September 28, 2026

Michael Roux
5 Flint Street LLC
209 Shafter Street
Islandia, New York 11749

Re: Remedial Action Work Plan
5 Flint Street
Site No.: C82862B
City of Rochester, Monroe (C)

Dear Mr. Roux:

The New York State Department of Environmental Conservation (Department) in conjunction with New York State Department of Health (NYSDOH) have completed a review of August 6, 2026 Remedial Action Work Plan (RAWP) for the 5 Flint Street site (Site) located in the City of Rochester. Based on the information presented in the RAWP, the Department is conditionally approving the RAWP with the following modifications and clarifications.

1. Executive Summary; Page x and Section 1.0; Introduction; Page 1 & 2: Note – the following is for clarity of the administrative record for the C828162 and C828162B sites.
    - The Brownfield Cleanup Agreement (BCA) was executed by the Department on October 10, 2025.
    - The May 10, 2017 Remedial Investigation Report letter issued by the Department stated the following: "*The Departments have no comments at this time. The Report will be approved, disapproved, or modified when the Decision Document is issued."*
    - Remedial Alternatives Analysis Reports for the C828162 site were disapproved on October 1, 2020, December 2, 2020, and on September 30, 2021.
    - The C828162 site was terminated from the Brownfield Cleanup Program (BCP) effective February 6, 2023.
    - The change of use and Interim Site Management Plan was submitted on June 16, 2025.

2. Executive Summary; Page x and Section 1.1; Site Location and Description: The Site size as indicated in the BCA is 1.61 acres.

3. Section 2.0; Description of Remedial Investigation Findings; Page 5: The May 10, 2017 Remedial Investigation Report letter issued by the Department stated the following: "*The Departments have no comments at this time. The Report will be approved, disapproved, or modified when the Decision Document is issued."*

4. Section 2.3.1; Past Uses and Ownership; Pages 10-11: For clarity of the administrative record for the C828162 site – Remedial Alternatives Analysis Reports for the C828162 site were disapproved on October 1, 2020, December 2, 2020, and on September 30, 2021. The C828162 site was terminated from the Brownfield Cleanup Program (BCP) effective February 6, 2023.

5. Section 2.5.5; Summary of Groundwater Contamination and Comparison with SCGs; Pages 16-17: The newly installed groundwater monitoring well discussed in this section is identified as 5FS-MW-1 and was installed as part of the PDI activities.

6. Section 2.7.2; Soil; Page 20: The RAOs for Public Health Protection also includes the following as per the Site's Decision Document:
    - Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

7. Section 4.4.5; ISS Construction; Pages 39-40: The Department understands that the cell size will range from 10 x 15 feet to 20 x 20 feet and it is contingent upon the Site geometry and fieldwork conditions. The Department understands that a standard excavator bucket will be used for the ISS mixing process. Thorough mixing will meet QC procedures as detailed in Appendix G of the RAWP. The Site's QEP and the Site's PE of record will be in communication to ensure thorough mixing in the ISS cells.

8. Section 4.4.5.1; ISS Obstructions; Page 40: The Department understands that obstructions encountered during the ISS mixing process will not prevent the ISS from meeting the ISS performance requirements as detailed in Appendix G of the RAWP.

9. Section 4.4.5.2; Wet Samples – Cylinders; Pages 40-41: The Department understands that the wet sample preparation will be in accordance with ASTM C31/C31M. The Department understands that the wet samples will be securely stored in the job trailer located at the Site.

10. Section 4.4.5.2.2; ISS Coring; Pages 41-42: The Department understands that ISS coring will be conducted between 14 to 28 days after ISS mixing has been completed.

11. Section 4.5.1; Soil and Subsurface Material Screening Methods; Page 42-43: The field screening level for the PID will be 5 parts per million. The individual conducting the field screening will be under the direct supervision of the Remedial Engineer.

12. Section 4.5.4; Materials Excavation and Load Out; Page 44-45: The qualified environmental professional, PE of record, or the direct report will be on-site for all excavation activity and the movement/management of all Site related soil/fill material. In addition, the mechanical processing of historical fill, contaminated soil, and clean concrete will only be conducted at the Site with prior written approval from the Department project manager.

13. Section 4.5.5; Materials Transport Off-Site; Pages 45-46: With regards to the queuing of trucks on adjacent sites, written approval must be obtained from Department project managers for the Site and the sites in which the queuing will be occurring. All trucks leaving the Site/sites using the haul road will be decontaminated prior to leaving the Vacuum Oil parcels.

14. Section 4.5.7; Materials Reuse On-Site; Page 48-49: Prior approval must be obtained before any processing of concrete material occurs at the Site. The Department understands that any concrete material proposed for reuse at the Site in the ISS process will have originated solely from the Site. The Department understands that all concrete material to be reused as part of the ISS process will be analyzed for asbestos.

15. Section 4.5.10; Backfill from Off-Site Sources; Pages 50-51: All imported soil material must meet the lowest valued soil cleanup objective (SCOs) when comparing restricted residential and protection of groundwater as presented in 6 NYCRR Part 375-6.8, Soil Cleanup Objectives, Table 375-6.8(b). Table 3 provided in the RAWP presents the SCOs for remedy implementation. The

SCOs presented in Table 3A apply to soil material imported to the Site. All material, soil and non-soil material, will be staged in the Import Soil and Material Stockpile Area as shown on Figure 10 of the RAWP. The stockpiled material in this area will not be co-mingled and will be staged separately.

16. Section 4.5.13; Community Air Monitoring; Page 53: The Community Air Monitoring Plan (CAMP) will be implemented during all activities associated with the in-situ stabilization implementation, during all ground intrusive activities, and during the handling and management of soil/fill material at the Site.

17. Section 4.5.14.1; Odor Control; Pages 53-54: NYSDEC, NYSDOH, and City of Rochester project managers will be notified of all odor events and all other complaints about the project.

18. Section 4.5.14.3; Other Nuisances: Page 54: Roux will confer with City of Rochester and NYSDEC project managers on all complaints received and best course of action.

19. Section 5.1.5.10; Construction Quality Control Testing; Pages 63-64: Bullet #6 on Page 64 – Air monitoring data will be made available to the NYSDEC and NYSDOH project managers for review.

20. Section 5.3.10; Groundwater Performance Sampling; Page 73: The Department understands that if the Certificate of Completion is not issued during the month of March 2027, then groundwater performance monitoring will begin April 2027. A work plan detailing the performance groundwater monitoring will be submitted to the Department and NYSDOH for review and approval. Groundwater performance monitoring will continue until the Certificate of Completion is issued. When the Site moves into the site management phase, then the Department approved Site Management Plan will detail the groundwater monitoring to be conducted at the Site.

21. Section 6.0; Residual Contamination to Remain on Site; Page 75: Bullet #2 – Must read as follows: "A Site Cover System that has all residual contamination covered either by buildings, sidewalks, pavement, or a two-foot think cover of soil that complies with the applicable SCOs Site-wide."

22. Section 7.1; Completed ISS Areas; Page 76: The Site's Final Engineering Report (FER) will document the final extent of the ISS areas on as-built drawings that will be signed and stamped by the NYS licensed and registered PE of record for the Site.

23. Section 7.2; Site-Wide Cover System; Pages 76-77: Table 3 of the RAWP is not applicable to the Site-wide cover system. The Site-wide cover system soil component must meet all constituents listed in Table 375-6.8(b) of 6 NYCRR Part 375 dated December 2025. Table 3 of the RAWP presents the SCOs for Site cleanup objectives – 6 NYCRR Part 375-6.8(b), Table 375-6.8(b) dated December 2006. December 2025 (current version) Part 375 SCOs are applicable for the site during redevelopment as well – Table 3A.

24. Section 9.2; Site Management Plan; Pages 79-81: On Page 80, Item #1.a. Engineering Controls – MNA or long-term groundwater monitoring is not an engineering control. Section 7 of the SMP template will provide all the necessary details and submittal deadlines for reports associated with the Site during the site management phase. A separate plan is not needed as indicated in the RAWP.

25. Section 10.0; Final Engineering Report; Page 82: The Department understands the following sentence should read as follows:

- The FER will provide a thorough summary of all soil, and a table and figure that presents exceedances from Track 4 RRSCOs for all soil remaining at the Site after the Remedial Action.

26. Figures: The Department understands that the reference to the NYSDEC 2015 PGW SCOs is referring to the 2006 PGW SCOs.

27. Figure 10: The Department understands the following:
    - Amendments will be stored in the Equipment Staging Area or the Trailer and Facilities Staging Area as shown on this figure.
    - Water to be used for the ISS mixing process and as needed for remedy implementation will be obtained from a hydrant located at the end of Flint Street under a Hydrant Use Permit issued by the City of Rochester.

28. Appendix F; QAPP/FSP; Section 6.1; Page 10: The Department understands that the field screening is described in the 2nd sentence of this section.

29. Appendix F; QAPP/FSP; Section 8; Site Control Procedures; Page 15: The HASP for the RAWP is located Appendix H.

30. Appendix F; QAPP/FSP; Section 8.1; Decontamination; Page 15: The Department understands that the decontamination pad as presented Figure 10 in the RAWP will be used for decontamination of the equipment associated with the ISS activities.

31. Appendix F; QAPP/FSP; Section 8.2; Management of Investigation Derived Waste; Page 15: The Department understands that this section should read as follows:

    - All fluids generated including but **not** limited to decontamination fluids, well development water and purge water generated during sampling will be discharged into the municipal sewer system through an approved Monroe County DES Discharge Permit or placed into DOT approved 55-gallon drums, sealed and labeled characterized, and disposed off-site at a permitted facility.

32. Appendix K; Erosion and Sediment Control Plan; Section 3.1; Page 4: Figure 10 of the RAWP presents the location of the construction entrance and the truck wash/decontamination pad.

33. Appendix L; Community Air Monitoring Plan: No visible dust is allowed on-site or leaving the Site during any of the remedy implementation activities. If visible dust is present, dust mitigation measures must be implemented.

Within fifteen (15) days of the date of this letter and prior to any fieldwork activities, the Applicant must elect in writing (electronic notification is acceptable) one of the following options:

- Option A: Accept the modified work plan;
- Option B: Invoke dispute resolution as set forth in 6 NYCRR Part 35-1.5(b)(2); or
- Option C: Terminate the Brownfield Cleanup Agreement in accordance with 6 NYCRR Part 375-3.5.

If the Applicant chooses to accept Option A, then this letter becomes part of the approved Remedial Action Work Plan dated August 2026. Also, if Option A is chosen, then a copy of the approved Remedial

Action Work Plan along with this letter attached must be placed in the document repository within 1 week of accepting Option A and prior to any fieldwork activities. Please provide notification to the Department that the Remedial Action Work Plan and a copy of this letter have been placed in the document repository (electronic notification is acceptable).

NYSDEC seeks to resolve outstanding differences in a mutually agreeable manner which addresses the requirements of the Brownfield Cleanup Agreement, Part 375, and all applicable laws, regulations, and guidance. If you or your technical team have any questions or concerns regarding this request, please contact me via email at charlotte.theobald@dec.ny.gov or at 585-226-5354. If your legal team have any questions or concerns regarding this request, please feel free to contact Deborah Gorman via e-mail at Deborah.Gorman@dec.ny.gov or at 518-402-9525 and Kyle Pero at kyle.pero@dec.ny.gov.

Sincerely,



Charlotte B. Theobald
Assistant Engineer

ec:
Noelle Clark (Roux Environmental Engineering & Geology, D.P.C.)
Ian Reed (Roux Associates, Inc.)
Eric Runstrom (Roux Associates, Inc.)
Michael Hecker (Hodgson Russ LLP)
Justin Deming (NYSDOH)
Julia Kenney (NYSDOH)
Christopher Budd (NYSDOH)
Starr O'Neil (MCHD)
Dr. Velez De Brown (MCHD)
Kyle Pero (NYSDEC)
Deborah Gorman (NYSDEC)
Greg MacLean (NYSDEC)
Michael Ormanoski (NYSDEC)

REMEDIAL ACTION WORK PLAN

5 Flint Street
Rochester, New York
BCP Site No. C828162B

August 6, 2026

Prepared for:

5 Flint Street LLC

Prepared by:

Roux Environmental Engineering and Geology, D.P.C.
209 Shafter Street
Islandia, New York 11749

Roux Associates, Inc.
200 Summit Drive, Suite 500
Burlington, Massachusetts 01803

4694.0001BM000.100.RCV

Environmental Consulting
& Management
+1.800.322.ROUX
rouxinc.com

Table of Contents

CERTIFICATION vi

ACRONYM LIST vii

EXECUTIVE SUMMARY x

Description of Areas of Concern xiii

1.0 INTRODUCTION 1

1.1 Site Location and Description 2

1.2 Contemplated Redevelopment Plan 3

1.3 Description of Surrounding Property 3

2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS 5

2.1 Summary Remedial Investigations Performed 5

2.1.1 1999 – 2000 NYSDEC Subsurface Investigation 5

2.1.2 2008 Roux Subsurface Investigation 6

2.1.2.1 2008 Roux – Soil 6

2.1.2.2 2008 Roux – Groundwater 6

2.1.3 2014 - 2015 Ravi Remedial Investigation 7

2.1.3.1 2014 - 2015 Ravi – Soil 7

2.1.3.2 2014 - 2015 Ravi – Groundwater 8

2.1.4 Roux 2017 Subsurface Investigation 8

2.1.4.1 2017 Roux – Soil 9

2.1.4.2 2017 Roux – Groundwater 9

2.1.5 Leader 2020 Emerging Contaminants Sampling 9

2.2 Significant Threat 10

2.3 Site History 10

2.3.1 Past Uses and Ownership 10

2.4 Geologic and Hydrogeologic Conditions 11

2.4.1 Site Geology 11

2.4.2 Site Hydrogeologic Setting 11

2.5 Contamination Conditions 12

2.5.1 Conceptual Model of Site Contamination 12

2.5.2 Description of Areas of Concern 12

2.5.3 Identification of Standards, Criteria and Guidance 2

2.5.4 Soil/Fill Contamination 15

2.5.4.1 Summary of Shallow Soil/Fill Data and Comparison With SCGS 15

2.5.4.2 Summary of Deep Soil/Fill Data and Comparison With SCGS 16

2.5.5 Summary of Groundwater Contamination and Comparison With SCGS 16

2.5.6 Soil Vapor and Air Quality 17

2.6 Environmental and Public Health Assessments 17

2.6.1 Qualitative Human Health Exposure Assessment 17

2.6.2 Qualitative Off-Site Exposure Assessment 18

2.6.3 Fish and Wildlife Remedial Impact Analysis 19

2.7 Remedial Action Objectives 20

2.7.1 Groundwater 20

2.7.2 Soil 20
2.7.3 Soil Vapor 20
3.0 DESCRIPTION OF REMEDIAL ACTION PLAN 21
3.1 Remedial Alternatives Analysis Report Summary 21
3.1.1 Source Area Delineation and Definition of Excavation Areas 21
3.2 Selected Remedy 21
4.0 REMEDIAL ACTION IMPLEMENTATION 27
4.1 Soil Cleanup Objectives 27
4.2 Pre-Design Investigation Sampling 27
4.2.1 Phase I PDI Sampling 28
4.2.2 Phase II PDI Sampling 31
4.2.3 Revised Excavation and ISS Area Extents 33
4.2.4 Additional PDI Sampling 33
4.2.5 Methodology 33
4.2.6 Analytical Reporting of Results 34
4.2.7 QA/QC 34
4.2.8 Data Usability Summary Report (DUSR) 34
4.2.9 Reporting PDI Sampling Data in RAWP Report and FER 35
4.3 Estimated Material Removal Quantities 35
4.4 In-Situ Stabilization/Solidification 35
4.4.1 ISS Performance Criteria 35
4.4.2 ISS Bench Testing 36
4.4.2.1 ISS Bench Test Performance Analysis 37
4.4.3 ISS Preparation 38
4.4.3.1 Utility Locate and Protection 38
4.4.3.2 Work Zones 38
4.4.3.3 Pre-Clearing 38
4.4.4 ISS Mobilization 39
4.4.5 ISS Construction 39
4.4.5.1 ISS Obstructions 40
4.4.5.2 ISS Quality Control 40
4.4.5.2.1 Wet Samples - Cylinders 40
4.4.5.2.1.1 Sampling Storage and Handling Requirements 41
4.4.5.2.2 ISS Coring 41
4.4.5.3 ISS Sampling Documentation 42
4.4.5.4 ISS Performance Evaluation 42
4.5 Soil/Materials Management Plan 42
4.5.1 Soil and Subsurface Material Screening Methods 42
4.5.2 Building Foundation Demolition and Management of Concrete Materials 43
4.5.2.1 Field Screening and Segregation of Potentially Impacted Building Foundation and Excavated Concrete Materials 43
4.5.2.2 Processing of Building Foundation and Excavated Concrete Materials 43
4.5.3 Stockpile Methods 44
4.5.4 Materials Excavation and Load Out 44
4.5.5 Materials Transport Off-Site 45

4.5.6 Materials Disposal Off-Site 46
4.5.7 Materials Reuse On-Site 48
4.5.7.1 Reuse of Crushed Concrete Building Materials 49
4.5.8 Fluids Management 49
4.5.9 Demarcation 50
4.5.10 Backfill from Off-Site Sources 50
4.5.11 Stormwater Pollution Prevention 51
4.5.12 Excavation Contingency Plan 51
4.5.12.1 Extreme Storm Preparedness and Response Contingency Plan 51
4.5.13 Community Air Monitoring Plan 53
4.5.14 Odor, Dust, and Nuisance Control Plan 53
4.5.14.1 Odor Control Plan 53
4.5.14.2 Dust Control Plan 54
4.5.14.3 Other Nuisances 54
5.0 REMEDIAL ACTION PROGRAM 55
5.1 Governing Documents 55
5.1.1 Standards, Criteria and Guidance (SCGS) 55
5.1.1.1 Green and Sustainable Remediation and Climate Resiliency 55
5.1.2 Site Specific Health and Safety Plan (HASP) 57
5.1.3 Community Air Monitoring Plan (CAMP) 58
5.1.4 Quality Assurance Project Plan (QAPP) 58
5.1.5 Construction Quality Assurance Plan (CQAP) 58
5.1.5.1 Organization / Personnel 59
5.1.5.2 5 Flint Street, LLC (Volunteer) – General Site Remediation Oversight 59
5.1.5.3 Roux Environmental Engineering and Geology, DPC - Remedial Engineer, Remedial Compliance and SSO 60
5.1.5.4 Roux MA – Environmental Consultant 61
5.1.5.5 Roux DPC (Contractor)-Remedial Contractor 61
5.1.5.6 Roux DPC Sub-Contractors 62
5.1.5.7 Environmental Laboratory 62
5.1.5.8 Surveying Firm 62
5.1.5.9 Waste Transporters and Disposal Facilities 62
5.1.5.10 Construction Quality Control Testing 63
5.1.5.11 Project Coordination 65
5.1.6 Soil/Materials Management Plan (SoMP) 65
5.1.7 Erosion and Sediment Control Plan (ESCP) 65
5.1.8 Contractors Site Operations Plan (SOP) 65
5.1.9 Citizen Participation Plan 65
5.2 General Remedial Construction Information 66
5.2.1 Project Organization 66
5.2.2 Remedial Engineer 66
5.2.3 Remedial Action Construction Schedule 67
5.2.4 Work Hours 67
5.2.5 Site Security 67
5.2.6 Traffic Control 67

5.2.7 Contingency Plan 67
5.2.8 Worker Training and Monitoring 68
5.2.9 Required Permits/Authorizations 68
5.2.10 NYSDEC BCP Signage 68
5.2.11 Pre-Construction Meeting with NYSDEC 68
5.2.12 Emergency Contact Information 68
5.2.13 Remedial Action Costs 69
5.3 Site Preparation 69
5.3.1 Mobilization 69
5.3.2 Monitoring Well Decommissioning 69
5.3.3 Erosion and Sedimentation Controls 70
5.3.4 Stabilized Construction Entrance(s) 70
5.3.5 Utility Marker and Easements Layout 70
5.3.6 Support of Excavation 71
5.3.7 Equipment and Material Staging 72
5.3.8 Decontamination Area 72
5.3.9 Demobilization 72
5.3.10 Groundwater Performance Monitoring 73
5.4 Reporting 73
5.4.1 Daily Reports 73
5.4.2 Monthly Reports 73
5.4.3 Other Reporting 74
5.4.4 Complaint Management Plan 74
5.4.5 Deviations from the Remedial Action Work Plan 74
6.0 RESIDUAL CONTAMINATION TO REMAIN ON SITE 75
7.0 ENGINEERING CONTROLS 76
7.1 Completed ISS Areas 76
7.2 Site-Wide Cover System 76
7.3 MNA Program 77
8.0 CRITERIA FOR COMPLETION OF REMEDIATION/ TERMINATION OF REMEDIAL SYSTEMS 78
8.1 ISS Areas 78
8.2 Site-Wide Cover Systems 78
8.3 Groundwater Monitoring 78
9.0 INSTITUTIONAL CONTROLS 79
9.1 Environmental Easement 79
9.2 Site Management Plan 79
10.0 FINAL ENGINEERING REPORT 82
10.1 Certifications 82
11.0 SCHEDULE 83

Tables

1 Summary of Soil Analytical Results
2 Summary of Groundwater Analytical Results
3 Soil Cleanup Objectives
3a Imported Backfill and Cover Reuse Criteria
4. PDI Sampling Field Observations
5. Summary of PDI Soil Analytical Results
6. Summary of PDI Groundwater Analytical Results
7. Required Permits, Certificates or Other Approvals or Authorizations
8. Emergency Contact List
9. Remedial Cost Estimate

Figures

1. Site Location Map
2. Site Plan
3. Tax and Surrounding Properties Map
4. Remedial Investigation Summary
5. Former Vacuum Oil Company Refinery Area
6. Phase I PDI Sampling Results
7. Phase II PDI Sampling Results
8. Updated Proposed Excavation and ISS Extents
9. Additional PDI Sampling
10. Truck Routes
11. Site Layout Plan
12. Construction Details
13. Known and Suspected Utilities
14. Cover Type Detail

Appendices

A. Metes and Bounds
B. NYSDEC Decision Document – Site No. C828162B
C. Groundwater Contour Map
D. PDI Soil Boring Logs
E. Laboratory Analytical Reports
F. Quality Assurance Project Plan (QAPP) / Field Sampling Plan (FSP)
G. NYSDEC In Situ Solidification QA/QC Guidance Document
H. Site Health and Safety Plan (HASP)
I. Request to Import/Reuse Fill Material Form
J. Approved Permits
K. Erosion and Sediment Control Plan (ESCP)
L. Community Air Monitoring Plan (CAMP)
M. Professional Profiles
N. Citizen Participation Plan

CERTIFICATIONS

I, Noelle Clarke, certify that I am currently a NYS registered professional engineer and that this Remedial Alternative Analysis and Remedial Work Plan was prepared in accordance with all applicable statutes and regulations and in substantial conformance with the DER Technical Guidance for Site Investigation and Remediation (DER-10) and Green Remediation (DER-31).
I certify that all information and statements in this certification are true. I understand that a false statement made herein is punishable as Class "A" misdemeanor, pursuant to Section 210.45 of the Penal Law.

Noelle Clarke	8/6/2026	
NYS Professional Engineer # 072491	Date	Signature



It is a violation of Article 145 of New York State Education Law for any person to alter this document in any way without the express written verification of adoption by any New York State licensed engineer in accordance with Section 7209(2), Article 145, New York State Education Law

ACRONYM LIST

Acronym	Definition
ASP	Analytical Services Protocol
AWQSGVs	Ambient Water Quality Standards and Guidance Values
BCA	Brownfield Cleanup Agreement
BCP	Brownfield Cleanup Program
BOA	Brownfield Opportunity Areas
BUD	Beneficial Use Determination
CAMP	Community Air Monitoring Plan
COC	Contaminant of Concern
CPP	Community Participation Plan
CQAP	Construction Quality Assurance Plan
CVOCs	Chlorinated Volatile Organic Compounds
CY	Cubic Yards
DER-10	NYSDEC Draft DER 10 Technical Guidance for Site Investigation and Remediation
DUSR	Data Usability Summary Report
EC	Engineering Control
ECL	Environmental Conservation Law
EDD	Electronic Data Deliverable
EE	Environmental Easement
ELAP	Environmental Laboratory Approval Program
ESA	Environmental Site Assessment
FEMA	Federal Emergency Management Agency
FER	Final Engineering Report
FSP	Field Sampling Plan
ft bgs	Feet Below Ground Surface
FMU	Flexible Mixed-Use
HASP	Health and Safety Plan
IC	Institutional Control
INC	Incorporated

Acronym	Definition
ISS	In-Situ Solidification
LLC	Limited Liability Company
MDL	Method Detection Limit
mg/kg	Milligrams per Kilogram
mg/l	Milligrams per liter
MNA	Monitored Natural Attenuation
MTBE	Methyl Tert-butyl Ether
NYCRR	New York Codes, Rules and Regulations
NYSDEC	New York State Department of Environmental Conservation
NYSDOH	New York State Department of Health
O-EP	Environmental Protection Overlay District
PAHs	Polycyclic Aromatic Hydrocarbons
PBS	Petroleum Bulk Storage
PCBs	Polychlorinated Biphenyls
PCSM	Preliminary Conceptual Site Model
PDI	Pre-Design Investigation
PFAS	Per- and Polyfluoroalkyl Substances
PGWSCO	Protection of Groundwater Soil Cleanup Objectives
PID	Photo Ionization Detector
PPE	Personal Protective Equipment
QAPP	Quality Assurance Project Plan
RAOs	Remedial Action Objectives
RAP	Remedial Action Plan
RAWP	Remedial Action Work Plan
RI	Remedial Investigation
RIR	Remedial Investigation Report
RIWP	Remedial Investigation Work Plan
QA	Quality Assurance
QC	Quality Control
QHHEA	Qualitative Human Health Exposure Assessment

Acronym	Definition
SCGs	Standards, Criteria and Guidance
SCO	Soil Cleanup Objective
SMP	Site Management Plan
SOE	Support of Excavation
SoMP	Soil/Materials Management Plan
SSDS	Sub-slab Depressurization System
SSO	Site Safety Officer
SVOCs	Semivolatile Organic Compounds
SWPPP	Stormwater Pollution Prevention Plan
TAL	Target Analyte List
TCE	Trichloroethylene
TCL	Target Compound List
TCLP	Toxicity Characteristic Leaching Procedure
TICs	Tentatively Identified Compounds
TOC	Top of Casing
USEPA	United States Environmental Protection Agency
USGS	United States Geological Survey
UST	Underground Storage Tank
VOCs	Volatile Organic Compounds
ZAP	Zoning Alignment Project

EXECUTIVE SUMMARY

Roux Associates, Inc. and Roux Environmental Engineering and Geology D.P.C. (collectively referred to as “Roux”), on behalf of 5 Flint Street LLC (referred to herein as Requestor or 5 Flint) has prepared the following Remedial Action Work Plan (RAWP, or Report) for the property located at 5 Flint Street, Rochester, New York (the “Site”). The Site falls within the footprint of the former Vacuum Oil Refinery (hereafter referred to as the “facility”) which encompasses approximately 27 acres along the south and west of the intersection of Flint and Exchange Streets on the west bank of the Genesee River (**Figure 1**). The boundaries of the Site parcels are shown on **Figure 2**.

The Site was accepted in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) per Title 6 New York State Official Compilation of Codes, Rules, and Regulations (NYCRR) Part 375-3.4 (NYSDEC 2006) on September 17, 2025 as Site Number C828162B. 5 Flint entered into a Brownfield Cleanup Agreement (BCA) with the NYSDEC on September 23, 2025 to investigate and remediate a 1.59-acre property located at 5 Flint Street in Monroe County, Rochester, New York. 5 Flint is a Volunteer in the Brownfield Cleanup Program.

The Site was entered into the NYSDEC BCP in June 2010 by One Flint Street, LLC (One Flint) along with the adjacent property, 15 Flint Street, and was assigned BCP site No. C828162. In October 2016, Ravi Engineering & Land Surveying, P.C. (Ravi) submitted a Remedial Investigation (RI) Report under BCP site No. C828162, which NYSDEC acknowledged as accepted and complete in a May 10, 2017, letter to One Flint. In March 2021, Dixon Rollins, P.E. submitted a Remedial Alternative Analysis Report (RAAR), on behalf of One Flint, for the 5 and 15 Flint Street BCP site (No. C828162), which was disapproved by NYSDEC in a letter to One Flint, dated September 30, 2021. The Brownfield Cleanup Agreement with One Flint was terminated by the NYSDEC; therefore, One Flint is not participating in the BCP for 5 and 15 Street. On August 31, 2023, Exxon Mobil Corporation (ExxonMobil) purchased the Site.

5 Flint submitted a BCP Application and Remedial Alternative Analysis Report (RAAR) on May 15, 2024 and revised the BCP Application and RAAR on July 10, 2024. The NYSDEC determined the BCP Application to be complete in a letter to 5 Flint, dated August 13, 2024 and provided a letter of response to the RAAR, dated November 20, 2024, requesting a revised RAAR addressing the Department’s concerns, comments and issues. 5 Flint submitted a revised RAAR to the NYSDEC on February 24, 2025 (Revised RAAR), which was accepted by NYSDEC in a letter to 5 Flint, dated November 17, 2025.

5 Flint submitted a Change of Use Form and Interim Site Management Plan (ISMP) to NYSDEC on July 16, 2025, which was conditionally approved by NYSDEC in a letter to 5 Flint, dated October 21, 2025. The ISMP was developed to address activities related to the demolition of the abandoned three-story block and brick building on the northeast end of the Site, which were planned to be conducted while the Site was pending acceptance into the NYSDEC BCP and before approval of this RAWP. The demolition was completed in December 2025, and the building slab will remain in place until the RAWP is approved and the remedial action commences.

Following demolition of the building in December 2025, demolition debris (i.e., hardfill including cast in-place concrete, concrete block and brick) were processed to reduce the material size to 2-inch minus and stockpiled on-Site.

The crushed hardfill material was sampled for laboratory analysis in accordance with a February 23, 2026 Case-Specific Beneficial Use Determination (BUD) Request, conditionally approved by NYSDEC in a letter to 5 Flint, dated March 12, 2026. Material sampling results were provided to NYSDEC on April 3, 2026 and additional sampling of the BUD material for TCL SVOCs via EPA Method 8270, following Synthetic Precipitation Leaching Procedure (SPLP) extraction, was conducted as proposed in a NYSDEC letter dated April 13, 2026. SPLP results were provided to NYSDEC on April 28, 2026. In response, NYSDEC provided conditional approval for reuse of the BUD material on the Site and adjacent BCP sites C828190 and C828162C in a letter dated May 13, 2026. Based on this conditional approval, a Request to Import/Reuse Fill Material form was submitted to NYSDEC on May 18, 2026 to import the BUD material to BCP Site C828190 for use as outlined in the May 13, 2026 conditional approval letter. NYSDEC conditionally approved the request to import to BCP Site C828190 in an email dated May 22, 2026. Subsequent to this conditional approval, all BUD material was imported to BCP Site C828190 and no BUD material is remaining at the Site.

ExxonMobil has granted access to 5 Flint throughout the BCP investigation and remediation process through obtainment of the Certificate of Completion (including allowing placement of an Environmental Easement [EE] on the Site). Proof of access was included in the BCP Application submitted concurrently with the Revised RAAR for the Site. It is likely that ExxonMobil will grant access to a future developer (not yet identified) to redevelop the Site in a manner consistent with the City master development plan for the Vacuum Oil Brownfield Opportunity Area (BOA).[1]

This RAWP summarizes the nature and extent of contamination as determined from data gathered from investigation activities conducted at the Site from 1999 through 2020, which includes data collected between 2014 and 2015 in accordance with the Remedial Investigation Work Plan (RIWP), dated January 2012. Summaries of the investigation activities conducted at the Site from 1999 through 2020 are included in **Section 2** below. This RAWP provides a summary of the Revised RAAR, approved by NYSDEC on November 17, 2025, and the NYSDEC Decision Document dated November 2025 (Decision Document), which describes the NYSDEC-approved remedy for the Site. The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy. The remedy described in this document is consistent with the procedures defined in DER-10 and complies with all applicable standards, criteria, and guidance. The remedy described in this document also complies with all applicable Federal, State and local laws, regulations and requirements.

Site Description/Physical Setting

A Site Location Map is included as **Figure 1**.

Site Location	
BCP Site Name:	5 Flint Street
Site Parcel Addresses:	5 Flint Street
Site Parcel Tax Identification:	Section 121, Block 77-1-10, Lot 001
Site Town, County, State:	Rochester, Monroe County, New York

[1] City Vacuum Oil - South Genesee River Corridor Brownfield Opportunity Area (BOA). Additional information on this BOA can be found online: https://www.cityofrochester.gov/VacuumOilBOA/

Site Location	
Site Topographic Quadrangle:	USGS-Rochester East, New York
Nearest Intersection:	South Plymouth Avenue to the northwest
Surrounding Area Description:	The Site is surrounded by City-owned parcels which are primarily undeveloped, apart from an asphalt-paved bike/pedestrian path which runs through 102 Violetta Street to the east/southeast, and the very southwestern end of 13 Cottage Street to the southwest, of the Site. The remaining portions of 13 Cottage Street to the southwest, and 10 Flint Street to the west/northwest are currently undeveloped. The Site and surrounding City-owned properties are located within the former Vacuum Oil Refinery footprint and are part of the Vacuum Oil – South Genesee River Corridor Brownfield Opportunity Area. The City-owned properties surrounding the Site (with the exception of 940 Exchange Street to the northeast) are currently in the BCP as site number C828190.

Site Information	
Site Size:	1.59 acres
Site Shape:	Polygon
Site Property Use:	The Site is currently undeveloped, with the exception of an abandoned three-story block and brick building on the northeast end of the Site. The building was reportedly built between 1918 and 1930 and has been vacant without utilities for an unknown amount of time.

Summary of Proposed Redevelopment Plan

Although the redevelopment plan for the Site is not finalized, it is anticipated that when redevelopment is completed, the redevelopment plan will be consistent with the City master development plan for the Vacuum Oil Brownfield Opportunity Area (BOA). The BOA redevelopment plan includes multi-family residential, commercial/retail, and industrial facilities through a phased implementation. Although current zoning is R-3 for high density residential, as part of the City's Zoning Alignment Project (ZAP), the zoning in the area will be rezoned to FMU (flexible mixed-use) once the ZAP is complete. In addition, the City will be imposing the Environmental Protection Overlay District (O-EP) in the area so that future development will be limited to restricted residential requirements.

Summary of Environmental Findings

The Site was investigated in accordance with the scope of work presented in the NYSDEC conditionally approved Remedial Investigation Work Plan (RIWP) dated January 2012, prepared by Labella Associates, P.C.[2], and various investigation and data collection efforts conducted in 1999-2000, 2008, 2011, 2014-2015, 2017, and 2020. The Remedial Investigation Report (RI Report) was submitted to NYSDEC in October 2016 and approved by NYSDEC on May 10, 2017. Based upon investigations conducted to date, petroleum-related impacts in shallow soil, deep soil, and groundwater are present across portions of the Site. Shallow soil refers to the top two feet of soil, while deep soil refers to soil located greater than two feet below ground surface (ft bgs). The specific source of the petroleum-related impacts is not known but has been inferred to be the result of various historical operations at the Site, as well as other historical operations at neighboring properties.

[2] As modified and approved by the NYSDEC letter dated February 16, 2012.

The following is a summary of the geological and hydrogeological findings, the soil and groundwater data generated during the RI and other Site investigations. The NYSDEC and NYSDOH have determined that the Site does pose a significant threat to human health and the environment.

Local Geology and Stratigraphy

The overburden at the Site consists of both native and fill materials. Fill material, including bricks, slag, cinders, gravel, wood, and miscellaneous debris, is observed throughout much of the Site and is generally found between 0 and 6 ft bgs. Native soils consisting of sand and silt with varying amounts of clay are found between 0 and approximately 17 ft bgs.

Bedrock was encountered at the Site during previous investigations at depths ranging from approximately 12 to 17 ft bgs. According to The New York State Department of Transportation (NYSDOT) Geology of New York State Geotechnical Design Manual, the Site, which is located in the Ontario Lowlands, is underlain by stratified beds of shales, sandstones, limestone, and dolostone. The bedrock generally dips to the southwest at a low angle.

Site Hydrogeologic Setting

Depth to groundwater at the Site ranges from approximately 3 ft bgs to approximately 11 ft bgs. Groundwater in the vicinity of the Site appears to flow in two converging directions. In the area northwest of the site (e.g., the 15 Flint Street property), groundwater flows southeast towards the Site and the Genesee River, as described in the 2016 Ravi Remedial Investigation Report.

The June 2023 Remedial Alternatives Analysis Report prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) for the abutting City-owned properties BCP site #C828190 states: "Groundwater flow direction and elevations suggest that the groundwater is fed by the river water on the south end of the site and flows northward. On the northern side of the Site the gradient is relatively flat and more than 5 ft lower than the river level. The groundwater elevations in overburden wells at or near the river are also more than 5 ft lower than the river level. This large difference suggests that there is some limitation in the hydraulic connection between the river and the overburden groundwater in this area of the site. As discussed in the [November 2019 RI Report prepared by O'Brien & Gere Engineers, Inc.] the existing segment of the [West River Wall (WRW)] that borders the Site extends to bedrock and is limiting the hydraulic connection between the Site groundwater and the river."[3]

Description of Areas of Concern

As described in the *RAAR*, information generated during previous Site investigations (including the RI) was used to evaluate the nature and extent of contamination at the Site. Section 3 of the *RAAR* presents the results of the data collected during the previous Site investigations and is summarized RAWP. Based on the findings related to historical use of the Site and historical and the BCP environmental investigations, the following contaminants of concern (COCs) have been identified as being present at the Site (naturally occurring metals are not considered COCs):

- **Shallow Soil (0-2 ft bgs):** Metals (arsenic, lead, and mercury), and SVOCs (primarily polycyclic aromatic hydrocarbons [PAHs]);

[3] The "Site" or "site" used in this excerpt from the 2023 City RAAR is the City-owned properties BCP site # C828190 located adjacent to, but not including the 5 Flint Street property.

- **Deep Soil (>2 ft bgs):** Metals (arsenic, barium, lead, and mercury), SVOCs (primarily PAHs), petroleum VOCs, and petroleum (in the form of GCM);
- **Groundwater**: Metals (arsenic, lead), SVOCs, petroleum VOCs, petroleum (in the form of GCM), and chlorinated volatile organic compounds (CVOCs);

As discussed in Section 6.1.2 of the Decision Document, data from previous Site investigations were used to identify Site COCs. A "Site COCs" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are COCs. The nature and extent of contamination and environmental media requiring action are summarized below. The Site COCs as defined in the Decision Document are:

- 1,1,1-trichloroethane
- trichloroethene (TCE)
- cis-1,2-dichloroethene
- vinyl chloride
- 1,2,4-trimethylbenzene
- 1,3,5-trimethylbenzene
- arsenic
- barium
- mercury
- lead
- total polycyclic aromatic hydrocarbons (PAHS)
- chrysene
- ethylbenzene
- 1,1-dichloroethane
- Benzene

Soil, Groundwater, and Soil Vapor Quality

Shallow Soil

SVOCs (primarily PAHs) are present at concentrations exceeding the Restricted Residential Soil Cleanup Objectives (RRSCOs) at 13 shallow locations, and metals (arsenic, lead, and/or mercury) are present at concentrations exceeding the RRSCOs at nine shallow locations. The levels of SVOCs and metals observed are typical of those found in urban/non-native fill. There are no exceedances of the RRSCOs for VOCs in shallow soil samples collected at the Site.

Although Grossly Contaminated Media (GCM; as defined in 6 NYCRR Part 375 and DER-10) was not observed, other contaminant source areas (as defined in Element #2 of the Decision Document) were identified within shallow soil samples collected at the Site. Specifically, shallow soil samples containing total SVOCs exceeding 500 ppm were collected from two soil boring locations, SB-015 and SB-01. In addition, contaminant source areas may also be present in shallow soils in the vicinity of several soil borings including SS-1, SS-2, SB-009, SB-015, SB-016, SB-017, SB-021, SB-046, SB-01, SB-03, SB-05, SB-06, RXSB-08, and RXSB-09, based on soil detections of some Site COCs exceeding the Protection of Groundwater Soil Cleanup Objectives (PGWSCOs) collocated with groundwater with the same Site COCs exceeding the AWQSGVs.

Deep Soil

SVOCs (primarily PAHs) are present at concentrations exceeding the RRSCOs at three deep locations, and metals identified as Site COCs (arsenic, lead, and/or mercury) are present at concentrations exceeding the RRSCOs at two deep locations. The levels of SVOCs and metals observed are typical of those found in urban/non-native fill. Petroleum VOCs (total xylenes and/or 1,2,4-trimethylbenzene) are present at concentrations exceeding the RRSCOs at two deep soil locations.

Contaminant source areas were identified within deep soil samples collected at the Site. A review of boring logs identified that GCM was observed in several deep soil samples collected at the Site. Deep soil samples containing total SVOCs exceeding 500 ppm were collected from one soil boring location, TP-2. In addition, contaminant source areas may also be present in deep soils in the vicinity of several soil borings including

TP-1, TP-2, TP-3, SB-015, SB-017, SB-020, SB-046, TP-05 and RXSB-08, based on soil detections of some Site COCs exceeding the PGWSCOs collocated with groundwater contaminated by the same Site COCs exceeding the AWQSGVs.

Groundwater

Petroleum-related compounds (VOCs and SVOCs), metals and CVOCs have been detected in exceedance of their individual AWQSGVs in groundwater throughout the Site. Petroleum-related compounds and metals are likely associated with source materials both on and off-Site.

GCM in the form of measurable LNAPL has been observed in monitoring well MW-03. In addition, sheens have been observed on groundwater in monitoring wells DEC MW-1, MW-01, MW-02, MW-04, and MW-09.

Soil Vapor

Based on sampling results reported in the March 2001 NYSDEC Site Investigation Report, petroleum VOCs and CVOCs are present in soil vapor at the Site, consistent with contaminants found in soil (petroleum VOCs/SVOCs) and groundwater (petroleum VOCs/SVOCs and CVOCs) at the Site.

Qualitative Human Health Exposure Assessment

Potential exposure pathways associated with human receptor scenarios at the Site include:

Environmental Media and Exposure Route	Human Exposure Assessment
Direct contact with soils (and incidental ingestion)	Construction and remedial contractors can come into contact with soil if they complete ground intrusive work at the Site. Remedial workers, trespassers, passersby, and utility workers could come into contact with contaminated soil contained in dust through inhalation, incidental ingestion and dermal contact. Implementation of the Site-specific HASP, CAMP and dust controls during the remedial action and any future ground intrusive activities will mitigate potential exposures. Future exposure will be mitigated through excavating or solidifying contaminant source areas, if present, in certain areas of the Site, and through the installation of a Site Cover System and implementation of the SMP and employing engineering controls outlined in the SMP during any future construction (e.g., erosion and sediment controls, dust and odor controls, etc.).
Ingestion of groundwater	Groundwater is not and will not be used for drinking water, as any future buildings proposed on the Site will be connected to the public water supply. An environmental easement will restrict the use of Site groundwater.

Environmental Media and Exposure Route	Human Exposure Assessment
Direct contact with groundwater (and incidental ingestion)	Remedial workers, trespassers, and utility workers could come into contact with contaminated groundwater through dermal contact and incidental ingestion during ground intrusive work. Proper PPE and personal hygiene measures, as defined in the HASP, will be required to prevent dermal contact and the potential for incidental ingestion of impacted groundwater during construction. Future exposure to Site groundwater will be eliminated by the presence of redevelopment that covers the entire Site and employing engineering controls outlined in the SMP during any future construction (e.g., erosion and sediment controls, dust and odor controls, etc.).
Inhalation of air (exposures related to soil vapor intrusion)	Remedial workers, trespassers, and utility workers may be exposed to contaminated soil vapor during ground intrusive activities. Exposures to workers, residents, and passersby during the remedial action and future ground activities will be reduced or eliminated through implementation of the HASP, CAMP, and odor/vapor controls during construction. Future exposure will be reduced or eliminated through the activation of a passive vapor intrusion mitigation system planned to be installed beneath proposed buildings, if necessary, depending on results from future vapor intrusion sampling, installation of a Site Cover System and employing engineering controls outlined in the SMP during any future construction (e.g., erosion and sediment controls, dust and odor controls, etc.).

Summary of Selected Remedial Actions

The November 2025 Decision Document describes the NYSDEC-approved remedy for the Site. The selected remedy (RAAR Alternative 2) is a Track 4: Restricted use with site-specific soil cleanup objectives remedy. The elements of the selected remedy for the Site, as presented in the Decision Document, are summarized below.

1. Remedial Design:

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;

- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise(TM) (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

The existing on-site building will be demolished and materials which cannot be beneficially reused on-site will be taken off-site for proper disposal in order to implement the remedy.

Excavation and off-site disposal of contaminant source areas, including:

- Grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- Concentrated solid or semi-solid hazardous substances per 6 NYCRR Part 375-1.2(au)(1);
- Non-aqueous phase liquids;
- Soil with visual waste material or non-aqueous phase liquid;
- Soil containing total SVOCs exceeding 500 ppm;
- Soils which exceed the PGWSCOs, as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- Soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet which exceed the restricted residential or protection of groundwater SCOs will be excavated and transported off-site for disposal or re-used on-site if it qualifies for use as backfill per Remedy Element 3 below.

All on-site soils below two feet of final grade which meet the above bulleted criteria, will be excavated as described below or addressed per remedial Remedy Element 5.

Approximately 6,500 cubic yards of contaminated soil may be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify DEC, submit the sample results and, and in consultation with DEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

Excavation and removal are required for any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Excavation of site soils to a depth of 4 feet below final grade in the portion of the site subject to the in-situ solidification (ISS) treatment described in Remedy Element 5. Up to approximately 6,500 cubic yards of soil will be excavated to facilitate ISS implementation. All soils which exceed restricted-residential (unless used as backfill per Remedy Element 3 below) or protection of groundwater soil cleanup objectives (SCOs) will be disposed of off-site at a permitted facility.

3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in Remedy Element 4 to backfill the excavation to the extent that a sufficient volume of on-site soil is available and establish the designed grades at the site.

On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or re-grade the site.

Backfill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site.

The site will be re-graded to accommodate installation of a cover system as described in Remedy Element 4.

4. Cover System

A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for future restricted residential use of the site. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any

fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

Where the soil cover is required over the ISS treatment area, it will consist of a minimum of four feet of soil to ensure the underlying monolith remains below the frost line and protected from the freeze-thaw cycle. A building and its foundation are considered suitable cover to protect the ISS monolith. Where a building and its foundation are considered part of the site cover, the ISS design should include considerations for drainage between the ISS and building foundation and the potential need to design the ISS for a higher strength. If the ISS monolith extends beyond the building footprint, the design shall include a soil cover consisting of a minimum of four feet of soil for that portion. Consistent with the remainder of the site cover, the upper two feet will meet the SCOs for restricted residential use outside the ISS monolith area. For areas where solidified material underlies the cover, the solidified material itself will serve as the demarcation layer due to the nature of the material.

5. Solidification/Stabilization - In-Situ Solidification

In-situ solidification (ISS) will be implemented in an approximately 1+ acre area of the site, as indicated on Figure 3 of the Decision Document (Figure 6 of the Revised RAAR). The treatment zone will extend from the top of the groundwater table, at approximately 4 feet below grade to approximately 12-15 feet below grade. An up to approximately 4- foot soil cut will need to be excavated in these areas to contain the ISS spoils and increased soil volume created by the soil mixing. ISS is a process that binds the soil particles in place creating a low permeability mass. The contaminated soil will be mixed in place together with solidifying reagents or other binding reagents using an excavator or augers. Often Portland cement is used as the primary binder, although less carbon-intensive amendments will be considered. The soil and binding reagents are mixed to produce a solidified mass resulting in a low permeability monolith. Prior to the full implementation of this technology, bench-scale laboratory testing and on-site pilot scale studies will be conducted to more clearly define design parameters, amendment types and dosages. Bench testing will consist of collecting soil from source area and mixing with a variety of amendments and doses in a controlled atmosphere followed by testing resulting hydraulic conductivity and unconfined-compressive strength. Pilot tests will then be conducted using successful amendment mixes from the bench test prior to full scale design.

Typical design requirements are that solidified mass would produce a hydraulic conductivity (K) of 1.0 X 10-6 cm/sec or less and would also result in an unconfined compressive strength of 50 psi, or higher pending future uses that may include construction above the solidified mass. The solidified mass will then be covered with a cover system as described in Remedy Element 4 to prevent direct exposure to the solidified mass. The resulting solid matrix reduces or eliminates mobility of contamination and reduces or eliminates the matrix as a source of groundwater contamination.

6. Groundwater - Monitored Natural Attenuation

Groundwater contamination (remaining after active remediation) will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination, and for MNA indicators which will provide an understanding of the biological activity breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude in within 5 years. Reports of the attenuation will be provided at 5-year intervals, and active remediation will be proposed if it appears that

natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that contingency technology, e.g., "oxygen injection" would be the expected contingency remedial action.

7. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4, restricted residential cleanup, at a minimum. Institutional Control Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- Require the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- Allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- Restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- Require compliance with the NYSDEC approved Site Management Plan.

8. Site Management Plan

A Site Management Plan is required, which includes the following:

1. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

   Institutional Controls: The Environmental Easement discussed in Remedy Element 7 above.

   Engineering Controls: The soil cover discussed in Remedy Element 4 above.

This plan includes, but may not be limited to:

- An Excavation Work Plan which details the provisions for management of future excavations in areas of remaining or potential contamination;
- A provision for demolition of the on-site building if and when it becomes unsafe or inactive or vacant;
- A provision should redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures;
- Descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- A provision for evaluation of the potential for soil vapor intrusion, including sub-slab and indoor air sampling, for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- A provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Remedy Element 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- Provisions for the management and inspection of the identified engineering controls;

- Maintaining site access controls and NYSDEC notification; and
- The steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

2. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- Monitoring of groundwater to assess the performance and effectiveness of the remedy;
- A schedule of monitoring and frequency of submittals to the NYSDEC;
- Monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

1.0 INTRODUCTION

Roux Associates, Inc. and Roux Environmental Engineering and Geology D.P.C. (Roux DPC) (collectively referred to as "Roux"), on behalf of 5 Flint Street LLC (referred to herein as Requestor or 5 Flint) has prepared the following Remedial Action Work Plan (RAWP, or Report) for the property located at 5 Flint Street, Rochester, New York (the "Site"). The Site falls within the footprint of the former Vacuum Oil Refinery (hereafter referred to as the "facility") which encompasses approximately 27 acres along the south and west of the intersection of Flint and Exchange Streets on the west bank of the Genesee River.

The Site was accepted in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP) per Title 6 New York State Official Compilation of Codes, Rules, and Regulations (NYCRR) Part 375-3.4 (NYSDEC 2006) on September 17, 2025, as Site Number C828162B. 5 Flint entered into a Brownfield Cleanup Agreement (BCA) with the NYSDEC on September 23, 2025 to investigate and remediate a 1.59-acre property located at 5 Flint Street in Monroe County, Rochester, New York. 5 Flint is a Volunteer in the Brownfield Cleanup Program. When completed, anticipated future use of the Site is for commercial / multi-family restricted residential mixed use, consistent with surrounding property use and Site zoning and the master development plan for the Vacuum Oil Brownfield Opportunity Area (BOA).[4] Refer to the revised BCP application, submitted to NYSDEC on July 10, 2024, for additional details.

The Site was entered into the NYSDEC BCP in June 2010 by One Flint Street, LLC (One Flint) along with the adjacent property, 15 Flint Street, and was assigned BCP site No. C828162. In October 2016, Ravi Engineering & Land Surveying, P.C. (Ravi) submitted a Remedial Investigation (RI) Report under BCP site No. C828162, which NYSDEC acknowledged as accepted and complete in a May 10, 2017, letter to One Flint. In March 2021, Dixon Rollins, P.E. submitted a Remedial Alternative Analysis Report (RAAR), on behalf of One Flint, for the 5 and 15 Flint Street BCP site (No. C828162), which was disapproved by NYSDEC in a letter to One Flint, dated September 30, 2021. The Brownfield Cleanup Agreement with One Flint was terminated by the NYSDEC; therefore, One Flint is not participating in the BCP for 5 and 15 Street. On August 31, 2023, Exxon Mobil Corporation (ExxonMobil) purchased the Site.

5 Flint submitted a BCP Application and Remedial Alternative Analysis Report (RAAR) on May 15, 2024 and revised the BCP Application and RAAR on July 10, 2024. The NYSDEC determined the BCP Application to be complete in a letter to 5 Flint, dated August 13, 2024 and provided a letter of response to the RAAR, dated November 20, 2024, requesting a revised RAAR addressing the Department's concerns, comments and issues. 5 Flint submitted a revised RAAR to the NYSDEC on February 24, 2025 (Revised RAAR), which was accepted by NYSDEC in a letter to 5 Flint, dated November 17, 2025.

5 Flint submitted a Change of Use Form and Interim Site Management Plan (ISMP) to NYSDEC on July 16, 2025, which was conditionally approved by NYSDEC in a letter to 5 Flint, dated October 21, 2025. The ISMP was developed to address activities related to the demolition of the abandoned three-story block and brick building on the northeast end of the Site, which were planned to be conducted while the Site was pending acceptance into the NYSDEC BCP and before approval of this RAWP. The demolition was completed in December 2025, and the building slab will remain in place until the RAWP is approved and the remedial action commences.

[4] As previously referenced, current zoning is R-3 for high density residential. Zoning in the area will eventually be changed to flexible mixed-use, following completion of the City's ZAP, and future development will be limited to restricted-residential requirements through an O-EP.

ExxonMobil has granted access to 5 Flint throughout the BCP investigation and remediation process through obtainment of the Certificate of Completion (including allowing placement of an Environmental Easement on the Site). Proof of access was included in the BCP Application submitted concurrently with the Revised RAAR for the Site. It is likely that ExxonMobil will grant access to a future developer (not yet identified) to redevelop the Site in a manner consistent with the City of Rochester (City) master development plan for the Vacuum Oil BOA.[5]

This RAWP summarizes the nature and extent of contamination as determined from data gathered from investigation activities conducted at the Site from 1999 through 2020, which includes data collected between 2014 and 2015 in accordance with the Remedial Investigation Work Plan (RIWP), dated January 2012. Summaries of the investigation activities conducted at the Site from 1999 through 2020 are included in **Section 2** below. This RAWP provides a summary of the Revised RAAR, approved by NYSDEC on November 17, 2025, and the NYSDEC Decision Document dated November 2025 (Decision Document), which describes the NYSDEC-approved remedy for the Site.

The remedy described in this document is consistent with the procedures defined in DER-10, DER-31, and complies with all applicable standards, criteria and guidance. The remedy described in this document also complies with all applicable Federal, State and local laws, regulations and requirements as well as the Site's Decision Document dated November 2025. As discussed in **Section 2.2** below, The NYSDEC and New York State Department of Health (NYSDOH) have determined that this Site poses a significant threat to human health and the environment. As discussed in **Section 2.6.3** below, the RI for this Site did identify fish and wildlife resources as potentially present in the vicinity of the Site; however, based on the Fish and Wildlife Resource Impact Analysis Decision Key included as Appendix H of the Revised RAAR (NYSDEC DER-20 Appendix 3C; Ref. 8), a fish and wildlife resources impact analysis is not warranted.

A formal Remedial Design document will not be prepared.

1.1 Site Location and Description

The Site is located in the County of Monroe, Rochester, New York and is identified as Section 121, Block 77-1-10, Lot 001 on the Rochester Tax Map. A United States Geological Survey (USGS) topographical quadrangle map showing the Site location is provided as **Figure 1** and a Site Plan is provided as **Figure 2**. A Tax and Surrounding Properties Map is provided as **Figure 3**. The Site is situated on an approximately 1.59-acre parcel and is currently undeveloped. An abandoned three-story block and brick building on the northeast end of the Site was demolished in late 2025. The building was reportedly built between 1918 and 1930 and was vacant without utilities for an unknown amount of time.

A boundary map is attached to the BCA as required by New York Environmental Conservation Law (ECL) Title 14 Section 27-1419. The 1.59-acre property is fully described in **Appendix A – Metes and Bounds**. A global positioning system coordinate for the starting point is included.

[5] City Vacuum Oil - South Genesee River Corridor Brownfield Opportunity Area (BOA). Additional information on this BOA can be found online: https://www.cityofrochester.gov/VacuumOilBOA/

1.2 Contemplated Redevelopment Plan

The Remedial Action to be performed under the RAWP is intended to make the Site protective of human health and the environment consistent with the selected remedy for the Site. The contemplated future use of the Site will be in accordance zoning and Site use restrictions as detailed in the Site's environmental easement. The Remedial Action completed under this RAWP will be implemented independent of the proposed future redevelopment plan. Any redevelopment of the Site will not interfere with, or prohibit, the implementation of the Site's selected remedy. A 60-day Change of Use notification presenting details associated with the redevelopment of the Site will be submitted to the Department prior to any redevelopment.

Although the redevelopment plan for the Site is not finalized, it is anticipated that the redevelopment plan will be consistent with the City master development plan for the Vacuum Oil BOA, the Site's environmental easement use restrictions, and City zoning. The BOA redevelopment plan includes multi-family residential, commercial/retail, and industrial facilities through a phased implementation. A proposed Site plan, depicting development parcels including the 5 Flint Street parcel, is provided in the BOA.

1.3 Description of Surrounding Property

Properties in the vicinity of the Site are primarily developed as residential, open space, commercial, manufacturing and or industrial properties. The Site is surrounded by City-owned parcels which are primarily undeveloped, apart from an asphalt-paved bike/pedestrian path which runs through 102 Violetta Street to the east/southeast, and the southwestern end of 13 Cottage Street to the southwest, of the Site. The remaining portions of 13 Cottage Street to the southwest, and 10 Flint Street to the west/northwest are currently undeveloped (see **Figure 3**).

The closest occupied building is located at 22 Flint Street (also a BCP Site #C828193), more than 150 feet away from the Site. The Site and surrounding City-owned properties are located within the former Vacuum Oil Refinery footprint and are part of the Vacuum Oil – South Genesee River Corridor Brownfield Opportunity Area. City-owned properties are currently in the BCP as site number C828190.

The remainder of this RAWP document is divided into the following sections:

- **Section 2 –** Describes the previous remedial investigation field work activities conducted at the Site; Site history; the Conceptual Site Model of Site contamination; environmental and public health assessments; and remedial action objections (RAOs) of the Site;
- **Section 3 –** Describes the Remedial Action plan, including a summary of the Remedial Alternative Analysis Report (RAAR) and the recommended and preferred remedy for the Site;
- **Section 4 –** Provides a discussion of the Remedial Action Implementation at the Site; including the soil cleanup objectives, the Pre-Design Investigation (PDI) sampling plan, and the soil/ materials management plan;
- **Section 5 –** Describes the Remedial Action program, including a summary of the governing documents (HASP, CAMP, QAPP, CQAP, SoMP, ESCP, SOP, etc.) and general remedial construction information;
- **Section 6 –** Provides a description of the residual contamination to remain on Site;
- **Section 7 –** Provides a discussion engineering controls that will be implemented at the Site;
- **Section 8 –** Provides the criteria for completion of remediation and termination of remediation systems including the Site cover system and vapor intrusion mitigation systems;

- **Section 9 –** Provides a discussion of the institutional controls required at the site under the selected remedy including an environmental easement and a site management plan;
- **Section 10 –** Provides a description of the Final Engineering Report (FER) that will be prepared once the work is completed; and
- **Section 11 –** Provides a description of the reporting schedule and structure.

2.0 DESCRIPTION OF REMEDIAL INVESTIGATION FINDINGS

The Site was investigated in accordance with the scope of work presented in the NYSDEC approved Remedial Investigation Work Plan (RIWP) dated January 2012, prepared by Labella Associates, P.C.[6], and various investigation and data collection efforts conducted in 1999-2000, 2008, 2011, 2014-2015, 2017, and 2020. The RI Report was submitted to NYSDEC in October 2016 and approved by NYSDEC on May 10, 2017.

2.1 Summary Remedial Investigations Performed

This section summarizes previous Site investigation activities as provided in the RAAR. All sample locations discussed below are presented on **Figure 4**. Further details regarding the previous Site investigations are summarized in the RAAR.

2.1.1 1999 – 2000 NYSDEC Subsurface Investigation

In 1999-2000, the NYSDEC conducted a subsurface investigation at the Site and nearby properties and presented the results in a Site Investigation Report dated March 2001. During the investigation, the following activities were performed at the Site: installing and sampling four passive soil gas survey points (A-3, B-3, C-3, and D-3) and two monitoring wells (MW-1 and MW-2)[7], excavating four test pits (TP-1, TP-2, TP-3, and TP-4), and collecting eleven soil samples [SS-1 (0-0.2), SS-2 (0-0.2), MW-1 (8-10), MW-1 (16-18), MW-2 (6-8), MW-2 (10-12), TP-1 (3-5), TP-1 (7-8), TP-2 (5), TP-3 (8-9), and TP-4 (5)]. The full March 2001 NYSDEC Site Investigation Report was provided as Appendix A of the revised Remedial Alternatives Analysis Report (RAAR), submitted to NYSDEC on February 24, 2025.

The results of this investigation indicated "widespread petroleum-related contamination (SVOCs [Semi Volatile Organic Compounds] and BTEX [benzene/toluene/ethylbenzene/xylenes]) in the soil, and groundwater. To a lesser extent, chlorinated VOCs, metals, and pesticides were detected in concentrations that exceeded New York State (NYS) standards." The results of this investigation indicated that "site contamination was not the result of disposal of a consequential amount of hazardous waste." Based on these results, NYSDEC decided not to include the facility in the NYS Listing of Inactive Hazardous Waste Disposal Sites.

For convenience of review, Site data generated during the 1999-2000 NYSDEC subsurface investigation are summarized on **Tables 1 and 2**.

[6] As modified and approved by the NYSDEC letter dated February 16, 2012.
[7] MW-1 and MW-2 installed by NYSDEC are hereinafter referred to as DEC MW-1 and DEC MW-2, respectively, in this Report and on figures and tables attached to this Report to avoid confusion with monitoring wells MW-1 and MW-2 installed by Ravi.

2.1.2 2008 Roux Subsurface Investigation

Roux directed a subsurface investigation at the Site and nearby properties between June 16 and July 2, 2008. During the investigation, ten soil borings were advanced at the Site, six of which were completed as monitoring wells. The investigation activities are described in detail in the Roux Subsurface Investigation Summary Report, dated January 12, 2009, which was previously submitted to NYSDEC and was provided as Appendix B of the revised RAAR, submitted to NYSDEC on February 24, 2025. The following sections summarize the Roux 2008 subsurface investigation activities and results for the Site (5 Flint Street) only. For convenience of review, Site data generated during the 2008 subsurface investigation are summarized on **Tables 1 and 2**.

2.1.2.1 2008 Roux – Soil

Ten soil borings were advanced at the Site: SB-008, SB-009, SB-010, SB-015, SB-016, SB-017, SB-020, SB-021, SB-046, and SB-061.[8] Fill materials consisting of ash and coal ash, concrete, brick, coal, construction debris, other debris, and pipe were encountered throughout the Site. Separate phase hydrocarbons (SPH) were not noted in any of the Site soil borings; though, soil staining was observed in one soil boring (SB-020). VOC vapors were monitored with a photoionization detector (PID); headspace PID readings ranged from non-detect to 2,948 parts per million (ppm) (SB-021) in on-Site borings.

A total of 25 soil samples from the Site were submitted for laboratory analysis. Analytical results for these samples are summarized below:

- 14 VOCs were detected at concentrations at or above the laboratory reporting limits and two VOCs (1,2,4-Trimethylbenzene and Total Xylenes) exceeded the NYSDEC Restricted Residential Soil Cleanup Objectives (RRSCOs) in one sample (SB-046B);
- 19 SVOCs were detected at concentrations at or above the laboratory reporting limits and 8 SVOCs exceeded the NYSDEC RRSCOs;
- 12 Priority Pollutant (PP)-13 total metals were detected at concentrations at or above the laboratory reporting limits and three PP-13 total metals exceeded the NYSDEC RRSCOs (arsenic, lead, and mercury);
- There were no detections of polychlorinated biphenyls (PCBs) at concentrations at or above the laboratory reporting limits in the samples collected from the Site;
- Five pesticides were detected at concentrations at or above the laboratory reporting limits, none of which exceeded the NYSDEC RRSCOs; and
- Two soil samples collected and analyzed for total petroleum hydrocarbon (TPH) fingerprinting (from SB-020 and SB-021) exhibited a match for diesel fuel and gasoline.

2.1.2.2 2008 Roux – Groundwater

A total of six groundwater samples were collected from the six monitoring wells installed at the Site by Roux. Analytical results are summarized below:

- 25 VOCs were detected at concentrations at or above the laboratory reporting limits, and 18 VOCs exceeded the applicable NYSDEC Technical Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards and Guidance Values (AWQSGV);

[8] Note that shallow refusal was encountered at some of the 2008 Roux boring locations due to the presence of concrete, brick, or other fill debris. Subsequent boring attempts at the same location due to shallow refusal were given a letter designation (e.g., SB-016A, SB-016B, etc.). For ease of visualization, the location IDs of subsequent boring attempts for a given location are not shown on figures attached to this Report; instead, the original location ID (e.g., SB-016) is displayed.

- 21 SVOCs were detected at concentrations at or above the laboratory reporting limits, and 12 SVOCs exceeded the applicable NYSDEC TOGS AWQSGV;
- 12 PP-13 dissolved metals were detected at concentrations at or above the laboratory reporting limits and three PP-13 dissolved metals (arsenic, lead, and thallium) exceeded the applicable NYSDEC TOGS AWQSGV;
- There were no detections of PCBs or pesticides at concentrations at or above the laboratory reporting limits in the samples collected from the Site; and
- One groundwater sample collected and analyzed for TPH fingerprinting (from SB-020) exhibited a match for gasoline.

2.1.3 2014 - 2015 Ravi Remedial Investigation

Ravi conducted a remedial investigation at the Site and nearby properties between 2014 and 2015 in accordance with the Remedial Investigation Work Plan (RIWP) dated January 2012. During the investigation at the Site, two test pits were excavated, nine soil borings were advanced, six of which were completed as overburden monitoring wells, and one bedrock monitoring well was installed. The investigation activities are described in detail in the Ravi Remedial Investigation Report, dated October 7, 2016, which was previously submitted to NYSDEC and was provided as Appendix C of the revised RAAR, submitted to NYSDEC on February 24, 2025. The following sections summarize the Ravi 2014 – 2015 remedial investigation activities and results for the Site (5 Flint Street) only. For convenience of review, Site data generated during the Ravi 2014 – 2015 subsurface investigation are presented on **Tables 1 and 2**.

2.1.3.1 2014 - 2015 Ravi – Soil

Two test pits were excavated, and nine soil borings were advanced, at the Site: TP-04, TP-05, SB-01, SB-02, SB-03, SB-04, SB-05, SB-06, MW-02, MW-09, and MW-010. Fill materials consisting of brick, ash, concrete, and/or construction debris were encountered at most locations. SPH was not noted in any of the Site test pits and soil borings; though, soil staining was observed in SB-01 and SB-06. VOC vapors were monitored with a PID; headspace PID readings ranged from non-detect to 2,500 ppm (SB-02) in Site test pits and soil borings.

A total of 14 soil samples were collected from the Site and submitted for laboratory analysis.[9] Analytical results for these samples are summarized below:

- 13 VOCs were detected at concentrations at or above the laboratory reporting limits; no samples contained VOCs that exceeded NYSDEC RRSCOs;
- 17 SVOCs were detected at concentrations at or above the laboratory reporting limits; seven SVOCs (Benzo (a) anthracene, Benzo (a) pyrene, Benzo (b) fluoranthene, Benzo (k) fluoranthene, Chrysene, Dibenz (a,h) anthracene, and Indeno (1,2,3-cd) pyrene) were detected in exceedance of NYSDEC RRSCOs;
- 13 metals were detected at concentrations at or above the laboratory reporting limits; two metals (mercury and arsenic) were detected in exceedance of NYSDEC RRSCOs;
- There were no detections of PCBs at concentrations at or above the laboratory reporting limits in the samples collected from the Site; and
- 12 pesticides were detected at concentrations at or above the laboratory reporting limits; no samples contained pesticides that exceeded the NYSDEC RRSCOs.

[9] Analytical soil samples were not collected from MW-02, MW-09, or MW-010.

2.1.3.2 2014 - 2015 Ravi – Groundwater

Seven monitoring wells were installed at the Site as part of this investigation. Six of the wells were installed in overburden (MW-01 at SB-01, MW-02, MW-03 at SB-03, MW-04 at SB-04, MW-09,[10] and MW-10), and one well was installed in bedrock well (BW-01). A total of 13 groundwater samples were collected from nine Site wells (the seven wells installed during this investigation, plus DEC MW-1 and DEC MW-2) over two sampling events and were submitted for laboratory analysis. Analytical results from these sampling events are summarized below:

- 19 VOCs were detected at concentrations at or above the laboratory reporting limits; 11 VOCs were detected in exceedance of the NYSDEC TOGS AWQSGV;
- Five SVOCs were detected at concentrations at or above the laboratory reporting limit; two SVOCs (Chrysene and Pyrene) were detected in exceedance of the NYSDEC TOGS AWQSGV. Both exceedances were from the MW-03 groundwater sample collected on November 19, 2015;
- 14 metals were detected at concentrations at or above the laboratory reporting limits; seven metals (aluminum, arsenic, iron, magnesium, manganese, selenium, and sodium) were detected in exceedance of the NYSDEC TOGS AWQSGV;
- There were no detections of PCBs at concentrations at or above the laboratory reporting limits in the samples collected from the Site; and
- Seven pesticides were detected at concentrations at or above the laboratory reporting limits; four pesticides (alpha-BHC, beta-BHC, delta-BHC, and heptachlor epoxide) were detected in exceedance of the NYSDEC TOGS AWQSGV.

Groundwater elevation data from the 2014-2015 Ravi investigation were used to model horizontal groundwater flow for the Site and nearby 15 Flint Street property. Based on these data, groundwater in the vicinity of the Site was estimated to flow southeast, towards the Genesee River.

Additionally, monitoring well gauging during the 2014-2015 Ravi investigation indicated grossly contaminated media (GCM),[11] in the form of measurable LNAPL, was present in one Site well, MW-03, at a thickness of 0.025 inches. Field observations of groundwater during the 2014-2015 Ravi investigation activities (e.g., soil borings, developing and/or sampling monitoring wells, etc.) indicated a sheen was present in the following Site wells: DEC MW-1, MW-01, MW-02, MW-04, and MW-09.

2.1.4 Roux 2017 Subsurface Investigation

Following completion of the 2016 RI by Ravi, Roux conducted a subsurface investigation at the Site and nearby properties in June 2017. The June 2017 scope of work was presented to NYSDEC via email, and all work was conducted in accordance with the procedures outlined in the approved 2012 RIWP. During the investigation, four soil borings were advanced at the Site, and six existing Site monitoring wells were sampled. The following sections summarize the Roux 2017 subsurface investigation activities and results for the Site (5 Flint Street) only. For convenience of review, Site data generated during the 2017 subsurface investigation are presented on **Tables 1 and 2.** Analytical laboratory reports and soil borings from the 2017 subsurface investigation were provided as Appendix D of the Revised RAAR.

[10] Although not explicitly stated in the 2016 Ravi Remedial Investigation Report, sample MW-09D is likely a duplicate sample of MW-09, as both were collected on the same day, and the results are discussed as one sample in the text of that report.

[11] Grossly contaminated media (GCM) is defined in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation, dated May 3, 2010, as "soil, sediment, surface water or groundwater which contains sources or substantial quantities of mobile contamination in the form of LNAPL that is identifiable either visually, through strong odor, by elevated contaminant vapor levels or is otherwise readily detectable without laboratory analysis."

2.1.4.1 2017 Roux – Soil

Between June 27 and 28, 2017, TREC Environmental, under the direction of Roux, completed a total of four soil borings at the Site (RXSB-06, RXSB-07, RXSB-08, and RXSB-09).[12] Roux collected a total of nine soil samples for laboratory analysis. Soil analytical results are summarized below:

- 20 VOCs were detected at concentrations at or above the laboratory reporting limits, one VOC (1,2,4-Trimethylbenzene) exceeded the NYSDEC RRSCO;
- 23 metals were detected at concentrations at or above the laboratory reporting limits; no metals were detected in exceedance of the NYSDEC RRSCOs;
- There were no detections of PCBs at concentrations at or above the laboratory reporting limits in the samples collected from the Site; and
- There were no detections of pesticides at concentrations at or above the laboratory reporting limits in the samples collected from the Site.

2.1.4.2 2017 Roux – Groundwater

Roux collected groundwater samples for laboratory analysis from six existing Site wells on June 29, 2017: BW-01, MW-01, MW-02, MW-04, MW-09, and MW-10.[13] Analytical results are summarized below:

- 17 VOCs were detected at concentrations at or above the laboratory reporting limits, seven VOCs were detected in exceedances of the NYSDEC TOGS AWQSGV;
- 17 metals were detected at concentrations at or above the laboratory reporting limits, three metals (iron, manganese, and magnesium) were detected in exceedances of the NYSDEC TOGS AWQSGV; and
- There were no detections of PCBs at concentrations at or above the laboratory reporting limits in the samples collected from the Site.

2.1.5 Leader 2020 Emerging Contaminants Sampling

At the request of NYSDEC, on July 30, 2020, Leader Professional Services, Inc. (Leader) completed groundwater sampling at the Site and the nearby 15 Flint Street property for the following emerging contaminants: per- and polyfluorinated substances (PFAS)[14] and 1,4-Dioxane. Specifically, Leader sampled one well located on the 5 Flint Street Site (MW-04). According to Leader's 2020 Emerging Contaminant Groundwater Report (provided as Appendix E of the Revised RAAR), results from sampling MW-04 indicate the following:

- Perfluorooctane sulfonic acid (PFOS) and Perfluorooctanoic acid (PFOA) were detected at concentrations of 2.1 ng/L and 0.74 ng/L, respectively. These results are below the groundwater quality guidance in effect at the time of 10.0 ng/L.
- 1,4-Dioxane was detected at a concentration of 3.2 µg/L, which exceeds the New York State adopted maximum contaminant concentration (MCL) in effect at the time of 1.0 µg/L.

Results from the 2020 Leader sampling event for MW-04 are presented on **Table 2.**

[12] Note that multiple soil analytical samples collected at the same boring location during the Roux 2017 investigation were given a letter designation at the end of the location ID (e.g., for location RXSB-06, sample "RXSB-06A" was collected from 0 -2 ft bgs and sample "RXSB-06B" was collected from 10 – 12 ft bgs, etc.).

[13] Note the following example format used for groundwater sample IDs during the Roux 2017 investigation: a groundwater sample collected from MW-04 was labeled as "RX-MW4-01".

[14] Details of the analytical method used and specific PFAS compounds analyzed can be found in Leader's 2020 Emerging Contaminant Groundwater Report (Appendix E of the Revised RAAR).

2.2 Significant Threat

The NYSDEC and NYSDOH have determined that this Site poses a significant threat to human health and the environment. Notice of that determination has been provided for public review. A copy of the NYSDEC Decision Document, which includes this determination, is included in **Appendix B**.

2.3 Site History

This section summarizes relevant Site history information.

2.3.1 Past Uses and Ownership

The Site along with several other contiguous and neighboring parcels in the area were collectively once associated with the former refinery. The Site was vacant land until approximately 1875 when the parcels were purchased by the Vacuum Oil Company and were developed with various buildings associated with the Refinery (see **Figure 5**). Records indicate that the Site originally served as a shipping and receiving yard between two railroad corridors along which raw materials for the refinery were received and refinery products were shipped. Specifically, the Site was used for barrel and stave manufacturing and storage. The refinery continued operations until approximately 1935. By that time, nearly 95% of the Site had been improved with various buildings including a cooperage (barrel factory), drum washing and storage building, a paint shop, barrel stave, storage buildings and sheds, a storage building for barrel headings and iron, and other unidentified support buildings.[15]

Following termination of Vacuum Oil Company operations, the Site was sold multiple times. Owners and operators include Rochester Distilling Co., Inc., the Rochester Scrap Baling Corp., and George M. Clancy Carting Co. From 1980 to an unknown date, the Site was used to store hazardous materials associated with the operation of R&K Services and/or Kneppar Resource Recovery. The following materials were listed in an inventory of the property on March 10, 1980:

- Ten 55-gallon drums described as probably containing “Fusecote 240” (a nonionic surfactant), isopropyl alcohol, rosin, lead oxide, and “Feron-13” (possibly a misspelling of Freon-13) from Service Chemical Company, and possibly small quantities of copper, tin, and lead;
- Spent photographic fixer solution in old blue plastic 55-gallon drums (no number given);
- Approximately fifteen 5-gallon pails of waste; and
- Possible spent solvent in blue plastic 55-gallon drums from Techtran Industries.

Other historical uses of the Site include food warehousing and/or distribution, an electrical equipment commercial enterprise, and a photographic studio. From 1984 to 2008, the Site was owned and operated by One Flint Street Associates. In 2008, the Site was purchased by DHD Ventures New York, LLC (DHD), and in 2010 the Site was transferred to One Flint.

As discussed, In June 2010, the Site was entered into the BCP by One Flint along with 15 Flint Street. In October 2016, Ravi submitted an RI Report for 5 and 15 Flint Street under BCP site No. C828162, which NYSDEC acknowledged as accepted and complete during a BCP pre-application meeting on March 25, 2024. Following submission of the RI, the March 2021 RAAR submitted by Dixon Rollins, P.E. for 5 and 15

[15] August 2008. Phase I Environmental Site Assessment 5 Flint Street City of Rochester, Monroe County, New York. Stantec Consulting Services Inc. (Stantec)

Flint Street was disapproved by NYSDEC in September 2021. A revised RAAR was never submitted and apparently NYSDEC terminated site No. C828162 from the BCP at some point after March 2021.

In August 2023, the Site was purchased by ExxonMobil.

2.4 Geologic and Hydrogeologic Conditions

The following sections provide a description of the geological and hydrogeological findings at the Site based on information provided in previous environmental investigations.

2.4.1 Site Geology

Fill material, including bricks, slag, cinders, gravel, wood, and miscellaneous debris, is observed throughout much of the Site and is generally found between 0 and 6 feet below ground surface (ft bgs). Native soils consisting of sand and silt with varying amounts of clay are found between 0 and approximately 17 ft bgs.

Bedrock was encountered at the Site during previous investigations at depths ranging from approximately 12 to 17 ft bgs. According to The New York State Department of Transportation (NYSDOT) Geology of New York State Geotechnical Design Manual, the Site, which is located in the Ontario Lowlands, is underlain by stratified beds of shales, sandstones, limestone, and dolostone. The bedrock generally dips to the southwest at a low angle.

2.4.2 Site Hydrogeologic Setting

Depth to groundwater at the Site ranges from approximately 3 ft bgs to approximately 11 ft bgs. Groundwater in the vicinity of the Site appears to flow in two converging directions. In the area northwest of the site (e.g., the 15 Flint Street property), groundwater flows southeast towards the Site and the Genesee River, as described in the 2016 Ravi Remedial Investigation Report.

The June 2023 Remedial Alternatives Analysis Report prepared by Ramboll Americas Engineering Solutions, Inc. (Ramboll) for the abutting City-owned properties BCP site #C828190 states: “Groundwater flow direction and elevations suggest that the groundwater is fed by the river water on the south end of the site and flows northward. On the northern side of the Site the gradient is relatively flat and more than 5 ft lower than the river level. The groundwater elevations in overburden wells at or near the river are also more than 5 ft lower than the river level. This large difference suggests that there is some limitation in the hydraulic connection between the river and the overburden groundwater in this area of the site. As discussed in the [November 2019 RI Report prepared by O’Brien & Gere Engineers, Inc.] the existing segment of the [West River Wall (WRW)] that borders the Site extends to bedrock and is limiting the hydraulic connection between the Site groundwater and the river.”[16] A Groundwater contour map taken from Leader’s 2020 Emerging Contaminant Groundwater Report, which includes groundwater elevations measured at Site monitoring wells in 2014, is included in **Appendix C**.

The City is currently designing modifications to the WRW of the Genesee River, bordering the eastern boundary of the facility footprint, as part of a rehabilitation program. These modifications will result in lowering the top of the wall to allow for river water to enter the western portion of the facility footprint. According to

[16] The “Site” or “site” used in this excerpt from the 2023 City RAAR is the City-owned properties BCP site # C828190 located adjacent to, but not including the 5 Flint Street property.

Appendix B of the 2023 City RAAR, "it is concluded that the WRW modifications will not result in changes to the groundwater flow or the nature and extent of impacts at the Site."[17]

The 2023 City RAAR was provided as Appendix F of the Revised RAAR for the Site.

2.5 Contamination Conditions

The following sections describe the nature and extent of contamination in soil, groundwater, and soil vapor observed at the Site, based on the findings related to historical use of the Site and previous environmental investigations. As discussed in Section 6.1.2 of the Decision Document, Site specific contaminants of concern (Site COCs) have been identified. Further information regarding Site COCs is provided in **Section 2.5.2** below.

2.5.1 Conceptual Model of Site Contamination

A Conceptual Site Model (CSM) for the Site was developed in the Revised RAAR for the Site. The updated CSM in the Revised RAAR identified COCs in shallow soils (0 – 2 ft bgs) and deep soils (deeper than 2 ft bgs). The specific source of the COCs is not known but has been inferred to be the result of various historical operations at the Site, described above in **Section 2.3 Site History.** Details regarding Site COCs are discussed in **Section 2.5.2** below.

2.5.2 Description of Areas of Concern

As described in the *RAAR*, information generated during previous Site investigations (including the RI) was used to evaluate the nature and extent of contamination at the Site. Section 3 of the *RAAR* presents the results of the data collected during the previous Site investigations and is summarized in the subsections below. Sample locations included in the *RI Report* are presented on **Figure 4.** Based on the findings related to historical use of the Site and historical and the BCP environmental investigations, the following contaminants of concern (COCs) have been identified as being present at the Site (naturally occurring metals are not considered COCs):

- **Shallow Soil (0-2 ft bgs):** Metals (arsenic, lead, and mercury), and SVOCs (primarily polycyclic aromatic hydrocarbons [PAHs]);
- **Deep Soil (>2 ft bgs):** Metals (arsenic, barium, lead, and mercury), SVOCs (primarily PAHs), petroleum VOCs, and petroleum (in the form of GCM);
- **Groundwater**: Metals (arsenic, lead), SVOCs, petroleum VOCs, petroleum (in the form of GCM), and chlorinated volatile organic compounds (CVOCs);

As discussed in Section 6.1.2 of the Decision Document, data from previous Site investigations were used to identify Site COCs. A "Site COCs" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are COCs. The nature and extent of contamination and environmental media requiring action are summarized below. The Site COCs as defined in the Decision Document are:

- 1,1,1-trichloroethane
- trichloroethene (TCE)
- cis-1,2-dichloroethene
- vinyl chloride
- 1,2,4-trimethylbenzene
- 1,3,5-trimethylbenzene
- arsenic
- barium
- mercury
- lead
- total polycyclic aromatic hydrocarbons (PAHS)

[17] Same as footnote 14.

- chrysene
- ethylbenzene
- 1,1-dichloroethane
- benzene

The Decision Document did not indicate which media the Site COCs were present in but did indicate the COCs exceeded the applicable SCGs for soil and groundwater. As discussed in the Decision Document, soil vapor sampling was not completed as part of the remedial investigation. However, groundwater concentrations and flow direction indicate a potential for off-site impacts to soil vapor. Actions to address the potential for soil vapor intrusion off-site will be addressed as part of the remedial actions for the adjacent sites. Although Per-and Polyfluoroalkly Substances (PFAS) were identified in overburden groundwater at the Site, the Decision Document did not identify PFAS compounds as Site COCs, and these compounds will not be discussed further in this RAWP.

2.5.3 Identification of Standards, Criteria and Guidance

Standards, Criteria and Guidance (SCGs) are promulgated requirements ("standards" and "criteria") and non-promulgated guidance ("guidance") that govern activities that may affect the environment and are used by the NYSDEC at various stages in the investigation and remediation of a site. The following table provides a list of SCGs potentially applicable to the Site. Key SCGs are discussed in greater detail below.

Citation	Title	Regulatory Agency
General		
6 NYCRR Part 375	Environmental Remediation Programs	NYSDEC
29 CFR 1910.120	Hazardous Waste Operations and Emergency Response	US Department of Labor, OSHA
29 CFR 1926	Safety and Health Regulations for Construction	US Department of Labor, OSHA
No Citation	Analytical Services Protocol	NYSDEC
DER-10	Technical Guidance for Site Investigation and Remediation (2010)	NYSDEC
DER-23	Citizen Participation Handbook for Remedial Programs (2010)	NYSDEC
DER-31	Green Remediation (2010)	NYSDEC
DER-33	Guide to Drafting and Recording Institutional Controls (2010)	NYSDEC
CP-49	Climate Change and DEC Action (2022)	NYSDEC
Soil		
6 NYCRR Part 375	Environmental Remediation Programs	NYSDEC
CP-51	Soil Cleanup Guidance (2010)	NYSDEC
Groundwater		
6 NYCRR Part 700-705	Surface Water and Ground Water Classification Standards	NYSDEC
TOGS 1.1.1	AWQSGVs	NYSDEC

Citation	Title	Regulatory Agency
Air		
DER-13	Strategy for Evaluating Soil Vapor Intrusion at Remedial Sites in New York (2006)	NYSDOH
No Citation	Final – Guidance for Evaluating Soil Vapor Intrusion in the State of New York (2006)	NYSDOH
Solid Waste		
6 NYCRR 360	Solid Waste Management Facilities	NYSDEC
6 NYCRR 364	Waste Transporters	NYSDEC
Hazardous Waste		
6 NYCRR Part 371	Identification and Listing of Hazardous Wastes	NYSDEC
6 NYCRR 372	Hazardous Waste Manifest System and Related Standards for Generators, Transporters and Facilities	NYSDEC
6 NYCRR 376	Land Disposal Restrictions	NYSDEC
Site Management		
No Citation	New York State Standards and Specifications for Erosion and Sediment Control (2016)	NYSDEC
CP-43	Groundwater Monitoring Well Decommissioning Procedures (December 2009)	NYSDEC

Legend:

SCG:	Standards, Criteria and Guidance
NYCRR:	New York Code of Rules and Regulations
NYSDEC:	New York State Department of Environmental Conservation
NYSDOH:	New York State Department of Health
OSHA:	Occupational Safety and Health Administration
TOGS:	Technical Operational Guidance Series

SCGs for Soil

SCGs for soil at the Site are based on the numerical soil cleanup objectives (SCOs) presented 6 NYCRR Part 375 and NYSDEC Soil Cleanup Guidance CP-51. The soil cleanup objectives are categorized into unrestricted use criteria and restricted use (residential, restricted-residential, commercial, or industrial) criteria, as well as criteria for protection of groundwater and ecological resources (which can also be satisfied by application of the unrestricted use criteria). The applicability of each category of soil cleanup objectives is determined based upon the current and reasonably anticipated future use of the Site, as well as cleanup tracks being evaluated.

The Restricted Residential Soil Cleanup Objectives (RRSCOs) are appropriate for the Site based upon the proposed future land use as discussed in **Section 1.2** above. The Protection of Groundwater SCOs (PGWSCOs) are applicable to those parameters that are present in soil and in groundwater exceeding the applicable Class GA groundwater standard presented below.

SCGs for Groundwater

The document entitled "Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations," issued by the NYSDEC in June 1998 and as amended in 2000, 2004 and 2023, presents the guidelines that were used to evaluate potential groundwater issues for the Site. The SCGs for groundwater are compared to the NYSDEC AWQSGVs (NYSDEC TOGS 1.1.1) for Class GA groundwater. However, it should be noted that, although the groundwater beneath the Site is classified as Class GA, the groundwater is not used for drinking water in this area. The City restricts the installation of drinking water wells within the City limits. In addition, the Environmental Easement will restrict the use of groundwater. Drinking water is, instead, supplied by the local municipality (City of Rochester) through another source.

SCG for Soil Vapor

The Final "Guidance for Evaluating Soil Vapor Intrusion in the State of New York," (NYSDOH SVI Guidance) issued by the NYSDOH in October 2006 and updated in May 2017 and February 2024, presents the guidelines that were used to evaluate potential soil vapor intrusion issues for the Site. The potential for soil vapor intrusion into any future buildings constructed on-Site will be evaluated as per the SMP after the remedial action is complete through the collection of soil vapor intrusion monitoring data. The soil vapor intrusion monitoring data will be evaluated by the Department and NYSDOH using the NYSDOH SVI Guidance and any other applicable regulation and/or guidance documents in effect at the time of the sampling.

2.5.4 Soil/Fill Contamination

As indicated in **Section 2.1**, previous Site investigations (including the RI) have been conducted at the Site to identify the nature and extent of contamination at the Site.. The information generated during these Site investigations was used to evaluate the nature and extent of contamination in shallow soils (0 – 2 ft bgs) and deep soils (deeper than 2 ft bgs). Shallow soils were assessed to determine human exposures and to identify if existing 0-2 foot interval of soil at the Site met the restricted residential SCOs for all constituents. Deep soils (deeper than 2 ft bgs) were evaluated to delineate the horizontal and vertical extent of contamination beneath the Site.

A total of 23 shallow soil samples and 36 deep soil samples were collected from the Site and submitted for laboratory analysis as part of remedial investigation activities. Site-wide analytical soil data were compared to UUSCOs, RRSCOs, and PGWSCOs to evaluate Site-wide soil quality and to determine contamination in soil, if present. Comparison of results to the UUSCOs was included for evaluation of the Track 1 Unrestricted use remedy as required by DER-10 only; evaluation and selection of the remedial alternatives in the Revised RAAR were based on RRSCOs and PGWSCOs. A table that indicates exceedances of RRSCO and PGWSCOs prior to the remedy is shown in **Table 1**.

2.5.4.1 Summary of Shallow Soil/Fill Data and Comparison With SCGS

As shown on **Table 1**, SVOCs (primarily PAHs) are present at concentrations exceeding the RRSCOs at 13 shallow locations, and metals (arsenic, lead, and/or mercury) are present at concentrations exceeding the RRSCOs at nine shallow locations. The levels of SVOCs and metals observed are typical of those found in urban/non-native fill. There are no exceedances of the RRSCOs for VOCs in shallow soil samples collected at the Site. The concentrations of SVOCs and metals exceeding the RRSCOs will be addressed by the selected remedy for the Site.

Although GCM (as defined in 6 NYCRR Part 375 and DER-10) was not observed, other contaminant source areas (as defined in Element #2 of the Decision Document) were identified within shallow soil samples collected

at the Site. Specifically, shallow soil samples containing total SVOCs exceeding 500 ppm were collected from two soil boring locations, SB-015 and SB-01. In addition, contaminant source areas may also be present in shallow soils in the vicinity of several soil borings including SS-1, SS-2, SB-009, SB-015, SB-016, SB-017, SB-021, SB-046, SB-01, SB-03, SB-05, SB-06, RXSB-08, and RXSB-09, based on soil detections of some Site COCs exceeding the PGWSCOs collocated with groundwater with the same Site COCs exceeding the AWQSGVs. Contaminant source areas will be addressed by the selected remedy for the Site.

2.5.4.2 Summary of Deep Soil/Fill Data and Comparison With SCGS

As shown on **Table 1**, SVOCs (primarily PAHs) are present at concentrations exceeding the RRSCOs at three deep locations, and metals identified as Site COCs (arsenic, lead, and/or mercury) are present at concentrations exceeding the RRSCOs at two deep locations. The levels of SVOCs and metals observed are typical of those found in urban/non-native fill. Petroleum VOCs (total xylenes and/or 1,2,4-trimethylbenzene) are present at concentrations exceeding the RRSCOs at two deep soil locations. The concentrations of Site COCs exceeding RRSCOs will be addressed by the selected remedy for the Site.

Contaminant source areas were identified within deep soil samples collected at the Site. A review of boring logs identified that GCM was observed in several deep soil samples collected at the Site[18]. Deep soil samples containing total SVOCs exceeding 500 ppm were collected from one soil boring location, TP-2. In addition, contaminant source areas may also be present in deep soils in the vicinity of several soil borings including TP-1, TP-2, TP-3, SB-015, SB-017, SB-020, SB-046, TP-05 and RXSB-08, based on soil detections of some Site COCs exceeding the PGWSCOs collocated with groundwater contaminated by the same Site COCs exceeding the AWQSGVs. Contaminant source areas will be addressed by the selected remedy for the Site.

2.5.5 Summary of Groundwater Contamination and Comparison With SCGS

As discussed previously, Site COCs, including petroleum-related compounds (VOCs and SVOCs), metals and CVOCs have been detected in exceedance of their individual AWQSGVs in groundwater throughout the Site (see **Table 2**). Petroleum-related compounds and metals are likely associated with source materials both on and off-Site. While low levels of CVOCs, below applicable SCOs, have been detected in soil samples collected at the Site, a defined source area has not been identified for the CVOCs in groundwater. As discussed in **Section 4.2** below, Roux conducted sampling of CVOCs as part of PDI soil sampling to determine if an on-Site source of CVOCs can be identified. Additionally, the current extent of contaminant source areas at the Site, which are proposed to be addressed by the selected remedy, are inclusive of the well locations where CVOCs have been detected in groundwater above AWQSGVs; therefore, the selected remedy will address potential CVOC source areas.

As discussed in **Section 4.2.1** below, Roux advanced one additional monitoring well at the Site and submitted groundwater samples from this well for laboratory analysis of VOCs and SVOCs, in accordance with the April 22, 2026 Pre-Design Investigation Work Plan (PDIWP) for the Site which was conditionally approved by NYSDEC in a letter dated June 18, 2026.

GCM in the form of measurable LNAPL has been observed in monitoring well MW-03. In addition, sheens have been observed on groundwater in monitoring wells DEC MW-1, MW-01, MW-02, MW-04, and

[18] Per 6 NYCRR Part 375 and DER-10, GCM was identified by the presence of elevated PID readings (up to approximately 2500 ppm), staining, strong petroleum odors, and/or sheens in soil boring logs for the Site.

MW-09. Contaminant source areas which may be associated with the presence of sheens and LNAPL observed in these wells will be addressed by the selected remedy for the Site.

A table that indicates exceedances of Class GA Ambient Water Quality Standards (AWQS) in monitoring wells prior to the remedy is shown in **Table 2.**

2.5.6 Soil Vapor and Air Quality

Based on sampling results reported in the March 2001 NYSDEC Site Investigation Report, petroleum VOCs and CVOCs are present in soil vapor at the Site, consistent with contaminants found in soil (petroleum VOCs/SVOCs) and groundwater (petroleum VOCs/SVOCs and CVOCs) at the Site. As mentioned previously, indoor air samples have not been collected from the former vacant building located on the Site, as the building was not occupied during previous investigation activities and, at the time of this report, has been demolished.

As discussed in the Decision Document, data collected during previous Site investigations indicate that the vapor intrusion pathway could potentially be complete under the probable future use scenarios depending on the location of future buildings. Future workers and residents could inhale vapors that may enter the interior of future commercial or residential structures from sub-slab soil gas. The potential for soil vapor intrusion into any future buildings constructed on-Site will be evaluated after the remedial action is complete as per the Site's SMP.

2.6 Environmental and Public Health Assessments

2.6.1 Qualitative Human Health Exposure Assessment

As described in Appendix 3B of DER-10, "The overall purpose of the Qualitative Human Health Exposure Assessment (or the exposure assessment) is to evaluate and document how people might be exposed to site related contaminants, and to identify and characterize the potentially exposed population(s) now and under the reasonably anticipated future use of the site." A Qualitative Human Health Exposure Assessment (QHHEA) was completed for the Site to evaluate and document the potential exposure routes and pathways, and to identify and characterize the potentially exposed populations currently and under reasonably anticipated future use of the Site. Environmental media assessed at the Site for potential impacts from historical Site operations and practices and potential human exposure include soil, groundwater, and soil vapor. The following presents the conclusions resulting from the QHHEA process. The full QHHEA is presented in Section 4 Revised RAAR for the Site.

Potential exposure pathways associated with human receptor scenarios at the Site include:

Environmental Media and Exposure Route	Human Exposure Assessment
Direct contact with soils (and incidental ingestion)	Construction and remedial contractors can come into contact with soil if they complete ground intrusive work at the Site. Remedial workers, trespassers, passersby, and utility workers could come into contact with contaminated soil contained in dust through inhalation, incidental ingestion and dermal contact. Implementation of the Site-specific HASP, CAMP and dust controls during the remedial action and any future ground intrusive activities will mitigate potential exposures.

Environmental Media and Exposure Route	Human Exposure Assessment
	Future exposure will be mitigated through excavating or solidifying contaminant source areas, if present, in certain areas of the Site, and through the installation of a Site Cover System and implementation of the SMP and employing engineering controls outlined in the SMP during any future construction (e.g., erosion and sediment controls, dust and odor controls, etc.).
Ingestion of groundwater	Groundwater is not and will not be used for drinking water, as any future buildings proposed on the Site will be connected to the public water supply. An environmental easement will restrict the use of Site groundwater.
Direct contact with groundwater (and incidental ingestion)	Remedial workers, trespassers, and utility workers could come into contact with contaminated groundwater through dermal contact and incidental ingestion during ground intrusive work. Proper PPE and personal hygiene measures, as defined in the HASP, will be required to prevent dermal contact and the potential for incidental ingestion of impacted groundwater during construction. Future exposure to Site groundwater will be eliminated by the presence of redevelopment that covers the entire Site and employing engineering controls outlined in the SMP during any future construction (e.g., erosion and sediment controls, dust and odor controls, etc.).
Inhalation of air (exposures related to soil vapor intrusion)	Remedial workers, trespassers, and utility workers may be exposed to contaminated soil vapor during ground intrusive activities. Exposures to workers, residents, and passersby during the remedial action and future ground activities will be reduced or eliminated through implementation of the HASP, CAMP, and odor/vapor controls during construction. Future exposure will be reduced or eliminated through the activation of a passive vapor intrusion mitigation system planned to be installed beneath proposed buildings, if necessary, depending on results from future vapor intrusion sampling, installation of a Site Cover System and employing engineering controls outlined in the SMP during any future construction (e.g., erosion and sediment controls, dust and odor controls, etc.).

2.6.2 Qualitative Off-Site Exposure Assessment

During previous investigations, numerous test pits and soil borings (some for the installation of monitoring wells) were advanced across the Site, including at locations proximal to Site boundaries in order to delineate the nature and extent of off-Site impacts. As mentioned previously, GCM in the form of measurable LNAPL has been observed in monitoring well MW-03. In addition, sheens have been observed on groundwater in five of the seven remaining monitoring wells, DEC MW-1, MW-01, MW-02, MW-04, and MW-09.

As discussed, groundwater in the vicinity of the Site appears to flow in two converging directions. In the area northwest of the site (e.g., the 15 Flint Street property), groundwater flows southeast towards the Site and the Genesee River, while groundwater in the area immediately southeast of the Site flows northwest from the river and onto the Site. In addition, as discussed in **Section 2.4.2**, the existing segment of the WRW (located between the Site and the river) extends to bedrock and is limiting the hydraulic connection between the Site groundwater and the river. Although it is unlikely that petroleum Site COCs and metals will flow off-Site with groundwater flow, due to convergent groundwater flow onto the Site, it is possible that contaminated

groundwater may be migrating off-Site. Monitoring wells located near the Site property boundary will serve to evaluate groundwater conditions near adjacent off-Site properties. Transport of Site-related VOCs and SVOCs in groundwater can be affected by various processes that result in reduced concentrations, including volatilization, diffusion, sorption, and degradation. Inorganic constituents in groundwater are potentially subject to biologically and physically induced chemical reactions (*e.g.*, oxidation/reduction), which can markedly affect their mobility. The degradation of VOC and SVOC compounds is likely given the period of operation of the facility and the undeveloped nature of the Site. In addition, groundwater is not used as a drinking water supply on Site or in the vicinity of the Site, as drinking water is supplied by the local municipality through another source. As a result, migration of groundwater to the Genesee River or other sensitive downgradient receptors is not expected to occur and off-site exposure from Site-related contaminants in groundwater is therefore not expected. It is also noted that the Site is surrounded by properties included in the BCP or other remedial programs.

As stated in **Section 2.5.6**, Site COCs, including petroleum VOCs and CVOCs are present in soil vapor at the Site, consistent with contaminants found in soil (petroleum VOCs/SVOCs) and groundwater (petroleum VOCs/SVOCs and CVOCs) at the Site. As mentioned previously, the former vacant building located on the Site has been demolished; the next closest occupied building (located at 22 Flint Street, also a BCP site [C828193]) is more than 150 feet away from the Site. As discussed, the Site is surrounded by properties included in the BCP or other remedial programs (including the closest occupied building located at 22 Flint Street), or areas (i.e., the Flint Street right-of-way) that are being assessed by others. 5 Flint Street LLC is entering the BCP as a volunteer and off-Site impacts will be addressed through the BCP or other remedial programs.

2.6.3 Fish and Wildlife Remedial Impact Analysis

The Site is located in an urban setting and is not a significant habitat for terrestrial wildlife. Due to the surrounding residential, commercial, and industrial land uses, the Site is not part of a larger corridor that is linked to other significant wildlife habitats. The Site is primarily covered by low-lying vegetation and mature trees, in addition to one vacant building. Most of the fauna found on the Site are avian and small mammal species, except, possibly, for some deer.

According to the US Fish and Wildlife Service (USFWS), the Northern Long-eared Bat is the only federally listed threatened[19] or endangered mammal listed as potentially present in forested communities (e.g., floodplain forest and successional northern hardwoods) within the project area (USFWS Information for Planning and Consultation Online System). Although, according to the USFWS online system, the Northern Long-eared Bat habitat is not present within the Site parcel, it may be present on the adjacent 10 Flint Street parcel. However, according to the USFWS online system, if present, this habitat is located more than 1000 feet southwest of the Site. If remedial activities for the Site are anticipated to impact the forested habitats, consultation with USFWS and adherence to bat-related conservation measures is required.

No wetlands were identified on the Site. The 2023 City RAAR for portions of the former Vacuum Oil Refinery facility adjacent to or nearby the Site identified a total of four isolated Federal wetlands within the footprint of the facility, three of which are located on properties adjacent to the Site (included as Appendix F in the Revised RAAR). However, the US Army Corps of Engineers (USACE) required the City to purchase wetland credits as compensatory mitigation for the permanent and unavoidable loss of the three federal jurisdictional wetlands, due to their locations within the remediation areas of City's BCP site (No. C828190).[20] The City obtained these

[19] Threatened; A species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
[20] USACE Nationwide permit number LRB-2010-01497, issued to the City on November 3, 2023.

wetland mitigation credits through the Ducks Unlimited In-Lieu Fee Mitigation Program, as documented in the April 16, 2024 Credit Sale Letter verifying acceptance of full payment for the appropriate credits (included as Appendix G in the Revised RAAR). Additionally, the Site is located within the Federal Emergency Management Agency (FEMA) 100- and 500-year floodplains. Remedial activities for the Site will be conducted in a manner consistent with applicable state and federal wetland and floodplain requirements.

The Site is likely to be redeveloped as a multi-family restricted residential mixed-use community, consistent with Site zoning, land use, and the master development plan for the Vacuum Oil BOA. New buildings, paved roadways and parking and newly landscaped areas are planned for redevelopment across the Site, which is anticipated to substantially limit availability of suitable cover type for reestablishment of biota.

Based on the Fish and Wildlife Resource Impact Analysis Decision Key (NYSDEC DER-20 Appendix 3C; Ref. 8), included as Appendix H of the Revised RAAR, a fish and wildlife resources impact analysis is not warranted.

2.7 Remedial Action Objectives

Based on the results of the Remedial Investigation, the following Remedial Action Objectives (RAOs) have been identified for this Site.

2.7.1 Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

2.7.2 Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.

Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil. *RAOs for Environmental Protection*

- Prevent migration of contaminants that would result in groundwater, or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

2.7.3 Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

3.0 DESCRIPTION OF REMEDIAL ACTION PLAN

The following sections describe the Remedial Action plan including a summary of the Revised RAAR and the recommended and preferred remedy for the Site.

3.1 Remedial Alternatives Analysis Report Summary

As described in **Section 1**, a revised RAAR was submitted to NYSDEC for the Site on February 24, 2025. The Revised RAAR provides findings of the remedial investigation activities described in **Section 2.1**, the nature and extent of contamination at the Site, and a proposed remedy for the Site. The Revised RAAR included a Remedial Alternatives Analysis to select a remedial approach for the Site using the Remedy Selection Evaluation Criteria identified in 6 NYCRR Part 375-1.8(f) and Section 4.2 of DER-10. As required by NYSDEC, in addition to the evaluation of the likely scenario, a Track 1 unrestricted use alternative was evaluated (considered under NYCRR Part 375 to be representative of cleanup to pre-disposal conditions). The following alternatives were evaluated as part of the Revised RAAR:

- Alternative 1: Unrestricted Use Track 1 Excavation;
- Alternative 2: Restricted Residential Use Track 4 Excavation and In-Situ Solidification (ISS); and
- Alternative 3: Restricted Residential Use Track 4 Excavation.

Based on the detailed evaluation of the alternatives, Alternative 2 was recommended as the selected remedy for the Site and was accepted by NYSDEC and memorialized in the Decision Document. Alternative 2 would provide the best balance of the evaluation criteria while achieving the RAOs set forth in the RAAR and would be consistent with current and anticipated redevelopment plans.

Additional details regarding the Remedial Alternatives Analysis performed for the Site can be found in Section 5 of the RAAR.

3.1.1 Source Area Delineation and Definition of Excavation Areas

As discussed in the RAAR and Decision Document, one of the remedial goals of the selected remedy for the Site was the excavation and off-site disposal and ISS of contaminant source areas. Specifically, excavation or ISS of soil exhibiting indicators of potential soil impacts including GCM, sheens, staining, odors, elevated PID readings, and/or elevated Site COCs concentrations. The areas and volumes of soil proposed for excavation and ISS in the RAAR (and accepted in the Decision Document) were delineated based on Site analytical data and field observations during the RI and other historical Site investigations discussed in **Section 2.1** above. To further define the extents of the contaminant source areas, a PDI was implemented as outlined in **Section 4.2** below.

3.2 Selected Remedy

The November 2025 Decision Document describes the NYSDEC-approved remedy for the Site. The selected remedy (RAAR Alternative 2) is a Track 4: Restricted use with site-specific soil cleanup objectives remedy. The elements of the selected remedy for the Site, as presented in the Decision Document, are summarized below.

1. Remedial Design:

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise(TM) (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

The existing on-site building will be demolished and materials which cannot be beneficially reused on-site will be taken off-site for proper disposal in order to implement the remedy.

Excavation and off-site disposal of contaminant source areas, including:

- Grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- Concentrated solid or semi-solid hazardous substances per 6 NYCRR Part 375-1.2(au)(1);
- Non-aqueous phase liquids;
- Soil with visual waste material or non-aqueous phase liquid;
- Soil containing total SVOCs exceeding 500 ppm;
- Soils which exceed the protection of PGWSCOs, as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- Soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet which exceed the restricted residential or protection of groundwater SCOs will be excavated and transported off-site for disposal or re-used on-site if it qualifies for use as backfill per Remedy Element 3 below.

All on-site soils below two feet of final grade which meet the above bulleted criteria, will be excavated as described below or addressed per remedial Remedy Element 5.

Approximately 6,500 cubic yards of contaminated soil may be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify DEC, submit the sample results and, and in consultation with DEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

Excavation and removal are required for any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Excavation of site soils to a depth of 4 feet below final grade (as needed) in the portion of the site subject to the in-situ solidification (ISS) treatment described in Remedy Element 5. Up to approximately 6,500 cubic yards of soil will be excavated to facilitate ISS implementation. All soils which exceed restricted-residential (unless used as backfill per Remedy Element 3 below) or protection of groundwater soil cleanup objectives (SCOs) will be disposed of off-site at a permitted facility.

3. Backfill

On-site soil which does not exceed the above criteria may be used below the cover system described in Remedy Element 4 to backfill the excavation to the extent that a sufficient volume of on-site soil is available and establish the designed grades at the site.

On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or re-grade the site.

Backfill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site.

The site will be re-graded to accommodate installation of a cover system as described in Remedy Element 4.

4. Cover System

A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for future restricted residential use of the site. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

Where the soil cover is required over the ISS treatment area, it will consist of a minimum of four feet of soil to ensure the underlying monolith remains below the frost line and protected from the freeze-thaw cycle. A building and its foundation are considered suitable cover to protect the ISS monolith. Where a building and its foundation are considered part of the site cover, the ISS design should include considerations for drainage between the ISS and building foundation and the potential need to design the ISS for a higher strength. If the ISS monolith extends beyond the building footprint, the design shall include a soil cover consisting of a minimum of four feet of soil for that portion. Consistent with the remainder of the site cover, the upper two feet will meet the SCOs for restricted residential use outside the ISS monolith area. For areas where solidified material underlies the cover, the solidified material itself will serve as the demarcation layer due to the nature of the material.

5. Solidification/Stabilization - In-Situ Solidification

In-situ solidification (ISS) will be implemented in an approximately 1+ acre area of the site, as indicated on Figure 3 of the Decision Document (Figure 6 of the Revised RAAR). The treatment zone will extend from the top of the groundwater table, at approximately 4 feet below final grade to approximately 12-15 feet below grade. An up to approximately 4- foot soil cut may need to be excavated in these areas to contain the ISS spoils and increased soil volume created by the soil mixing. ISS is a process that binds the soil particles in place creating a low permeability mass. The contaminated soil will be mixed in place together with solidifying reagents or other binding reagents using an excavator or augers. Often Portland cement is used as the primary binder, although less carbon-intensive amendments will be considered. The soil and binding reagents are mixed to produce a solidified mass resulting in a low permeability monolith. Prior to the full implementation of this technology, bench-scale laboratory testing and on-site pilot scale studies will be

conducted to more clearly define design parameters, amendment types and dosages. Bench testing will consist of collecting soil from source area and mixing with a variety of amendments and doses in a controlled atmosphere followed by testing resulting hydraulic conductivity and unconfined-compressive strength. Pilot tests will then be conducted using successful amendment mixes from the bench test prior to full scale design.

Typical design requirements are that solidified mass would produce a hydraulic conductivity (K) of 1.0 X 10-6 cm/sec or less and would also result in an unconfined compressive strength of 50 psi, or higher pending future uses that may include construction above the solidified mass. The solidified mass will then be covered with a cover system as described in Remedy Element 4 to prevent direct exposure to the solidified mass. The resulting solid matrix reduces or eliminates mobility of contamination and reduces or eliminates the matrix as a source of groundwater contamination.

6. Groundwater - Monitored Natural Attenuation

Groundwater contamination (remaining after active remediation) will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination, and for MNA indicators which will provide an understanding of the biological activity breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude in within 5 years. Reports of the attenuation will be provided at 5-year intervals, and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that contingency technology, e.g., "oxygen injection" would be the expected contingency remedial action.

7. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4, restricted residential cleanup, at a minimum. Institutional Control Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- Require the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- Allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- Restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- Require compliance with the NYSDEC approved Site Management Plan.

8. Site Management Plan

A Site Management Plan is required, which includes the following:

1. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

   Institutional Controls: The Environmental Easement discussed in Remedy Element 7 above.

   Engineering Controls: The soil cover discussed in Remedy Element 4 above.

This plan includes, but may not be limited to:

- An Excavation Work Plan which details the provisions for management of future excavations in areas of remaining or potential contamination;
- A provision for demolition of the on-site building if and when it becomes unsafe or inactive or vacant;
- A provision should redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures;
- Descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- A provision for evaluation of the potential for soil vapor intrusion, including sub-slab and indoor air sampling, for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- A provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Remedy Element 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- Provisions for the management and inspection of the identified engineering controls;
- Maintaining site access controls and NYSDEC notification; and
- The steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

2. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

- Monitoring of groundwater to assess the performance and effectiveness of the remedy;
- A schedule of monitoring and frequency of submittals to the NYSDEC;
- Monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Remedial activities will be performed at the Site in accordance with this NYSDEC-approved RAWP and the Decision Document. All deviations from the RAWP and/or Decision Document will be promptly reported to NYSDEC for approval and fully explained in the FER.

4.0 REMEDIAL ACTION IMPLEMENTATION

This section describes the PDI sampling conducted to determine the extent and design parameters of the excavation and ISS remedial measures detailed in this RAWP to be implemented at the Site.

4.1 Soil Cleanup Objectives

The Restricted Residential Soil Cleanup Objectives (RRSCOs) have been selected for the Site based upon the current and proposed future land use. The PGWSCOs are applicable to those parameters that are present in both soil and groundwater exceeding the applicable standard. The Soil Cleanup Objectives for this Site are listed in **Table 3** and are the lower of the applicable Site SCOs for each compound**.** Soil and fill material management on-Site and off-Site will be conducted in accordance with the Soil/Materials Management Plan as described below. UST closures (if conducted) will, at a minimum, be completed in accordance with DER-10 Section 5.5, regulations and guidance.

As discussed below PDI soil borings were advanced and soil samples collected for field screening and laboratory analysis to determine if contaminant source area materials were present in soil samples and assist with the delineation of previously identified contaminant source areas. The following criteria were used to identify the presence of contaminant source area materials in soil samples collected during the PDI:

- Grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- Concentrated solid or semi-solid hazardous substances per 6 NYCRR Part 375-1.2(au)(1);
- Non-aqueous phase liquids;
- Soil with visual waste material or non-aqueous phase liquid;
- Soil containing total SVOCs exceeding 500 ppm;
- Soils which exceed the PGWSCOs, as defined by 6 NYCRR Part 375-6.8 for those Site COCs (as defined in **Section 2.5.2** above) found in site groundwater above standards; and
- Soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

4.2 Pre-Design Investigation Sampling

As discussed, contaminant source areas (as defined in **Section 4.1** above) have been identified in several locations, which are included within the Proposed Excavation and ISS Areas 1 and 2 on **Figure 6**. These areas include approximately 65% of the total Site area and extend to the southeast and northwest Site/property limits.

PDI soil and groundwater sampling has been conducted in accordance with the April 22, 2026 Pre-Design Investigation Work Plan (PDIWP) for the Site which was conditionally approved by NYSDEC in a letter dated June 18, 2026. The PDIWP was performed to further delineate Potential Excavation and ISS Areas 3 and 4 to the southwest of Proposed Excavation and ISS Area 1 and northeast of Proposed Excavation and ISS Area 2, with the objective to:

- finalize vertical and lateral extents of contaminant source areas in Proposed Excavation and ISS Areas 1 and 2;

- verify the presence of dissolved phase VOCs and SVOCs in groundwater at levels that warrant additional remediation to address potential contaminant source areas for those analytes in Potential Excavation and ISS Area 3;
- assess the presence of contaminant source areas within Potential Excavation and ISS Areas 3 and 4;
- conduct ISS bench scale studies to more clearly define the ISS design parameters (i.e. amendment types, dosages); and
- aid waste characterization for disposal and/or support beneficial reuse of Site soils in preparation for future remedial activities at the Site.

The approved PDI sampling was conducted in a phased approach which allowed for data collected during Phase I sampling to assist in determining the additional data required to finalize the presence and extents of contaminant source areas during Phase II.

Phase I and Phase II PDI sampling discussed below were facilitated by advancing soil borings using a Geoprobe direct-push drill rig or an excavator. At each borehole location utility clearances were performed prior to advancement to a minimum of five ft bgs to confirm that no subsurface utilities were present. Additional details regarding the PDI sampling conducted as part of Phase I and Phase II are described below.

Soil samples were collected continuously during boring advancement and field screened to assist in delineating the extent of contaminant source areas. Field screening included visually inspecting soil samples for the presence of petroleum impact (sheen, non-aqueous phase liquid [NAPL]), screened (5 ppm) using a calibrated photoionization detector (PID), characterized for visual and odor impacts, and textural classifications based on the Unified Soil Classification System (USCS). In addition, any observations regarding staining, odor and/or sheen in/on the soil, and type of fill material encountered were noted. Results of field screening at each soil boring are summarized in **Table 4**. Soil boring logs generated for each soil boring are included in **Appendix D**.

As detailed in **Section 4.2.1** and **Section 4.2.2** below, select soil and groundwater samples were submitted for laboratory analysis and analytical laboratory reports are included In **Appendix E**.

4.2.1 Phase I PDI Sampling

As discussed in the PDIWP, Phase I soil, and groundwater sampling were conducted to:

- delineate the extent of the contaminant source area to the northeast of Proposed Excavation and ISS Area 2; and
- assess the presence of contaminant source areas within Potential Excavation and ISS Areas 3 and 4.

Proposed Area 2 Contaminant Source Area Delineation Sampling

To delineate observed contaminant source area, soil borings were advanced to bedrock at intervals of every 30-feet along the northeast side of Proposed Excavation and ISS Area 2. As shown on **Figure 6**, two soil borings (5FS-SW-1 & 5FS-SW-2) were advanced in this area. As documented in the boring logs, field screening of soil samples collected from these two soil borings did not identify contaminant source area materials. As a result, soil samples were collected for laboratory analysis from soils exhibiting the highest PID response in each boring. Specifically, soil samples were collected from 6 to 8 feet below ground surface (ft bgs) at soil boring 5FS-SW-1 and 10 to 12 ft bgs at 5FS-SW-2 and submitted for laboratory analysis of:

- Part 375 Target Compound List (TCL) VOC's by EPA Method 8260D including tentatively identified compounds (TICs);
- Part 375 TCL SVOCs by EPA Method 8270E including TICs; and
- Part 375 Target Analyte List (TAL) metals + Hexavalent/Trivalent Chromium & Cyanide by USEPA Methods 6010D/7470A.

As shown on **Table 5**, laboratory analytical results of soil samples 5FS-SW-1 (6-8) and 5FS-SW-2 (10-12) did not identify exceedances of Site COCs (discussed in **Section 2.5.2**). Analytical results from the soil sample 5FS-SW-1 (6-8) identified slight exceedances of PGWSCOs for three non-Site COC SVOC compounds (2-Methylphenol, 3-Methylphenol/4-Methylphenol and Phenol) and one non-Site COC VOC compound (Acetone).

Based on the field screening and analytical sampling results presented above, PDI samples 5FS-SW-1 (6-8) and 5FS-SW-2 (10-12) are proposed to be used as sidewall Confirmation samples and used as final delineation samples for excavation or ISS remediation activities along the northeast side of Proposed Excavation and ISS Area 2.

Potential Area 3 Contaminant Source Area Material Assessment Sampling

As discussed in the conditionally approved PDIWP, potential contaminant source area material has been identified in shallow samples collected at SB-008 and SB-009, within Potential Excavation and ISS Areas 3 (see **Figure 6**). Specifically, PGWSCO exceedances of SVOCs Benzo(a)anthracene, Benzo(a)fluoranthene, Benzo(k)fluoranthene and Chrysene have been identified in soil sample SB-009 (0-1 ft bgs) and SVOCs Benzo(a)anthracene and Chrysene at soil sample SB-008 (0-1 ft bgs). Analytical results of deeper soil samples collected from SB-008 at 4-6 feet and SB-009 at 8-10 ft bgs did not detect PGWSCO exceedances; however, laboratory reporting limits for Benzo(a)anthracene and Chrysene slightly exceeded the PGWSCO standards for these compounds in these samples.

Unfiltered groundwater samples in this area were previously collected from former/temporary monitoring well SB-009. Results of unfiltered groundwater samples from SB-009 indicated AWQSGV exceedances of SVOCs Benzo(a)anthracene, Benzo(a)fluoranthene and Chrysene, which also exceeded PGWSCO standards in shallow soil samples collected from this area.[21] Benzo(a)anthracene is not a Site COC. As discussed in **Section 2.5**, it is possible that SVOCs present in the unfiltered groundwater samples were a result of sediment present in the samples and are not representative of dissolved impacts in groundwater.

To assess the potential presence of contaminant source area material in this area, three soil borings (5FS-PE-1, 5FS-PE-3 and 5FW-PE-3B) were advanced to refusal and a 2-inch monitoring well (5FS-MW-1) installed in the borehole of 5FS-PE-1. As documented in the boring logs, field screening of soil samples collected from these three soil borings did not identify contaminant source area materials.

As a result, soil samples were collected for laboratory analysis from 5FS-PE-1 at 4-5 ft bgs and 12-14 ft bgs (at the high PIDs detected during preclearance to 5 ft bgs and full soil boring advancement, respectively) and submitted for laboratory analysis of TCL SVOCs+ TICS. In order to collect soil samples for analysis of TCL VOCS + TIC, as required by the conditionally approved PDIWP, soil borings 5FS-PE-3 and 5FW-PE-3B were advanced adjacent to 5FS-PE-1. One soil sample was submitted from the high PID observed at 0-

[21] Detections of Benzo(a)anthracene, Benzo(a)fluoranthene and Chrysene from groundwater samples collected from SB-009 were flagged by the analytical lab as being below the laboratory reporting limit but greater than or equal to the method detection limit, and as a result, the detected concentrations were estimated values.

2 ft bgs in 5FS-PE-3 for laboratory analysis of TCL VOCS + TIC. Because refusal was encountered at 12 ft bgs at soil boring 5FS-PE-3, soil boring 5FW-PE-3B was advanced to attempt to collect a soil sample for analysis of TCL VOCS + TIC between 12-14 ft bgs, at the same depth of the high PID sample at 5FS-PE-1. 5FS-PE-3B was advanced to refusal at 15 ft bgs and samples were submitted for laboratory analysis of TCL VOCs+ TICS at 4-5 and 12-14 ft bgs.

As shown on **Table 5**, results of soil samples submitted for laboratory analysis from 5FS-PE-1, 5FS-PE-3 and 5FW-PE-3B did not identify exceedances of Site COCs. Analytical results from the soil sample 5FS-PE-3B (4-5) identified a slight exceedance of the PGWSCO for one non-Site COC, Acetone.

Two days after the installation of the 2-inch monitoring well (5FS-MW-1) in soil boring 5FS-PE-1 the well was developed in accordance with Roux's procedure for developing monitoring wells. Approximately 3 months following monitoring well installation, an electronic interface probe was used to gauge water level and detect for the presence NAPL in 5FS-MW-1. Groundwater was measured at 2.49 ft below top of well casing and NAPL was not detected. Groundwater samples were collected from 5FS-MW-1 in general accordance with EPA low-flow sampling methodology and submitted for laboratory analysis of TCL SVOCs+ TICS and TCL VOCs+ TICS.[22]. Groundwater gauging and sampling activities were conducted in accordance with Section 3.7 of the NYSDEC DER-10, ASTMs, and Roux SOP procedures.

As shown on **Table 6**, results of the groundwater sample submitted for laboratory analysis from 5FS-MW-1 did not identify exceedances of Site COCs. Analytical results identified an exceedance of the non-Site COC, Benzo[a]anthracene, above NYSDEC AWQSGVs (NYSDEC TOGS 1.1.1) for Class GA groundwater.

Based on the field screening and analytical results of the soil and groundwater sampling conducted in this area, contaminant source area materials were not identified, and excavation and ISS activities are not required. Phase II PDI soil sampling was conducted to delineate the extent of contaminant source areas to the southwest side of Proposed Excavation and ISS Area 1. Results of this Phase II PDI soil sampling are presented below.

Potential Area 4 Contaminant Source Area Assessment Sampling

To assess for the presence of contaminant source area material in Potential Excavation and ISS Area 4, two soil borings (5FS-PE-2 & 5FS-PE-2B) were advanced to bedrock in the approximate middle of this area. Specific soil boring locations are shown on **Figure 6**.

As documented in the boring logs, field screening of soil samples collected from these two soil borings did not identify contaminant source area materials. As a result, soil samples were collected for laboratory analysis from soils exhibiting the highest PID response in each boring. Specifically, soil samples were collected from 12 to 13 ft bgs at soil boring 5FS-PE-2 and 10 to 12 ft bgs at 5FS-PE-2B and submitted for laboratory analysis of:

- Part 375 Target Compound List (TCL) VOC's by EPA Method 8260D including tentatively identified compounds (TICs);
- Part 375 TCL SVOCs by EPA Method 8270E including TICs; and

[22] Low-flow sampling uses a peristaltic pump, bladder pump, or bailer to extract ground water while minimizing the stress to surrounding aquifer. Water quality parameters, including pH, dissolved oxygen content, oxidation reduction potential and temperature, are measured during ground water purging. Ground water samples are collected when water quality parameters stabilize, indicating that ground water is being drawn from the aquifer surrounding the well screen.

- Part 375 Target Analyte List (TAL) metals + Hexavalent/Trivalent Chromium & Cyanide by USEPA Methods 6010D/7470A.

As shown on **Table 5**, results of soil samples submitted for laboratory analysis from 5FS-PE-2 (12-13) and 5FS-PE-2B (10-12) did not identify exceedances of Site COCs. Analytical results from the soil sample 5FS-PE-2B (10-12) identified a slight exceedances of PGWSCO for non-Site COC, Acetone.

Based on the field screening and analytical sampling results presented above, Phase II PDI soil sampling was conducted to delineate the extent of contaminant source areas within Potential Excavation and ISS Area 4 (along the northeast side of Proposed Excavation and ISS Area 1 and southwest side of Proposed Excavation and ISS Area 2). Results of this Phase II PDI soil sampling are presented below.

ISS Bench Scale Study Sampling

As part of the ISS design process, a bench testing program was implemented to evaluate the effectiveness of various potential reagents and reagent ratios to achieve the ISS performance requirements. To facilitate the bench test program, soil borings were advanced in three test areas within Proposed Excavation and ISS Areas 1 & 2. These three test area locations were selected based on existing soil data to be representative of areas within the Proposed Excavation and ISS Areas which are generally representative of relatively high, medium and low levels of known soil impacts (including GCM and NAPL) within the currently planned ISS areas. The locations of these "clean, medium and dirty" test areas are shown on **Figure 6**. A minimum of two soil borings were advanced in each test area, and soil samples were collected from grade to bedrock (terminal depth of the respective ISS Areas) in each boring and composited together to create one bench test sample with sufficient volume from each test area to perform bench testing.

Results of the ISS bench scale study sampling and additional details on the proposed implementation of ISS remedial measures are discussed in **Section 4.4.**

4.2.2 Phase II PDI Sampling

As discussed above and in the PDIWP, Phase II soil sampling was conducted to:

- delineate the extent of contaminant source areas to the southwest side of Proposed Excavation and ISS Area 1; and
- delineate the extent of contaminant source areas within Potential Excavation and ISS Area 4 (northeast side of Proposed Excavation and ISS Area 1 and southwest side of Proposed Excavation and ISS Area 2).

Phase II PDI delineation sampling in these areas was conducted to delineate the extents of contaminant source areas at the Site. As noted in the PDIWP, no sidewall end point samples were collected for contaminant source areas where the corresponding sidewall extends to the Site boundary, and no untreated (i.e. not within ISS area) soil is anticipated to remain on-Site after excavation and ISS.

Additional details regarding Phase II PDI delineation sampling conducted in each area are discussed below.

Southwest Side of Proposed Area 1 Contaminant Source Area Delineation Sampling

Per the conditionally approved PDIWP, Phase II sampling was conducted to delineate the extent of contaminant source area materials along the southwest side of Proposed Excavation and ISS Area 1**.** Specifically, four soil borings (5FS-SW-20 through 5FS-SW-23) were advanced to bedrock (or refusal) at

intervals of every 30-feet along the southwest side of Proposed Excavation and ISS Area 1 to further delineate the southwest side of this contaminant source area. Two additional "step-out" soil borings (5FS-SW-22B & 5FS-SW-23B) were advanced 10-feet from their corresponding original soil boring locations, due to subsurface concrete obstructions observed at 5FS-SW-22 and the presence of contaminant source area materials (sheen) observed at 5FS-SW-23. Soil boring locations are shown on **Figure 7**.

As documented in the boring logs, with the exception of 5FS-SW-23, field screening of soil samples collected from these soil borings did not identify contaminant source area materials. As a result, soil samples were collected for laboratory analysis from soils exhibiting the highest PID response in soil borings 5FS-SW-20 (9-11 ft bgs), 5FS-SW-21 (11-13 ft bgs), 5FS-SW-22B (6-8 ft bgs) and 5FS-SW-23B (11-13 ft bgs) and submitted for laboratory analysis of:

- Part 375 Target Compound List (TCL) VOC's by EPA Method 8260D including tentatively identified compounds (TICs);
- Part 375 TCL SVOCs by EPA Method 8270E including TICs; and
- Part 375 Target Analyte List (TAL) metals + Cyanide by USEPA Methods 6010D/7470A.

As shown on **Table 5**, laboratory analytical results of soil samples 5FS-SW-20 (9-11), 5FS-SW-21 (11-13), 5FS-SW-22B (6-8) and 5FS-SW-23B (11-13) did not identify exceedances of PGWSCOs.

Based on the field screening and analytical sampling results presented above, PDI soil samples 5FS-SW-20 (9-11), 5FS-SW-21 (11-13), 5FS-SW-22B (6-8) and 5FS-SW-23B (11-13) are proposed to be used as sidewall Confirmation samples and used as final delineation samples for excavation and ISS remediation activities for the revised Proposed Excavation and ISS Area 1, which was extended to the southwest (see **Figure 8**).

Potential Area 4 Contaminant Source Area Delineation Sampling

Based on the results of Phase I sampling, Phase II sampling was conducted to delineate the extent of contaminant source area materials in Potential Area 4 Contaminant Source Area (along the northeast side of Proposed Area 1 and southwest side of Proposed Area 2) per the conditionally approved PDIWP. Six soil borings (5FS-SW-10 through 5FS-SW-15) were advanced to bedrock (or refusal) at intervals of every 30-feet along the northeast side of Proposed Excavation and ISS Area 1 and the southwest side of Proposed Excavation and ISS Area 1. Additional "step-out" soil borings were advanced at approximately 10-foot intervals from soil borings 5FS-SW-10 and 5FS-SW-12, and at additional 10-foot "step-out" locations until contaminant source area materials were no longer identified during field screening or laboratory analysis.

As shown on **Figure 7**, contaminant source area materials (sheen) were identified at 5FS-SW-10 and its 10-foot "step-out" 5FS-SW-10B. Two additional "step-outs" 5FS-SW-10C and 5FS-SW-10E identified contaminant source area materials in soil samples submitted for laboratory analysis. Contaminant source area materials were also identified in soil samples submitted for laboratory analysis from the adjacent soil boring 5FS-SW-13 and, as a result, no additional soil borings were collected between 5FS-SW-13 and 5FS-SW-10E. Two additional soil borings (5FS-SW-10D and 5FS-SW-10F) were advanced approximately 10-feet southeast from the 5FS-SW-10 series, at intervals of every 30-feet, to delineate the extent of contaminant source area materials in this area. Contaminant source area materials were not identified during field screening or in laboratory samples collected from 5FS-SW-10D and 5FS-SW-10F.

Based on the field screening and analytical sampling results from 5FS-SW-10D and 5FS-SW-10F, PDI soil samples 5FS-SW-10D (8-10), 5FS-SW-10F (12-14.5) are proposed to be used as sidewall Confirmation samples and used as final delineation samples for excavation or ISS remediation activities along the southeast side of newly Proposed Excavation and ISS Area 1A (See **Figure 8**).

A 10-foot "step-out" soil boring was advanced subsequent to the advancement soil boring 5FS-SW-12 and contaminant source area material (sheen) was identified during field screening at 5FS-SW-12B. As a result, the soil sample submitted for laboratory analysis at 5FS-SW-12 was discarded and additional 10-foot "step-out" soil boring 5FS-SW-12C was advanced. After contaminant source area materials were identified in soil samples submitted for laboratory analysis from 5FS-SW-12C, soil borings 5FS-SW-12D and 5FS-SW-12E were advanced approximately 10-feet northeast and northwest from 5FS-SW-12C. Contaminant source area materials were not identified during field screening or in laboratory samples collected from 5FS-SW-12D and 5FS-SW-12E.

Based on the field screening and analytical sampling results from 5FS-SW-12D and 5FS-SW-12E, PDI soil samples 5FS-SW-12D (8-10) and 5FS-SW-12E (12-14) are proposed to be used as sidewall Confirmation samples and used as final delineation samples for excavation or ISS remediation activities along the northwest and northeast sides, respectively, of newly Proposed Excavation and ISS Area 1B (See **Figure 8**).

4.2.3 Revised Excavation and ISS Area Extents

Based on the PDI sampling discussed above, as shown on **Figure 8**, the proposed extents of the excavation and ISS areas have been revised to expand Area 1 and include two additional areas (Areas 1A and 1B). The revised extents of all proposed excavation and ISS areas (revised Area 1, Area 1A, Area 1B and Area 2) do not intersect with any known sub-surface utilities and comprise approximately 5,200 square yards of the Site, which is approximately 68% of the total Site area.

4.2.4 Additional PDI Sampling

As discussed in the conditionally approved PDIWP, soil borings 5FS-SB-1 & 5FS-SB-2 have been proposed to be advanced at the northeastern end of the Site, northeast of an active water line (and potentially active gas line located adjacent to the water line) to characterize soil in this area of the Site. These two soil borings have not yet been advanced at the time of this report and are planned to be conducted prior to the start of RAWP activities.

These soil borings will be advanced and soil samples collected in accordance with the PDIWP. As discussed in the PDIWP, soil samples from these soil borings will be used to characterize soil conditions and document the level of contamination remaining, if any, within this area between the utilities and the Site boundaries. However, no remedial activities are proposed in this area due to the size of the area and proximity to utilities. The locations of 5FS-SB-1 & 5FS-SB-2 along with the approximate locations of the water and gas lines and buffers around the lines to maintain worker safety and prevent damage are shown on **Figure 9**

4.2.5 Methodology

As discussed above, samples collected from PDI soil borings 5FS-SW-1, 5FS-SW-2, 5FS-SW-10D, 5FS-SW-10F, 5FS-SW-11, 5FS-SW-12D, 5FS-SW-12E, 5FS-SW-14, 5FS-SW-15, 5FS-SW-20, 5FS-SW-21, 5FS-SW-22B and 5FS-SW-23B did not identify contaminant source area materials during field screening or in laboratory analysis and are therefore proposed to be used to define the horizontal extents of the

excavation and ISS areas at the Site. Samples collected from these soil borings are proposed to be considered Confirmation samples [per DER-10 Section 1.3(b)3] as they are being used to provide evidence that the Site's soil cleanup objectives will be obtained through remedy implementation.

As discussed, the proposed extents of the excavation and ISS areas do not intersect with any known sub-surface utilities. Removal of other known or suspected sub-surface obstructions (e.g. buried concrete foundations) will be attempted prior to remedy implementation. However, if sub-surface utilities or obstructions are identified which cannot reasonably be removed and which limit remedy implementation, ISS will be completed around the perimeter of the obstruction and end point samples will be collected in these areas. If these samples do not meet the Site's soil cleanup objectives, these samples will be considered Documentation samples [per DER-10 Section 1.3(b)12] used to document the level of contamination remaining at the boundary with the utility or obstruction. Each sample will be collected in accordance with DER-10 Section 5.4(b), and field screened for visual evidence (e.g., staining, sheen, NAPL) of impacts, odor impacts, and with a PID with a screening level of 5 ppm. Samples to be submitted for analysis will be placed in a laboratory sample jar, placed in an iced cooler, and transported to the laboratory. The laboratory will have the appropriate ELAP method certifications to conduct the analysis.

4.2.6 Analytical Reporting of Results

The laboratory has and will report analytical results for endpoint samples in Analytical Services Protocol (ASP) Category B deliverable packages. An electronic data deliverable (EDD) in the required NYSDEC format will also be provided by the laboratory and will be submitted to NYSDECs electronic database. A data usability summary report will be generated in accordance with the Department's guidance.

All PDI data generated will be logged in a database and organized to facilitate data review and evaluation.

4.2.7 QA/QC

QA/QC samples serve as checks on both the sampling and measurement systems and assist in determining the overall data quality with regard to representation, accuracy, and precision. The PDIWP QAPP (included as Appendix A of the PDIWP) describes QA/QC procedures and sampling performed during the PDI.

The QAPP/FSP, included as **Appendix F** to this RAWP, describes QA/QC procedures and sampling to be performed under the RAWP and is discussed below.

4.2.8 Data Usability Summary Report (DUSR)

Chemical laboratories used for all PDI final delineation samples, that also act to document quality of the remaining soil, are NYSDOH ELAP certified for the analytical methods. Final delineation sampling, including side-wall sampling (as applicable), has been performed in accordance with DER-10 sample frequency requirements and have been collected a minimum of every 30 linear feet of side wall.

A DUSR will be prepared to evaluate the PDI data by a party independent from the laboratory performing the analysis and the project team in accordance with DER-10 Chapter 2 and Appendix 2B of DER-10. The QAPP, included as **Appendix F** to this RAWP, describes the DUSR to be prepared for the project. As discussed in Section 6.4 of the QAPP, James Hauri of Roux MA, who is independent from the project team, will be the Data Validator and will review the analytical data for quality assurance and quality control in accordance with NYSDEC standards. A Data Usability Summary Report (DUSR) will be prepared meeting the requirements in Section 2.2(a)1.ii and Appendix 2B of DER-10 for all data packages generated for the remedial action.

4.2.9 Reporting PDI Sampling Data in RAWP Report and FER

This revised RAWP documents the PDI and ISS bench testing sampling data, the actions completed to obtain the data, and the proposed final remedial excavations and ISS area extents. The RAWP includes a tabular and map summary of all PDI sample results and exceedances of SCOs, which will also be included in the FER.

All laboratory data are reported in NYSDEC ASP Category B deliverables and will be delivered to NYSDEC in EDD format as described on NYSDEC's website (http://www.dec.ny.gov/chemical/62440.html). Additionally, electronic data deliverables of all validated laboratory data will be electronically submitted to the NYSDEC maintained state database.

4.3 Estimated Material Removal Quantities

Based on the current extents of excavation and ISS areas on the Site and the plan to raise current grades to a minimum of two feet above the 100-year floodplain, excavation to facilitate ISS activities and ensure that the ISS monolith is four or more feet below final grades at the Site will likely not be needed or will be limited to approximately 2-feet below current Site grades in limited ISS areas. Excavation greater that 2-feet may be conducted in limited areas to accommodate final grades and maintain at least 4-feet of cover above the ISS monolith.

Based on this, the estimated quantity of material expected to be disposed off-Site will be between zero and 5,000 cubic yards.

4.4 In-Situ Stabilization/Solidification

As discussed, ISS is the primary remedy to be implemented at the Site. ISS is the remediation processes by which contaminants in soil or other media are rendered less mobile, less soluble, chemically inactive, and less toxic by the addition of properly selected and mixed additives and/or reagents. The ISS reagents are mixed into the impacted soil using conventional excavation equipment or specialized drill augers, rakes or rotating mixing tools that inject the reagents while simultaneously mixing the soil.

4.4.1 ISS Performance Criteria

The criteria by which the treated, or solidified, soil will be evaluated (the Performance Criteria) is outlined in the NYSDEC In-Situ Solidification QA/QC document, provided as **Appendix G,** and summarized in the ISS Performance Criteria table below. Mixing uniformity of solidified soil will be evaluated based on visual observations of the mixed materials and confirmation that no free NAPL remains within the mixed materials. The tests and observations criteria is targeted to be met by samples that have been cured for 28 days, however, samples achieving criteria listed below prior to or after 28 days curing will also be deemed acceptable. Once a specific performance criterion (e.g., UCS or hydraulic conductivity) has been met by a

specific time interval from a particular sample, no additional analysis for that specific performance criterion will be performed for subsequent time intervals from that sample set.

ISS Performance Criteria

Test	USEPA/ASTM Test Method	Frequency (Mixed Soil Cylinder)	Frequency (In-Situ Core)	Required Result
Unconfined compressive strength (UCS)	ASTM D1633	1 per 500 CY	--	≥50 psi (1)
Hydraulic Conductivity (HC)	D5084	1 per 500 CY	--	≤1 x 10^{-6} cm/sec (2)
Free Liquids	Visual Inspection	1 per 500 CY	1 per 5,000 sq. ft. of ISS Treatment Area	No Visible NAPL in mixed soils
Mixing Uniformity(1)	--	1 per 500 CY	1 per 5,000 sq. ft. of ISS Treatment Area	Material thoroughly and uniformly mixed vertically and horizontally within each ISS Cell. Unmixed soil shall not exceed three inches in any dimension. (3)
Mixing Depth (4)	--	--	1 per 5,000 sq. ft. of ISS Treatment Area	To bedrock, at depths ranging from 11 to 16 ft bgs (+/- 0.5 ft.)
Recovery (5)	Visual Inspection	--	1 per 5,000 sq. ft. of ISS Treatment Area	Recovery > 60%

1. psi = pounds per square inch
2. cm/sec = centimeters per second
3. Based on visual inspection performed by the Engineer/Consultant and NYSDEC. Unmixed soil shall not exceed three inches in any dimension.
4. Mixing Depth shall be measured using equipment readouts on the mixing equipment. Approximate depth to bedrock presenting on Drawings but shall be verified in the field using methods proposed by the Contractor.
5. If less than 60% of the core material is recovered from any of the coring runs, one new core hole must be drilled adjacent to the previous location. If the recovery from the adjacent core hole continues to be less than 60%, the contractor may abandon the location.

4.4.2 ISS Bench Testing

As discussed above, to determine the ISS mix that will meet the Performance Criteria, Roux and its ISS subcontractor, Geo-Solutions Inc. (GSI), implemented a bench test. Implemented bench testing program consisted of collecting representative soil samples from across the Site to capture the range of soil conditions at the Site. The sample locations were selected to contain the most challenging conditions (regarding presence of NAPL and/or organic content), the most favorable conditions (low visible impacts and low organic content), and an average condition (represented mix of both non-favorable and favorable conditions). Sample locations are shown on **Figure 6**, and samples were composited from surface grade to bedrock at each sample location. These are simply referred to as “clean”, “medium” and “dirty”, for ease of reference herein.

These soil samples were then sent to GSI who prepared the sample with various reagent mixtures and performed the UCS and permeability analysis at specified curing intervals to help determine what mix design would achieves the Performance Criteria detailed above.

The bench test originally included three mix ratios, which were applied to each of the three Site soils for a total of nine samples, then a fourth mixture was also tested against only the soil collected from the area of the Site expected to represent least favorable NAPL conditions. The amendments consisted of varying ratios (by weight) of Portland cement (PC), ground, granulated blast furnace slag (GGBLS or Slag), and water (shown as the percentage [%] of weight compared to the total weight of the dry admixture components), as shown in the table below. Additionally, each of the untreated, composited soil samples were analysed for sieve analysis, permeability, moisture content, and specific gravity.

Bench Test Mix Ratios Tested

Mix ID	Portland Cement (%)	Slag (%)	Water: Cement Ratio
1	6.00%	2.00%	1:1
2	6.00%	4.00%	1:1
3	1.50%	6.75%	1:1
4	3.00%	6.00%	1:1

4.4.2.1 ISS Bench Test Performance Analysis

Test cylinders were prepared from each of the admixture batches and tested at timed intervals to evaluate the performance of each cured soil/reagent mixture relative to the applicable Performance Criteria. Samples were analyzed at 7, 14 and 28 days for UCS and at 14 and 28 days for hydraulic conductivity (HC).

A summary of the **Bench Test Results** is provided in the table below.

Mix ID	Soil Sample Type	PC Dosage	Slag Dosage	Water: Cement Ratio	Unconfined Compressive Strength (ASTM D2166)			Hydraulic Conductivity (ASTM D5084)	
					psi			cm/sec	
		%	%		7 days	14 days	28 days	14 days	28 days
		CRITERIA			> 50 psi at 28-days of cure			< 1E-06 cm/sec at 28-days of cure	
1	Clean	6.00	2.00	1:1	68.71	65.32	82.52	9.7E-08	1.70E-07
2	Clean	6.00	4.00	1:1	81.33	116.73	117.17	3.3E-07	1.70E-07
3	Clean	1.50	6.75	1:1	30.36	38.38	95.59	9.1E-10	7.40E-09
1	Medium	6.00	2.00	1:1	46.15	62.59	67.19	4.1E-09	9.00E-08
2	Medium	6.00	4.00	1:1	55.72	71.67	117.76	2.7E-07	1.40E-07
3	Medium	1.50	6.75	1:1	9.57	33.48	43.35	6.1E-07	4.50E-07
1	Dirty	6.00	2.00	1:1	17.51	22.38	27.54	6.1E-07	2.30E-07
2	Dirty	6.00	4.00	1:1	25.48	33.60	75.03	7.9E-07	7.00E-07
3	Dirty	1.50	6.75	1:1	9.57	17.73	27.69	4.8E-07	1.30E-06
4	Dirty	3.00	6.00	1:1	--	48.00	148.41	2.7E-09	8.60E-07

The baseline, unmixed soil samples HC ranged from 1.60E-07 to 3.60E-07, which already meets the HC Performance Criteria (less than 1.0E-06 cm/sec). Therefore, as would be expected, all bench test samples met the HC Performance Criteria. UCS was therefore the focus of subsequent analysis.

Overall, each mix design performed best under the least impacted "clean" soil conditions, with UCS values decreasing as soil impacts increased. The most conservative ISS mix design would meet, or demonstrate that it was on track to meet, the Performance Criteria in the most impacted "dirty" soil samples before the 28-day cure date. Mix #2 exceeded the minimum UCS criterion after 28 days of curing and was therefore considered adequate for treating Site soils at the 28-day mark. Roux and GSI subsequently evaluated a fourth mix consisting of 3.00% PC and 6.00% Slag using the "dirty" soil sample. Mix #4 nearly achieved the target UCS at 14 days and exceeded the target by nearly a factor of three at 28 days. Accordingly, Mix #4 (3% PC and 6% Slag) was selected for full-scale ISS implementation.

4.4.3 ISS Preparation

Once the RAWP is approved, work will begin on-Site to prepare for ISS. Details on ISS preparation are discussed in the following sections.

4.4.3.1 Utility Locate and Protection

UDIG NY will be notified at least 3 business days prior to beginning land disturbing activities to identify and mark out subsurface utilities entering the Site. Subsurface and above grade utilities to remain in place will be clearly identified and protected from damage during Site work.

4.4.3.2 Work Zones

Details regarding Site Work zones (support zone, exclusion zone, and contamination reduction zone) will be established for ISS and related activities as described in the Site HASP (**Appendix H**).

4.4.3.3 Pre-Clearing

Given the known Site history which includes several former Vacuum Oil buildings and infrastructure, and obstructions encountered during previous soil borings, test pitting, and subsurface explorations, it is expected that subsurface objects/structures, such as foundation slabs, decommissioned or defunct piping, and other debris from historical operations at the property exist in subsurface within target ISS treatment areas. The areas where subsurface entities are known or anticipated will be pre-cleared by Roux to remove or mitigate these objects, wherever practicable by excavation and/or pulling with an excavator. If the object cannot be removed, mitigation may include abandonment in place (for piping, this may include vacuum removal of any pipe contents and fill with a flowable fill, and for structures this may include breaking the structure into smaller pieces to allow its removal or full encapsulation within the ISS monolith. The locations, quantities, and characteristics of each object removed or mitigated during the subsurface pre-clearing will be documented and presented in the Final Engineering Report. Details regarding the on-Site management and off-Site disposal of materials removed from the subsurface are discussed below.

Soil disturbed during the pre-clearing will be roughly re-graded immediately after the removal effort is completed. If an object or structure cannot be removed, and if there is no indication of a contamination source present, an attempt will be made to reduce the size of the object/structure to aid in its removal, or

otherwise will be handled as an obstruction, as further detailed in **Section 4.4.5.1**. At Roux's discretion, Roux may elect to perform additional pre-clearing in areas not containing known or suspected subsurface objects or structures.

4.4.4 ISS Mobilization

Concurrently with the pre-clearing activities, the ISS contractor will mobilize equipment, materials, and personnel to the Site.

As the temporary Site controls and other required infrastructure will be established at the Site by Roux ahead of pre-clearing activities, the primary mobilization activity will be delivering and assembling the ISS equipment at the Site, including an ISS grout mixing (or "batch") plant. The batch plant will consist of mix tanks, water tanks, reagent storage silos, piping and hoses, metering equipment, pumps and other equipment or materials.

The ISS reagents will be delivered to the Site via pneumatic bulk tankers or bulk bags and transferred to the storage vessels using dust-reducing equipment (e.g., dust filter bags or other suitable equipment) on the exhaust piping outlet of the storage vessel. Dust control methods (e.g., misting) will also be employed, as needed, to mitigate airborne particulates during material transfer and processing.

4.4.5 ISS Construction

The ISS contractor will be responsible for selecting the mixing equipment to achieve the Performance Criteria, and it is anticipated that contractor will elect to use excavators to implement ISS via bucket mixing.

The ISS treatment areas will be subdivided into ISS cells to ensure full coverage of the ISS area, and each cell will be assigned an identification number. Each cell will be located, and the four corners of the cell will be staked, then ISS mixing will proceed using the following process:

1. In the center of the cell, the contractor will excavate a small "sump", approximately one-bucket-width wide, to allow for the delivery of grout from the batch plant. The excavated soils will be stockpiled within the cell, to be mixed during a subsequent step.
2. Grout will be pumped from the batch plant to the "sump" in the cell. The excavator bucket will extend through the grout in the sump to pull deeper soils up to be mixed with the grout.
3. The mixing will continue vertically and laterally as the cell sidewalls are extended to the limits of the established cell dimension. This process will continue until the sidewall soil is blended with the reagent to the outer limits of the cell. All grout required for that cell will be added as this step is completed with the first mixing pass.
4. Final blending will continue until the cell is homogeneous by observation.
5. Preliminary depths will be determined through the observation of fabricated graduated markings on the excavator's boom and stick assembly once refusal at bedrock is encountered. Once the excavation is complete, final depth will be measured and documented by the contractor using survey equipment.
    a. The bottom elevation will be verified across the cell before the excavator moves to begin mixing of the next cell.
    b. The cells will be laid out to include approximately 1-foot of overlap between adjacent cells.

For each mix cell, the following details will be documented:

- Cell identification number;
- Cell dimensions, depth, and volume;
- Elevation of ground surface before and after solidification and elevation of Bottom of ISS mixing;
- Date and duration of mixing, including start and end time;
- Mix ratio;
- Supplemental water or reagent added and reason;
- Grout density test results;
- Reagent delivery information (density and flow rate); and
- Description of depths of obstructions or hard drilling or refusal encountered.

4.4.5.1 ISS Obstructions

If foreign material/debris including, but not limited to, concrete debris, remnant piping in fill, unknown subsurface structures, historic building foundation elements or abandoned utilities are encountered during ISS operations, the ISS operator will stop mixing at that location until the nature of the material/debris is known or it is removed. An attempt will be made by the ISS contractor to excavate and remove the material. Removal efforts will be performed until the material/debris is removed, but in no case will a removal attempt be abandoned after less than 60 minutes from the time when the removal process begins with the removal equipment. If an obstruction cannot be removed an attempt to penetrate it with the ISS equipment will be made by the ISS contractor for no less than 30 minutes. If an obstruction is too large for satisfactory progress to be made within 30 minutes and is located at a distance of at least one-time the diameter of the ISS bucket width from the lateral limits of the ISS area, a determination if the obstruction can be left in place will be made by Roux. Additional removal attempts will be made by Roux, if deemed appropriate. If an obstruction that cannot be removed or penetrated is present at the outer edge of the ISS areas, which are not site boundaries, additional cells will be added to surround the obstruction, as directed by Roux.

The material/debris unable to be removed will be deemed an obstruction and known details on the location, size, depth and dimensions will be documented and provided in the FER. NYSDEC will be notified of any obstructions that cannot be removed in the daily report.

4.4.5.2 ISS Quality Control

This section details the ISS QA/QC procedures and requirements that will be implemented during the ISS construction.

4.4.5.2.1 Wet Samples - Cylinders

Samples of the ISS material will be collected to ensure the ISS performance requirements for strength and permeability have been met in accordance with NYSDEC ISS QA/QC Guidance provided in **Appendix G** and summarized in the **ISS Performance Criteria** table presented in **Section 4.4.1** above. Samples for performance testing will be collected from the freshly mixed ISS material. Samples of the fresh (wet) ISS material will be collected using contractor provided sampling equipment advanced to pre-determined depths. The wet samples will be collected at a frequency of one per every 500 cubic yards of ISS material, as identified on the **ISS Performance Criteria** table**.** Sample collection depths shall be randomly varied between shallow, intermediate, and deeper intervals of the mix cells to obtain adequate distribution and

representativeness of sampling. At a minimum, 10 percent of the samples will be collected from the bottom 5 feet of cells sampled and at least 10 percent of the samples will be collected from the edges of the sampled cells at the cell overlaps.

Wet samples of ISS material will be collected using an electronic, hydraulic, or mechanical sampler capable of reaching the full depth of each cell to be sampled. The sampler shall be capable of collecting wet samples from precise, discrete intervals of no more than two vertical feet and shall be able to indicate the specific depth of each wet sample collected. Each sample will be run through a 3/8-inch wire mesh screen and prepared into 3"x 6" specimen cylinders for UCS and 2"x4" specimen cylinders for hydraulic conductivity. Samples of the mixed soil will be properly stored on-Site prior to being transferred to the analytical laboratory for testing. The performance testing samples will be analysed in accordance with the approved testing methods: ASTM D5084 for hydraulic conductivity, ASTM D1633 for UCS. ISS material performance testing samples will be collected for testing at various cure times including, but not necessarily limited to 7, 14, and 28 days.

Results of the ISS material performance testing samples collected by the ISS contractor or Roux will be provided to NYSDEC in daily reports as they become available. Once a specific performance criterion (e.g., UCS or hydraulic conductivity) has been met by a specific time interval from a particular sample, no additional analysis for that specific performance criterion will be performed for subsequent time intervals from that sample set. Additional samples may be collected at the request of NYSDEC in areas where obstructions could not be removed.

4.4.5.2.1.1 Sampling Storage and Handling Requirements

All treated or mixed soil samples collected will be properly preserved according to laboratory requirements, placed in appropriate containers, and transported under chain of custody to an accredited laboratory. Samples will be cured on-site for three days in a cooler with at least 2 inches of water in the bottom (to maintain humid condition) at ambient temperature of 60 degrees Fahrenheit ± 10 degrees. Samples will be maintained on-Site in a neat and orderly fashion in damp and unfrozen conditions.

4.4.5.2.2 ISS Coring

To confirm thorough mixing of the ISS material and that the required depths of ISS mixing are achieved, the partially solidified mass will be cored using a rock core to collect core samples of the ISS material at a frequency of one core per every 5,000 square feet of treated soil. Accordingly, a total of 10 cores will be collected from the ISS cells. Core locations will be selected with consideration for site logistics and construction sequence. Core borehole locations shall be biased towards areas with the greatest soil contamination and/or locations where difficulties in the ISS process were encountered and/or where obstructions were left in place.

Following completion of each coring location, the borings will be filled with grout using tremie methods. Core samples and related equipment will be visually inspected for the following criteria, and the results recorded:

- Visible NAPL;
- Uniformity of the mix vertically and horizontally within each cell;
- Non-mechanical induced cracking within the core; and
- Percent of core sample recovered.

In addition, indirect indications of unmixed NAPL will be recorded, such as:

- NAPL coating on drilling tools; and
- NAPL in drill wash tub if water-based drilling methods are employed.

All performance testing results will be provided to the NYSDEC prior to final acceptance of any completed ISS areas.

4.4.5.3 ISS Sampling Documentation

Documentation of the ISS QA/QC activities shall be included in the FER.

- Figure depicting boring locations;
- Photographs of each core boring referenced;
- Type of drilling method used;
- Field coring logs; and
- ISS performance testing results (e.g., UCS and hydraulic conductivity tests).

4.4.5.4 ISS Performance Evaluation

The following conditions will be documented during ISS implementation:

- Core recovery of less than 60%;
- A continuous layer or seam of NAPL is noted within the core;
- NAPL coating is visible on drilling tools;
- Visible NAPL is noted in the drill wash tub, if used;
- Unconfined compressive strength below 50 psi;
- Hydraulic conductivity greater than 1 x 10-6 cm/sec;
- Large sections (as determined by Roux) of unmixed material.

Per the NYSDEC ISS QA/QC guidance, if one or more of the above conditions are noted, the NYSDEC will be notified to discuss the severity of the problem, the degree of concern, and whether any corrective action will be necessary. Additional assessment may be required at the direction of Roux. Corrective action will be implemented as required by Roux, in collaboration with NYSDEC. All final performance testing results will be provided to NYSDEC for review and approval.

4.5 Soil/Materials Management Plan

The following sections provide the SoMP to be implemented during the Remedial Action.

4.5.1 Soil and Subsurface Material Screening Methods

Field screening (visual, olfactory, and PID soil screening) and assessment will be performed by a qualified environmental professional [defined 375-1.2(ak)] or experienced field geologist/scientist under the direction of the Remedial Engineer during all remedial excavations. Soil other subsurface material screening will be performed during all ground intrusive field work completed at the Site – prior and post-Certificate of Completion issuance including but not limited to excavations for remedy implementation.

All primary contaminant sources (including but not limited to tanks and hotspots) identified during the Remedial Action will be surveyed by a surveyor licensed to practice in the State of New York. This information will be provided on maps in the FER.

Field screening will be performed by a qualified environmental professional or experienced field geologist/scientist under the direction of the Remedial Engineer. Resumes/Professional Profiles will be provided for all personnel responsible for field screening (i.e., those representing the Remedial Engineer and are direct reports to the Remedial Engineer) of ground intrusive work during all remediation work.

4.5.2 Building Foundation Demolition and Management of Concrete Materials

As discussed in the ISMP for the Site (conditionally approved by NYSDEC in a letter dated October 21, 2025), the accepted building demolition under the ISMP did not include the removal of the existing building foundation. Instead, the building foundation removal is planned to be completed during Site-wide remedial activities under this RAWP. As discussed in **Section 4.4.3.3**, preclearing of concrete subsurface objects/structures is planned to be conducted prior to ISS activities. On-Site management and/or off-Site disposal of concrete building foundation and other subsurface concrete materials are discussed below.

4.5.2.1 Field Screening and Segregation of Potentially Impacted Building Foundation and Excavated Concrete Materials

As discussed, GCM in the form of measurable LNAPL has been observed in monitoring well MW-03, which is located within the building foundation footprint. As a result, building foundation material has the potential to have staining or other impacts with petroleum, or other hazardous materials. In addition, as discussed in **Section 4.4.3.3**, known and suspected subsurface concrete objects (e.g. foundation slabs and other concrete debris) will be pre-cleared by Roux to remove, wherever practicable by excavation and/or pulling with an excavator.

Building foundation and excavated subsurface concrete materials will be segregated (as needed) based on visual, olfactory and PID screening during their removal. If any material is identified as being stained with petroleum or other potentially hazardous substances, having an odor indicative of petroleum or potentially hazardous materials impact or having a PID reading above 5 ppm, that material will be segregated from non-impacted material. Segregation of materials based on field screening will be noted in the daily report.

Planned off-Site disposal and potential on-Site re-use of concrete materials in areas of ISS are discussed below.

4.5.2.2 Processing of Building Foundation and Excavated Concrete Materials

In addition to the segregation of potentially impacted material discussed in **Section 4.5.2.1** above, concrete building foundation and excavated concrete materials will be processed as needed for off-Site disposal or potential on-Site re-use. Specifically, both impacted and non-impacted concrete material which is being set off-Site for disposal will be sized to 2x2' foot or less and any rebar removed or cut flush per disposal facility requirements. Impacted concrete which is determined acceptable and approved to be re-used on-Site within area of ISS will be sized to 1x1' foot or less and any rebar removed per ISS contractor requirements. Details regarding potential concrete material re-use on-Site are discussed in **Section 4.5.7** below.

Material processing will be conducted utilizing excavators (or similar equipment) with impact hammer and pulverizer processor attachments. Removed metal rebar material will be cut to size (as needed) to facilitate stockpiling and loading and stockpiled on-Site until a sufficient quantity has been generated to load for off-Site transport and recycling.

4.5.3 Stockpile Methods

Stockpiles, if any, will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC. Judgement will be used to evaluate water infiltration, nearby waterbodies where runoff is likely to occur, and engineering controls that may be affected by storm events.

Stockpiles, if any, will always be kept covered with appropriately anchored tarps. Stockpiles will be routinely inspected, and damaged tarp covers will be promptly replaced.

Soil stockpiles, if any, will be continuously encircled with silt fences or straw bales/socks. Straw bales will be used as needed near catch basins and other discharge points.

Water will be available on-Site at suitable supply and pressure for use in dust control.

4.5.4 Materials Excavation and Load Out

A qualified environmental professional as defined in 6 NYCRR Part 375, a PE (Remedial Engineer) who is licensed and registered in New York State, or a qualified person who directly reports to a PE (Remedial Engineer) who is licensed and registered in New York State will oversee all invasive work and the excavation and load-out of all excavated material.

5 Flint and its contractors are solely responsible for safe execution of all invasive and other work performed under this Plan.

The presence of utilities and easements on the Site has been investigated by the Remedial Engineer. Additional info on the presence of known and suspected Site related utilities is included in **Section 5.3.5**.

Loaded vehicles leaving the Site will be appropriately lined, tarped, securely covered, manifested, and placarded in accordance with appropriate Federal, State, local, and NYSDOT requirements (and all other applicable transportation requirements). Trucks transporting contaminated soil/fill material must have either tight-fitting opaque covers that are secured on the sides and/or back or opaque covers that are locked on all sides.

Vehicles leaving the Site will not be overloaded. The qualified environmental professional, the Remedial Engineer or a qualified individual that is a direct report to the Remedial Engineer will make reasonable efforts to ensure that vehicles are not loaded beyond their NYSDOT weight rating and that all material is secured beneath the truck bed cover.

A truck wash will be operated on-Site (or on an adjacent site as approved by DEC). The Remedial Engineer, the qualified environmental profession, or a qualified individual that this a direct report to the Remedial Engineer will be responsible for ensuring that all outbound trucks are clean of soil/fill material or other materials derived from the site.

Locations where vehicles enter or exit the Site shall be inspected daily for evidence of off-Site soil/fill material tracking.

The Remedial Engineer, qualified environmental professional, or a qualified individual that is a direct report to the Remedial Engineer will be responsible for ensuring that all egress points for truck and equipment transport from the Site will be clean of dirt and other Site materials derived from the Site during ground intrusive activities, Site remediation and development. Cleaning of the adjacent streets will be performed as needed to maintain a clean condition with respect to Site–derived materials. Material accumulated from the street cleaning and egress cleaning activities will be disposed off-site at a permitted landfill facility in accordance with all applicable local, State, and Federal regulations.

5 Flint and associated parties preparing the remedial documents submitted to the State, and parties performing this work, are completely responsible for the safe performance of all invasive work, the structural integrity of excavations, and for structures that may be affected by excavations (such as adjacent building foundations). All excavation activities will be in accordance with 29 CFR 1926 Subpart P.

The Remedial Engineer will ensure that Site development activities will not interfere with, or otherwise impair or compromise, remedial activities proposed in this RAWP.

Each targeted excavation area and structures to be remediated (USTs, vaults and associated piping, etc., if identified during remedial activities) will be removed and Confirmation sampling will be used to provide evidence that the Site's soil cleanup objectives were obtained where feasible, or Documentation sampling will be conducted in areas where Site boundaries, utilities or other obstructions prevent further excavation, to document the level of contamination remaining.

Development-related grading cuts and fills will not be performed without NYSDEC approval and will not interfere with, or otherwise impair or compromise, the performance of remediation required by this plan.

Mechanical processing of historical fill and contaminated soil on-Site is prohibited, without approval of NYSDEC. Mechanical processing of clean concrete may be implemented with approval of NYSDEC.

All primary contaminant sources (including but not limited to tanks and targeted excavation areas, if any) identified during Site Characterization, Remedial Investigation, and Remedial Action will be surveyed by a surveyor licensed to practice in the State of New York. The survey information will be shown on maps to be reported in the FER.

4.5.5 Materials Transport Off-Site

All transport of materials will be performed by licensed haulers in accordance with appropriate local, State, and Federal regulations, including 6 NYCRR Part 364. Haulers will be appropriately licensed and trucks properly placarded.

Truck transport routes are as described in **Section 5.2.6**. All trucks loaded with Site materials will exit the vicinity of the Site using only these approved truck routes.

Proposed in-bound and out-bound truck routes to the Site are shown in **Figure 10**. These are the most appropriate routes and consider: (a) limiting transport through residential areas and past sensitive sites; (b) use of city mapped truck routes; (c) prohibiting off-Site queuing of trucks entering the facility; (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project Site.

Egress points for truck and equipment transport from the Site will be kept clean of dirt and other materials during Site remediation.

Queuing of trucks will be performed on-Site (or adjacent Sites as approved by the DEC) in order to minimize off-Site disturbance. Off-Site queuing on roadways will be prohibited.

Material transported by trucks exiting the Site will be secured with either tight-fitting opaque covers that are secured on the sides and/or back, or opaque covers that are locked on all sides. Loose fitting canvas-type truck covers will be prohibited. If loads contain wet material capable of producing free liquid, truck liners will be used.

All trucks will be washed prior to leaving the Site (or on an adjacent site as approved by DEC). Washing of trucks prior to exiting the Site/adjacent site is discussed in **Section 4.5.4** above.

4.5.6 Materials Disposal Off-Site

Excavated soils, if any, will be disposed of at Waste Management's Mill Seat Landfill located at 303 Brew Rd, Bergen, NY 14416 or Waste Management's High Acres Landfill 425 Perinton Pkwy, Fairport, NY 14450.

Non-impacted concrete materials will be disposed of at Waste Management's Mill Seat Landfill located at 303 Brew Rd, Bergen, NY 14416 or Waste Management's High Acres Landfill 425 Perinton Pkwy, Fairport, NY 14450.

Impacted concrete materials, not re-used on-Site, will be disposed of at Waste Management's Mill Seat Landfill located at 303 Brew Rd, Bergen, NY 14416 or Waste Management's High Acres Landfill 425 Perinton Pkwy, Fairport, NY 14450.

Clean metal rebar, piping or scrap will be recycled at Metalico located at 1515 Scottsville Road, Rochester, NY.

If encountered, disposal locations for other materials identified during ISS preclearing or other excavation will be determined and will be reported to the NYSDEC Project Manager prior to disposal.

All soil/fill/solid waste excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed off-Site in a permitted facility in accordance with all local, State (including 6NYCRR Part 360) and Federal regulations. If disposal of soil/fill from this Site is proposed for unregulated disposal (i.e. clean soil removed for development purposes), a formal request with an associated plan will be made to NYSDEC's Project Manager. Unregulated off-Site management of materials from this Site will not occur without prior formal NYSDEC project manager approval.

Material including historical fill material and contaminated soils that does not meet unrestricted SCOs is prohibited from being taken to a New York State C&D recycling facility (6NYCRR Part 360.15 registered or permitted facility).

The following documentation will be obtained and reported by the Remedial Engineer for each disposal location used in this project to fully demonstrate and document that the disposal of material derived from the Site conforms with all applicable laws: (1) a waste profile from the Remedial Engineer or BCP Applicant to the receiving facility describing the material to be disposed and requesting formal written acceptance of the material. This profile will state that material to be disposed is contaminated material generated at an environmental remediation Site in New York State. The profile will provide the project identity and the name and phone number of the Remedial Engineer. The profile will include as an attachment a summary of all chemical data for the material being transported (including Site Characterization data); and (2) a letter from all receiving facilities stating it is in receipt of the correspondence (above) and is approved to accept the material. These documents along with but not limited to all manifests, weigh tickets, etc. will be included in the FER.

A contained-in determination from NYSDEC may allow soil/fill material to be disposed off-site at a permitted landfill facility as non- hazardous waste. A contained-in determination will need to be obtained from the NYSDEC. Contained-in determination requests must be sent to the NYSDEC Division of Materials Management (DMM) dedicated mailbox, Contained-InRequest@dec.ny.gov, with a copy to Division of Environmental Remediation (DER) project manager and their supervisor.

Non-hazardous historic fill and contaminated soils taken off-Site will be handled per with 6 NYCRR Parts 360, 361, 362, 363, 364, and 365. The Remedial Engineer is responsible for assuring that site related material is properly characterized and is disposed off-site at a permitted facility based on the characterization results and in accordance with all applicable local, State, and Federal regulations.

All soil/fill material excavated and removed from the Site will be treated as contaminated and regulated material and will be transported and disposed off-site in a permitted facility in accordance with all local, State and Federal regulations. If disposal of material from the Site is proposed for unregulated off-site disposal (i.e., clean soil removed for development purposes), a formal request with an associated plan will be made to the NYSDEC project manager. Unregulated off-site management of materials from this Site will not occur without prior formal (written) NYSDEC project manager approval.

Off-site disposal locations for excavated soils will be identified and provided to the NYSDEC project manager prior to the start of remedy implementation at the Site. This will include estimated quantities and a breakdown by class of disposal facility if appropriate, (e.g. hazardous waste disposal facility, solid waste landfill, petroleum treatment facility, C&D debris recovery facility). Actual disposal quantities and associated documentation will be reported in the FER. The documentation will include, but will not be limited to: waste profiles, test results, facility acceptance letters, manifests, bills of lading and facility receipts.

The FER will include an accounting of the destination of all Site material removed from the Site during this Remedial Action, including excavated soil, contaminated soil, historic fill, solid waste, hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all Site material must also include records/manifests/weight tickets and approvals for receipt of the material. This information will also be presented in a tabular form as well as an appendix in the FER.

Bill of Lading system or equivalent will be used for off-Site movement of non-hazardous wastes and contaminated soils. This information will be reported in and will be an appendix in the FER.

Hazardous wastes derived from on-Site will be stored, transported, and disposed of in full compliance with applicable local, State, and Federal regulations. A contained-in determination will be obtained from the NYSDEC.

Appropriately Part 364 licensed haulers will be used for Site soil/fill material removed/transported from this Site and will be in full compliance with all applicable local, State and Federal regulations.

Waste characterization sampling will be performed for the purposes of off-Site soil disposal at permitted facilities and in conformance with applicable federal, state and local laws rules and regulations and facility-specific permits. Sampling and analytical methods, sampling frequency, analytical results and QA/QC associated with waste characterization activities will be reported in the FER. All data available for soil/material to be disposed at a permitted facility must be submitted to the permitted disposal facility with suitable explanation prior to shipment and receipt. Waste characterization data will be used solely for complying with requirements for off-site disposal at a permitted facility. Waste Characterization sampling cannot be utilized for:

- Delineating the extent of contamination required for remediation at a Site.
- Replacing or substituting data collected as part of Site Characterization and/or Remedial Investigation.
- Replacing or substituting confirmation or documentation sampling as described in NYSDEC DER-10, Section 5.4.
- To modify remedial decisions as formalized in a NYSDEC approved Decision Document or Record of Decision.

4.5.7 Materials Reuse On-Site

On-site soil and fill material may be reused for backfill on the Site with prior approval obtained from the NYSDEC project manager prior to placement. Soil/fill material that exhibits impacts based on field screening must be staged separately from soil/fill material proposed to be reused on the Site. On-site soil/fill material proposed to be reused on the Site will be sampled to ensure that the soil/fill material meets the Site's SCOs as presented in **Table 3**.

As feasible, impacted concrete building foundation or excavated concrete materials are proposed to be incorporated into the ISS mixed soils to be encapsulated in place within the Proposed ISS areas. Concrete materials which are approved for this use would be first processed as described in **Section 4.5.2.2.** Processed concrete material would be incorporated evenly throughout the ISS areas and not concentrated into any single area. The maximum volume of the concrete which would be considered for incorporation will be determined by the Remedial Engineer in consultation with the ISS contractor. Final concrete volumes will be provided and approval obtained from the NYSDEC project manager prior to incorporation.

The Remedial Engineer will ensure that procedures defined for materials reuse in this RAWP are followed and that unacceptable material will not remain on-Site.

A "Request to Import/Reuse Fill Material" form will be submitted to the NYSDEC project manager for review and approval prior to material reuse/placement on the Site. A copy of the form is presented in **Appendix I**.

Any demolition material proposed for reuse on-Site, will be sampled for asbestos and the results will be reported to the NYSDEC project manager for approval prior to reuse at the Site.

Concrete crushing or processing on-Site is prohibited, without NYSDEC project manager approval. On-Site reuse of demolition material will require NYSDEC project manager approval prior to reuse at the Site.

Organic matter (e.g. wood, roots, stumps) or other solid waste derived from clearing and grubbing of the Site is prohibited for reuse on-Site and may only be reused on-site with written prior approval from the NYSDEC project manager. Contaminated on-site material, including historic fill and contaminated soil, that is acceptable for reuse on-site will be placed below the demarcation layer or impervious surface with NYSDEC project manager approval, and will not be reused within the cover system or within landscaping berms.

Contaminated on-Site material may only be used beneath the Site's cover soil layer or as backfill for subsurface utility lines with prior approval from the NYSDEC project manager.

4.5.7.1 Reuse of Crushed Concrete Building Materials

As discussed, an ISMP was conditionally approved by NYSDEC to address activities related to the demolition of the abandoned three-story block and brick building on the northeast end of the Site. Following demolition of the building in December 2025, demolition debris (i.e., hardfill including cast in-place concrete, concrete block and brick) were processed to reduce the material size to 2-inch minus and stockpiled on-Site.

The crushed hardfill material was sampled for laboratory analysis in accordance with a February 23, 2026 Case-Specific Beneficial Use Determination (BUD) Request, conditionally approved by NYSDEC in a letter to 5 Flint, dated March 12, 2026. Material sampling results were provided to NYSDEC on April 3, 2026 and additional sampling of the BUD material for TCL SVOCs via EPA Method 8270, following Synthetic Precipitation Leaching Procedure (SPLP) extraction, was conducted as proposed in a NYSDEC letter dated April 13, 2026. SPLP results were provided to NYSDEC on April 28, 2026. In response, NYSDEC provided conditional approval for reuse of the BUD material on the Site and adjacent BCP sites C828190 and C828162C in a letter dated May 13, 2026. The conditional approval letter included the following conditions:

1. The BUD material located in sub-piles four and five is approved for use in excavations below the site cover system, which must meet the requirements of 6 NYCRR Part 375. Material from sub-piles four and five can be used in this way at BCP Sites C828190, C828162B, and/or C828162C.
2. The remaining material is approved for use above the top of groundwater, as measured during past groundwater gauging events, and below the site cover system. This material must only be utilized at sites with existing Naphthalene contamination of groundwater (only at BCP site #C828190).

Based on this conditional approval, a Request to Import/Reuse Fill Material form was submitted to NYSDEC on May 18, 2026 to import the BUD material to BCP Site C828190 for use as outlined in the above conditions. NYSDEC conditionally approved the request to import to BCP Site C828190 in an email dated May 22, 2026. Subsequent to this conditional approval, all BUD material was imported to BCP Site C828190 and no BUD material is remaining at the Site.

4.5.8 Fluids Management

All liquids to be removed from the Site, including excavation dewatering, decontamination waters, and groundwater monitoring well purge and redevelopment waters, will be handled, transported, and disposed off-site at a permitted facility in accordance with applicable local, State, and Federal regulations. Site fluids

will be containerized, characterized, and disposed off-site. Dewatering, purge and development fluids will not be recharged back to the land surface or subsurface of the Site and will be managed off-site unless prior approval is obtained from the NYSDEC project manager. Site fluids may be discharged into the municipal sewer system through an approved Monroe County DES Discharge Permit. A copy of the permit approved Monroe County DES Discharge Permit is included in **Appendix J**. The NYSDEC project manager will receive notification of the discharge at least 24 hours in advance.

Discharge of water generated during large scale construction activities and remedial construction to surface waters (i.e. a local pond, stream, river and/or storm sewer) is prohibited without a NYSDEC issued SPDES permit.

4.5.9 Demarcation

After the completion of soil removal and any other invasive remedial activities and prior to backfilling, a land survey will be performed by a New York State licensed surveyor. The survey will define the top elevation of residual contaminated soils. A physical demarcation layer, consisting of orange snow fencing material or equivalent material will be placed on this surface to provide a visual reference. This demarcation layer will constitute the top of the remaining contamination. The SMP, in particular the EWP, for the Site will detail the procedures to be adhered to if the Site-wide cover system is breached or the Site-wide cover system is altered. The survey will measure the grade covered by the demarcation layer before the placement of cover soils, pavement and sub-soils, structures, or other materials. This survey and the demarcation layer placed on this grade surface will constitute the physical and written record of the upper surface of the remaining contamination in the SMP. A map showing the survey results will be included in the FER and the SMP.

4.5.10 Backfill from Off-Site Sources

All materials to be imported to the Site will be approved by the Remedial Engineer and NYSDEC project manager prior to importation to the Site.

Materials will be imported to the Site to be used to backfill excavation areas (as needed), raise the site grade to a minimum of two feet above the 100-year floodplain, and to establish the Site-wide cover system. Based on the currently planned extents and depths of excavation areas, final grade increases and Site-wide cover system up to approximately 5,000 yd^3 of fill material may be used to raise site grades and as needed, excavation backfill, and approximately 3,800 yd^3 of fill material and 1,200 yd^3 of top soil will be imported for use as site cover.

Material from industrial sites, spill sites, other environmental remediation sites or other potentially contaminated sites will not be imported to the Site. Solid waste will not be imported onto the Site.

The FER will include the following certification by the Remedial Engineer: “I certify that all import of soils from off-Site, including source evaluation, approval and sampling, has been performed in a manner that is consistent with the methodology defined in the Remedial Action Work Plan”.

All imported soils will meet NYSDEC approved backfill and cover soil quality standards established in 6 NYCRR 375-6.7(d) and DER-10 Appendix 5 for restricted residential (see **Table 3** of the RAWP)**.** Soils that meet ‘general’ fill requirements under 6 NYCRR Part 360.13, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC project manager. Soil material will be sampled for the full suite of analytical parameters, including PFAS and 1, 4-dioxane. Soil sampling frequency will be in accordance with DER-10 Table 5.4(e) unless prior approval for modification of sampling frequency is obtained from the NYSDEC project manager.

A “Request to Import/Reuse Fill Material” form with all the necessary supporting data (e.g., sieve analysis, laboratory analytical data) will be submitted to the NYSDEC project manager for review and approval prior to importation of any backfill to the Site. The NYSDEC project manager will be allowed a minimum of 5 business days for review. A copy of the form is presented in **Appendix I**.

Materials which have a NYSDEC approved Case-Specific BUD Request for use at the Site will be imported for the specific Site uses approved by the NYSDEC. A “Request to Import/Reuse Fill Material” form will be submitted to the NYSDEC project manager for review and approval prior to importation of approved BUD material.

Backfill material that may be used for this Site includes soil, gravel, or stone.

Trucks entering the site with imported soils will be securely covered with tight fitting covers. Imported soils will be stockpiled separately from excavated materials and covered to prevent dust releases.

4.5.11 Stormwater Pollution Prevention

As discussed in **Section 5.1.7**, an ESCP is included in **Appendix K** of this report. Erosion and sediment control measures will be installed and inspected once a week and after every storm event in accordance with the Site-specific ESCP. Results of inspections will be recorded in a logbook and maintained at the Site and available for inspection by NYSDEC project manager. All necessary repairs shall be made immediately. Accumulated sediments will be removed as required to keep the barrier and straw bale check functional. All undercutting or erosion of silt fence toe anchors shall be repaired immediately with appropriate backfill materials. Manufacturer's recommendations will be followed for the installation and replacement of silt fencing damaged due to weathering.

Erosion and sediment control measures identified in the RAWP/ESCP shall be observed to ensure that they are operating correctly. Where discharge locations or points are accessible, they shall be inspected to ascertain whether erosion control measures are effective in preventing significant impacts to receiving waters.

4.5.12 Excavation Contingency Plan

In the unlikely event underground tanks or other previously unidentified contaminant sources are found during on-Site remedial excavation sampling will be performed on product, sediment and surrounding soils, etc. in accordance with DER-10. The NYSDEC project manager will be promptly notified of the discovery. Chemical analytical work will be for full scan parameters (TAL metals; cyanide, TCL volatiles and semi-volatiles, TCL pesticides, PCBs, 1,4-dioxane, and PFAS). Analyses will not be otherwise limited without prior NYSDEC project manager approval. Discovery of unknown USTs will be handled in accordance with NYSDEC DER-10, Section 5.5 and will be closed in accordance with NYSDEC regulations and guidance.

Identification of unknown or unexpected contaminated media identified by field screening during invasive Site work will be promptly communicated by phone to NYSDEC’s Project Manager. Reportable quantities of petroleum product will also be reported to the NYSDEC spills hotline. These findings will be also included in daily and monthly progress reports and in the FER.

4.5.12.1 Extreme Storm Preparedness and Response Contingency Plan

Damage from flooding or storm surge can include dislocation of soil and stockpiled materials, dislocation of site structures and construction materials and equipment, and dislocation of support of excavation structures. Damage from wind during an extreme storm event can create unsafe or unstable structures, damage safety

structures and cause downed power lines creating dangerous site conditions and loss of power. In the event of emergency conditions caused by an extreme storm event, 5 Flint will undertake the following steps for site preparedness prior to the event and response after the event.

Storm Preparedness

Preparations in advance of an extreme storm event (e.g. hurricane, tropical storm or other high rain or wind event) will include the following: containerized hazardous materials will be disposed at a permitted landfill facility and fuels will be removed from the Site; loose materials will be secured to prevent dislocation and blowing by wind or water; heavy equipment such as excavators and generators will be removed from excavated areas, trenches and depressions on the Site to high ground or removed from the Site; an inventory of the Site with photographs will be performed to establish conditions for the site and equipment prior to the extreme storm event; stockpile covers for soil and fill will be secured by adding weights such as sandbags for added security and worn or ripped stockpile covers will be replaced with competent covers; stockpiled hazardous wastes will be disposed off-site at a permitted facility; stormwater management systems will be inspected and fortified, including, as necessary: clean and reposition silt fences, hay bales; clean storm sewer filters and traps; and secure and protect pumps and hosing.

Storm Response

At the conclusion of an extreme storm event, as soon as it is safe to access the Site, a complete inspection of the Site will be performed. A site inspection report will be submitted to NYSDEC at the completion of site inspection and after the site security is assessed. Site conditions will be compared to the inventory of site conditions and stockpiled material performed prior to the storm event and significant differences will be noted. Damage from storm conditions that result in acute public safety threats, such as downed power lines or imminent collapse of buildings, structures or equipment will be reported to public safety authorities via appropriate means such as calling 911.

Petroleum spills will be reported to NYSDEC Spills Hotline within 2 hours of identification and consistent with State regulations and guidance. Public safety structures, such as construction security fences will be repaired promptly to eliminate public safety threats. Debris will be collected and removed.

Dewatering will be performed in compliance with existing laws and regulations and consistent with emergency notifications, if any, from proper authorities. Eroded areas of soil including unsafe slopes will be stabilized and fortified. Dislocated materials will be collected and appropriately managed. Support of excavation structure will be inspected and fortified as necessary. Impacted stockpiles will be contained and damaged stockpile covers will be replaced. Stormwater control systems and structures will be inspected and maintained as necessary.

If soil and/or fill materials are discharged off site to adjacent properties, property owners and NYSDEC and NYSDOH project managers will be notified immediately, and corrective action work plan designed to remove and clean dislocated material will be submitted to NYSDEC and NYSDOH project managers. The corrective action work plan will be implemented following approval by NYSDEC and NYSDOH project managers. 5 Flint will be responsible for obtaining access from the impacted property owner. Impacted offsite areas will need to be addressed and characterized under the corrective action work plan.

If onsite petroleum spills are identified, a qualified environmental professional or the Remedial Engineer will determine the nature and extent of the spill (reportable quantities) and report to NYSDEC's spill hotline at (800) 457- 7362 within statutory defined timelines. If the source of the spill is ongoing and can be identified, it will be stopped if this can be done safely. Potential hazards will be addressed immediately, consistent with guidance issued by NYSDEC.

Storm Response Reporting

A site inspection report will be submitted to NYSDEC at the completion of site inspection.

Site conditions will be compared to the inventory of site conditions and stockpiled material performed prior to the storm event and significant differences will be noted. The site inspection report will be sent to the NYSDEC and NYSDOH project manager and will include the site name, address, tax block and lot, site primary and alternate contact name and phone number.

Damage and soil release assessment will include: whether the project had stockpiles; whether stockpiles were damaged; photographs of damage and corrective action work plan for repair; report of whether soil from the site was dislocated and whether any of the soil left the site; estimates of the volume of soil that left the site, nature of impact, and photographs; description of erosion damage; description of equipment damage; description of damage to the remedial program or the construction program, such as damage to the support of excavation; presence of onsite or offsite exposure pathways caused by the storm; presence of petroleum or other spills and status of spill reporting to NYSDEC Spills Hotline;; description of corrective actions; schedule for submittal of correction action work plan and implementation of corrective actions.

This report will be completed and submitted to NYSDEC and NYSDOH project manager with photographs within 24 hours of the time of safe entry to the Site after the storm event.

4.5.13 Community Air Monitoring Plan

CAMP will be conducted during any ground intrusive activities and activities involving the movement of soil/fill material (e.g. stumping/grubbing grading, load-out) at the Site. Monitoring will include particulate and VOCs. Fugitive dust/visible dust will be mitigated immediately. The CAMP is included as **Appendix L**. A map showing the location of mobile sampling stations will be provided in each daily CAMP report. The Special CAMP will be implemented as needed at the Site.

Exceedances observed in the CAMP will be reported to NYSDEC and NYSDOH Project Managers within 24 hours and included in the Daily Report which will detail the correction actions taken to resolve the exceedance.

4.5.14 Odor, Dust, and Nuisance Control Plan

This section describes the odor, dust and nuisance controls to be implemented during the remedial action.

4.5.14.1 Odor Control Plan

This odor control plan is capable of controlling emissions of nuisance odors off-Site. Specific odor control methods to be used on a routine basis will include limiting open excavation areas and covering excavated soil (i.e., with polyethylene sheeting or in covered roll off containers, spraying of odor suppressant). If nuisance odors are identified, or odor complaints received, work will be halted, and the source of odors will

be identified and corrected. Work will not resume until all nuisance odors have been abated. The Remedial Party will notify the NYSDEC, NYSDOH and the City of all odor events and of all other complaints about the project and these events/complaints will be documented in the Daily Report. Implementation of all odor controls, including the halt of work, will be the responsibility of the Remedial Engineer.

All necessary means will be employed to prevent on- and off-Site nuisance odors. At a minimum, procedures will include: (a) limiting the area of open excavations; (b) shrouding open excavations with tarps and other covers; and (c) using foams or other odor suppressant materials to cover exposed odorous soils. If odors develop and cannot be otherwise controlled, additional means to eliminate odor nuisances will include: (d) direct load-out of soils to trucks for off-Site disposal; (e) use of chemical odorants in spray or misting systems; and, (f) use of staff to monitor odors at the Site boundaries and in surrounding neighborhoods.

Where odor nuisances have developed during remedial work and cannot be corrected, or where the release of nuisance odors cannot otherwise be avoided due to on-Site conditions or close proximity to sensitive receptors, odor control will be achieved by sheltering excavation and handling areas under tented containment structures equipped with appropriate air venting/filtering systems.

4.5.14.2 Dust Control Plan

No visible dust will leave the Site during remedy implementation. A dust suppression plan that addresses dust management during invasive on-Site work, will include, at a minimum, the items listed below and will comply with NYSDEC DER-10 Appendix 1B – Fugitive Dust Control:

- Dust suppression will be achieved through the use of available on-site water at suitable supply and pressure for use in dust control.
- Clearing and grubbing of larger sites will be done in stages to limit the area of exposed, unvegetated soils vulnerable to dust production.
- Gravel will be used on roadways to provide a clean and dust-free road surface.
- On-Site roads will be limited in total area to minimize the area required for water spraying.

4.5.14.3 Other Nuisances

Roux contracted Town and Country Pest Solutions Inc. to implement rodent control at the site in preparation for the on-Site building demolition activities conducted under the conditionally approved ISMP. Rodent control measures were active between June 2024 and December 2025 when building demolition activities were completed. The necessity for additional rodent control will be assessed and implemented as needed during all remedial work.

In accordance with COR Municipal Code Chapter 75, Noise, Section 10, Construction Activities, on-Site activities will occur only between the hours of 7:00 a.m. and 10:00 p.m. If noise complaints are received Roux will confer with COR and NYSDEC to determine appropriate actions. Noise control will be exercised during the remedial program. All remedial work will conform, at a minimum, to the COR noise ordinance.[23]

Note that vibration monitoring is not required by the COR Municipal Code. Vibration monitoring will be implemented if any complaints are received. A vibration monitoring plan will be developed and submitted to the NYSDEC project manager for review and approval.

[23] City of Rochester, NY Municipal Chapter 75, Section 10. https://ecode360.com/8676945

5.0 REMEDIAL ACTION PROGRAM

The following sections describe the Remedial Action program for the implementation of the Site's selected remedy as well as the associated reporting..

5.1 Governing Documents

The following Governing Documents are included as part of this RAWP and discussed below:

- Site Specific Health and Safety Plan (HASP)
- Community Air Monitoring Plan (CAMP)
- Quality Assurance Project Plan/Field Sampling Plan (QAPP/FSP)
- Construction Quality Assurance Plan (CQAP)
- Soil/Materials Management Plan (SoMP)
- Erosion and Sediment Control Plan (ESCP)
- Contractors Site Operations Plan (SOP)
- Citizens Participation Plan (CPP)

5.1.1 Standards, Criteria and Guidance (SCGS)

A table listing SCGs which are potentially applicable to the Site is provided in **Section 2.5.3** above and will be consulted and adhered to as applicable.

5.1.1.1 Green and Sustainable Remediation and Climate Resiliency

Project design specifications have been incorporated into the remedial design program and include detailed requirements to achieve the Green and Sustainable Remediation (GSR) goals. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major GSR components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Reduction in vehicle idling, including both on and off-road vehicles and construction equipment;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing beneficial reuse of materials which would otherwise be considered a waste (i.e. use of BUD soils);
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and

- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the Remedial Alternatives Analysis performed for the Site (presented in Section 5 of the Revised RAAR), an environmental footprint analysis was completed for the three remedial alternatives with respect to green and sustainable remediation principles. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use were estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, have been incorporated into the remedial design program, as appropriate. SiteWise™ Model spreadsheets were used to develop an environmental footprint analysis and estimate environmental impacts associated with the three remedial alternatives evaluated for the Site. Specific inputs and outputs to the SiteWise™ model are presented in Appendix I of the Revised RAAR. SiteWise™ results indicate that the sustainability of the selected remedy, Alternative 2, would be considered more favorable than both Alternative 1 and Alternative 3 due to the smaller carbon footprint, lower emissions resulting from equipment and truck traffic, and lower volume of waste generated during completion of this remedy. SiteWise™ results indicate that Alternative 1 produces approximately nine times more greenhouse gas, 18 times more dust emissions, and more than triples the risk of injury and fatality compared to Alternative 2. Alternative 3 produces approximately two times the greenhouse gas and three times the dust emissions compared to Alternative 2.

The Site is located within an environmental justice area that works to address environmental issues and concerns that affect primarily low income and minority communities through grant opportunities, enforcement of environmental laws and regulations, consultation, guidance, and enhance public participation.

Additionally, the remedial design includes a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise have been identified, and the measures to minimize the impact of climate change on potential identified vulnerabilities are summarized below:

Project Hazard	Potential Implications
Sea Level Rise and Floodplain	**Current FEMA Flood Zones Maps:** The Site is located within the current 100-year flood plain or 500-year flood plain. The FEMA coastal flooding risk rating is very low, with a risk index score of 42.1 out of 100.
Precipitation	**2035:** 0.9% to 5.% change in average annual precipitation. **2060:** 1.9% to 10.3% change in average annual precipitation.
Rising Temperatures	**2035:** 2.4 F to 3.1 F change in average annual temperature. **2060:** 4.7 F to 6.0 F change in average annual temperature.

Project Hazard	Potential Implications
Extreme Heat	Historical average 1 day over 100 F. **2035:** 0 days over 100 F. **2060:** 1 to 2 days over 100 F The FEMA risk index rating for heat waves is relatively moderate, with a risk index score of 89.7 out of 100. The FEMA risk index rating for drought is very low, with a risk index score of 40.2 out of 100 (based on Agricultural [crop only] impacts).
Extreme Weather Events	**2035:** 4.3% to 10.7% change in 100-year storm intensity. **2060:** 8.4% to 20.9% change in 100-year storm intensity.
Seismic Activity	The potential impact due to seismic activity in the Site area is relatively low, with a risk index of 84.4 out of 100.
Hazardous Material/Toxic Chemical Spills	The NYSPILLS database does not indicate any onsite spill or releases. It is not anticipated that any petroleum bulk storage (PBS) will be included as part of remediation.
Wildfire	The USEPA Wildfire Conditions & Risk Map for Water Utilities reports fires larger than 1,000 acres throughout the period of 1984 through 2019. No wildfires have been reported within Monroe County during this time period. The FEMA risk index rating for wildfire is very low, with a risk index score of 60.8 out of 100.
Landslide	The USGS Landslide Inventory summarized the landslide confidence levels from High confidence in extent or nature of landslide through possible landslide. The Site is not located within any of the landslide confidence areas.

Notes:

1.) The FEMA Risk Ratings are a comparison of the risk factors for the Site area to the rest of the United States.
2.) The FEMA Risk Index scores are calculated using data for a single hazard type and reflect an area's relative risk for that hazard type.
3.) The 2035 and 2060 scenarios are based on the USEPA Climate Scenarios Projection Maps. These scenarios define a range of future climate conditions that can be considered for each time period (short- and long-term), from the hottest (and driest) to the wettest model results. All climate models project warming, the extent of warming varies per scenario. Note that due to the inherent uncertainty in using models to project future climate conditions, all scenarios have been considered to evaluate the resilience to impacts that could result from possible future climates and high impact/low probability events.

Additionally, the American Society for Testing and Materials (ASTM) Standard Guide for Greener Cleanups will be taken into consideration during remediation implementation to minimize total energy use, air pollutants and greenhouse gas emissions, water use and impacts to water resources, recycling of materials and waste, and promote the protection of land and ecosystems.

Progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the FER, including a comparison to the goals established in the remedial design program.

5.1.2 Site Specific Health and Safety Plan (HASP)

The Site-specific HASP is included in **Appendix H**. All remedial work performed under this plan will be in full compliance with governmental requirements, including Site and worker safety requirements mandated by the Federal Occupational Safety and Health Administration (OSHA).

5 Flint and associated parties preparing the remedial documents submitted to the State and those performing the construction work, are completely responsible for the preparation of an appropriate Health and Safety Plan and for the appropriate performance of work according to that plan and applicable laws.

The HASP and requirements defined in this RAWP pertain to all remedial and invasive work performed at the Site until the issuance of a Certificate of Completion.

The Site Safety Coordinator will be Nicholas Suraci. A professional profile has been provided to NYSDEC project manager and included in **Appendix M.**

All individuals involved with the implementation of the remedial actions will have 40 Hr. HAZWOPER certifications with certification of current 8 Hr. refresher. The certifications will be made available upon request from the Department and NYSDOH.

Though not anticipated to be required, confined space entry will comply with all OSHA requirements to address the potential risk posed by combustible and toxic gasses.

5.1.3 Community Air Monitoring Plan (CAMP)

The Site-specific CAMP is included in **Appendix L.** The CAMP has been prepared to ensure the subsurface investigation and remediation activities to be performed at the Site do not adversely affect the residents and downwind community, and to preclude or minimize airborne migration of Site contaminants. Compliance with the CAMP is required during all intrusive activities and all soil/fill material movement activities. The CAMP includes monitoring for particulate matter and volatile organic compounds (VOCs).

The CAMP is consistent with the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan, which is included as Appendix 1A of the New York State Department of Environmental Conservation (NYSDEC) “DER-10 Technical Guidance of Site Investigation and Remediation” (DER-10), dated May 3, 2010.

5.1.4 Quality Assurance Project Plan (QAPP)

The QAPP/FSP (**Appendix F**) includes all procedures to be followed for quality assurance and quality control as well as sampling and analysis. The QAPP/FSP includes all requirements outlined in DER-10 Section 2.4.

5.1.5 Construction Quality Assurance Plan (CQAP)

Quality assurance/quality control procedures for all construction activities associated with implementation of the RAWP are established in the Construction Quality Assurance Plan (CQAP), which is set forth in this section of the RAWP. The CQAP describes the Site-specific construction quality assurance and control measures that will be implemented at the Site during implementation of the RAWP. The CQAP includes a program for construction observation and testing to verify performance of the remedial construction in accordance with the RAWP.

5.1.5.1 Organization / Personnel

The implementation of the remedial construction will be sequenced based on construction requirements, environmental considerations, and logistics based on entry points and staging areas. The project team is comprised of 5 Flint, the construction manager, contractors, and consultants specializing in one or more critical aspects of the project. It is understood by the project team that close coordination and proper sequencing of all activities occurring on the Site will be crucial to the success of the remediation. The project team and associated responsibilities are as follows. If changes are made to the project team, the CQAP will be amended.

Company	Project Role	Name (title)	Contact Info (email or phone)
5 Flint Street LLC	Volunteer	Michael Roux	mroux@rouxinc.com (631) 630-2425
Roux DPC	Environmental Consultant (working under the COA)	Noelle Clarke, P.E. (Remedial Engineer PE of Record for the Site)	nclarke@rouxinc.com (631) 232-2600
		Nicholas Suraci (Qualified Person, SSO)	nsuraci@rouxinc.com (716) 725-6969
		Alex Wirth (Quality Assurance Officer)	awirth@rouxinc.com (585) 895-4957
Roux MA	Environmental Consultant (not working under the COA)	Ian Reed (Project Principal)	ireed@rouxinc.com (781) 569-4000
		Eric Runstrom (Project Manager)	erunstrom@rouxinc.com (781) 569-4000
Roux DPC (Contractor)	Remedial Contractor	Michael Lesakowski	mlesakowski@rouxinc.com (716) 856-0599
		Mark Janus (Field Manager)	mjanus@rouxinc.com (716) 856-0635
Pace® Analytical Services Laboratory	Environmental Laboratory	Candace Fox (Project Manager)	Candace.Fox@pacelabs.com (716) 427-5223

5.1.5.2 5 Flint Street, LLC (Volunteer) – General Site Remediation Oversight

Michael Roux, Site Remediation Project Executive

As 5 Flint's project executive for the Site, Mr. Michael Roux will provide high level general oversight of all aspects of the remediation. Direct communication with regulatory agencies will be the Roux MA Project Manager (Eric Runstrom) or the Remedial Engineer (Noelle Clarke). As discussed, 5 Flint will be the primary entity undertaking the remedial activities at the Site. 5 Flint or its designated representative, Roux DPC will be responsible for the review and submission of all documents, reports, correspondence, etc., required by the RAWP and/or the BCA with the NYSDEC.

The Remedial Party or its designated representatives, Roux MA and Roux DPC will be responsible for community notifications and addressing concerns with the adjacent property owners and local community on all remediation-related issues. The Remedial Party will be immediately notified by the on-Site team of any complaints or concerns regarding the work raised by the adjacent property owners and or the general public. In addition, the Remedial Party or its designated representatives (Roux MA and Roux DPC) will provide notice to the Department of issues raised by adjacent property owners and the general public.

5.1.5.3 Roux Environmental Engineering and Geology, DPC - Remedial Engineer, Remedial Compliance and SSO

Noelle Clarke, P.E. – Remedial Engineer
Nicholas Suraci – Qualified Person, Site Safety Officer (SSO)
Alex Wirth – Quality Assurance Officer

Roux Environmental Engineering and Geology, D.P.C. (Roux DPC) will provide continual review of all quality control measures implemented by the contractors to ensure compliance with the Site's remedial objectives. As such, Roux will provide oversight services for the duration of the remedial activities and will have a Qualified Person who is a direct report to the Remedial Engineer on-Site at all times. Roux will be responsible for managing the transportation and disposal of contaminated waste and materials generated during the construction/remedy implementation at permitted facilities and in accordance with all applicable local, State, and Federal regulations. Material for disposal could include:

- fill/soil/spoils;
- contaminated pipe, concrete, bricks or other construction debris;
- personal protective equipment and other miscellaneous debris; and
- construction wastewater which includes but not limited to decontamination liquids, excavation dewatering, etc.

Noelle Clarke, P.E., Remedial Engineer

The Remedial Engineer (i.e., P.E. of Record) for this project/Site will be Noelle M. Clarke of Roux DPC. Roux DPC holds a Certificated of Authorization to conduct engineering work in NYS. The Remedial Engineer is a registered professional engineer licensed by the State of New York. The Remedial Engineer will have primary direct responsibility for implementation of the remedial program for the Site (BCP Site No. C828190). The Remedial Engineer will certify in the FER that the remedial activities were observed by qualified environmental professional [as defined Part 375-1.2(ak)] and was under her direct supervision. The Remedial Engineer will also certify that the remediation requirements set forth in the Department approved Remedial Action Work Plan and any other relevant provisions of New York Environmental Conservation Law (NYECL) Section 27-1419 have been achieved in full conformance with the RAWP. Additional Remedial Engineer certification requirements are listed later in this RAWP.

The Remedial Engineer will coordinate and oversee the work of the contractors and subcontractors involved in all aspects of remedy implementation including but not limited to remedial construction, including soil excavation, stockpiling, characterization, removal, and disposal, air monitoring, emergency spill response services, import of backfill material, and management of waste transport and disposal. The Remedial Engineer or the Roux MA project manager will be responsible for all communication with NYSDEC and NYSDOH project managers.

The Remedial Engineer will review all remedial plans submitted by contractors for compliance with this Remedial Action Work Plan and will certify compliance in the FER. Additionally, Ms. Noelle Clarke, the "Remedial Engineer," a professional engineer licensed in the State of New York, will be responsible for certifying that the remediation construction was completed in substantial conformance with the NYSDEC-approved RAWP, NYSDEC-issued Decision Document, and/or any NYSDEC approved field changes. In addition, the Remedial Engineer will provide P.E. stamped and signed as-built drawings to be included in the FER.

Nicholas Suraci – Qualified Person, Site Safety Officer (SSO)

Nicholas Suraci will act as a Qualified Person who is a direct report to the Remedial Engineer and the Qualified Person or, another similar qualified person, will be on-Site at all times. The Qualified Person will report directly to the Remedial Engineer to coordinate all Site activities being implemented to achieve the remedial objectives defined in the RAWP. Nicholas Suraci will also act as the SSO and implement the CAMP. Nicholas will provide continual review of all quality control measures implemented by the contractors to ensure compliance with the Site-specific HASP. CAMP monitoring data will be reported daily to the SSO and will be maintained on-Site. Action level exceedances will be reported to the SSO, and appropriate communication and corrective actions taken. All CAMP monitoring records will be included in the overall FER that will be submitted to the NYSDEC and NYSDOH project managers and will include all the CAMP data collected, daily monitoring station location maps, and copies of the action limit reports with corrective action details. If an action limit report is generated due to VOC or particulate exceedances, the NYSDEC, NYSDOH as well as the City Project Representative will be notified within 12 hours of the exceedance and what corrective actions were taken to mitigate the exceedance.

Alex Wirth - Quality Assurance Officer

The Quality Assurance Officer is responsible for conducting periodic reviews, inspections, and audits to ensure the data collection is conducted in accordance with the QAPP and FSP. The Quality Assurance Officer's responsibilities range from ensuring effective field equipment decontamination procedures and proper sample collection to the review of all laboratory analytical data for completeness and usefulness. The Quality Assurance Officer reports to the Remedial Engineer and makes independent recommendations to the field team.

5.1.5.4 Roux MA – Environmental Consultant

Ian Reed – Project Principal
Eric Runstrom– Project Manager

Roux MA, along with the Remedial Engineer, will communicate with NYSDEC and NYSDOH project managers, and the City's Project Representative, as a designated representative of the Remedial Party. Roux MA will coordinate with Roux DPC to ensure all planning and execution of Site related activities, including tasks completed, remedial measures achieved, and any issues of concern, are communicated to NYSDEC and NYSDOH project managers and City representatives, and will provide notice to the Department of issues raised by adjacent property owners and the general public. Roux MA will provide support to the Remedial Engineer and Roux DPC to ensure all quality control measures implemented by the contractors to ensure compliance with the Site's remedial objectives.

5.1.5.5 Roux DPC (Contractor)-Remedial Contractor

Michael Lesakowski – Remedial Contractor
Mark Janus – Field Manager

Roux DPC (Contractor) a NYS licensed contractor, will be contracted to execute all earthwork, including debris removal and demolition, excavation, backfill, compaction, loading of material for disposal, grading, and restoration.

Mark Janus - Field Manager

Mark Janus will act as the Field Manager and will be the on-Site representation of the Remedial Contractor. He will coordinate with Qualified Person for all Site activities being implemented to achieve the remedial objectives defined in the RAWP.

5.1.5.6 Roux DPC Sub-Contractors

Roux DPC will contract subcontractors to perform specific activities at the Site. Zoladz Construction of Alden, NY, a NYS licensed contractor, will be subcontracted to perform tree clearing and grubbing. Sessler Wrecking of Alden, NY, a NYS licensed contractor, will be subcontracted to perform building demolition activities. Geo-Solutions, Inc. of New Kensington, PA, a NYS licensed contractor, will be subcontracted to perform ISS activities. All subcontractors and their key personnel will be interviewed and vetted by Roux DPC to ensure sufficient experience and competency with the relevant remedial technologies are available to the crew(s) implementing the RAWP.

5.1.5.7 Environmental Laboratory

Pace Analytical Services (Pace) will be utilized for all remediation action-related analytical requirements. If needed, Eurofins Environment Testing America Laboratories (Eurofins) will be maintained as an alternative laboratory for this project. Eurofins and Pace are NYSDOH ELAP certified laboratories for the analytical methods to be used for the analysis. All results will be reported in EDDs prepared in accordance with NYSDEC requirements. Formal laboratory qualifications and QA/QC information packages for the analytical laboratories proposed for the project will be submitted to the NYSDEC project manager. See Attachment 4 of the QAPP (**Appendix F**) for the laboratory qualifications and information packages.

5.1.5.8 Surveying Firm

Gregory J. Koester, PLS – Construction Quality Control

Nussaumer & Clarke, Inc., a NYS licensed surveying firm, will be contracted to provide lines, grades, boundaries, benchmarks, topographic surveys, as built drawings, and any other survey work required for the proper execution and documentation of the work as required by the RAWP.

5.1.5.9 Waste Transporters and Disposal Facilities

Waste from the Site will be transported to permitted waste/landfill disposal facilities. Currently, Site remedial waste including excavated soils are planned to be disposed at Waste Management – Mill Seat Landfill of Bergen, NY (Facility ID: 8264800014). This CQAP will be updated with the names of the facility or facilities, as required. If any is generated, non-impacted (i.e., no evidence of impacts such as odors, visual, PID) construction debris (concrete, concrete block, brick) will be transported to a registered construction and demolition disposal facility.

As required, a qualifications package will be provided by each vendor contracted to transport waste from the Site to permitted disposal facilities. The package will include the following:

Proof of insurance and all current NYS waste transport permits (Part 364 permitted haulers) for the waste type(s) being transported.

Letters of Commitment or other appropriate documentation from all waste haulers and from all permitted transfer, treatment, storage, and disposal facilities to be used for the project. The letters of commitment shall specifically identify the types and quantities of waste that the facility will be able to accept, the permit numbers for all facilities at which the waste will be accepted and all waste characterization requirements, if additional to waste characterization samples already collected. In the event that a permitted facility (such as a privately owned treatment works) is prohibited from issuing a letter of commitment without a sample of the waste, a conditional-type letter will be acceptable. Such a conditional letter shall specifically state what types and quantities of waste the facility will accept.

- For each permitted waste hauler.
  - Name and federal and state identification numbers, as applicable.
  - Address.
  - Name of responsible contact for the hauler.
  - Telephone number for the contact.
  - List of types and sizes of all transport vehicles and equipment to be used.
  - A description of proposed transportation route, method, and procedures for hauling waste material, including type of vehicles that will be used for each type of waste.
  - Copies of any and all necessary permits and authorizations for each type of waste transported.
- For each permitted transfer, treatment, storage and disposal facility, the Contractor shall submit the following information.
  - Facility name and federal and state identification numbers.
  - Facility location.
  - Name of responsible contact for the facility.
  - Telephone number for contact.
  - Signed letter of agreement to accept waste.
  - Unit of measure utilized at facility for costing purposes.
  - Copies of all permits, licenses, letters of approval, and other authorizations to operate, held by the proposed facility as they pertain to receipt, and management of waste derived from this Contract.

5.1.5.10 Construction Quality Control Testing

Implementation of quality control testing and measurement will be performed by the contractors conducting the specific Site tasks, as required. The quality control officers as listed in **Section 5.1.5.3** will be responsible for providing documentation of all testing and measurement results to the Remedial Engineer. The Remedial Engineer will be responsible for verifying that all quality control testing has been conducted in compliance with the RAWP and as specified herein.

Prior to initial quality control testing procedures, the quality control officers will:

1. Verify that the testing procedures are within the manufacturer's recommendations.
2. Verify that the facilities' testing equipment are available and comply with testing standards.
3. Check testing instrument calibrations against certified standards.
4. Verify the recording forms, including all the test documentation requirements have been prepared.

Qualifications of all independent environmental testing firms and laboratories will be submitted to Roux and 5 Flint for approval prior to any quality control testing and/or lab analysis as an obligation of this CQAP.

Specific task-driven testing/certification obligations as they relate to environmental aspects of the project are as follows:

- A New York State-licensed surveyor will conduct all of the necessary measurements associated with the excavation and ISS areas, sampling locations, extent of the site cover system, the grade covered by the demarcation layer, and the grade of cover soils.
- Field QA/QC samples of the ISS mix and field cores of the cured ISS monolith will be collected to confirm the selected soil stabilization design mix requirements are met. QA/QC samples and cores will be subject to the QA/QC requirements presented in the NYSDEC In Situ Solidification QA/QC guidance document included in **Appendix G**. Tests include compressive strength and hydraulic conductivity/permeability, as well as visual assessment.
- Final delineation samples will be collected as part of PDI activities to provide evidence that the extents of the remedial excavations are sufficient to achieve the Site's soil cleanup objectives (Confirmation samples) or document the level of contamination remaining (Documentation samples). Final delineation samples will be submitted to a laboratory with the appropriate ELAP method certifications to conduct the analysis. An interim report documenting the PDI sampling data will be submitted to the NYSDEC and NYSDOH PMs for review.
- Groundwater samples will be collected as part of groundwater performance monitoring after the remedy has been completed and prior to the issuance of the Certificate of Completion. samples will be submitted to a laboratory with the appropriate ELAP method certifications to conduct the analysis. Groundwater sampling data collected as part of groundwater performance monitoring will be submitted to the NYSDEC and NYSDOH PMs for review.
- Soil and fill designated for off-Site disposal will require waste characterization analyses. Waste characterization sampling and analysis may be conducted in-Situ prior to excavation or ex-Situ. Ex-Situ waste characterization samples will be collected from individual stockpiles, and no soil will be added or removed from the stockpile once the samples have been collected. Waste characterization analysis parameters and frequency for any additional samples are determined by the waste disposal facility's acceptance requirements. As required, excavated soils will be tested in accordance with the soil disposal facility's analytical acceptance requirements that will be provided to NYSDEC project manager when available. Waste characterization results will be provided to the disposal facility for review and will be included in the FER.
- The CAMP requires continuous, real-time monitoring of VOCs and particulates during all ground intrusive and soil/fill material movement activities at the Site. The air monitoring equipment will be inspected periodically throughout each workday with ground intrusive and soil/fill material movement activities to check and manually record the concentrations of VOCs and particulates and to ensure that the equipment is working properly. The air monitoring equipment will be repaired, recalibrated, and/or replaced, as necessary. These air monitoring data will be collected and logged for review daily by Roux and made available for NYSDEC and NYSDOH review. Action Limit Reports will be completed to document any and all action level exceedances and corrective action completed and will be submitted to NYSDEC and NYSDOH project managers, as described in the CAMP.
- All testing data will be managed in accordance with the above requirements and will be included in the FER. The FER will be prepared by 5 Flint upon completion of all remedial objectives defined in the NYSDEC-approved RAWP and NYSDEC-issued Decision Document.

5.1.5.11 Project Coordination

During implementation of the remedial action construction, progress meetings/conference calls will be conducted periodically to assess the progress of the work, overall progress to date, quality control requirements, environmental and construction health and safety requirements, and future progress expectations. Those in attendance will include representatives from 5 Flint, Roux, NYSDEC and NYSDOH project managers, NYSDEC field technicians/inspectors, and other subcontractors, as necessary. This will provide the opportunity for all Site tasks to be integrated and discussed collectively and provide for coordination of all Site activities to maintain the overall construction schedule. Routine task meetings will also be conducted on an as needed basis to ensure proper communication between the contractors, tradesman, and supervisory personnel.

5.1.6 Soil/Materials Management Plan (SoMP)

The SoMP is included in **Section 4.5** of this RAWP.

5.1.7 Erosion and Sediment Control Plan (ESCP)

An Erosion and Sediment Control Plan (ESCP) for the Site is included in **Appendix K**.[24] Erosion and sediment control measures (i.e., silt sock, straw bales, silt fence) will be put in place to ensure no potentially contaminated stormwater is discharged from the Site in conformance with requirements presented in the New York State Standards and Specifications for Erosion and Sediment Control.

5.1.8 Contractors Site Operations Plan (SOP)

The Remedial Engineer will review all plans and submittals for this remedial project (including those listed above and contractor and sub-contractor document submittals) and confirms, or will confirm, that they are in compliance with this RAWP. The Remedial Engineer is responsible for ensuring that all later document submittals for this remedial project, including contractor and sub-contractor document submittals, are in compliance with this RAWP. All remedial documents will be submitted to NYSDEC and NYSDOH project managers in a timely manner and prior to the start of any field work.

5.1.9 Citizen Participation Plan

A certification of mailing will be sent by 5 Flint to the NYSDEC project manager following the distribution of all Fact Sheets and notices that includes: (1) certification that the Fact Sheets were mailed, (2) the date they were mailed; (3) a copy of the Fact Sheet, (4) a list of recipients (contact list); and (5) a statement that the repository was inspected on [specific date] and that it contained all of applicable project documents. No changes will be made to approved Fact Sheets authorized for release by NYSDEC without written consent of the NYSDEC. No other information, such as brochures and flyers, will be included with the Fact Sheet mailing.

The Citizen Participation Plan for this project, submitted to the NYSDEC on October 31, 2025, is attached in **Appendix N**.

[24] In accordance with item 4 of the *Frequently Asked Questions About Permit Requirements of the SPDES General Permit (GP-02-01) for Stormwater Discharges from Construction Activities Version 3.0 - September 12, 2006. https://extapps.dec.ny.gov/docs/water_pdf/constrfaq.pdf*, a State Pollutant Discharge Elimination System (SPDES) permit is not required for the Site since it is solely serviced by combined sewers, as a result, a Stormwater Pollution Prevention Plan (SWPPP) is not required.

Document repositories have been established at the following locations and contain all applicable project documents:

Phillis Wheatley Community Library
33 Dr. Samuel McCree Way
Rochester, NY 14608
(585) 428-8213
Branch Site Manager: Lori Frankunas
E-Mail: Lori.Frankunas@Libraryweb.org
Hours:

Wednesday	11 AM–7 PM
Thursday	11 AM–6 PM
Friday	11 AM–5 PM
Saturday	10 AM–2 PM
Sunday	Closed
Monday	11 AM–7 PM
Tuesday	11 AM–6 PM

In addition, an electronic repository can be accessed via DECInfo Locator at the following link: Index of /data/DecDocs/C828162B

5.2 General Remedial Construction Information

5.2.1 Project Organization

A copy of professional profiles for the Remedial Engineer, Qualified Person, Quality Assurance Officer, Project Manager, and Field Manager for Roux DPC and the Project Principal, Project Manager Data Validator for Roux MA are presented in **Appendix M**.

5.2.2 Remedial Engineer

The Remedial Engineer (i.e., PE of Record) for this project/Site will be Noelle M. Clarke, P. E. The Remedial Engineer is a registered professional engineer licensed by the State of New York. The Remedial Engineer will have primary direct responsibility for implementation of the remedial program for the 5 Flint Street Site (NYSDEC BCP Site No. C828162B). The Remedial Engineer will certify in the FER that the remedial activities were observed by Qualified Environmental Professional under the direct supervision of the Remedial Engineer and that the remediation requirements set forth in the RAWP, Decision Document and any other relevant provisions of ECL 27-1419 have been achieved in full conformance with those Plans. The certification language in the current FER template will be used verbatim with no modifications.

The Remedial Engineer will coordinate the work of contractors and subcontractors involved in all aspects of remedial construction, including soil excavation, stockpiling, characterization, removal and disposal, air monitoring, emergency spill response services, import of back fill material, and management of waste transport and disposal off-site at permitted facilities. The Remedial Engineer will be responsible to ensure that communication with NYSDEC and NYSDOH project managers is conducted by the assigned Roux MA personnel.

The Remedial Engineer will review all remedial plans submitted by contractors for compliance with this RAWP and will certify compliance in the FER.

5.2.3 Remedial Action Construction Schedule

A schedule for the major elements of the Remedial Action construction is presented in **Section 11**.

5.2.4 Work Hours

The hours for operation of remedial construction will conform to the Local, State, and Federal code requirements or according to specific variances issued by the appropriate agency. NYSDEC project manager will be notified by 5 Flint or Roux of any variances issued. NYSDEC project manager reserves the right to deny alternate remedial construction hours.

5.2.5 Site Security

Security for the work, equipment, materials, supplies, facilities, personnel, and incidentals will be provided throughout the performance of the work at the Site. A perimeter chain-link fence is partially in place and will be expanded to encompass the work area and maintained by 5 Flint and/or its contractors during implementation of the remedial action. Appropriate signage (e.g. authorized personnel only, no trespassing, etc.) will be posted on Site fencing or other perimeter locations. The qualified person/SSO will maintain a sign in/sign out sheet for all visitors to the Site. Perimeter fencing will be installed (where not currently in place) to encompass the work area and maintained by Roux and its contractors during implementation of the remedial action to control site access. The fences and gates will be closed and locked whenever there is no activity on the Site, and any breaks or gaps will be repaired immediately. Temporary fencing (e.g., cones, caution tape, etc.) will supplement the perimeter fencing to delineate and secure the area of on-going remediation activities within the Site, such as soil stockpiles and health and safety exclusion zones.

5.2.6 Traffic Control

For any trucking required, the proposed truck routes for ingress and egress to the Site are shown in **Figure 10**. All trucks loaded with Site-derived materials will exit the vicinity of the Site using only these approved truck routes. These are the most appropriate routes and take into account: (a) limiting transport through residential areas and past sensitive sites; (b) use of City-mapped truck routes; (c) prohibiting off-Site queuing of trucks entering the facility, (d) limiting total distance to major highways; (e) promoting safety in access to highways; and (f) overall safety in transport.

Trucks will be prohibited from stopping and idling in the neighborhood outside the project site.

Egress points for truck and equipment transport from the Site will be kept clean of Site related material (e.g. soil) during Site remediation.

The contractors operating on the Site will be responsible for providing all necessary personnel and materials (e.g., traffic lanes, safety cones) to control traffic entering and exiting the Site and for coordinating traffic control measures with the local Police Department, as necessary. Contractors operating on roadways shall be responsible for all applicable New York Department of Transportation (NYDOT) traffic control and notification requirements and incorporating those elements into this Traffic Control Plan.

5.2.7 Contingency Plan

The Contingency Plan for USTs and previously unidentified contaminant areas is described in **Section 4.5.12.**

5.2.8 Worker Training and Monitoring

All general Site workers such as, but not limited to, equipment operators, general laborers, supervisory personnel (defined in OSHA 1910.120 (e)(3)(i)) that will be involved with remedy implementation activities will have received a minimum of 40 hours of initial health and safety training for hazardous waste site operations (40 Hour HAZWOPER training), will have current 8 hour HAZWOPER refresher certification, and will meet the medical surveillance requirements included in the HASP. Certifications will be made available upon request from NYSDEC and NYSDOH.

5.2.9 Required Permits/Authorizations

All permits or government approvals required for remedial construction have been, or will be, obtained prior to the start of any fieldwork associated with the remedial construction. Copies of all permits and government approvals will be provided to the NYSDEC project manager prior to the start of any fieldwork activities.

5 Flint has addressed all State Environmental Quality Review Act (SEQRA) requirements for this Site.

As discussed, the planned end use for the Site is in conformance with the planned rezoning of the property to multi-family restricted residential mixed use as determined by the City Zoning Alignment Project (ZAP) and the master development plan for the BOA. A Certificate of Completion will not be issued for the project unless conformance with zoning designation is demonstrated.

A complete list of all federal, state and local governmental permits, certificates or other approvals or authorizations required to perform the remedial work is attached in **Table 7**. This list includes a citation of the law, statute or code to be complied with, the originating agency, and a contact name and phone number in that agency. This list will be updated in the Final Engineering Report. Copies of all permits associated with the remedy implementation are included in **Appendix J** of the RAWP.

All planned remedial or construction work in regulated wetlands and adjacent areas will be specifically approved by the NYSDEC Division of Fish and Wildlife, Bureau of Ecosystem Health to ensure that it meets the requirements for compliance with those regulations and guidance documents prior to the start of construction. Nothing in the approved RAWP or its approval by NYSDEC should be construed as an approval for this purpose.

5.2.10 NYSDEC BCP Signage

A BCP project sign is no longer required.

5.2.11 Pre-Construction Meeting with NYSDEC

A project kick-off meeting will be conducted with the 5 Flint, Roux DPC, Roux MA, NYSDEC project manager and the selected remedial Contractor(s) prior to the commencement of any remedial activities in this RAWP.

5.2.12 Emergency Contact Information

An emergency contact sheet with names and phone numbers is included in **Table 8.** That document will define the specific project contacts for use by NYSDEC and NYSDOH in the case of a day or night emergency. As some of the contractors have not yet been selected, the emergency contact list will be updated prior to the start of work.

5.2.13 Remedial Action Costs

The total estimated cost of the Remedial Action is $7,204,624 with total estimated capital costs of $6,871,024to complete the remedial action pursuant to a Certificate of Completion. Annualized post Certificate of Completion operation, maintenance, monitoring and reporting costs have been estimated with and without a groundwater monitoring component. Estimated annualized costs with groundwater monitoring are estimated at $33,000, and annualized costs without groundwater monitoring are estimated at $11,000. It is understood that elements of the remedy will be inspected (annually) and maintained in perpetuity. An itemized and detailed summary of estimated costs for all remedial activity is attached on **Table 9**.

5.3 Site Preparation

5.3.1 Mobilization

The selected contractors shall supply any labor and materials required for the removal, and disposal of contaminated soil and the implementation of ISS. In addition, all necessary insurance certificates, disposal facility permits, imported fill documentation (to assist with Department PM approval of fill materials), and any other required documents shall be obtained prior to mobilization. Treatability testing for ISS mix design shall be completed prior to full scale mobilization of ISS subcontractors.

Mobilization and Site preparation activities include:

1. Mobilization of equipment to the work area.
2. Installation of the Site perimeter construction fencing, plus temporary fencing, signage, and traffic barricades to delineate the work zone and serve as worksite security measures.
3. Implementation of erosion and sediment control measures in accordance with the New York Guidelines for Urban Erosion and Sediment Control and the ESCP located in **Appendix K** of the RAWP.
4. Set-up of temporary facilities (e.g., construction field trailer and portable toilets) and decontamination facilities, including decontamination pad for decontamination of trucks and excavation equipment and other vehicles/equipment.

5.3.2 Monitoring Well Decommissioning

Existing groundwater monitoring wells will either be protected during remediation for use in post-remedial monitoring or will be properly decommissioned in accordance with NYSDEC Commissioners Policy CP-43. Groundwater monitoring well decommissioning will require prior approval from the NYSDEC project manager. The only exception to this is if the full length of the well is to be excavated during remediation and the NYSDEC project manager must be notified which groundwater monitoring wells meet this criteria.

Based on the current excavation and ISS areas and depths approved in the Site's Decision Document the following overburden monitoring wells will be fully excavated/decommissioned during remediation:

- Proposed Excavation and ISS Area 1: DEC-MW-1, DEC-MW-2, SB-01/MW-01, MW-2, MW-09.
- Proposed Excavation and ISS Area 2: SB-03/MW-03, SB-04/MW-04.

In addition to the overburden monitoring wells listed above, bedrock monitoring well BW-01 is located within Proposed Excavation and ISS Area 2 and will be properly decommissioned in accordance with NYSDEC Commissioners Policy CP-43 during remediation.

5.3.3 Erosion and Sedimentation Controls

Implementation of erosion and sediment controls will be in conformance with the Erosion and Sediment Control Plan and the requirements presented in the New York State Guidelines for Urban Erosion and Sediment Control and the ESCP (**Appendix K)**. As necessary and as detailed in **Appendix K**, straw bales/silt socks/silt fencing will be placed at locations upgradient of excavation and ISS areas to control stormwater runoff and surface water from entering or exiting the area. Catch basin inlets immediately adjacent to the work area or on the Site will be protected to prevent disturbed soil from entering them. All erosion and sedimentation controls will be installed as per manufacturer's instructions. All construction/remedy implementation water/liquids generated during the implementation of the remedy will be collected, containerized, and characterized for off-site disposal at a permitted facility (or discharged to the sewer of Monroe County Department Environmental Services [DES] discharge permit). Construction water will also be managed in accordance with the SoMP described in **Section 4.5**.

5.3.4 Stabilized Construction Entrance(s)

Stabilized construction entrances will be installed at all points of vehicle ingress and egress to the Site or, with DEC approval, adjacent sites which provide Site access to roadways. The truck wash/decontamination pad (see **Section 5.3.8**) and the stone-based egress path will be continuous so that trucks do not get re-contaminated following decontamination and prior to departure from the Site. Due to limitations to direct Site access to roadways, the currently planned locations of the stabilized construction entrance and truck wash/decontamination pad are on adjacent BCP Site No. C828162C located at 15 Flint Street, as shown on **Figure 11.** Construction details are shown on **Figure 12**. Additional details on the stabilized construction entrance are included in Section 3.1.1 of **Appendix K** - Erosion and Sediment Control Plan.

Any Site-derived material on sidewalks or streets will be promptly removed, and the street will be cleaned. The material collected will be containerized, characterized, and disposed off-site at a permitted landfill facility. Site entrances and exits will be inspected at the beginning and end of the day as well as during the day to ensure that Site material is not being tracked off-site.

5.3.5 Utility Marker and Easements Layout

Prior to conducting any ground intrusive activities, excavation or other subsurface site work, the required notification will be provided UDIG NY.

5 Flint and its contractors are solely responsible for the identification of utilities that might be affected by work under the RAWP and implementation of all required, appropriate, or necessary health and safety measures during performance of work under this RAWP. 5 Flint and its contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. 5 Flint and its contractors must obtain any local, State or Federal permits or approvals pertinent to such work that may be required to perform work under this RAWP. Approval of this RAWP by NYSDEC does not constitute satisfaction of the permit or approval requirements.

The presence of utilities and easements on the Site has been investigated by the Remedial Engineer. A review of available utility maps, visible Site related manholes and fire hydrants, and information provided by utility companies (including UDig NY mark outs) identified subsurface utilities on or in close proximity to the Site. Specifically, a water line and a potential gas line on the northeastern end of the Site, a potential sewer service line (for the abandoned building on 5 Flint Street) located on the abutting parcel to the northwest,

and water lines on the abutting parcels to the northwest and southeast of the Site. Based on this information, a private utility survey was conducted in October 2025 which confirmed the water line located on the northeastern end of the Site and a portion of the water line on the parcel to the southeast of the Site. The approximate locations of these confirmed and suspected utilities are shown on **Figure 13**.

As discussed, based on the results of the PDI, the proposed extents of the excavation and ISS areas are greater than thirty feet from the mapped utility line locations as confirmed by a private utility survey and information provided by utility companies. However, in the event that utility lines are identified within or near the planned limits of excavation and ISS areas, which have not previously been, or cannot be, decommissioned, the excavation and ISS areas will be adjusted as needed based on the final confirmed depths and locations of utilities. The limits of excavation and ISS activities in the vicinity of these utility lines will be advanced to a feasible safe distance from the utility to prevent potential disturbance to the existing utility lines. Remaining contaminated soils in proximity to the utility lines which are left in place will be documented in detail in the Site's FER and SMP as well as managed under the Site's SMP. Documentation samples will be collected in areas where utilities limit the remedial actions.

5.3.6 Support of Excavation

Appropriate management of structural stability of on-Site or off-Site structures during on-Site activities include excavation is the sole responsibility of the 5 Flint and its contractors. 5 Flint and its contractors are solely responsible for safe execution of all invasive and other work performed under this RAWP. 5 Flint and its contractors must obtain any local, State or Federal permits or approvals that may be required to perform work under this RAWP. Further, 5 Flint and its contractors are solely responsible for the implementation of all required, appropriate, or necessary health and safety measures during performance of work under the approved RAWP.

Based on the current extents of excavation and ISS areas on the Site and the plan to raise current grades to a minimum of two feet above the 100-year floodplain, excavation to facilitate ISS activities and ensure that the ISS monolith is four or more feet below final grades at the Site will likely not be needed or will be limited to approximately 2-feet below current Site grades in limited ISS areas. Excavation greater that 2-feet may be conducted in limited areas to accommodate final grades and maintain at least 4-feet of cover above the ISS monolith but is not planned to extend more than 4-feet below current grades in any excavation or ISS area.

Per OSHA regulations in 1926.652, for excavations less than 5-feet below grade, a competent person may determine if a protective system (e.g. benching, sloping, shoring) is not required. The on-Site Qualified Person will act as the OSHA competent person[25] and will conduct examinations of the ground during excavation activities to determine if indication of a potential cave-in exists. If indication of a potential cave-in is identified, the excavation will be sloped.

No planned entry into excavations is anticipated. However, if entry is required, or if excavations greater than 5-feet below grade are determined to be required, the Contractor shall comply with all Federal, State, and Local regulations, including OSHA regulations in 29 CFR 1926.651 and 29 CFR 1926.652.

[25] An OSHA "competent person" is defined as an individual who is capable of identifying hazards in the workplace and has the authority to take corrective actions to ensure safety.

5.3.7 Equipment and Material Staging

An equipment and materials staging area will be established in a designated area on-Site. In addition, an off-Site area located on the City owned 10 Flint Street parcel, to the northeast of the Site (across Flint Street), will be utilized for job site trailer placement, vehicle parking and off-Site equipment and materials staging (prior to mobilization on-Site for Site related activities). This off-Site area will be enclosed with perimeter fencing to prevent unauthorized access. Both on-Site and off-Site equipment and materials staging areas are shown on **Figure 11**.

As shown on **Figure 11**, on-Site staging areas include an equipment staging area, an imported soil and materials staging area, a soil and material staging area for potential on-Site reuse, and a staging area for off-Site disposal. These areas will be constructed with stone underlain by geotextile fabric.

5.3.8 Decontamination Area

As discussed, due to limitations to direct Site access to roadways, the currently planned locations of the stabilized construction entrance and truck wash/decontamination pad for the Site are on the abutting BCP site No. C828162C located at 15 Flint Street, as shown on **Figure 11.** A temporary decontamination pad/truck wash has been constructed (on BCP site No. C828162C) to decontaminate trucks and other vehicles/equipment which made contact with contaminated Site soil prior to leaving the Site or, with DEC approval, adjacent sites which provide Site access to roadways. The decontamination pad was sized to accommodate the largest construction vehicle used and located prior to and integrated with the stabilized construction egress. Dry decontamination will be employed to the extent practical, within a designated area of the Site. All liquid decontamination material will be collected and properly disposed of off-Site or treated using an on-Site treatment system prior to discharge to the municipal sewer system under an approved Monroe County DES discharge permit. The truck decontamination area/construction entrance was adequately sloped toward the interior of the Site to prevent off-Site tracking of soils. Construction details are shown on **Figure 12.** Additional details on the stabilized construction entrance are included in Section 3.1.1 of **Appendix K**- Erosion and Sediment Control Plan.

5.3.9 Demobilization

Demobilization from the Site will include:

- Removal and restoration of remediation-related equipment and materials storage areas including:
    - stabilized construction entrances;
    - decontamination pad/truck wash;
    - material staging areas; and
    - job site trailer and porta potties.
- Equipment decontamination; and
- General refuse disposal.

Erosion and sediment controls and work area perimeter fencing will remain in place until remedial activities (e.g. excavation and ISS, Site-wide cover system) have been completed, and vegetative cover established (or other Department approved cover materials have been installed) in the work area.

5.3.10 Groundwater Performance Monitoring

If there is a delay between completion of the remedy and issuance of the Certificate of Completion, groundwater performance monitoring may be required by the NYSDEC project manager until the Certificate of Completion is issued. However, as discussed in **Section 5.3.2**, the current excavation and ISS areas are inclusive of all but one of the current on-Site monitoring wells; therefore, the wells in these areas are planned to be excavated/decommissioned during remediation activities. If required, details regarding groundwater performance monitoring including monitoring wells to be sampled and frequency of sampling will be determined through consultation with NYSDEC and NYSDOH project managers.

5.4 Reporting

All daily and monthly reports will be included in the FER.

5.4.1 Daily Reports

Daily reports will be submitted to NYSDEC and NYSDOH Project Managers by noon the following day and will include at a minimum:

- An update of progress made during the reporting day;
- Locations of work and quantities of material imported and exported from the Site, number of trucks;
- References to alpha-numeric map for Site activities;
- A summary of any and all complaints with relevant details (names, phone numbers) response provided, who provided the response;
- A summary of CAMP finding, including excursions and corrective actions undertaken to mitigate exceedances as well as a map presenting the locations of the monitoring stations;
- Photographs of site activities;
- Issues encountered during the work day and resolution;
- An explanation of notable Site conditions.

Daily reports are not intended to be the mode of communication for notification to the NYSDEC of emergencies (e.g. accident, spill), requests for changes to the RAWP, or other sensitive or time critical information. However, such conditions must also be included in the daily reports. Emergency conditions and changes to the RAWP will be addressed directly to NYSDEC Project Manager via personal communication – email, telephone call.

The NYSDEC assigned project number will appear on all reports.

5.4.2 Monthly Reports

Monthly reports will be submitted to NYSDEC and NYSDOH Project Managers by the 10th of the month following the end of the month of the reporting period and will include:

- Activities relative to the Site during the previous reporting period and those anticipated for the next reporting period, including a quantitative presentation of work performed (e.g., tons/cubic yards of material exported and imported, etc.);
- Description of approved activity modifications, including changes of work scope and/or schedule;
- Sampling results received following internal data review and validation, as applicable;

- An update of the remedial schedule including the percentage of project completion, unresolved delays encountered or anticipated that may affect the future schedule, and efforts made to mitigate such delays; and
- Tracking of GSR metrics determined during the design process should be included in monthly reports.

5.4.3 Other Reporting

Photographs will be taken of all remedial activities and submitted to NYSDEC in digital (JPEG) format. Photos will illustrate all remedial program elements and will be of acceptable quality. Representative photos of the Site prior to any Remedial Actions will be provided. Representative photos will be provided of each contaminant source, source area and Site structures before, during and after remediation. Photos will be included in the daily reports as needed, and a comprehensive collection of photos will be included in the FER.

Progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the FER, including a comparison to the goals established during the remedial program. Updates to the SiteWise™ model will be included in the FER, SMP and Periodic Review reports.

The Climate Screening process and results will be documented in the form of a completed checklist and brief letter report. If the Climate Screening results indicate that a Climate Vulnerability Assessment (CVA) is necessary, a complete CVA Report will be developed. The CVA Report will be included as an Appendix or Attachment in relevant documents (i.e. SMP, FER and Periodic Review reports) and/or submitted as a standalone report.

Job-site record keeping for all remedial work will be appropriately documented. These records will be maintained on-Site at all times during the project and be available for inspection by NYSDEC and NYSDOH staff and included in the FER.

5.4.4 Complaint Management Plan

If an odor or dust complaint is received, the following procedure will be implemented:

1. Work in the affected area will be halted, and the source of odors/dust will be identified.
2. NYSDEC, NYSDOH, and 5 Flint will be notified immediately of the complaint.
3. Nuisance odors, if any, will be abated through covering/containerizing excavated materials, backfilling open excavations in a timely manner, using a foam unit, and/or other appropriate odor suppression measures. These odor suppression materials and measures will be kept on-Site and readily available for use, as needed.
4. As described in NYSDEC DER-10, Appendix 1B – Fugitive Dust Control, nuisance dust, if any, will be abated by applying water on haul roads; wetting equipment and excavation faces; spraying water on buckets during excavation and dumping; hauling materials in properly tarped or watertight containers; restricting on-Site vehicle speeds to 10 mph; covering excavated areas and material after excavation activity ceases; and reducing the open excavation size and/or number of open excavations.
5. Work will resume in the affected area when the nuisance odors/dust have been abated, as determined by the Roux on-Site Qualified Person.

If any other complaints or concerns regarding the work is raised by the adjacent property owners and or the general public, NYSDEC, NYSDOH, and 5 Flint will be notified immediately of the complaint or concern.

5.4.5 Deviations from the Remedial Action Work Plan

All deviations from the RAWP will be reported to NYSDEC for approval and fully explained in the FER.

6.0 RESIDUAL CONTAMINATION TO REMAIN ON SITE

Since the remedial cleanup track for the Site is a Track 4 cleanup there will be residual contaminated soil (soil containing concentrations exceeding the Site's SCOs) at the Site after the remedy is completed, Engineering and Institutional Controls (ECs and ICs) are required to be protective of human health and the environment. These ECs and ICs will be described in the Site's FER and SMP. Long- term management of EC/ICs and of residual contamination will be under a Site-specific SMP and will be included in the FER.

ECs will be implemented to protect public health and the environment by appropriately managing residual contamination. The Controlled Property (the Site) will have four primary EC systems. These are:

- the completed ISS areas, which solidifies contaminant source areas (e.g. GCM and PGWSCO-designated source material);
- a Site Cover System that has all residual contamination covered either by buildings, sidewalks, pavement, or a two-foot-thick cover of soil that complies with the applicable SCOs within remedial activities areas;
- implementation of an MNA program as part of post-certificate of completion groundwater monitoring; and
- the potential for SVI into any future buildings constructed on-Site will be evaluated after the remedial action is complete through the collection of soil vapor intrusion monitoring data under the SMP. If required, provision for implementing actions recommended to address exposures related to soil vapor intrusion will be included in the SMP.

The FER will report residual contamination on the Site in tabular and map form. This will include presentation of exceedances of both Track 1 and Track 4 SCOs.

7.0 ENGINEERING CONTROLS

The following sections provide the engineering controls to be implemented at the Site to protect public health and the environment.

7.1 Completed ISS Areas

As discussed, Alternative 2, the accepted remedial approach for the Site includes ISS of contaminant source areas from approximately four feet below final grade to the vertical extents of the contaminant source areas, or bedrock. ISS would use a solidification reagent blend of 3% Portland cement and 6% ground granulated blast slag to remediate contaminant source areas at the Site. ISS of contaminant source areas is proposed within Proposed Excavation and ISS Areas 1 (revised), 1A, 1B and 2 as described in **Section 4.4**. The final extents of ISS areas will be documented in the FER.

As discussed, field QA/QC samples of the ISS mix and field cores of the cured ISS monolith will be collected to confirm the selected soil stabilization design mix requirements are met. QA/QC samples and cores will be subject to the QA/QC requirements presented in the NYSDEC In Situ Solidification QA/QC guidance document included in **Appendix G**. Tests include compressive strength and hydraulic conductivity/permeability, as well as visual assessment.

7.2 Site-Wide Cover System

Exposure to residual contaminated soils will be prevented by a Site-wide cover system that will be installed at the Site. The Site-wide cover system will be protective of human health and the environment and allows for restricted residential use of the Site. A cover system will be required to be installed in areas where the upper two feet of exposed surface soil exceeds the Site's SCOs. Where the Site-wide cover system is installed the soil cover will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the Site, will meet the SCOs for all constituents for the restricted residential use of the Site as set forth in 6 NYCRR Part 375-6.7(d). A diagram showing the Site-wide extents of the cover system and design details for the proposed cover type (engineered soil cover) and potential cover type is shown in **Figure 14.**

Stone material or soil imported to the Site for the construction of the Site-wide cover system will be in compliance with procedures defined for material import in the SoMP (see **Section 4.5.10**) and will be approved by the NYSDEC project manager prior to import to the Site. The material to be imported will meet soil quality objectives for this Site and/or will meet the sieve analysis requirements, unless otherwise approved by NYSDEC under a Case-Specific BUD Request. The NYSDEC approved cover soil quality objectives are the lower of the PGWSCOs or the RRSCOs for all constituents listed in Table 375-6.8(b) of 6 NYCRR Part 375 as well as PFAS and are presented on **Table 3** of this RAWP. The Site-wide cover system is an element of the selected remedy for the Site as detailed in the Site's Decision Document.

When redevelopment occurs at the Site, in locations where pavement, concrete, paved surface parking areas, sidewalks, building foundations, and building slabs are proposed those areas will be detailed in the 60 day change of use notification. Qualifying features of the development will constitute the site cover system component. Areas which are not components of the development will have 2 feet of soil cover that meets the Site's SCOs for all constituents listed in Part 375-6.8(b) including PFAS and are presented in **Table 3** of this RAWP and/or stone cover that meets the sieve analysis requirements.

An Excavation Work Plan will be included in the SMP and will outline the procedures to be followed if the site cover system is breached or altered and the underlying residual contamination are disturbed after the Remedial Action is complete.

The final configuration of the Site-wide Cover System components will be documented in the FER. The FER will include as-built drawings presenting the details of the installed site-wide cover system with NYS PE stamp and signature. Maintenance and inspection of this site-wide cover system will be described in the Site's SMP.

7.3 MNA Program

As discussed, implementation of an MNA program is proposed as part of post-certificate of completion groundwater monitoring. Further groundwater remediation would be accomplished through MNA, which is likely to reduce the toxicity, mobility, and volume of contamination remaining on-Site towards compliance with SCOs.

8.0 CRITERIA FOR COMPLETION OF REMEDIATION/ TERMINATION OF REMEDIAL SYSTEMS

8.1 ISS Areas

The completed ISS areas are a permanent control. As discussed, field QA/QC samples of the ISS mix and field cores of the cured ISS monolith will be collected to confirm the selected soil stabilization design mix requirements are met. QA/QC samples and cores will be subject to the QA/QC requirements presented in the NYSDEC In Situ Solidification QA/QC guidance document included in **Appendix G**.

8.2 Site-Wide Cover Systems

The Site-wide cover system is an engineering control, and the quality and integrity of this engineering control will be inspected at defined, regular intervals in perpetuity, and will be maintained as described in the SMP.

8.3 Groundwater Monitoring

As discussed in **Section 7.3** above, MNA to assess the performance of the remedy, or natural attenuation following the removal of contaminant sources, will continue, as determined by NYSDOH and NYSDEC project managers, until residual groundwater concentrations are found to be below NYSDEC standards or have become asymptotic over an extended period. The long-term groundwater MNA will continue until permission to discontinue is granted in writing by NYSDEC and NYSDOH project managers. All MNA activities including the frequency, analytical parameters, and the number of groundwater monitoring wells will be outlined in the Monitoring Plan of the Site's SMP. No modifications and changes to groundwater sampling and analytical parameters will occur without prior written NYSDEC project manager approval. Select groundwater monitoring wells removed or decommissioned (with NYSDEC project manager approval) as part of excavation and ISS activities would be reinstalled or replaced, as needed, to conduct groundwater monitoring. The decision on which monitoring wells will be reinstalled, or where replacement monitoring wells will be placed, will be made in consultation with NYSDEC at the time of the SMP.

9.0 INSTITUTIONAL CONTROLS

The Site is achieving a Track 4 restricted residential remedy. As such, the Site will have residual contamination remaining in place at the Site; therefore, institutional and engineering controls (IC/ECs) for the residual contamination have been incorporated into the remedy to be protective of public health and the environment. All Site ICs/ECs will ensure continual and proper management of residual contamination in perpetuity. As a Track 4 restricted residential remedy, the Site will require an Environmental Easement (EE) and a SMP.

9.1 Environmental Easement

An Environmental Easement (EE), as defined in Article 71 Title 36 of the Environmental Conservation Law, is required when residual contamination is left on-Site after the Remedial Action is complete. As part of this remedy, an Environmental Easement executed by NYSDEC and 5 Flint/property owner will be filed and recorded with the Monroe County Clerk. The EE will run in perpetuity with the controlled property. The Environmental Easement will be included as an appendix in the Site's SMP and Final Engineering Report.

The EE is the legal instrument that sets forth the use restriction(s) and/or prohibition(s) on the future use of the Site in a manner inconsistent with ECs. An Environmental Easement will be recorded with Monroe County Clerk. The EE will run with the properties of the Site in perpetuity or until released in writing by NYSDEC. It requires that the grantor of the Environmental Easement and the grantor's successors and assigns adhere to all Engineering and Institutional Controls (ECs/ICs) placed on this Site by this NYSDEC-approved remedy. ICs provide restrictions on Site usage, restrictions on the use of groundwater at the Site, and compliance with the Site's SMP. The SMP describes appropriate methods and procedures to ensure compliance with all ECs and ICs that are required by the Environmental Easement and the SMP. Once the SMP has been approved by the NYSDEC, compliance with the SMP is required by the grantor of the Environmental Easement and grantor's successors and assigns.

The Environmental Easement renders the Site a Controlled Property. The Environmental Easement must be recorded with Monroe County before SMP and FER can be approved and the Certificate of Completion can be issued by NYSDEC. A series of ICs are required under this remedy to implement, maintain and monitor these ECs systems, prevent future exposure to residual contamination by controlling disturbances of the subsurface soil and restricting the use of the Site to restricted residential use(s) only. These Institutional Controls are requirements or restrictions placed on the Site that are listed in the Environmental Easement. The Institutional and Engineering Control Plan in the Site's SMP provides all of the methods and procedures to be followed to comply with this Track 4 restricted residential remedy.

9.2 Site Management Plan

Site Management is the last phase of remediation and begins with the approval of the FER and issuance of the Certificate of Completion for Site. The SMP is a complete and independent living document for the Site. Site Management continues in perpetuity or until released in writing by NYSDEC or until the Site is remediated to meet Unrestricted use. The property owner is responsible to ensure that all Site Management responsibilities defined in the SMP are performed.

The SMP will also include methods to incorporate and track GSR. Measures will be taken to maintain a cost-effective, protective remedy that remains conscientious of the Site's environmental footprint. At a minimum, the following should be assessed: waste generation, energy usage, emissions, and water usage.

The SMP is intended to be a living document that provides a detailed description of the procedures required to manage residual contamination left in place at the Site following completion of the Remedial Action. This includes: (1) development, implementation, and management of all Engineering and Institutional Controls; (2) development and implementation of monitoring systems and a Monitoring Plan; (3) development of a plan to operate and maintain any treatment, collection, containment, or recovery systems (including, where appropriate, preparation of an Operation and Maintenance Manual); (4) submittal of Site Management Reports, site inspections, remedy performance monitoring and certification of results; (5) defining criteria for termination of treatment system operation.

To address these needs, this SMP will include the following:

1. an Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

    a. Institutional Controls: The Environmental Easement discussed in **Section 9.1** above and remedial element 7 of the Decision Document.

    Engineering Controls: The Site cover system, completed ISS areas, MNA program discussed in **Section 7.0** and remedial elements 4, 5 and 6 (respectively) of the decision document.

    This plan includes, but may not be limited to:

    - an Excavation Work Plan which details the provisions for management of future excavations in areas of remaining contamination;
    - a provision should redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures;
    - descriptions of the provisions of the environmental easement including any land use, and groundwater or surface water use restrictions;
    - a provision for the evaluation of the potential for soil vapor intrusion for any occupied buildings developed on the Site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
    - provisions for the management and inspection of the identified engineering controls;
    - maintaining site access controls and Department notification; and
    - the steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

2. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:

    a. monitoring of the cover system to assess the performance and effectiveness of the remedy;

    b. implementation of an MNA program as part of post-certificate of completion groundwater monitoring;

    c. monitoring for vapor intrusion for any proposed buildings on the Site, as may be required by the Institutional and Engineering Control Plan discussed above; and

    d. a schedule of monitoring and frequency of submittals to the NYSDEC.

3. An Operation and Maintenance (O&M) Plan to ensure continued operation, maintenance, optimization, monitoring, inspection, and reporting of any mechanical or physical components of the remedy. The plan includes, but is not limited to:

    - compliance monitoring of treatment systems to ensure proper O&M;

- providing the NYSDEC access to the site and O&M records.

4. A Site Management Reporting Plan for submittal of data, information, recommendations, and certifications to NYSDEC.

The SMP will be prepared in accordance with the requirements in NYSDEC DER-10 Technical Guidance for Site Investigation and Remediation and NYSDEC's current template.

Site management activities, reporting, and EC/IC certification will be scheduled on a certification period basis. The certification period will be annually, and the first submission will be due 16 months after the issuance of the Certificate of Completion, and annually (or at another frequency as approved by NYSDEC project manager) thereafter.

The SMP will include a long-term groundwater monitoring plan for groundwater at the down-gradient Site perimeter to evaluate the Site-wide performance of the remedy. Appropriately placed groundwater monitor wells will also be installed immediately down-gradient of all source remediation areas for the purpose of evaluation of the effectiveness of the remedy that is implemented.

All handling of residual contaminated soil/fill material will be subject to provisions contained in the SMP and the EWP.

10.0 FINAL ENGINEERING REPORT

A FER will be submitted to NYSDEC following implementation of the Remedial Action defined in this RAWP. The FER provides documentation that the remedial work approved under this RAWP has been completed and has been performed in compliance with the approved RAWP. The FER will provide a comprehensive account of the locations and characteristics of all material removed from the Site including the surveyed map(s) of all excavation and ISS areas. The FER will include PE stamped and signed as-built drawings for all excavation and ISS areas, constructed elements, including but limited to the site-wide cover system, calculation and manufacturer documentation for treatment systems, certifications, documentation for imported material to the Site, manifests and bills of lading. The FER will provide a description of deviations from the approved RAWP. The FER will provide a tabular summary of all analytical sampling and associated SGCs, performance evaluation sampling results and all material characterization results and other sampling, and chemical analysis performed as part of the Remedial Action. The FER will provide test results demonstrating that all mitigation and remedial systems are functioning properly. The FER will be prepared in conformance with DER-10 Section 5.8 and the current NYSDEC FER template.

The FER will include written (e.g., daily reports, field log books) and photographic documentation of all remedial work performed under this remedy.

The FER will provide a thorough summary of all soil, and a table and figure that presents exceedances from Track 4 RRSCOs for all soil remaining within the top two feet at the Site after the Remedial Action.

The FER will provide a thorough summary of all residual contamination that exceeds the SCOs and must provide an explanation for why the material was not removed as part of the Remedial Action. A table that shows residual contamination in excess of Site SCOs and a map that shows residual contamination in excess of Site SCOs will be included in the FER.

The FER will include an accounting of all material removed from the Site and disposed off-site at a permitted facility. This will include but not limited to excavated contaminated soil, historic fill, solid waste, hazardous waste, non-regulated material, and fluids. Documentation associated with disposal of all material must also include records (e.g., manifests, bills of lading, weigh tickets) and approvals for receipt of the material (approval letters from disposal facility). The FER will document all material imported to the Site, accounting of the origin and chemical quality of all material imported onto the Site as well as where the material was placed at the Site.

The FER must include a discussion of the green remediation practices/technologies employed throughout the remedial program. A final footprint analysis using a DER accepted model, and any tracking methods used through the construction including restoration activities. Before approval of a FER and issuance of a Certificate of Completion, all project reports must be submitted in digital form on electronic media (PDF).

10.1 Certifications

The certification of the Final Engineering Report will be as presented in the FER template with no changes or modifications. The FER will be prepared, stamped and signed by a NYS licensed and registered P.E. authorized in accordance with article 145 of the education law to practice the profession of engineering.

11.0 SCHEDULE

The proposed remedial activities at the Site described in this RAWP will be initiated upon approval of that Work Plan. Remedial Activities are tentatively scheduled to begin in the third quarter of 2026. The NYSDEC Project Manager will be notified at least seven days in advance of all field activities. A Final Engineering Report and SMP will be prepared in accordance with NYSDEC DER-10 following the conclusion of Remedial Action activities and submitted to NYSDEC. An Environmental Easement will be placed on the property prior to receipt of the Certificate of Completion.

A schedule for the proposed Remedial Action for the Site is presented below.

May 2024	Submit BCP Application and RAAR
July 2024	Submit revisions to BCP Application and RAAR,
February 2025	Submit Revised RAAR
June 2025	Submit Change of Use / Interim SMP for Building Demolition
November 2025	Building Demolition
January 2026	Submit Draft RAWP
July 2026	Submit Revised RAWP
September 2025	Initiate implementation of RAWP
September 2026	Submit Draft Environmental Easement (EE) Package
November 2026	SMP
December 2026	Complete remediation activities
January 2027	Submit Draft Final Engineering Report
March 2027	Anticipated issuance of Certificate of Completion

Respectfully submitted,

ROUX ENVIRONMENTAL ENGINEERING AND GEOLOGY, D.P.C.



Noelle M. Clarke, PE
Principal Engineer

TABLES

1. Summary of Soil Analytical Results
2. Summary of Groundwater Analytical Results
3. Soil Cleanup Objectives
3a Imported Backfill and Cover Reuse Criteria
4. PDI Sampling Field Observations
5. Summary of PDI Soil Analytical Results
6. Summary of PDI Groundwater Analytical Results
7. Required Permits, Certificates or Other Approvals or Authorizations
8. Emergency Contact List
9. Remedial Cost Estimate

Table 1 - Summary of Soil Analytical Data (Detections Only)
BCP Site No. C828162B
5 Flint Street, Rochester, New York

Sample ID Sample Depth (ft bgs) Lab Sample ID Sample Date	NYSDEC Unrestricted SCO mg/kg	NYSDEC PGWSCO mg/kg	NYSDEC Restricted Residential SCO mg/kg	SS-1 0-0.2 9912L959-009 12/7/1999	SS-2 0-0.2 9912L959-011 12/7/1999	TP-1 3-5 9912L973-001 12/8/1999	TP-1 7-8 9912L973-002 12/8/1999	TP-2 5 9912L959-003 12/8/1999	TP-3 8-9 9912L959-004 12/8/1999	TP-4 5 9912L959-005 12/8/1999	DEC MW-1 8-10 0002L425-003 & 0002L425-004 2/8/2000	DEC MW-1 16-18 0002L425-005 2/8/2000	DEC MW-2 6-8 0002L425-001 2/8/2000	DEC MW-2 10-12 0002L425-002 2/8/2000	SB-008 0-1 M74535-14 6/18/2008	SB-008 4-6 M74740-3 6/23/2008	SB-009 0-1 M74535-15 6/18/2008	SB-009 8-10 M74740-4 6/23/2008	SB-010A 0-1 M74739-3 6/23/2008	SB-010A 6-8 M74740-5 6/24/2008	SB-015A 0-1 M74906-1 6/27/2008	SB-015A 4-6 M75017-1 7/2/2008	SB-016 0-1 M74873-5 7/1/2008	SB-016C 8-9 M75017-2 7/2/2008	SB-016C Dupe 8-9 M75017-2 7/2/2008	SB-017A 0-1 M74739-2 6/23/2008	SB-017A 10-12 M74740-6 6/24/2008	SB-020 0-1 M74739-1 6/23/2008	SB-020 4-8 M74740-7 6/24/2008	SB-020 8-10 M74740-8 6/24/2008	SB-021 0-1 M74739-4 6/24/2008	SB-021 6-8 M74740-9 6/24/2008	SB-021 10-12 M74740-10 6/24/2008	SB-046B 0-1 M74739-5 6/24/2008	SB-046B Dupe 0-1 M74739-6 6/24/2008	SB-046B 6-7.5 M74858-1 6/25/2008	SB-061A 0-1 M74861-1 6/25/2008
TOTAL PETROLEUM HYDROCARBONS (mg/kg)																																				
Total Petroleum Hydrocarbons (mg/kg)	NS	NS	NS	—	—	—	—	—	—	—	1140	166	474	22.3	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
CYANIDE (mg/kg)																																				
Cyanide	27	40	27	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
METALS (mg/kg)																																				
Aluminum	NS	NS	NS	**6770**	**7000**	**6340**	**9120**	**20100**	**7560**	**12000**	**6140**	—	**8100**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Antimony	NS	NS	NS	—	**1.2 J**	—	—	—	—	—	—	—	—	—	4.1 U	—	2.1 U	2.4 U	2.3 U	2.3 U	2.4 U	—	**0.39 J**	2.4 U	2.4 U	2.4 U	**0.44 J**	2.2 U	2.2 U	—	2.3 U	2.3 U	—	2.3 U	2.2 U	2.2 U	2 U
Arsenic	13	16	16	**4.6**	60.7	**9.0**	**10.4**	16.1	**4.7**	**5.3**	**7.2**	—	**4.7**	—	**14.8**	—	**8.5**	**4**	15.1	**6.5**	13.4	—	22.9	**7.8**	**6.4**	18.5	**5.9**	**5.3**	—	**4.3**	**11.2**	—	**6.7**	15.9	16.1	**4.6**	**7.5**
Barium	350	820	400	**51.0**	366	**89.5**	**29 J**	828	**86.1**	**98.8**	**43.9 J**	—	**47 J**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Beryllium	7.2	47	72	**0.34 J**	**0.63 J**	**0.54 J**	**0.52 J**	**2.2**	**0.47 J**	**0.69 J**	**0.28 J**	—	**0.46 J**	—	**1.3**	—	**0.34 J**	**0.42 J**	**0.59**	**0.61**	**0.38 J**	—	**0.35 J**	**0.6**	**0.6**	**0.6**	**0.46**	**0.29 J**	—	**0.72**	**0.34 J**	—	**0.58**	**0.77**	**0.77**	**0.49**	**0.23 J**
Cadmium	2.5	7.5	4.3	**0.34 J**	**2.3**	—	**0.56 J**	**2.4**	**0.47 J**	**0.31 J**	**0.65 J**	—	—	—	**1.3**	—	**0.52**	0.48 U	**0.22 J**	0.45 U	**2.2**	—	**0.42 J**	0.48 U	0.48 U	**1.5**	0.45 U	**0.4 J**	—	0.45 U	**0.53**	—	0.46 U	**0.23 J**	**0.27 J**	0.43 U	**0.27 J**
Calcium	NS	NS	NS	**46500**	**167000**	**3150**	**1850**	**85100**	**15400**	**3880**	**1870**	—	**1280**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chromium	30	NS	180	**10.1**	**14.1**	**9.4**	**9.8**	47.9	**11.1**	**16.3**	**19.9**	—	**11.5**	—	**12.2**	—	**9.1**	**13**	**7.8**	**14.8**	**14.5**	—	**13.4**	**15.3**	**15.2**	**10.2**	**10.3**	**7.9**	—	**14**	**13.8**	—	**12.9**	**18.2**	**19.7**	**11.4**	**5.7**
Cobalt	NS	NS	NS	**4.7 J**	**4.9 J**	**5.8 J**	**5.4 J**	**9.1**	**5.5 J**	**11.5**	**4.6 J**	—	**7.6 J**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Copper	50	1720	270	**17.9**	**44.1**	**28.0**	143	**45.8**	**21.8**	**13.5**	**17.2**	—	**13.7**	—	134	—	**25.8**	**17.6**	**28.7**	**15.1**	**34.3**	—	**32**	**16.9**	**18.4**	**36.6**	**14.4**	**23.3**	—	**14.2**	**39.6**	—	**17.2**	**32.8**	**32**	**15.8**	**20.6**
Iron	NS	NS	NS	**14900**	**17400**	**19300**	**17700**	**20200**	**16700**	**23900**	**15900**	—	**18100**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Lead	63	450	400	152	119	**29.8**	**9.1**	3480	**47.2**	**14.8**	**12.1**	—	**9.6**	—	379	—	169	**8.1**	88	**8.7**	471	—	**53.1**	**10.2**	**11.5**	575	**11.1**	325	—	**10.2**	343	—	**10.1**	**43.5**	**41.1**	**13.6**	97.5
Magnesium	NS	NS	NS	**27200**	**30600**	**2250**	**2410**	**35800**	**2900**	**3790**	**2130**	—	**2640**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Manganese	1600	2000	2000	**440**	**1500**	**108**	**87.3**	3480	**346**	**780**	**85.4**	—	**222**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Mercury	0.18	0.73	0.81	**0.12**	0.67	4	—	1.5	**0.12**	**0.03 J**	**0.09**	—	—	—	0.99	—	0.59	**0.025 J**	0.6	**0.023 J**	4.4	—	0.26	**0.022 J**	**0.029 J**	0.37	0.039 U	0.56	—	**0.027 J**	0.29	—	**0.024 J**	0.6	0.76	0.046	0.31
Nickel	30	130	310	**10.1**	**23.6**	**14.9**	**17.3**	35.6	**14.0**	**22.8**	**14.5**	—	**20.0**	—	**16**	—	**13.4**	**21.5**	**13.7**	**23.2**	**15.3**	—	**17.2**	**26.1**	**25.2**	**12.2**	**18.8**	**7.6**	—	**21.6**	**13.1**	—	**23.1**	**13.1**	**13.6**	**21**	**12.4**
Potassium	NS	NS	NS	**1000 J**	**2240**	**930 J**	**1040 J**	**2540**	**1020 J**	**1170**	**473 J**	—	**865 J**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Selenium	3.9	4	180	—	7.4	**1.3**	**1.6**	**2.6**	**1.3 J**	**0.99 J**	**2.0**	—	**1.5**	—	4.1 U	—	2.1 U	2.4 U	2.3 U	2.3 U	**1 J**	—	2.4 U	2.4 U	2.4 U	**1.4 J**	2.2 U	2.2 U	—	2.3 U	2.3 U	—	2.3 U	**0.7 J**	**0.79 J**	2.2 U	2 U
Silver	2	8.3	180	—	**0.36 J**	—	—	**0.24 J**	—	—	—	—	—	—	**0.34 J**	—	**0.17 J**	0.6 U	**0.11 J**	0.56 U	**0.48 J**	—	**0.27 J**	**0.094 J**	0.6 U	**0.92**	0.56 U	**0.24 J**	—	0.57 U	**0.32 J**	—	**0.076 J**	**0.092 J**	0.56 U	**0.13 J**	**0.19 J**
Sodium	NS	NS	NS	**118 J**	**497 J**	**75.4 J**	**67.7 J**	**714 J**	**88.5 J**	**56.5 J**	**52.3 J**	—	**97.7 J**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Thallium	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	4.1 U	—	2.1 U	2.4 U	2.3 U	2.3 U	2.4 U	—	2.4 U	2.4 U	2.4 U	2 U	2.2 U	2.2 U	—	2.3 U	2.3 U	—	2.3 U	2.2 U	2.2 U	2.2 U	2 U
Vanadium	NS	NS	NS	**16.6**	**28.6**	**16.2**	**15.7**	**23.2**	**15.5**	**20.1**	**32.0**	—	**13.9**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Zinc	109	2480	10000	**103**	183	139	160	**663**	196	**79.4**	**62.9**	—	**47.5**	—	**729**	—	**257**	**55.2**	174	**72.2**	688	—	122	**58.9**	**58.4**	410	**54.6**	191	—	**49.7**	212	—	**54.9**	**87.9**	**87.9**	**53.6**	92
PESTICIDES (mg/kg)																																				
Aldrin	0.005	0.19	0.097	—	—	—	**0.0026**	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.008 U	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
Alpha BHC (Alpha Hexachlorocyclohexane)	0.02	0.02	0.48	—	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.008 U	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
Beta BHC (Beta Hexachlorocyclohexane)	0.036	0.09	0.36	—	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.008 U	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
Chlordane	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	0.092 U	—	0.078 U	0.077 U	0.072 U	0.082 U	0.08 U	—	0.094 U	0.077 U	0.078 U	0.089 U	0.079 U	0.072 U	—	0.077 U	**0.263**	—	0.077 U	0.075 U	0.076 U	0.078 U	0.067 U
cis-Chlordane	0.094	2.9	4.2	0.21	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Delta BHC (Delta Hexachlorocyclohexane)	0.04	0.25	100	—	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.008 U	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
Dieldrin	0.005	0.1	0.2	0.074	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.1	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
Endosulfan Sulfate	2.4	1000	24	—	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.008 U	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
Endrin	0.014	0.06	11	—	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.008 U	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
Endrin Aldehyde	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.008 U	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
Endrin Ketone	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Gamma Bhc (Lindane)	0.1	0.1	1.3	—	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.008 U	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
Heptachlor	0.042	0.38	2.1	**0.03**	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.008 U	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
Heptachlor Epoxide	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.008 U	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
Methoxychlor	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.008 U	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
P,P'-DDD	0.0033	14	13	—	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0072 U	—	0.0077 U	0.0163	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
P,P'-DDE	0.0033	17	8.9	—	—	—	—	—	—	—	—	—	—	—	0.0129	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.004 J	—	0.0077 U	0.0112	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
P,P'-DDT	0.0033	136	7.9	—	—	—	—	—	—	—	—	—	—	—	0.0092 U	—	0.0078 U	0.0077 U	0.0072 U	0.0082 U	0.008 U	—	0.0094 U	0.0077 U	0.0078 U	0.0089 U	0.0079 U	0.0079	—	0.0077 U	0.047	—	0.0077 U	0.0075 U	0.0076 U	0.0078 U	0.0067 U
trans-Chlordane	NS	NS	NS	**0.17**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SEMI-VOLATILE ORGANIC COMPOUNDS (mg/kg)																																				
2-Methylnaphthalene	NS	NS	NS	**0.098 J**	—	**1.5 J**	**6.4 J**	**110**	**0.67 J**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Acenaphthene	20	98	100	**0.78 J**	**3.7 J**	—	—	170	**1.7 J**	—	—	—	—	—	**0.122 J**	1.6 U	**1.58**	1.5 U	1.4 U	0.3 U	**9.76**	**2.78**	**4.71**	0.29 U	0.3 U	**3.31**	0.29 U	0.28 U	**0.209 J**	**0.0605 J**	**0.931**	0.31 U	0.28 U	**1.15**	**0.654**	0.29 U	0.26 U
Acenaphthylene	100	107	100	—	—	—	—	—	**0.31 J**	—	—	—	—	—	**0.136 J**	—	**1.18**	1.5 U	1.4 U	0.3 U	**5.81**	—	**0.96**	0.29 U	0.3 U	**0.922 J**	0.29 U	0.28 U	—	**0.043 J**	**0.168 J**	—	0.28 U	**0.239 J**	**0.191 J**	0.29 U	**0.0641 J**
Anthracene	100	1000	100	**1.6 J**	**12 J**	—	—	510	**4.7 J**	—	—	—	—	—	**0.402**	1.6 U	**5.73**	1.5 U	**0.295 J**	0.3 U	**26.7**	**9.47**	**12.6**	0.29 U	0.3 U	**8.81**	0.29 U	**0.0359 J**	**0.305**	0.3 U	**2.49**	0.31 U	0.28 U	**2.5**	**1.57**	0.29 U	**0.0941 J**
Benzo(a)anthracene	1	1	1	3.3	28	—	—	760	10	**0.065 J**	—	—	—	—	1.23	1.6 U	15.8	1.5 U	**0.707 J**	0.3 U	59.1	26.7	25.1	0.29 U	**0.0373 J**	**21.3**	0.29 U	**0.0719 J**	**0.862**	0.3 U	4.29	0.31 U	0.28 U	4.01	3.31	0.29 U	**0.199 J**
Benzo(a)pyrene	1	22	1	3.1	23	—	—	530	8.1	**0.054 J**	—	—	—	—	1.14	1.6 U	14	1.5 U	**0.627 J**	0.3 U	49.3	16.7	18.9	0.29 U	0.3 U	17.9	0.29 U	**0.0623 J**	**0.67**	0.3 U	3.71	0.31 U	0.28 U	3.65	2.44	0.29 U	**0.228 J**
Benzo(a)fluoranthene	1	1.7	1	2.7	29 J	—	—	480	7	**0.055 J**	—	—	—	—	1.19	1.6 U	14.1	1.5 U	**0.636 J**	0.3 U	51.2	17.5	19.2	0.29 U	0.3 U	17.8	0.29 U	**0.0699 J**	**0.568**	0.3 U	3.72	0.31 U	0.28 U	4.28	2.93	0.29 U	**0.314**
Benzo(g,h,i)perylene	100	1000	100	**1.9**	15	—	—	280	**4.2 J**	**0.043 J**	—	—	—	—	**0.731**	1.6 U	**8.37**	1.5 U	**0.416 J**	0.3 U	**34.1**	**7.53**	**6.77**	0.29 U	0.3 U	**11.3**	0.29 U	**0.0873 J**	**0.317**	0.3 U	**2.56**	0.31 U	0.28 U	**1.68**	**0.999**	0.29 U	**0.206 J**
Benzo(k)fluoranthene	0.8	1.7	3.9	2.6	22 J	—	—	470	6.9	**0.059 J**	—	—	—	—	**0.743**	1.6 U	6.2	1.5 U	**0.434 J**	0.3 U	34.4	7.19	6.19	0.29 U	0.3 U	14.6	0.29 U	0.28 U	**0.559**	0.3 U	2.28	0.31 U	0.28 U	**1.91**	1.31	0.29 U	**0.216 J**
Benzyl butyl phthalate	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	0.34 U	—	**0.0886 J**	1.5 U	1.4 U	0.3 U	2.9 U	—	0.35 U	0.29 U	0.3 U	1.7 U	0.29 U	**0.285**	—	0.3 U	0.29 U	—	0.28 U	0.29 U	0.29 U	0.29 U	0.26 U
bis(2-Ethylhexyl) phthalate	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	**0.214 J**	—	**0.179 J**	1.5 U	1.4 U	0.3 U	2.9 U	—	**0.18 J**	0.29 U	0.3 U	1.7 U	0.29 U	0.28 U	—	0.3 U	**0.219 J**	—	0.28 U	0.29 U	0.29 U	0.29 U	0.26 U
Carbazole	NS	NS	NS	**0.85 J**	**4 J**	—	—	**170**	**2.5 J**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Carbon Disulfide	NS	NS	NS	—	—	—	—	—	**0.002 J**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chrysene	1	1	3.9	3.3	30	**0.39 J**	—	710	11	**0.072 J**	—	—	—	—	**1.22**	1.6 U	14.9	1.5 U	**0.77 J**	0.3 U	56.2	19.2	23.4	0.29 U	**0.0405 J**	21.8	0.29 U	**0.135 J**	**0.854**	0.3 U	4.43	0.31 U	0.28 U	5.14	3.64	0.29 U	**0.261**
Dibenz(a,h)anthracene	0.33	1000	0.33	0.81 J	5.7 J	—	—	100	1.4 J	—	—	—	—	—	**0.278 J**	1.6 U	2.98	1.5 U	1.4 U	0.3 U	13.2	4.12	4.03	0.29 U	0.3 U	4.71	0.29 U	0.28 U	**0.158 J**	0.3 U	0.958	0.31 U	0.28 U	0.738	0.461	0.29 U	**0.0754 J**
Dibenzofuran	7	210	59	**0.42 J**	**2.3 J**	—	—	220	**1.5 J**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Di-n-butyl Phthalate	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	0.34 U	—	0.29 U	1.5 U	**0.18 J**	0.3 U	**0.394 J**	—	0.35 U	0.29 U	0.3 U	**0.25 J**	0.29 U	**0.0374 J**	—	0.3 U	0.29 U	—	0.28 U	0.29 U	0.29 U	0.29 U	0.26 U
Fluoranthene	100	1000	100	**9.7**	**63**	**0.5 J**	—	1500	**24**	**0.13 J**	—	—	—	—	**2.49**	1.6 U	**34.3**	1.5 U	**1.45**	0.3 U	108	**41.6**	**48.1**	0.29 U	0.3 U	**45.8**	0.29 U	**0.114 J**	**1.66**	0.3 U	**11.4**	0.31 U	0.28 U	**10.6**	**7.24**	0.29 U	**0.27**
Fluorene	30	386	100	**0.73 J**	**3.9 J**	—	—	360	**2.4 J**	—	—	—	—	—	**0.164 J**	1.6 U	**2.61**	1.5 U	1.4 U	0.3 U	**13.7**	**4.87**	**6.12**	0.29 U	0.3 U	**4.45**	0.29 U	**0.228 J**	**0.294 J**	0.3 U	**1.09**	0.31 U	0.28 U	**1.16**	**0.649**	0.29 U	0.26 U
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	1.7 J	14 J	—	—	280	3.9 J	**0.035 J**	—	—	—	—	0.659	1.6 U	7.67	1.5 U	**0.409 J**	0.3 U	32.3	9.72	9.15	0.29 U	0.3 U	13.1	0.29 U	**0.0691 J**	**0.348**	0.3 U	2.42	0.31 U	0.28 U	1.8	1.11	0.29 U	**0.234 J**
Naphthalene	12	12	100	**0.26 J**	**2.4 J**	—	—	320	**2.3 J**	—	—	—	—	—	**0.0988 J**	1.6 U	**0.771**	1.5 U	1.4 U	0.3 U	**9.43**	**3.46**	**3.16**	0.29 U	0.3 U	**2.31**	0.29 U	0.28 U	**0.615**	**0.133 J**	**0.331**	**0.0443 J**	0.28 U	**0.63**	**0.348**	**0.591**	**0.0603 J**
Pentachlorophenol	0.8	0.8	6.7	—	—	—	—	—	—	—	—	—	—	—	0.69 U	—	0.58 U	3 U	2.9 U	0.6 U	5.9 U	—	0.7 U	0.58 U	0.59 U	3.4 U	0.58 U	0.56 U	—	0.59 U	**0.235 J**	—	0.57 U	0.58 U	0.58 U	0.58 U	0.51 U
Phenanthrene	100	1000	100	**7.3**	**46**	**1.3 J**	**1.5 J**	1600	**25**	**0.099 J**	—	—	—	—	**1.7**	**0.37 J**	**23.5**	1.5 U	**1.35 J**	0.3 U	**92.2**	**36.3**	**47.9**	0.29 U	**0.15 J**	**38.3**	**0.204 J**	**0.0392 J**	**1.39**	**0.153 J**	**8.56**	0.31 U	**0.101 J**	**8.71**	**5.76**	**0.387**	**0.166 J**
Pyrene	100	1000	100	**7.2**	**47**	**0.67 J**	—	960	**20**	**0.11 J**	—	—	—	—	**2.06**	1.6 U	**25.6**	1.5 U	**1.37 J**	0.3 U	**99.5**	**36.4**	**44.7**	0.29 U	**0.0774 J**	**38.8**	0.29 U	**0.165 J**	**1.06**	0.3 U	**9.64**	0.31 U	0.28 U	**8.56**	**5.94**	0.29 U	**0.306**
VOLATILE ORGANIC COMPOUNDS (mg/kg)																																				
1,1,1-Trichloroethane	0.68	0.68	100	—	—	—	—	—	—	—	—	—	—	—	0.21 U	—	0.15 U	0.15 U	0.16 U	0.19 U	0.15 U	—	0.2 U	0.15 U	0.15 U	0.24 U	0.23 U	0.12 U	—	0.12 U	0.16 U	—	0.78 U	0.18 U	0.18 U	0.61 U	0.13 U
1,1-Dichloroethane	0.27	0.27	26	—	—	—	—	—	**0.008 J**	—	—	—	—	—	0.21 U	—	0.15 U	0.15 U	0.16 U	0.19 U	0.15 U	—	0.2 U	0.15 U	0.15 U	0.24 U	0.23 U	0.12 U	—	0.12 U	0.16 U	—	0.78 U	0.18 U	0.18 U	0.61 U	0.13 U
1,2,4-Trimethylbenzene	3.6	3.6	52	—	—	—	—	—	—	—	—	—	—	—	0.53 U	0.42 U	0.37 U	**3.33**	0.4 U	0.48 U	0.36 U	0.41 U	0.5 U	0.38 U	**0.149 J**	0.59 U	5.74	0.31 U	42.7	**2.19**	0.4 U	**0.173 J**	1.9 U	**0.0401 J**	0.45 U	67.5	0.31 U
1,2-Dichloroethene, Total	NS	NS	NS	—	—	—	—	—	**0.006**	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
1,3,5-Trimethylbenzene	8.4	8.4	52	—	—	—	—	—	—	—	—	—	—	—	0.53 U	0.42 U	0.37 U	0.37 U	0.4 U	0.48 U	0.36 U	0.41 U	0.5 U	0.38 U	**0.0423 J**	0.59 U	**1.56**	0.31 U	24.4	**1.19**	0.4 U	**0.0327 J**	1.9 U	**0.0224 J**	0.45 U	38.1	0.31 U
Acetone	0.05	0.05	100	—	—	0.41 JB	0.29 JB	—	0.098 B	—	—	—	—	—	0.53 U	—	0.37 U	0.37 U	0.4 U	0.48 U	0.36 U	—	0.5 U	0.38 U	0.38 U	0.59 U	0.58 U	0.31 U	—	0.29 U	0.4 U	—	1.9 U	0.45 U	0.45 U	1.5 U	0.31 U
Benzene	0.06	0.06	4.8	—	—	—	—	—	—	—	—	—	—	—	0.053 U	0.042 U	0.037 U	0.037 U	0.04 U	0.048 U	0.036 U	0.041 U	0.05 U	0.038 U	0.038 U	0.059 U	0.058 U	0.031 U	0.38 U	0.029 U	0.04 U	0.041 U	0.19 U	0.045 U	0.045 U	0.15 U	0.031 U
Bromomethane	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	0.21 U	—	0.15 U	0.15 U	0.16 U	0.19 U	0.15 U	—	0.2 U	0.15 U	0.15 U	0.24 U	0.23 U	0.12 U	—	0.12 U	0.16 U	—	0.78 U	0.18 U	0.18 U	0.61 U	0.13 U
Carbon Disulfide	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	0.53 U	—	0.37 U	0.37 U	0.4 U	0.48 U	0.36 U	—	0.5 U	0.38 U	0.38 U	0.59 U	0.58 U	0.31 U	—	0.29 U	0.4 U	—	1.9 U	0.45 U	0.45 U	1.5 U	0.31 U
Chlorobenzene	1.1	1.1	100	—	—	—	—	—	—	—	—	—	—	—	0.21 U	—	0.15 U	**0.215**	0.16 U	0.19 U	0.15 U	—	0.2 U	0.15 U	0.15 U	0.24 U	0.23 U	0.12 U	—	0.12 U	0.16 U	—	0.78 U	0.18 U	0.18 U	0.61 U	0.13 U
Chloroethane	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	0.53 U	—	0.37 U	0.37 U	0.4 U	0.48 U	0.36 U	—	0.5 U	0.38 U	0.38 U	0.59 U	0.58 U	0.31 U	—	0.29 U	0

Table 1 - Summary of Soil Analytical Data (Detections Only)
BCP Site No. C828162B
5 Flint Street, Rochester, New York

Sample ID Sample Depth (ft bgs) Lab Sample ID Sample Date	NYSDEC Unrestricted SCO mg/kg	NYSDEC PGWSCO mg/kg	NYSDEC Restricted Residential SCO mg/kg	SB-061A 2-4 M74861-2 6/25/2008	SB-061A 4-6 M74858-2 6/25/2008	SB-01-S 0-1 144507-01 10/14/2014	SB-01-D 8-10 144507-02 10/14/2014	SB-02-S 0-1 144538-01 10/14/2014	SB-02-D 7-8 144538-02 10/14/2014	SB-03-S 0-1 144538-03 10/14/2014	SB-03-D 12 144538-04 10/14/2014	SB-04-S 0-1 144507-03 10/14/2014	SB-04-D 9-10 144507-04 10/14/2014	SB-05-S 0-1 144538-05 10/14/2014	SB-05-D 7-8 144538-06 10/14/2014	SB-06-S 0-1 144491-03 10/14/2014	SB-06-D 4-6 144491-04 10/14/2014	TP-04 7-10 144445-01 10/8/2014	TP-05 10 144445-02 10/8/2014	RXSB-06A 0-2 L1722162-01 6/28/2017	RXSB-06B 10-12 L1722162-02 6/28/2017	RXSB-07A 0-1 L1722162-03 6/28/2017	RXSB-07B 8-10 L1722162-04 6/28/2017	RXSB-08A 0-1 L1722162-05 6/28/2017	RXSB-08B 6-7.5 L1722162-06 6/28/2017	RXSB-08C 11-12.4 L1722162-07 6/28/2017	RXSB-09A 0-1 L1722162-08 6/28/2017	RXSB-09B 4-5.5 L1722162-09 6/28/2017
TOTAL PETROLEUM HYDROCARBONS (mg/kg)																											
Total Petroleum Hydrocarbons (mg/kg)	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
CYANIDE (mg/Kg)																											
Cyanide	27	40	27	—	—	**0.639**	0.406 U	0.54 U	0.448 U	0.632 U	0.577 U	0.585 U	0.357 U	**0.359 J**	0.561 U	**6.03**	**0.347 J**	0.61 U	**8.6**	—	—	—	—	—	—	—	—	—
METALS (mg/Kg)																											
Aluminum	NS	NS	NS	—	—	**7650**	**13300**	**8400**	**6550**	**2590**	**5060**	**11900**	**6030**	**4730**	**5530**	**11800**	**7840**	**8740**	**6980**	**4100**	**9150**	**6320**	**7370**	**5120**	**6710**	**6700**	**3480**	**5230**
Antimony	NS	NS	NS	2.4 U	2.2 U	7.94 U	7.86 U	6.95 U	7.2 U	9.5 U	7.35 U	7.78 U	6.78 U	7.45 U	8.02 U	7.44 U	7.66 U	7.35 U	8.78 U	**0.206 J**	**0.225 J**	**0.706**	**0.258 J**	**0.203 J**	**0.199 J**	**0.184 J**	**0.338 J**	**0.202 J**
Arsenic	13	16	16	**6.2**	**3.4**	**8.99**	**7.39**	**1.35**	**6.9**	19.1	**5.5**	**2.12**	**3.8**	**6.82**	**5.96**	23.9	**5.3**	**5.41**	**10.9**	**8.22**	**9.43**	**11.1**	**8.36**	**7.82**	**9.85**	**8.64**	**8.68**	**4.27**
Barium	350	820	400	—	—	**122**	**50.8**	**41.7**	**34.6**	**109**	**21.3**	**105**	**24.8**	**63**	**34.5**	**183**	**38.8**	**38**	**86.7**	**48.6**	**101**	**101**	**53.5**	**41**	**56.9**	**61.9**	**44.5**	**47.0**
Beryllium	7.2	47	72	**0.3 J**	**0.55**	**0.436 J**	**0.63 J**	**0.438 J**	**0.408 J**	**0.996**	0.612 U	**0.575 J**	**0.34 J**	**0.61 J**	0.668 U	**0.858**	**0.477 J**	**0.478 J**	0.732 U	**0.234**	**0.512**	**0.487**	**0.462**	**0.279**	**0.383**	**0.374**	**0.319**	**0.336**
Cadmium	2.5	7.5	4.3	0.48 U	0.45 U	**1.21**	0.655 U	0.579 U	0.6 U	0.791 U	0.612 U	0.647 U	0.565 U	0.621 U	0.668 U	0.62 U	0.639 U	0.612 U	0.732 U	**0.216**	**0.161**	**0.087**	**0.124**	**0.236**	**0.255**	**0.176**	**0.114**	**0.221**
Calcium	NS	NS	NS	—	—	**33100**	**1290**	**4960**	**1390**	**7560**	**1330**	**50200**	**1090**	**18800**	**2000**	**21300**	**1800**	**1930**	**3620**	**111000**	**2370**	**2450**	**1110**	**9040**	**3420**	**3200**	**53900**	**19000**
Chromium	30	NS	180	**4.4**	**14.4**	**17.9**	**17.2**	**13.9**	**10.8**	**8.26**	**9.45**	**24.4**	**8.45**	**12.7**	**9.6**	**15.1**	**11.2**	**14.9**	**13.5**	**9.82**	**16.0**	**12.3**	**12.9**	**11.6**	**12.4**	**13.2**	**10.3**	**10.3**
Cobalt	NS	NS	NS	—	—	**5.72 J**	**11**	**7.18**	**6.81**	**8.96**	**6.26**	**5.92 J**	**7.17**	**8.49**	**7.3 D**	**6.47**	**9.15**	**7.44**	**5.04 J**	**5.45**	**11.9**	**7.51**	**8.51**	**7.51**	**12.9**	**9.17**	**4.57**	**5.57**
Copper	50	1720	270	**23.1**	**12.4**	**37.5**	**10.5**	**12.2**	**15.3**	**37.5**	**10**	**28.8**	**13.3**	**19.2**	**14**	**25.3**	**11.9**	**14.3**	**15.5**	**9.8**	**17.4**	**36.8**	**17.4**	**14.4**	**18.0**	**14.9**	**16.8**	**12.7**
Iron	NS	NS	NS	—	—	**17700**	**23000**	**15900**	**17100**	**14600**	**16500**	**18600**	**12900**	**10100**	**20700**	**14900**	**17400**	**18000**	**14500**	**10300**	**25100**	**18700**	**21800**	**14800**	**29400**	**20000**	**11300**	**13500**
Lead	63	450	400	**17.4**	**5.8**	276	**8.76**	**8.34**	**9.1**	**17.6**	**7.82**	**35.6**	**7.01**	**32.5**	**6.24**	**53.4**	**8.4**	**10.2**	**25.8**	**24.5**	**13.0**	149	**14.1**	**18.1**	**13.1**	**20.9**	**43.0**	**16.7**
Magnesium	NS	NS	NS	—	—	**9730**	**3380**	**3380**	**2170**	**1180**	**1990**	**19200**	**2020**	**5310**	**1820 M**	**2740**	**2470**	**2930**	**1780**	**25300**	**3530**	**2260**	**2550**	**5210**	**2640**	**2620**	**20800**	**7520**
Manganese	1600	2000	2000	—	—	**437**	**241**	**655**	**202**	**63**	**153**	**273**	**133 M**	**129**	**328 DM**	**179**	**124**	**391**	**88.3**	**339**	**710**	**122**	**256**	**174**	**1300**	**494**	**291**	**350**
Mercury	0.18	0.73	0.81	0.38	**0.025 J**	1.19	**0.0223**	**0.0362**	0.0239 U	**0.0198 J**	0.0209 U	0.478	0.0224 U	**0.161**	**0.0135 J**	9.82	**0.022**	**0.0179 J**	**0.046**	**0.017**	**0.023**	0.349	**0.017**	**0.048**	**0.008 J**	**0.023**	0.238	0.287
Nickel	30	130	310	**8.9**	**20.8**	**16.2**	**19.2**	**13.8**	**17.3**	**18.9**	**15**	**14.3**	**16**	**14.4**	**16.6**	**15.3**	**18.8**	**19.8**	**19.2**	**12.6**	**26.2**	**16.0**	**21.3**	**18.2**	**24.5**	**20.9**	**9.25**	**11.6**
Potassium	NS	NS	NS	—	—	**1450**	**1030**	**1570**	**657**	**377 J**	**741**	**1540**	**824**	**884**	**668**	**862**	**1110**	**1040**	**1180**	**569**	**385**	**551**	**388**	**420**	**312**	**490**	**596**	**531**
Selenium	3.9	4	180	**1.3 J**	2.2 U	**1.64**	**3.9**	**2.71**	**3.61**	7.54	4.26	**1.37**	**1.86**	**1.17 J**	4.73	**2.24**	**3.59**	**3.43**	**2.79**	**0.957**	**1.95**	**2.01**	**2.06**	**1.40**	**1.82**	**1.61**	**1.91**	**1.40**
Silver	2	8.3	180	0.59 U	**0.086 J**	1.32 U	1.31 U	1.16 U	1.2 U	1.58 U	1.22 U	1.29 U	1.13 U	1.24 U	1.34 U	1.24 U	1.28 U	1.22 U	1.46 U	**0.055 J**	**0.037 J**	**0.040 J**	**0.02 J**	**0.036 J**	**0.027 J**	**0.029 J**	**0.045 J**	**0.02 J**
Sodium	NS	NS	NS	—	—	**262 J**	327 U	289 U	300 U	**247 J**	306 U	**356**	282 U	**262 J**	334 U	319 U	306 U	366 U	438 U	**219**	**67.4**	**47.1**	**31.2 J**	**46.6**	**43.3**	**27.2 J**	**192**	**137**
Thallium	NS	NS	NS	2.4 U	2.2 U	3.31 U	3.27 U	2.89 U	3 U	3.96 U	3.06 U	3.23 U	2.82 U	3.1 U	3.34 U	3.1 U	3.19 U	**1.57 J**	3.66 U	**0.09**	**0.125**	**0.174**	**0.103**	**0.092**	**0.127**	**0.093**	**0.117**	**0.085**
Vanadium	NS	NS	NS	—	—	**23.1**	**23.5**	**21.9**	**13.3**	**33.8**	**13.3**	**23.6**	**11.3**	**17.1**	**12.4**	**28.9**	**15**	**16.8**	**15.6**	**12.5**	**18.1**	**20.0**	**17.0**	**14.2**	**14.8**	**15.7**	**14.7**	**17.8**
Zinc	109	2480	10000	**57.6**	**49.8**	366	**54.1**	**58.7**	**42.6**	**108**	**40.5**	131	**42.4**	143	**38.4**	**125**	**44.8**	**52.5**	**36.1**	**56.6**	**56.5**	146	**50.9**	161	**51.9**	**55.8**	**55.6**	**86.2**
PESTICIDES (mg/kg)																											
Aldrin	0.005	0.19	0.097	0.0089 U'	0.0078 U'	0.0176 JP	0.00341 U	—	—	—	—	0.00393 U	—	—	—	0.00356 U	0.00335 U	0.00352 U	0.00413 U	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U'	0.00833 U'
Alpha BHC (Alpha Hexachlorocyclohexane)	0.02	0.02	0.48	0.0089 U	0.0078 U	0.0359 P	**0.00185 J**	—	—	—	—	0.00393 U	—	—	—	0.00356 U	0.00335 U	0.00352 U	0.00413 U	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U	0.00833 U
Beta BHC (Beta Hexachlorocyclohexane)	0.036	0.09	0.36	0.0089 U	0.0078 U	0.018 U	0.00341 U	—	—	—	—	**0.00455**	—	—	—	0.00356 U	0.00335 U	0.00352 U	**0.0843 P**	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U	0.00833 U
Chlordane	NS	NS	NS	0.089 U	0.078 U	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0714 U	0.0766 U	0.0412 U	0.0798 U	0.081 U	0.0768 U	0.0803 U	0.394 U	0.418 U
cis-Chlordane	0.094	2.9	4.2	—	—	**0.0878 P**	**0.00181 JP**	—	—	—	—	**0.00368 JP**	—	—	—	0.00356 U	0.00335 U	0.00352 U	**0.0121**	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U	0.00833 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	0.25	100	0.0089 U'	0.0078 U'	**0.00989 JP**	0.00341 U	—	—	—	—	0.00393 U	—	—	—	0.00356 U	0.00335 U	0.00352 U	0.00413 U	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U	0.00833 U
Dieldrin	0.005	0.1	0.2	0.0089 U'	0.0078 U'	0.018 U'	0.00341 U	—	—	—	—	0.00393 U	—	—	—	0.00356 U	0.00335 U	0.00352 U	0.00413 U	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U'	0.00833 U'
Endosulfan Sulfate	2.4	1000	24	0.0089 U	0.0078 U	**0.0758 P**	0.00341 U	—	—	—	—	0.00393 U	—	—	—	0.00356 U	0.00335 U	0.00352 U	0.00413 U	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U	0.00833 U
Endrin	0.014	0.06	11	0.0089 U	0.0078 U	0.0776 P	**0.00245 J**	—	—	—	—	**0.00263 J**	—	—	—	0.00356 U	0.00335 U	0.00352 U	0.00413 U	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U	0.00833 U
Endrin Aldehyde	NS	NS	NS	0.0089 U	0.0078 U	**0.021 P**	0.00341 U	—	—	—	—	0.00393 U	—	—	—	**0.00197 J**	0.00335 U	0.00352 U	0.00413 U	0.00427 U	0.00458 U	0.00246 U	0.00477 U	0.00484 U	0.00459 U	0.0048 U	0.0235 U	0.025 U
Endrin Ketone	NS	NS	NS	—	—	**0.125**	0.00341 U	—	—	—	—	0.00393 U	—	—	—	0.00356 U	0.00335 U	0.00352 U	0.00413 U	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U	0.00833 U
Gamma Bhc (Lindane)	0.1	0.1	1.3	0.0089 U	0.0078 U	0.018 U	0.00341 U	—	—	—	—	0.00393 U	—	—	—	0.00356 U	0.00335 U	0.00352 U	**0.0276**	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U	0.00833 U
Heptachlor	0.042	0.38	2.1	0.0089 U	0.0078 U	0.018 U	0.00341 U	—	—	—	—	0.00393 U	—	—	—	0.00356 U	0.00335 U	0.00352 U	**0.0179 P**	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U	0.00833 U
Heptachlor Epoxide	NS	NS	NS	0.0089 U	0.0078 U	**0.0167 J**	0.00341 U	—	—	—	—	0.00393 U	—	—	—	0.00356 U	0.00335 U	0.00352 U	0.00413 U	0.00284 U	0.00305 U	0.00164 U	0.00318 U	0.00323 U	0.00306 U	0.032 U	0.0157 U	0.0166 U
Methoxychlor	NS	NS	NS	0.0089 U	0.0078 U	**0.097 P**	**0.00176 JP**	—	—	—	—	**0.00379 JP**	—	—	—	**0.00185 JP**	0.00335 U	0.00352 U	**0.00447 P**	0.0142 U	0.0153 U	0.00822 U	0.0159 U	0.0161 U	0.0153 U	0.016 U	0.0784 U	0.0833 U
P,P'-DDD	0.0033	14	13	0.0089 U'	0.0078 U'	0.037 P	0.00341 U'	—	—	—	—	0.00393 U'	—	—	—	0.00356 U	0.00335 U'	0.00352 U'	0.00413 U'	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U'	0.00833 U'
P,P'-DDE	0.0033	17	8.9	0.0089 U'	0.0078 U'	0.018 U'	0.00341 U'	—	—	—	—	0.00393 U'	—	—	—	0.00356 U'	0.00335 U'	0.00352 U'	0.00436 P	0.00142 U	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U'	0.00833 U'
P,P'-DDT	0.0033	136	7.9	0.0089 U'	0.0078 U'	0.018 U'	0.00341 U'	—	—	—	—	0.00393 U'	—	—	—	**0.00184 J**	0.00335 U'	0.00352 U'	0.00413 U'	0.00142 U	0.00153 U	0.00822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U'	0.00833 U'
trans-Chlordane	NS	NS	NS	—	—	**0.0648**	0.00341 U	—	—	—	—	0.00393 U	—	—	—	0.00356 U	0.00335 U	0.00352 U	**0.0045 P**	**0.00254 IP**	0.00153 U	0.000822 U	0.00159 U	0.00161 U	0.00153 U	0.0016 U	0.00784 U	0.00833 U
SEMI-VOLATILE ORGANIC COMPOUNDS (mg/kg)																											
2-Methylnaphthalene	NS	NS	NS	—	—	**22.2 J**	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	0.387 U	0.349 U	3.54 U	0.341 U	0.359 U	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Acenaphthene	20	98	100	0.34 U	0.29 U	29.4 J	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	0.387 U	0.349 U	3.54 U	0.341 U	0.359 U	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Acenaphthylene	100	107	100	0.34 U	0.29 U	**40.1**	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	0.387 U	0.349 U	3.54 U	0.341 U	0.359 U	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Anthracene	100	1000	100	0.34 U	0.29 U	126	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	0.387 U	0.349 U	3.54 U	0.341 U	0.359 U	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Benzo(a)anthracene	1	1	1	0.34 U	0.29 U	203	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	**0.354 J**	0.349 U	3.54 U	0.341 U	**0.442**	0.341 U	0.339 U	**0.247 J**	—	—	—	—	—	—	—	—	—
Benzo(a)pyrene	1	22	1	0.34 U	0.29 U	160	0.337 U	0.335 U	0.347 U	2.18 J	0.344 U	**0.308 J**	0.349 U	3.54 U'	0.341 U	**0.548**	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Benzo(a)fluoranthene	1	1.7	1	0.34 U	0.29 U	186	0.337 U	0.335 U	0.347 U	4.02 U'	0.344 U	**0.3 J**	0.349 U	3.54 U'	0.341 U	**0.477**	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Benzo(g,h,i)perylene	100	1000	100	0.34 U	0.29 U	**86.9**	0.337 U	0.335 U	0.347 U	**2.94 J**	0.344 U	**0.202 J**	0.349 U	3.54 U	0.341 U	**0.509**	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Benzo(k)fluoranthene	0.8	1.7	3.9	0.34 U	0.29 U	92.8	0.337 U	0.335 U	0.347 U	4.02 U'	0.344 U	**0.229 J**	0.349 U	3.54 U'	0.341 U	**0.472**	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Benzyl butyl phthalate	NS	NS	NS	0.34 U	0.29 U	35.4 U	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	0.387 U	0.349 U	3.54 U	0.341 U	0.359 U	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
bis(2-Ethylhexyl) phthalate	NS	NS	NS	**0.0482 J**	**0.345**	35.4 U	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	0.387 U	0.349 U	3.54 U	**0.224 J**	0.359 U	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Carbazole	NS	NS	NS	—	—	**41.1**	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	0.387 U	0.349 U	3.54 U	0.341 U	0.359 U	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Carbon Disulfide	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
Chrysene	1	1	3.9	0.34 U	0.29 U	199	0.337 U	0.335 U	0.347 U	6.2	0.344 U	**0.443**	0.349 U	3.27 J	0.341 U	**0.659**	0.341 U	0.339 U	**0.306 J**	—	—	—	—	—	—	—	—	—
Dibenz(a,h)anthracene	0.33	1000	0.33	0.34 U	0.29 U	32.8 J	0.337 U	0.335 U	0.347 U	4.02 U'	0.344 U	0.387 U	0.349 U	3.54 U'	0.341 U	0.359 U	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Dibenzofuran	7	210	59	—	—	**48.2**	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	0.387 U	0.349 U	3.54 U	0.341 U	0.359 U	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Di-n-butyl Phthalate	NS	NS	NS	0.34 U	0.29 U	35.4 U	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	0.387 U	0.349 U	3.54 U	0.341 U	0.359 U	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Fluoranthene	100	1000	100	0.34 U	0.29 U	484	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	**0.708**	0.349 U	3.54 U	0.341 U	**0.852**	0.341 U	0.339 U	**0.518**	—	—	—	—	—	—	—	—	—
Fluorene	30	386	100	0.34 U	0.29 U	83.6	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	0.387 U	0.349 U	3.54 U	0.341 U	0.359 U	0.341 U	0.339 U	**0.488**	—	—	—	—	—	—	—	—	—
Indeno(1,2,3-cd)pyrene	0.5	8.2	0.5	0.34 U	0.29 U	113	0.337 U	0.335 U	0.347 U	4.02 U'	0.344 U	**0.248 J**	0.349 U	3.54 U	0.341 U	0.564	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Naphthalene	12	12	100	0.34 U	0.29 U	42.9	0.337 U	0.335 U	0.347 U	4.02 U	0.344 U	0.387 U	0.349 U	3.54 U	0.341 U	0.359 U	0.341 U	0.339 U	0.41 U	—	—	—	—	—	—	—	—	—
Pentachlorophenol	0.8	0.8	6.7	0.68 U	0.59 U	70.7 U'	0.673 U	0.671 U	0.695 U	8.04 U'	0.688 U	0.775 U	0.697 U	7.07 U'	0.682 U	0.718 U	0.682 U	0.678 U	0.82 U'	—	—	—	—	—	—	—	—	—
Phenanthrene	100	1000	100	0.34 U	**0.0701 J**	490	0.337 U	0.335 U	**0.193 J**	4.02 U	0.344 U	**0.76**	0.349 U	3.54 U	0.341 U	**0.606**	0.341 U	0.339 U	**1.63**	—	—	—	—	—	—	—	—	—
Pyrene	100	1000	100	0.34 U	0.29 U	361	0.337 U	0.335 U	0.347 U	**3.24 J**	0.344 U	**0.714**	0.349 U	**3.17 J**	0.341 U	**0.859**	0.341 U	0.339 U	**0.384 J**	—	—	—	—	—	—	—	—	—
VOLATILE ORGANIC COMPOUNDS (mg/kg)																											
1,1,1-Trichloroethane	0.68	0.68	100	0.18 U	0.12 U	0.0508 UJL	0.00465 UJL	0.00438 U	0.00473 U	**0.00496 J**	0.00496 U	0.00413 UJL	0.00481 UJL	0.00501 U	0.00415 U	0.00417 UJL	0.0587 UJL	0.00457 UJL	0.121 UJL	0.0011 U	0.12 U	**0.018**	0.12 U	0.83 U'	0.63 U	0.69 U'	0.075 U	0.063 U
1,1-Dichloroethane	0.27	0.27	26	**0.184**	0.12 U	0.0508 UJL	**0.00342 JL**	0.00438 U	0.00473 U	**0.00377 J**	0.00496 U	**0.00394 JL**	0.00481 UJL	**0.00474 J**	0.00415 U	**0.0021 JL**	0.0587 UJL	0.00457 UJL	0.121 UJL	0.0016 U	0.19 U	**0.0076**	0.18 U	1.2 U'	0.95 U'	1 U'	**0.023 J**	0.094 U
1,2,4-Trimethylbenzene	3.6	3.6	52	**0.174 J**	**0.964**	**0.14 JL**	0.00465 UJL	0.00438 U	0.00473 U	**0.00708**	0.00496 U	0.00413 UJL	0.00481 UJL	0.00501 U	0.00415 U	0.00417 UJL	0.0587 UJL	0.00457 UJL	5.89 JL	0.0055 U	**1.6**	0.0064 U	**0.12 J**	52	20	140	**0.054 J**	**0.028 J**
1,2-Dichloroethene, Total	NS	NS	NS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	0.0011 U	0.12 U	**0.0018**	0.12 U	0.83 U	0.63 U	0.69 U	0.075 U	0.063 U
1,3,5-Trimethylbenzene	8.4	8.4	52	0.46 U	**0.149 J**	**0.0629 JL**	0.00465 UJL	0.00438 U	0.00473 U	**0.00457 J**	0.00496 U	0.00413 UJL	0.00481 UJL	0.00501 U	0.00415 U	0.00417 UJL	0.0587 UJL	0.00457 UJL	**0.0695 JL**	0.0055 U	0.62 U	0.0064 U	0.61 U	20	10	**1.1 J**	**0.016 J**	**0.017 J**
Acetone	0.05	0.05	100	0.46 U'	0.29 U'	0.254 U'	**0.0469 JL**	**0.0438**	0.0566	0.0281 U	0.0248 U	0.173 JL	**0.02 JL**	0.238	**0.049**	0.0209 UJL	0.294 U'	0.0229 UJL	0.365 JL	0.04 U	4.5 U'	**0.009 J**	4.4 U'	30 U'	23 U'	25 U'	2.7 U'	2.3 U'
Benzene	0.06	0.06	4.8	0.046 U	0.029 U	0.0508 UJL	0.00465 UJL	0.00438 U	0.00473 U	0.00561 U	0.00496 U	0.00413 UJL	0.00481 UJL	0.00501 U	0.00415 U	0.00417 UJL	0.0587 UJL	0.00457 UJL	0.121 UJL	0.0011 U	0.12 U'	0.0013 U	0.12 U'	**0.46 J**	**0.26 J**	0.69 U'	**0.019 J**	0.063 U'
Bromomethane	NS	NS	NS	0.18 U	0.12 U	0.0508 UJL	0.00465 UJL	0.00438 U	0.00473 U	0.00561 U	0.00496 U	0.00413 UJL	0.00481 UJL	0.00501 U	0.00415 U	0.00417 UJL	0.0587 UJL	0.00457 UJL	0.121 UJL	0.0022 U	0.25 U	0.0026 U	0.24 U	1.7 U	1.3 U	1.4 U	0.15 U	**0.046 J**
Carbon Disulfide	NS	NS	NS	0.46 U	0.29 U	0.0508 UJL	0.00465 UJL	0.00438 U	0.00473 U	**0.00606**	0.00496 U	0.00413 UJL	0.00481 UJL	**0.0112**	0.00415 U	0.00417 UJL	0.0587 UJL	0.00457 UJL	0.121 UJL	0.011 U	1.2 U	**0.0025 J**	1.2 U	**1.8 J**	**1.4 J**	6.9 U	0.75 U	**0.13 J**
Chlorobenzene	1.1	1.1	100	0.18 U	0.12 U	0.0508 UJL	0.00465 UJL	0.00438 U	0.00473 U	0.00561 U	0.00496 U	0.00413 UJL	0.00481 UJL	0.00501 U	0.00415 U	0.00417 UJL	0.0587 UJL	0.00457 UJL	0.121 UJL	0.0011 U	0.12 U	0.0013 U	0.12 U	0.83 U	0.63 U	0.69 U	0.075 U	0.063 U
Chloroethane	NS	NS	NS	0.46 U	0.29 U	0.0508 UJL	0.00465 UJL	0.00438 U	0.00473 U	0.00561 U	0.00496 U	0.00413 UJL	**0.00381 JL**	**0.00605**	0.00415 U	0.00417 UJL	0.0587 UJL	**0.0197 JL**	0.121 UJL	0.0022 U	0.25 U	0.0026 U	0.24 U	1.7 U	1.3 U	1.4 U	0.15 U	0.13 U
Chloroform	0.37	0.37	49	0.18 U	0.12 U	0.0508 UJL	0.00465 UJL	0.00438 U	0.00473 U	0.00561 U	0.00496 U	0.00413 UJL	0.00481 UJL	0.00501 U	0.00415 U	0.00417 UJL	0.0587 UJL	0.00457 UJL	0.121 UJL	0.0016 U	0.19 U	0.0019 U	0.18 U	1.2 U'	0.95 U'	1 U'	0.11 U	0.094 U
Cis-1,2-Dichloroethene	0.25	0.25	100	0.18 U	0.12 U	0.0508 UJL	0.00465 UJL	0.00438 U	0.00473 U	0.00561 U	0.00496 U	0.00413 UJL	0.00481 UJL	0.00501 U	0.00415 U	0.00417 UJL	0.0587 UJL	**0.00555 JL**	0.121 UJL	0.0011 U	0.12 U	**0.0018**	0.12 U	0.83 U'	0.63 U'	0.69 U'	0.075 U	0.063 U
Cyclohexane	NS	NS	NS	—	—	0.254 UJL	0.0233 UJL	0.0219 U	0.0236 U	0.0281 U	0.0248 U	0.0206 UJL	0.024 UJL	0.025 U	0.0208 U	0.0209 UJL	**0.355 JL**	0.0229 UJL	0.605 UJL	—	—	—	—	—	—	—	—	—
Cyclohexane, methyl-	NS	NS	NS	—	—	0.0508 UJL	0.00465 UJL	0.00438 U	0.00473 U	**0.228**	0.00496 U	0.00413 UJL	0.00481 UJL	0.00501 U	0.00415 U	0.00417 UJL	**1.54**	0.00457 UJL	**2.66 JL**	—	—	—	—	—	—	—	—	—
Ethylbenzene	1	1	41	0.18 U	0.12 U	0.0508 UJL	0.00465 UJL	0.00438 U	0.00473 U	**0.00431 J**	0.00496 U	0.00413 UJL	0.00481 UJL	0.00501 U	0.00415 U	0.00417 UJL	0.0587 UJL	0.00457 UJL	0.121 UJL	**0.0012**	0.12 U	0.0013 U	0.12 U	0.83 U	0.63 U	0.69 U	**0.028 J**	0.063 U
Isopropylbenzene	NS	NS	NS	**0.0865 J**	**0.15 J**	0.0508 UJL	0.00465 UJL	0.00438 U	0.00473 U	**0.00675**	0.00496 U	0.00413 UJL	0.00481 UJL	**0.0101**	0.00415 U	0.00417 UJL	0.0587 UJL	0.00457 UJL	**0.536 JL**	0.0011 U	0.12 U	0.0013 U	**0.096 J**	**1.6**	**0.85**	**1.2**	0.075 U	0.063 U
m&p-Xylenes	0.26	1.6	100	—	—	**0.0411 JL**	0.00465 UJL	0.00438 U	0.00473 U	**0.0146**	0.00496 U	0.00413

Table 2 - Summary of Groundwater Analytical Data (Detections Only)
5 Flint Street, Rochester, New York

Well ID	NYSDEC GA AWQSGV	BW-01			DEC MW-1		DEC MW-2		MW-01		MW-02		MW-03	MW-04				MW-09			MW-10		SB-009	SB-015	SB-016	SB-017	SB-020	SB-046
Sample ID		BW-01	BW-01	RX-BW01-01	DEC MW-1	DEC MW-1	DEC MW-2	DEC MW-2	MW-01	RXMW-01-01	MW-02	RXMW-02-01	MW-03	MW-04	MW-04	RX-MW4-01	MW-04	MW-09	MW-09D	RX-MW09-01	MW-10	RXMW-10-01	SB-009	SB-015A	SB-016C	SB-017A	SB-020	SB-046B
Lab Sample ID	µg/l	152238-01	154937-01	L1721958-09	0002L553-002	152266-02	0002L553-003	152311-01	152366-01	L1721958-06	152266-01	L1721958-07	152340-02	152366-02	154937-04	L1721958-01	R2006768-003	152238-02	152238-03	L1721958-08	152311-02	L1721958-05	M75205-4	M75205-6	M75205-5	M75205-7	M75205-8	M75205-9
Sample Date		6/4/2015	11/18/2015	6/29/2017	2/23/2000	6/5/2015	2/23/2000	6/9/2015	6/11/2015	6/29/2017	6/5/2015	6/29/2017	6/10/2015	6/11/2015	11/19/2015	6/27/2017	7/30/2020	6/4/2015	6/4/2015	6/29/2017	6/5/2015	6/29/2017	7/9/2008	7/9/2008	7/9/2008	7/9/2008	7/9/2008	7/9/2008
METALS (µg/l)																												
Aluminum	NS	**518**	**1080**	10 U	**7380 N**	200 U	**4210 N**	200 U	200 U	**10.4**	**1080**	10 U	200 U	200 U	200 U	**7.7 J**	—	200 U	200 U	**4.05 J**	**484**	10 U	—	—	—	—	—	—
Antimony	3	60 U'	60 U'	4 U'	—	60 U'	—	60 U'	60 U'	**0.43 J**	60 U'	4 U'	60 U'	60 U'	60 U'	**0.54 J**	—	60 U'	60 U'	4 U'	60 U'	4 U'	6 U'	**1.5 J**	6 U'	6 U'	**2.2 J**	**1.3 J**
Arsenic	25	10 U	10 U	**0.43 J**	**7.6 J**	**21.8**	**17**	**25.6**	**12.6**	**10.03**	**13.8**	**7.87**	**22.4**	**20**	**6.8 J**	**8.44**	—	10 U	**7.2 J**	**12.12**	**24.5**	**5.65**	**1.4 J**	**2.7 J**	**22.9**	**51.8**	**53.8**	**45**
Barium	1000	**86 J**	**66.9 J**	**41.12**	**202**	**192**	**246**	**178**	**105**	**93.97**	**135**	**88.47**	**147**	**176**	**89.2 J**	**154.4**	—	**87.2 J**	**88.6 J**	**86.3**	**149**	**147.2**	—	—	—	—	—	—
Beryllium	3	5 U'	5 U'	0.3 U	**0.68 J**	5 U'	**0.44 J**	5 U'	5 U'	0.3 U	5 U'	0.3 U	5 U'	5 U'	5 U'	0.3 U	—	5 U'	5 U'	0.3 U	5 U'	0.3 U	4 U'	4 U'	4 U'	**0.9 J**	4 U'	4 U'
Cadmium	5	5 U	5 U	0.2 U	—	5 U	**0.87 J**	5 U	5 U	0.2 U	5 U	0.2 U	5 U	5 U	5 U	0.2 U	—	5 U	5 U	0.2 U	5 U	0.2 U	4 U	4 U	4 U	**1.2 J**	4 U	**0.4 J**
Calcium	NS	**101000**	**95900**	**65900**	**212000**	**285000**	**158000**	**182000**	**357000**	**267000**	**248000**	**264000**	**218000**	**150000**	**127000**	**182000**	—	**188000**	**199000**	**208000**	**186000**	**193000**	—	—	—	—	—	—
Chromium	50	10 U	10 U	**0.22 J**	**10 J**	10 U	**7.6 J**	10 U	10 U	**1.77**	10 U	**0.34 J**	10 U	10 U	**20.4**	10 U	—	10 U	10 U	**0.36 J**	10 U	**0.49 J**	10 U	10 U	**2 J**	**25.6**	10 U	**2.5 J**
Cobalt	NS	50 U	50 U	0.5 U	**6.3 J**	50 U	**4.4 J**	50 U	50 U	**2.5**	50 U	**1.24**	50 U	50 U	50 U	**0.89**	—	50 U	50 U	**2.9**	50 U	**0.75**	—	—	—	—	—	—
Copper	200	25 U	25 U	1 U	**15.2 J**	25 U	**18.4 J**	25 U	25 U	**0.72 J**	25 U	**0.45 J**	25 U	25 U	25 U	**0.48 J**	—	25 U	25 U	**0.66 J**	25 U	1 U	**2.7 J**	25 U	**4.1 J**	**34.1**	25 U	**4.2 J**
Iron	300	**13100**	**4820**	**2740**	**21700**	**43700**	**18700**	**8890**	**3990**	**9260**	**7520**	**8530**	**9190**	**11600**	**2780**	**13100**	—	**4040**	**4390**	**9480**	**14300**	**8160**	—	—	—	—	—	—
Lead	25	10 U	10 U	1 U	**11.1**	10 U	**15.9**	10 U	10 U	1 U	10 U	1 U	10 U	10 U	10 U	**0.76 J**	—	10 U	10 U	1 U	10 U	1 U	5 U	5 U	**3.7 J**	**123**	5 U	**2.5 J**
Magnesium	35000	**62400**	**57000**	—	**76200**	**57000**	**50500**	**59300**	**125000**	—	**56800**	—	**50900**	**32500**	**29200**	**44700**	—	**60700**	**62200**	—	**60000**	—	—	—	—	—	—	—	—
Manganese	300	**50.2**	**52.8**	**119.2**	**1130 N**	**1320**	**1730 N**	**1990**	**1020**	**1276**	**1160**	**861.4**	**682**	**561**	**115**	**578.3**	—	**1430**	**1380**	**1755**	**4020**	**4242**	—	—	—	—	—	—
Mercury	0.7	0.2 U	0.2 U	0.05 U	—	0.2 U	—	0.2 U	0.2 U	0.05 U	0.2 U	0.05 U	0.2 U	0.2 U	**0.101 J**	0.05 U	—	0.2 U	0.2 U	0.05 U	0.2 U	0.05 U	0.2 U	0.2 U	0.2 U	**0.17 J**	**0.043 J**	0.2 U
Nickel	100	40 U	40 U	2 U	**19.4 J**	40 U	**13.1 J**	40 U	40 U	**4.96**	40 U	**1.71 J**	40 U	40 U	40 U	**1.14 J**	—	40 U	40 U	**2.91**	40 U	**0.8 J**	**3.6 J**	**2.2 J**	**4.5 J**	**46.1**	**2.4 J**	**4.8 J**
Potassium	NS	**2430 J**	**2420 J**	**4090**	**5090 E**	**18500**	**6480 E**	**3760**	**4380**	**3160**	**3210**	**2840**	**29400**	**12100**	**9710**	**11800**	—	**4160**	**4170**	**4140**	**3150**	**2820**	—	—	—	—	—	—
Selenium	10	**5.23 J**	10 U	5 U	—	**17.9**	—	**7.48 J**	**11.4**	5 U	**7.3 J**	5 U	**8.96 J**	**6.52 J**	**8.31 J**	5 U	—	10 U	10 U	5 U	10 U	5 U	10 U	10 U	10 U	10 U	**2.2 J**	10 U
Sodium	20000	**78100**	**71300**	**63300**	**23600**	**18800**	10800	**18600**	**20600**	**15400**	**17500**	**15700**	**88100**	**21900**	**18000**	**18900**	—	**26100**	**25200**	**17600**	**20400**	**14000**	—	—	—	—	—	—
Thallium	0.5	25 U'	25 U'	0.5 U	—	25 U'	—	25 U'	25 U'	0.5 U	25 U'	0.5 U	25 U'	25 U'	25 U'	0.5 U	—	25 U'	25 U'	0.5 U	25 U'	0.5 U	**1.7 J**	10 U'	10 U'	10 U'	10 U'	10 U'
Vanadium	NS	25 U	25 U	5 U	**12 J**	25 U	**8.5 J**	25 U	25 U	5 U	25 U	5 U	25 U	25 U	25 U	**1.76 J**	—	25 U	25 U	5 U	25 U	5 U	—	—	—	—	—	—
Zinc	2000	60 U	60 U	10 U	**149 E**	60 U	**263 E**	60 U	60 U	10 U	60 U	10 U	60 U	60 U	**55.6 J**	**12.1**	—	60 U	60 U	**13.1**	60 U	10 U	**28.6**	**8.5 J**	**39.9**	**229**	**11.5 J**	**20.1**
PERFLOURINATED COMPOUNDS (µg/l)																												
Perfluorobutanoic Acid (PFBA)	NS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**0.0016 J**	—	—	—	—	—	—	—	—	—	—	—
Perfluorohexanesulfonic Acid (PFHxS)	NS	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**0.0014 J**	—	—	—	—	—	—	—	—	—	—	—
Perfluorooctanesulfonic Acid (PFOS)	0.0027	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**0.0021**	—	—	—	—	—	—	—	—	—	—	—
Perfluorooctanoic acid (PFOA)	0.0067	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**0.00074 J**	—	—	—	—	—	—	—	—	—	—	—
PESTICIDES (µg/l)																												
Alpha BHC (Alpha Hexachlorocyclohexane)	0.01	0.1 U'	0.02 U'	—	—	0.1 U'	—	0.1 U'	0.1 U'	—	**0.0574 J**	—	**0.0607 J**	—	0.02 U'	—	—	0.1 U'	0.1 U'	—	—	—	0.053 U'	0.053 U'	0.054 U'	0.053 U'	0.063 U'	0.053 U'
Beta BHC (Beta Hexachlorocyclohexane)	0.04	0.1 U'	0.02 U	—	—	**0.126**	—	**0.0512 J**	0.1 U'	—	0.1 U'	—	0.1 U'	—	0.02 U'	—	—	0.1 U'	0.1 U'	—	—	—	0.053 U'	0.053 U'	0.054 U'	0.053 U'	0.063 U'	0.053 U'
Beta Endosulfan	NS	0.1 U	0.04 U	—	—	0.1 U	—	0.1 U	0.1 U	—	0.1 U	—	**0.0517 J**	—	0.04 U	—	—	0.1 U	0.1 U	—	—	—	0.053 U	0.053 U	0.054 U	0.053 U	0.063 U	0.053 U
Delta BHC (Delta Hexachlorocyclohexane)	0.04	0.1 U'	0.02 U	—	—	**0.0706 J**	—	0.1 U'	**0.0512 J**	—	**0.0747 J**	—	**0.0681 J**	—	0.02 U'	—	—	**0.106**	**0.0655 J**	—	—	—	0.053 U'	0.053 U'	0.054 U'	0.053 U'	0.063 U'	0.053 U'
Heptachlor Epoxide	0.03	0.1 U'	0.02 U	—	—	0.1 U'	—	0.1 U'	**0.0908 J**	—	0.1 U'	—	0.1 U'	—	0.02 U'	—	—	0.1 U'	0.1 U'	—	—	—	0.053 U'	0.053 U'	0.054 U'	0.053 U'	0.063 U'	0.053 U'
Methoxychlor	35	0.1 U	0.2 U	—	—	0.1 U	—	**0.0592 J**	0.1 U	—	0.1 U	—	0.1 U	—	0.2 U	—	—	0.1 U	0.1 U	—	—	—	0.053 U	0.053 U	0.054 U	0.053 U	0.063 U	0.053 U
P,P'-DDD	0.3	0.1 U	0.04 U	—	—	**0.0661 J**	—	0.1 U	0.1 U	—	**0.0635 J**	—	0.1 U	—	0.04 U	—	—	**0.0622 J**	**0.0698 J**	—	—	—	0.053 U	0.053 U	0.054 U	0.053 U	0.063 U	0.053 U
SEMI-VOLATILE ORGANIC COMPOUNDS SIMS (µg/l)																												
1,4-dioxane	0.35	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	**3.2**	—	—	—	—	—	—	—	—	—	—	—
SEMI-VOLATILE ORGANIC COMPOUNDS (µg/l)																												
2,4-Dimethylphenol	50	10 U	10 U	—	—	10 U	—	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	11 U	10 U	10 U	11 U	**12.9**	**14.2**
3&4-Methylphenol	NS	10 U	10 U	—	—	**8.78 J**	**0.8 J**	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	—	—	—	—	—	—
Acenaphthene	20	10 U	10 U	—	—	10 U	**0.6 J**	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	5.3 U	5 U	**8.7**	5.3 U	5.3 U	5 U
Acenaphthylene	20	10 U	10 U	—	—	10 U	—	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	5.3 U	5 U	**2.2 J**	5.3 U	5.3 U	5 U
Anthracene	50	10 U	10 U	—	—	10 U	—	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	5.3 U	5 U	**21.4**	**1.1 J**	5.3 U	5 U
Benzo(a)anthracene	0.002	10 U'	10 U'	—	—	10 U'	—	10 U'	10 U'	—	10 U'	—	10 U'	10 U'	10 U'	—	—	10 U'	10 U'	—	10 U'	—	**1.3 J**	**3.1 J**	**45.7**	**4.3 J**	5.3 U'	5 U'
Benzo(a)pyrene	ND	10 U'	10 U'	—	—	10 U'	—	10 U'	10 U'	—	10 U'	—	10 U'	10 U'	10 U'	—	—	10 U'	10 U'	—	10 U'	—	**1.2 J**	**2.8 J**	**36.8**	**3.9 J**	5.3 U'	5 U'
Benzo(a)fluoranthene	0.002	10 U'	10 U'	—	—	10 U'	—	10 U'	10 U'	—	10 U'	—	10 U'	10 U'	10 U'	—	—	10 U'	10 U'	—	10 U'	—	**1.3 J**	**2.9 J**	**33.1**	**4.5 J**	5.3 U'	5 U'
Benzo(g,h,i)perylene	NS	10 U	10 U	—	—	10 U	—	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	5.3 U	**1.8 J**	**22.7**	**2.8 J**	5.3 U	5 U
Benzo(k)fluoranthene	0.002	10 U'	10 U'	—	—	10 U'	—	10 U'	10 U'	—	10 U'	—	10 U'	10 U'	10 U'	—	—	10 U'	10 U'	—	10 U'	—	5.3 U'	**1.9 J**	**29**	**2.6 J**	5.3 U'	5 U'
bis(2-Ethylhexyl) phthalate	5	10 U'	10 U'	—	—	10 U'	—	10 U'	10 U'	—	10 U'	—	10 U'	10 U'	10 U'	—	—	10 U'	10 U'	—	10 U'	—	**111**	**28.4**	**60.4**	**10.5**	**15.4**	**6.1**
Caprolactam	NS	10 U	**5.82 J**	—	—	10 U	—	10 U	10 U	—	10 U	—	10 U	10 U	**32.8**	—	—	10 U	10 U	—	10 U	—	—	—	—	—	—	—
Carbazole	NS	10 U	10 U	—	—	10 U	**0.9 J**	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	—	—	—	—	—	—
Chrysene	0.002	10 U'	10 U'	—	—	10 U'	—	10 U'	10 U'	—	10 U'	—	10 U'	10 U'	10 U'	—	—	10 U'	10 U'	—	10 U'	—	**1.2 J**	**3 J**	**43.1**	**4.7 J**	5.3 U'	5 U'
Dibenz(a,h)anthracene	NS	10 U	10 U	—	—	10 U	—	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	5.3 U	5 U	**8.4**	**1.3 J**	5.3 U	5 U
Dibenzofuran	NS	10 U	10 U	—	—	10 U	**0.6 J**	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	—	—	—	—	—	—
Diethyl Phthalate	50	10 U	10 U	—	—	10 U	—	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	5.3 U	5 U	5.2 U	5.3 U	5.3 U	**2.2 J**
Di-n-butyl phthalate	50	10 U	10 U	—	—	10 U	—	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	5.3 U	5 U	5.2 U	**0.57 J**	5.3 U	5 U
Di-n-octylphthalate	NS	10 U	10 U	—	—	10 U	**0.8 J**	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	5.3 U	5 U	5.2 U	5.3 U	5.3 U	5 U
Fluoranthene	50	10 U	10 U	—	—	10 U	—	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	**2.3 J**	**5.8**	**92**	**8.7**	5.3 U	5 U
Fluorene	50	10 U	10 U	—	—	10 U	**0.8 J**	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	5.3 U	5 U	**10.4**	**0.89 J**	**0.87 J**	5 U
Indeno(1,2,3-cd)pyrene	0.002	10 U'	10 U'	—	—	10 U'	—	10 U'	10 U'	—	10 U'	—	10 U'	10 U'	10 U'	—	—	10 U'	10 U'	—	10 U'	—	5.3 U'	**2.1 J**	**25.9**	**3.1 J**	5.3 U'	5 U'
Naphthalene	10	10 U	10 U	—	—	10 U	**1 J**	10 U	10 U	—	10 U	—	10 U	10 U	10 U	**0.72 J**	—	10 U	10 U	—	10 U	—	5.3 U	**0.92 J**	**4.9 J**	**0.72 J**	**10.4**	**20**
Phenanthrene	50	10 U	10 U	—	—	10 U	—	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	**1.4 J**	**2.7 J**	**80.9**	**5.7**	**1.9 J**	**1.9 J**
Phenol	1	10 U'	10 U'	—	**7 J**	10 U'	—	10 U'	10 U'	—	10 U'	—	10 U'	10 U'	10 U'	—	—	10 U'	10 U'	—	10 U'	—	5.3 U'	5 U'	5.2 U'	5.3 U'	5.3 U'	**5.1**
Pyrene	50	10 U	10 U	—	—	10 U	—	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	**2.2 J**	**5.2**	**79.1**	**7.5**	5.3 U	5 U
TOTAL PETROLEUM HYDROCARBONS (µg/l)																												
Total Petroleum Hydrocarbons	NS	—	—	—	**3700**	—	ND	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—
VOLATILE ORGANIC COMPOUNDS (µg/l)																												
1,1,1-Trichloroethane	5	—	2 U	0.5 U	—	2 U	—	2 U	**31**	**26**	2 U	0.5 U	2 U	2 U	**1.33 J**	**0.31 J**	—	2 U	2 U	**6.2**	2 U	0.5 U	1 U	**2.4**	1 U	1 U	1 U	1 U
1,1,2-Trichloroethane	1	—	2 U'	0.75 U	**2 J**	2 U'	—	2 U'	2 U'	0.75 U	2 U'	0.75 U	2 U'	2 U'	2 U'	0.75 U	—	2 U'	2 U'	0.75 U	2 U'	0.75 U	1 U	1 U	1 U	1 U	1 U	1 U
1,1-Dichloroethane	5	—	2 U	0.75 U	**7 J**	2 U	**13**	**7.49**	**79.1**	**61**	**1.75 J**	**1**	2 U	**9.83**	**21.1**	**10**	—	**33.2**	**31.5**	**56**	2 U	0.75 U	**1.4**	**11.8**	**2.1**	**0.94 J**	**2.7**	**2.9**
1,1-Dichloroethene	5	—	2 U	0.5 U	—	2 U	—	2 U	2 U	**0.19 J**	2 U	0.5 U	2 U	2 U	2 U	0.5 U	—	2 U	2 U	**0.32 J**	2 U	0.5 U	1 U	1 U	1 U	1 U	1 U	1 U
1,2,4-Trimethylbenzene	5	—	2 U	**0.5 J**	—	**69.1**	—	2 U	2 U	2.5 U	2 U	2.5 U	2 U	2 U	2 U	2.5 U	—	2 U	2 U	2.5 U	2 U	2.5 U	**4.3 J**	5 U	**1 J**	**78.9**	**313**	**916**
1,2-Dichloroethane	0.6	—	2 U'	0.5 U	—	2 U'	—	2 U'	2 U'	0.5 U	2 U'	0.5 U	2 U'	2 U'	2 U'	0.5 U	—	2 U'	2 U'	**0.27 J**	2 U'	0.5 U	1 U'	1 U'	1 U'	1 U'	1 U'	1 U'
1,2-Dichloroethene, Total	NS	—	—	0.5 U	—	—	—	—	—	**14 J**	—	0.5 U	—	—	—	**0.49 J**	—	—	—	**39**	—	0.5 U	—	—	—	—	—	—
1,3,5-Trimethylbenzene	5	—	2 U	2.5 U	—	**14.9**	—	2 U	2 U	2.5 U	2 U	2.5 U	2 U	2 U	2 U	2.5 U	—	2 U	2 U	2.5 U	2 U	2.5 U	5 U	5 U	5 U	**18.5**	**179**	**378**
2-Hexanone	50	—	5 U	5 U	—	5 U	—	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	—	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Acetone	50	—	10 U	5 U	**28 B**	10 U	**14 B**	10 U	10 U	5 U	10 U	5 U	10 U	10 U	10 U	5 U	—	**7.42 J**	**5.82 J**	5 U	10 U	5 U	5 U	5 U	**6.8**	5 U	**12.1**	**62**	5 U
Benzene	1	—	1 U	**0.4 J**	**95**	**21.6**	—	1 U	1 U	0.5 U	0.7 U	0.5 U	1 U	1 U	1 U	0.5 U	—	0.7 U	0.7 U	**0.75**	1 U	0.5 U	0.5 U	**0.54**	0.5 U	**0.23 J**	**13.3**	**397**
Carbon Disulfide	60	—	2 U	5 U	—	2 U	—	2 U	2 U	5 U	2 U	5 U	2 U	2 U	2 U	5 U	—	2 U	2 U	5 U	2 U	5 U	5 U	5 U	5 U	5 U	5 U	5 U
Chlorobenzene	5	—	2 U	0.5 U	—	2 U	—	2 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	0.5 U	—	2 U	2 U	0.5 U	2 U	0.5 U	1 U	1 U	1 U	1 U	**1.5**	**0.31 J**
Chloroethane	5	—	2 U	**4.6**	—	2 U	—	2 U	**2.89**	**10**	2 U	1 U	2 U	**4.68**	**4.28**	**15**	—	**5.66**	**4.54**	**36**	2 U	1 U	2 U	2 U	2 U	2 U	2 U	**18.6**
Chloromethane	5	—	2 U	2.5 U	—	2 U	—	2 U	2 U	2.5 U	2 U	2.5 U	2 U	2 U	2 U	2.5 U	—	2 U	2 U	2.5 U	2 U	2.5 U	2 U	2 U	2 U	2 U	2 U	**0.93 J**
Cis-1,2-Dichloroethene	5	—	2 U	0.5 U	—	2 U	—	2 U	**13.4**	**13**	2 U	0.5 U	2 U	2 U	2 U	**0.49 J**	—	**15.7**	**16.1**	**38**	2 U	0.5 U	1 U	**3.8**	1 U	1 U	**0.7 J**	**2.7**
Cyclohexane	NS	—	10 U	—	—	**25.2**	—	10 U	10 U	—	10 U	—	10 U	10 U	10 U	—	—	10 U	10 U	—	10 U	—	—	—	—	—	—	—
Cyclohexane, methyl-	NS	—	2 U	—	—	**13.9**	—	2 U	2 U	—	2 U	—	2 U	2 U	2 U	—	—	2 U	2 U	—	2 U	—	—	—	—	—	—	—
Ethylbenzene	5	—	2 U	0.5 U	**49**	**1.66 J**	—	2 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	0.5 U	—	2 U	2 U	0.5 U	2 U	0.5 U	1 U	1 U	1 U	**0.31 J**	**3**	**2350**
Isopropylbenzene	5	—	2 U	0.5 U	—	**3.24**	—	2 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	0.5 U	—	2 U	2 U	0.5 U	2 U	0.5 U	5 U	5 U	5 U	5 U	**15.4**	**48.1**
m&p-Xylenes	NS	—	—	**0.33 J**	—	**64.6**	—	—	2 U	1 U	2 U	1 U	—	—	—	1 U	—	2 U	2 U	1 U	—	1 U	—	—	—	—	—	—
Methyl Ethyl Ketone	50	—	10 U	5 U	—	10 U	—	10 U	10 U	5 U	10 U	5 U	**21.2**	10 U	10 U	5 U	—	10 U	10 U	5 U	10 U	5 U	5 U	5 U	5 U	5 U	**90.7**	**4.9 J**
Methyl Tert-Butyl Ether	10	—	2 U	**0.19 J**	—	2 U	—	2 U	2 U	1 U	2 U	1 U	2 U	2 U	2 U	1 U	—	2 U	2 U	1 U	2 U	1 U	1 U	1 U	1 U	1 U	1 U	1 U
Methylcyclohexane	NS	—	2 U	—	—	**13.9**	—	2 U	2 U	—	2 U	—	2 U	2 U	2 U	—	—	2 U	2 U	—	2 U	—	—	—	—	—	—	—
Methylene Chloride	5	—	5 U	3 U	**8 JB**	5 U	**8 JB**	5 U	5 U	3 U	5 U	3 U	5 U	5 U	5 U	3 U	—	5 U	5 U	3 U	5 U	3 U	2 U	2 U	2 U	2 U	2 U	2 U
Naphthalene	10	—	5 U	2.5 U	—	5 U	—	5 U	**3.85 J**	**1.1 J**	5 U	**0.65 J**	5 U	5 U	5 U	**0.52 J**	—	5 U	5 U	**0.64 J**	5 U	2.5 U	**1.6 J**	**3.6 J**	**1.7 J**	**1.4 J**	**13.6**	**40.8**
N-Butylbenzene	5	—	2 U	0.5 U	—	2 U	—	2 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	0.5 U	—	2 U	2 U	0.5 U	2 U	0.5 U	5 U	5 U	5 U	**1.7 J**	**14.2**	**22.2**
N-Propylbenzene	5	—	2 U	0.5 U	—	**3.18**	—	2 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	0.5 U	—	2 U	2 U	0.5 U	2 U	0.5 U	5 U	5 U	5 U	5 U	**17.9**	**51.4**
o-Xylene	5	—	2 U	1 U	—	**26.1**	—	2 U	2 U	**0.41 J**	2 U	**0.41 J**	2 U	2 U	2 U	1 U	—	2 U	2 U	**0.42 J**	2 U	**0.41 J**	—	—	—	—	—	—
P-Isopropyltoluene	5	—	2 U	0.5 U	—	2 U	—	2 U	2 U	0.5 U	2 U	0.5 U	2 U	2 U	2 U	0.5 U	—	2 U	2 U	0.5 U	2 U	0.5 U	5 U	5 U	5 U	5 U	**8.8**	**14.2**
Sec-Butylbenzene	5	—	2 U	0.5 U	—	2 U	—	2 U	2 U	**0.24 J**	2 U	0.5 U	2 U	2 U	2 U	0.5 U	—	2 U	2 U	**0.4 J**	2 U	0.5 U	5 U	5 U	**0.44 J**	**2 J**	**5.6**	**11**
Tert-Butylbenzene	5	—	2 U	2.5 U	—	2 U	—	2 U	2 U	2.5 U	2 U	2.5 U	2 U	2 U	2 U	2.5 U	—	2 U	2 U	**0.3 J**	2 U	2.5 U	5 U	5 U	5 U	**1.5 J**	**2.5 J**	**2.4 J**
Toluene	5	—	2 U	0.75 U	**4 J**	2 U	—	2 U	2 U	0.75 U	2 U	0.75 U	2 U	2 U	2 U	0.75 U	—	2 U	2 U	0.75 U	2 U	0.75 U	1 U	**0.58 J**	**20.5**	**0.22 J**	**2.8**	**14.4**
Trans-1,2-Dichloroethene	5	—	2 U	0.75 U	—	2 U	—	2 U	2 U	**0.58 J**	2 U	0.75 U	2 U	2 U	2 U	0.75 U	—	2 U	2 U	**1.4**	2 U	0.75 U	1 U	1 U	1 U	1 U	1 U	1 U
Trichloroethene	5	—	2 U	0.5 U	—	2 U	—	2 U	**14.2**	**14**	2 U	0.5 U	2 U	2 U	2 U	**0.78**	—	**16.4**	**16.4**	**59**	2 U	0.5 U	1 U	**8.9**	1 U	1 U	1 U	1 U
Vinyl Chloride	2	—	2 U	1 U	—	2 U	—	2 U	2 U	**0.12 J**	2 U	1 U	2 U	2 U	2 U	**0.89 J**	—	**4.86**	**4.39**	**21**	2 U	1 U	1 U	1 U	1 U	1 U	1 U	**2.2**
Xylenes, Total	5	—	—	**0.33 J**	**190**	—	—	—	—	**0.41 J**	—	**0.41 J**	—	—	—	1 U	—	—	—	**0.42 J**	—	**0.41 J**	**1.4**	**0.89 J**	**1.5**	**0.53 J**	**321**	**3830**

Notes:
NYSDEC GA AWQSGV = New York State Department of Environmental Conservation Class GA Ambient Water Quality Standards and Guidance Values taken from June 1998 Memorandum, Part 1, Table 1 and any applicable amendments.
µg/l = Micrograms per liter.
Grey shaded concentrations exceed the NYSDEC GA Ambient Water Quality Standards & Guidance Values.
ND = The analyte was not detected in the sample, but a laboratory reporting limit is not provided OR the standard is non detect (i.e., any detection exceeds the standard).
NS = No standard currently established.
Bold = Detected concentration.
— = For data after 2000, indicates sample not analyzed. For 2000 data, indicates either sample not analyzed or analyte not detected above the laboratory reporting limit (data compiled from detection summary table from 2001 NYSDEC Site Investigation Report).
B = Analyte also detected in the laboratory blank.
U = Not detected (value shown is laboratory reporting limit).
U' = Not detected (value shown is reporting limit, which in this case, exceeds the applicable regulatory standard or other criteria referenced herein).
J = Result below the reporting limit but greater than or equal to the method detection limit, and the concentration is an estimated value.
N (NYSDEC metals data only) = Spiked sample recovery not within control limits.
E (NYSDEC metals data only) = The reported value is estimated because of the presence of interference. Note: this is different than the E qualifier used for other methods in the same lab reports, which indicates the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
When the applicable state standard applies to mixed isomers and the laboratory reports individual isomers, the total standard is listed for each isomer.

Table 3 - Track 4 (Excavation and ISS Soil)
BCP Site No. C828162B
5 Flint Street, Rochester, New York

Contaminant	CAS Number	Track 4 Soil Cleanup Objectives [a]
Metals (mg/kg)		
Arsenic	7440-38-2	16
Barium	7440-39-3	400
Beryllium	7440-41-7	47
Cadmium	7440-43-9	4.3
Chromium, hexavalent	18540-29-9	19
Chromium, trivalent	16065-83-1	180
Copper	7440-50-8	270
Total Cyanide		27
Lead	7439-92-1	400
Manganese	7439-96-5	2000
Total Mercury		0.73
Nickel	7440-02-0	130
Selenium	7782-49-2	4
Silver	7440-22-4	8.3
Zinc	7440-66-6	2480
PCBs/Pesticides (mg/kg)		
2,4,5-TP Acid (Silvex)	93-72-1	3.8
4,4'-DDE	72-55-9	8.9
4,4'-DDT	50-29-3	7.9
4,4'-DDD	72-54-8	13
Aldrin	309-00-2	0.097
alpha-BHC	319-84-6	0.02
beta-BHC	319-85-7	0.09
Chlordane (alpha)	5103-71-9	2.9
delta-BHC	319-86-8	0.25
Dibenzofuran	132-64-9	59
Dieldrin	60-57-1	0.1
Endosulfan I	959-98-8	24
Endosulfan II	33213-65-9	24
Endosulfan sulfate	1031-07-8	24
Endrin	72-20-8	0.06
Heptachlor	76-44-8	0.38
Lindane	58-89-9	0.1
Polychlorinated biphenyls	1336-36-3	1
Semivolatiles (mg/kg)		
Acenaphthene	83-32-9	98
Acenapthylene	208-96-8	100
Anthracene	120-12-7	100
Benz(a)anthracene	56-55-3	1
Benzo(a)pyrene	50-32-8	1
Benzo(b)fluoranthene	205-99-2	1
Benzo(g,h,i)perylene	191-24-2	100
Benzo(k)fluoranthene	207-08-9	1.7
Chrysene	218-01-9	1
Dibenz(a,h)anthracene	53-70-3	0.33

Table 3 - Track 4 (Excavation and ISS Soil)
BCP Site No. C828162B
5 Flint Street, Rochester, New York

Contaminant	CAS Number	Track 4 Soil Cleanup Objectives [a]
Fluoranthene	206-44-0	100
Fluorene	86-73-7	100
Indeno(1,2,3-cd)pyrene	193-39-5	0.5
m-Cresol	108-39-4	0.33
Naphthalene	91-20-3	12
o-Cresol	95-48-7	0.33
p-Cresol	106-44-5	0.33
Pentachlorophenol	87-86-5	0.8
Phenanthrene	85-01-8	100
Phenol	108-95-2	0.33
Pyrene	129-00-0	100
Volatiles (mg/kg)		
1,1,1-Trichloroethane	71-55-6	0.68
1,1-Dichloroethane	75-34-3	0.27
1,1-Dichloroethene	75-35-4	0.33
1,2-Dichlorobenzene	95-50-1	1.1
1,2-Dichloroethane	107-06-2	0.02
cis-1,2-Dichloroethene	156-59-2	0.25
trans-1,2-Dichloroethene	156-60-5	0.19
1,3-Dichlorobenzene	541-73-1	2.4
1,4-Dichlorobenzene	106-46-7	1.8
1,4-Dioxane	123-91-1	0.1
Acetone	67-64-1	0.05
Benzene	71-43-2	0.06
Butylbenzene	104-51-8	12
Carbon tetrachloride	56-23-5	0.76
Chlorobenzene	108-90-7	1.1
Chloroform	67-66-3	0.37
Ethylbenzene	100-41-4	1
Hexachlorobenzene	118-74-1	1.2
Methyl ethyl ketone	78-93-3	0.12
Methyl tert-butyl ether	1634-04-4	0.93
Methylene chloride	75-09-2	0.05
n-Propylbenzene	103-65-1	3.9
sec-Butylbenzene	135-98-8	11
tert-Butylbenzene	98-06-6	5.9
Tetrachloroethene	127-18-4	1.3
Toluene	108-88-3	0.7
Trichloroethene	79-01-6	0.47
1,2,4-Trimethylbenzene	95-63-6	3.6
1,3,5- Trimethylbenzene	108-67-8	8.4
Vinyl chloride	75-01-4	0.02
Xylene (mixed)	1330-20-7	1.6

Table 3 - Track 4 (Excavation and ISS Soil)
BCP Site No. C828162B
5 Flint Street, Rochester, New York

Contaminant	CAS Number	Track 4 Soil Cleanup Objectives [a]
Perfluorinated Alkyl Acids (Concentrations in ng/g) [b]		
Perfluorooctanesulfonic acid (PFOS)		1
Perfluorooctanoic acid (PFOA)		0.8

Notes

µg/kg - Micrograms per kilogram

mg/kg - Milligrams per kilogram

ng/g - nanogram per gram

NYSDEC - New York State Department of Environmental Conservation

SCOs - Soil Cleanup Objectives

[a] Backfill, soil cover and reuse cleanup objectives for the Track 4 remedy are the lower of the December 2006 NYSDEC Part 375 Restricted Residential or Protection of Groundwater from Table 375-6.8(b): Restricted Use Soil Cleanup Objectives.

[b] Backfill, soil cover and reuse cleanup objectives for the track 4 remedy are lower of the NYSDEC's part 375 Remedial Programs Restricted Residential or Protection of Groundwater guidance values listed in Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), dated April 2023.

Table 3a - Track 4 Cleanup Objectives - Imported Backfill and Cover Reuse Criteria.
December 2025 Site Cleanup Objectives
BCP Site No. C828162B
5 Flint Street, Rochester, New York

Contaminant	CAS Number	Restricted-Residential	Protection of Groundwater	Track 4 Soil Cleanup Objectives [a]
Metals (mg/kg)				
Arsenic	7440-38-2	16	16	16
Barium	7440-39-3	410	820	410
Beryllium	7440-41-7	43	47	43
Cadmium	7440-43-9	2.5	7.5	2.5
Chromium, hexavalent	18540-29-9	1	19	1
Chromium, trivalent	16065-83-1	110	NS	110
Copper	7440-50-8	280	1720	280
Total Cyanide	NA	13	40	13
Lead	7439-92-1	400	450	400
Manganese	7439-96-5	2000	2000	2000
Total Mercury	NA	0.3	0.73	0.3
Nickel	7440-02-0	320	130	130
Selenium	7782-49-2	110	4	4
Silver	7440-22-4	110	8.3	8.3
Zinc	7440-66-6	6600	2480	2480
PCBs/Pesticides (mg/kg)				
4,4'-DDE	72-55-9	3.4	9.3	3.4
4,4'-DDT	50-29-3	3.8	135	3.8
4,4'-DDD	72-54-8	5	14	5
Aldrin	309-00-2	0.044	0.19	0.044
alpha-BHC	319-84-6	0.18	0.02	0.02
beta-BHC	319-85-7	0.18	0.09	0.09
Chlordane (alpha)	5103-71-9	0.65	4.5	0.65
delta-BHC	319-86-8	100	0.1	0.1
Dieldrin	60-57-1	0.075	0.1	0.075
Endosulfan I	959-98-8	35	65	35
Endosulfan II	33213-65-9	35	44	35
Endosulfan sulfate	1031-07-8	35	47	35
Endrin	72-20-8	5.3	0.06	0.06
Heptachlor	76-44-8	0.53	0.38	0.38
Lindane	58-89-9	0.21	0.05	0.05
Polychlorinated biphenyls	1336-36-3	1	3.2	1
Semivolatiles (mg/kg)				
1,4-Dioxane	123-91-1	5.7	0.1	0.1
Acenaphthene	83-32-9	100	98	98
Acenapthylene	208-96-8	100	365	100
Anthracene	120-12-7	100	1000	100
Benz(a)anthracene	56-55-3	1.4	1	1
Benzo(a)pyrene	50-32-8	1	22	1
Benzo(b)fluoranthene	205-99-2	1.4	2.1	1.4
Benzo(g,h,i)perylene	191-24-2	4.9	1000	4.9
Benzo(k)fluoranthene	207-08-9	4.9	2	2
Chrysene	218-01-9	4.9	1	1
Dibenz(a,h)anthracene	53-70-3	0.33	1000	0.33
Fluoranthene	206-44-0	100	1000	100
Fluorene	86-73-7	100	386	100
Indeno(1,2,3-cd)pyrene	193-39-5	1.4	6.6	1.4
m-Cresol	108-39-4	100	0.33	0.33
Naphthalene	91-20-3	100	12	12
o-Cresol	95-48-7	100	0.33	0.33
p-Cresol	106-44-5	100	0.33	0.33
Pentachlorophenol	87-86-5	1.3	0.8	0.8
Phenanthrene	85-01-8	4.9	1000	4.9
Phenol	108-95-2	100	0.33	0.33
Pyrene	129-00-0	100	1000	100

Table 3a - Track 4 Cleanup Objectives - Imported Backfill and Cover Reuse Criteria.
December 2025 Site Cleanup Objectives
BCP Site No. C828162B
5 Flint Street, Rochester, New York

Contaminant	CAS Number	Restricted-Residential	Protection of Groundwater	Track 4 Soil Cleanup Objectives [a]
Volatiles (mg/kg)				
1,1,1-Trichloroethane	71-55-6	100	0.68	0.68
1,1-Dichloroethane	75-34-3	47	0.27	0.27
1,1-Dichloroethene	75-35-4	0.98	0.33	0.33
1,2-Dichlorobenzene	95-50-1	100	1.1	1.1
1,2-Dichloroethane	107-06-2	5.8	0.02	0.02
cis-1,2-Dichloroethene	156-59-2	41	0.19	0.19
trans-1,2-Dichloroethene	156-60-5	100	0.19	0.19
1,3-Dichlorobenzene	541-73-1	38	2.6	2.6
1,4-Dichlorobenzene	106-46-7	24	1.8	1.8
Acetone	67-64-1	100	0.03	0.03
Aniline	62-53-3	8.1	0.04	0.04
Benzene	71-43-2	3.7	0.06	0.06
n-Butylbenzene	104-51-8	100	18	18
Carbon tetrachloride	56-23-5	7.1	0.76	0.76
Chlorobenzene	108-90-7	100	4.5	4.5
Chloroform	67-66-3	24	0.37	0.37
Ethylbenzene	100-41-4	76	1	1
Hexachlorobenzene	118-74-1	0.33	3.2	0.33
Methyl ethyl ketone	78-93-3	100	0.1	0.1
Methyl tert-butyl ether	1634-04-4	100	0.1	0.1
Methylene chloride	75-09-2	81	0.05	0.05
Nitrobenzene	98-95-3	1.8	0.08	0.08
n-Propylbenzene	103-65-1	100	5	5
sec-Butylbenzene	135-98-8	100	25	25
tert-Butylbenzene	98-06-6	100	11	11
Tetrachloroethene	127-18-4	18	1.3	1.3
Toluene	108-88-3	100	0.7	0.7
Trichloroethene	79-01-6	6.4	0.47	0.47
1,2,4-Trimethylbenzene	95-63-6	100	5.9	5.9
1,3,5- Trimethylbenzene	108-67-8	100	3.1	3.1
Vinyl chloride	75-01-4	0.48	0.03	0.03
Xylene (mixed)	1330-20-7	100	1.2	1.2
Perfluorinated Alkyl Acids (Concentrations in ng/g) [b]				
Perfluorooctanesulfonic acid (PFOS)	NA	44	1	1
Perfluorooctanoic acid (PFOA)	NA	33	0.8	0.8

Notes

µg/kg - Micrograms per kilogram

mg/kg - Milligrams per kilogram

ng/g - nanogram per gram

NYSDEC - New York State Department of Environmental Conservation

SCOs - Soil Cleanup Objectives

[a] Backfill, soil cover and reuse cleanup objectives for the Track 4 remedy are the lower of the December 2025 NYSDEC Part 375, Restricted Residential or Protection of Groundwater from Table 375-6.8(b): Restricted Use Soil Cleanup Objectives.

[b] Backfill, soil cover and reuse cleanup objectives for the track 4 remedy are lower of the NYSDEC's part 375 Remedial Programs Restricted Residential or Protection of Groundwater guidance values listed in Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS), dated April 2023.

Table 4. Excavation PDI Samples, Soil Descriptions and Field Observations
BCP Site No. C828162B
5 Flint Street, Rochester, NY

Sample ID	Sample Interval (ft)	Laboratory Sample ID	Advancment / Collection Date	Analytical Results of Site COCs Above PGW SCOs 2015	Sampled Material Simplified Description	Max PID Interval (ft)	Max PID Reading	Sheen Present (ft bgs)	Refusal Depth (ft bgs)
Southwest Side of Proposed Excavation and ISS Area 1									
5FS-SW-20	9-11	L2638828-01	6/19/2026	No	Grey soft fine SAND; Odor; Wet.	9-11	77.2	No	14.9
5FS-SW-21	11-13	L2638828-02	6/19/2026	No	Brown to grey Sandy CLAY, some fine and coarse Gravel; Dense; Wet.	11-13	9.3	No	16.1
5FS-SW-22	No Lab Sample	No Lab Sample	6/19/2026	No Lab Sample	No Lab Sample collected. Subsurface concrete slab observed at 3.5 ft bgs; step out boring 5FS-SW-22B advanced	0-2	2.5	No	3.5
5FS-SW-22B	6-8	L2645073-01	7/16/2026	No	Dark grey Sandy CLAY; Odor; Soft to medium dense; Wet.	6-8	481.0	No	13.5
5FS-SW-23	No Lab Sample	No Lab Sample	6/19/2026	NA	No Lab Sample collected. Sheen observed from 11 to 14 ft bgs; step out boring 5FS-SW-23B advanced.	11-13	210.0	11-14	15.7
5FS-SW-23B	11-13	L2638828-04	6/19/2026	No	Grey Sandy Clay; Dense; Wet / Light brown fine to coarse SAND; Dense Wet.	11-13	3.9	No	16
Proposed Excavation and ISS Area 2									
5FS-SW-1	6-8	L2615737-01	3/20/2026	No	Grey CLAY, some fine to coarse Gravel; Odor; Medium plasticity; Wet.	6-8	28.1	No	11.5
5FS-SW-2	10-12	L2615737-02	3/20/2026	No	Dark grey Silty CLAY; Odor; Wet.	10-12	275.6	Yes	12
Potential Excavation and ISS Area 3									
5FS-PE-1/5FS-MW-1	4-5	L2615737-03	3/20/2026	No	Dark gray to brown SILT; some fine to coarse Gravel; Brick (FILL); Wet.	12-15	20.0	No	15
	12-14	L2615955-01	3/25/2026	No	Tan to grey fine to coarse SAND and Silt, some fine to coarse SAND and Silt, few fine to coarse Gravel; Wet.				
5FS-PE-3	0-2	L2641963-01	7/2/2026	No	Brown fine SAND and fine to coarse Gravel; Brick (FILL); Moist.	0-2	30.8	No	12
5FS-PE-3B	4-5	L2641963-02	7/2/2026	No	Grey fine to coarse SAND and Silt; Wet.	0-2	5.9	No	15
	12-14	L2641963-03		No	Brown CLAY and fine to coarse SAND; Wet.				
Potential Excavation and ISS Area 4									
5FS-PE-2	12-14	L2633816-01	6/2/2026	No	Grey to tan CLAY; trace coarse Sand; Odor; Wet.	12-14	341.4	No	14.4
5FS-PE-2B	10-12	L2633818-01	6/2/2026	No	Dark brown CLAY and fine to coarse SAND; Odor; Wet.	10-12	348.0	No	13.5
5FS-SW-10	No Lab Sample	No Lab Sample	6/18/2026	No Lab Sample	No Lab Sample collected. Sheen observed from 11 to 13.5 ft bgs; step out boring 5FS-SW-10B advanced.	4-5	695.0	11-13.5	13.5
5FS-SW-10B	No Lab Sample	No Lab Sample	6/19/2026	No Lab Sample	No Lab Sample collected. Sheen observed from 6 to 14.2 ft bgs; step out boring 5FS-SW-10C advanced.	6-8	1,040.0	6-14.2	14.2
5FS-SW-10C	4-6	L2641560-04	7/1/2026	Yes	Brown fine GRAVEL; Brick and concrete fragments (FILL); Dry.	4-6	1.2	No	12
5FS-SW-10D	8-10	L2641560-05	7/1/2026	No	Grey fine to coarse SAND and Silt; Moist.	8-10	319.2	No	14
5FS-SW-10E	8-10	L2641964-01	7/2/2026	Yes	Grey fine to coarse SAND and Clay; Odor; Wet.	8-10	501.3	No	14
5FS-SW-10F	12-14.5	L2645073-03	7/16/2026	No	Grey CLAY and fine to coarse Sand; Odor; Soft; Wet.	12-14.5	783.0	No	14.5
5FS-SW-11	7-9	L2638412-04	6/18/2026	No	Grey Sandy CLAY; Odor; Dense; Moist.	7-9	755.0	No	15.5
	13-15	L2638412-03	6/18/2026	No	Grey Sandy CLAY and fine Gravel; Odor; Soft; Wet.				

Table 4. Excavation PDI Samples, Soil Descriptions and Field Observations
BCP Site No. C828162B
5 Flint Street, Rochester, NY

Sample ID	Sample Interval (ft)	Laboratory Sample ID	Advancment / Collection Date	Analytical Results of Site COCs Above PGW SCOs 2015	Sampled Material Simplified Description	Max PID Interval (ft)	Max PID Reading	Sheen Present (ft bgs)	Refusal Depth (ft bgs)
5FS-SW-12	9-11	L2638412 (discarded)	6/18/2026	NA	Grey CLAY and fine to coarse Sand; Black staining; Odor; Dense; Moist to wet.	9-11	612.0	No	16
5FS-SW12B	No Lab Sample	No Lab Sample	6/19/2026	No Lab Sample	No Lab Sample collected. Sheen observed from 11 to 16 ft bgs; step out boring 5FS-SW-12C advanced.	10-12	1,147.0	11-16	16
5FS-SW-12C	8-10	L2641560-01	7/1/2026	Yes	Grey fine to coarse SAND, some Clay; Odor; Wet.	8-10	1,446.0	No	15
5FS-SW-12D	8-10	L2641560-02	7/1/2026	No	Grey Sandy CLAY; Odor; Wet.	8-10	108.4	No	11
5FS-SW-12E	12-14	L2641561-01	7/1/2026	No	Grey Sandy CLAY; Odor; Wet	12-14	359.0	No	15
5FS-SW-13	8-10	L2641560-05	7/1/2026	Yes	Grey CLAY; Odor; Wet.	8-10	649.8	No	14
5FS-SW-14	7-9	L2638412-02	6/18/2026	No	Grey Sandy CLAY; Odor; Wet.	7-9	575.0	No	14.5
5FS-SW-15	10-12	L2638412-01	6/18/2026	No	Grey Sandy CLAY, trace fine Gravel; Odor; Dense; Wet.	10-12	857.0	No	14

Notes:
SCO = Soil Cleanup Objective.
PGW 2015 = 2015 NYSDEC Protection of Groundwater SCO
ft bgs = feet below ground surface
ISS - In-situ Solodification

Table 5. Summary of PDI Soil Analytical Data, Detections Only
BCP Site C828162B
5 Flint St, Rochester, New York

Sample ID Sample Depth (ft bgs) Lab Sample ID Sample Date	2015 NYSDEC Protection of GW SCO (mg/kg)	5FS-PE-1 4-5 L2615737-03 3/20/2026	5FS-PE-1 12-14 L2615955-01 3/23/2026	5FS-PE-2B 10-12 L2633818-01 6/2/2026	5FS-PE-2 12-13 L2633816-01 6/2/2026	5FS-PE-3 0-2 L2641963-01 7/2/2026	5FS-PE-3B 4-5 L2641963-02 7/2/2026	5FS-PE-3B 12-14 L2641963-03 7/2/2026	5FS-SW-1 6-8 L2615737-01 3/20/2026	5FS-SW-2 10-12 L2615737-02 3/20/2026	5FS-SW-10C 4-6 L2641560-04 7/1/2026	5FS-SW-10D 8-10 L2641560-03 7/1/2026
SITE CONTAMINANTS OF CONCERN (mg/kg)												
1,1,1-Trichloroethane	0.68	—	—	0.00056 U	0.00054 U	0.00051 U	0.00051 U	0.00059 U	0.00077 U	0.032 U	0.00071 U	0.00066 U
1,1-Dichloroethane	0.27	—	—	0.0011 U	0.0011 U	0.001 U	0.001 U	0.0012 U	0.0015 U	0.063 U	0.0014 U	0.0013 U
1,2,4-Trimethylbenzene	3.6	—	—	**0.00057 J**	0.0021 U	0.002 U	0.002 U	0.0024 U	**0.0011 J**	0.13 U	**0.00056 J**	0.0026 U
1,3,5-Trimethylbenzene	8.4	—	—	0.0022 U	0.0021 U	0.002 U	0.002 U	0.0024 U	**0.00032 J**	0.13 U	**0.00036 J**	0.0026 U
Arsenic	16	—	—	**7.93**	**4.43**	—	—	—	**3.28**	**3.91**	**9.67**	**6.34**
Benzene	0.06	—	—	**0.0017**	**0.00018 J**	0.00051 U	0.00051 U	0.00059 U	0.00077 U	0.032 U	**0.00033 J**	0.00066 U
cis-1,2-Dichloroethene	0.25	—	—	0.0011 U	0.0011 U	0.001 U	0.001 U	0.0012 U	0.0015 U	0.063 U	0.0014 U	0.0013 U
Ethylbenzene	1	—	—	0.0011 U	0.0011 U	0.001 U	0.001 U	0.0012 U	0.0015 U	0.063 U	**0.00025 J**	0.0013 U
Lead	450	—	—	**10.2**	**11.6**	—	—	—	**10.3**	**11.5**	**593**	**11.1**
Trichloroethene	0.47	—	—	0.00056 U	0.00054 U	0.00051 U	0.00051 U	0.00059 U	0.00077 U	0.032 U	0.00071 U	**0.0016**
Vinyl chloride	0.02	—	—	0.0011 U	0.0011 U	0.001 U	0.001 U	0.0012 U	0.0015 U	0.063 U'	0.0014 U	0.0013 U
Chrysene	1	**0.13**	**0.6**	**0.025 J**	0.12 U	—	—	—	0.12 U	0.12 U	**2.9**	**0.028 J**
Barium	820	—	—	**49.3**	**70.3**	—	—	—	**44.9**	**42.1**	**79.7**	**37.6**
Mercury	0.73	—	—	0.09 U	0.096 U	—	—	—	0.09 U	0.093 U	**1.44**	0.104 U
METALS - 6010D/ CALC(mg/kg)												
Aluminum	NS	—	—	**8260**	**10600**	—	—	—	**7500**	**6030**	**4740**	**6830**
Beryllium	47	—	—	**0.482**	**0.6**	—	—	—	**0.4 J**	**0.3 J**	**0.322 J**	**0.376 J**
Cadmium	7.5	—	—	**0.19 J**	**0.12 J**	—	—	—	**0.103 J**	**0.139 J**	**0.363 J**	**0.163 J**
Calcium	NS	—	—	**2220**	**2960**	—	—	—	**1780**	**2400**	**70700**	**2680**
Chromium	NS	—	—	**12.2**	**14.7**	—	—	—	**14.3**	**9.72**	**7.51**	**10.3**
Chromium, Trivalent	NS	—	—	**12.2**	**14.7**	—	—	—	**14.3**	**9.72**	**7.51**	**10.3**
Chromium, Hexavalent	19	—	—	0.985 U	0.968 U	—	—	—	1.03 U	0.988 U	0.995 U	1.18 U
Cobalt	NS	—	—	**9.33**	**9.96**	—	—	—	**7.09**	**6.25**	**3.66**	**8.79**
Copper	1720	—	—	**15.4**	**16.3**	—	—	—	**14.2**	**13**	**23.3**	**16.7**
Iron	NS	—	—	**20200**	**22200**	—	—	—	**16700**	**15700**	**12800**	**16900**
Magnesium	NS	—	—	**3100**	**3810**	—	—	—	**2610**	**2140**	**17700**	**2740**
Manganese	2000	—	—	**313**	**589**	—	—	—	**144**	**676**	**264**	**134**
Nickel	130	—	—	**21.5**	**23.4**	—	—	—	**16.9**	**14.8**	**9.61**	**19.3**
Potassium	NS	—	—	**416**	**638**	—	—	—	**594**	**421**	**656**	**298**
Selenium	4	—	—	1.91 U	1.88 U	—	—	—	2.01 U	1.88 U	1.94 U	2.32 U
Silver	8.3	—	—	0.477 U	0.47 U	—	—	—	0.502 U	0.471 U	0.486 U	0.581 U
Sodium	NS	—	—	191 U	188 U	—	—	—	201 U	188 U	**339**	232 U
Vanadium	NS	—	—	**14.3**	**16.8**	—	—	—	**11.9**	**10.2**	**17.4**	**12.6**
Zinc	2480	—	—	**56**	**58.1**	—	—	—	**45.8**	**42.4**	**437**	**63.7**
SEMI-VOLATILE ORGANIC COMPOUNDS - 8270E (mg/kg)												
2-Methylphenol	0.33	0.21 U	0.2 U	0.2 U	0.2 U	—	—	—	**0.37**	0.2 U	0.2 U	0.24 U
3-Methylphenol/4-Methylphenol	0.33	0.3 U	0.29 U	0.29 U	0.28 U	—	—	—	**1.1**	0.29 U	**0.068 J**	0.35 U'
Acenaphthene	98	0.17 U	**0.031 J**	0.16 U	0.16 U	—	—	—	0.17 U	0.16 U	**0.36**	0.2 U
Acenaphthylene	107	0.17 U	0.16 U	0.16 U	0.16 U	—	—	—	0.17 U	0.16 U	**0.64**	0.2 U
Anthracene	1000	0.12 U	**0.28**	0.12 U	0.12 U	—	—	—	0.12 U	0.12 U	**1.5**	0.15 U
Benzo[a]anthracene	1	**0.098 J**	**0.72**	**0.024 J**	0.12 U	—	—	—	0.12 U	0.12 U	**3.1**	**0.034 J**
Benzo[a]pyrene	22	**0.099 J**	**0.52**	0.16 U	0.16 U	—	—	—	0.17 U	0.16 U	**3**	0.2 U
Benzo[b]fluoranthene	1.7	**0.14**	**0.68**	0.12 U	0.12 U	—	—	—	0.12 U	0.12 U	**3.8**	0.15 U
Benzo[g,h,i]perylene	1000	**0.06 J**	**0.21**	0.16 U	0.16 U	—	—	—	**0.032 J**	0.16 U	**1.7**	0.2 U
Benzo[k]fluoranthene	1.7	**0.046 J**	**0.24**	0.12 U	0.12 U	—	—	—	0.12 U	0.12 U	**1.3**	0.15 U

Table 5. Summary of PDI Soil Analytical Data, Detections Only
BCP Site C828162B
5 Flint St, Rochester, New York

Sample ID Sample Depth (ft bgs) Lab Sample ID Sample Date	2015 NYSDEC Protection of GW SCO (mg/kg)	5FS-PE-1 4-5 L2615737-03 3/20/2026	5FS-PE-1 12-14 L2615955-01 3/23/2026	5FS-PE-2B 10-12 L2633818-01 6/2/2026	5FS-PE-2 12-13 L2633816-01 6/2/2026	5FS-PE-3 0-2 L2641963-01 7/2/2026	5FS-PE-3B 4-5 L2641963-02 7/2/2026	5FS-PE-3B 12-14 L2641963-03 7/2/2026	5FS-SW-1 6-8 L2615737-01 3/20/2026	5FS-SW-2 10-12 L2615737-02 3/20/2026	5FS-SW-10C 4-6 L2641560-04 7/1/2026	5FS-SW-10D 8-10 L2641560-03 7/1/2026
Dibenzo(a,h)anthracene	1000	0.12 U	**0.068 J**	0.12 U	0.12 U	—	—	—	0.12 U	0.12 U	**0.45**	0.15 U
Dibenzofuran	210	0.21 U	0.2 U	0.2 U	0.2 U	—	—	—	**0.048 J**	0.2 U	**0.51**	0.24 U
Fluoranthene	1000	**0.18**	**1.4**	**0.037 J**	**0.028 J**	—	—	—	0.12 U	**0.023 J**	**5.2**	**0.046 J**
Fluorene	386	0.21 U	**0.058 J**	0.2 U	0.2 U	—	—	—	0.21 U	0.2 U	**0.72**	0.24 U
Indeno[1,2,3-cd]pyrene	8.2	**0.06 J**	**0.25**	0.16 U	0.16 U	—	—	—	0.17 U	0.16 U	**1.9**	0.2 U
Naphthalene	12	0.21 U	0.2 U	0.2 U	0.2 U	—	—	—	0.21 U	0.2 U	**1.1**	0.24 U
Phenanthrene	1000	**0.17**	**0.83**	**0.051 J**	**0.036 J**	—	—	—	**0.032 J**	**0.063 J**	**5.3**	**0.042 J**
Phenol	0.33	0.21 U	0.2 U	0.2 U	0.2 U	—	—	—	**0.86**	0.2 U	0.2 U	0.24 U
Pyrene	1000	**0.16**	**1.1**	**0.035 J**	**0.026 J**	—	—	—	0.12 U	**0.02 J**	**4.4**	**0.042 J**
Toluene	NS	—	—	—	—	—	—	—	—	—	**0.484 NJ**	—
Total Semi-Volatile TICs	NS	ND	**1.39 J**	**1.64 J**	**5.84 J**	—	—	—	**18.8 J**	**30.9 J**	**12 J**	**6.39 J**
VOLATILE ORGANIC COMPOUNDS - 8260D (mg/kg)												
1,1,4-Trimethylcyclohexane	NS	—	—	—	—	—	—	—	—	—	—	**0.0172 NJ**
1,1,-Dichloroethene	0.33	—	—	0.0011 U	0.0011 U	0.001 U	0.001 U	0.0012 U	0.0015 U	0.063 U	0.0014 U	0.0013 U
1-Ethyl-4-methylcyclohexane	NS	—	—	—	—	—	—	—	—	—	—	—
2-Butanone	0.12	—	—	0.011 U	0.011 U	0.01 U	**0.0063 J**	**0.0033 J**	0.015 U	0.63 U'	**0.0078 J**	**0.021**
Acetone	0.05	—	—	**0.069**	**0.018**	0.01 U	**0.055**	**0.032**	**0.12**	0.63 U'	**0.091**	**0.098**
Chloroform	0.37	—	—	0.0017 U	0.0016 U	**0.00063 J**	**0.00073 J**	**0.00085 J**	0.0023 U	0.095 U	0.0021 U	**0.0013 J**
n-Butylbenzene	12	—	—	**0.0019**	0.0011 U	0.001 U	0.001 U	0.0012 U	**0.0011 J**	**0.034 J**	0.0014 U	0.0013 U
n-Propylbenzene	3.9	—	—	0.0011 U	0.0011 U	0.001 U	0.001 U	0.0012 U	0.0015 U	0.063 U	0.0014 U	0.0013 U
sec-Butylbenzene	11	—	—	**0.0094**	**0.0044**	0.001 U	0.001 U	0.0012 U	**0.0044**	**0.09**	0.0014 U	0.0013 U
tert-Butylbenzene	5.9	—	—	**0.0034**	**0.0036**	0.002 U	0.002 U	0.0024 U	**0.0065**	**0.055 J**	0.0028 U	**0.0042**
Toluene	0.7	—	—	**0.0022**	**0.00064 J**	0.001 U	0.001 U	0.0012 U	0.0015 U	0.063 U	**0.0014**	0.0013 U
Xylene (m&p)	NS	—	—	**0.0022**	0.0021 U	0.002 U	0.002 U	0.0024 U	**0.0012 J**	0.13 U	**0.0014 J**	0.0026 U
Xylene (o)	NS	—	—	**0.00033 J**	0.0011 U	0.001 U	0.001 U	0.0012 U	0.0015 U	0.063 U	0.0014 U	0.0013 U
Xylenes (Total)	1.6	—	—	**0.0025 J**	0.0011 U	0.001 U	0.001 U	0.0012 U	**0.0012 J**	0.063 U	**0.0014 J**	0.0013 U
Total Volatile TICs	NS	—	—	**1.36 J**	**1.59 J**	ND	ND	ND	**1.02 J**	**39 J**	ND	**0.232 J**

Notes:
Protection of GW SCO = New York State Department of Environmental Conservation Protection of Groundwater Soil Cleanup Objectives
ft bgs = Feet below ground surface.
% = Percent.
mg/kg = Milligrams per kilogram.
Grey highlighted cells indicates value exceeds the NYSDEC Restricted Use Protection of Groundwater SCO.
— = Sample not analyzed.
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.
ND = Not detected, reporting limit unknown.
NS = No standard currently established.
U = Not detected (value shown is laboratory reporting limit).
U' = Not detected (value shown is reporting limit, which in this case, exceeds the applicable regulatory standard or other criteria referenced herein).
J = Result below the reporting limit but greater than or equal to the method detection limit, and the concentration is an estimated value.
Bold = Detected concentration.
When the applicable standard applies to mixed isomers or aroclors and the laboratory reports individual isomers or aroclors, the total standard is listed for each isomer or aroclor.

Table 5. Summary of PDI Soil Analytical Data, Detections Only
BCP Site C828162B
5 Flint St, Rochester, New York

Sample ID Sample Depth (ft bgs) Lab Sample ID Sample Date	2015 NYSDEC Protection of GW SCO (mg/kg)	5FS-SW-10E 8-10 L2641964-01 7/2/2026	5FS-SW-10E DUP 8-10 L2641964-02 7/2/2026	5FS-SW-10F 12-14.5 L2645073-03 7/16/2026	5FS-SW-10F DUP 12-14.5 L2645073-04 7/16/2026	5FS-SW-11 7-9 L2638412-04 6/18/2026	5FS-SW-11 13-15 L2638412-03 6/18/2026	5FS-SW-12C 8-10 L2641560-01 7/1/2026	5FS-SW-12D 8-10 L2641560-02 7/1/2026	5FS-SW-12E 12-14 L2641561-01 7/1/2026	5FS-SW-20 9-11 L2638828-01 6/19/2026
SITE CONTAMINANTS OF CONCERN (mg/kg)											
1,1,1-Trichloroethane	0.68	0.31 U	0.027 U	0.00051 U	0.00052 U	0.036 U	0.00054 U	0.031 U	0.00047 U	0.045 U	0.00086 U
1,1-Dichloroethane	0.27	0.61 U'	0.054 U	0.001 U	0.001 U	0.072 U	0.0011 U	0.062 U	0.00094 U	0.09 U	**0.0011 J**
1,2,4-Trimethylbenzene	3.6	**160**	**8.5**	**0.00055 J**	**0.006**	**0.045 J**	**0.00044 J**	0.12 U	**0.00035 J**	**0.86**	**0.024**
1,3,5-Trimethylbenzene	8.4	**90**	**6.5**	**0.0004 J**	**0.0082**	0.14 U	**0.00029 J**	**0.012 J**	0.0019 U	**1.2**	**0.0037**
Arsenic	16	**8.4**	**4.02**	**4.99**	**4.5**	**2.15**	**6.54**	**7.03**	**6.42**	**5.13**	**11.2**
Benzene	0.06	**0.15 J**	0.027 U	**0.00027 J**	**0.00027 J**	0.036 U	0.00054 U	0.031 U	**0.0009**	**0.044 J**	0.00086 U
cis-1,2-Dichloroethene	0.25	0.61 U'	0.054 U	0.001 U	0.001 U	0.072 U	0.0011 U	0.062 U	0.00094 U	0.09 U	0.0017 U
Ethylbenzene	1	0.61 U	0.054 U	0.001 U	0.001 U	**0.093**	0.0011 U	0.062 U	0.00094 U	**0.034 J**	0.0017 U
Lead	450	**25**	**10.7**	**10.9**	**9.95**	**13.2**	**10.1**	**16.9**	**11.4**	**8.7**	**91.9**
Trichloroethene	0.47	0.31 U	0.027 U	0.00051 U	0.00052 U	0.036 U	0.00054 U	0.031 U	0.00047 U	0.045 U	0.00086 U
Vinyl chloride	0.02	0.61 U'	0.054 U'	0.001 U	0.001 U	0.072 U'	0.0011 U	0.062 U'	0.00094 U	0.09 U'	0.0017 U
Chrysene	1	**0.026 J**	**0.036 J**	**0.028 J**	**0.023 J**	0.14 U	0.12 U	**19**	0.12 U	0.13 U	**0.17**
Barium	820	**65.8**	**41.2**	**37.7**	**42.2**	**96.6**	**55**	**59.9**	**48.2**	**32**	**100**
Mercury	0.73	0.081 U	0.078 U	0.087 U	0.089 U	0.098 U	0.082 U	**0.093**	0.087 U	0.085 U	0.109 U
METALS - 6010D/ CALC(mg/kg)											
Aluminum	NS	**8210**	**6550**	**7240**	**7180**	**13500**	**8610**	**8520**	**7990**	**6610**	**13100**
Beryllium	47	**0.463 J**	**0.342 J**	**0.404 J**	**0.373 J**	**0.7**	**0.488**	**0.513**	**0.466**	**0.381 J**	**0.774**
Cadmium	7.5	**0.057 J**	**0.138 J**	**0.178 J**	**0.143 J**	1.05 U	**0.077 J**	**0.158 J**	**0.166 J**	**0.28 J**	**0.108 J**
Calcium	NS	**10900**	**4060**	**2640**	**6560**	**4230**	**1770**	**5060**	**1770**	**1810**	**4260**
Chromium	NS	**12.3**	**9.56**	**10.5**	**11**	**17.3**	**12.9**	**13.3**	**11.4**	**9.82**	**18**
Chromium, Trivalent	NS	**12.3**	**9.56**	**10.5**	**11**	**17.3**	**12.9**	**13.3**	**11.4**	—	**18**
Chromium, Hexavalent	19	0.976 U	0.984 U	0.958 U	0.977 U	0.97 U	0.97 U	0.973 U	0.963 U	1.03 U	1.08 U
Cobalt	NS	**5.17**	**5.66**	**7.5**	**6.66**	**6.44**	**10.4**	**9.04**	**9.08**	**6.77**	**12.9**
Copper	1720	**12**	**13.7**	**18.8**	**16.3**	**9.58**	**20.7**	**17.3**	**14.7**	**15.6**	**27.4**
Iron	NS	**15900**	**16700**	**16600**	**15900**	**17800**	**21200**	**20800**	**18700**	**15800**	**31200**
Magnesium	NS	**5460**	**2730**	**2770**	**4180**	**3860**	**3170**	**4590**	**2980**	**2580**	**5490**
Manganese	2000	**315**	**1180**	**340**	**208**	**245**	**251**	**482**	**583**	**484**	**556**
Nickel	130	**16**	**16.9**	**17.1**	**16.7**	**20.4**	**23.7**	**22.9**	**21.6**	**17.8**	**32.9**
Potassium	NS	**361**	**432**	**497**	**485**	**593**	**476**	**432**	**391**	**431**	**814**
Selenium	4	1.88 U	1.95 U	1.81 U	1.87 U	**0.46 J**	1.88 U	1.86 U	1.86 U	1.96 U	2.06 U
Silver	8.3	0.471 U	0.488 U	**0.492**	**0.478**	0.524 U	0.469 U	0.464 U	0.466 U	0.49 U	0.514 U
Sodium	NS	**1070**	**134 J**	181 U	187 U	210 U	188 U	186 U	186 U	196 U	206 U
Vanadium	NS	**11.6**	**10.8**	**12.2**	**11.6**	**14.4**	**15.6**	**15.8**	**13.8**	**12.1**	**22.4**
Zinc	2480	**72.4**	**50.9**	**50.1**	**52.6**	**86.9**	**57.1**	**57.8**	**52.8**	**52.9**	**98.7**
SEMI-VOLATILE ORGANIC COMPOUNDS - 8270E (mg/kg)											
2-Methylphenol	0.33	0.2 U	0.2 U	0.2 U	0.2 U	0.23 U	0.2 U	1 U'	0.2 U	0.21 U	0.22 U
3-Methylphenol/4-Methylphenol	0.33	0.29 U	0.29 U	0.28 U	0.29 U	0.33 U	0.29 U	1.4 U'	0.28 U	0.3 U	0.31 U
Acenaphthene	98	0.16 U	0.16 U	0.16 U	0.16 U	0.18 U	0.16 U	**4.6**	0.16 U	0.17 U	**0.064 J**
Acenaphthylene	107	0.16 U	0.16 U	0.16 U	0.16 U	0.18 U	0.16 U	**5.3**	**0.034 J**	0.17 U	0.17 U
Anthracene	1000	0.12 U	**0.1 J**	0.12 U	0.12 U	0.14 U	0.12 U	**16**	0.12 U	0.13 U	**0.12 J**
Benzo[a]anthracene	1	**0.027 J**	**0.024 J**	**0.029 J**	0.12 U	0.14 U	0.12 U	**20**	0.12 U	0.13 U	**0.18**
Benzo[a]pyrene	22	0.16 U	0.16 U	0.16 U	0.16 U	0.18 U	0.16 U	**16**	0.16 U	0.17 U	**0.16 J**
Benzo[b]fluoranthene	1.7	0.12 U	0.12 U	0.12 U	0.12 U	0.14 U	0.12 U	**19**	0.12 U	0.13 U	**0.19**
Benzo[g,h,i]perylene	1000	0.16 U	0.16 U	0.16 U	0.16 U	0.18 U	0.16 U	**7.8**	0.16 U	0.17 U	**0.09 J**
Benzo[k]fluoranthene	1.7	0.12 U	0.12 U	0.12 U	0.12 U	0.14 U	0.12 U	**5.4**	0.12 U	0.13 U	**0.064 J**

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BCP Site C828162B
5 Flint St, Rochester, New York

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Dibenzo(a,h)anthracene	1000	0.12 U	0.12 U	0.12 U	0.12 U	0.14 U	0.12 U	**2.2**	0.12 U	0.13 U	0.13 U
Dibenzofuran	210	0.2 U	0.2 U	0.2 U	0.2 U	0.23 U	0.2 U	**4.4**	0.2 U	0.21 U	**0.041 J**
Fluoranthene	1000	**0.059 J**	**0.054 J**	**0.06 J**	**0.043 J**	0.14 U	0.12 U	**37**	0.12 U	0.13 U	**0.42**
Fluorene	386	**0.044 J**	**0.32**	**0.027 J**	**0.065 J**	0.23 U	0.2 U	**10**	0.2 U	0.21 U	**0.071 J**
Indeno[1,2,3-cd]pyrene	8.2	0.16 U	0.16 U	0.16 U	0.16 U	0.18 U	0.16 U	**8**	0.16 U	0.17 U	**0.09 J**
Naphthalene	12	**0.14 J**	**0.65**	0.2 U	0.2 U	0.23 U	0.2 U	**2.9**	0.2 U	0.21 U	**0.068 J**
Phenanthrene	1000	**0.1 J**	**0.52**	**0.083 J**	**0.14**	0.14 U	**0.034 J**	**56**	0.12 U	0.13 U	**0.5**
Phenol	0.33	0.2 U	0.2 U	0.2 U	0.2 U	0.23 U	0.2 U	1 U'	0.2 U	0.21 U	0.22 U
Pyrene	1000	**0.056 J**	**0.091 J**	**0.06 J**	**0.048 J**	0.14 U	0.12 U	**34**	0.12 U	0.13 U	**0.34**
Toluene	NS	—	—	—	—	**0.256 NJ**	—	—	—	—	—
Total Semi-Volatile TICs	NS	**29 J**	**190 J**	**10.5 J**	**48.7 J**	**5.15 J**	**8.97 J**	**54.7 J**	**7.14 J**	**6.68 J**	**2.04 J**
VOLATILE ORGANIC COMPOUNDS - 8260D (mg/kg)											
1,1,4-Trimethylcyclohexane	NS	—	—	—	—	—	—	—	—	—	—
1,1,-Dichloroethene	0.33	0.61 U'	0.054 U	0.001 U	0.001 U	0.072 U	0.0011 U	0.062 U	0.00094 U	0.09 U	0.0017 U
1-Ethyl-4-methylcyclohexane	NS	—	—	—	—	—	—	—	—	—	—
2-Butanone	0.12	6.1 U'	0.54 U'	0.01 U	0.01 U	0.72 U'	0.011 U	0.62 U'	**0.0057 J**	0.9 U'	**0.06**
Acetone	0.05	6.1 U'	0.54 U'	**0.027**	**0.026**	0.72 U'	**0.031**	0.62 U'	**0.02**	0.9 U'	**0.071**
Chloroform	0.37	0.92 U'	0.082 U	0.0015 U	0.0016 U	0.11 U	0.0016 U	0.093 U	0.0014 U	0.14 U	**0.0026**
n-Butylbenzene	12	**6.7**	**0.53**	**0.0054**	**0.0079**	**0.015 J**	**0.00066 J**	**0.2**	**0.0068**	**0.13**	0.0017 U
n-Propylbenzene	3.9	**0.96**	**0.058**	0.001 U	0.001 U	0.072 U	0.0011 U	**0.19**	**0.002**	**0.18**	0.0017 U
sec-Butylbenzene	11	**4.2**	**0.27**	**0.018**	**0.028**	**0.03 J**	**0.0035**	**0.75**	**0.04**	**0.23**	**0.0028**
tert-Butylbenzene	5.9	**0.76 J**	**0.056 J**	**0.0053**	**0.008**	**0.028 J**	**0.0031**	**0.2**	**0.014**	**0.054 J**	**0.0016 J**
Toluene	0.7	0.61 U	0.054 U	0.001 U	**0.00072 J**	0.072 U	0.0011 U	0.062 U	**0.0012**	**0.066 J**	0.0017 U
Xylene (m&p)	NS	**220**	**4.8**	0.002 U	0.0021 U	0.14 U	0.0022 U	0.12 U	0.0019 U	**0.8**	**0.0019 J**
Xylene (o)	NS	**0.36 J**	**0.04 J**	**0.00082 J**	**0.0012**	0.072 U	0.0011 U	**0.053 J**	**0.0015**	**0.03 J**	0.0017 U
Xylenes (Total)	1.6	**220 J**	**4.8 J**	**0.00082 J**	**0.0012**	0.072 U	0.0011 U	**0.053 J**	**0.0015**	**0.83 J**	**0.0019 J**
Total Volatile TICs	NS	**559 J**	**59 J**	**1.24 J**	**0.649 J**	**10.8 J**	**1.09 J**	**51.3 J**	**2.13 J**	**100 J**	**0.549 J**

Notes:
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ND = Not detected, reporting limit unknown.
NS = No standard currently established.
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U' = Not detected (value shown is reporting limit, which in this case, exceeds the applicable regulatory standard or other criteria referenced herein).
J = Result below the reporting limit but greater than or equal to the method detection limit, and the concentration is an estimated value.
Bold = Detected concentration.
When the applicable standard applies to mixed isomers or aroclors and the laboratory reports individual isomers or aroclors, the total standard is listed for each isomer or aroclor.

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BCP Site C828162B
5 Flint St, Rochester, New York

Sample ID Sample Depth (ft bgs) Lab Sample ID Sample Date	2015 NYSDEC Protection of GW SCO (mg/kg)	5FS-SW-21 11-13 L2638828-02 6/19/2026	5FS-SW-21 DUP 11-13 L2638828-05 6/19/2026	5FS-SW-22B 6-8 L2645073-01 7/16/2026	5FS-SW-23B 11-13 L2638828-04 6/19/2026	5FS-SW-13 8-10 L2641560-05 7/1/2026	5FS-SW-14 7-9 L2638412-02 6/18/2026	5FS-SW-15 10-12 L2638412-01 6/18/2026
SITE CONTAMINANTS OF CONCERN (mg/kg)								
1,1,1-Trichloroethane	0.68	0.00059 U	0.00072 U	0.039 U	**0.00022 J**	0.054 U	0.00052 U	**0.022**
1,1-Dichloroethane	0.27	**0.00028 J**	0.0014 U	0.079 U	**0.00055 J**	0.11 U	0.001 U	**0.014**
1,2,4-Trimethylbenzene	3.6	0.0023 U	0.0029 U	**1.2**	**0.00063 J**	**45**	0.0021 U	**0.01**
1,3,5-Trimethylbenzene	8.4	0.0023 U	0.0029 U	**0.22**	**0.00043 J**	**25**	0.0021 U	**0.011**
Arsenic	16	**9.38**	**6.85**	**5.44**	**8.06**	**4.1**	**6.39**	**9.13**
Benzene	0.06	0.00059 U	0.00072 U	0.039 U	0.0006 U	**0.42**	0.00052 U	**0.0012**
cis-1,2-Dichloroethene	0.25	0.0012 U	0.0014 U	0.079 U	0.0012 U	0.11 U	0.001 U	**0.00021 J**
Ethylbenzene	1	0.0012 U	0.0014 U	0.079 U	0.0012 U	0.11 U	0.001 U	**0.00061 J**
Lead	450	**20.6**	**15.8**	**24**	**20.6**	**8.46**	**14.8**	**30.1**
Trichloroethene	0.47	0.00059 U	0.00072 U	0.039 U	**0.0015**	0.054 U	0.00052 U	0.00052 U
Vinyl chloride	0.02	0.0012 U	0.0014 U	0.079 U'	0.0012 U	0.11 U'	0.001 U	**0.00039 J**
Chrysene	1	**0.53**	0.12 U	**0.11 J**	0.13 U	**0.088 J**	**0.025 J**	**0.028 J**
Barium	820	**43.8**	**47**	**51**	**56.2**	**42.1**	**90**	**52.8**
Mercury	0.73	**0.08 J**	**0.06 J**	**0.094 J**	0.083 U	0.078 U	0.076 U	**0.503**
METALS - 6010D/ CALC(mg/kg)								
Aluminum	NS	**4610**	**4440**	**7340**	**6780**	**6520**	**9880**	**5250**
Beryllium	47	**0.28 J**	**0.251 J**	**0.416 J**	**0.39 J**	**0.32 J**	**0.586**	**0.435 J**
Cadmium	7.5	0.989 U	0.902 U	**0.115 J**	0.99 U	**0.098 J**	**0.051 J**	0.936 U
Calcium	NS	**58100**	**27000**	**7760**	**3500**	**2060**	**2670**	**31600**
Chromium	NS	**7.41**	**7.18**	**11.3**	**10.1**	**9.58**	**14.8**	**11.2**
Chromium, Trivalent	NS	**7.41**	**7.18**	**11.3**	**10.1**	**9.58**	**14.8**	**11.2**
Chromium, Hexavalent	19	1.01 U	0.956 U	1.05 U	1.03 U	0.99 U	0.947 U	0.983 U
Cobalt	NS	**5.51**	**5.6**	**6.54**	**7.1**	**6.92**	**10.6**	**6.25**
Copper	1720	**14.9**	**12.6**	**18**	**16.8**	**12**	**13.9**	**28.4**
Iron	NS	**12700**	**11400**	**16400**	**20800**	**16000**	**24600**	**16300**
Magnesium	NS	**31200**	**14200**	**5170**	**2790**	**2540**	**3690**	**12200**
Manganese	2000	**252**	**175**	**231**	**361**	**192**	**475**	**319**
Nickel	130	**12.6**	**13.1**	**17.4**	**17.4**	**17.6**	**22.8**	**15.7**
Potassium	NS	**533**	**470**	**507**	**562**	**313**	**543**	**581**
Selenium	4	**0.904 J**	**1.07 J**	2.01 U	1.98 U	1.94 U	1.8 U	**0.471 J**
Silver	8.3	0.494 U	0.451 U	0.504 U	0.495 U	0.484 U	0.451 U	0.468 U
Sodium	NS	**153 J**	**106 J**	**173 J**	**110 J**	**277**	180 U	**107 J**
Vanadium	NS	**11.9**	**11**	**12.6**	**12.4**	**11.1**	**17.5**	**17.6**
Zinc	2480	**69**	**63.2**	**73.9**	**69.1**	**48.4**	**62.3**	**135**
SEMI-VOLATILE ORGANIC COMPOUNDS - 8270E (mg/kg)								
2-Methylphenol	0.33	0.21 U	0.2 U	0.22 U	0.21 U	0.2 U	0.2 U	0.2 U
3-Methylphenol/4-Methylphenol	0.33	0.3 U	0.28 U	0.32 U	0.3 U	0.29 U	0.28 U	0.29 U
Acenaphthene	98	**0.19**	0.16 U	0.18 U	0.17 U	0.16 U	0.16 U	0.16 U
Acenaphthylene	107	**0.033 J**	0.16 U	0.18 U	0.17 U	0.16 U	0.16 U	0.16 U
Anthracene	1000	**0.46**	0.12 U	**0.1 J**	0.13 U	**0.24**	0.12 U	0.12 U
Benzo[a]anthracene	1	**0.58**	0.12 U	**0.076 J**	0.13 U	**0.069 J**	**0.029 J**	**0.031 J**
Benzo[a]pyrene	22	**0.5**	0.16 U	**0.057 J**	0.17 U	**0.051 J**	0.16 U	0.16 U
Benzo[b]fluoranthene	1.7	**0.58**	0.12 U	**0.1 J**	0.13 U	**0.065 J**	0.12 U	**0.038 J**
Benzo[g,h,i]perylene	1000	**0.25**	0.16 U	**0.048 J**	0.17 U	**0.032 J**	0.16 U	**0.024 J**
Benzo[k]fluoranthene	1.7	**0.22**	0.12 U	0.13 U	0.13 U	0.12 U	0.12 U	0.12 U

Table 5. Summary of PDI Soil Analytical Data, Detections Only
BCP Site C828162B
5 Flint St, Rochester, New York

Sample ID Sample Depth (ft bgs) Lab Sample ID Sample Date	2015 NYSDEC Protection of GW SCO (mg/kg)	5FS-SW-21 11-13 L2638828-02 6/19/2026	5FS-SW-21 DUP 11-13 L2638828-05 6/19/2026	5FS-SW-22B 6-8 L2645073-01 7/16/2026	5FS-SW-23B 11-13 L2638828-04 6/19/2026	5FS-SW-13 8-10 L2641560-05 7/1/2026	5FS-SW-14 7-9 L2638412-02 6/18/2026	5FS-SW-15 10-12 L2638412-01 6/18/2026
Dibenzo(a,h)anthracene	1000	**0.066 J**	0.12 U	0.13 U	0.13 U	0.12 U	0.12 U	0.12 U
Dibenzofuran	210	**0.19 J**	0.2 U	0.22 U	0.21 U	0.2 U	0.2 U	0.2 U
Fluoranthene	1000	**1.5**	**0.03 J**	**0.16**	0.13 U	**0.24**	**0.053 J**	**0.046 J**
Fluorene	386	**0.26**	0.2 U	0.22 U	0.21 U	**0.36**	0.2 U	0.2 U
Indeno[1,2,3-cd]pyrene	8.2	**0.28**	0.16 U	**0.047 J**	0.17 U	**0.031 J**	0.16 U	0.16 U
Naphthalene	12	**0.19 J**	0.2 U	**0.38**	0.21 U	**1.3**	0.2 U	0.2 U
Phenanthrene	1000	**1.9**	**0.031 J**	**0.51**	0.13 U	**1.5**	**0.063 J**	**0.03 J**
Phenol	0.33	0.21 U	0.2 U	0.22 U	0.21 U	0.2 U	0.2 U	0.2 U
Pyrene	1000	**1.2**	**0.026 J**	**0.18**	0.13 U	**0.31**	**0.05 J**	**0.041 J**
Toluene	NS	—	—	—	—	—	—	—
Total Semi-Volatile TICs	NS	**2.98 J**	**1.34 J**	**176 J**	**1.56 J**	**69.8 J**	**5.32 J**	**3.8 J**
VOLATILE ORGANIC COMPOUNDS - 8260D (mg/kg)								
1,1,4-Trimethylcyclohexane	NS	—	—	—	—	—	—	—
1,1,-Dichloroethene	0.33	0.0012 U	0.0014 U	0.079 U	0.0012 U	0.11 U	0.001 U	**0.00055 J**
1-Ethyl-4-methylcyclohexane	NS	—	—	—	—	**21 NJ**	—	—
2-Butanone	0.12	**0.004 J**	**0.0049 J**	0.79 U'	**0.0027 J**	1.1 U'	0.01 U	0.01 U
Acetone	0.05	**0.03**	**0.038**	0.79 U'	**0.022**	1.1 U'	**0.058**	**0.028**
Chloroform	0.37	**0.0015 J**	**0.0018 J**	0.12 U	**0.0015 J**	0.16 U	0.0016 U	0.0016 U
n-Butylbenzene	12	0.0012 U	0.0014 U	**0.033 J**	0.0012 U	**2.3**	**0.0026**	0.001 U
n-Propylbenzene	3.9	0.0012 U	0.0014 U	**0.056 J**	0.0012 U	**2.2**	0.001 U	**0.001**
sec-Butylbenzene	11	0.0012 U	0.0014 U	**0.094**	**0.00017 J**	**1.3**	**0.011**	**0.0041**
tert-Butylbenzene	5.9	0.0023 U	**0.00046 J**	**0.012 J**	0.0024 U	0.22 U	**0.0038**	**0.0018 J**
Toluene	0.7	0.0012 U	0.0014 U	0.079 U	0.0012 U	0.11 U	0.001 U	**0.0026**
Xylene (m&p)	NS	0.0023 U	0.0029 U	0.16 U	**0.00095 J**	**45**	0.0021 U	**0.0065**
Xylene (o)	NS	0.0012 U	0.0014 U	0.079 U	0.0012 U	**0.1 J**	0.001 U	**0.00084 J**
Xylenes (Total)	1.6	0.0012 U	0.0014 U	0.079 U	**0.00095 J**	**45 J**	0.001 U	**0.0073 J**
Total Volatile TICs	NS	**0.0478 J**	**0.193 J**	**9.22 J**	**0.0426 J**	**153 J**	**1.39 J**	**1.08 J**

Notes:
Protection of GW SCO = New York State Department of Environmental Conservation Protection of Groundwater Soil Cleanup Objectives
ft bgs = Feet below ground surface.
% = Percent.
mg/kg = Milligrams per kilogram.
Grey highlighted cells indicates value exceeds the NYSDEC Restricted Use Protection of Groundwater SCO.
— = Sample not analyzed.
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.
ND = Not detected, reporting limit unknown.
NS = No standard currently established.
U = Not detected (value shown is laboratory reporting limit).
U' = Not detected (value shown is reporting limit, which in this case, exceeds the applicable regulatory standard or other criteria referenced herein).
J = Result below the reporting limit but greater than or equal to the method detection limit, and the concentration is an estimated value.
Bold = Detected concentration.
When the applicable standard applies to mixed isomers or aroclors and the laboratory reports individual isomers or aroclors, the total standard is listed for each isomer or aroclor.

Table 6. Summary of Groundwater Analytical Data, Detections Only
BCP Site C828162B
5 Flint St, Rochester, New York

Sample ID Lab Sample ID Sample Date	NYSDEC TOGS GW Effluent Limitations	5FS-MW-1 L2639381-01 6/23/2026	5FS-MW-1 DUP L2639381-02 6/23/2026
Site Area		**Area 3**	
SEMI-VOLATILE ORGANIC COMPOUNDS - 8270E (µg/l)			
Total Semi-Volatile TICs	NS	**43.3 J**	**63.2 J**
Unknown	NS	**31.9 J**	**5 J**
Unknown Alkane	NS	—	**6 J**
Unknown Organic Acid	NS	**6.8 J**	**8.4 J**
SEMI-VOLATILE ORGANIC COMPOUNDS SIM - 8270E-SIM (µg/l)			
Benzo[a]anthracene	0.002	**0.04 J**	**0.05 J**
Fluoranthene	50	0.1 U	**0.03 J**
Naphthalene	10	**0.07 J**	**0.05 J**
VOLATILE ORGANIC COMPOUNDS - 8260D (µg/l)			
2-Butanone	50	**2.6 J**	**3.8 J**
Acetone	50	**3.8 J**	**5.1**

Notes:
TOGS GW Effluent Limitations = New York State Department of Environmental Conservation Technical and Operational Guidance for Groundwater Effluent Limits
µg/l = Micrograms per liter.
Grey highlighted cells indicates value exceeds the applicable criteria or screening level.
NS = No standard currently established.
Bold = Detected concentration.

Table 7 - Required Permits, Certificates or Other Approvals or Authorizations
BCP Site No. C828162B
Portion of the Former Vacuum Oil Refinery Site, Rochester, New York

Permit	Citation	Regulatory Agency	Regulatory Contact
Site Preparation Permit (Permit No. B-25-0989)	City of Rochester Article IV, § 39-400	City of Rochester Department of Neighborhood and Business Development	Crystal Gizzi (585) 428-6520
Short Term Discharge Permit (ST-Permit No: ST-473)	Sewer Use Law of Monroe County - Section 1 - Local Law No. 3 of 1988	Monroe County Department of Environmental Services	Michael J. Garland P.E. (585) 753-7600
Long Term Industrial Sewer Use Permit (Permit No. IWC-1104)	Sewer Use Law of Monroe County - Section 5.2(a)	Monroe County Department of Environmental Services	Donald Wolf (585) 753-5441
Hydrant Use Permit	City of Rochester Chapter 32 Waterworks § 23-29 Fire Hydrants	City of Rochester, Water Engineering Office	585-428-7562

Notes:

Table 8 - Project Manager / Health and Safety Personnel
BCP Site No. C828162B
5 Flint Street, Rochester, New York

10 Flint Street, LLC (Volunteer)	Contact	Telephone
Managing Member	Michael Roux	(631) 630-2425
City of Rochester (Volunteer)	**Contact**	**Telephone**
Associate Environmental Specialist	Jane MH Forbes	(585) 428-7892
Roux DPC (Environmental Consultant)		
Project Engineer / Remedial Engineer	Noelle Clarke	(631) 232-2600
Qualified Person / Site Saftey Officer	Nicholas Suraci	(716) 725-6969
Quality Assurance Officer	Alex Wirth	(585) 895-4957
Corporate Health and Safety Manager	Brian Hobbs	(631) 232-2600
Roux MA (Environmental Consultant)		
Project Principal	Ian Reed	(781) 569-4000
Project Manager	Eric Runstrom	(781) 569-4000
Roux DPC (Remedial Contractor)		
Remedial Contractor Manager	Michael Lesakowski	(716) 725-6946
Field Manager	John Deth	(716) 725-6952
Emergency Phone Numbers		
Emergency Medical Service	--	911
Rochester Police Department	--	911
Rochester Fire Department	--	911
Urgent Care	--	(585) 426-4990
National Response Center	--	(800) 424-8802
Poison Control Center	--	(800) 222-1222
Centers for Disease Control	--	(800) 232-4636
USEPA (Region II)	--	(212) 637-3000
NYSDEC Emergency Spill Response	--	(800) 457-7362

Table 9: Remedial Alternative Cost Estimates
5 Flint Street, Rochester, NY
BCP Site # C828162B

Remedial Costs	Alternative 2 Track 4 (Excavation + ISS)			
	Est. Units	Unit	Unit Rate	Total
Task 1 - Pre-Transaction Work	Est. Units	Unit	Unit Rate	Total
BCP Applications and Amendments	1	Lump Sum		$ 75,000
Task 1 Sub Total				**$ 75,000**
Task 2 - Pre-Remediation Work, Engineering and Consulting	Est. Units	Unit	Unit Rate	Total
AAR/Remedial Action/Remedial Design Work Plan, Final Engineering Report	1	Lump Sum	$ 160,000	$ 160,000
Pre-Design Investigation/Bench-scale Study of In-Situ Solidification (ISS)	1	Lump Sum	$ 130,000	$ 130,000
Construction Trailer and amenities	24	Weeks	$ 5,000	$ 120,000
Mobilization - Heavy Equipment, etc.	1	Lump Sum	$ 15,000	$ 15,000
Temporary Fencing	1600	Linear Feet	11	$ 17,600
Surveys and Layouts	1	Lump Sum	$ 25,000	$ 25,000
Clearing/Grubbing/Grading	1.62	Acres	$ 20,000	$ 32,400
Truck Wash	24	Weeks	$ 12,000	$ 288,000
Dust Suppression/Water Truck	24	Weeks	$ 3,000	$ 72,000
Odor Control	6	months	$ 10,000	$ 60,000
Water Management- mobilization, Permitting, Set-up, Operation, Testing, Cleaning, Demobilization	2	months	$ 15,000	$ 30,000
Construction Entrance	1	Lump Sum	$ 8,000	$ 8,000
Access Roads	6000	Square Feet	6.00	$ 36,000
Erosion and Sediment Control	1600	Linear Feet	7.00	$ 11,200
Building/Structure/Foundations/Concrete Walls Demo, Debris Removal	1	Estimated	$ 470,000	$ 470,000
Well Decommissioning	6	Each	$ 3,000	$ 18,000
Utility Support- protection and demo				
Task 2 Sub Total				**$ 1,493,200**
Task 3 - Program and Remedial Work Management and Administration	Est. Units	Unit	Unit Rate	Total
BCP Project Management and Administration, Contracting, Contract Management, Scheduling, Laboratory Coordination, Personnel, Waste Profile Applications/Profiles Transportion/Disposal Coordination, Publicly Owned Treatment Works planning and permitting, Client/Attorney/NYSDEC Correspondence	1	Estimated	$ 80,000	$ 80,000
Task 3 Sub Total				**$ 80,000**
Task 4 - Remedial Excavation Work	Est. Units	Unit	Unit Rate	Total
Task 4 - Remedial Excavation Work				
Remediation Fieldwork Professional Services				
Remedial Excavation, ISS and Backfill Management, Oversight, Sampling, SWPPP monitoring	80	DY	$ 3,000	$ 240,000
Community Air monitoring (Data Ram, PIDs)	80	DY	$ 1,500	$ 120,000
Earthwork Services-Impacted (Treatment, Excavation, Handling)				
5 FLINT STREET: Track 4 areas - Excavation and loading	8,000	T	6.25	$ 50,000
ISS	25,800	CY	$ 80	$ 2,064,000
Transportation and Disposal Services				
GCM Non-Haz Transporation and Disposal	8,000	T	$ 81	$ 644,000
Organic Debris- Transporation and Disposal	500	T	$ 45	$ 22,500
C&D- Transporation and Disposal	400	T	$ 72	$ 28,800
Analytical/Physical Testing				
Waste Characterization Samples	21	Each	$ 1,000	$ 21,000
ISS Post-Treatment Testing (monolith Coring)	1	Estimated	$ 30,000	$ 30,000
Task 4 Sub Total				**$ 3,220,300**
Task 5 - Site Grading, Cover Placement, Drainage and Restoration	Est. Units	Unit	Unit Rate	Total
Cover Placement and Restoration Fieldwork				
Cover Placement Management, Oversight, Sampling, SWPPP monitoring	40	Days	$ 3,000	$ 120,000
Community Air monitoring (Data Ram, PIDs)	40	Days	$ 1,500	$ 60,000
Analytical Testing				
Imported Soil Characterization - Cover Material (gravel)	1	Estimated	$ 6,220	$ 6,220
Imported Soil Characterization - Cover Material (top soil)	1	Estimated	$ 4,195	$ 4,195
Earthwork Services (Raise Site Grade)				
Import, Place Gravel	9,500	Tons	$ 30	$ 285,000
Earthwork Services (Cover System)				
Import, Place Gravel	7,100	Tons	$ 30	$ 213,000
Import, Place Top Soil	1,700	Tons	$ 40	$ 68,000
Demarcation Material and Shipping	2	Roll	$ 3,000	$ 6,000
Hydroseed/Fertilize/Watering	1.62	Acres	$ 4,900	$ 7,938
New monitoring Wells				
Install, Develop, Sample New Wells	8	Each	$ 4,000	$ 32,000
Task 5 Sub Total				**$ 802,353**
Task 6 - Final Engineering Report (FER) and Site Management Plan (SMP)	Est. Units	Unit	Unit Rate	Total
Final Engineering Reports	1	Each	$ 25,000	$ 25,000
Site Management Plan and Environmental Easement Support	1	Each	$ 15,000	$ 15,000
Post-Remediation Survey, BCP Easement Surveys	1	Estimated	$ 5,000	$ 5,000
Third Party Data Validation (Post-Excavation and Imported Materials Samples)	1	Estimated	$ 10,000	$ 10,000
Task 6 Sub Total				**$ 55,000**
Estimated Remediation Cost				**$ 5,725,853**
With 20% Contingency			**With 20% Contingency**	**$ 6,871,024**
Post-COC Operation, Maintenance and Monitoring Costs	Est. Units	Unit	Unit Rate	Total
Monitoring Well Replacement/Decommissioning				
Decommission monitoring Wells	8	Each	$ 3,000	$ 24,000
Annual Post-COC Operation, Maintenance and Monitoring Costs	Est. Units	Unit	Unit Rate	Total
Groundwater monitoring, Cover System Maintenance and Monitoring				
Professional Services- Groundwater monitoring, GW Sampling, Sampling Equipment, Personal Protective Equipment, Analytical Samples (VOCs/SVOCs/Metals), Reports, Drum Disposal.	1	Year	$ 28,800	$ 28,800
Cover System Maintenance and Monitoring (Without Groundwater Monitoring)				
Professional Services- Cover System Monitoring, Personal Protective Equipment, Reports	1	Year	$ 6,000	$ 6,000
Sub Total				**$ 6,000**
Annual Periodic Review Reports				
Professional Services- Annual Periodic Review Reports	1	Year	$ 5,000	$ 5,000
Total Annual Costs With Groundwater Monitoring				**$ 33,800**
Total Annual Costs Without Groundwater Monitoring				**$ 11,000**

FIGURES

1. Site Location Map
2. Site Plan
3. Tax and Surrounding Properties Map
4. Remedial Investigation Summary
5. Former Vacuum Oil Company Refinery Area
6. Phase I PDI Sampling Results
7. Phase II PDI Sampling Results
8. Updated Proposed Excavation and ISS Extents
9. Additional PDI Sampling
10. Truck Routes
11. Site Layout Plan
12. Construction Details
13. Known and Suspected Utilities
14. Cover Type Detail



QUADRANGLE LOCATION



N

1,000 0 1,000'

Title:

SITE LOCATION MAP

BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER, NEW YORK

Prepared for:

5 FLINT STREET LLC

ROUX

Compiled by: SB	Date: 05/10/24
Prepared by: SB	Scale: AS SHOWN
Project Mgr: ER	Project:0172.0180M015
File: 0172.0180M017.104.001 - Site Location Map.mxd	

FIGURE 1

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LEGEND

- FOUNDATION OF DEMOLISHED 3-STORY BLOCK BUILDING
- BCP SITE C828162B - 5 FLINT STREET

SOURCES

- AERIAL IMAGERY FROM CITY OF ROCHESTER'S OPEN DATA PORTAL

- PROPERTY BOUNDARIES OBTAINED FROM THE CITY OF ROCHESTER OPEN DATA PORTAL (SEPTEMBER 2024) WITH THE EXCEPTION OF THE BOUNDARY BETWEEN 940 EXCHANGE STREETAND 5 FLINT STREET.

- PROPERTY BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET TAKEN FROM DEED INSTRUMENT #200307290847 FOR PROPERTY ADDRESS 5 FLINT STREET, ROCHESTER, NY, RECORDED ON JULY 29, 2003, RECORDED IN THE MONROE COUNTY REGISTRY OF DEEDS, BOOK 09821, PAGE 0657

NOTES

- ALL FEATURES SHOWN ARE APPROXIMATE.

100 0 100 FEET

Title:

SITE PLAN

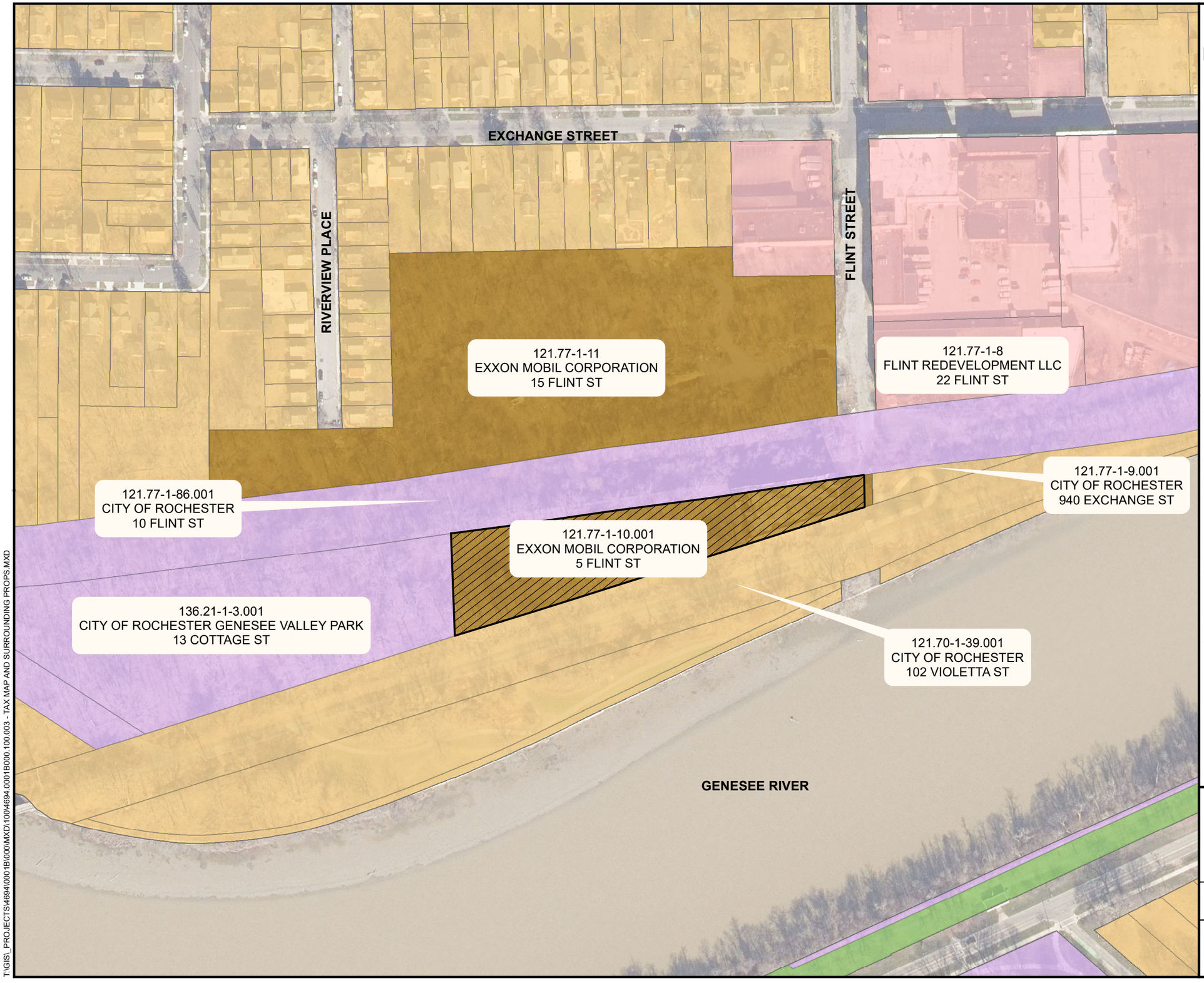
BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER, NEW YORK

Prepared For:
5 FLINT STREET LLC

ROUX

Compiled by: SB	Date: 19DEC25	FIGURE
Prepared by: SB	Scale: AS SHOWN	2
Project Mgr: IR	Project: 4694.0001B000	
File: 4694.0001B000.100.002 - Site Plan.mxd		

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LEGEND

- BCP SITE C828162B - 5 FLINT STREET
- APPROXIMATE PROPERTY BOUNDARY

ZONING DISTRICTS

- PLANNED DEVELOPMENT
- M-1 INDUSTRIAL
- O-S OPEN SPACE
- R-1 LOW-DENSITY RESIDENTIAL
- R-3 HIGH-DENSITY RESIDENTIAL

121.77-1-10.001 — TAX MAP NUMBER
EXXON MOBIL CORPORATION — PROPERTY OWNER
PROPERTY ADDRESS OR LOCATION

SOURCES

- AERIAL IMAGERY FROM THE CITY OF ROCHESTER'S OPEN DATA PORTAL.

- PROPERTY BOUNDARIES AND ZONING DISTRICTS OBTAINED FROM THE CITY OF ROCHESTER OPEN DATA PORTAL (SEPTEMBER 2024) WITH THE EXECPTION OF THE BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET.

- PROPERTY BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET TAKEN FROM DEED INSTRUMENT # 200307290847 FOR PROPERTY ADDRESS 5 FLINT STREET, ROCHESTER, NY, RECORDED ON JULY 29, 2003, RECORDED IN THE MONROE COUNTY REGISTRY OF DEEDS, BOOK 09821, PAGE 0657.

NOTES

- ALL FEATURES SHOWN ARE APPROXIMATE.

N

200 0 200
FEET

Title:

TAX MAP AND SURROUNDING PROPERTIES

BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER, NEW YORK

Prepared for:
5 FLINT STREET LLC

ROUX

Compiled by: SB	Date: 12/22/25	FIGURE
Prepared by: SB	Scale: AS SHOWN	3
Project Mgr:IR	Project: 4694.0001B000	
File: 4694.0001B000.100.003 - Tax Map and Surrounding Props.mxd		

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LEGEND

- NYSDEC SOIL GAS (2001)
- NYSDEC SURFACE SOIL I (2001)
- NYSDEC TEST PIT (2001)
- NYSDEC MONITORING WELL (2001)
- RAVI BEDROCK WELL (2014-2015)
- RAVI SOIL BORING (2014-2015)
- RAVI SOIL BORING/MONITORING WELL (2014-2015)
- RAVI TEST PIT (2014-2015)
- ROUX SOIL BORING (2017)
- ROUX SOIL BORING (2008)
- ROUX SOIL BORING / FORMER MONITORING WELL (2008)
- BCP SITE C828162B - 5 FLINT STREET

SOURCES

- AERIAL IMAGERY FROM CITY OF ROCHESTER'S OPEN DATA PORTAL

- PROPERTY BOUNDARIES OBTAINED FROM THE CITY OF ROCHESTER OPEN DATA PORTAL (SEPTEMBER 2024) WITH THE EXCEPTION OF THE BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET.

- PROPERTY BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET TAKEN FROM DEED INSTRUMENT #200307290847 FOR PROPERTY ADDRESS 5 FLINT STREET, ROCHESTER, NY, RECORDED ON JULY 29, 2003, RECORDED IN THE MONROE COUNTY REGISTRY OF DEEDS, BOOK 09821, PAGE 0657.

NOTES

- ALL FEATURES SHOWN ARE APPROXIMATE.

- 2008 ROUX SOIL BORING AND MONITORING WELL IDS SHOWN ON THIS FIGURE ARE THE ORIGINAL LOCATION ID (E.G., SB-016). THE IDS FOR SUBSEQUENT BORING ATTEMPTS DUE TO SHALLOW REFUSAL (E.G., SB-016A, SB-

100 0 100 FEET

Title: **REMEDIAL INVESTIGATIONS SUMMARY**

BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER, NEW YORK

Prepared For: 5 FLINT STREET LLC

ROUX

Compiled by: SB	Date: 19DEC25	FIGURE
Prepared by: SB	Scale: AS SHOWN	4
Project Mgr: ER	Project: 4694.0001P000	
File: 4694.0001P000.104.03 - Remedial Investigation		

T:\GIS_Projects\4694\0001B\000\MXD\104\4694.0001P000.104.03 - Remedial Investigation Summary.mxd

MAGNOLIA STREET
RIVERVIEW PLACE
FLINT STREET
EXCHANGE STREET
COTTAGE STREET
SERENITY CIRCLE
GENESEE RIVER

LEGEND

- BCP SITE C828162B - 5 FLINT STREET
- APPROXIMATE PROPERTY BOUNDARIES
- PORTION OF FORMER VACUUM OIL REFINERY FOOTPRINT
- FOUNDATION OF DEMOLISHED 3-STORY BLOCK BUILDING

FEATURES IDENTIFIED AND DESCRIBED (NAMED) BY AMEC 2004

- RETAINING WALL
- CULVERT
- DRAINAGE SWALE
- WALL FOUNDATION/CONCRETE PILLARS / FOOTERS
- SLAG MOUNDS/REEL-O-MATIC
- SHALLOW FLOOR PITS
- RUBBLE AND/OR TIRE
- PIPES
- SEWAGE PIPES
- MOLTEN PLASTIC
- MANHOLE
- MACHINERY
- FIRE HYDRANTS
- DRUMS (55) GALLON
- REMNANT OF CIRCULAR FOOTING
- APPROXIMATE SLUDGE PITS AREA

HISTORIC FEATURES GEOREFERENCED FROM 1926 SANBORN

- FORMER STRUCTURE (BUILDING, TANK, ETC)
- FORMER BARREL CONVEYOR
- PROPERTY PROPERTY BOUNDARIES
- PIPES
- FORMER RAILROAD

SOURCES

- AERIAL IMAGERY FROM THE CITY OF ROCHESTER'S OPEN DATA PORTAL.

- THE PROPERTY BOUNDARIES OBTAINED FROM THE CITY OF ROCHESTER OPEN DATA PORTAL (SEPTEMBER 2024) WITH THE EXECPTION OF THE BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET.

- THE PROPERTY BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET TAKEN FROM DEED INSTRUMENT # 200307290847 FOR PROPERTY ADDRESS 5 FLINT STREET, ROCHESTER, NY, RECORDED ON JULY 29, 2003, RECORDED IN THE MONROE COUNTY REGISTRY OF DEEDS, BOOK 09821, PAGE 0657.

- BROWNFIELD CLEANUP PROGRAM SITE LIMITS AS SHOWN ON FIGURE 2 OF RAMBOLL'S REMEDIAL ALTERNATIVES ANALYSIS REPORT, DATED JUNE 2023, AND PRESENTED IN THE SEPTEMBER 2023 DECISION DOCUMENT FOR SITE.

NOTES

- ALL FEATURES SHOWN ARE APPROXIMATE.

N

200 0 FEET

TITLE:

FORMER VACUUM OIL COMPANY REFINERY AREA

5 FLINT STREET SITE
ROCHESTER, NEW YORK

PREPARED FOR:
5 FLINT STREET LLC

ROUX

COMPILED BY: SB	DATE: 12/22/25	FIGURE
PREPARED BY: SB	SCALE: AS SHOWN	5
PROJECT MGR: ER	PROJECT: 4880.0001P000	
FILE: 4694.0001B000.100.005 - FORMER VACUUM OIL.MXD		

T:\GIS_PROJECTS\4694\0001B\MXD\4694.0001B000.100.005 - FORMER VACUUM OIL.MXD



LEGEND

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

- NYSDEC SOIL GAS (2001)
- NYSDEC SURFACE SOIL (2001)
- NYSDEC TEST PIT (2001)
- NYSDEC MONITORING WELL (2001)
- RAVI BEDROCK WELL (2014-2015)
- RAVI SOIL BORING (2014-2015)
- RAVI SOIL BORING / MONITORING WELL (2014-2015)
- RAVI TEST PIT (2014-2015)
- ROUX SOIL BORING (2017)
- ROUX SOIL BORING (2008)
- ROUX SOIL BORING / FORMER MONITORING WELL (2008)

PRE-DESIGN INVESTIGATION SAMPLE LOCATIONS

- ROUX MONITORING WELL PDI PHASE 1
- SITE COCS DO NOT EXCEED NYSDEC 2015 PGW SCOS AND NO CONTAMINANT SOURCE MATERIAL IDENTIFIED
- BCP BOUNDARY AND LIMITS OF SITE COVER SYSTEM
- APPROXIMATE LNAPL REMEDIATION AREA (UP TO 8 FT)
- PROPOSED EXCAVATION AND ISS AREA
- POTENTIAL EXCAVATION AND ISS AREA
- SUBSURFACE CONCRETE OBSTRUCTION
- EXCAVATION EXCLUSION ZONE FOR UTILITIES (5FT BUFFER)

IN-SITU SOLIDIFICATION BENCH TESTING

- CLEAN SAMPLING AREA
- MEDIUM SAMPLING AREA
- DIRTY SAMPLING AREA

UTILITIES

- CONFIRMED SANITARY SEWER
- CONFIRMED GAS
- CONFIRMED WATER
- UNCONFIRMED ELECTRIC
- UNCONFIRMED SANITARY SEWER
- UNCONFIRMED GAS
- UNCONFIRMED WATER
- END OF CONFIRMED EXTENT OF UTILITY

SOURCES
- AERIAL IMAGERY (2023) FROM CITY OF ROCHESTER'S OPEN DATA PORTAL.
- PROPERTY BOUNDARIES OBTAINED FROM THE CITY OF ROCHESTER OPEN DATA PORTAL (SEPTEMBER 2024) WITH THE EXCEPTION OF THE BOUNDARY BETWEEN 940 EXCHANGE STREETAND 5 FLINT STREET.
- PROPERTY BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET TAKEN FROM DEED INSTRUMENT #200307290847 FOR PROPERTY ADDRESS 5 FLINT STREET, ROCHESTER, NY, RECORDED ON JULY 29, 2003, RECORDED IN THE MONROE COUNTY REGISTRY OF DEEDS, BOOK 09821, PAGE 0657
- UNCONFIRMED UTILTIES AS MAPPED IN ROCHESTER PURE WATERS DISTRICT MAP, 1974. CONFIRMED UTILITES AS MAPPED BY GPRS, OCTOBER 2025

NOTES
- ISS, IN-SITU SOLIDIFICATION.
- ALL FEATURES SHOWN ARE APPROXIMATE.
- 2008 ROUX SOIL BORING AND MONITORING WELL IDS SHOWN ON THIS FIGURE ARE THE ORIGINAL LOCATION ID (E.G., SB-016). THE IDS FOR SUBSEQUENT BORING ATTEMPTS DUE TO SHALLOW REFUSAL (E.G., SB-016A, SB-016B, ETC) ARE NOT DISPLAYED ON THIS FIGURE.
- MW-1 AND MW-2 INSTALLED BY NYSDEC ARE DISPLAYED AS DEC MW-1 AND DEC MW-2, RESPECTIVELY, TO AVOID CONFUSION WITH MONITORING WELLS MW-1 AND MW-2 INSTALLED BY RAVI.
- A SITE COVER SYSTEM WILL BE INSTALLED ACROSS THE ENTIRE SITE.
- ONLY EXCEEDANCES FOR SITE CONTAMINANTS OF CONCERN (COCS) ARE SHOWN (AS LISTED IN SECTION 6.1.2 OF THE NOVEMBER 2025 DECISION DOCUMENT FOR THE SITE.

50 0 50 FEET

Title:

PHASE I PDI SAMPLING RESULTS

BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER, NEW YORK

Prepared For:
5 FLINT STREET LLC

ROUX

Compiled by: SB	Date: 03AUG26	FIGURE
Prepared by: MB	Scale: AS SHOWN	6
Project Mgr: ER	Project: 4694.0001P000	
File: 4694.0001P000.104.mxd		

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PROPOSED EXCAVATION AND ISS AREA 1

PROPOSED EXCAVATION AND ISS AREA 2

POTENTIAL EXCAVATION AND ISS AREA 3

POTENTIAL EXCAVATION AND ISS AREA 4

SB-010 MW-02 TP-5 RXSB-06 SB-047 TP-4 5FS-SW-20 SB-016 SS-2 C-3 5FS-SW-21 SB-008 RXSB-07 SB-01/MW-01 TP-2 DEC-MW-2 5FS-SW-22B 5FS-SW-22 SB-015 SB-009 D-3 5FS-SW-23B 5FS-SW-23 TP-3 MW-10 SB-020 B-3 DEC-MW-1 TP-1 5FS-SW-10B 5FS-SW-10C 5FS-SW-10E 5FS-SW-10 5FS-SW-10D 5FS-SW-11 5FS-SW-12D 5FS-SW-12 5FS-SW-12C 5FS-SW-12B 5FS-SW-12E SS-1 SB-021 TP-04 MW-09 A-3 BW-01 SB-046 5FS-SW-13 5FS-SW-10F RXSB-08 5FS-SW-14 SB-061 SB-06 5FS-SW-15 SB-04/MW-04 SB-05 RXSB-09 SB-03/MW-03 SB-02

LEGEND

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

- NYSDEC SOIL GAS (2001)
- NYSDEC SURFACE SOIL (2001)
- NYSDEC TEST PIT (2001)
- NYSDEC MONITORING WELL (2001)
- RAVI BEDROCK WELL (2014-2015)
- RAVI SOIL BORING (2014-2015)
- RAVI SOIL BORING / MONITORING WELL (2014-2015)
- RAVI TEST PIT (2014-2015)
- ROUX SOIL BORING (2017)
- ROUX SOIL BORING (2008)
- ROUX SOIL BORING / FORMER MONITORING WELL (2008)

PRE-DESIGN INVESTIGATION SAMPLE LOCATIONS

- ROUX MONITORING WELL PDI PHASE 1
- SITE COCS DO NOT EXCEED NYSDEC 2015 PGW SCOS AND NO CONTAMINANT SOURCE MATERIAL IDENTIFIED
- ONE OR MORE SITE COCS EXCEED NYSDEC 2015 PGW SCOS
- CONTAMINANT SOURCE MATERIALS IDENTIFIED DURING FIELD SCCREENING (NO LAB SAMPLE COLLECTED)
- REFUSAL LOCATION DUE TO OBSTRUCTION
- LAB SAMPLE DISCARDED

- BCP BOUNDARY AND LIMITS OF SITE COVER SYSTEM
- APPROXIMATE LNAPL REMEDIATION AREA (UP TO 8 FT)
- PROPOSED EXCAVATION AND ISS AREA
- POTENTIAL EXCAVATION AND ISS AREA
- SUBSURFACE CONCRETE OBSTRUCTION
- EXCAVATION EXCLUSION ZONE FOR UTILITIES (5FT BUFFER)

UTILITIES

- CONFIRMED SANITARY SEWER
- CONFIRMED GAS
- CONFIRMED WATER
- UNCONFIRMED ELECTRIC
- UNCONFIRMED SANITARY SEWER
- UNCONFIRMED GAS
- UNCONFIRMED WATER
- END OF CONFIRMED EXTENT OF UTILITY

SOURCES
- AERIAL IMAGERY (2023) FROM CITY OF ROCHESTER'S OPEN DATA PORTAL.
- PROPERTY BOUNDARIES OBTAINED FROM THE CITY OF ROCHESTER OPEN DATA PORTAL (SEPTEMBER 2024) WITH THE EXCEPTION OF THE BOUNDARY BETWEEN 940 EXCHANGE STREETAND 5 FLINT STREET.
- PROPERTY BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET TAKEN FROM DEED INSTRUMENT #200307290847 FOR PROPERTY ADDRESS 5 FLINT STREET, ROCHESTER, NY, RECORDED ON JULY 29, 2003, RECORDED IN THE MONROE COUNTY REGISTRY OF DEEDS, BOOK 09821, PAGE 0657
- UNCONFIRMED UTILTIES AS MAPPED IN ROCHESTER PURE WATERS DISTRICT MAP, 1974. CONFIRMED UTILITES AS MAPPED BY GPRS, OCTOBER 2025

NOTES
- ISS, IN-SITU SOLIDIFICATION.
- ALL FEATURES SHOWN ARE APPROXIMATE.
- 2008 ROUX SOIL BORING AND MONITORING WELL IDS SHOWN ON THIS FIGURE ARE THE ORIGINAL LOCATION ID (E.G., SB-016). THE IDS FOR SUBSEQUENT BORING ATTEMPTS DUE TO SHALLOW REFUSAL (E.G., SB-016A, SB-016B, ETC) ARE NOT DISPLAYED ON THIS FIGURE.
- MW-1 AND MW-2 INSTALLED BY NYSDEC ARE DISPLAYED AS DEC MW-1 AND DEC MW-2, RESPECTIVELY, TO AVOID CONFUSION WITH MONITORING WELLS MW-1 AND MW-2 INSTALLED BY RAVI.
- A SITE COVER SYSTEM WILL BE INSTALLED ACROSS THE ENTIRE SITE.
- ONLY EXCEEDANCES FOR SITE CONTAMINANTS OF CONCERN (COCS) ARE SHOWN (AS LISTED IN SECTION 6.1.2 OF THE NOVEMBER 2025 DECISION DOCUMENT FOR THE SITE.

50 0 50 FEET

Title:

PHASE II PDI SAMPLING RESULTS

BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER, NEW YORK

Prepared For:
5 FLINT STREET LLC

ROUX

Compiled by: SB	Date: 03AUG26	FIGURE
Prepared by: MB	Scale: AS SHOWN	7
Project Mgr: ER	Project: 4694.0001P000	
File: 4694.0001P000.104.mxd		

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PROPOSED EXCAVATION AND ISS AREA 1A

PROPOSED EXCAVATION AND ISS AREA 2

PROPOSED EXCAVATION AND ISS AREA 1 (REVISED)

PROPOSED EXCAVATION AND ISS AREA 1B

5FS-SW-1
5FS-SW-2
5FS-SW-10B
5FS-SW-10C
5FS-SW-10E
5FS-SW-10
5FS-SW-10F
5FS-SW-10D
5FS-SW-13
5FS-SW-14
5FS-SW-15
5FS-SW-11
5FS-PE-2B
5FS-PE-2
5FS-SW-12D
5FS-SW-12
5FS-SW-12C
5FS-SW-12E
5FS-SW-12B
5FS-SW-20
5FS-SW-21
5FS-SW-22B
5FS-SW-22
5FS-PE-3B
5FS-MW-1
5FS-PE-3
5FS-SW-23B
5FS-SW-23
A-3
BW-01
SB-046
RXSB-08
RXSB-09
SB-03/MW-03
SB-02
SB-05
SB-04/MW-04
SB-06
SB-061
SB-020
SB-010
MW-02
TP-05
RXSB-06
SB-047
TP-4
B-3
TP-1
DEC-MW-1
SB-016
SS-2
C-3
SS-1
RXSB-07
SB-01/MW-01
SB-021
TP-2
DEC-MW-2
TP-04
MW-09
SB-008
SB-015
SB-009
D-3
TP-3
MW-10

LEGEND

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

- NYSDEC SOIL GAS (2001)
- NYSDEC SURFACE SOIL (2001)
- NYSDEC TEST PIT (2001)
- NYSDEC MONITORING WELL (2001)
- RAVI BEDROCK WELL (2014-2015)
- RAVI SOIL BORING (2014-2015)
- RAVI SOIL BORING / MONITORING WELL (2014-2015)
- RAVI TEST PIT (2014-2015)
- ROUX SOIL BORING (2017)
- ROUX SOIL BORING (2008)
- ROUX SOIL BORING / FORMER MONITORING WELL (2008)

PRE-DESIGN INVESTIGATION SAMPLE LOCATIONS

- ROUX MONITORING WELL PDI PHASE 1
- SITE COCS DO NOT EXCEED NYSDEC 2015 PGW SCOS AND NO CONTAMINANT SOURCE MATERIAL IDENTIFIED
- ONE OR MORE SITE COCS EXCEED NYSDEC 2015 PGW SCOS
- CONTAMINANT SOURCE MATERIALS IDENTIFIED DURING FIELD SCCREENING (NO LAB SAMPLE COLLECTED)
- REFUSAL LOCATION DUE TO OBSTRUCTION
- LAB SAMPLE DISCARDED
- BCP BOUNDARY AND LIMITS OF SITE COVER SYSTEM
- APPROXIMATE LNAPL REMEDIATION AREA (UP TO 8 FT)
- PROPOSED EXCAVATION AND ISS AREA
- SUBSURFACE CONCRETE OBSTRUCTION
- EXCAVATION EXCLUSION ZONE FOR UTILITIES (5FT BUFFER)

UTILITIES

- CONFIRMED SANITARY SEWER
- CONFIRMED GAS
- CONFIRMED WATER
- UNCONFIRMED ELECTRIC
- UNCONFIRMED SANITARY SEWER
- UNCONFIRMED GAS
- UNCONFIRMED WATER
- END OF CONFIRMED EXTENT OF UTILITY

SOURCES
- AERIAL IMAGERY (2023) FROM CITY OF ROCHESTER'S OPEN DATA PORTAL.
- PROPERTY BOUNDARIES OBTAINED FROM THE CITY OF ROCHESTER OPEN DATA PORTAL (SEPTEMBER 2024) WITH THE EXCEPTION OF THE BOUNDARY BETWEEN 940 EXCHANGE STREETAND 5 FLINT STREET.
- PROPERTY BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET TAKEN FROM DEED INSTRUMENT #200307290847 FOR PROPERTY ADDRESS 5 FLINT STREET, ROCHESTER, NY, RECORDED ON JULY 29, 2003, RECORDED IN THE MONROE COUNTY REGISTRY OF DEEDS, BOOK 09821, PAGE 0657
- UNCONFIRMED UTILTIES AS MAPPED IN ROCHESTER PURE WATERS DISTRICT MAP, 1974. CONFIRMED UTILITES AS MAPPED BY GPRS, OCTOBER 2025

NOTES
- ISS, IN-SITU SOLIDIFICATION.
- ALL FEATURES SHOWN ARE APPROXIMATE.
- 2008 ROUX SOIL BORING AND MONITORING WELL IDS SHOWN ON THIS FIGURE ARE THE ORIGINAL LOCATION ID (E.G., SB-016). THE IDS FOR SUBSEQUENT BORING ATTEMPTS DUE TO SHALLOW REFUSAL (E.G., SB-016A, SB-016B, ETC) ARE NOT DISPLAYED ON THIS FIGURE.
- MW-1 AND MW-2 INSTALLED BY NYSDEC ARE DISPLAYED AS DEC MW-1 AND DEC MW-2, RESPECTIVELY, TO AVOID CONFUSION WITH MONITORING WELLS MW-1 AND MW-2 INSTALLED BY RAVI.
- A SITE COVER SYSTEM WILL BE INSTALLED ACROSS THE ENTIRE SITE.
- ONLY EXCEEDANCES FOR SITE CONTAMINANTS OF CONCERN (COCS) ARE SHOWN (AS LISTED IN SECTION 6.1.2 OF THE NOVEMBER 2025 DECISION DOCUMENT FOR THE SITE.

50 0 50
FEET

Title:

UPDATED EXCAVATION AND ISS EXTENTS

BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER, NEW YORK

Prepared For:
5 FLINT STREET LLC

ROUX

Compiled by: SB	Date: 03AUG26	FIGURE
Prepared by: MB	Scale: AS SHOWN	8
Project Mgr: ER	Project: 4694.0001P000	
File: 4694.0001P000.104.mxd		

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LEGEND

REMEDIAL INVESTIGATION SAMPLE LOCATIONS

- NYSDEC SOIL GAS (2001)
- NYSDEC SURFACE SOIL (2001)
- NYSDEC TEST PIT (2001)
- NYSDEC MONITORING WELL (2001)
- RAVI BEDROCK WELL (2014-2015)
- RAVI SOIL BORING (2014-2015)
- RAVI SOIL BORING / MONITORING WELL (2014-2015)
- RAVI TEST PIT (2014-2015)
- ROUX SOIL BORING (2017)
- ROUX SOIL BORING (2008)
- ROUX SOIL BORING / FORMER MONITORING WELL (2008)

PRE-DESIGN INVESTIGATION SAMPLE LOCATIONS

- ROUX MONITORING WELL PDI PHASE 1
- SITE COCS DO NOT EXCEED NYSDEC 2015 PGW SCOS AND NO CONTAMINANT SOURCE MATERIAL IDENTIFIED
- ONE OR MORE SITE COCS EXCEED NYSDEC 2015 PGW SCOS
- CONTAMINANT SOURCE MATERIALS IDENTIFIED DURING FIELD SCCREENING (NO LAB SAMPLE COLLECTED)
- REFUSAL LOCATION DUE TO OBSTRUCTION
- LAB SAMPLE DISCARDED

ADDITIONAL PDI SAMPLING

- ADDITIONAL PDI SAMPLE LOCATION
- BCP BOUNDARY AND LIMITS OF SITE COVER SYSTEM
- APPROXIMATE LNAPL REMEDIATION AREA (UP TO 8 FT)
- PROPOSED EXCAVATION AND ISS AREA
- SUBSURFACE CONCRETE OBSTRUCTION
- EXCAVATION EXCLUSION ZONE FOR UTILITIES (5FT BUFFER)

UTILITIES

- CONFIRMED SANITARY SEWER
- CONFIRMED GAS
- CONFIRMED WATER
- UNCONFIRMED ELECTRIC
- UNCONFIRMED SANITARY SEWER
- UNCONFIRMED GAS
- UNCONFIRMED WATER
- END OF CONFIRMED EXTENT OF UTILITY

SOURCES
- AERIAL IMAGERY (2023) FROM CITY OF ROCHESTER'S OPEN DATA PORTAL.
- PROPERTY BOUNDARIES OBTAINED FROM THE CITY OF ROCHESTER OPEN DATA PORTAL (SEPTEMBER 2024) WITH THE EXCEPTION OF THE BOUNDARY BETWEEN 940 EXCHANGE STREETAND 5 FLINT STREET.
- PROPERTY BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET TAKEN FROM DEED INSTRUMENT #200307290847 FOR PROPERTY ADDRESS 5 FLINT STREET, ROCHESTER, NY, RECORDED ON JULY 29, 2003, RECORDED IN THE MONROE COUNTY REGISTRY OF DEEDS, BOOK 09821, PAGE 0657
- UNCONFIRMED UTILTIES AS MAPPED IN ROCHESTER PURE WATERS DISTRICT MAP, 1974. CONFIRMED UTILITES AS MAPPED BY GPRS, OCTOBER 2025

NOTES
- ISS, IN-SITU SOLIDIFICATION.
- ALL FEATURES SHOWN ARE APPROXIMATE.
- 2008 ROUX SOIL BORING AND MONITORING WELL IDS SHOWN ON THIS FIGURE ARE THE ORIGINAL LOCATION ID (E.G., SB-016). THE IDS FOR SUBSEQUENT BORING ATTEMPTS DUE TO SHALLOW REFUSAL (E.G., SB-016A, SB-016B, ETC) ARE NOT DISPLAYED ON THIS FIGURE.
- MW-1 AND MW-2 INSTALLED BY NYSDEC ARE DISPLAYED AS DEC MW-1 AND DEC MW-2, RESPECTIVELY, TO AVOID CONFUSION WITH MONITORING WELLS MW-1 AND MW-2 INSTALLED BY RAVI.
- A SITE COVER SYSTEM WILL BE INSTALLED ACROSS THE ENTIRE SITE.
- ONLY EXCEEDANCES FOR SITE CONTAMINANTS OF CONCERN (COCS) ARE SHOWN (AS LISTED IN SECTION 6.1.2 OF THE NOVEMBER 2025 DECISION DOCUMENT FOR THE SITE.

50 0 50
FEET

Title:

ADDITIONAL PDI SAMPLING

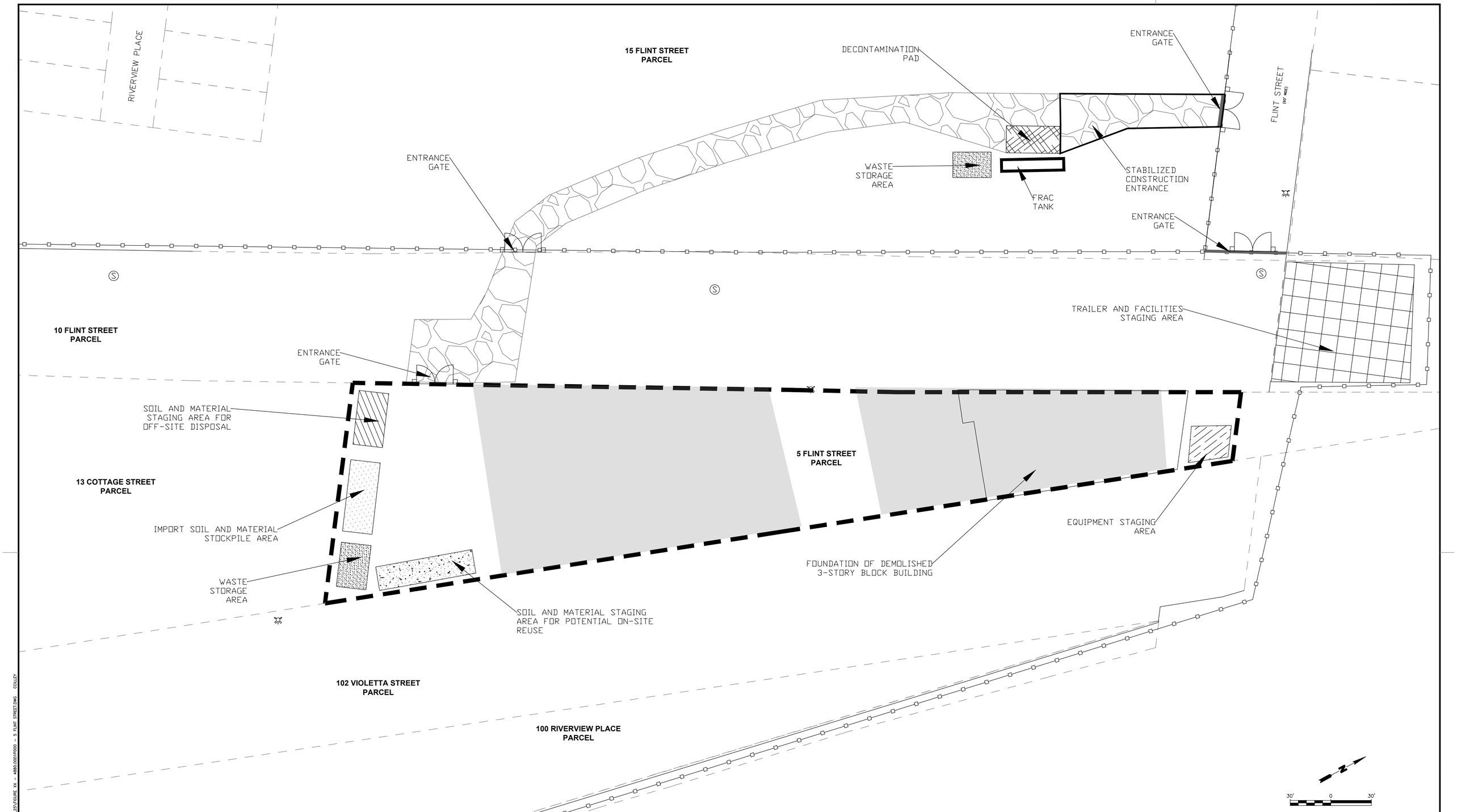
BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER, NEW YORK

Prepared For:
5 FLINT STREET LLC

ROUX

Compiled by: SB	Date: 03AUG26	FIGURE
Prepared by: MB	Scale: AS SHOWN	9
Project Mgr: ER	Project: 4694.0001P000	
File: 4694.0001P000.104.mxd		

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NOTES

1. LOCATIONS OF FENCING ARE APPROXIMATE AND SUBJECT TO CHANGE BASED ON ACTIVE WORK AREAS.
2. PROPOSED EXCAVATION AND ISS AREAS AS SHOWN ON FIGURE 6 OF THE REVISED REMEDIAL ALTERNATIVES ANALYSIS REPORT, DATED JULY 2024, AND PRESENTED IN THE NOVEMBER 2025 DECISION DOCUMENT FOR THE SITE.
3. PROPOSED EXCAVATION AND ISS AREAS AS SHOWN ON FIGURE 1A IN THE NOVEMBER 2025 DECISION DOCUMENT FOR THE SITE.
4. BASEMAP FEATURES OBTAINED FROM NUSSBAUMER & CLARKE, INC., OCTOBER 2025.
5. PROPERTY BOUNDARIES OBTAINED FROM THE CITY OF ROCHESTER OPEN DATA PORTAL (SEPTEMBER 2024) WITH THE EXCEPTION OF THE BOUNDARY BETWEEN 940 EXCHANGE STREETAND 5 FLINT STREET.
6. PROPERTY BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET TAKEN FROM DEED INSTRUMENT #200307290847 FOR PROPERTY ADDRESS 5 FLINT STREET, ROCHESTER, NY, RECORDED ON JULY 29, 2003, RECORDED IN THE MONROE COUNTY REGISTRY OF DEEDS, BOOK 09821, PAGE 0657.

LEGEND

- SANITARY MANHOLE
- HYDRANT
- SECURITY GATE ENTRANCE
- SITE BOUNDARY
- APPROXIMATE LOCATION OF PARAMETER FENCING
- PROPERTY BOUNDARIES FROM OPEN DATA PORTAL
- EXCAVATION AND/OR ISS AREAS
- SITE ACCESS ROAD
- DECONTAMINATION PAD
- FRAC TANK

7. LOCATIONS ARE APPROXIMATE AND SUBJECT TO CHANGE BASED ON FIELD CONDITIONS:

- SOIL AND MATERIAL STAGING AREA FOR OFF-SITE DISPOSAL
- SOIL AND MATERIAL STAGING AREA FOR POTENTIAL ON-SITE REUSE
- IMPORT SOIL AND MATERIAL STOCKPILE AREA
- SOIL AND MATERIAL STAGING AREA FOR POTENTIAL ON-SITE REUSE
- EQUIPMENT STAGING AREA

TITLE:

SITE LAYOUT PLAN
BCP SITE # C828162B

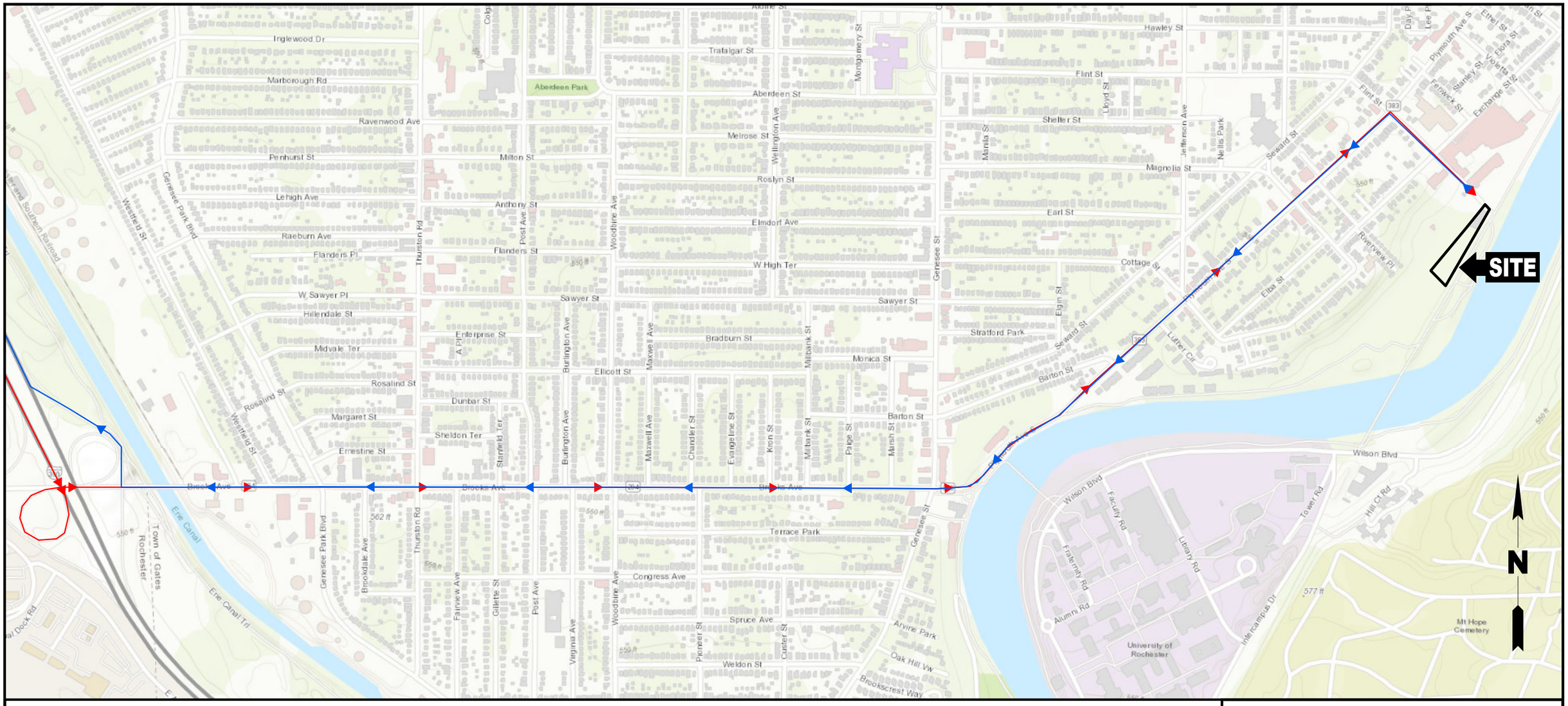
PORTION OF FORMER VACUUM OIL REFINERY SITE
ROCHESTER, NEW YORK

5, 10 & 15 FLINT STREET LLC AND CITY OF ROCHESTER

ROUX

COMPILED BY: CC	DATE: 11/3/25	FIGUR
PREPARED BY: CC	SCALE: AS SHOWN	10
PROJECT MGR: SB	PROJECT: 4880.0001P00	
FILE: FIGURE XX - 4880.0001P000 - 5 FLINT STREET.DWG		

S:\CLIENTS\10 FLINT STREET LLC\CAD\REPORT FIGURES 11_4_25\FIGURE XX - 4880.0001P000 - 5 FLINT STREET.DWG COLLEY



DIRECTIONS INBOUND

1. DRIVE EAST.
2. TURN LEFT ONTO BREW ROAD/CR 196.
3. TURN LEFT ONTO CHILI-RIGA CENTER ROAD/NY 33A.
4. TAKE THE I 490 EAST RAMP TOWARD ROCHESTER.
5. TAKE EXIT 6 ONTO NY 204 EAST TOWARD AIRPORT.
6. TURN LEFT ONTO CHILI AVENUE/NY 33A/NY 204.
7. TURN RIGHT TOWARD NY 204 EAST/BROOKS AVENUE.
8. TAKE THE I 390 SOUTH RAMP TOWARD I 90/CORNING.
9. TAKE EXIT 17 ONTO NY 383 TOWARD ROCHESTER/SCOTTSVILLE ROAD/ROCHESTER INSTITUTE OF TECHNOLOGY.
10. TURN LEFT ONTO SCOTTSVILLE ROAD/NY 383. CONTINUE ON NY 383.
11. TURN RIGHT ONTO SOUTH PLYMOUTH AVENUE/NY 383.
12. TURN RIGHT ONTO FLINT STREET.

DIRECTIONS OUTBOUND

1. DRIVE NORTHWEST ON FLINT STREET.
2. TURN LEFT ONTO SOUTH PLYMOUTH AVENUE/NY 383.
3. TURN LEFT ONTO CHILI AVENUE/NY 33A/NY 204.
4. TURN RIGHT ONTO NY 204/AIRPORT EXPRESSWAY.
5. KEEP LEFT TO TAKE I 490 WEST TOWARD BUFFALO.
6. TAKE EXIT 2 ONTO NY 33A TOWARD BERGEN/BATAVIA.
7. TURN LEFT ONTO CHILI-RIGA CENTER ROAD/NY 33A.
8. TURN RIGHT ONTO BREW ROAD/CR 196.
9. TURN RIGHT.

SOURCES

- TRUCK ROUTES FROM TRACKROAD.COM (OCTOBER 2025).

- BROWNFIELD CLEANUP PROGRAM SITE LIMITS AS SHOWN ON FIGURE 2 OF RAMBOLL'S REMEDIAL ALTERNATIVES ANALYSIS REPORT, DATED JUNE 2023, AND PRESENTED IN THE SEPTEMBER 2023 DECISION DOCUMENT FOR SITE.

NOTES

- ALL FEATURES SHOWN ARE APPROXIMATE.

1,000 0 1,000
FEET

TITLE:

TRUCK ROUTES
BCP SITE # C828162B

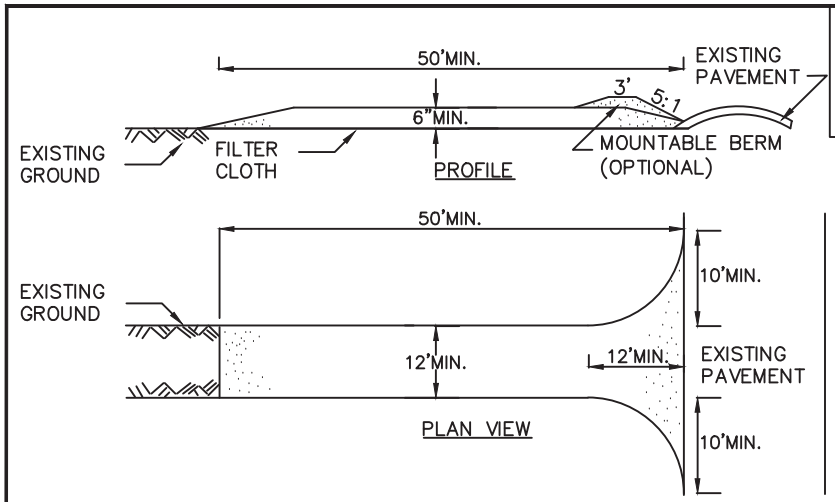
5 FLINT STREET SITE
ROCHESTER, NEW YOR

PREPARED FOR:

5 FLINT STREET LLC

ROUX

COMPILED BY: SB	DATE: 18DEC25	FIGURE
PREPARED BY: SB	SCALE: AS SHOWN	11
PROJECT MGR: ER	PROJECT: 4880.0001P000	
FILE: 4880.0001P000.102.09 - TRUCK ROUTES		



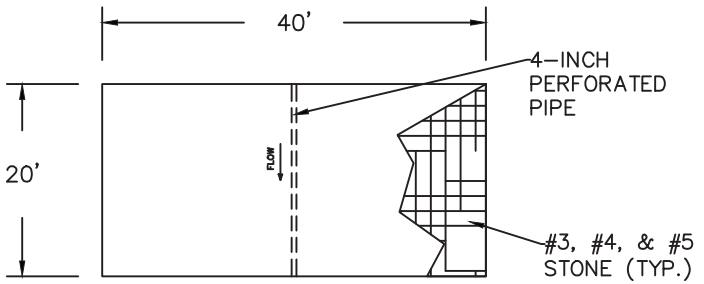
CONSTRUCTION SPECIFICATIONS

1. STONE SIZE – USE 1–4 INCH STONE, OR RECLAIMED OR RECYCLED CONCRETE EQUIVALENT.
2. LENGTH – NOT LESS THAN 50 FEET (EXCEPT ON A SINGLE RESIDENCE LOT WHERE A 30 FOOT MINIMUM LENGTH WOULD APPLY).
3. THICKNESS – NOT LESS THAN SIX (6) INCHES.
4. WIDTH – TWELVE (12) FOOT MINIMUM, BUT NOT LESS THAN THE FULL WIDTH AT POINTS WHERE INGRESS OR EGRESS OCCURS. TWENTY–FOUR (24) FOOT IF SINGLE ENTRANCE TO SITE.
5. GEOTEXTILE – WILL BE PLACED OVER THE ENTIRE AREA PRIOR TO PLACING OF STONE.
6. SURFACE WATER – ALL SURFACE WATER FLOWING OR DIVERTED TOWARD CONSTRUCTION ACCESS SHALL BE PIPED BENEATH THE ENTRANCE. IF PIPING IS IMPRACTICAL, A MOUNTABLE BERM WITH 5:1 SLOPES WILL BE PERMITTED.
7. MAINTENANCE – THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC RIGHTS–OF–WAY, ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC RIGHTS–OF–WAY MUST BE REMOVED IMMEDIATELY.
8. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON A AREA STABILIZED WITH STONE AND WHICH DRAINS INTO AN APPROVED SEDIMENT TRAPPING DEVICE.
9. PERIODIC INSPECTION AND NEEDED MAINTENANCE SHALL BE PROVIDED AFTER EACH RAIN.

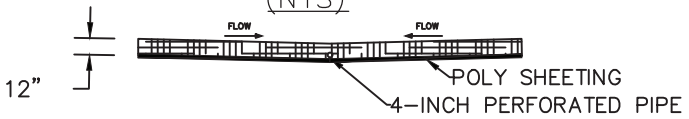
ADAPTED FROM DETAILS PROVIDED BY: USDA – NRCS,
NEW YORK STATE DEPARTMENT OF TRANSPORTATION,
NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION,
NEW YORK STATE SOIL & WATER CONSERVATION COMMITTEE

STABILIZED CONSTRUCTION ACCESS

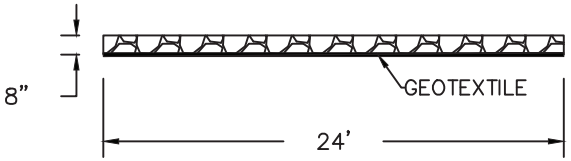
DECONTAMINATION PAD PLAN VIEW DETAIL (NTS)



DECONTAMINATION PAD PROFILE DETAIL (NTS)



ACCESS ROAD PROFILE DETAIL (NTS)



Title:

CONSTRUCTION DETAILS
BCP SITE # C828162B

5 FLINT STREET SITE
ROCHESTER, NEW YORK

Prepared for:

5 FLINT STREET LLC

ROUX

COMPILED BY: CMC	DATE: OCTOBER 2025	FIGURE
PREPARED BY:CMC	SCALE: AS SHOWN	12
PROJECT MGR:ER	PROJECT: 4880.0001P000	
FILE: FIGURE 1; SITE ACCESS & DECON PAD.DWG		

15 FLINT STREET
PARCEL

10 FLINT STREET
PARCEL

5 FLINT STREET
PARCEL

13 COTTAGE STREET
PARCEL

102 VIOLETTA STREET
PARCEL

100 RIVERVIEW PLACE
PARCEL

RIVERVIEW PLACE

FLINT STREET
(60' WIDE)

FOUNDATION OF DEMOLISHED
3-STORY BLOCK BUILDING

VAULT

GENESEE RIVER

NOTES

1. SUBSURFACE UTILITIES AND FEATURES IDENTIFIED IN ROCHESTER PURE WATERS DISTRICT, COMBINED WASTEWATER OVERFLOW ABATEMENT PROGRAM, PHASE I, ENGINEERING DRAWING DS-3 GENESEE RIVER INTERCEPTOR SOUTHWEST, MONROE COUNTY, NEW YORK, MARCH 28, 1974.
2. SUBSURFACE UTILITIES CONFIRMED IN THE FIELD BY GROUND PENETRATING RADAR SYSTEMS, LLC (GPRS), OCTOBER 28, 2025.
3. LOCATIONS OF FENCING ARE APPROXIMATE AND SUBJECT TO CHANGE BASED ON ACTIVE WORK AREAS.
4. PROPOSED EXCAVATION AND ISS AREAS AS SHOWN ON FIGURE 6 OF THE REVISED REMEDIAL ALTERNATIVES ANALYSIS REPORT, DATED JULY 2024, AND PRESENTED IN THE NOVEMBER 2025 DECISION DOCUMENT FOR THE SITE.
5. PROPOSED EXCAVATION AND ISS AREAS AS SHOWN ON FIGURE 1A IN THE NOVEMBER 2025 DECISION DOCUMENT FOR THE SITE.
6. BASEMAP FEATURES OBTAINED FROM NUSSBAUMER & CLARKE, INC., OCTOBER 2025.
7. PROPERTY BOUNDARIES OBTAINED FROM THE CITY OF ROCHESTER OPEN DATA PORTAL, SEPTEMBER 2024.
8. ALL LOCATIONS ARE APPROXIMATE

LEGEND

- HYDRANT
- SANITARY MANHOLE
- WATERLINE MANHOLE
- UTILITY POLE
- SITE BOUNDARY
- OVERHEAD ELECTRICAL/UTILITY LINE
- INFERRED LOCATION OF SUSPECTED WATER UTILITY LINE
- INFERRED LOCATION OF SUSPECTED GAS UTILITY LINE
- PROPERTY BOUNDARIES FROM OPEN DATA PORTAL – NOT SURVEYED
- EXCAVATION AND/OR ISS AREAS

SUSPECTED POTENTIAL SUBSURFACE UTILITIES AS MAPPED IN ROCHESTER PURE WATERS DISTRICT MAP, 1974:

- APPROXIMATE LOCATION OF UNCONFIRMED GAS UTILITY
- APPROXIMATE LOCATION OF UNCONFIRMED SANITARY SEWER LINE
- APPROXIMATE LOCATION OF UNCONFIRMED WATER UTILITY LINE

SUBSURFACE UTILITIES CONFIRMED IN THE FIELD BY GPRS, OCTOBER 2025:

- CONFIRMED LOCATION OF GAS UTILITY LINE
- CONFIRMED LOCATION OF WATER UTILITY LINE
- CONFIRMED LOCATION OF UNKNOWN LINEAR ANOMALY
- CONFIRMED LOCATION OF SANITARY SEWER LINE
- END OF CONFIRMED EXTENT OF SUBSURFACE WATER LINE
- END OF CONFIRMED EXTENT OF SUBSURFACE GAS LINE
- END OF CONFIRMED EXTENT OF SUBSURFACE SANITARY SEWER LINE

30' 0 30'

TITLE:

KNOWN AND SUSPECTED UTILITIES
BCP SITE # C828162B

5 FLINT STREET SITE
ROCHESTER, NEW YORK

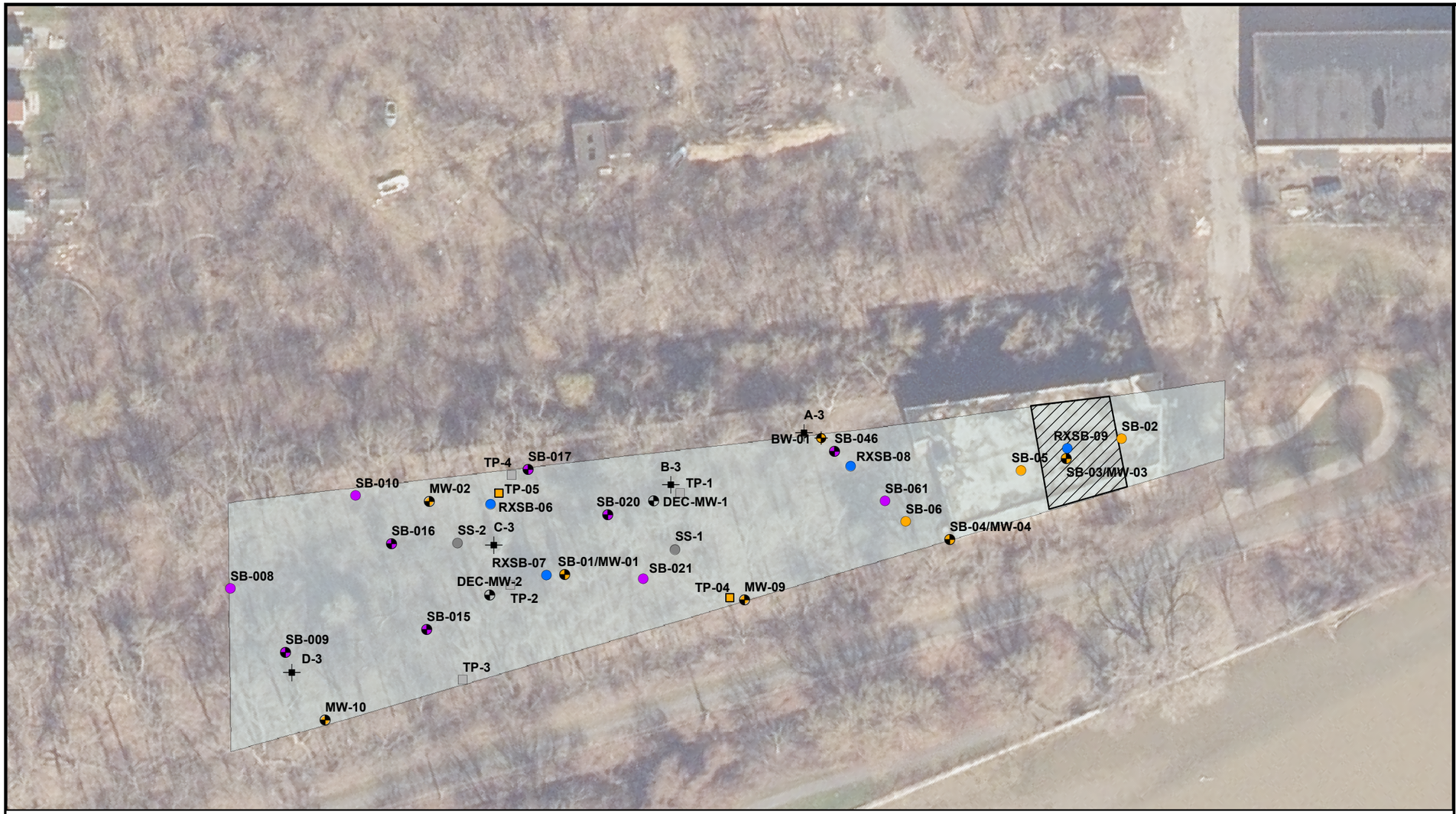
PREPARED FOR:
5 FLINT STREET LLC

ROUX

COMPILED BY: CC	DATE: 12/17/25
PREPARED BY: CC	SCALE:AS SHOWN
PROJECT MGR: SB	PROJECT: 4880.0001P00
FILE: FIGURE 11 - 4880.0001P000 - UTILITIES PLAN.DWG	

FIGURE 13

S:\CLIENTS\10 FLINT STREET LLC\CAD\REPORT FIGURES 11-4_25\FIGURE 11 - 4880.0001P000 - UTILITIES PLAN.DWG COLLEY



LEGEND

- NYSDEC SOIL GAS (2001)
- NYSDEC SURFACE SOIL (2001)
- NYSDEC TEST PIT (2001)
- NYSDEC MONITORING WELL (2001)
- RAVI BEDROCK WELL (2014-2015)
- RAVI SOIL BORING (2014-2015)
- RAVI SOIL BORING / MONITORING WELL (2014-
- RAVI TEST PIT (2014-2015)
- ROUX SOIL BORING (2017)
- ROUX SOIL BORING (2008)
- ROUX SOIL BORING / FORMER MONITORING WELL
- APPROXIMATE LNAPL REMEDIATION AREA (UP TO 8 FT)
- BCP SITE (C828162B) BOUNDARY AND LIMITS OF PROPOSED SITE COVER AREA

SOURCES
- AERIAL IMAGERY (2023) FROM CITY OF ROCHESTER'S OPEN DATA PORTAL.

- PROPERTY BOUNDARIES OBTAINED FROM THE CITY OF ROCHESTER OPEN DATA PORTAL (SEPTEMBER 2024) WITH THE EXCEPTION OF THE BOUNDARY BETWEEN 940 EXCHANGE STREETAND 5 FLINT STREET.

- PROPERTY BOUNDARY BETWEEN 940 EXCHANGE STREET AND 5 FLINT STREET TAKEN FROM DEED INSTRUMENT #200307290847 FOR PROPERTY ADDRESS 5 FLINT STREET, ROCHESTER, NY, RECORDED ON JULY 29, 2003, RECORDED IN THE MONROE COUNTY REGISTRY OF DEEDS, BOOK 09821, PAGE 0657

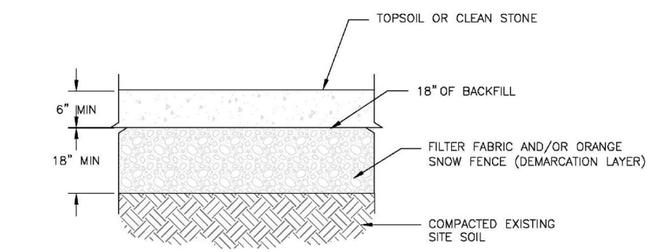
NOTES

- ALL FEATURES SHOWN ARE APPROXIMATE.

- 2008 ROUX SOIL BORING AND MONITORING WELL IDS SHOWN ON THIS FIGURE ARE THE ORIGINAL LOCATION ID (E.G., SB-016). THE IDS FOR SUBSEQUENT BORING ATTEMPTS DUE TO SHALLOW REFUSAL (E.G., SB-016A, SB-016B, ETC) ARE NOT DISPLAYED ON THIS FIGURE.

- MW-1 AND MW-2 INSTALLED BY NYSDEC ARE DISPLAYED AS DEC MW-1 AND DEC MW-2, RESPECTIVELY, TO AVOID CONFUSION WITH MONITORING WELLS MW-1 AND MW-2 INSTALLED BY RAVI.

100 0 100
FEET



1 PROPOSED SITE COVER SYSTEM: SOIL OR STONE AREAS
SCALE: NOT TO SCALE

TYPICAL COVER DETAILS

Title:
PROPOSED SITE COVER SYSTEM

BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER, NEW YORK

Prepared For:
5 FLINT STREET LLC

ROUX

Compiled by: SB	Date: 08JAN26	FIGURE
Prepared by: SB	Scale: AS SHOWN	14
Project Mgr: ER	Project: 4694.0001P000	
File: 4694.0001P000.104.10-RA2PDI.mxd		

T:\GIS_Projects\4694\0001B\000\MXD\104\4694.0001P000.104.10-RA2PDI.mxd

APPENDICES

A. Metes and Bounds
B. NYSDEC Decision Document – Site No. C828162B
C. Groundwater Contour Map
D. PDI Soil Boring Logs
E. Laboratory Analytical Reports
F. Quality Assurance Project Plan (QAPP) / Field Sampling Plan (FSP)
G. NYSDEC In Situ Solidification QA/QC Guidance Document
H. Site Health and Safety Plan (HASP)
I. Request to Import/Reuse Fill Material Form
J. Approved Permits
K. Erosion and Sediment Control Plan (ESCP)
L. Community Air Monitoring Plan (CAMP)
M. Professional Profiles
N. Citizen Participation Plan

APPENDIX A

Metes and Bounds

Schedule "A"

Legal Description

ALL THAT TRACT OR PARCEL OF LAND situate in the City of Rochester, County of Monroe and State of New York, bounded and described as follows:

Beginning at the intersection of the westerly line of the Right of Way of the Erie Railroad and the easterly line of the Right of Way of the Pennsylvania Railroad (formerly Genesee Valley Canal); (1) thence in a general southerly direction along said westerly line of the Right of Way of the Erie Railroad, a distance of 1544.31 feet to the lands of the State of New York; (2) thence in a general southwesterly direction making an included angle of the northwest quadrant of 129° 39' 21" with course (1) a distance of 505 feet along said State of New York line to a point in the easterly Right of Way line of the Pennsylvania Railroad; (3) thence northerly making an included angle in the northwest quadrant of 23° 38' 11" with course (2) a distance of 62.50 feet to a point; (4) thence northerly making an interior angle of 183° 16' 39" with course (3) a distance of 68.64 feet to a point; (5) thence making an interior angle of 183° 01' 34" with course (4) a distance of 66.72 feet to a point; (6) thence making an interior angle of 182° 52' 03" with course (5) a distance of 66.82 feet to a point; (7) thence making an interior angle of 183° 27' 16" with course (6) a distance of 70.95 feet to a point; (8) thence making an interior angle of 183° 38' 28" with course (7) a distance of 68.79 feet to a point; (9) thence making an interior angle of 180° 35' 35" with course (8) a distance of 334 feet to a point; (10) thence making an interior angle of 179° 01' 39" with course (9) a distance of 134.85 feet to a point; (11) thence making an interior angle of 181° 02' 57" with course (10) a distance of 130.78 feet to a point; (12) thence making an interior angle of 179° 57' 21" with course (11) a distance of 249.49 feet to a point; (13) thence making an interior angle of 179° 32' 33" with course (12) a distance of 152.45 feet to a point; (14) thence making an interior angle of 181° 15' 12" with course (13) a distance of 328.94 feet to a point; (15) thence making an interior angle of 177° 13' 15" with course (14) a distance of 132.50 feet to a point; (16) thence making an interior angle of 182° 27' 56" with course (15) a distance of 44.81 feet to the place of beginning, courses numbered (3) to (16) inclusive running along the easterly line of the Right of Way of the Western New York and Pennsylvania Railroad Company.

EXCEPTING from the above described premises a triangular parcel of land being Parcel No. 2 in deed dated December 31, 1935 from Socony-Vacuum Oil Company to Rochester Distilling Company, Inc. bounded and described as follows: On the east by the westerly line of the Right of Way of the Erie Railroad 126 feet, more or less; on the west by the easterly line of the Right of Way of the Pennsylvania Railroad (formerly Genesee Valley Canal) 124 feet, more or less; on the south by a line drawn parallel to and 100 feet northerly from the northerly line of Flint Street.

EXCEPTING also that parcel of land conveyed to Frank J. Goodwin by deed dated November 3, 1961, and recorded on the same day in Monroe County Clerk's Office in Liber 3371 of Deeds at Page 30.

EXCEPTING therefrom parcel of land conveyed by the party of the first part to the City of Rochester, by deed recorded in Monroe County Clerk's Office in Liber 9821 of Deeds at Page 657 on July 29, 2003.

APPENDIX B

NYSDEC Decision Document – Site No. C828162B

DECISION DOCUMENT

5 Flint Street
Brownfield Cleanup Program
Rochester, Monroe County
Site No. C828162B
November 2025

Prepared by
Division of Environmental Remediation
New York State Department of Environmental Conservation

DECLARATION STATEMENT - DECISION DOCUMENT

5 Flint Street
Brownfield Cleanup Program
Rochester, Monroe County
Site No. C828162B
November 2025

Statement of Purpose and Basis

This document presents the remedy for the 5 Flint Street site a brownfield cleanup site. The remedial program was chosen in accordance with the New York State Environmental Conservation Law and Title 6 of the Official Compilation of Codes, Rules and Regulations of the State of New York (6 NYCRR) Part 375.

This decision is based on the Administrative Record of the New York State Department of Environmental Conservation (NYSDEC) for the 5 Flint Street site and the public's input to the proposed remedy presented by NYSDEC.

Description of Selected Remedy

The elements of the selected remedy are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be

constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise(TM) (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

The existing on-site building will be demolished and materials which cannot be beneficially reused on-site will be taken off-site for proper disposal in order to implement the remedy.

Excavation and off-site disposal of contaminant source areas, including:

- Grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- Concentrated solid or semi-solid hazardous substances per 6 NYCRR Part 375-1.2(au)(1);
- Non-aqueous phase liquids;
- Soil with visual waste material or non-aqueous phase liquid;
- Soil containing total SVOCs exceeding 500 ppm;
- Soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- Soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet which exceed the restricted residential or protection of groundwater SCOs will be excavated and transported off-site for disposal or re-used on-site if it qualifies for use as backfill per Remedy Element 3 below.

All on-site soils below two feet which meet the above bulleted criteria, will be excavated as described below or addressed per remedial Remedy Element 5.

Approximately 6,500 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify DEC, submit the sample results and, and in consultation with DEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

Excavation and removal are required for any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Excavation of site soils to a depth of 4 feet below grade in the portion of the site subject to the in-situ solidification (ISS) treatment described in Remedy Element 5. Approximately 6,500 cubic yards of soil will be excavated to facilitate ISS implementation. All soils which exceed restricted-residential (unless used as backfill per Remedy Element 3 below) or protection of groundwater soil cleanup objectives (SCOs) will be disposed of off-site at a permitted facility.

3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in Remedy Element 4 to backfill the excavation to the extent that a sufficient volume of on-site soil is available and establish the designed grades at the site.

On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or re-grade the site.

Backfill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site.

The site will be re-graded to accommodate installation of a cover system as described in Remedy Element 4.

4. Cover System

A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for future restricted residential use of the site. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a

demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

Where the soil cover is required over the ISS treatment area, it will consist of a minimum of four feet of soil to ensure the underlying monolith remains below the frost line and protected from the freeze-thaw cycle. A building and its foundation are considered suitable cover to protect the ISS monolith. Where a building and its foundation are considered part of the site cover, the ISS design should include considerations for drainage between the ISS and building foundation and the potential need to design the ISS for a higher strength. If the ISS monolith extends beyond the building footprint, the design shall include a soil cover consisting of a minimum of four feet of soil for that portion. Consistent with the remainder of the site cover, the upper two feet will meet the SCOs for restricted residential use outside the ISS monolith area. For areas where solidified material underlies the cover, the solidified material itself will serve as the demarcation layer due to the nature of the material.

5. Solidification/Stabilization - In-Situ Solidification

In-situ solidification (ISS) will be implemented in an approximately 1+ acre area of the site, as indicated on Figure 3. The treatment zone will extend from the top of the groundwater table, at approximately 4 feet below grade to approximately 12-15 feet below grade. An approximately 4-foot soil cut will need to be excavated in these areas to contain the ISS spoils and increased soil volume created by the soil mixing. ISS is a process that binds the soil particles in place creating a low permeability mass. The contaminated soil will be mixed in place together with solidifying reagents or other binding reagents using an excavator or augers. Often Portland cement is used as the primary binder, although less carbon-intensive amendments will be considered. The soil and binding reagents are mixed to produce a solidified mass resulting in a low permeability monolith. Prior to the full implementation of this technology, bench-scale laboratory testing and on-site pilot scale studies will be conducted to more clearly define design parameters, amendment types and dosages. Bench testing will consist of collecting soil from source area and mixing with a variety of amendments and doses in a controlled atmosphere followed by testing resulting hydraulic conductivity and unconfined-compressive strength. Pilot tests will then be conducted using successful amendment mixes from the bench test prior to full scale design.

Typical design requirements are that solidified mass would produce a hydraulic conductivity (K) of 1.0×10^{-6} cm/sec or less and would also result in an unconfined compressive strength of 50 psi, or higher pending future uses that may include construction above the solidified mass. The solidified mass will then be covered with a cover system as described in Remedy Element 4 to prevent direct exposure to the solidified mass. The resulting solid matrix reduces or eliminates mobility of contamination and reduces or eliminates the matrix as a source of groundwater contamination.

6. Groundwater - Monitored Natural Attenuation

Groundwater contamination (remaining after active remediation) will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination, and for MNA indicators which will provide an understanding of the biological activity breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude in within 5 years. Reports of the attenuation will be provided at 5-year intervals, and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that contingency technology, e.g., "oxygen injection" would be the expected contingency remedial action.

7. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4, restricted residential cleanup, at a minimum.

Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- Require the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- Allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- Restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- Require compliance with the NYSDEC approved Site Management Plan.

8. Site Management Plan

A Site Management Plan is required, which includes the following:

1. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

   Institutional Controls: The Environmental Easement discussed in Remedy Element 7 above.
   Engineering Controls: The soil cover discussed in Remedy Element 4 above.

   This plan includes, but may not be limited to:
   - An Excavation Work Plan which details the provisions for management of future excavations in areas of remaining or potential contamination;
   - A provision for demolition of the on-site building if and when it becomes unsafe or inactive or vacant;
   - A provision should redevelopment occur to ensure no soil exceeding protection of

groundwater concentrations will remain below storm water retention basin or infiltration structures.

- Descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
- A provision for evaluation of the potential for soil vapor intrusion, including sub-slab and indoor air sampling, for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
- A provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Remedy Element 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
- Provisions for the management and inspection of the identified engineering controls;
- Maintaining site access controls and NYSDEC notification; and
- The steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.

2. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
    - Monitoring of groundwater to assess the performance and effectiveness of the remedy;
    - A schedule of monitoring and frequency of submittals to the NYSDEC;
    - Monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.

Declaration

The remedy conforms with promulgated standards and criteria that are directly applicable, or that are relevant and appropriate and takes into consideration Department guidance, as appropriate. The remedy is protective of public health and the environment.

11/17/2025
Date

Michael J Cruden
Michael Cruden, Director
Remedial Bureau E

DECISION DOCUMENT

5 Flint Street
Rochester, Monroe County
Site No. C828162B
November 2025

SECTION 1: SUMMARY AND PURPOSE

The New York State Department of Environmental Conservation (NYSDEC), in consultation with the New York State Department of Health (NYSDOH), has selected a remedy for the above referenced site. The disposal of contaminants at the site has resulted in threats to public health and the environment that would be addressed by the remedy. The disposal or release of contaminants at this site, as more fully described in this document, has contaminated various environmental media. Contaminants include hazardous waste and/or petroleum.

The New York State Brownfield Cleanup Program (BCP) is a voluntary program. The goal of the BCP is to enhance private-sector cleanups of brownfields and to reduce development pressure on "greenfields." A brownfield site is real property, where a contaminant is present at levels exceeding the soil cleanup objectives or other health-based or environmental standards, criteria or guidance, based on the reasonably anticipated use of the property.

NYSDEC has issued this document in accordance with the requirements of New York State Environmental Conservation Law and 6 NYCRR Part 375. This document is a summary of the information that can be found in the site-related reports and documents.

SECTION 2: CITIZEN PARTICIPATION

NYSDEC seeks input from the community on all remedies. A public comment period was held, during which the public was encouraged to submit comment on the proposed remedy. All comments on the remedy received during the comment period were considered by NYSDEC in selecting a remedy for the site. Site-related reports and documents were made available for review by the public at the following document repository:

DECInfo Locator - Web Application
https://gisservices.dec.ny.gov/gis/dil/index.html?rs=C828162B

Phillis Wheatley Library
Attn: Lori Frankunas
33 Dr. Samuel McCree Way
Rochester, New York 14608
Phone: 585 428-8212

Plymouth-Exchange (PLEX) Neighborhood Association
Attn: Dorothy Hall
Carlson Commons
70 Coretta Scott Crossing
Rochester, New York 14608
585-328-6916
info@PL-EX.org

Receive Site Citizen Participation Information By Email

Please note that NYSDEC's Division of Environmental Remediation (DER) is "going paperless" relative to citizen participation information. The ultimate goal is to distribute citizen participation information about contaminated sites electronically by way of county email listservs. Information will be distributed for all sites that are being investigated and cleaned up in a particular county under the State Superfund Program, Environmental Restoration Program, Brownfield Cleanup Program and Resource Conservation and Recovery Act Program. We encourage the public to sign up for one or more county listservs at http://www.dec.ny.gov/chemical/61092.html

SECTION 3: SITE DESCRIPTION AND HISTORY

Location: The site is a 1.61-acre site located in the City of Rochester, Monroe County. The site is located approximately 140 feet west of the Genesee River. The site is located on Flint Street and approximately 550 feet from the intersection of Exchange Street and Flint Street.

Site Features: The site is a wooded undeveloped parcel. An existing building, built between 1918 and 1930, is located on the northern end of the site. The building is currently vacant and abandoned.

Current Zoning and Land Use: The site is currently undeveloped and is zoned for high-density residential. The surrounding parcels are currently used for a combination of commercial, residential, and utility rights-of-way. The nearest residential parcel is approximately 500 feet to the west of the site.

Past Use of the Site: The site, along with several other contiguous and neighboring parcels, is within the footprint of the Former Vacuum Oil Refinery. The site was vacant land until approximately 1875 when developed into a refinery and operated until approximately 1935. The site also served as a shipping and receiving yard between two railroad corridors. Operations also included barrel and stave manufacturing. The refinery included a cooperage, drum washing and storage building, a paint shop, barrel stave, storage buildings and sheds, a storage building for barrel headings and iron, and support buildings.

Site Geology and Hydrogeology: The site geology consists of fill material from 0-6 feet below ground surface. Native soils consist of sand and silt with varying amounts of clay to approximately 17 ft. below ground surface. Bedrock depth at the site ranges from 12 to 17 ft. below ground surface. The site is in the Ontario Lowlands and is underlain by beds of shale, sandstone, limestone, and dolostone.

Groundwater depth ranges from 3 to 11 ft. below ground surface. Groundwater flow is generally in southeastern direction.

A site location map is attached as Figure 1 and 1A.

SECTION 4: LAND USE AND PHYSICAL SETTING

NYSDEC may consider the current, intended, and reasonably anticipated future land use of the site and its surroundings when evaluating a remedy for soil remediation. For this site, alternatives that restrict the use of the site as described in Part 375-1.8(g) were evaluated in addition to an alternative which would allow for unrestricted use of the site.

A comparison of the results of the Remedial Investigation (RI) to the appropriate standards, criteria and guidance values (SCGs) for the identified land use and the unrestricted use SCGs for the site contaminants is available in the RI Report.

SECTION 5: ENFORCEMENT STATUS

The Applicants under the Brownfield Cleanup Agreement are Volunteers. The Volunteers do not have an obligation to address off-site contamination. NYSDEC has determined that this site poses a significant threat to human health and the environment. Off-site impacts that require remedial activities will be addressed by the Responsible Party under an Order on Consent.

SECTION 6: SITE CONTAMINATION

6.1: Summary of the Remedial Investigation

A remedial investigation (RI) serves as the mechanism for collecting data to:

- Characterize site conditions;
- Determine the nature of the contamination; and
- Assess risk to human health and the environment.

The RI is intended to identify the nature (or type) of contamination which may be present at a site and the extent of that contamination in the environment on the site or leaving the site. The RI reports on data gathered to determine if the soil, groundwater, soil vapor, indoor air, surface water or sediments may have been contaminated. Monitoring wells are installed to assess groundwater and soil borings, or test pits are installed to sample soil and/or wastes identified. If other natural resources are present, such as surface water bodies or wetlands, the water and sediment may be sampled as well. Based on the presence of contaminants in soil and groundwater, soil vapor will also be sampled for the presence of contamination. Data collected in the RI influence the

development of remedial alternatives. The RI report is available for review in the site document repository and the results are summarized in section 6.3.

The analytical data collected on this site includes data for:

- Groundwater
- Soil

6.1.1: Standards, Criteria, and Guidance (SCGs)

The remedy must conform to promulgated standards and criteria that are directly applicable or that are relevant and appropriate. The selection of a remedy must also take into consideration guidance, as appropriate. Standards, Criteria and Guidance are hereafter called SCGs.

To determine whether the contaminants identified in various media are present at levels of concern, the data from the RI were compared to media-specific SCGs. NYSDEC has developed SCGs for groundwater, surface water, sediments, and soil. The NYSDOH has developed SCGs for drinking water and soil vapor intrusion. For a full listing of all SCGs see: http://www.dec.ny.gov/regulations/61794.html

6.1.2: RI Results

The data have identified contaminants of concern. A "contaminant of concern" is a contaminant that is sufficiently present in frequency and concentration in the environment to require evaluation for remedial action. Not all contaminants identified on the property are contaminants of concern. The nature and extent of contamination and environmental media requiring action are summarized below. Additionally, the RI Report contains a full discussion of the data. The contaminants of concern identified at this site are:

1,1,1-trichloroethane	mercury
trichloroethene (TCE)	lead
cis-1,2-dichloroethene	polycyclic aromatic hydrocarbons (PAHS),
vinyl chloride	total
1,2,4-trimethylbenzene	chrysene
1,3,5-trimethylbenzene	ethylbenzene
arsenic	1,1-dichloroethane
barium	benzene

The contaminants of concern exceed the applicable SCGs for:

- Groundwater
- Soil

6.2: Interim Remedial Measures

An interim remedial measure (IRM) is conducted at a site when a source of contamination or exposure pathway can be effectively addressed before issuance of the Decision Document.

There were no IRMs performed at this site during the RI.

6.3: Summary of Environmental Assessment

This section summarizes the assessment of existing and potential future environmental impacts presented by the site. Environmental impacts may include existing and potential future exposure pathways to fish and wildlife receptors, wetlands, groundwater resources, and surface water. The RI report presents a detailed discussion of any existing and potential impacts from the site to fish and wildlife receptors.

Nature and Extent of Contamination: The nature and extent of contamination at the site has been defined under the remedial investigation completed as part of the Brownfield Cleanup Program. The primary contaminants of concern include volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals.

Surface Soil:
Surface soil samples were analyzed for TCL SVOCs, metals, PCBs, and pesticides. Surface soil sampling indicated that SVOCs and metals are the primary contaminants that exceed the restricted residential and protection of groundwater soil cleanup objectives (SCO).

SVOCs: Benzo(a)pyrene concentrations ranged from non-detect to 23 parts per million [ppm] (restricted residential SCO - 1 ppm). Benzo(a)anthracene concentrations ranged from non-detect to 28 ppm (protection of groundwater SCO - 1 ppm). Benzo(b)fluoranthene concentrations ranged from non-detect to 20 ppm (protection of groundwater SCO - 1.7 ppm). Chrysene concentrations ranged from non-detect to 30 ppm (protection of groundwater SCO - 1 ppm). Benzo(k)fluoranthene concentrations ranged from non-detect to 22 ppm (protection of groundwater SCO - 1.7 ppm). Indeno(1,2,3-cd)pyrene concentrations ranged from non-detect to 14 ppm (restricted residential SCO - 0.5 ppm). Dibenz(a,h)anthracene concentrations ranged from non-detect to 5.7 ppm (restricted residential SCO - 0.33 ppm).

Metals: Arsenic concentrations ranged from non-detect to 60.7 ppm (protection of groundwater SCO - 16 ppm).

Surface soil data does not indicate a potential for off-site impacts in soil.

Subsurface Soil:
Sub-surface soil samples were analyzed for TCL VOCs, TCL SVOCs, metals, PCBs, and pesticides. Subsurface soil sampling indicated that VOCs, SVOCs, and metals are the primary contaminants that exceed the restricted residential and protection of groundwater soil cleanup objectives (SCO).

VOCs: 1,2,4-trimethylbenzene concentrations ranged from non-detect to 67.5 ppm (protection of groundwater SCO - 3.6 ppm). 1,3,5-trimethylbenzene concentrations ranged from non-detect to 38.1 ppm (protection of groundwater SCO - 8.4 ppm). Xylene (mixed) concentrations ranged from non-detect to 101 ppm (protection of groundwater SCO - 1.6 ppm).

SVOCs: Benzo(a)pyrene concentrations ranged from non-detect to 530 ppm (restricted residential SCO - 1 ppm). Benzo(a)anthracene concentrations ranged from non-detect to 760 ppm (protection of groundwater SCO - 1 ppm). Benzo(b)fluoranthene concentrations ranged from non-detect to 480 ppm (protection of groundwater SCO - 1.7 ppm). Chrysene concentrations ranged from non-detect to 710 ppm (protection of groundwater SCO - 1 ppm). Indeno(1,2,3-cd)pyrene concentrations ranged from non-detect to 280 ppm (restricted residential SCO - 0.5 ppm). Fluoranthene concentrations ranged from non-detect to 1500 ppm (restricted residential SCO - 100 ppm). Naphthalene concentrations ranged from non-detect to 320 ppm (protection of groundwater SCO - 12 ppm). Phenanthrene concentrations ranged from non-detect to 1600 ppm (protection of groundwater SCO - 100 ppm). Pyrene concentrations ranged from non-detect to 960 ppm (protection of groundwater SCO - 100 ppm).

Metals: Arsenic concentrations ranged from 0.857 to 36.5 ppm (restricted residential SCO - 16 ppm). Barium concentrations ranged from 3.9 to 828 ppm (restricted residential SCO - 270 ppm). Lead concentrations ranged from non-detect to 578 ppm (restricted residential SCO - 400 ppm). Mercury concentrations ranged from non-detect to 9.02 ppm (restricted residential SCO - 0.81 ppm).

Subsurface soil data does not indicate a potential for off-site impacts in soil.

Groundwater:
Groundwater samples were analyzed for TCL VOCs, TCL SVOCs, TAL metals, PCBs, pesticides, PFOS, and PFOA. Groundwater sampling conducted indicated VOCs (chlorinated and petroleum), SVOCs, 1,4-dioxane, and metals that exceeded the State's standards and guidance values in overburden groundwater.

VOCs: 1,1-dichloroethane concentrations ranged from non-detect to 79.1 parts per billion [ppb] (groundwater standard - 5 ppb). 1,2,4-trimethylbenzene concentrations ranged from non-detect to 916 ppb (groundwater standard - 5 ppb). 1,3,5-trimethylbenzene concentrations ranged from non-detect to 378 ppb (groundwater standard - 5 ppb). Benzene concentrations ranged from non-detect to 397 (groundwater standard - 1 ppb). Toluene concentrations ranged from non-detect to 22 ppb (groundwater standard - 5 ppb). Trichloroethene concentrations ranged from non-detect to 59 ppb (groundwater standard - 5 ppb). Cis-1,2-dichlorothene concentrations ranged from non-detect to 38 ppb (groundwater standard - 5). Vinyl chloride concentrations ranged from non-detect to 21 ppb (groundwater standard - 2 ppb). 1,1,1-trichloroethane concentrations range from non-detect to 31 ppb (groundwater standard - 5 ppb). Xylenes (total) concentrations ranged from non-detect to 3830 ppb (groundwater standard - 5 ppb). Ethylbenzene concentrations ranged from non-detect to 2350 ppb (groundwater standard - 5 ppb). 1,4-dioxane concentrations ranged from non-detect to 3.3 ppb (groundwater standard - 1 ppb).

SVOCs: Benzo(a)anthracene concentrations ranged from non-detect to 45.7 ppb (groundwater standard - 0.002 ppb). Benzo(a)pyrene concentrations ranged from non-detect to 36.8 ppb (groundwater standard – non-detect). Benzo(b)fluoranthene concentrations ranged from non-detect to 33.1 ppb (groundwater standard - 0.002 ppb). Benzo(k)fluoranthene concentrations ranged from non-detect to 29 ppb (groundwater standard - 0.002 ppb). Chrysene concentrations ranged from non-detect to 43.1 ppb (groundwater standard - 0.002 ppb). Pyrene concentrations ranged from non-detect to 79.1 ppb (groundwater standard - 50 ppb).

Metals: Arsenic concentrations ranged from non-detect to 53.8 ppb (groundwater standard - 25 ppb). Lead concentrations ranged from non-detect to 123 ppb (groundwater standard - 25 ppb).

Groundwater data and flow direction does indicate a potential for off-site impacts in groundwater.

Soil Vapor:
Soil vapor sampling was not completed as part of the remedial investigation. However, groundwater concentrations and flow direction indicate a potential for off-site impacts to soil vapor. Actions to address the potential for soil vapor intrusion off-site will be addressed as part of the remedial actions for the adjacent sites.

6.4: Summary of Human Exposure Pathways

This human exposure assessment identifies ways in which people may be exposed to site-related contaminants. Chemicals can enter the body through three major pathways (breathing, touching or swallowing). This is referred to as *exposure.*

The site is not fenced and people who enter the site could contact contaminants in the soil by walking on the soil, digging or otherwise disturbing the soil. People are not drinking the contaminated groundwater because the area is served by a public water supply that is not affected by this contamination. Volatile organic compounds in the groundwater and/or soil may move into the soil vapor (air spaces within the soil), which in turn may move into overlying buildings and affect the indoor air quality. This process, which is similar to the movement of radon gas from the subsurface into the indoor air of buildings, is referred to as soil vapor intrusion. Soil vapor intrusion is not a current concern on-site because the site is vacant; however, the potential exists for inhalation of contaminants from soil vapor intrusion in any future on-site buildings. The potential for soil vapor intrusion off-site will be evaluated as part of the adjacent sites.

6.5: Summary of the Remediation Objectives

The objectives for the remedial program have been established through the remedy selection process stated in 6 NYCRR Part 375. The goal for the remedial program is to restore the site to pre-disposal conditions to the extent feasible. At a minimum, the remedy shall eliminate or mitigate all significant threats to public health and the environment presented by the contamination identified at the site through the proper application of scientific and engineering principles.

The remedial action objectives for this site are:

Groundwater

RAOs for Public Health Protection

- Prevent ingestion of groundwater with contaminant levels exceeding drinking water standards.
- Prevent contact with, or inhalation of volatiles, from contaminated groundwater.

RAOs for Environmental Protection

- Restore ground water aquifer to pre-disposal/pre-release conditions, to the extent practicable.
- Prevent the discharge of contaminants to surface water.
- Remove the source of ground or surface water contamination.

Soil

RAOs for Public Health Protection

- Prevent ingestion/direct contact with contaminated soil.
- Prevent inhalation of or exposure from contaminants volatilizing from contaminants in soil.

RAOs for Environmental Protection

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Prevent impacts to biota from ingestion/direct contact with soil causing toxicity or impacts from bioaccumulation through the terrestrial food chain.

Soil Vapor

RAOs for Public Health Protection

- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at a site.

SECTION 7: ELEMENTS OF THE SELECTED REMEDY

The alternatives developed for the site and the evaluation of the remedial criteria are presented in the Alternative Analysis. The remedy is selected pursuant to the remedy selection criteria set forth in DER-10, Technical Guidance for Site Investigation and Remediation and 6 NYCRR Part 375.

The selected remedy is a Track 4: Restricted use with site-specific soil cleanup objectives remedy.

The selected remedy is referred to as the remedy.

The elements of the selected remedy, as shown in Figure 3, are as follows:

1. Remedial Design

A remedial design program will be implemented to provide the details necessary for the construction, operation, optimization, maintenance, and monitoring of the remedial program. Green remediation principles and techniques will be implemented to the extent feasible in the

design, implementation, and site management of the remedy as per DER-31. The major green remediation components are as follows:

- Considering the environmental impacts of treatment technologies and remedy stewardship over the long term;
- Reducing direct and indirect greenhouse gases and other emissions;
- Increasing energy efficiency and minimizing use of non-renewable energy;
- Conserving and efficiently managing resources and materials;
- Reducing waste, increasing recycling and increasing reuse of materials which would otherwise be considered a waste;
- Maximizing habitat value and creating habitat when possible;
- Fostering green and healthy communities and working landscapes which balance ecological, economic and social goals;
- Integrating the remedy with the end use where possible and encouraging green and sustainable re-development; and
- Additionally, to incorporate green remediation principles and techniques to the extent feasible in the future development at this site, any future on-site buildings shall be constructed, at a minimum, to meet the 2020 Energy Conservation Construction Code of New York (or most recent edition) to improve energy efficiency as an element of construction.

As part of the remedial design program, to evaluate the remedy with respect to green and sustainable remediation principles, an environmental footprint analysis will be completed. The environmental footprint analysis will be completed using an accepted environmental footprint analysis calculator such as SEFA (Spreadsheets for Environmental Footprint Analysis, USEPA), SiteWise(TM) (available in the Sustainable Remediation Forum [SURF] library) or similar NYSDEC accepted tool. Water consumption, greenhouse gas emissions, renewable and non-renewable energy use, waste reduction and material use will be estimated, and goals for the project related to these green and sustainable remediation metrics, as well as for minimizing community impacts, protecting habitats and natural and cultural resources, and promoting environmental justice, will be incorporated into the remedial design program, as appropriate. The project design specifications will include detailed requirements to achieve the green and sustainable remediation goals. Further, progress with respect to green and sustainable remediation metrics will be tracked during implementation of the remedial action and reported in the Final Engineering Report (FER), including a comparison to the goals established during the remedial design program.

Additionally, the remedial design program will include a climate change vulnerability assessment, to evaluate the impact of climate change on the project site and the proposed remedy. Potential vulnerabilities associated with extreme weather events (e.g., hurricanes, lightning, heat stress and drought), flooding, and sea level rise will be identified, and the remedial design program will incorporate measures to minimize the impact of climate change on potential identified vulnerabilities.

2. Excavation

The existing on-site building will be demolished and materials which cannot be beneficially reused on-site will be taken off-site for proper disposal in order to implement the remedy.

Excavation and off-site disposal of contaminant source areas, including:

- Grossly contaminated soil, as defined in 6 NYCRR Part 375-1.2(u);
- Concentrated solid or semi-solid hazardous substances per 6 NYCRR Part 375-1.2(au)(1);
- Non-aqueous phase liquids;
- Soil with visual waste material or non-aqueous phase liquid;
- Soil containing total SVOCs exceeding 500 ppm;
- Soils which exceed the protection of groundwater soil cleanup objectives (PGWSCOs), as defined by 6 NYCRR Part 375-6.8 for those contaminants found in site groundwater above standards; and
- Soils that create a nuisance condition, as defined in Commissioner Policy CP-51 Section G.

All soils in the upper two feet which exceed the restricted residential or protection of groundwater SCOs will be excavated and transported off-site for disposal or re-used on-site if it qualifies for use as backfill per Remedy Element 3 below.

All on-site soils below two feet which meet the above bulleted criteria, will be excavated as described below or addressed per remedial Remedy Element 5.

Approximately 6,500 cubic yards of contaminated soil will be removed from the site. Collection and analysis of confirmation samples at the remedial excavation depth will be used to verify that SCOs for the site have been achieved. If confirmation sampling indicates that SCOs were not achieved at the stated remedial depth, the Applicant must notify DEC, submit the sample results and, and in consultation with DEC, determine if further remedial excavation is necessary. Further excavation for development will proceed after confirmation samples demonstrate that SCOs for the site have been achieved.

To ensure proper handling and disposal of excavated material, waste characterization sampling will be completed for all identified contaminated site material. Waste characterization sampling will be performed exclusively for the purposes of off-site disposal in a manner suitable to receiving facilities and in conformance with applicable federal, state and local laws, rules, and regulations and facility-specific permits.

Excavation and removal are required for any underground storage tanks (USTs), fuel dispensers, underground piping or other structures associated with a source of contamination.

Excavation of site soils to a depth of 4 feet below grade in the portion of the site subject to the in-situ solidification (ISS) treatment described in Remedy Element 5. Approximately 6,500 cubic yards of soil will be excavated to facilitate ISS implementation. All soils which exceed restricted-residential (unless used as backfill per Remedy Element 3 below) or protection of groundwater soil cleanup objectives (SCOs) will be disposed of off-site at a permitted facility.

3. Backfill

On-site soil which does not exceed the above excavation criteria may be used below the cover system described in Remedy Element 4 to backfill the excavation to the extent that a sufficient volume of on-site soil is available and establish the designed grades at the site.

On-site soil which does not exceed the above excavation criteria or the protection of groundwater SCOs for any constituent may be used anywhere beneath the cover system, including below the water table, to backfill the excavation or re-grade the site.

Backfill meeting the requirements of 6 NYCRR Part 375-6.7(d) will be brought in to replace the excavated soil or complete the backfilling of the excavation and establish the designed grades at the site.

The site will be re-graded to accommodate installation of a cover system as described in Remedy Element 4.

4. Cover System

A site cover will be required in areas where the upper two feet of exposed surface soil will exceed the applicable soil cleanup objectives (SCOs), to allow for future restricted residential use of the site. Where a soil cover is to be used it will be a minimum of two feet of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer. Soil cover material, including any fill material brought to the site, will meet the SCOs for cover material for the use of the site as set forth in 6 NYCRR Part 375-6.7(d). Substitution of other materials and components may be allowed where such components already exist or are a component of the tangible property to be placed as part of site redevelopment. Such components may include, but are not necessarily limited to: pavement, concrete, paved surface parking areas, sidewalks, building foundations and building slabs.

Where the soil cover is required over the ISS treatment area, it will consist of a minimum of four feet of soil to ensure the underlying monolith remains below the frost line and protected from the freeze-thaw cycle. A building and its foundation are considered suitable cover to protect the ISS monolith. Where a building and its foundation are considered part of the site cover, the ISS design should include considerations for drainage between the ISS and building foundation and the potential need to design the ISS for a higher strength. If the ISS monolith extends beyond the building footprint, the design shall include a soil cover consisting of a minimum of four feet of soil for that portion. Consistent with the remainder of the site cover, the upper two feet will meet the SCOs for restricted residential use outside the ISS monolith area. For areas where solidified material underlies the cover, the solidified material itself will serve as the demarcation layer due to the nature of the material.

5. Solidification/Stabilization - In-Situ Solidification

In-situ solidification (ISS) will be implemented in an approximately 1+ acre area of the site, as indicated on Figure 3. The treatment zone will extend from the top of the groundwater table, at approximately 4 feet below grade to approximately 12-15 feet below grade. An approximately 4-foot soil cut will need to be excavated in these areas to contain the ISS spoils and increased soil volume created by the soil mixing. ISS is a process that binds the soil particles in place creating a low permeability mass. The contaminated soil will be mixed in place together with solidifying reagents or other binding reagents using an excavator or augers. Often Portland cement is used as the primary binder, although less carbon-intensive amendments will be considered. The soil and binding reagents are mixed to produce a solidified mass resulting in a low permeability monolith.

Prior to the full implementation of this technology, bench-scale laboratory testing and on-site pilot scale studies will be conducted to more clearly define design parameters, amendment types and dosages. Bench test will consist of collecting soil from source area and mixing with a variety of amendments and doses in a controlled atmosphere followed by testing resulting hydraulic conductivity and unconfined-compressive strength. Pilot tests will then be conducted using successful amendment mixes from the bench test prior to full scale design.

Typical design requirements are that solidified mass would produce a hydraulic conductivity (K) of 1.0 X 10^{-6} cm/sec or less and would also result in an unconfined compressive strength of 50 psi, or higher pending future uses that may include construction above the solidified mass. The solidified mass will then be covered with a cover system as described in Remedy Element 4 to prevent direct exposure to the solidified mass. The resulting solid matrix reduces or eliminates mobility of contamination and reduces or eliminates the matrix as a source of groundwater contamination.

6. Groundwater - Monitored Natural Attenuation

Groundwater contamination (remaining after active remediation) will be addressed with monitored natural attenuation (MNA). Groundwater will be monitored for site related contamination, and for MNA indicators which will provide an understanding of the biological activity breaking down the contamination. It is anticipated that contamination will decrease by an order of magnitude in within 5 years. Reports of the attenuation will be provided at 5-year intervals, and active remediation will be proposed if it appears that natural processes alone will not address the contamination. The contingency remedial action will depend on the information collected, but it is currently anticipated that contingency technology, e.g., "oxygen injection" would be the expected contingency remedial action.

7. Engineering and Institutional Controls

Imposition of an institutional control in the form of an environmental easement and a Site Management Plan, as described below, will be required. The remedy will achieve a Track 4, restricted residential cleanup, at a minimum.

Institutional Control

Imposition of an institutional control in the form of an environmental easement for the controlled property which will:

- Require the remedial party or site owner to complete and submit to the NYSDEC a periodic certification of institutional and engineering controls in accordance with Part 375-1.8 (h)(3);
- Allow the use and development of the controlled property for restricted residential use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;
- Restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the NYSDOH or County DOH; and
- Require compliance with the NYSDEC approved Site Management Plan.

8. Site Management Plan

A Site Management Plan is required, which includes the following:

1. An Institutional and Engineering Control Plan that identifies all use restrictions and engineering controls for the site and details the steps and media-specific requirements necessary to ensure the following institutional and/or engineering controls remain in place and effective:

   Institutional Controls: The Environmental Easement discussed in Remedy Element 7 above.
   Engineering Controls: The soil cover discussed in Remedy Element 4 above.

   This plan includes, but may not be limited to:
   - An Excavation Work Plan which details the provisions for management of future excavations in areas of remaining or potential contamination;
   - A provision for demolition of the on-site building if and when it becomes unsafe or inactive or vacant;
   - A provision should redevelopment occur to ensure no soil exceeding protection of groundwater concentrations will remain below storm water retention basin or infiltration structures.
   - Descriptions of the provisions of the environmental easement including any land use, and groundwater use restrictions;
   - A provision for evaluation of the potential for soil vapor intrusion, including sub-slab and indoor air sampling, for any occupied buildings on the site, including provision for implementing actions recommended to address exposures related to soil vapor intrusion;
   - A provision that should a building foundation or building slab be removed in the future, a cover system consistent with that described in Remedy Element 4 above will be placed in any areas where the upper two feet of exposed surface soil exceed the applicable soil cleanup objectives (SCOs);
   - Provisions for the management and inspection of the identified engineering controls;
   - Maintaining site access controls and NYSDEC notification; and
   - The steps necessary for the periodic reviews and certification of the institutional and/or engineering controls.
2. A Monitoring Plan to assess the performance and effectiveness of the remedy. The plan includes, but may not be limited to:
   - Monitoring of groundwater to assess the performance and effectiveness of the remedy;
   - A schedule of monitoring and frequency of submittals to the NYSDEC;
   - Monitoring for vapor intrusion for any buildings on the site, as may be required by the Institutional and Engineering Control Plan discussed above.



QUADRANGLE LOCATION



N

1,000 0 1,000 FEET

Title:

SITE LOCATION MAP

BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER, NEW YORK

Prepared for:

5 FLINT STREET LLC

ROUX

Compiled by: SB	Date: 01/30/25
Prepared by: SB	Scale: AS SHOWN
Project Mgr: ER	Project: 4694.0001P000
File: 4694.0001P000.104.01 - Site Location Map.mxd	

FIGURE 1

T:\GIS_PROJECTS\4694\0001B\000\MXD\1044694.0001P000.104.01 - SITE LOCATION MAP.MXD

Figure 1A
5 Flint Street Site



October 21, 2025

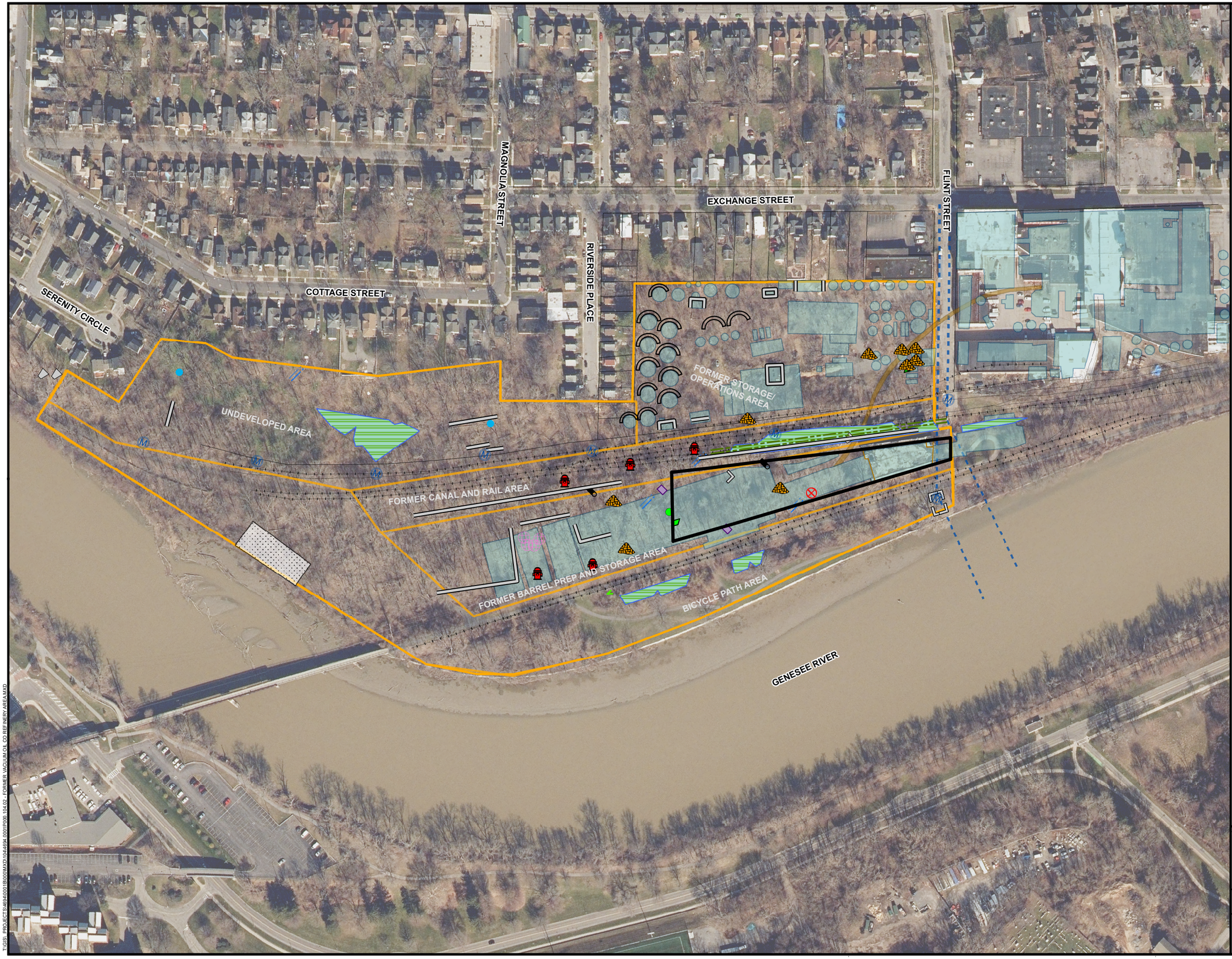
1:4,514

0 0.04 0.07 0.15 mi

0 0.05 0.1 0.2 km

Esri, HERE, Garmin, (c) OpenStreetMap contributors, New York State, Maxar, NYS ITS Geospatial Services, Westchester County GIS

NYS Department of Environmental Conservation
Not a legal document



LEGEND

- 5 FLINT STREET PROPERTY BOUNDARY
- SUBDIVISION SITE AREAS

WETLANDS IDENTIFIED IN OBG RI 2019

- WETLANDS

FEATURES IDENTIFIED AND DESCRIBED (NAMED) BY AMEC 2004

- RETAINING WALL
- CULVERT
- DRAINAGE SWALE
- WALL FOUNDATION/CONCRETE PILLARS / FOOTERS
- SLAG MOUNDS/REEL-O-MATIC
- SHALLOW FLOOR PITS
- RUBBLE AND/OR TIRE
- PIPES
- SEWAGE PIPES
- MOLTEN PLASTIC
- MANHOLE
- MACHINERY
- FIRE HYDRANTS
- DRUMS (55) GALLON
- REMNANT OF CIRCULAR FOOTING
- APPROXIMATE SLUDGE PITS AREA

HISTORIC FEATURES GEOREFERENCED FROM 1926 SANBORN

- FORMER STRUCTURE (BUILDING, TANK, ETC)
- FORMER BARREL CONVEYOR
- PROPERTY BOUNDARIES
- PIPES
- RAILROAD

SOURCES
- AERIAL IMAGE SOURCE: NYS GIS CLEARINGHOUSE (www.nysgis.state.ny.us), 2005 AERIAL.

- THE PROPERTY BOUNDARY SHOWN FOR 5 FLINT STREET IS AS SURVEYED BY WENDEL FEBRUARY 22, 2024. NOTE THAT THERE HAVE BEEN PROPERTY BOUNDARY INCONSISTENCIES SHOWN ON PRIOR FIGURES FOR 5 FLINT STREET AND OTHER NEARBY PROPERTIES.

NOTES
- ALL FEATURES SHOWN ARE APPROXIMATE.

200 0 200
FEET

Title:

FORMER VACUUM OIL COMPANY REFINERY AREA

BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER NEW YORK

Prepared for:
5 FLINT STREET, LLC

ROUX

Compiled by: SB	Date: 01/30/25
Prepared by: SB	Scale: AS SHOWN
Project Mgr: ER	Project: 4694.0001P000
File: 4694.0001P000.104.02 - Former Vacuum Oil Co Refinery Area.mxd	

FIGURE 2

T:\GIS_PROJECTS\4694\0001P000\MXD\104\4694.0001P000.104.02 - FORMER VACUUM OIL CO REFINERY AREA.MXD

Vacuum Oil Refinery Sites
Brownfield Cleanup Program Sites

Figure 2A



October 20, 2025

1:9,028

0 0.05 0.1 0.2 mi

0 0.07 0.15 0.3 km

New York State, Maxar, Esri, HERE, Garmin, iPC

NYS Department of Environmental Conservation
Not a legal document

Figure 3
5 Flint Street Site
Decision Document



LEGEND

- NYSDEC SOIL GAS (2001)
- NYSDEC SURFACE SOIL (2001)
- NYSDEC TEST PIT (2001)
- NYSDEC MONITORING WELL (2001)
- RAVI BEDROCK WELL (2014-2015)
- RAVI SOIL BORING (2014-2015)
- RAVI SOIL BORING / MONITORING WELL (2014-2015)
- RAVI TEST PIT (2014-2015)
- ROUX SOIL BORING (2017)
- ROUX SOIL BORING (2008)
- ROUX SOIL BORING / FORMER MONITORING WELL (2008)
- BCP BOUNDARY AND LIMITS OF SITE COVER
- APPROXIMATE LNAPL REMEDIATION AREA (UP TO 8 FT)
- PROPOSED EXCAVATION AND ISS
- POTENTIAL EXCAVATION AND
- TARGETED CITY EXCAVATIONS AS SHOWN IN APPROVED AAR FOR SITE C828190

PRE-DESIGN INVESTIGATION SAMPLE LOCATIONS

- PHASE 1, SOIL BORING
- PHASE 1, SOIL BORING / MONITORING WELL

SOURCES
- AERIAL IMAGERY (2023) AND ELEVATION CONTOURS (2019) FROM CITY OF ROCHESTER'S OPEN DATA PORTAL.

- THE PROPERTY BOUNDARY SHOWN FOR 5 FLINT STREET IS AS SURVEYED BY WENDEL FEBRUARY 22, 2024. NOTE THAT THERE HAVE BEEN PROPERTY BOUNDARY INCONSISTENCIES SHOWN ON PRIOR FIGURES FOR 5 FLINT STREET AND OTHER NEARBY PROPERTIES.

NOTES
- ISS, IN-SITU SOLIDIFICATION.

- ALL FEATURES SHOWN ARE APPROXIMATE.

- 2008 ROUX SOIL BORING AND MONITORING WELL IDS SHOWN ON THIS FIGURE ARE THE ORIGINAL LOCATION ID (E.G., SB-016). THE IDS FOR SUBSEQUENT BORING ATTEMPTS DUE TO SHALLOW REFUSAL (E.G., SB-016A, SB-016B, ETC) ARE NOT DISPLAYED ON THIS FIGURE.

- MW-1 AND MW-2 INSTALLED BY NYSDEC ARE DISPLAYED AS DEC MW-1 AND DEC MW-2, RESPECTIVELY, TO AVOID CONFUSION WITH MONITORING WELLS MW-1 AND MW-2 INSTALLED BY RAVI.

- A SITE COVER SYSTEM WILL BE INSTALLED ACROSS THE ENTIRE SITE.

100 0 100
FEET

Title:

REMEDIAL ALTERNATIVE 2
PROPOSED PHASE 1 PRE-DESIGN SAMPLING AREAS

BCP SITE NO. C828162B
5 FLINT STREET, ROCHESTER, NEW YORK

Prepared For:
5 FLINT STREET LLC

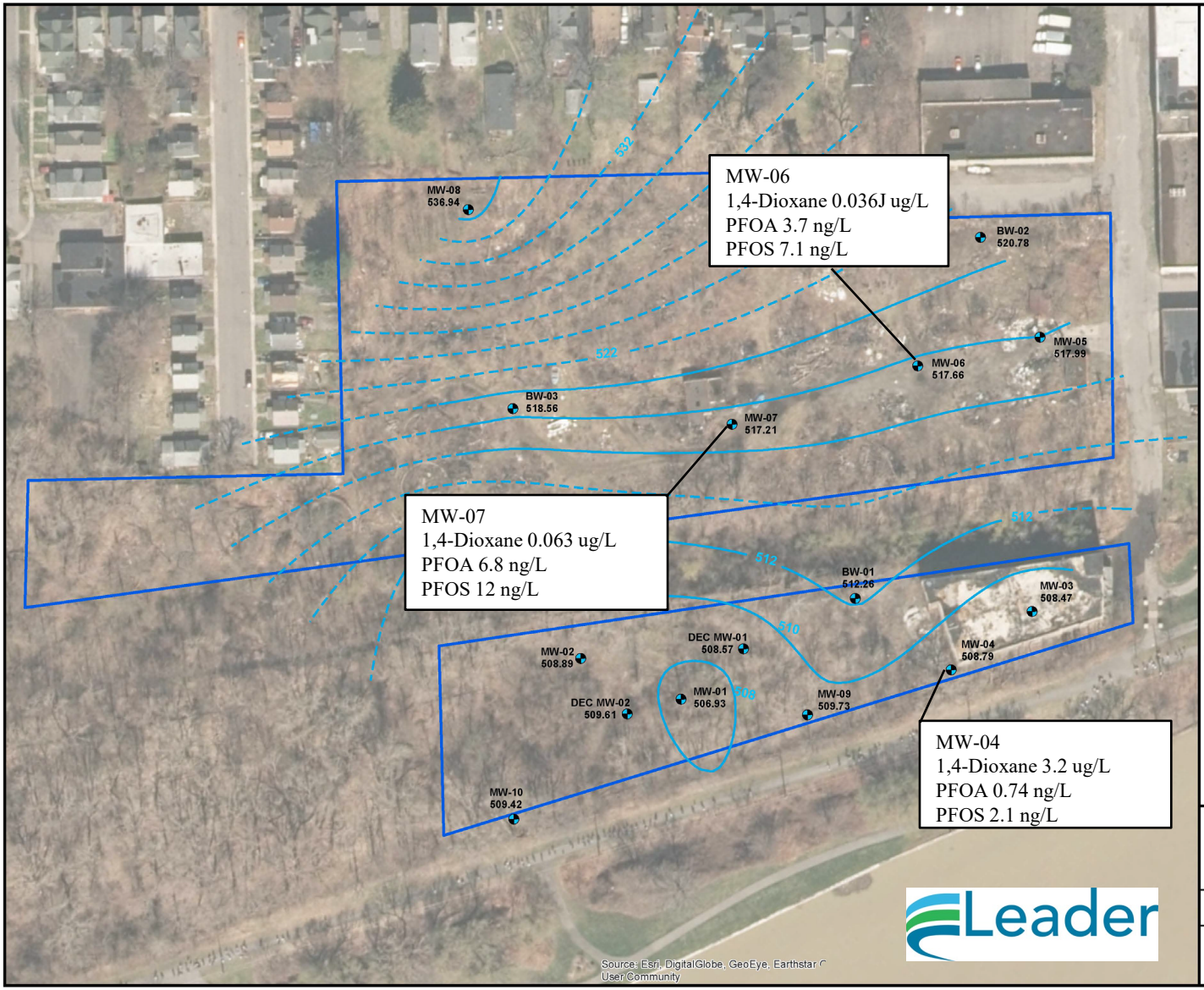
ROUX

Compiled by: SB	Date: 30JAN25	FIGURE
Prepared by: SB	Scale: AS SHOWN	6
Project Mgr: ER	Project: 4694.0001P000	
File: 4694.0001P000.104.06-RA2PDI.mxd		

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APPENDIX C

Groundwater Contour Map



Legend

- 2014 RI Monitoring Well Location (MW ID / GW Elev (ft))
- Groundwater Contour
- Dashed Contours are Inferred Based on Limited Available Data
- Property Boundaries

SOURCES
- Aerial photography is a streaming world imagery layer provided by ESRI.

NOTES
- All features shown are approximate
- Groundwater elevations as measured on April 10, 2014
- Additional off-Site Roux (2008) Soil Boring/Monitoring Well locations south of the Site are not shown.
- RI = Remedial Investigation
- Groundwater elevations are in North American Verticla Datum 1988
-Contours are generated using Kriging methods in Golden Sofware Surfer Contour program

40 0 40 80 Feet

Title:

GROUNDWATER ELEVATION CONTOURS APRIL 2014

5 & 15 FLINT STREET
ROCHESTER, NEW YORK

Compiled by:	Date: 20MAY19	FIGURE
Prepared by:	Scale: AS SHOWN	1
Project Mgr:	Project:	
File: 5 & 15 Flint Street – Figure 3		

APPENDIX D

PDI Soil Boring Logs

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

WELL ID: 5FS-PE-1 / 5FS-MW-1

TOP - BOTTOM (T-B)

CLIENT: 5 Flint Street LLC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828188
CITY/STATE: Rochester, NY
DATE(S): 3/20/2026 - 3/22/2026
LOGGED BY: N. Jonasse

DRILLING CONTRACTOR: TREC
DRILLING METHOD: Hand Tools / Direct Push
SAMPLER TYPE: Macro Core
BOREHOLE DIAMETER: 6"
WELL DIAM & MAT'L: 2

ANNULAR SEAL (T-B): 0.5' - 1'
DIVIDER SEAL (T-B): 0' - 0.5'
SAND PACK (T-B): 0.5' - 11'
SCREEN (T-B): 1' - 11'
WELL DEPTH: 11

DEPTH (ft)	Sample Interval	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	WELL DIAGRAM	Notes
0		0.5	Dark grey to dark brown SILT; Brick, and concrete fragments (FILL); Moist to wet.	FILL		
		0.8	Grey to light brown SILT and fine to coarse Sand, some fine to coarse Gravel; Wet.	FILL		
5		5.9	Dark grey to brown SILT; some fine to coarse Gravel; Brick (FILL); Wet.	FILL		Collected laboratory sample 5FS-PE-1 (4-5'). Concrete on west side at 5'
		16.8	Tan brown to grey fine to coarse SAND and Silt, little fine to coarse Gravel; Organics; Wet.	SW		
10		9.0	Brown to tan fine to coarse SAND and Silt; Wet.	SM		
		15.2	Grey CLAY and Silt; Wet.	CL		
15		20.0	Tan to grey fine to coarse SAND and Silt, some fine to coarse SAND and Silt, few fine to coarse Gravel; Wet.	SW		Collected laboratory sample 5FS-PE-1 (12-14) Refusal at 15'

Bottom of borehole at 15.0 ft.

Additional Notes:

GENERAL BH / TP / WELL - GINT STD US.GDT - 7/27/26 08:25 - S:\CLIENTS\5 FLINT STREET LLC\FIELD\12_GINT\EXCAVATION.SS 5.20.2026.GPJ

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-PE-2

CLIENT: 5 Flint Street LLC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
CITY/STATE: Rochester, NY
DATE(S): 6/1/2026 - 6/2/2026
LOGGED BY: S. Keenan / E. Spirito

DRILLING CONTRACTOR: TREC
DRILLING METHOD: Hand Tools / Direct Push
SAMPLER TYPE: Macro Core
BOREHOLE DIAMETER: 6"
BOREHOLE DEPTH: 14.4'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		4	0 0	Dark brown fine to coarse SAND; Brick, wood (FILL); Odor; Wet.	FILL	
5		0.75	14.2 14.8	Brown to grey fine to coarse SAND, Concrete fragments (FILL); Odor; Wet.	FILL	Pre-cleared to 5'
10		2	5.4 4.7	Brown fine to coarse SAND; Wet.	SP	
		2.4	92.1 341.1	Grey to tan CLAY; trace coarse Sand; Odor; Wet.	CH	Collected laboratory sample 5FS-PE-2 (12-14') Refusal at 14.4'

Bottom of borehole at 14.4 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-PE-2B

CLIENT: 5 Flint Street LLC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
CITY/STATE: Rochester, NY
DATE(S): 3/18/2026 - 3/20/2026
LOGGED BY: S. Keenan / E. Spirito

DRILLING CONTRACTOR: TREC
DRILLING METHOD: Hand Tools / Direct Push
SAMPLER TYPE: Macro Core
BOREHOLE DIAMETER: 6"
BOREHOLE DEPTH: 13.5'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		0.67	2.5 3.0	Fine to coarse Sand; Organics; Brick fragments (FILL); Dry.	FILL	
5		2	183 298	Dark brown fine to coarse SAND and Clay; Odor; Wet.	SC	
10		2	272 348	Dark brown CLAY and fine to coarse SAND; Odor; Wet.	OH	Collected laboratory sample 5FS-PE-2B (10-12).
				No recovery.		Refusal at 13.5'.

Bottom of borehole at 13.5 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-PE-3

CLIENT: 5 Flint Street LLC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
CITY/STATE: Rochester, NY
DATE(S): 7/2/2026 - 7/2/2026
LOGGED BY: S. Keenan / E. Spirito

DRILLING CONTRACTOR: TREC
DRILLING METHOD: Hand Tools / Direct Push
SAMPLER TYPE: Macro Core
BOREHOLE DIAMETER: 6"
BOREHOLE DEPTH: 12'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		1.6	30.8 27.1	Brown fine SAND and fine to coarse Gravel; Brick (FILL); Moist.	SW	Collected laboratory sample 5FS-PE-3 (0-2')
5		3	13.7 13.5	Brown to grey fine SAND and Silt; Wet.	SM	
10		2.3	5.1 4.6	Brown fine to coarse SAND and Clay.	SC	Refusal at 12'

Bottom of borehole at 12.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-PE-3B

CLIENT: 5 Flint Street LLC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
CITY/STATE: Rochester, NY
DATE(S): 7/2/2026 - 7/2/2026
LOGGED BY: S. Keenan / E. Spirito

DRILLING CONTRACTOR: TREC
DRILLING METHOD: Hand Tools / Direct Push
SAMPLER TYPE: Macro Core
BOREHOLE DIAMETER: 6"
BOREHOLE DEPTH: 15'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		2	5.9 5.6	Brown fine to coarse SAND; Brick, concrete fragments (FILL); Dry.	FILL	
5		2.5	2.1 1.8	Grey fine to coarse SAND and Silt; Dry to moist.	SM	Collected laboratory sample 5FS-PE-3B (4-5')
10		3	3.0 2.5	Grey CLAY and fine to coarse SAND; Wet.	SC	Collected laboratory sample 5FS-PE-3B (12-14')
15		2	0.8	Brown CLAY and fine to coarse SAND; Wet.		Refusal at 15'

Bottom of borehole at 15.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-1

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 3/18/2026 - 3/20/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 11.5'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		2	1.1	Brown fine SAND and Silt; Moist.	SM	
		2	1.5	Brown fine SAND, Silt, and Clay.		
5		1	2.4	Grey fine to coarse SAND, Silt, and Clay; Wet.	SW	
		1	18.6	Grey CLAY, some fine to coarse Gravel; Odor; Medium plasticity; Wet.	GC	Collected laboratory sample 5FS-SW-1 (6-8).
		2.8	28.1			
10				Dark grey fine to coarse SAND and Silt; Odor; Wet.	SW	
		1.3	2.5			Refusal at 11.5'.

Bottom of borehole at 11.5 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-2

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 3/18/2026 - 3/20/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 12'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		2	1.2	Brown coarse Sand; Asphalt fragments (FILL); Wet.	FILL	
		2	18.4	Grey fine to coarse SAND, some fines; Wet.	SW	
5		1	16.5	Grey CLAY; Wet.	CL	
		2.6	0.7	Brown Silty SAND; Wet.	SM	Pre-cleared to 5'
			171.6	Grey Silty SAND; Odor; Wet.		
				Brown Silty SAND; Odor; Wet.		
10		2	10.1			
			275.6	Dark grey Silty CLAY; Odor; Wet.	CL	Collected laboratory sample 5FS-SW-2 (10-12') Refusal at 12'

Bottom of borehole at 12.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-10

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/18/2026 - 6/18/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: E. Spirito
BOREHOLE DEPTH: 13.5'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0				Concrete slab.	--	
		2.5	0	Brown fine and coarse GRAVEL, some fine Sand; Moist.	FILL	
				Dark grey fine SAND, some Fines, little Cobbles, little Gravel; Brick, metal, and wood fragments; Odor; Wet.		
		2.5	195		FILL	
5			695			Pre-cleared to 5'
			675	Dark grey Silty CLAY; Odor; Soft; Wet.	CL	
		4		Grey Sandy CLAY; Odor; Dense; Wet.	CH	
			571			
10			360	Grey fine SAND, some fine Gravel; Odor; Soft; Wet.	SP	
		3.5		Brown SAND, some fine Gravel; Odor, sheen; Dense; Wet.		Refusal at 13.5. No laboratory sample collected
			545		SP	
		0.5	531			

Bottom of borehole at 13.5 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-10B

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/19/2026 - 6/19/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: E. Spirito
BOREHOLE DEPTH: 14.2'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0			5.1	Dark brown Silty Sand and Gravel; Brick, and concrete fragments (FILL); Dry.	FILL	
				Concrete slab	--	
		3	5.6	Brown fine Sand; Brick and concrete fragments (FILL); Wet.	FILL	
5		2.5	864	Grey fine soft SAND; Odor; Wet.	SP	
			1040	Grey Sandy CLAY; Odor, sheen; Dense; Wet.	CL	
10		4	941			
			993			
		2	899	Grey fine SAND; Odor, sheen; Wet.	SP	Refusal at 14.2' No laboratory sample

Bottom of borehole at 14.2 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-10C

CLIENT: 5 Flint Street LLC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
CITY/STATE: Rochester, NY
DATE(S): 6/29/2026 - 7/1/2026
LOGGED BY: E. Spirito

DRILLING CONTRACTOR: TREC
DRILLING METHOD: Hand Tools / Direct Push
SAMPLER TYPE: Macro Core
BOREHOLE DIAMETER: 6"
BOREHOLE DEPTH: 12'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0						
		4	0	Brown fine to coarse SAND, some fine Gravel; Brick fragments (FILL); Dry.	FILL	
				Concrete slab.	--	
			0	Brown to tan fine SAND; Brick and concrete fragments (FILL); Dry.	FILL	Collected laboratory sample 5FS-SW-10 (4-6)
5		1	1.2	Brown fine GRAVEL; Brick and concrete fragments (FILL); Dry.	FILL	Pre-cleared to 5'
			0.9			
10				No recovery	--	Refusal at 12'

Bottom of borehole at 12.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-10D

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/29/2026 - 7/1/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: E. Spirito
BOREHOLE DEPTH: 14'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		4	0 0	Dark brown fine to coarse SAND; Brick and wood fragments (FILL). Brown fine SAND and fine to coarse Gravel; Brick fragments (FILL); Dry to moist.	FILL	
5		2.8	187.5 183	Brown to dark grey fine to coarse SAND and Silt; Wet.	SW	Pre-cleared to 5'
10		4	319.2 303.1	Grey fine to coarse SAND and Silt; Moist. Grey CLAY; Odor; Wet.	SW CL	Collected laboratory sample 5FS-SW-10D (8-10)
		1	21.3	Grey fine to coarse SAND and Silt; Odor.	SW	Refusal at 14'

Bottom of borehole at 14.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-10E

CLIENT: 5 Flint Street LLC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
CITY/STATE: Rochester, NY
DATE(S): 7/2/2026 - 7/2/2026
LOGGED BY: S. Keenan / E. Spirito

DRILLING CONTRACTOR: TREC
DRILLING METHOD: Hand Tools / Direct Push
SAMPLER TYPE: Macro Core
BOREHOLE DIAMETER: 6"
BOREHOLE DEPTH: 14'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		1	11.8 12.4	Brown fine to coarse GRAVEL; Concrete (FILL).	FILL	
5		3.4	303.9 288.3	Grey SILT.	ML	
10		3.8	501.3 483	Grey fine to coarse SAND and Clay; Odor; Wet.	SC	Collected laboratory sample 5FS-SW-10E (8-10)
		1	305.1			Refusal at 14'

Bottom of borehole at 14.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-10F

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 7/16/2026 - 7/16/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: E. Spirito
BOREHOLE DEPTH: 14.5'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		2	37.1	Brown fine to coarse SAND and fine to coarse Gravel; Brick, concrete, and wood fragments (FILL); Dry.	FILL	
5		2.2	499 575	Grey to dark grey fine to coarse SAND; Odor; Moist to wet. Dark grey CLAY and fine to coarse Sand; Medium dense; Odor.	SW	
10		2.3	507 427		SC	
		2.8	783	Grey CLAY and fine to coarse Sand; Odor; Soft; Wet.		Collected laboratory sample 5FS-SW-10F (12-14.5). Refusal at 14.5'.

Bottom of borehole at 14.5 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-11

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/18/2026 - 6/18/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: E. Spirito
BOREHOLE DEPTH: 15.5'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		2	0	Brown Silty Sand; Brick, and wood fragments (FILL); Dry.	FILL	
		2	0.1	Brown fine to coarse Sand; Cobbles; Concrete, brick, and wood fragments, ash; Dry.	FILL	
5		1	1.6			Pre-cleared to 5'
		3	747	Grey Sandy CLAY; Odor; Dense; Moist.	CL	Collected laboratory sample 5FS-SW-11 (7-9')
			755			
10		3	78.9	Grey Sandy CLAY and fine Gravel; Odor; Soft; Wet.	CL	
			110	Grey Sandy CLAY; Dense; Wet.	CL	
		2.5	509	Grey soft fine SAND; Odor; Wet.	SP	Collected laboratory sample 5FS-SW-11 (13-15')
15			559			Refusal at 15'

Bottom of borehole at 15.5 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-12

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/18/2026 - 6/18/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: E. Spirito
BOREHOLE DEPTH: 16'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		2	2.5	Brown fine to coarse SAND and Silt; Brick, wood, metal, ash (FILL); Moist.	FILL	
		2	2.5	Grey fine SAND, some fine to coarse Gravel; Brick, ash (FILL); Wet.		
5		1		Tan to brown CLAY, some fine Sand.		
		4	619 545	Grey CLAY and fine to coarse Sand; Black staining; Odor; Dense; Moist to wet.		
10		4	612 572		SC	Collected laboratory sample 5FS-SW-12 (9-11).
15		3	47.5 10.8	Grey to brown fine SAND; Wet.	SP	Refusal at 16'.

Bottom of borehole at 16.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-12B

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/19/2026 - 6/19/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: E. Spirito
BOREHOLE DEPTH: 16'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		3	27.2	Dark brown fine Sand, some Silt, some fine Gravel; Concrete, brick, and wood fragments (FILL); Medium dense; Moist.	FILL	
			70.1	Dark brown Silty Sand and fine Gravel; Concrete, brick, and wood fragments (FILL); Wet.	FILL	
5		4	421	Grey Sandy CLAY; Odor; Medium dense Wet.	CL	
			475			
10		1	572	Grey soft fine SAND; Odor; Wet.	SP	
			1,147	Dark grey soft fine SAND; Odor, sheen; Wet.	SP	
15		2	901		SP	
			718	Dark grey fine to medium SAND, some fine Gravel; Sheen; Wet.	SP	Refusal at 16'. No laboratory sample collected

Bottom of borehole at 16.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-12C

CLIENT: 5 Flint Street LLC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
CITY/STATE: Rochester, NY
DATE(S): 6/29/2026 - 7/1/2026
LOGGED BY: S. Keenan / E. Spirito

DRILLING CONTRACTOR: TREC
DRILLING METHOD: Hand Tools / Direct Push
SAMPLER TYPE: Macro Core
BOREHOLE DIAMETER: 6"
BOREHOLE DEPTH: 15'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0						
		4	0	Brown fine to coarse Sand; Concrete fragments (FILL); Dry.	FILL	
			0	Brown fine coarse Sand, some fine Gravel; Brick; Dry.	FILL	
5		0		No recovery.	--	
		3.3	1,446	Grey fine to coarse SAND, some Clay; Odor; Wet.	SW	Collected laboratory sample 5FS-SW-12C (8-10')
10			1,380			
		3	915	Grey Silty SAND; Odor; Wet.	SP	
15			886			Refusal at 15'

Bottom of borehole at 15.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-12D

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/29/2026 - 7/1/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 11'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		4	0 0	Dark brown fine to coarse Sand, some fine Gravel; Dry. Brown fine Sand, some fine Gravel; Brick fragments (FILL); Odor; Moist.	FILL FILL	
5		2.4	17.2 17.7	Brown fine to coarse Sand, some fine Gravel; Brick fragments (FILL); Odor; Moist.	FILL	Pre-cleared to 5'
10		2.2	108.4 106.2	Grey Sandy CLAY; Odor; Wet.	CL	Collected laboratory sample 5FS-SW-12D (8-10') Refusal at 11'

Bottom of borehole at 11.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-12E

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 7/1/2026 - 7/1/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 15'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		2	9.8 10.1	Grey fine and coarse Gravel; Brick fragments, black granular material; Dry. Brown fine to coarse SAND; Moist.	FILL SW	
5		1.6	47.4 45	Brown fine to coarse SAND, some fine and coarse Gravel, some Fines; Wet.	SC	Pre-cleared to 5'
10		2	200.5 194.3	Grey Sandy CLAY; Odor; Wet.	CL	
15		3.5	359 321.4			Collected laboratory sample 5FS-SW-12E (12-14') Refusal at 15'

Bottom of borehole at 15.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-13

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/26/2026 - 7/1/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 14'

DEPTH (ft)	Sample Interval	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		1.9	Dark brown Silty Sand; Brick, concrete, and metal fragments, black granular material (FILL); Dry.	FILL	
			Concrete slab 4" thick	--	
		1.8	Brown medium fine SAND, some Silt; Dry.	SP	
			Grey fine Sand; Dry.	SP	Pre-cleared to 5'
5		590	Grey Silty SAND, some fine and coarse Gravel; Odor; Moist.	SM	
		588			Collected laboratory sample 5FS-SW-13 (8-10')
		649.8	Grey CLAY; Odor; Wet.	CL	
10			Grey Sandy CLAY; Odor; Wet.		
		603.1		CL	
		173.1			Refusal at 14'

Bottom of borehole at 14.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-14

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/18/2026 - 6/18/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 14.5'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		2	0	Brown Silty SAND; Brick fragments (FILL); Medium dense; Moist.	FILL	
		3	0	Grey fine Sand; Ash, brick fragments (FILL); Wet.	FILL	
5		3	423 575	Grey Sandy CLAY; Odor; Wet.	CL	Pre-cleared to 5' Collected laboratory sample 5FS-SW-14 (7-9')
10		1	342 43.7	Grey soft fine SAND; Odor; Wet.	SP	
		0	--	No recovery.	--	Refusal at 14.5'

Bottom of borehole at 14.5 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-15

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/18/2026 - 6/18/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 14'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		3	9.4	Brown fine Sand; Brick fragments, ash (FILL); Dry.	FILL	
		2	227	Brown Silt, some fine Sand; Brick fragments (FILL); Wet.	FILL	
5				Dark grey fine SAND, some Silt; Odor; Wet.	FILL	Pre-cleared to 5'
		4	221 293 582	Grey fine Sand and fine Gravel; Brick and concrete fragments (FILL); Odor; Wet.	FILL	
10		3	857 795	Grey Sandy CLAY, trace fine Gravel; Odor; Dense; Wet.	CL	Collected laboratory sample 5FS-SW-15 (10-12')
		1	345	Grey soft Sandy CLAY, some coarse Gravel and Cobbles; Wet.	CL	Refusal at 14'

Bottom of borehole at 14.0 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-20

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/19/2026 - 6/19/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 14.9'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		3	11.4	Dark brown Silty Sand, fine Gravel; Brick, concrete, and wood fragments; Soft to medium dense; Dry to Moist.	FILL	
				Brown fine to coarse SAND and fine and coarse GRAVEL; 2' section of 2" pipe; Wet.	FILL	
5		2	4.2	Brown soft fine Sand; Brick, concrete, and wood fragments; Wet.	FILL	
		4	24.1	Brown Sandy CLAY; Dense; Wet.	CL	Pre-cleared to 5'
				Grey Sandy CLAY; Odor; Dense; Wet.	CL	
			31.3			
10		1.5	77.2	Grey soft fine SAND; Odor; Wet.	SP	Collected laboratory sample 5FS-SW-20 (9-11')
			61.1	Grey Sandy CLAY; Medium dense; Wet.		
		1	35.2		CL	Refusal at 14.9'

Bottom of borehole at 14.9 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-21

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/19/2026 - 6/19/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 16.1'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		3	1.8	Dark brown Silty Sand and fine Gravel; Brick, concrete, and wood fragments (FILL); Loose; Moist.	FILL	
				Brown fine SAND and fine GRAVEL; Wet.		
5		2	0.6		FILL	
		4	1.1	Brown fine Sand and fine Gravel; Ash, brick and concrete fragments (FILL); Wet.	FILL	Pre-cleared to 5'
			1.8	Brown to grey Sandy CLAY; Dense; Wet.	CL	
10		1	9.1			
			9.3	Brown to grey Sandy CLAY, some fine and coarse Gravel; Dense; Wet.	CL	Collected laboratory sample 5FS-SW-21 (11-13')
		2	3.1	Brown fine SAND and fine GRAVEL; Dense; Wet.	GM	
15			3.5			Refusal at 16.1'

Bottom of borehole at 16.1 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-22

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/19/2026 - 7/16/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 3.5'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0						
	X	2.5	2.5	Dark brown Silty Sand and fine Gravel; Black granular material, brick, and concrete fragments (FILL); Dry to moist.	FILL	
	X	1	--	Light brown fine Sand and fine Gravel; Loose; Wet.	FILL	
				Cluster of sections of 3" diameter pipes; Concrete slab.	FILL	

Bottom of borehole at 3.5 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-22B

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/19/2026 - 7/16/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 13.5'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		2	79.2	Brown fine to coarse Sand; Brick and concrete fragments (FILL); Soft; Dry.	FILL	
			106	Brown fine to coarse Sand; Brick and concrete fragments (FILL); Soft; Wet.	FILL	
5		2.2	396	Dark grey Sandy CLAY; Odor; Soft to medium dense; Wet.		Collected laboratory sample 5FS-SW-22B (6-8')
			481			
10		2	461		CL	
			434			
		1.5	85.6	Grey fine SAND; Soft; Wet.	SP	Refusal at 13.5'

Bottom of borehole at 13.5 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-23

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/19/2026 - 6/19/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 15.7'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		2	0.7	Dark brown Silty Sand; Brick, concrete, and wood fragments, remains of brick road (FILL); Wet.	FILL	
		3	1.6			
5		2	3.7 4.1	Light brown fine Sand; concrete, and wood fragments (FILL); Wet.	FILL	Pre-cleared to 5'
10		4	79.7 210	Grey Sandy CLAY; Odor; Dense; Wet. Grey soft fine SAND; Odor, sheen, staining; Wet.	CL SP	
15		2	3.0	Grey soft fine SAND, some fine and coarse Gravel; Odor; Wet.		Refusal at 15.7'. No laboratory sample collected.

Bottom of borehole at 15.7 ft.

Additional Notes:

ROUX
200 Summit Drive
Suite 500
Burlington MA 01803
Telephone: (781)-569-4000
Fax: (781)-569-4001

BORING ID: 5FS-SW-23B

CLIENT: 5 Flint Street LLC
DRILLING CONTRACTOR: TREC
SITE NAME/ADDRESS: 5 Flint Street / BCP Site #C828162B
DRILLING METHOD: Hand Tools / Direct Push
CITY/STATE: Rochester, NY
SAMPLER TYPE: Macro Core
DATE(S): 6/19/2026 - 6/19/2026
BOREHOLE DIAMETER: 6"
LOGGED BY: S. Keenan / E. Spirito
BOREHOLE DEPTH: 16'

DEPTH (ft)	Sample Interval	RECOVERY (ft)	PID (ppm)	MATERIAL DESCRIPTION	U.S.C.S.	Notes
0		2	2.1	Dark brown Silty Sand; Brick, concrete, and wood fragments (FILL); Wet.	FILL	
5		3	0.8	Light brown Sand; 3' section of 4" to 6" diameter clay pipe; Brick, concrete, and wood fragments (FILL); Wet.	FILL	
		2	2.2 3.1	Light brown Sand; Brick, concrete, and wood fragments (FILL); Wet.	FILL	Pre-cleared to 5'
10		4	3.6	Grey Sandy Clay; Dense; Wet.	CL	Collected laboratory sample 5FS-SW-23B (11-13')
				Light brown fine to coarse SAND; Dense Wet.	SW	
			3.9	Grey fine to coarse SAND; Dense; Wet.	SW	
15		2	3.1 2.9	Tan fine to coarse SAND, some fine to coarse Gravel; Loose; Wet.	GM	Refusal at 16'

Bottom of borehole at 16.0 ft.

Additional Notes:

APPENDIX E

Laboratory Analytical Reports

ANALYTICAL REPORT

Lab Number:	L2615737
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT STREET
Project Number:	4694.0001B000
Report Date:	03/27/26

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Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2615737-01	5FS-SW-1 (6-8)	SOIL	Not Specified	03/20/26 12:00	03/20/26
L2615737-02	5FS-SW-2 (10-12)	SOIL	Not Specified	03/20/26 12:30	03/20/26
L2615737-03	5FS-PE-1 (4-5)	SOIL	Not Specified	03/20/26 11:30	03/20/26

Project Name:	5 FLINT STREET	**Lab Number:**	L2615737
Project Number:	4694.0001B000	**Report Date:**	03/27/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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: 5 FLINT STREET **Lab Number:** L2615737
Project Number: 4694.0001B000 **Report Date:** 03/27/26

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.

Sample Receipt

L2615737-03: The Client ID was specified by the client.

Volatile Organics

L2615737-01: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (346%) and 4-bromofluorobenzene (137%); however, the sample was not re-analyzed due to coelution with obvious interferences.

L2615737-02: The internal standard (IS) response(s) for chlorobenzene-d5 (39%) and the surrogate recoveries for toluene-d8 (1560%) and 4-bromofluorobenzene (232%) were outside the acceptance criteria due to obvious interferences. A High Level Methanol analysis was performed, and the results of both analyses are reported.

Total Metals

L2615737-01 and -02: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the sample matrix.

Chromium, Hexavalent

The WG2190328-5 Soluble MS recovery performed on L2615737-02 was outside the acceptance criteria for chromium, hexavalent (27%). This has been attributed to matrix interference. A post-spike was performed with a recovery of 97%.

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

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 03/27/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Organics by EPA 5035/8260 Low - Westborough Lab								
8260D	5FS-SW-1 (6-8)	L2615737-01	Toluene-d8	Surrogate	346	70-130	-	potential high bias
8260D	5FS-SW-1 (6-8)	L2615737-01	4-Bromofluorobenzene	Surrogate	137	70-130	-	potential high bias
8260D	5FS-SW-2 (10-12)	L2615737-02	Toluene-d8	Surrogate	1560	70-130	-	potential high bias
8260D	5FS-SW-2 (10-12)	L2615737-02	4-Bromofluorobenzene	Surrogate	232	70-130	-	potential high bias
Total Metals - Mansfield Lab								
6010D	Batch QC (L2615739-21)	WG2188757-3	Aluminum, Total	MS	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-21)	WG2188757-3	Antimony, Total	MS	43	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-21)	WG2188757-3	Cadmium, Total	MS	61	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-21)	WG2188757-3	Calcium, Total	MS	2940	75-125	01-02	potential high bias
6010D	Batch QC (L2615739-21)	WG2188757-3	Iron, Total	MS	1360	75-125	01-02	potential high bias
6010D	Batch QC (L2615739-21)	WG2188757-3	Lead, Total	MS	183	75-125	01-02	potential high bias
6010D	Batch QC (L2615739-21)	WG2188757-3	Magnesium, Total	MS	2770	75-125	01-02	potential high bias
6010D	Batch QC (L2615739-21)	WG2188757-3	Manganese, Total	MS	216	75-125	01-02	potential high bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Aluminum, Total	MSD	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Antimony, Total	MSD	46	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Cadmium, Total	MSD	67	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Calcium, Total	MSD	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Calcium, Total	MSD	42	75-125	01-02	non-directional bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Iron, Total	MSD	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Iron, Total	MSD	37	75-125	01-02	non-directional bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Lead, Total	MSD	62	75-125	01-02	non-directional bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Magnesium, Total	MSD	63	75-125	01-02	non-directional bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Magnesium, Total	MSD	222	75-125	01-02	potential high bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Manganese, Total	MSD	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-21)	WG2188757-4	Manganese, Total	MSD	41	75-125	01-02	non-directional bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Aluminum, Total	MS	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Antimony, Total	MS	44	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Arsenic, Total	MS	71	75-125	01-02	potential low bias

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
6010D	Batch QC (L2615739-24)	WG2188757-7	Barium, Total	MS	73	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Cadmium, Total	MS	42	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Calcium, Total	MS	2190	75-125	01-02	potential high bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Chromium, Total	MS	54	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Cobalt, Total	MS	63	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Copper, Total	MS	64	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Iron, Total	MS	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Lead, Total	MS	65	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Magnesium, Total	MS	3320	75-125	01-02	potential high bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Manganese, Total	MS	18	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Nickel, Total	MS	62	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Potassium, Total	MS	42	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Thallium, Total	MS	72	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Vanadium, Total	MS	68	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-7	Zinc, Total	MS	34	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Aluminum, Total	MSD	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Antimony, Total	MSD	21	75-125	01-02	non-directional bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Antimony, Total	MSD	57	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Cadmium, Total	MSD	35	75-125	01-02	non-directional bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Cadmium, Total	MSD	61	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Calcium, Total	MSD	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Calcium, Total	MSD	37	75-125	01-02	non-directional bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Chromium, Total	MSD	67	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Iron, Total	MSD	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Lead, Total	MSD	69	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Magnesium, Total	MSD	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Magnesium, Total	MSD	88	75-125	01-02	non-directional bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Manganese, Total	MSD	0	75-125	01-02	potential low bias
6010D	Batch QC (L2615739-24)	WG2188757-8	Potassium, Total	MSD	73	75-125	01-02	potential low bias

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
6010D	Batch QC (L2615739-24)	WG2188757-8	Zinc, Total	MSD	31	75-125	01-02	non-directional bias
General Chemistry - Westborough Lab								
9010C/9012B	Batch QC (L2615739-21)	WG2189137-4	Cyanide, Total	MS	72	75-125	01-02	potential low bias

ORGANICS

VOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-01
Client ID: 5FS-SW-1 (6-8)
Sample Location: Not Specified
Date Collected: 03/20/26 12:00
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 03/26/26 16:46
Analyst: JIC
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	7.7	3.5	1
1,1-Dichloroethane	ND		ug/kg	1.5	0.22	1
Chloroform	ND		ug/kg	2.3	0.22	1
Carbon tetrachloride	ND		ug/kg	1.5	0.35	1
Tetrachloroethene	ND		ug/kg	0.77	0.30	1
Chlorobenzene	ND		ug/kg	0.77	0.20	1
1,2-Dichloroethane	ND		ug/kg	1.5	0.40	1
1,1,1-Trichloroethane	ND		ug/kg	0.77	0.26	1
Benzene	ND		ug/kg	0.77	0.26	1
Toluene	ND		ug/kg	1.5	0.84	1
Ethylbenzene	ND		ug/kg	1.5	0.22	1
Vinyl chloride	ND		ug/kg	1.5	0.52	1
1,1-Dichloroethene	ND		ug/kg	1.5	0.37	1
trans-1,2-Dichloroethene	ND		ug/kg	2.3	0.21	1
Trichloroethene	ND		ug/kg	0.77	0.21	1
1,2-Dichlorobenzene	ND		ug/kg	3.1	0.22	1
1,3-Dichlorobenzene	ND		ug/kg	3.1	0.23	1
1,4-Dichlorobenzene	ND		ug/kg	3.1	0.26	1
Methyl tert butyl ether	ND		ug/kg	3.1	0.31	1
p/m-Xylene	1.2	J	ug/kg	3.1	0.86	1
o-Xylene	ND		ug/kg	1.5	0.45	1
Xylenes, Total	1.2	J	ug/kg	1.5	0.45	1
cis-1,2-Dichloroethene	ND		ug/kg	1.5	0.27	1
Acetone	120		ug/kg	15	7.4	1
2-Butanone	ND		ug/kg	15	3.4	1
n-Butylbenzene	1.1	J	ug/kg	1.5	0.26	1
sec-Butylbenzene	4.4		ug/kg	1.5	0.22	1
tert-Butylbenzene	6.5		ug/kg	3.1	0.18	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-01
Client ID: 5FS-SW-1 (6-8)
Sample Location: Not Specified
Date Collected: 03/20/26 12:00
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.5	0.26	1
1,3,5-Trimethylbenzene	0.32	J	ug/kg	3.1	0.30	1
1,2,4-Trimethylbenzene	1.1	J	ug/kg	3.1	0.52	1
Tentatively Identified Compounds						
Total TIC Compounds	1020	J	ug/kg			1
Cyclohexane, 1,1-dimethyl-	71.9	NJ	ug/kg			1
Unknown	70.4	J	ug/kg			1
Unknown	84.1	J	ug/kg			1
Unknown	79.4	J	ug/kg			1
Unknown Alkane	108	J	ug/kg			1
Unknown Cycloalkane	150	J	ug/kg			1
Unknown Cycloalkane	109	J	ug/kg			1
Cyclohexane, 1,1,3-trimethyl-	116	NJ	ug/kg			1
Cyclopentane, 1,2,4-trimethyl-	78.5	NJ	ug/kg			1
Unknown Cycloalkane	148	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	103		70-130
Toluene-d8	**346**	Q	70-130
4-Bromofluorobenzene	**137**	Q	70-130
Dibromofluoromethane	93		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-02
Client ID: 5FS-SW-2 (10-12)
Sample Location: Not Specified
Date Collected: 03/20/26 12:30
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 03/25/26 19:38
Analyst: JIC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High/8260 - Westborough Lab						
Methylene chloride	ND		ug/kg	320	140	1
1,1-Dichloroethane	ND		ug/kg	63	9.1	1
Chloroform	ND		ug/kg	95	8.8	1
Carbon tetrachloride	ND		ug/kg	63	14.	1
Tetrachloroethene	ND		ug/kg	32	12.	1
Chlorobenzene	ND		ug/kg	32	8.0	1
1,2-Dichloroethane	ND		ug/kg	63	16.	1
1,1,1-Trichloroethane	ND		ug/kg	32	10.	1
Benzene	ND		ug/kg	32	10.	1
Toluene	ND		ug/kg	63	34.	1
Ethylbenzene	ND		ug/kg	63	8.9	1
Vinyl chloride	ND		ug/kg	63	21.	1
1,1-Dichloroethene	ND		ug/kg	63	15.	1
trans-1,2-Dichloroethene	ND		ug/kg	95	8.6	1
Trichloroethene	ND		ug/kg	32	8.6	1
1,2-Dichlorobenzene	ND		ug/kg	130	9.1	1
1,3-Dichlorobenzene	ND		ug/kg	130	9.3	1
1,4-Dichlorobenzene	ND		ug/kg	130	11.	1
Methyl tert butyl ether	ND		ug/kg	130	13.	1
p/m-Xylene	ND		ug/kg	130	35.	1
o-Xylene	ND		ug/kg	63	18.	1
Xylenes, Total	ND		ug/kg	63	18.	1
cis-1,2-Dichloroethene	ND		ug/kg	63	11.	1
Acetone	ND		ug/kg	630	300	1
2-Butanone	ND		ug/kg	630	140	1
n-Butylbenzene	34	J	ug/kg	63	10.	1
sec-Butylbenzene	90		ug/kg	63	9.2	1
tert-Butylbenzene	55	J	ug/kg	130	7.4	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-02
Client ID: 5FS-SW-2 (10-12)
Sample Location: Not Specified
Date Collected: 03/20/26 12:30
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035 High/8260 - Westborough Lab						
n-Propylbenzene	ND		ug/kg	63	11.	1
1,3,5-Trimethylbenzene	ND		ug/kg	130	12.	1
1,2,4-Trimethylbenzene	ND		ug/kg	130	21.	1
Tentatively Identified Compounds						
Total TIC Compounds	39000	J	ug/kg			1
Unknown	1920	J	ug/kg			1
Cyclopentane, 1,2,4-trimethyl-	5110	NJ	ug/kg			1
Unknown Cycloalkane	8280	J	ug/kg			1
Unknown Cycloalkane	1670	J	ug/kg			1
Cyclohexane, 1,1-dimethyl-	5570	NJ	ug/kg			1
Hexane, 2,4-dimethyl-	3980	NJ	ug/kg			1
Pentane, 2,3-dimethyl-	3270	NJ	ug/kg			1
Unknown	3720	J	ug/kg			1
Unknown Cycloalkane	1700	J	ug/kg			1
Hexane, 2,3-dimethyl-	3800	NJ	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	126		70-130
4-Bromofluorobenzene	117		70-130
Dibromofluoromethane	88		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-02
Client ID: 5FS-SW-2 (10-12)
Sample Location: Not Specified
Date Collected: 03/20/26 12:30
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 03/26/26 17:13
Analyst: JIC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.0	2.7	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.17	1
Chloroform	ND		ug/kg	1.8	0.17	1
Carbon tetrachloride	ND		ug/kg	1.2	0.27	1
Tetrachloroethene	ND		ug/kg	0.60	0.23	1
Chlorobenzene	ND		ug/kg	0.60	0.15	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.31	1
1,1,1-Trichloroethane	ND		ug/kg	0.60	0.20	1
Benzene	ND		ug/kg	0.60	0.20	1
Toluene	ND		ug/kg	1.2	0.65	1
Ethylbenzene	ND		ug/kg	1.2	0.17	1
Vinyl chloride	ND		ug/kg	1.2	0.40	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.28	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	0.16	1
Trichloroethene	ND		ug/kg	0.60	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.4	0.17	1
1,3-Dichlorobenzene	ND		ug/kg	2.4	0.18	1
1,4-Dichlorobenzene	ND		ug/kg	2.4	0.20	1
Methyl tert butyl ether	ND		ug/kg	2.4	0.24	1
p/m-Xylene	2.3	J	ug/kg	2.4	0.67	1
o-Xylene	ND		ug/kg	1.2	0.35	1
Xylenes, Total	2.3	J	ug/kg	1.2	0.35	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.21	1
Acetone	22		ug/kg	12	5.7	1
2-Butanone	ND		ug/kg	12	2.6	1
n-Butylbenzene	6.6		ug/kg	1.2	0.20	1
sec-Butylbenzene	49		ug/kg	1.2	0.17	1
tert-Butylbenzene	43		ug/kg	2.4	0.14	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-02
Client ID: 5FS-SW-2 (10-12)
Sample Location: Not Specified
Date Collected: 03/20/26 12:30
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.2	0.20	1
1,3,5-Trimethylbenzene	5.5		ug/kg	2.4	0.23	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.4	0.40	1
Tentatively Identified Compounds						
Total TIC Compounds	519	J	ug/kg			1
Unknown Cycloalkane	26.6	J	ug/kg			1
Unknown	36.4	J	ug/kg			1
Cyclohexane, butyl-	49.1	NJ	ug/kg			1
Cyclohexane, 1,1-dimethyl-	55.5	NJ	ug/kg			1
Unknown	61.8	J	ug/kg			1
Unknown	47.3	J	ug/kg			1
Unknown	52.8	J	ug/kg			1
Unknown Alkane	46.3	J	ug/kg			1
Unknown Cycloalkane	108	J	ug/kg			1
Unknown	34.7	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	**1560**	Q	70-130
4-Bromofluorobenzene	**232**	Q	70-130
Dibromofluoromethane	90		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 03/25/26 10:05
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 02 Batch: WG2189493-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	26	J	ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Vinyl chloride	ND		ug/kg	50	17.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8
Trichloroethene	ND		ug/kg	25	6.8
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
Acetone	ND		ug/kg	500	240

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 03/25/26 10:05
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 02 Batch: WG2189493-5					
2-Butanone	ND		ug/kg	500	110
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
n-Propylbenzene	ND		ug/kg	50	8.6
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	104		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	98		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 03/26/26 10:11
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 01-02 Batch: WG2189845-14					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.22	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 03/26/26 10:11
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 01-02 Batch: WG2189845-14					
Acetone	ND		ug/kg	10	4.8
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 02 Batch: WG2189493-3 WG2189493-4								
Methylene chloride	96		96		70-130	0		30
1,1-Dichloroethane	98		99		70-130	1		30
Chloroform	89		88		70-130	1		30
Carbon tetrachloride	102		100		70-130	2		30
Tetrachloroethene	96		95		70-130	1		30
Chlorobenzene	96		95		70-130	1		30
1,2-Dichloroethane	105		103		70-130	2		30
1,1,1-Trichloroethane	88		89		70-130	1		30
Benzene	92		92		70-130	0		30
Toluene	95		97		70-130	2		30
Ethylbenzene	96		96		70-130	0		30
Vinyl chloride	117		121		67-130	3		30
1,1-Dichloroethene	89		91		65-135	2		30
trans-1,2-Dichloroethene	82		82		70-130	0		30
Trichloroethene	95		94		70-130	1		30
1,2-Dichlorobenzene	97		98		70-130	1		30
1,3-Dichlorobenzene	96		98		70-130	2		30
1,4-Dichlorobenzene	96		98		70-130	2		30
Methyl tert butyl ether	82		83		66-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 02 Batch: WG2189493-3 WG2189493-4								
p/m-Xylene	94		94		70-130	0		30
o-Xylene	94		96		70-130	2		30
cis-1,2-Dichloroethene	86		87		70-130	1		30
Acetone	124		121		54-140	2		30
2-Butanone	108		104		70-130	4		30
n-Butylbenzene	106		106		70-130	0		30
sec-Butylbenzene	103		104		70-130	1		30
tert-Butylbenzene	99		100		70-130	1		30
n-Propylbenzene	102		102		70-130	0		30
1,3,5-Trimethylbenzene	100		99		70-130	1		30
1,2,4-Trimethylbenzene	98		100		70-130	2		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110		109		70-130
Toluene-d8	105		105		70-130
4-Bromofluorobenzene	99		97		70-130
Dibromofluoromethane	98		94		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 01-02 Batch: WG2189845-12 WG2189845-13								
Methylene chloride	107		101		70-130	6		30
1,1-Dichloroethane	107		102		70-130	5		30
Chloroform	100		98		70-130	2		30
Carbon tetrachloride	108		106		70-130	2		30
Tetrachloroethene	113		111		70-130	2		30
Chlorobenzene	103		104		70-130	1		30
1,2-Dichloroethane	94		97		70-130	3		30
1,1,1-Trichloroethane	105		104		70-130	1		30
Benzene	103		103		70-130	0		30
Toluene	103		103		70-130	0		30
Ethylbenzene	105		104		70-130	1		30
Vinyl chloride	130		114		67-130	13		30
1,1-Dichloroethene	123		112		65-135	9		30
trans-1,2-Dichloroethene	114		108		70-130	5		30
Trichloroethene	100		101		70-130	1		30
1,2-Dichlorobenzene	101		101		70-130	0		30
1,3-Dichlorobenzene	104		104		70-130	0		30
1,4-Dichlorobenzene	99		100		70-130	1		30
Methyl tert butyl ether	104		101		66-130	3		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 01-02 Batch: WG2189845-12 WG2189845-13								
p/m-Xylene	104		104		70-130	0		30
o-Xylene	103		102		70-130	1		30
cis-1,2-Dichloroethene	102		105		70-130	3		30
Acetone	63		62		54-140	2		30
2-Butanone	74		92		70-130	22		30
n-Butylbenzene	108		107		70-130	1		30
sec-Butylbenzene	108		107		70-130	1		30
tert-Butylbenzene	104		104		70-130	0		30
n-Propylbenzene	108		106		70-130	2		30
1,3,5-Trimethylbenzene	103		102		70-130	1		30
1,2,4-Trimethylbenzene	102		102		70-130	0		30

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

SEMIVOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-01
Client ID: 5FS-SW-1 (6-8)
Sample Location: Not Specified

Date Collected: 03/20/26 12:00
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 03/23/26 20:28
Analyst: SLR
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 03/22/26 04:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	170	22.	1
Hexachlorobenzene	ND		ug/kg	120	23.	1
Fluoranthene	ND		ug/kg	120	24.	1
Naphthalene	ND		ug/kg	210	26.	1
Nitrobenzene	ND		ug/kg	42	18.	1
Benzo(a)anthracene	ND		ug/kg	120	24.	1
Benzo(a)pyrene	ND		ug/kg	170	51.	1
Benzo(b)fluoranthene	ND		ug/kg	120	35.	1
Benzo(k)fluoranthene	ND		ug/kg	120	34.	1
Chrysene	ND		ug/kg	120	22.	1
Acenaphthylene	ND		ug/kg	170	32.	1
Anthracene	ND		ug/kg	120	41.	1
Benzo(ghi)perylene	32	J	ug/kg	170	25.	1
Fluorene	ND		ug/kg	210	20.	1
Phenanthrene	32	J	ug/kg	120	25.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	24.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	170	29.	1
Pyrene	ND		ug/kg	120	21.	1
Aniline	ND		ug/kg	42	16.	1
Dibenzofuran	48	J	ug/kg	210	20.	1
Pentachlorophenol	ND		ug/kg	170	46.	1
Phenol	860		ug/kg	210	32.	1
2-Methylphenol	370		ug/kg	210	32.	1
3-Methylphenol/4-Methylphenol	1100		ug/kg	300	33.	1
1,4-Dioxane	ND		ug/kg	31	9.6	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-01
Client ID: 5FS-SW-1 (6-8)
Sample Location: Not Specified
Date Collected: 03/20/26 12:00
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	18800	J	ug/kg			1
Unknown	1640	J	ug/kg			1
Unknown Alkane	2600	J	ug/kg			1
Unknown	587	J	ug/kg			1
Unknown	1510	J	ug/kg			1
Unknown Alkane	4180	J	ug/kg			1
Unknown Ketone	526	J	ug/kg			1
Unknown	543	J	ug/kg			1
Unknown Phenol	583	J	ug/kg			1
Unknown	781	J	ug/kg			1
Unknown	1020	J	ug/kg			1
Unknown	1190	J	ug/kg			1
Unknown Phenol	1070	J	ug/kg			1
Unknown Phenol	1110	J	ug/kg			1
Unknown	709	J	ug/kg			1
Unknown Alkane	745	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	61		25-120
Phenol-d6	66		10-120
Nitrobenzene-d5	83		23-120
2-Fluorobiphenyl	76		30-120
2,4,6-Tribromophenol	107		10-136
4-Terphenyl-d14	78		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-02
Client ID: 5FS-SW-2 (10-12)
Sample Location: Not Specified

Date Collected: 03/20/26 12:30
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 03/23/26 20:49
Analyst: SLR
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 03/22/26 04:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	21.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	23	J	ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	40	18.	1
Benzo(a)anthracene	ND		ug/kg	120	23.	1
Benzo(a)pyrene	ND		ug/kg	160	49.	1
Benzo(b)fluoranthene	ND		ug/kg	120	34.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	ND		ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	24.	1
Fluorene	ND		ug/kg	200	20.	1
Phenanthrene	63	J	ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	20	J	ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	31.	1
1,4-Dioxane	ND		ug/kg	30	9.2	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-02
Client ID: 5FS-SW-2 (10-12)
Sample Location: Not Specified
Date Collected: 03/20/26 12:30
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	30900	J	ug/kg			1
Unknown Cycloalkane	1280	J	ug/kg			1
Unknown Cycloalkane	2320	J	ug/kg			1
Unknown Alkane	2370	J	ug/kg			1
Unknown	3160	J	ug/kg			1
Unknown Alkane	1630	J	ug/kg			1
Unknown Alkane	1750	J	ug/kg			1
Unknown	2280	J	ug/kg			1
Unknown	2750	J	ug/kg			1
Unknown	1480	J	ug/kg			1
Unknown Alkane	1370	J	ug/kg			1
Unknown Alkane	1430	J	ug/kg			1
Unknown Alkane	1950	J	ug/kg			1
Unknown Cycloalkane	1350	J	ug/kg			1
Unknown	1810	J	ug/kg			1
Unknown	3980	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	72		25-120
Phenol-d6	76		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	80		30-120
2,4,6-Tribromophenol	103		10-136
4-Terphenyl-d14	84		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-03
Client ID: 5FS-PE-1 (4-5)
Sample Location: Not Specified
Date Collected: 03/20/26 11:30
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 03/23/26 21:10
Analyst: SLR
Percent Solids: 79%
Extraction Method: EPA 3546
Extraction Date: 03/22/26 04:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	170	22.	1
Hexachlorobenzene	ND		ug/kg	120	23.	1
Fluoranthene	180		ug/kg	120	24.	1
Naphthalene	ND		ug/kg	210	25.	1
Nitrobenzene	ND		ug/kg	42	18.	1
Benzo(a)anthracene	98	J	ug/kg	120	24.	1
Benzo(a)pyrene	99	J	ug/kg	170	51.	1
Benzo(b)fluoranthene	140		ug/kg	120	35.	1
Benzo(k)fluoranthene	46	J	ug/kg	120	33.	1
Chrysene	130		ug/kg	120	22.	1
Acenaphthylene	ND		ug/kg	170	32.	1
Anthracene	ND		ug/kg	120	41.	1
Benzo(ghi)perylene	60	J	ug/kg	170	24.	1
Fluorene	ND		ug/kg	210	20.	1
Phenanthrene	170		ug/kg	120	25.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	24.	1
Indeno(1,2,3-cd)pyrene	60	J	ug/kg	170	29.	1
Pyrene	160		ug/kg	120	21.	1
Aniline	ND		ug/kg	42	16.	1
Dibenzofuran	ND		ug/kg	210	20.	1
Pentachlorophenol	ND		ug/kg	170	46.	1
Phenol	ND		ug/kg	210	32.	1
2-Methylphenol	ND		ug/kg	210	32.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	33.	1
1,4-Dioxane	ND		ug/kg	31	9.6	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-03
Client ID: 5FS-PE-1 (4-5)
Sample Location: Not Specified
Date Collected: 03/20/26 11:30
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	75		25-120
Phenol-d6	83		10-120
Nitrobenzene-d5	88		23-120
2-Fluorobiphenyl	88		30-120
2,4,6-Tribromophenol	113		10-136
4-Terphenyl-d14	84		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 03/23/26 13:27
Analyst: SLR

Extraction Method: EPA 3546
Extraction Date: 03/22/26 04:11

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG2187944-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Fluoranthene	ND		ug/kg	99	19.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	33	14.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	26.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Aniline	ND		ug/kg	33	12.
Dibenzofuran	ND		ug/kg	160	16.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 03/23/26 13:27
Analyst: SLR

Extraction Method: EPA 3546
Extraction Date: 03/22/26 04:11

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG2187944-1					
1,4-Dioxane	ND		ug/kg	25	7.6
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		25-120
Phenol-d6	72		10-120
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	79		30-120
2,4,6-Tribromophenol	125		10-136
4-Terphenyl-d14	95		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG2187944-2 WG2187944-3								
Acenaphthene	93		85		31-137	9		50
Hexachlorobenzene	104		94		40-140	10		50
Fluoranthene	103		92		40-140	11		50
Naphthalene	86		81		40-140	6		50
Nitrobenzene	90		86		40-140	5		50
Benzo(a)anthracene	106		96		40-140	10		50
Benzo(a)pyrene	120		105		40-140	13		50
Benzo(b)fluoranthene	116		105		40-140	10		50
Benzo(k)fluoranthene	119		103		40-140	14		50
Chrysene	104		94		40-140	10		50
Acenaphthylene	102		92		40-140	10		50
Anthracene	102		93		40-140	9		50
Benzo(ghi)perylene	114		102		40-140	11		50
Fluorene	96		88		40-140	9		50
Phenanthrene	99		90		40-140	10		50
Dibenzo(a,h)anthracene	112		99		40-140	12		50
Indeno(1,2,3-cd)pyrene	111		98		40-140	12		50
Pyrene	101		90		35-142	12		50
Aniline	57		57		40-140	0		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG2187944-2 WG2187944-3								
Dibenzofuran	94		86		40-140	9		50
Pentachlorophenol	96		85		17-109	12		50
Phenol	85		80		26-90	6		50
2-Methylphenol	93		87		30-130	7		50
3-Methylphenol/4-Methylphenol	99		92		30-130	7		50
1,4-Dioxane	62		54		40-140	14		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	83		78		25-120
Phenol-d6	87		80		10-120
Nitrobenzene-d5	91		86		23-120
2-Fluorobiphenyl	94		84		30-120
2,4,6-Tribromophenol	133		120		10-136
4-Terphenyl-d14	102		88		18-120

METALS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-01
Client ID: 5FS-SW-1 (6-8)
Sample Location: Not Specified
Date Collected: 03/20/26 12:00
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7500		mg/kg	10.0	3.26	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Antimony, Total	ND		mg/kg	5.02	3.86	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Arsenic, Total	3.28		mg/kg	1.00	0.433	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Barium, Total	44.9		mg/kg	1.00	0.106	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Beryllium, Total	0.400	J	mg/kg	0.502	0.055	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Cadmium, Total	0.103	J	mg/kg	1.00	0.055	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Calcium, Total	1780		mg/kg	10.0	5.69	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Chromium, Total	14.3		mg/kg	1.00	0.851	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Cobalt, Total	7.09		mg/kg	2.01	0.249	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Copper, Total	14.2		mg/kg	1.00	0.228	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Iron, Total	16700		mg/kg	25.1	8.02	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Lead, Total	10.3		mg/kg	5.02	0.239	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Magnesium, Total	2610		mg/kg	10.0	1.64	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Manganese, Total	144		mg/kg	1.00	0.538	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Mercury, Total	ND		mg/kg	0.090	0.059	1	03/24/26 11:18	03/24/26 14:11	EPA 7471B	1,7471B	RJG
Nickel, Total	16.9		mg/kg	2.51	0.810	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Potassium, Total	594		mg/kg	251	50.8	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Selenium, Total	ND		mg/kg	2.01	0.330	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Silver, Total	ND		mg/kg	0.502	0.299	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Sodium, Total	ND		mg/kg	201	106.	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Thallium, Total	ND		mg/kg	2.01	0.905	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Vanadium, Total	11.9		mg/kg	1.00	0.151	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
Zinc, Total	45.8		mg/kg	5.02	0.608	2	03/24/26 10:05	03/24/26 18:28	EPA 3050B	1,6010D	ERC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	14.3		mg/kg	1.03	0.851	1		03/27/26 14:21	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-02
Client ID: 5FS-SW-2 (10-12)
Sample Location: Not Specified
Date Collected: 03/20/26 12:30
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6030		mg/kg	9.42	3.06	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Antimony, Total	ND		mg/kg	4.71	3.62	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Arsenic, Total	3.91		mg/kg	0.942	0.407	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Barium, Total	42.1		mg/kg	0.942	0.100	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Beryllium, Total	0.300	J	mg/kg	0.471	0.052	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Cadmium, Total	0.139	J	mg/kg	0.942	0.052	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Calcium, Total	2400		mg/kg	9.42	5.34	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Chromium, Total	9.72		mg/kg	0.942	0.798	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Cobalt, Total	6.25		mg/kg	1.88	0.234	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Copper, Total	13.0		mg/kg	0.942	0.214	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Iron, Total	15700		mg/kg	23.5	7.53	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Lead, Total	11.5		mg/kg	4.71	0.224	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Magnesium, Total	2140		mg/kg	9.42	1.53	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Manganese, Total	676		mg/kg	0.942	0.505	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Mercury, Total	ND		mg/kg	0.093	0.061	1	03/24/26 11:18	03/24/26 14:15	EPA 7471B	1,7471B	RJG
Nickel, Total	14.8		mg/kg	2.35	0.761	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Potassium, Total	421		mg/kg	235	47.7	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Selenium, Total	ND		mg/kg	1.88	0.310	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Silver, Total	ND		mg/kg	0.471	0.281	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Sodium, Total	ND		mg/kg	188	99.8	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Thallium, Total	ND		mg/kg	1.88	0.849	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Vanadium, Total	10.2		mg/kg	0.942	0.142	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
Zinc, Total	42.4		mg/kg	4.71	0.571	2	03/24/26 10:05	03/24/26 18:31	EPA 3050B	1,6010D	ERC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	9.72		mg/kg	0.988	0.798	1		03/27/26 14:21	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG2188757-1										
Aluminum, Total	ND		mg/kg	4.00	1.30	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Antimony, Total	ND		mg/kg	2.00	1.54	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Arsenic, Total	ND		mg/kg	0.400	0.173	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Barium, Total	ND		mg/kg	0.400	0.042	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Beryllium, Total	ND		mg/kg	0.200	0.022	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Cadmium, Total	ND		mg/kg	0.400	0.022	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Calcium, Total	ND		mg/kg	4.00	2.27	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Chromium, Total	ND		mg/kg	0.400	0.339	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Cobalt, Total	ND		mg/kg	0.800	0.099	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Copper, Total	ND		mg/kg	0.400	0.091	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Iron, Total	ND		mg/kg	10.0	3.20	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Lead, Total	ND		mg/kg	2.00	0.095	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Magnesium, Total	ND		mg/kg	4.00	0.652	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Manganese, Total	ND		mg/kg	0.400	0.214	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Nickel, Total	ND		mg/kg	1.00	0.323	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Potassium, Total	ND		mg/kg	100	20.3	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Selenium, Total	ND		mg/kg	0.800	0.132	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Silver, Total	ND		mg/kg	0.200	0.119	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Sodium, Total	ND		mg/kg	80.0	42.4	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Thallium, Total	ND		mg/kg	0.800	0.361	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Vanadium, Total	ND		mg/kg	0.400	0.060	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC
Zinc, Total	ND		mg/kg	2.00	0.242	1	03/24/26 10:05	03/24/26 16:15	1,6010D	ERC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG2188760-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	03/24/26 11:18	03/24/26 13:12	1,7471B	RJG

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG2188757-2								
Aluminum, Total	102		-		80-120	-		20
Antimony, Total	101		-		80-120	-		20
Arsenic, Total	98		-		80-120	-		20
Barium, Total	101		-		80-120	-		20
Beryllium, Total	100		-		80-120	-		20
Cadmium, Total	95		-		80-120	-		20
Calcium, Total	104		-		80-120	-		20
Chromium, Total	98		-		80-120	-		20
Cobalt, Total	96		-		80-120	-		20
Copper, Total	100		-		80-120	-		20
Iron, Total	103		-		80-120	-		20
Lead, Total	99		-		80-120	-		20
Magnesium, Total	99		-		80-120	-		20
Manganese, Total	100		-		80-120	-		20
Nickel, Total	99		-		80-120	-		20
Potassium, Total	102		-		80-120	-		20
Selenium, Total	99		-		80-120	-		20
Silver, Total	101		-		80-120	-		20
Sodium, Total	104		-		80-120	-		20
Thallium, Total	97		-		80-120	-		20
Vanadium, Total	100		-		80-120	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG2188757-2					
Zinc, Total	95	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG2188760-2					
Mercury, Total	96	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG2188757-3 WG2188757-4 QC Sample: L2615739-21 Client ID: MS Sample												
Aluminum, Total	6610	190	6080	**0**	Q	5220	**0**	Q	75-125	15		20
Antimony, Total	ND	47.6	20.5	**43**	Q	20.8	**46**	Q	75-125	1		20
Arsenic, Total	3.31	11.4	12.3	79		11.8	78		75-125	4		20
Barium, Total	66.5	190	254	98		233	92		75-125	9		20
Beryllium, Total	0.262J	4.76	4.58	96		4.36	97		75-125	5		20
Cadmium, Total	ND	5.04	3.06	**61**	Q	3.19	**67**	Q	75-125	4		20
Calcium, Total	108000	952	136000	**2940**	Q	89000	**0**	Q	75-125	**42**	Q	20
Chromium, Total	7.48	19	24.4	89		21.4	77		75-125	13		20
Cobalt, Total	2.47	47.6	40.6	80		38.6	80		75-125	5		20
Copper, Total	11.2	23.8	34.9	100		29.6	82		75-125	16		20
Iron, Total	8060	95.2	9350	**1360**	Q	6420	**0**	Q	75-125	**37**	Q	20
Lead, Total	14.6	50.4	107	**183**	Q	56.4	88		75-125	**62**	Q	20
Magnesium, Total	24800	952	51200	**2770**	Q	26800	**222**	Q	75-125	**63**	Q	20
Manganese, Total	255	47.6	358	**216**	Q	237	**0**	Q	75-125	**41**	Q	20
Nickel, Total	6.83	47.6	45.7	82		44.3	83		75-125	3		20
Potassium, Total	1120	952	1870	79		1840	80		75-125	2		20
Selenium, Total	ND	11.4	12.4	108		11.2	104		75-125	10		20
Silver, Total	ND	4.76	4.91	103		4.53	100		75-125	8		20
Sodium, Total	405	952	1400	104		1330	103		75-125	5		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG2188757-3 WG2188757-4 QC Sample: L2615739-21 Client ID: MS Sample												
Thallium, Total	ND	11.4	9.76	85		9.19	85		75-125	6		20
Vanadium, Total	9.68	47.6	52.6	90		48.3	86		75-125	9		20
Zinc, Total	46.2	47.6	99.3	112		85.7	88		75-125	15		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG2188757-7 WG2188757-8 QC Sample: L2615739-24 Client ID: MS Sample												
Aluminum, Total	7830	183	4420	**0**	Q	5050	**0**	Q	75-125	13		20
Antimony, Total	ND	45.7	20.3	**44**	Q	25.1	**57**	Q	75-125	**21**	Q	20
Arsenic, Total	2.39	11	10.2	**71**	Q	10.7	79		75-125	5		20
Barium, Total	56.1	183	190	**73**	Q	215	90		75-125	12		20
Beryllium, Total	0.291J	4.57	3.54	78		4.06	92		75-125	14		20
Cadmium, Total	ND	4.84	2.01	**42**	Q	2.85	**61**	Q	75-125	**35**	Q	20
Calcium, Total	108000	913	128000	**2190**	Q	87600	**0**	Q	75-125	**37**	Q	20
Chromium, Total	7.97	18.3	17.8	**54**	Q	19.8	**67**	Q	75-125	11		20
Cobalt, Total	2.56	45.7	31.3	**63**	Q	36.1	76		75-125	14		20
Copper, Total	9.87	22.8	24.5	**64**	Q	27.0	78		75-125	10		20
Iron, Total	7210	91.3	5380	**0**	Q	6060	**0**	Q	75-125	12		20
Lead, Total	15.7	48.4	47.4	**65**	Q	47.9	**69**	Q	75-125	1		20
Magnesium, Total	27500	913	57800	**3320**	Q	22400	**0**	Q	75-125	**88**	Q	20
Manganese, Total	298	45.7	306	**18**	Q	255	**0**	Q	75-125	18		20
Nickel, Total	6.95	45.7	35.3	**62**	Q	39.8	75		75-125	12		20
Potassium, Total	959	913	1340	**42**	Q	1600	**73**	Q	75-125	18		20
Selenium, Total	ND	11	10.0	91		11.0	104		75-125	10		20
Silver, Total	ND	4.57	3.93	86		4.24	97		75-125	8		20
Sodium, Total	354	913	1060	77		1130	88		75-125	6		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG2188757-7 WG2188757-8 QC Sample: L2615739-24 Client ID: MS Sample												
Thallium, Total	ND	11	7.93	**72**	Q	8.62	82		75-125	8		20
Vanadium, Total	9.44	45.7	40.7	**68**	Q	45.9	83		75-125	12		20
Zinc, Total	35.8	45.7	51.1	**34**	Q	69.7	77		75-125	**31**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG2188760-3 WG2188760-4 QC Sample: L2615739-21 Client ID: MS Sample												
Mercury, Total	0.104	1.56	1.57	94		1.92	96		80-120	20		20
Total Metals - Mansfield Lab Associated sample(s): 01-02 QC Batch ID: WG2188760-5 WG2188760-6 QC Sample: L2615739-24 Client ID: MS Sample												
Mercury, Total	ND	1.5	1.51	100		1.76	104		80-120	15		20

INORGANICS
&
MISCELLANEOUS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-01
Client ID: 5FS-SW-1 (6-8)
Sample Location: Not Specified

Date Collected: 03/20/26 12:00
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.7		%	0.100	NA	1	-	03/21/26 12:00	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.2	0.25	1	03/24/26 21:50	03/25/26 14:07	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	1.03	0.206	1	03/27/26 08:01	03/27/26 14:21	1,7196A	LOF

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-02
Client ID: 5FS-SW-2 (10-12)
Sample Location: Not Specified

Date Collected: 03/20/26 12:30
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.0		%	0.100	NA	1	-	03/21/26 12:00	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.2	0.26	1	03/24/26 21:50	03/25/26 14:08	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.988	0.198	1	03/27/26 08:01	03/27/26 14:21	1,7196A	LOF

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

SAMPLE RESULTS

Lab ID: L2615737-03
Client ID: 5FS-PE-1 (4-5)
Sample Location: Not Specified

Date Collected: 03/20/26 11:30
Date Received: 03/20/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.0		%	0.100	NA	1	-	03/21/26 12:00	121,2540G	ROI

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG2189137-1										
Cyanide, Total	ND		mg/kg	0.91	0.19	1	03/24/26 21:50	03/25/26 13:55	1,9010C/9012B	JER
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG2190328-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	03/27/26 08:01	03/27/26 14:21	1,7196A	LOF

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG2189137-2 WG2189137-3								
Cyanide, Total	84		100		80-120	14		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG2190328-2								
Chromium, Hexavalent	103		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG2189137-4 WG2189137-5 QC Sample: L2615739-21 Client ID: MS Sample												
Cyanide, Total	ND	11	8.1	**72**	Q	11	97		75-125	30		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG2189137-6 WG2189137-7 QC Sample: L2615739-24 Client ID: MS Sample												
Cyanide, Total	ND	11	8.2	76		12	110		75-125	34		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG2190328-4 QC Sample: L2615737-02 Client ID: 5FS-SW-2 (10-12)												
Chromium, Hexavalent	ND	1490	1290	86		-	-		75-125	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG2187813-1 QC Sample: L2615630-04 Client ID: DUP Sample						
Solids, Total	77.3	77.0	%	0		10
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG2190328-6 QC Sample: L2615737-02 Client ID: 5FS-SW-2 (10-12)						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Sample Receipt and Container Information

Were project specific reporting limits specified? YES

Cooler Information

Cooler	Custody Seal
A	Absent
B	Absent
C	Absent
D	Absent

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2615737-01A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2615737-01B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2615737-01C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2615737-01D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2615737-01E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TL-TI(180),SE-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),ZN-TI(180),V-TI(180),CO-TI(180),MG-TI(180),HG-T(28),FE-TI(180),MN-TI(180),NA-TI(180),K-TI(180),CD-TI(180),CA-TI(180)
L2615737-01F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2615737-01G	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2615737-01X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2615737-01Y	Vial Water preserved split	NA	NA			Y	Absent	21-MAR-26 05:49	NYTCL-8260HLW-R2(14)
L2615737-01Z	Vial Water preserved split	NA	NA			Y	Absent	21-MAR-26 05:49	NYTCL-8260HLW-R2(14)
L2615737-02A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14),NYTCL-8260H-R2(14)
L2615737-02B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14),NYTCL-8260H-R2(14)
L2615737-02C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14),NYTCL-8260H-R2(14)
L2615737-02D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2615737
Report Date: 03/27/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2615737-02E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),TL-TI(180),AL-TI(180),NI-TI(180),SB-TI(180),ZN-TI(180),CU-TI(180),SE-TI(180),PB-TI(180),V-TI(180),CO-TI(180),MG-TI(180),MN-TI(180),FE-TI(180),HG-T(28),CA-TI(180),K-TI(180),NA-TI(180),CD-TI(180)
L2615737-02F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2615737-02G	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2615737-02X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14),NYTCL-8260H-R2(14)
L2615737-02Y	Vial Water preserved split	NA	NA			Y	Absent	21-MAR-26 05:49	NYTCL-8260HLW-R2(14),NYTCL-8260H-R2(14)
L2615737-02Z	Vial Water preserved split	NA	NA			Y	Absent	21-MAR-26 05:49	NYTCL-8260HLW-R2(14),NYTCL-8260H-R2(14)
L2615737-03A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2615737-03B	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT STREET	**Lab Number:**	L2615737
Project Number:	4694.0001B000	**Report Date:**	03/27/26

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:	5 FLINT STREET	**Lab Number:**	L2615737
Project Number:	4694.0001B000	**Report Date:**	03/27/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT STREET	**Lab Number:**	L2615737
Project Number:	4694.0001B000	**Report Date:**	03/27/26

Data Qualifiers

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: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2615737
Report Date: 03/27/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

107 Calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v02 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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-G, 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.**

ENV-FORM-WES2-0065 v02 Certificate/Approval Program Summary

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water

EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, ASTM D516, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water

SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, ASTMD516, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY kY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

L2615737

ROUX – BENCH

L2615737

Company Name: Roux	Contact/Report To: Eric Runstrom
Street Address: 5 Flint Street, Rochester, NY	Phone #: 781.569.4031
	E-Mail: erunstrom@rouxinc.com
	Cc E-Mail: sbantantos@rouxinc.com; nsurack@rouxinc.com
Customer Project #: 4694.00018000	Invoice to: Roux
Project Name: 5 Flint Street	Invoice E-mail: rouxap@rouxinc.com
Site Collection Info/Facility ID (as applicable):	Purchase Order # (if applicable):
	Quote #: 00203091
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET	County / State origin of sample(s): Monroe County, New York

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [X] EQUIS [X] Other Roux MA formatted EDDS

Regulatory Program (DW, RCRA, etc.) as applicable: Reportable [X] Yes [ ] No

Part 375, Table 6.8 (a), please include TICS for both VOCs and SVOCs. Category B deliverable.

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other _____

Date Results Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 6 | 10 | 10

Identify Container Preservative Type***: 8 | 11 | 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

	Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs + TICS (8260)	SVOCs + TICS (8270)	TAL Metals + total cyanide + tri and hexa Chromium (6010D)	Sample Comment
1	SFS-SW-1 (6-8)	SOIL	GRAB	N/A	N/A	3/20/26	12:00	8	N/A	N/A	X	X	X	
2	SFS-SW-2 (10-12)	SOIL	GRAB	N/A	N/A	3/20/26	12:30	8	N/A	N/A	X	X	X	
3	SFS-PE-1 (5)	SOIL	GRAB	N/A	N/A	3/20/26	11:30	2	N/A	N/A		X		

Lab Use Only: Proj. Mgr: | Acctnum / Client ID: | Table #: | Profile / Template: | Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:

Collected By: Printed Name / Signature

Customer Remarks / Special Conditions / Possible Hazards: NA

Coolers: | Thermometer ID: | Correction Factor (°C): | Obs. Temp. (°C): | Corrected Temp. (°C): | [ ] On ice

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:	Tracking Number:
Roux	3/20/26	NSMT-Pace	3/20/26 15:30	
NSMT-Pace	3/20/26	Roch, NY	3/20/26 17:00	Delivered by: [ ] In-Person [ ] Courier
Russell B. Bixby	3.20.26 18:18		3/20 2200	[ ] FedEx [ ] UPS [ ] Other
	3/21 130		03/21 0130	

Page: 1 of 1

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

ENV-FRM-CORO-0019_v02_110123 ©

Sample Delivery Group Summary

Pace Job Number : L2615737

Account Name : Roux
Project Number : 4694.0001B000
Project Name : 5 FLINT STREET

Received : 20-MAR-2026
Reviewer : Maile Kolton

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	4.1	
B	Absent/	Ice	2.8	
C	Absent/	Ice	3.9	
D	Absent/	Ice	4.4	

Condition Information

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

Volatile Organics/VPH

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

ANALYTICAL REPORT

Lab Number:	L2615955
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT ST-PDI SAMPLING
Project Number:	4880.0001B000
Report Date:	03/30/26

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

Project Name: 5 FLINT ST-PDI SAMPLING
Project Number: 4880.0001B000

Lab Number: L2615955
Report Date: 03/30/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2615955-01	5FS-PE-1 (12-14)	SOIL	ROCHESTER, NY	03/23/26 14:50	03/23/26

Project Name:	5 FLINT ST-PDI SAMPLING	**Lab Number:**	L2615955
Project Number:	4880.0001B000	**Report Date:**	03/30/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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:	5 FLINT ST-PDI SAMPLING	**Lab Number:**	L2615955
Project Number:	4880.0001B000	**Report Date:**	03/30/26

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.

Sample Receipt

The Client ID was specified by the client.

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

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative Date: 03/30/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT ST-PDI SAMPLING
Project Number: 4880.0001B000

Lab Number: L2615955
Report Date: 03/30/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Semivolatile Organics by GC/MS - Westborough Lab								
8270E	Batch QC	WG2188225-2	Phenol	LCS	102	26-90	01	potential high bias
8270E	Batch QC	WG2188225-3	Phenol	LCSD	108	26-90	01	potential high bias

ORGANICS

SEMIVOLATILES

Project Name: 5 FLINT ST-PDI SAMPLING
Project Number: 4880.0001B000
Lab Number: L2615955
Report Date: 03/30/26

SAMPLE RESULTS

Lab ID: L2615955-01
Client ID: 5FS-PE-1 (12-14)
Sample Location: ROCHESTER, NY
Date Collected: 03/23/26 14:50
Date Received: 03/23/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 03/25/26 15:36
Analyst: SMZ
Percent Solids: 80%
Extraction Method: EPA 3546
Extraction Date: 03/24/26 07:36

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	31	J	ug/kg	160	21.	1
Hexachlorobenzene	ND		ug/kg	120	23.	1
Fluoranthene	1400		ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	40	18.	1
Benzo(a)anthracene	720		ug/kg	120	23.	1
Benzo(a)pyrene	520		ug/kg	160	49.	1
Benzo(b)fluoranthene	680		ug/kg	120	34.	1
Benzo(k)fluoranthene	240		ug/kg	120	32.	1
Chrysene	600		ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	280		ug/kg	120	39.	1
Benzo(ghi)perylene	210		ug/kg	160	24.	1
Fluorene	58	J	ug/kg	200	20.	1
Phenanthrene	830		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	68	J	ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	250		ug/kg	160	28.	1
Pyrene	1100		ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	32.	1
1,4-Dioxane	ND		ug/kg	30	9.3	1

Project Name: 5 FLINT ST-PDI SAMPLING
Lab Number: L2615955
Project Number: 4880.0001B000
Report Date: 03/30/26

SAMPLE RESULTS

Lab ID: L2615955-01
Client ID: 5FS-PE-1 (12-14)
Sample Location: ROCHESTER, NY
Date Collected: 03/23/26 14:50
Date Received: 03/23/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	1390	J	ug/kg			1
Unknown PAH	223	J	ug/kg			1
Unknown PAH	168	J	ug/kg			1
Unknown PAH	163	J	ug/kg			1
Unknown PAH	211	J	ug/kg			1
Unknown PAH	395	J	ug/kg			1
Unknown PAH	232	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	81		25-120
Phenol-d6	85		10-120
Nitrobenzene-d5	93		23-120
2-Fluorobiphenyl	83		30-120
2,4,6-Tribromophenol	113		10-136
4-Terphenyl-d14	64		18-120

Project Name: 5 FLINT ST-PDI SAMPLING
Project Number: 4880.0001B000
Lab Number: L2615955
Report Date: 03/30/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 03/24/26 10:48
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 03/23/26 08:28

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2188225-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	97	18.
Fluoranthene	ND		ug/kg	97	18.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	32	14.
Benzo(a)anthracene	ND		ug/kg	97	18.
Benzo(a)pyrene	ND		ug/kg	130	39.
Benzo(b)fluoranthene	ND		ug/kg	97	27.
Benzo(k)fluoranthene	ND		ug/kg	97	26.
Chrysene	ND		ug/kg	97	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	97	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	97	20.
Dibenzo(a,h)anthracene	ND		ug/kg	97	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	22.
Pyrene	ND		ug/kg	97	16.
Aniline	ND		ug/kg	32	12.
Dibenzofuran	ND		ug/kg	160	15.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	24.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	25.

Project Name: 5 FLINT ST-PDI SAMPLING
Project Number: 4880.0001B000
Lab Number: L2615955
Report Date: 03/30/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 03/24/26 10:48
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 03/23/26 08:28

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2188225-1					
1,4-Dioxane	ND		ug/kg	24	7.4
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	103		25-120
Phenol-d6	103		10-120
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	97		30-120
2,4,6-Tribromophenol	126		10-136
4-Terphenyl-d14	110		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST-PDI SAMPLING
Project Number: 4880.0001B000

Lab Number: L2615955
Report Date: 03/30/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2188225-2 WG2188225-3								
Acenaphthene	93		86		31-137	8		50
Hexachlorobenzene	97		84		40-140	14		50
Fluoranthene	95		92		40-140	3		50
Naphthalene	99		92		40-140	7		50
Nitrobenzene	98		108		40-140	10		50
Benzo(a)anthracene	96		89		40-140	8		50
Benzo(a)pyrene	109		93		40-140	16		50
Benzo(b)fluoranthene	106		96		40-140	10		50
Benzo(k)fluoranthene	107		93		40-140	14		50
Chrysene	100		87		40-140	14		50
Acenaphthylene	100		90		40-140	11		50
Anthracene	101		98		40-140	3		50
Benzo(ghi)perylene	105		96		40-140	9		50
Fluorene	100		91		40-140	9		50
Phenanthrene	100		96		40-140	4		50
Dibenzo(a,h)anthracene	106		96		40-140	10		50
Indeno(1,2,3-cd)pyrene	103		90		40-140	13		50
Pyrene	92		93		35-142	1		50
Aniline	80		82		40-140	2		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST-PDI SAMPLING
Project Number: 4880.0001B000

Lab Number: L2615955
Report Date: 03/30/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2188225-2 WG2188225-3								
Dibenzofuran	93		87		40-140	7		50
Pentachlorophenol	95		83		17-109	13		50
Phenol	**102**	Q	**108**	Q	26-90	6		50
2-Methylphenol	105		106		30-130	1		50
3-Methylphenol/4-Methylphenol	102		108		30-130	6		50
1,4-Dioxane	95		94		40-140	1		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	110		106		25-120
Phenol-d6	108		110		10-120
Nitrobenzene-d5	99		106		23-120
2-Fluorobiphenyl	98		78		30-120
2,4,6-Tribromophenol	111		88		10-136
4-Terphenyl-d14	92		88		18-120

INORGANICS
&
MISCELLANEOUS

Project Name: 5 FLINT ST-PDI SAMPLING
Project Number: 4880.0001B000

Lab Number: L2615955
Report Date: 03/30/26

SAMPLE RESULTS

Lab ID: L2615955-01
Client ID: 5FS-PE-1 (12-14)
Sample Location: ROCHESTER, NY

Date Collected: 03/23/26 14:50
Date Received: 03/23/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.3		%	0.100	NA	1	-	03/24/26 13:27	121,2540G	ROI

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT ST-PDI SAMPLING

Project Number: 4880.0001B000

Lab Number: L2615955

Report Date: 03/30/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2188835-1 QC Sample: L2615888-01 Client ID: DUP Sample						
Solids, Total	81.0	79.5	%	2		10

Project Name: 5 FLINT ST-PDI SAMPLING
Project Number: 4880.0001B000

Lab Number: L2615955
Report Date: 03/30/26

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(*)
L2615955-01A	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2615955-01B	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT ST-PDI SAMPLING	**Lab Number:**	L2615955
Project Number:	4880.0001B000	**Report Date:**	03/30/26

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:	5 FLINT ST-PDI SAMPLING	**Lab Number:**	L2615955
Project Number:	4880.0001B000	**Report Date:**	03/30/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT ST-PDI SAMPLING	**Lab Number:**	L2615955
Project Number:	4880.0001B000	**Report Date:**	03/30/26

Data Qualifiers

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: 5 FLINT ST-PDI SAMPLING
Project Number: 4880.0001B000
Lab Number: L2615955
Report Date: 03/30/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v02 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 624.1: m/p-xylene, o-xylene, Naphthalene
EPA 625.1: alpha-Terpineol
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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-G, 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.**

ENV-FORM-WES2-0065 v02 Certificate/Approval Program Summary

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water

EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, ASTM D516, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water

SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, ASTMD516, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY kY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (DW) 25700, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

NEW YORK CHAIN OF CUSTODY

Pace ANALYTICAL SERVICES

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
Woodcliff Lake, NJ 07677: 123 Tice Blvd, Suite 101
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page 1 of 1

Date Rec'd in Lab: 03/24/26

Pace Job #: L2615955

Client Information
Client: Roux Inc
Address: 2850 Clover St
Rochester NY
Phone: 716-713-3937
Fax:
Email: ERunstrom@roux.com

Project Information
Project Name: 5 Flint St - PDI Sampling
Project Location: Rochester, NY
Project #: 4880.001B000
(Use Project name as Project #)
Project Manager: Eric Runstrom
PACE Quote #: 00203091

Turn-Around Time
Standard: X
Rush (only if pre approved):
Due Date:
# of Days: 5 days

Deliverables
ASP-A: ASP-B: X
EQuIS (1 File): EQuIS (4 File):
Other: Roux MA EDD

Regulatory Requirement
NY TOGS: NY Part 375:
AWQ Standards: NY CP-51:
NY Restricted Use: Other:
NY Unrestricted Use:
NYC Sewer Discharge:

Billing Information
Same as Client Info:
PO #:

Disposal Site Information
Please identify below location of applicable disposal facilities.
Disposal Facility:
NJ: NY:
Other:

These samples have been previously analyzed by Pace:

Other project specific requirements/comments:
Part 375, Table 6.8(a), Please include TICs for SVOCs.

Please specify Metals or TAL.

ANALYSIS
Full SVOCs + TICs (8270E)

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

PACE Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	Full SVOCs + TICs (8270E)	Sample Specific Comments	Total # Bottles
15955-01	SFS-MW-1 (12-14)	3/25/26	1450	S	SR	X		2

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

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

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

Container Type: A
Preservative: A

Relinquished By:	Date/Time	Received By:	Date/Time
[illegible]	3/23/26 15:15	NSMT-Pace	3/23/26 15:20
NSMT-Pace	3/23/26 17:00	Roch, NY	17:00
Russell B Bixby	3/23/26 18:15		

0312612 6-0205

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 PACE'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 29-Jan-2025)

Sample Delivery Group Summary

Pace Job Number : L2615955

Account Name : Roux
Project Number : 4880.0001B000
Project Name : 5 FLINT ST-PDI SAMPLING

Received : 23-MAR-2026
Reviewer : Matthew Bianculli

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	3.9	

Condition Information

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

Volatile Organics/VPH

1) Reagent Water Vials Frozen by Client?	**NA**

ANALYTICAL REPORT

Lab Number:	L2633816
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT STREET
Project Number:	4694.0001B000
Report Date:	06/09/26

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

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2633816-01	5FS-PE-2 (12-13)	SOIL	Not Specified	06/02/26 09:30	06/02/26

Project Name:	5 FLINT STREET	**Lab Number:**	L2633816
Project Number:	4694.0001B000	**Report Date:**	06/09/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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: 5 FLINT STREET **Lab Number:** L2633816
Project Number: 4694.0001B000 **Report Date:** 06/09/26

Case Narrative (continued)

Report Submission

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

Volatile Organics

L2633816-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (193%); however, the sample was not re-analyzed due to coelution with obvious interferences.

Total Metals

L2633816-01: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the sample matrix.

The WG2224600-3 MS recoveries performed on L2633816-01 do not apply for aluminum (0%), iron (0%), magnesium (483%) and manganese (0%) because the sample concentrations are greater than four times the spike amounts added.

The WG2224600-3 MS recoveries performed on L2633816-01 are outside the acceptance criteria for antimony (30%), arsenic (46%), calcium (859%), and selenium (64%). A post digestion spike was performed and was within acceptance criteria.

The WG2224600-4 Laboratory Duplicate RPD performed on L2633816-01 is outside the acceptance criteria for calcium (22%) due to the non-homogeneous nature of the native sample.

Cyanide, Total

The WG2223290-3 LCSD recovery associated with L2633816-01 is outside our in-house acceptance criteria for cyanide, total (56%), but within the vendor-certified acceptance limits. The results of the original analysis are reported.

The WG2223290-2/-3 LCS/LCSD RPD associated with L2633816-01 is above the acceptance criteria for cyanide, total (42%).

Project Name:	5 FLINT STREET	**Lab Number:**	L2633816
Project Number:	4694.0001B000	**Report Date:**	06/09/26

Case Narrative (continued)

Chromium, Hexavalent

The WG2223025-5 Soluble MS recovery performed on L2633816-01 was outside the acceptance criteria for chromium, hexavalent (73%). This has been attributed to matrix interference. A post-spike was performed with a recovery of 100%.

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

Authorized Signature: Kelly O'Neill

Title: Technical Director/Representative Date: 06/09/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Organics by EPA 5035/8260 Low - Westborough Lab								
8260D	5FS-PE-2 (12-13)	L2633816-01	4-Bromofluorobenzene	Surrogate	193	70-130	-	potential high bias
Semivolatile Organics by GC/MS - Westborough Lab								
8270E	Batch QC	WG2222172-2	Phenol	LCS	93	26-90	01	potential high bias
8270E	Batch QC	WG2222172-3	Phenol	LCSD	98	26-90	01	potential high bias
Total Metals - Mansfield Lab								
6010D	Batch QC (L2633816-01)	WG2224600-3	Aluminum, Total	MS	0	75-125	01	potential low bias
6010D	Batch QC (L2633816-01)	WG2224600-3	Antimony, Total	MS	30	75-125	01	potential low bias
6010D	Batch QC (L2633816-01)	WG2224600-3	Arsenic, Total	MS	46	75-125	01	potential low bias
6010D	Batch QC (L2633816-01)	WG2224600-3	Calcium, Total	MS	859	75-125	01	potential high bias
6010D	Batch QC (L2633816-01)	WG2224600-3	Iron, Total	MS	0	75-125	01	potential low bias
6010D	Batch QC (L2633816-01)	WG2224600-3	Magnesium, Total	MS	483	75-125	01	potential high bias
6010D	Batch QC (L2633816-01)	WG2224600-3	Manganese, Total	MS	0	75-125	01	potential low bias
6010D	Batch QC (L2633816-01)	WG2224600-3	Selenium, Total	MS	64	75-125	01	potential low bias
6010D	Batch QC (L2633816-01)	WG2224600-4	Calcium, Total	Duplicate	22	NA	01	non-directional bias
General Chemistry - Westborough Lab								
9010C/9012B	Batch QC	WG2223290-3	Cyanide, Total	LCSD	42	80-120	01	non-directional bias
9010C/9012B	Batch QC	WG2223290-3	Cyanide, Total	LCSD	56	80-120	01	potential low bias

ORGANICS

VOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633816
Report Date: 06/09/26

SAMPLE RESULTS

Lab ID: L2633816-01
Client ID: 5FS-PE-2 (12-13)
Sample Location: Not Specified
Date Collected: 06/02/26 09:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/08/26 17:25
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.4	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.25	1
Tetrachloroethene	ND		ug/kg	0.54	0.21	1
Chlorobenzene	ND		ug/kg	0.54	0.14	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.28	1
1,1,1-Trichloroethane	ND		ug/kg	0.54	0.18	1
Benzene	0.18	J	ug/kg	0.54	0.18	1
Toluene	0.64	J	ug/kg	1.1	0.58	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Vinyl chloride	ND		ug/kg	1.1	0.36	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1
Trichloroethene	ND		ug/kg	0.54	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.22	1
p/m-Xylene	ND		ug/kg	2.1	0.60	1
o-Xylene	ND		ug/kg	1.1	0.31	1
Xylenes, Total	ND		ug/kg	1.1	0.31	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
Acetone	18		ug/kg	11	5.2	1
2-Butanone	ND		ug/kg	11	2.4	1
n-Butylbenzene	ND		ug/kg	1.1	0.18	1
sec-Butylbenzene	4.4		ug/kg	1.1	0.16	1
tert-Butylbenzene	3.6		ug/kg	2.1	0.13	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633816
Report Date: 06/09/26

SAMPLE RESULTS

Lab ID: L2633816-01
Client ID: 5FS-PE-2 (12-13)
Sample Location: Not Specified
Date Collected: 06/02/26 09:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.18	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.1	0.21	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.1	0.36	1
Tentatively Identified Compounds						
Total TIC Compounds	1590	J	ug/kg			1
Unknown Cycloalkane	108	J	ug/kg			1
Unknown	102	J	ug/kg			1
Unknown	363	J	ug/kg			1
Unknown	92.2	J	ug/kg			1
Pentane, 2,4-dimethyl-	114	NJ	ug/kg			1
Pentane, 2,3-dimethyl-	250	NJ	ug/kg			1
Unknown	98.7	J	ug/kg			1
Unknown Alkane	117	J	ug/kg			1
Hexane, 3,4-dimethyl-	136	NJ	ug/kg			1
Cyclohexane, 1,1-dimethyl-	207	NJ	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	**193**	Q	70-130
Dibromofluoromethane	95		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/08/26 09:40
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2225318-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.82	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633816
Report Date: 06/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/08/26 09:40
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2225318-5					
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	99		70-130
Dibromofluoromethane	95		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2225318-3 WG2225318-4								
Methylene chloride	96		90		70-130	6		30
1,1-Dichloroethane	106		98		70-130	8		30
Chloroform	97		91		70-130	6		30
Carbon tetrachloride	105		98		70-130	7		30
Tetrachloroethene	114		106		70-130	7		30
Chlorobenzene	101		96		70-130	5		30
1,2-Dichloroethane	93		89		70-130	4		30
1,1,1-Trichloroethane	105		96		70-130	9		30
Benzene	103		96		70-130	7		30
Toluene	104		97		70-130	7		30
Ethylbenzene	105		98		70-130	7		30
Vinyl chloride	126		110		67-130	14		30
1,1-Dichloroethene	114		105		65-135	8		30
trans-1,2-Dichloroethene	108		98		70-130	10		30
Trichloroethene	104		96		70-130	8		30
1,2-Dichlorobenzene	100		94		70-130	6		30
1,3-Dichlorobenzene	103		96		70-130	7		30
1,4-Dichlorobenzene	100		92		70-130	8		30
Methyl tert butyl ether	92		86		66-130	7		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2225318-3 WG2225318-4								
p/m-Xylene	105		98		70-130	7		30
o-Xylene	101		94		70-130	7		30
cis-1,2-Dichloroethene	98		91		70-130	7		30
Acetone	125		100		54-140	22		30
2-Butanone	103		94		70-130	9		30
n-Butylbenzene	114		105		70-130	8		30
sec-Butylbenzene	112		104		70-130	7		30
tert-Butylbenzene	108		100		70-130	8		30
n-Propylbenzene	112		104		70-130	7		30
1,3,5-Trimethylbenzene	107		99		70-130	8		30
1,2,4-Trimethylbenzene	108		100		70-130	8		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	98		99		70-130
Toluene-d8	102		102		70-130
4-Bromofluorobenzene	100		101		70-130
Dibromofluoromethane	98		97		70-130

SEMIVOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

SAMPLE RESULTS

Lab ID: L2633816-01
Client ID: 5FS-PE-2 (12-13)
Sample Location: Not Specified

Date Collected: 06/02/26 09:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/04/26 04:35
Analyst: JG
Percent Solids: 83%

Extraction Method: EPA 3546
Extraction Date: 06/03/26 13:11

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	20.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	28	J	ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	40	17.	1
Benzo(a)anthracene	ND		ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	160	48.	1
Benzo(b)fluoranthene	ND		ug/kg	120	33.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	ND		ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	30.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	23.	1
Fluorene	ND		ug/kg	200	19.	1
Phenanthrene	36	J	ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	26	J	ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	31.	1
1,4-Dioxane	ND		ug/kg	30	9.1	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633816
Report Date: 06/09/26

SAMPLE RESULTS

Lab ID: L2633816-01
Client ID: 5FS-PE-2 (12-13)
Sample Location: Not Specified
Date Collected: 06/02/26 09:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	5840	J	ug/kg			1
Unknown Cycloalkane	403	J	ug/kg			1
Unknown	270	J	ug/kg			1
Unknown	1100	J	ug/kg			1
Unknown Alkane	254	J	ug/kg			1
Unknown Alkane	452	J	ug/kg			1
Unknown Alkane	521	J	ug/kg			1
Unknown Cycloalkane	338	J	ug/kg			1
Unknown Alkane	254	J	ug/kg			1
Unknown Alkane	286	J	ug/kg			1
Unknown Alkane	348	J	ug/kg			1
Unknown Alkane	410	J	ug/kg			1
Unknown Cycloalkane	294	J	ug/kg			1
Unknown	340	J	ug/kg			1
Unknown	304	J	ug/kg			1
Unknown Alkane	264	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		25-120
Phenol-d6	80		10-120
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	77		30-120
2,4,6-Tribromophenol	84		10-136
4-Terphenyl-d14	74		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/03/26 01:03
Analyst: SLR

Extraction Method: EPA 3546
Extraction Date: 06/02/26 13:18

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2222172-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	98	18.
Fluoranthene	ND		ug/kg	98	19.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	33	14.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	98	28.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	98	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
Aniline	ND		ug/kg	33	12.
Dibenzofuran	ND		ug/kg	160	15.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/03/26 01:03
Analyst: SLR

Extraction Method: EPA 3546
Extraction Date: 06/02/26 13:18

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2222172-1					
1,4-Dioxane	ND		ug/kg	24	7.5
Tentatively Identified Compounds					
Total TIC Compounds	293	J	ug/kg		
Unknown	147	J	ug/kg		
Unknown	146	J	ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		25-120
Phenol-d6	87		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	79		30-120
2,4,6-Tribromophenol	90		10-136
4-Terphenyl-d14	76		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2222172-2 WG2222172-3								
Acenaphthene	70		73		31-137	4		50
Hexachlorobenzene	76		78		40-140	3		50
Fluoranthene	76		78		40-140	3		50
Naphthalene	73		74		40-140	1		50
Nitrobenzene	86		88		40-140	2		50
Benzo(a)anthracene	69		72		40-140	4		50
Benzo(a)pyrene	77		80		40-140	4		50
Benzo(b)fluoranthene	74		77		40-140	4		50
Benzo(k)fluoranthene	72		74		40-140	3		50
Chrysene	69		72		40-140	4		50
Acenaphthylene	81		84		40-140	4		50
Anthracene	73		76		40-140	4		50
Benzo(ghi)perylene	74		77		40-140	4		50
Fluorene	75		79		40-140	5		50
Phenanthrene	71		75		40-140	5		50
Dibenzo(a,h)anthracene	74		77		40-140	4		50
Indeno(1,2,3-cd)pyrene	74		77		40-140	4		50
Pyrene	75		76		35-142	1		50
Aniline	61		63		40-140	3		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2222172-2 WG2222172-3								
Dibenzofuran	70		74		40-140	6		50
Pentachlorophenol	74		76		17-109	3		50
Phenol	**93**	Q	**98**	Q	26-90	5		50
2-Methylphenol	79		84		30-130	6		50
3-Methylphenol/4-Methylphenol	87		92		30-130	6		50
1,4-Dioxane	54		56		40-140	4		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	78		79		25-120
Phenol-d6	87		92		10-120
Nitrobenzene-d5	86		87		23-120
2-Fluorobiphenyl	75		79		30-120
2,4,6-Tribromophenol	85		88		10-136
4-Terphenyl-d14	71		73		18-120

METALS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633816
Report Date: 06/09/26

SAMPLE RESULTS

Lab ID: L2633816-01
Client ID: 5FS-PE-2 (12-13)
Sample Location: Not Specified
Date Collected: 06/02/26 09:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	10600		mg/kg	9.41	3.06	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Antimony, Total	ND		mg/kg	4.70	3.62	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Arsenic, Total	4.43		mg/kg	0.941	0.406	2	06/08/26 08:50	06/08/26 21:44	EPA 3050B	1,6010D	MFR
Barium, Total	70.3		mg/kg	0.941	0.100	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Beryllium, Total	0.600		mg/kg	0.470	0.052	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Cadmium, Total	0.120	J	mg/kg	0.941	0.052	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Calcium, Total	2960		mg/kg	9.41	5.33	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Chromium, Total	14.7		mg/kg	0.941	0.798	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Cobalt, Total	9.96		mg/kg	1.88	0.233	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Copper, Total	16.3		mg/kg	0.941	0.214	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Iron, Total	22200		mg/kg	23.5	7.52	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Lead, Total	11.6		mg/kg	4.70	0.224	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Magnesium, Total	3810		mg/kg	9.41	1.53	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Manganese, Total	589		mg/kg	0.941	0.504	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Mercury, Total	ND		mg/kg	0.096	0.062	1	06/08/26 09:37	06/08/26 10:58	EPA 7471B	1,7471B	RJG
Nickel, Total	23.4		mg/kg	2.35	0.760	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Potassium, Total	638		mg/kg	235	47.7	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Selenium, Total	ND		mg/kg	1.88	0.309	2	06/08/26 08:50	06/08/26 21:44	EPA 3050B	1,6010D	MFR
Silver, Total	ND		mg/kg	0.470	0.280	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Sodium, Total	ND		mg/kg	188	99.7	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Thallium, Total	ND		mg/kg	1.88	0.848	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Vanadium, Total	16.8		mg/kg	0.941	0.142	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
Zinc, Total	58.1		mg/kg	4.70	0.570	2	06/08/26 08:50	06/08/26 16:06	EPA 3050B	1,6010D	ERC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	14.7		mg/kg	0.968	0.798	1		06/08/26 16:06	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633816
Report Date: 06/09/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG2224600-1										
Aluminum, Total	ND		mg/kg	4.00	1.30	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Antimony, Total	ND		mg/kg	2.00	1.54	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Arsenic, Total	ND		mg/kg	0.400	0.173	1	06/08/26 08:50	06/08/26 21:40	1,6010D	MFR
Barium, Total	ND		mg/kg	0.400	0.042	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Beryllium, Total	ND		mg/kg	0.200	0.022	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Cadmium, Total	ND		mg/kg	0.400	0.022	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Calcium, Total	ND		mg/kg	4.00	2.27	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Chromium, Total	ND		mg/kg	0.400	0.339	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Cobalt, Total	ND		mg/kg	0.800	0.099	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Copper, Total	ND		mg/kg	0.400	0.091	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Iron, Total	ND		mg/kg	10.0	3.20	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Lead, Total	ND		mg/kg	2.00	0.095	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Magnesium, Total	ND		mg/kg	4.00	0.652	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Manganese, Total	ND		mg/kg	0.400	0.214	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Nickel, Total	ND		mg/kg	1.00	0.323	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Potassium, Total	ND		mg/kg	100	20.3	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Selenium, Total	ND		mg/kg	0.800	0.132	1	06/08/26 08:50	06/08/26 21:40	1,6010D	MFR
Silver, Total	ND		mg/kg	0.200	0.119	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Sodium, Total	ND		mg/kg	80.0	42.4	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Thallium, Total	ND		mg/kg	0.800	0.361	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Vanadium, Total	ND		mg/kg	0.400	0.060	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC
Zinc, Total	ND		mg/kg	2.00	0.242	1	06/08/26 08:50	06/08/26 15:58	1,6010D	ERC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG2224603-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	06/08/26 09:37	06/08/26 10:52	1,7471B	RJG

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633816
Report Date: 06/09/26

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2224600-2								
Aluminum, Total	108		-		80-120	-		20
Antimony, Total	113		-		80-120	-		20
Arsenic, Total	97		-		80-120	-		20
Barium, Total	109		-		80-120	-		20
Beryllium, Total	108		-		80-120	-		20
Cadmium, Total	114		-		80-120	-		20
Calcium, Total	116		-		80-120	-		20
Chromium, Total	109		-		80-120	-		20
Cobalt, Total	110		-		80-120	-		20
Copper, Total	111		-		80-120	-		20
Iron, Total	112		-		80-120	-		20
Lead, Total	116		-		80-120	-		20
Magnesium, Total	113		-		80-120	-		20
Manganese, Total	108		-		80-120	-		20
Nickel, Total	111		-		80-120	-		20
Potassium, Total	116		-		80-120	-		20
Selenium, Total	95		-		80-120	-		20
Silver, Total	110		-		80-120	-		20
Sodium, Total	118		-		80-120	-		20
Thallium, Total	110		-		80-120	-		20
Vanadium, Total	114		-		80-120	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2224600-2					
Zinc, Total	106	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2224603-2					
Mercury, Total	101	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2224600-3 QC Sample: L2633816-01 Client ID: 5FS-PE-2 (12-13)												
Aluminum, Total	10600	182	10300	**0**	Q	-	-		75-125	-		
Antimony, Total	ND	45.6	13.6	**30**	Q	-	-		75-125	-		
Arsenic, Total	4.43	10.9	9.43	**46**	Q	-	-		75-125	-		
Barium, Total	70.3	182	248	97		-	-		75-125	-		
Beryllium, Total	0.600	4.56	4.95	95		-	-		75-125	-		
Cadmium, Total	0.120J	4.84	4.69	97		-	-		75-125	-		
Calcium, Total	2960	912	10800	**859**	Q	-	-		75-125	-		
Chromium, Total	14.7	18.2	31.6	93		-	-		75-125	-		
Cobalt, Total	9.96	45.6	51.3	91		-	-		75-125	-		
Copper, Total	16.3	22.8	39.0	100		-	-		75-125	-		
Iron, Total	22200	91.2	19000	**0**	Q	-	-		75-125	-		
Lead, Total	11.6	48.4	58.6	97		-	-		75-125	-		
Magnesium, Total	3810	912	8220	**483**	Q	-	-		75-125	-		
Manganese, Total	589	45.6	391	**0**	Q	-	-		75-125	-		
Nickel, Total	23.4	45.6	64.6	90		-	-		75-125	-		
Potassium, Total	638	912	1470	91		-	-		75-125	-		
Selenium, Total	ND	10.9	7.00	**64**	Q	-	-		75-125	-		
Silver, Total	ND	4.56	4.31	94		-	-		75-125	-		
Sodium, Total	ND	912	1040	114		-	-		75-125	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2224600-3 QC Sample: L2633816-01 Client ID: 5FS-PE-2 (12-13)												
Thallium, Total	ND	10.9	10.6	97		-	-		75-125	-		
Vanadium, Total	16.8	45.6	60.5	96		-	-		75-125	-		
Zinc, Total	58.1	45.6	95.1	81		-	-		75-125	-		
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2224603-3 QC Sample: L2633816-01 Client ID: 5FS-PE-2 (12-13)												
Mercury, Total	ND	1.59	1.60	101		-	-		80-120	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2224600-4 QC Sample: L2633816-01 Client ID: 5FS-PE-2 (12-13)						
Aluminum, Total	10600	10600	mg/kg	0		20
Antimony, Total	ND	ND	mg/kg	NC		20
Barium, Total	70.3	70.8	mg/kg	1		20
Beryllium, Total	0.600	0.626	mg/kg	4		20
Cadmium, Total	0.120J	0.163J	mg/kg	NC		20
Calcium, Total	2960	2380	mg/kg	**22**	Q	20
Chromium, Total	14.7	14.5	mg/kg	1		20
Cobalt, Total	9.96	9.95	mg/kg	0		20
Copper, Total	16.3	17.1	mg/kg	5		20
Iron, Total	22200	22700	mg/kg	2		20
Lead, Total	11.6	13.0	mg/kg	11		20
Magnesium, Total	3810	3510	mg/kg	8		20
Manganese, Total	589	571	mg/kg	3		20
Nickel, Total	23.4	23.0	mg/kg	2		20
Potassium, Total	638	585	mg/kg	9		20
Silver, Total	ND	ND	mg/kg	NC		20
Sodium, Total	ND	ND	mg/kg	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2224600-4 QC Sample: L2633816-01 Client ID: 5FS-PE-2 (12-13)						
Thallium, Total	ND	ND	mg/kg	NC		20
Vanadium, Total	16.8	16.7	mg/kg	1		20
Zinc, Total	58.1	55.7	mg/kg	4		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2224600-4 QC Sample: L2633816-01 Client ID: 5FS-PE-2 (12-13)						
Arsenic, Total	4.43	4.15	mg/kg	7		20
Selenium, Total	ND	ND	mg/kg	NC		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2224603-4 QC Sample: L2633816-01 Client ID: 5FS-PE-2 (12-13)						
Mercury, Total	ND	ND	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

SAMPLE RESULTS

Lab ID: L2633816-01
Client ID: 5FS-PE-2 (12-13)
Sample Location: Not Specified

Date Collected: 06/02/26 09:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.6		%	0.100	NA	1	-	06/03/26 12:08	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.1	0.24	1	06/04/26 13:50	06/04/26 16:33	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.968	0.194	1	06/04/26 01:45	06/08/26 05:14	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633816
Report Date: 06/09/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG2223025-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	06/04/26 01:45	06/08/26 05:14	1,7196A	TN
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG2223290-1										
Cyanide, Total	ND		mg/kg	0.92	0.20	1	06/04/26 13:50	06/04/26 16:28	1,9010C/9012B	JER

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG2223025-2								
Chromium, Hexavalent	100		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG2223290-2 WG2223290-3								
Cyanide, Total	86		**56**	Q	80-120	**42**	Q	35

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2223025-4 QC Sample: L2633816-01 Client ID: 5FS-PE-2 (12-13)												
Chromium, Hexavalent	ND	1500	1330	89		-	-		75-125	-		
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2223290-4 WG2223290-5 QC Sample: L2633816-01 Client ID: 5FS-PE-2 (12-13)												
Cyanide, Total	ND	11	9.5	84		9.2	80		75-125	5		35

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET

Project Number: 4694.0001B000

Lab Number: L2633816

Report Date: 06/09/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2222635-1 QC Sample: L2633732-20 Client ID: DUP Sample						
Solids, Total	84.3	84.2	%	0		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2223025-6 QC Sample: L2633816-01 Client ID: 5FS-PE-2 (12-13)						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633816
Report Date: 06/09/26

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(*)
L2633816-01A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2633816-01B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2633816-01C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2633816-01D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2633816-01E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),AL-TI(180),TL-TI(180),PB-TI(180),ZN-TI(180),SE-TI(180),SB-TI(180),CU-TI(180),V-TI(180),CO-TI(180),MN-TI(180),HG-T(28),MG-TI(180),FE-TI(180),CA-TI(180),NA-TI(180),CD-TI(180),K-TI(180)
L2633816-01F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		HEXCR-7196(30)
L2633816-01G	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14)
L2633816-01X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2633816-01Y	Vial Water preserved split	NA	NA			Y	Absent	03-JUN-26 07:50	NYTCL-8260HLW-R2(14)
L2633816-01Z	Vial Water preserved split	NA	NA			Y	Absent	03-JUN-26 07:50	NYTCL-8260HLW-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT STREET	**Lab Number:**	L2633816
Project Number:	4694.0001B000	**Report Date:**	06/09/26

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:	5 FLINT STREET	**Lab Number:**	L2633816
Project Number:	4694.0001B000	**Report Date:**	06/09/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT STREET	**Lab Number:**	L2633816
Project Number:	4694.0001B000	**Report Date:**	06/09/26

Data Qualifiers

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: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633816
Report Date: 06/09/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

107 Calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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 504.1: EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,**.

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, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water
EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water
SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY KY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NV MA00030, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

L2633816

Scan QR Code for instructions

Company Name: Roux	Contact/Report To: Eric Runstrom
Street Address: 5 Flint Street, Rochester, NY	Phone #: 781.569.4031
	E-Mail: erunstrom@rouxinc.com
	Cc E-Mail: sbarlenton@rouxinc.com; rauracli@rouxinc.com
Customer Project #: 4894.00018000	Invoice to: Roux
Project Name: 5 Flint Street	Invoice E-mail: rouxap@rouxinc.com
Site Collection Info/Facility ID (as applicable):	Purchase Order # (if applicable):
	Quote #: 00203091
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET	County / State origin of sample(s): Monroe County, New York

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [X] EQUIS [X] Other Roux MA formatted EDDS

Regulatory Program (DW, RCRA, etc.) as applicable: Part 375, Table 6.8 (a), please include TICS for both VOCs and SVOCs. Category B deliverable.

Reportable [X] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other _____

Date Results Requested: 5 day TAT

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 6 | 10 | 10

Identify Container Preservative Type***: 8 | 11 | 2

Analysis Requested

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs + TICS (8260)	SVOCs + TICS (8270)	TAL Metals + total cyanide + tri and hexa Chromium (6010D)	Sample Comment
SFS-PE-2 (12-13)	Soil	G	N/A	N/A	6/2/26	9:30	7			X	X	X	

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 50mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only: Proj. Mgr: | Accthum / Client ID: | Table #: | Profile / Template: | Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:

Collected By: Printed Name: Shannon Keenan Signature: Shannon K

Customer Remarks / Special Conditions / Possible Hazards: NA

Coolers: | Thermometer ID: | Correction Factor (°C): | Obs. Temp. (°C): | Corrected Temp. (°C): | [ ] On Ice

Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time	Tracking Number:
ROUX	6/2/26 15:20	PACE ROCH SVC CTR	6/2/26 1520	
ROC SIC	6-2-26 18:00	NORBY	6-2-26 18:00	Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other
NO BOSU	6-2-26 19:20		6/2 2200	
	6/3 200			Page: of

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

0610312 6-0200

ENV-FRM-CORO-0019_v02_110123 ©

Sample Delivery Group Summary

Pace Job Number : L2633816

Account Name : Roux
Project Number : 4694.0001B000
Project Name : 5 FLINT STREET

Received : 02-JUN-2026
Reviewer : Malik Rouse

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	3.8	

Condition Information

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

Volatile Organics/VPH

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

ANALYTICAL REPORT

Lab Number:	L2633818
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT STREET
Project Number:	4694.0001B000
Report Date:	06/16/26

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

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2633818-01	5FS-PE-2B (10-12)	SOIL	ROCHESTER, NY	06/02/26 10:30	06/02/26

Project Name:	5 FLINT STREET	**Lab Number:**	L2633818
Project Number:	4694.0001B000	**Report Date:**	06/16/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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: 5 FLINT STREET **Lab Number:** L2633818
Project Number: 4694.0001B000 **Report Date:** 06/16/26

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.

Sample Receipt

The analyses performed were specified by the client.

Volatile Organics

L2633818-01: The surrogate recoveries are outside the acceptance criteria for 4-bromofluorobenzene (171%); however, the sample was not re-analyzed due to coelution with obvious interferences.

Total Metals

L2633818-01: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the sample matrix.

The WG2227994-3 MS recoveries performed on L2633818-01 do not apply for aluminum (222%), iron (1030%), and manganese (194%) because the sample concentrations are greater than four times the spike amounts added.

The WG2227994-3 MS recoveries performed on L2633818-01 are outside the acceptance criteria for antimony (41%) and calcium (58%). A post digestion spike was performed and was within acceptance criteria.

The WG2227994-4 Laboratory Duplicate RPD performed on L2633818-01 is outside the acceptance criteria for potassium (28%) due to the non-homogeneous nature of the native sample.

Cyanide, Total

The WG2225991-2 LCS recovery associated with L2633818-01 is outside our in-house acceptance criteria for cyanide, total (66%), but within the vendor-certified acceptance limits. The results of the original analysis are reported.

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

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative Date: 06/16/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Organics by EPA 5035/8260 Low - Westborough Lab								
8260D	5FS-PE-2B (10-12)	L2633818-01	4-Bromofluorobenzene	Surrogate	171	70-130	-	potential high bias
Total Metals - Mansfield Lab								
6010D	Batch QC (L2633818-01)	WG2227994-3	Aluminum, Total	MS	222	75-125	01	potential high bias
6010D	Batch QC (L2633818-01)	WG2227994-3	Antimony, Total	MS	41	75-125	01	potential low bias
6010D	Batch QC (L2633818-01)	WG2227994-3	Calcium, Total	MS	58	75-125	01	potential low bias
6010D	Batch QC (L2633818-01)	WG2227994-3	Iron, Total	MS	1030	75-125	01	potential high bias
6010D	Batch QC (L2633818-01)	WG2227994-3	Manganese, Total	MS	194	75-125	01	potential high bias
6010D	Batch QC (L2633818-01)	WG2227994-4	Potassium, Total	Duplicate	28	NA	01	non-directional bias
General Chemistry - Westborough Lab								
9010C/9012B	Batch QC	WG2225991-2	Cyanide, Total	LCS	66	80-120	01	potential low bias

ORGANICS

VOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633818
Report Date: 06/16/26

SAMPLE RESULTS

Lab ID: L2633818-01
Client ID: 5FS-PE-2B (10-12)
Sample Location: ROCHESTER, NY
Date Collected: 06/02/26 10:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/12/26 16:11
Analyst: AJK
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.6	2.6	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	ND		ug/kg	1.7	0.16	1
Carbon tetrachloride	ND		ug/kg	1.1	0.26	1
Tetrachloroethene	ND		ug/kg	0.56	0.22	1
Chlorobenzene	ND		ug/kg	0.56	0.14	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.29	1
1,1,1-Trichloroethane	ND		ug/kg	0.56	0.19	1
Benzene	1.7		ug/kg	0.56	0.18	1
Toluene	2.2		ug/kg	1.1	0.61	1
Ethylbenzene	ND		ug/kg	1.1	0.16	1
Vinyl chloride	ND		ug/kg	1.1	0.38	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.27	1
trans-1,2-Dichloroethene	ND		ug/kg	1.7	0.15	1
Trichloroethene	ND		ug/kg	0.56	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,3-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	0.19	1
Methyl tert butyl ether	ND		ug/kg	2.2	0.22	1
p/m-Xylene	2.2		ug/kg	2.2	0.63	1
o-Xylene	0.33	J	ug/kg	1.1	0.32	1
Xylenes, Total	2.5	J	ug/kg	1.1	0.32	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.20	1
Acetone	69		ug/kg	11	5.4	1
2-Butanone	ND		ug/kg	11	2.5	1
n-Butylbenzene	1.9		ug/kg	1.1	0.19	1
sec-Butylbenzene	9.4		ug/kg	1.1	0.16	1
tert-Butylbenzene	3.4		ug/kg	2.2	0.13	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633818
Report Date: 06/16/26

SAMPLE RESULTS

Lab ID: L2633818-01
Client ID: 5FS-PE-2B (10-12)
Sample Location: ROCHESTER, NY
Date Collected: 06/02/26 10:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.19	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.2	0.22	1
1,2,4-Trimethylbenzene	0.57	J	ug/kg	2.2	0.37	1
Tentatively Identified Compounds						
Total TIC Compounds	1360	J	ug/kg			1
Unknown	117	J	ug/kg			1
Unknown Cyclohexane	93.7	J	ug/kg			1
Unknown Cyclohexane	94.1	J	ug/kg			1
Unknown Cycloalkane	225	J	ug/kg			1
Cyclohexane, 1,1-dimethyl-	103	NJ	ug/kg			1
Unknown	183	J	ug/kg			1
Unknown	93.7	J	ug/kg			1
Unknown Cyclohexane	175	J	ug/kg			1
Unknown Alkane	116	J	ug/kg			1
Decane, 4-methyl-	162	NJ	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	105		70-130
4-Bromofluorobenzene	**171**	Q	70-130
Dibromofluoromethane	100		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/12/26 08:40
Analyst: JFI

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2227945-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.62	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633818
Report Date: 06/16/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/12/26 08:40
Analyst: JFI

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2227945-5					
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33

Tentatively Identified Compounds			
Total TIC Compounds	2.88	J	ug/kg
Unknown	2.88	J	ug/kg

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	107		70-130
Dibromofluoromethane	100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2227945-3 WG2227945-4								
Methylene chloride	89		87		70-130	2		30
1,1-Dichloroethane	105		103		70-130	2		30
Chloroform	103		100		70-130	3		30
Carbon tetrachloride	118		117		70-130	1		30
Tetrachloroethene	92		91		70-130	1		30
Chlorobenzene	98		98		70-130	0		30
1,2-Dichloroethane	121		121		70-130	0		30
1,1,1-Trichloroethane	114		109		70-130	4		30
Benzene	105		103		70-130	2		30
Toluene	95		94		70-130	1		30
Ethylbenzene	93		92		70-130	1		30
Vinyl chloride	93		90		67-130	3		30
1,1-Dichloroethene	106		100		65-135	6		30
trans-1,2-Dichloroethene	106		101		70-130	5		30
Trichloroethene	109		108		70-130	1		30
1,2-Dichlorobenzene	96		95		70-130	1		30
1,3-Dichlorobenzene	96		93		70-130	3		30
1,4-Dichlorobenzene	94		93		70-130	1		30
Methyl tert butyl ether	115		114		66-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2227945-3 WG2227945-4								
p/m-Xylene	94		93		70-130	1		30
o-Xylene	92		92		70-130	0		30
cis-1,2-Dichloroethene	100		101		70-130	1		30
Acetone	130		128		54-140	2		30
2-Butanone	121		116		70-130	4		30
n-Butylbenzene	91		90		70-130	1		30
sec-Butylbenzene	92		91		70-130	1		30
tert-Butylbenzene	96		94		70-130	2		30
n-Propylbenzene	93		92		70-130	1		30
1,3,5-Trimethylbenzene	96		94		70-130	2		30
1,2,4-Trimethylbenzene	100		99		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110		109		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	110		109		70-130
Dibromofluoromethane	99		100		70-130

SEMIVOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633818
Report Date: 06/16/26

SAMPLE RESULTS

Lab ID: L2633818-01
Client ID: 5FS-PE-2B (10-12)
Sample Location: ROCHESTER, NY

Date Collected: 06/02/26 10:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/11/26 11:09
Analyst: JG
Percent Solids: 81%

Extraction Method: EPA 3546
Extraction Date: 06/10/26 21:34

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	21.	1
Hexachlorobenzene	ND		ug/kg	120	23.	1
Fluoranthene	37	J	ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	40	18.	1
Benzo(a)anthracene	24	J	ug/kg	120	23.	1
Benzo(a)pyrene	ND		ug/kg	160	49.	1
Benzo(b)fluoranthene	ND		ug/kg	120	34.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	25	J	ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	24.	1
Fluorene	ND		ug/kg	200	20.	1
Phenanthrene	51	J	ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	35	J	ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	32.	1
1,4-Dioxane	ND		ug/kg	30	9.3	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633818
Report Date: 06/16/26

SAMPLE RESULTS

Lab ID: L2633818-01
Client ID: 5FS-PE-2B (10-12)
Sample Location: ROCHESTER, NY
Date Collected: 06/02/26 10:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	1640	J	ug/kg			1
Unknown	315	J	ug/kg			1
Unknown	191	J	ug/kg			1
Unknown	170	J	ug/kg			1
Unknown	334	J	ug/kg			1
Unknown	189	J	ug/kg			1
Unknown	225	J	ug/kg			1
Unknown Alkane	216	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		25-120
Phenol-d6	92		10-120
Nitrobenzene-d5	98		23-120
2-Fluorobiphenyl	66		30-120
2,4,6-Tribromophenol	55		10-136
4-Terphenyl-d14	52		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/11/26 05:31
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 06/10/26 21:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2226201-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	97	18.
Fluoranthene	ND		ug/kg	97	19.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	32	14.
Benzo(a)anthracene	ND		ug/kg	97	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	97	27.
Benzo(k)fluoranthene	ND		ug/kg	97	26.
Chrysene	ND		ug/kg	97	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	97	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	97	20.
Dibenzo(a,h)anthracene	ND		ug/kg	97	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	22.
Pyrene	ND		ug/kg	97	16.
Aniline	ND		ug/kg	32	12.
Dibenzofuran	ND		ug/kg	160	15.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	24.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	25.

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/11/26 05:31
Analyst: JG

Extraction Method: EPA 3546
Extraction Date: 06/10/26 21:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2226201-1					
1,4-Dioxane	ND		ug/kg	24	7.4
Tentatively Identified Compounds					
Total TIC Compounds	454	J	ug/kg		
Unknown	140	J	ug/kg		
Unknown	161	J	ug/kg		
Unknown	153	J	ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	68		25-120
Phenol-d6	80		10-120
Nitrobenzene-d5	81		23-120
2-Fluorobiphenyl	63		30-120
2,4,6-Tribromophenol	48		10-136
4-Terphenyl-d14	59		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2226201-2 WG2226201-3								
Acenaphthene	61		76		31-137	22		50
Hexachlorobenzene	62		78		40-140	23		50
Fluoranthene	57		74		40-140	26		50
Naphthalene	63		77		40-140	20		50
Nitrobenzene	82		90		40-140	9		50
Benzo(a)anthracene	55		70		40-140	24		50
Benzo(a)pyrene	59		78		40-140	28		50
Benzo(b)fluoranthene	57		73		40-140	25		50
Benzo(k)fluoranthene	60		79		40-140	27		50
Chrysene	56		73		40-140	26		50
Acenaphthylene	60		74		40-140	21		50
Anthracene	60		75		40-140	22		50
Benzo(ghi)perylene	56		73		40-140	26		50
Fluorene	59		74		40-140	23		50
Phenanthrene	60		76		40-140	24		50
Dibenzo(a,h)anthracene	55		72		40-140	27		50
Indeno(1,2,3-cd)pyrene	52		69		40-140	28		50
Pyrene	58		74		35-142	24		50
Aniline	58		61		40-140	5		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2226201-2 WG2226201-3								
Dibenzofuran	55		69		40-140	23		50
Pentachlorophenol	57		72		17-109	23		50
Phenol	71		81		26-90	13		50
2-Methylphenol	71		84		30-130	17		50
3-Methylphenol/4-Methylphenol	77		89		30-130	14		50
1,4-Dioxane	65		56		40-140	15		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	67		61		25-120
Phenol-d6	78		91		10-120
Nitrobenzene-d5	78		84		23-120
2-Fluorobiphenyl	54		67		30-120
2,4,6-Tribromophenol	57		74		10-136
4-Terphenyl-d14	49		64		18-120

METALS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633818
Report Date: 06/16/26

SAMPLE RESULTS

Lab ID: L2633818-01
Client ID: 5FS-PE-2B (10-12)
Sample Location: ROCHESTER, NY
Date Collected: 06/02/26 10:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	8260		mg/kg	9.54	3.10	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	4.77	3.67	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Arsenic, Total	7.93		mg/kg	0.954	0.412	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Barium, Total	49.3		mg/kg	0.954	0.101	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.482		mg/kg	0.477	0.053	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.190	J	mg/kg	0.954	0.053	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Calcium, Total	2220		mg/kg	9.54	5.41	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Chromium, Total	12.2		mg/kg	0.954	0.809	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Cobalt, Total	9.33		mg/kg	1.91	0.236	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Copper, Total	15.4		mg/kg	0.954	0.216	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Iron, Total	20200		mg/kg	23.8	7.63	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Lead, Total	10.2		mg/kg	4.77	0.227	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Magnesium, Total	3100		mg/kg	9.54	1.55	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Manganese, Total	313		mg/kg	0.954	0.511	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Mercury, Total	ND		mg/kg	0.090	0.059	1	06/15/26 12:39	06/15/26 13:35	EPA 7471B	1,7471B	RJG
Nickel, Total	21.5		mg/kg	2.38	0.771	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Potassium, Total	416		mg/kg	238	48.4	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	1.91	0.314	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Silver, Total	ND		mg/kg	0.477	0.284	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Sodium, Total	ND		mg/kg	191	101.	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	1.91	0.860	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Vanadium, Total	14.3		mg/kg	0.954	0.144	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
Zinc, Total	56.0		mg/kg	4.77	0.578	2	06/15/26 11:47	06/15/26 14:22	EPA 3050B	1,6010D	JMF
General Chemistry - Mansfield Lab											
Chromium, Trivalent	12.2		mg/kg	0.985	0.809	1		06/15/26 14:22	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633818
Report Date: 06/16/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG2227994-1										
Aluminum, Total	ND		mg/kg	4.00	1.30	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Antimony, Total	ND		mg/kg	2.00	1.54	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Arsenic, Total	ND		mg/kg	0.400	0.173	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Barium, Total	ND		mg/kg	0.400	0.042	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Beryllium, Total	ND		mg/kg	0.200	0.022	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Cadmium, Total	ND		mg/kg	0.400	0.022	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Calcium, Total	ND		mg/kg	4.00	2.27	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Chromium, Total	ND		mg/kg	0.400	0.339	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Cobalt, Total	ND		mg/kg	0.800	0.099	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Copper, Total	ND		mg/kg	0.400	0.091	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Iron, Total	ND		mg/kg	10.0	3.20	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Lead, Total	ND		mg/kg	2.00	0.095	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Magnesium, Total	ND		mg/kg	4.00	0.652	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Manganese, Total	ND		mg/kg	0.400	0.214	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Nickel, Total	ND		mg/kg	1.00	0.323	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Potassium, Total	ND		mg/kg	100	20.3	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Selenium, Total	ND		mg/kg	0.800	0.132	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Silver, Total	ND		mg/kg	0.200	0.119	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Sodium, Total	ND		mg/kg	80.0	42.4	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Thallium, Total	ND		mg/kg	0.800	0.361	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Vanadium, Total	ND		mg/kg	0.400	0.060	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF
Zinc, Total	ND		mg/kg	2.00	0.242	1	06/15/26 11:47	06/15/26 14:18	1,6010D	JMF

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG2228006-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	06/15/26 12:39	06/15/26 13:29	1,7471B	RJG

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633818
Report Date: 06/16/26

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2227994-2								
Aluminum, Total	96		-		80-120	-		20
Antimony, Total	100		-		80-120	-		20
Arsenic, Total	96		-		80-120	-		20
Barium, Total	98		-		80-120	-		20
Beryllium, Total	96		-		80-120	-		20
Cadmium, Total	100		-		80-120	-		20
Calcium, Total	100		-		80-120	-		20
Chromium, Total	96		-		80-120	-		20
Cobalt, Total	97		-		80-120	-		20
Copper, Total	96		-		80-120	-		20
Iron, Total	97		-		80-120	-		20
Lead, Total	97		-		80-120	-		20
Magnesium, Total	98		-		80-120	-		20
Manganese, Total	98		-		80-120	-		20
Nickel, Total	98		-		80-120	-		20
Potassium, Total	99		-		80-120	-		20
Selenium, Total	100		-		80-120	-		20
Silver, Total	100		-		80-120	-		20
Sodium, Total	101		-		80-120	-		20
Thallium, Total	98		-		80-120	-		20
Vanadium, Total	98		-		80-120	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2227994-2					
Zinc, Total	96	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2228006-2					
Mercury, Total	97	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2227994-3 QC Sample: L2633818-01 Client ID: 5FS-PE-2B (10-12)												
Aluminum, Total	8260	193	8690	**222**	Q	-	-		75-125	-		
Antimony, Total	ND	48.3	19.7	**41**	Q	-	-		75-125	-		
Arsenic, Total	7.93	11.6	20.0	104		-	-		75-125	-		
Barium, Total	49.3	193	235	96		-	-		75-125	-		
Beryllium, Total	0.482	4.83	5.00	93		-	-		75-125	-		
Cadmium, Total	0.190J	5.12	5.06	99		-	-		75-125	-		
Calcium, Total	2220	967	2780	**58**	Q	-	-		75-125	-		
Chromium, Total	12.2	19.3	30.6	95		-	-		75-125	-		
Cobalt, Total	9.33	48.3	55.8	96		-	-		75-125	-		
Copper, Total	15.4	24.2	39.1	98		-	-		75-125	-		
Iron, Total	20200	96.7	21200	**1030**	Q	-	-		75-125	-		
Lead, Total	10.2	51.2	57.1	92		-	-		75-125	-		
Magnesium, Total	3100	967	4050	98		-	-		75-125	-		
Manganese, Total	313	48.3	407	**194**	Q	-	-		75-125	-		
Nickel, Total	21.5	48.3	68.0	96		-	-		75-125	-		
Potassium, Total	416	967	1340	96		-	-		75-125	-		
Selenium, Total	ND	11.6	10.2	88		-	-		75-125	-		
Silver, Total	ND	4.83	4.66	96		-	-		75-125	-		
Sodium, Total	ND	967	972	100		-	-		75-125	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2227994-3 QC Sample: L2633818-01 Client ID: 5FS-PE-2B (10-12)												
Thallium, Total	ND	11.6	10.8	93		-	-		75-125	-		
Vanadium, Total	14.3	48.3	60.9	96		-	-		75-125	-		
Zinc, Total	56.0	48.3	101	93		-	-		75-125	-		
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2228006-3 QC Sample: L2633818-01 Client ID: 5FS-PE-2B (10-12)												
Mercury, Total	ND	1.64	1.62	99		-	-		80-120	-		

Lab Duplicate Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2227994-4 QC Sample: L2633818-01 Client ID: 5FS-PE-2B (10-12)						
Aluminum, Total	8260	8390	mg/kg	2		20
Antimony, Total	ND	ND	mg/kg	NC		20
Arsenic, Total	7.93	8.78	mg/kg	10		20
Barium, Total	49.3	49.4	mg/kg	0		20
Beryllium, Total	0.482	0.500	mg/kg	4		20
Cadmium, Total	0.190J	0.112J	mg/kg	NC		20
Calcium, Total	2220	1920	mg/kg	14		20
Chromium, Total	12.2	12.5	mg/kg	2		20
Cobalt, Total	9.33	9.78	mg/kg	5		20
Copper, Total	15.4	16.0	mg/kg	4		20
Iron, Total	20200	21200	mg/kg	5		20
Lead, Total	10.2	11.7	mg/kg	14		20
Magnesium, Total	3100	3110	mg/kg	0		20
Manganese, Total	313	286	mg/kg	9		20
Nickel, Total	21.5	21.6	mg/kg	0		20
Potassium, Total	416	550	mg/kg	**28**	Q	20
Selenium, Total	ND	ND	mg/kg	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET

Project Number: 4694.0001B000

Lab Number: L2633818

Report Date: 06/16/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2227994-4 QC Sample: L2633818-01 Client ID: 5FS-PE-2B (10-12)						
Silver, Total	ND	ND	mg/kg	NC		20
Sodium, Total	ND	ND	mg/kg	NC		20
Thallium, Total	ND	ND	mg/kg	NC		20
Vanadium, Total	14.3	15.2	mg/kg	6		20
Zinc, Total	56.0	57.3	mg/kg	2		20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2228006-4 QC Sample: L2633818-01 Client ID: 5FS-PE-2B (10-12)						
Mercury, Total	ND	0.082J	mg/kg	NC		20

INORGANICS
&
MISCELLANEOUS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

SAMPLE RESULTS

Lab ID: L2633818-01
Client ID: 5FS-PE-2B (10-12)
Sample Location: ROCHESTER, NY

Date Collected: 06/02/26 10:30
Date Received: 06/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.2		%	0.100	NA	1	-	06/11/26 04:36	121,2540G	JMN
Cyanide, Total	ND		mg/kg	1.2	0.24	1	06/10/26 14:15	06/10/26 17:24	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.985	0.197	1	06/11/26 13:19	06/15/26 10:29	1,7196A	LOF

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633818
Report Date: 06/16/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG2225991-1										
Cyanide, Total	ND		mg/kg	0.94	0.20	1	06/10/26 14:15	06/10/26 17:18	1,9010C/9012B	JER
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG2226356-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	06/11/26 13:19	06/15/26 10:29	1,7196A	LOF

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG2225991-2 WG2225991-3								
Cyanide, Total	**66**	Q	87		80-120	28		35
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG2226356-2								
Chromium, Hexavalent	102		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2225991-4 WG2225991-5 QC Sample: L2633818-01 Client ID: 5FS-PE-2B (10-12)												
Cyanide, Total	ND	12	11	94		12	99		75-125	5		35
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2225991-6 WG2225991-7 QC Sample: L2635802-11 Client ID: MS Sample												
Cyanide, Total	ND	10	10	95		10	99		75-125	4		35
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2226356-4 QC Sample: L2633818-01 Client ID: 5FS-PE-2B (10-12)												
Chromium, Hexavalent	ND	1650	1540	93		-	-		75-125	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET

Project Number: 4694.0001B000

Lab Number: L2633818

Report Date: 06/16/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2226288-1 QC Sample: L2632560-39 Client ID: DUP Sample						
Solids, Total	88.6	89.5	%	1		10
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2226356-6 QC Sample: L2633818-01 Client ID: 5FS-PE-2B (10-12)						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2633818
Report Date: 06/16/26

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(*)
L2633818-01A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2633818-01B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2633818-01C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2633818-01D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2633818-01E	Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),TL-TI(180),CR-TI(180),AL-TI(180),NI-TI(180),CU-TI(180),ZN-TI(180),SB-TI(180),SE-TI(180),PB-TI(180),CO-TI(180),V-TI(180),HG-T(28),MG-TI(180),MN-TI(180),FE-TI(180),CD-TI(180),CA-TI(180),K-TI(180),NA-TI(180)
L2633818-01F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2633818-01G	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2633818-01X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2633818-01Y	Vial Water preserved split	NA	NA			Y	Absent	03-JUN-26 07:50	NYTCL-8260HLW-R2(14)
L2633818-01Z	Vial Water preserved split	NA	NA			Y	Absent	03-JUN-26 07:50	NYTCL-8260HLW-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT STREET	**Lab Number:**	L2633818
Project Number:	4694.0001B000	**Report Date:**	06/16/26

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:	5 FLINT STREET	**Lab Number:**	L2633818
Project Number:	4694.0001B000	**Report Date:**	06/16/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT STREET	**Lab Number:**	L2633818
Project Number:	4694.0001B000	**Report Date:**	06/16/26

Data Qualifiers

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: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2633818
Report Date: 06/16/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

107 Calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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 504.1: EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,**.

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, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water
EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water
SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY KY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NV MA00030, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

ON HOLD!

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

L2633818

Scan QR Code for instructions

Company Name: Roux	Contact/Report To: Eric Runstrom
Street Address: 5 Flint Street, Rochester, NY	Phone #: 781.569.4031
	E-Mail: erunstrom@rouxinc.com
	Cc E-Mail: sbarberios@rouxinc.com; rauraci@rouxinc.com
Customer Project #: 4804.0001B000	Invoice to: Roux
Project Name: 5 Flint Street	Invoice E-mail: rouxap@rouxinc.com
Site Collection Info/Facility ID (as applicable):	Purchase Order # (if applicable):
	Quote #: 00203091
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET	County / State origin of sample(s): Monroe County, New York

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [X] EQUIS [X] Other Roux MA formatted EDDS

Regulatory Program (DW, RCRA, etc.) as applicable: Part 375, Table 6.8 (a), please include TICS for both VOCs and SVOCs. Category B deliverable. Reportable [X] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other _____

Date Results Requested: 5 DAY TAT

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs + TICS (8260)	SVOCs + TICS (8270)	TAL Metals + total cyanide + tri and hexa Chromium (6010D)	Sample Comment
SFS-PE-2B (10-12)	SOIL	G	NA	NA	6/2/26	10:30	7			X	X	X	HOLD

Specify Container Size **: 6 10 10

Identify Container Preservative Type***: 8 11 2

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only: Proj. Mgr: / Acct/Num / Client ID: / Table #: / Profile / Template: / Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:

Collected By: Printed Name E.Spirito / S. Keenan Signature

Customer Remarks / Special Conditions / Possible Hazards: NA

Coolers: Thermometer ID: Correction Factor (°C): Obs. Temp. (°C): Corrected Temp. (°C): [ ] On Ice

Relinquished by/Company: (Signature) ROUX	Date/Time: 6/2/26 15:20	Received by/Company: (Signature) PACE ROCH SVC CTR	Date/Time: 6/2/26 1520	Tracking Number:	
Relinquished by/Company: (Signature) ROC S/C	Date/Time: 6-2-26 18:40	Received by/Company: (Signature) NORBY	Date/Time: 6-2-26 18:40	Delivered by: [ ] In-Person [ ] Courier	
Relinquished by/Company: (Signature) NORBY	Date/Time: 6-2-26 19:30	Received by/Company: (Signature)	Date/Time: 6/2 2200	[ ] FedEx [ ] UPS [ ] Other	
Relinquished by/Company: (Signature)	Date/Time: 6/3 200	Received by/Company: (Signature) DC AC 312 8-A2AA	Date/Time:	Page: of	

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

ENV-FRM-CORQ-0019_v02_110123 ©

Sample Delivery Group Summary

Pace Job Number : L2633818

Account Name : Roux
Project Number : 4694.0001B000
Project Name : 5 FLINT STREET

Received : 02-JUN-2026
Reviewer : Malik Rouse

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	3.8	

Condition Information

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

Volatile Organics/VPH

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

ANALYTICAL REPORT

Lab Number:	L2638412
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT STREET
Project Number:	4694.0001B000
Report Date:	06/25/26

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Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2638412-01	5FS-SW-15 (10-12)	SOIL	Not Specified	06/18/26 10:30	06/18/26
L2638412-02	5FS-SW-14 (7-9)	SOIL	Not Specified	06/18/26 10:00	06/18/26
L2638412-03	5FS-SW-11 (13-15)	SOIL	Not Specified	06/18/26 11:00	06/18/26
L2638412-04	5FS-SW-11 (7-9)	SOIL	Not Specified	06/18/26 11:30	06/18/26
L2638412-05	TRIP BLANK	SOIL	Not Specified	06/18/26 00:00	06/18/26

Project Name:	5 FLINT STREET	**Lab Number:**	L2638412
Project Number:	4694.0001B000	**Report Date:**	06/25/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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: 5 FLINT STREET **Lab Number:** L2638412
Project Number: 4694.0001B000 **Report Date:** 06/25/26

Case Narrative (continued)

Report Submission

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

Volatile Organics

L2638412-01: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (163%); however, the sample was not re-analyzed due to coelution with obvious interferences.

L2638412-02: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (191%); however, the sample was not re-analyzed due to coelution with obvious interferences.

L2638412-03: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (153%); however, the sample was not re-analyzed due to coelution with obvious interferences.

The WG2231416-5 Method Blank associated with L2638412-01, -02, -03, and -05 has a concentration above the reporting limit for Chloroform. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

Total Metals

L2638412-01 through -04: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the sample matrix.

The WG2231993-3 MS recoveries performed on L2638412-01 do not apply for aluminum (223%), calcium (0%), iron (0%) and magnesium (0%) because the sample concentrations are greater than four times the spike amounts added.

The WG2231993-3 MS recoveries performed on L2638412-01 are outside the acceptance criteria for antimony (50%), sodium (130%) and zinc (176%). A post digestion spike was performed and was within acceptance criteria.

The WG2231999-3 MS recovery performed on L2638412-01 is outside the acceptance criteria for mercury (127%). A post digestion spike was performed and was within acceptance criteria.

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Case Narrative (continued)

The WG2231993-4 Laboratory Duplicate RPDs performed on L2638412-01 are outside the acceptance criteria for chromium (21%), iron (30%), magnesium (81%), nickel (33%), vanadium (34%) and zinc (30%) due to the non-homogeneous nature of the native sample.

The WG2231999-4 Laboratory Duplicate RPD performed on L2638412-01 is outside the acceptance criteria for mercury (68%) due to the non-homogeneous nature of the native sample.

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

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative

Date: 06/25/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Organics by EPA 5035/8260 Low - Westborough Lab								
8260D	5FS-SW-15 (10-12)	L2638412-01	4-Bromofluorobenzene	Surrogate	163	70-130	-	potential high bias
8260D	5FS-SW-14 (7-9)	L2638412-02	4-Bromofluorobenzene	Surrogate	191	70-130	-	potential high bias
8260D	5FS-SW-11 (13-15)	L2638412-03	4-Bromofluorobenzene	Surrogate	153	70-130	-	potential high bias
8260D	Batch QC	WG2231416-3	Vinyl chloride	LCS	133	67-130	01-03,05	potential high bias
Total Metals - Mansfield Lab								
6010D	Batch QC (L2638412-01)	WG2231993-3	Aluminum, Total	MS	223	75-125	01-04	potential high bias
6010D	Batch QC (L2638412-01)	WG2231993-3	Antimony, Total	MS	50	75-125	01-04	potential low bias
6010D	Batch QC (L2638412-01)	WG2231993-3	Calcium, Total	MS	0	75-125	01-04	potential low bias
6010D	Batch QC (L2638412-01)	WG2231993-3	Iron, Total	MS	0	75-125	01-04	potential low bias
6010D	Batch QC (L2638412-01)	WG2231993-3	Magnesium, Total	MS	0	75-125	01-04	potential low bias
6010D	Batch QC (L2638412-01)	WG2231993-3	Sodium, Total	MS	130	75-125	01-04	potential high bias
6010D	Batch QC (L2638412-01)	WG2231993-3	Zinc, Total	MS	176	75-125	01-04	potential high bias
6010D	Batch QC (L2638412-01)	WG2231993-4	Chromium, Total	Duplicate	21	NA	01-04	non-directional bias
6010D	Batch QC (L2638412-01)	WG2231993-4	Iron, Total	Duplicate	30	NA	01-04	non-directional bias
6010D	Batch QC (L2638412-01)	WG2231993-4	Magnesium, Total	Duplicate	81	NA	01-04	non-directional bias
6010D	Batch QC (L2638412-01)	WG2231993-4	Nickel, Total	Duplicate	33	NA	01-04	non-directional bias
6010D	Batch QC (L2638412-01)	WG2231993-4	Vanadium, Total	Duplicate	34	NA	01-04	non-directional bias
6010D	Batch QC (L2638412-01)	WG2231993-4	Zinc, Total	Duplicate	30	NA	01-04	non-directional bias
7471B	Batch QC (L2638412-01)	WG2231999-3	Mercury, Total	MS	127	80-120	01-04	potential high bias
7471B	Batch QC (L2638412-01)	WG2231999-4	Mercury, Total	Duplicate	68	NA	01-04	non-directional bias
General Chemistry - Westborough Lab								
9010C/9012B	Batch QC (L2638425-13)	WG2231810-6	Cyanide, Total	MS	0	75-125	01-04	potential low bias
9010C/9012B	Batch QC (L2638425-13)	WG2231810-7	Cyanide, Total	MSD	0	75-125	01-04	potential low bias

ORGANICS

VOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-01
Client ID: 5FS-SW-15 (10-12)
Sample Location: Not Specified
Date Collected: 06/18/26 10:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/21/26 15:35
Analyst: JIC
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.2	2.4	1
1,1-Dichloroethane	14		ug/kg	1.0	0.15	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.0	0.24	1
Tetrachloroethene	ND		ug/kg	0.52	0.21	1
Chlorobenzene	ND		ug/kg	0.52	0.13	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.27	1
1,1,1-Trichloroethane	22		ug/kg	0.52	0.18	1
Benzene	1.2		ug/kg	0.52	0.17	1
Toluene	2.6		ug/kg	1.0	0.57	1
Ethylbenzene	0.61	J	ug/kg	1.0	0.15	1
Vinyl chloride	0.39	J	ug/kg	1.0	0.35	1
1,1-Dichloroethene	0.55	J	ug/kg	1.0	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.14	1
Trichloroethene	ND		ug/kg	0.52	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.21	1
p/m-Xylene	6.5		ug/kg	2.1	0.59	1
o-Xylene	0.84	J	ug/kg	1.0	0.31	1
Xylenes, Total	7.3	J	ug/kg	1.0	0.31	1
cis-1,2-Dichloroethene	0.21	J	ug/kg	1.0	0.18	1
Acetone	28		ug/kg	10	5.1	1
2-Butanone	ND		ug/kg	10	2.3	1
n-Butylbenzene	ND		ug/kg	1.0	0.18	1
sec-Butylbenzene	4.1		ug/kg	1.0	0.15	1
tert-Butylbenzene	1.8	J	ug/kg	2.1	0.12	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-01
Client ID: 5FS-SW-15 (10-12)
Sample Location: Not Specified
Date Collected: 06/18/26 10:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	1.0		ug/kg	1.0	0.18	1
1,3,5-Trimethylbenzene	11		ug/kg	2.1	0.20	1
1,2,4-Trimethylbenzene	10		ug/kg	2.1	0.35	1
Tentatively Identified Compounds						
Total TIC Compounds	1080	J	ug/kg			1
Unknown Alkane	89.8	J	ug/kg			1
Cyclohexane, 1,1-dimethyl-	142	NJ	ug/kg			1
Cyclopentane, 1,2,4-trimethyl-	91.1	NJ	ug/kg			1
Unknown Cycloalkane	326	J	ug/kg			1
Unknown Cycloalkane	86.0	J	ug/kg			1
Pentane, 2,3-dimethyl-	66.4	NJ	ug/kg			1
Unknown	63.5	J	ug/kg			1
Unknown	67.2	J	ug/kg			1
Unknown	78.3	J	ug/kg			1
Decane, 4-methyl-	70.4	NJ	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	**163**	Q	70-130
Dibromofluoromethane	97		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-02
Client ID: 5FS-SW-14 (7-9)
Sample Location: Not Specified
Date Collected: 06/18/26 10:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/21/26 16:01
Analyst: JIC
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.2	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.15	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.0	0.24	1
Tetrachloroethene	ND		ug/kg	0.52	0.20	1
Chlorobenzene	ND		ug/kg	0.52	0.13	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.27	1
1,1,1-Trichloroethane	ND		ug/kg	0.52	0.17	1
Benzene	ND		ug/kg	0.52	0.17	1
Toluene	ND		ug/kg	1.0	0.57	1
Ethylbenzene	ND		ug/kg	1.0	0.15	1
Vinyl chloride	ND		ug/kg	1.0	0.35	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.14	1
Trichloroethene	ND		ug/kg	0.52	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.21	1
p/m-Xylene	ND		ug/kg	2.1	0.59	1
o-Xylene	ND		ug/kg	1.0	0.30	1
Xylenes, Total	ND		ug/kg	1.0	0.30	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Acetone	58		ug/kg	10	5.0	1
2-Butanone	ND		ug/kg	10	2.3	1
n-Butylbenzene	2.6		ug/kg	1.0	0.17	1
sec-Butylbenzene	11		ug/kg	1.0	0.15	1
tert-Butylbenzene	3.8		ug/kg	2.1	0.12	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-02
Client ID: 5FS-SW-14 (7-9)
Sample Location: Not Specified
Date Collected: 06/18/26 10:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.0	0.18	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.1	0.20	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.1	0.35	1
Tentatively Identified Compounds						
Total TIC Compounds	1390	J	ug/kg			1
Unknown Cycloalkane	231	J	ug/kg			1
Unknown Cycloalkane	163	J	ug/kg			1
Decane, 4-methyl-	110	NJ	ug/kg			1
Unknown Benzene	121	J	ug/kg			1
Unknown	89.7	J	ug/kg			1
Unknown	149	J	ug/kg			1
Unknown Cycloalkane	164	J	ug/kg			1
Cyclohexane, 1,1-dimethyl-	102	NJ	ug/kg			1
Unknown	138	J	ug/kg			1
Unknown Cycloalkane	124	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	**191**	Q	70-130
Dibromofluoromethane	96		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-03
Client ID: 5FS-SW-11 (13-15)
Sample Location: Not Specified
Date Collected: 06/18/26 11:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/21/26 16:27
Analyst: JIC
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.4	2.5	1
1,1-Dichloroethane	ND		ug/kg	1.1	0.16	1
Chloroform	ND		ug/kg	1.6	0.15	1
Carbon tetrachloride	ND		ug/kg	1.1	0.25	1
Tetrachloroethene	ND		ug/kg	0.54	0.21	1
Chlorobenzene	ND		ug/kg	0.54	0.14	1
1,2-Dichloroethane	ND		ug/kg	1.1	0.28	1
1,1,1-Trichloroethane	ND		ug/kg	0.54	0.18	1
Benzene	ND		ug/kg	0.54	0.18	1
Toluene	ND		ug/kg	1.1	0.59	1
Ethylbenzene	ND		ug/kg	1.1	0.15	1
Vinyl chloride	ND		ug/kg	1.1	0.36	1
1,1-Dichloroethene	ND		ug/kg	1.1	0.26	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.15	1
Trichloroethene	ND		ug/kg	0.54	0.15	1
1,2-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,3-Dichlorobenzene	ND		ug/kg	2.2	0.16	1
1,4-Dichlorobenzene	ND		ug/kg	2.2	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.2	0.22	1
p/m-Xylene	ND		ug/kg	2.2	0.60	1
o-Xylene	ND		ug/kg	1.1	0.31	1
Xylenes, Total	ND		ug/kg	1.1	0.31	1
cis-1,2-Dichloroethene	ND		ug/kg	1.1	0.19	1
Acetone	31		ug/kg	11	5.2	1
2-Butanone	ND		ug/kg	11	2.4	1
n-Butylbenzene	0.66	J	ug/kg	1.1	0.18	1
sec-Butylbenzene	3.5		ug/kg	1.1	0.16	1
tert-Butylbenzene	3.1		ug/kg	2.2	0.13	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-03
Client ID: 5FS-SW-11 (13-15)
Sample Location: Not Specified
Date Collected: 06/18/26 11:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.1	0.18	1
1,3,5-Trimethylbenzene	0.29	J	ug/kg	2.2	0.21	1
1,2,4-Trimethylbenzene	0.44	J	ug/kg	2.2	0.36	1
Tentatively Identified Compounds						
Total TIC Compounds	1090	J	ug/kg			1
Unknown	144	J	ug/kg			1
Unknown Cycloalkane	88.3	J	ug/kg			1
Unknown Alkane	74.1	J	ug/kg			1
Unknown	65.3	J	ug/kg			1
Unknown Cycloalkane	238	J	ug/kg			1
Unknown	58.5	J	ug/kg			1
Cyclohexane, 1,1-dimethyl-	213	NJ	ug/kg			1
Unknown	87.0	J	ug/kg			1
Hexane, 2,4-dimethyl-	58.4	NJ	ug/kg			1
Unknown	61.7	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	118		70-130
4-Bromofluorobenzene	**153**	Q	70-130
Dibromofluoromethane	95		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-04
Client ID: 5FS-SW-11 (7-9)
Sample Location: Not Specified
Date Collected: 06/18/26 11:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/19/26 13:02
Analyst: JIC
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
Methylene chloride	ND		ug/kg	360	160	1
1,1-Dichloroethane	ND		ug/kg	72	10.	1
Chloroform	ND		ug/kg	110	10.	1
Carbon tetrachloride	ND		ug/kg	72	16.	1
Tetrachloroethene	ND		ug/kg	36	14.	1
Chlorobenzene	ND		ug/kg	36	9.2	1
1,2-Dichloroethane	ND		ug/kg	72	18.	1
1,1,1-Trichloroethane	ND		ug/kg	36	12.	1
Benzene	ND		ug/kg	36	12.	1
Toluene	ND		ug/kg	72	39.	1
Ethylbenzene	93		ug/kg	72	10.	1
Vinyl chloride	ND		ug/kg	72	24.	1
1,1-Dichloroethene	ND		ug/kg	72	17.	1
trans-1,2-Dichloroethene	ND		ug/kg	110	9.9	1
Trichloroethene	ND		ug/kg	36	9.9	1
1,2-Dichlorobenzene	ND		ug/kg	140	10.	1
1,3-Dichlorobenzene	ND		ug/kg	140	11.	1
1,4-Dichlorobenzene	ND		ug/kg	140	12.	1
Methyl tert butyl ether	ND		ug/kg	140	14.	1
p/m-Xylene	ND		ug/kg	140	40.	1
o-Xylene	ND		ug/kg	72	21.	1
Xylenes, Total	ND		ug/kg	72	21.	1
cis-1,2-Dichloroethene	ND		ug/kg	72	13.	1
Acetone	ND		ug/kg	720	350	1
2-Butanone	ND		ug/kg	720	160	1
n-Butylbenzene	15	J	ug/kg	72	12.	1
sec-Butylbenzene	30	J	ug/kg	72	10.	1
tert-Butylbenzene	28	J	ug/kg	140	8.5	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-04
Client ID: 5FS-SW-11 (7-9)
Sample Location: Not Specified
Date Collected: 06/18/26 11:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
n-Propylbenzene	ND		ug/kg	72	12.	1
1,3,5-Trimethylbenzene	ND		ug/kg	140	14.	1
1,2,4-Trimethylbenzene	45	J	ug/kg	140	24.	1
Tentatively Identified Compounds						
Total TIC Compounds	10800	J	ug/kg			1
Unknown Cyclohexane	1570	J	ug/kg			1
Unknown Cyclohexane	862	J	ug/kg			1
Unknown	907	J	ug/kg			1
Cyclopentane, 1,2,4-trimethyl-	1500	NJ	ug/kg			1
Unknown Cyclopentane	802	J	ug/kg			1
Unknown Alkane	975	J	ug/kg			1
Unknown	962	J	ug/kg			1
Unknown Cyclohexane	897	J	ug/kg			1
Unknown	1430	J	ug/kg			1
Unknown Cyclohexane	878	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	93		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	93		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-05
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 06/18/26 00:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/21/26 12:08
Analyst: JIC
Percent Solids: Results Reported on an "AS RECEIVED" basis

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.0	2.3	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.14	1
Chloroform	0.85	JB	ug/kg	1.5	0.14	1
Carbon tetrachloride	ND		ug/kg	1.0	0.23	1
Tetrachloroethene	ND		ug/kg	0.50	0.20	1
Chlorobenzene	ND		ug/kg	0.50	0.13	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.26	1
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17	1
Benzene	ND		ug/kg	0.50	0.17	1
Toluene	ND		ug/kg	1.0	0.54	1
Ethylbenzene	ND		ug/kg	1.0	0.14	1
Vinyl chloride	ND		ug/kg	1.0	0.34	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.24	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14	1
Trichloroethene	ND		ug/kg	0.50	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17	1
Methyl tert butyl ether	ND		ug/kg	2.0	0.20	1
p/m-Xylene	ND		ug/kg	2.0	0.56	1
o-Xylene	ND		ug/kg	1.0	0.29	1
Xylenes, Total	ND		ug/kg	1.0	0.29	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Acetone	ND		ug/kg	10	4.8	1
2-Butanone	ND		ug/kg	10	2.2	1
n-Butylbenzene	ND		ug/kg	1.0	0.17	1
sec-Butylbenzene	ND		ug/kg	1.0	0.15	1
tert-Butylbenzene	ND		ug/kg	2.0	0.12	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-05
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 06/18/26 00:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.0	0.17	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33	1
Tentatively Identified Compounds						
Total TIC Compounds	2.03	J	ug/kg			1
Cyclotrisiloxane, Hexamethyl-	2.03	NJ	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	101		70-130
Dibromofluoromethane	102		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/21/26 10:50
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 01-03,05 Batch: WG2231416-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	1.5		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/21/26 10:50
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 01-03,05 Batch: WG2231416-5					
Acetone	ND		ug/kg	10	4.8
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	111		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	98		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/19/26 09:38
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 04 Batch: WG2231444-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	18	J	ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Vinyl chloride	ND		ug/kg	50	17.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8
Trichloroethene	ND		ug/kg	25	6.8
1,2-Dichlorobenzene	8.0	J	ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
Acetone	ND		ug/kg	500	240

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/19/26 09:38
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 04 Batch: WG2231444-5					
2-Butanone	ND		ug/kg	500	110
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
n-Propylbenzene	ND		ug/kg	50	8.6
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	92		70-130
Dibromofluoromethane	99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 01-03,05 Batch: WG2231416-3 WG2231416-4								
Methylene chloride	102		100		70-130	2		30
1,1-Dichloroethane	113		111		70-130	2		30
Chloroform	108		107		70-130	1		30
Carbon tetrachloride	112		109		70-130	3		30
Tetrachloroethene	110		108		70-130	2		30
Chlorobenzene	104		103		70-130	1		30
1,2-Dichloroethane	107		106		70-130	1		30
1,1,1-Trichloroethane	112		109		70-130	3		30
Benzene	109		107		70-130	2		30
Toluene	105		104		70-130	1		30
Ethylbenzene	108		106		70-130	2		30
Vinyl chloride	**133**	Q	126		67-130	5		30
1,1-Dichloroethene	117		112		65-135	4		30
trans-1,2-Dichloroethene	109		107		70-130	2		30
Trichloroethene	107		108		70-130	1		30
1,2-Dichlorobenzene	101		100		70-130	1		30
1,3-Dichlorobenzene	103		103		70-130	0		30
1,4-Dichlorobenzene	98		98		70-130	0		30
Methyl tert butyl ether	98		97		66-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 01-03,05 Batch: WG2231416-3 WG2231416-4								
p/m-Xylene	108		106		70-130	2		30
o-Xylene	104		103		70-130	1		30
cis-1,2-Dichloroethene	102		102		70-130	0		30
Acetone	125		98		54-140	24		30
2-Butanone	111		105		70-130	6		30
n-Butylbenzene	116		114		70-130	2		30
sec-Butylbenzene	111		110		70-130	1		30
tert-Butylbenzene	105		105		70-130	0		30
n-Propylbenzene	112		113		70-130	1		30
1,3,5-Trimethylbenzene	106		106		70-130	0		30
1,2,4-Trimethylbenzene	107		106		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	107		105		70-130
Toluene-d8	101		101		70-130
4-Bromofluorobenzene	105		101		70-130
Dibromofluoromethane	99		99		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 04 Batch: WG2231444-3 WG2231444-4								
Methylene chloride	99		95		70-130	4		30
1,1-Dichloroethane	102		95		70-130	7		30
Chloroform	96		92		70-130	4		30
Carbon tetrachloride	92		89		70-130	3		30
Tetrachloroethene	98		94		70-130	4		30
Chlorobenzene	106		102		70-130	4		30
1,2-Dichloroethane	96		94		70-130	2		30
1,1,1-Trichloroethane	108		100		70-130	8		30
Benzene	106		100		70-130	6		30
Toluene	102		97		70-130	5		30
Ethylbenzene	103		98		70-130	5		30
Vinyl chloride	113		102		67-130	10		30
1,1-Dichloroethene	111		103		65-135	7		30
trans-1,2-Dichloroethene	106		100		70-130	6		30
Trichloroethene	112		107		70-130	5		30
1,2-Dichlorobenzene	108		104		70-130	4		30
1,3-Dichlorobenzene	109		105		70-130	4		30
1,4-Dichlorobenzene	107		104		70-130	3		30
Methyl tert butyl ether	91		90		66-130	1		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 04 Batch: WG2231444-3 WG2231444-4								
p/m-Xylene	108		102		70-130	6		30
o-Xylene	105		100		70-130	5		30
cis-1,2-Dichloroethene	98		96		70-130	2		30
Acetone	70		68		54-140	3		30
2-Butanone	70		70		70-130	0		30
n-Butylbenzene	118		111		70-130	6		30
sec-Butylbenzene	117		110		70-130	6		30
tert-Butylbenzene	112		107		70-130	5		30
n-Propylbenzene	115		108		70-130	6		30
1,3,5-Trimethylbenzene	114		108		70-130	5		30
1,2,4-Trimethylbenzene	115		110		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	91		92		70-130
Toluene-d8	98		99		70-130
4-Bromofluorobenzene	96		98		70-130
Dibromofluoromethane	100		97		70-130

SEMIVOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-01
Client ID: 5FS-SW-15 (10-12)
Sample Location: Not Specified
Date Collected: 06/18/26 10:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/20/26 11:34
Analyst: GMR
Percent Solids: 81%
Extraction Method: EPA 3546
Extraction Date: 06/19/26 18:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	21.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	46	J	ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	40	18.	1
Benzo(a)anthracene	31	J	ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	160	49.	1
Benzo(b)fluoranthene	38	J	ug/kg	120	34.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	28	J	ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	24	J	ug/kg	160	24.	1
Fluorene	ND		ug/kg	200	19.	1
Phenanthrene	30	J	ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	41	J	ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	31.	1
1,4-Dioxane	ND		ug/kg	30	9.2	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-01
Client ID: 5FS-SW-15 (10-12)
Sample Location: Not Specified
Date Collected: 06/18/26 10:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	3800	J	ug/kg			1
Unknown	230	J	ug/kg			1
Unknown	282	J	ug/kg			1
Unknown Alkane	173	J	ug/kg			1
Unknown Benzene	328	J	ug/kg			1
Unknown Cycloalkane	174	J	ug/kg			1
Unknown	176	J	ug/kg			1
Unknown Alkane	239	J	ug/kg			1
Unknown	181	J	ug/kg			1
Unknown Alkane	297	J	ug/kg			1
Unknown Alkane	316	J	ug/kg			1
Unknown Organic Acid	1220	J	ug/kg			1
Unknown Alkane	183	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	65		25-120
Phenol-d6	71		10-120
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	65		30-120
2,4,6-Tribromophenol	74		10-136
4-Terphenyl-d14	60		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-02
Client ID: 5FS-SW-14 (7-9)
Sample Location: Not Specified

Date Collected: 06/18/26 10:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/20/26 11:53
Analyst: GMR
Percent Solids: 85%

Extraction Method: EPA 3546
Extraction Date: 06/19/26 18:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	20.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	53	J	ug/kg	120	22.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	39	17.	1
Benzo(a)anthracene	29	J	ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	160	48.	1
Benzo(b)fluoranthene	ND		ug/kg	120	33.	1
Benzo(k)fluoranthene	ND		ug/kg	120	31.	1
Chrysene	25	J	ug/kg	120	20.	1
Acenaphthylene	ND		ug/kg	160	30.	1
Anthracene	ND		ug/kg	120	38.	1
Benzo(ghi)perylene	ND		ug/kg	160	23.	1
Fluorene	ND		ug/kg	200	19.	1
Phenanthrene	63	J	ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	27.	1
Pyrene	50	J	ug/kg	120	19.	1
Aniline	ND		ug/kg	39	15.	1
Dibenzofuran	ND		ug/kg	200	18.	1
Pentachlorophenol	ND		ug/kg	160	43.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	30.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	31.	1
1,4-Dioxane	ND		ug/kg	29	9.0	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-02
Client ID: 5FS-SW-14 (7-9)
Sample Location: Not Specified
Date Collected: 06/18/26 10:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	5320	J	ug/kg			1
Unknown Organic Acid	1160	J	ug/kg			1
Unknown Alkane	223	J	ug/kg			1
Unknown Alkane	305	J	ug/kg			1
Unknown Alkane	305	J	ug/kg			1
Unknown Alkane	654	J	ug/kg			1
Unknown Cycloalkane	237	J	ug/kg			1
Unknown Alkane	378	J	ug/kg			1
Unknown Cycloalkane	307	J	ug/kg			1
Unknown Benzene	244	J	ug/kg			1
Unknown Cycloalkane	258	J	ug/kg			1
Unknown Benzene	256	J	ug/kg			1
Unknown	229	J	ug/kg			1
Unknown	263	J	ug/kg			1
Unknown Cycloalkane	275	J	ug/kg			1
Unknown Alkane	225	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	66		25-120
Phenol-d6	71		10-120
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	66		30-120
2,4,6-Tribromophenol	72		10-136
4-Terphenyl-d14	59		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-03
Client ID: 5FS-SW-11 (13-15)
Sample Location: Not Specified
Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/20/26 12:12
Analyst: GMR
Percent Solids: 83%

Date Collected: 06/18/26 11:00
Date Received: 06/18/26
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 06/19/26 18:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	21.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	ND		ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	40	18.	1
Benzo(a)anthracene	ND		ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	160	48.	1
Benzo(b)fluoranthene	ND		ug/kg	120	34.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	ND		ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	23.	1
Fluorene	ND		ug/kg	200	19.	1
Phenanthrene	34	J	ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	ND		ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	31.	1
1,4-Dioxane	ND		ug/kg	30	9.2	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-03
Client ID: 5FS-SW-11 (13-15)
Sample Location: Not Specified
Date Collected: 06/18/26 11:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	8970	J	ug/kg			1
Unknown Alkane	406	J	ug/kg			1
Unknown Organic Acid	1230	J	ug/kg			1
Unknown Alkane	612	J	ug/kg			1
Unknown Cycloalkane	508	J	ug/kg			1
Unknown	421	J	ug/kg			1
Unknown Alkane	1300	J	ug/kg			1
Unknown Cycloalkane	436	J	ug/kg			1
Unknown Alkane	745	J	ug/kg			1
Unknown Cycloalkane	415	J	ug/kg			1
Unknown Cycloalkane	480	J	ug/kg			1
Unknown	639	J	ug/kg			1
Unknown Alkane	584	J	ug/kg			1
Unknown Alkane	379	J	ug/kg			1
Unknown	414	J	ug/kg			1
Unknown Cycloalkane	401	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	66		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	73		23-120
2-Fluorobiphenyl	68		30-120
2,4,6-Tribromophenol	70		10-136
4-Terphenyl-d14	62		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-04
Client ID: 5FS-SW-11 (7-9)
Sample Location: Not Specified

Date Collected: 06/18/26 11:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/20/26 12:31
Analyst: GMR
Percent Solids: 73%

Extraction Method: EPA 3546
Extraction Date: 06/19/26 18:57

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	180	24.	1
Hexachlorobenzene	ND		ug/kg	140	25.	1
Fluoranthene	ND		ug/kg	140	26.	1
Naphthalene	ND		ug/kg	230	28.	1
Nitrobenzene	ND		ug/kg	45	20.	1
Benzo(a)anthracene	ND		ug/kg	140	26.	1
Benzo(a)pyrene	ND		ug/kg	180	55.	1
Benzo(b)fluoranthene	ND		ug/kg	140	38.	1
Benzo(k)fluoranthene	ND		ug/kg	140	36.	1
Chrysene	ND		ug/kg	140	24.	1
Acenaphthylene	ND		ug/kg	180	35.	1
Anthracene	ND		ug/kg	140	44.	1
Benzo(ghi)perylene	ND		ug/kg	180	27.	1
Fluorene	ND		ug/kg	230	22.	1
Phenanthrene	ND		ug/kg	140	28.	1
Dibenzo(a,h)anthracene	ND		ug/kg	140	26.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	180	32.	1
Pyrene	ND		ug/kg	140	22.	1
Aniline	ND		ug/kg	45	17.	1
Dibenzofuran	ND		ug/kg	230	22.	1
Pentachlorophenol	ND		ug/kg	180	50.	1
Phenol	ND		ug/kg	230	34.	1
2-Methylphenol	ND		ug/kg	230	35.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	330	36.	1
1,4-Dioxane	ND		ug/kg	34	10.	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-04
Client ID: 5FS-SW-11 (7-9)
Sample Location: Not Specified
Date Collected: 06/18/26 11:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	5150	J	ug/kg			1
Unknown Organic Acid	1430	J	ug/kg			1
Unknown Alkane	199	J	ug/kg			1
Unknown Alkane	285	J	ug/kg			1
Unknown Benzene	198	J	ug/kg			1
Unknown Alkane	320	J	ug/kg			1
Unknown	197	J	ug/kg			1
Unknown Alkane	208	J	ug/kg			1
Toluene	256	NJ	ug/kg			1
Unknown Alkane	402	J	ug/kg			1
Unknown Alkane	212	J	ug/kg			1
Unknown Benzene	643	J	ug/kg			1
Unknown	214	J	ug/kg			1
Unknown Cycloalkane	235	J	ug/kg			1
Unknown	349	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	69		25-120
Phenol-d6	75		10-120
Nitrobenzene-d5	75		23-120
2-Fluorobiphenyl	71		30-120
2,4,6-Tribromophenol	81		10-136
4-Terphenyl-d14	64		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/19/26 21:18
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 06/19/26 08:49

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG2230436-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Fluoranthene	ND		ug/kg	99	19.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	33	14.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Aniline	ND		ug/kg	33	12.
Dibenzofuran	ND		ug/kg	160	16.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/19/26 21:18
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 06/19/26 08:49

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG2230436-1					
1,4-Dioxane	ND		ug/kg	25	7.6
Tentatively Identified Compounds					
Total TIC Compounds	1100	J	ug/kg		
Unknown	1100	J	ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		25-120
Phenol-d6	87		10-120
Nitrobenzene-d5	82		23-120
2-Fluorobiphenyl	78		30-120
2,4,6-Tribromophenol	81		10-136
4-Terphenyl-d14	73		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG2230436-2 WG2230436-3								
Acenaphthene	77		88		31-137	13		50
Hexachlorobenzene	72		82		40-140	13		50
Fluoranthene	75		91		40-140	19		50
Naphthalene	76		87		40-140	13		50
Nitrobenzene	76		84		40-140	10		50
Benzo(a)anthracene	83		93		40-140	11		50
Benzo(a)pyrene	88		109		40-140	21		50
Benzo(b)fluoranthene	85		105		40-140	21		50
Benzo(k)fluoranthene	81		101		40-140	22		50
Chrysene	82		95		40-140	15		50
Acenaphthylene	72		79		40-140	9		50
Anthracene	82		93		40-140	13		50
Benzo(ghi)perylene	92		104		40-140	12		50
Fluorene	77		87		40-140	12		50
Phenanthrene	80		92		40-140	14		50
Dibenzo(a,h)anthracene	89		102		40-140	14		50
Indeno(1,2,3-cd)pyrene	91		103		40-140	12		50
Pyrene	72		89		35-142	21		50
Aniline	50		49		40-140	2		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG2230436-2 WG2230436-3								
Dibenzofuran	72		83		40-140	14		50
Pentachlorophenol	66		75		17-109	13		50
Phenol	70		76		26-90	8		50
2-Methylphenol	72		77		30-130	7		50
3-Methylphenol/4-Methylphenol	71		76		30-130	7		50
1,4-Dioxane	59		69		40-140	16		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	71		79		25-120
Phenol-d6	76		82		10-120
Nitrobenzene-d5	72		79		23-120
2-Fluorobiphenyl	68		74		30-120
2,4,6-Tribromophenol	73		84		10-136
4-Terphenyl-d14	64		79		18-120

METALS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-01
Client ID: 5FS-SW-15 (10-12)
Sample Location: Not Specified
Date Collected: 06/18/26 10:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	5250		mg/kg	9.36	3.04	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Antimony, Total	ND		mg/kg	4.68	3.60	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Arsenic, Total	9.13		mg/kg	0.936	0.404	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Barium, Total	52.8		mg/kg	0.936	0.099	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Beryllium, Total	0.435	J	mg/kg	0.468	0.052	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Cadmium, Total	ND		mg/kg	0.936	0.052	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Calcium, Total	31600		mg/kg	9.36	5.31	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Chromium, Total	11.2		mg/kg	0.936	0.794	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Cobalt, Total	6.25		mg/kg	1.87	0.232	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Copper, Total	28.4		mg/kg	0.936	0.212	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Iron, Total	16300		mg/kg	23.4	7.49	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Lead, Total	30.1		mg/kg	4.68	0.223	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Magnesium, Total	12200		mg/kg	9.36	1.53	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Manganese, Total	319		mg/kg	0.936	0.502	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Mercury, Total	0.503		mg/kg	0.084	0.055	1	06/23/26 08:46	06/23/26 12:06	EPA 7471B	1,7471B	RJG
Nickel, Total	15.7		mg/kg	2.34	0.756	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Potassium, Total	581		mg/kg	234	47.5	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Selenium, Total	0.471	J	mg/kg	1.87	0.308	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Silver, Total	ND		mg/kg	0.468	0.279	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Sodium, Total	107	J	mg/kg	187	99.2	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Thallium, Total	ND		mg/kg	1.87	0.844	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Vanadium, Total	17.6		mg/kg	0.936	0.141	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
Zinc, Total	135		mg/kg	4.68	0.567	2	06/23/26 08:33	06/23/26 16:10	EPA 3050B	1,6010D	ZPC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	11.2		mg/kg	0.983	0.794	1		06/23/26 16:10	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-02
Client ID: 5FS-SW-14 (7-9)
Sample Location: Not Specified
Date Collected: 06/18/26 10:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 85%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	9880		mg/kg	9.02	2.93	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Antimony, Total	ND		mg/kg	4.51	3.47	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Arsenic, Total	6.39		mg/kg	0.902	0.390	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Barium, Total	90.0		mg/kg	0.902	0.096	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Beryllium, Total	0.586		mg/kg	0.451	0.050	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Cadmium, Total	0.051	J	mg/kg	0.902	0.050	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Calcium, Total	2670		mg/kg	9.02	5.11	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Chromium, Total	14.8		mg/kg	0.902	0.765	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Cobalt, Total	10.6		mg/kg	1.80	0.224	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Copper, Total	13.9		mg/kg	0.902	0.205	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Iron, Total	24600		mg/kg	22.6	7.22	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Lead, Total	14.8		mg/kg	4.51	0.215	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Magnesium, Total	3690		mg/kg	9.02	1.47	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Manganese, Total	475		mg/kg	0.902	0.483	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Mercury, Total	ND		mg/kg	0.076	0.049	1	06/23/26 08:46	06/23/26 12:41	EPA 7471B	1,7471B	RJG
Nickel, Total	22.8		mg/kg	2.26	0.729	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Potassium, Total	543		mg/kg	226	45.7	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Selenium, Total	ND		mg/kg	1.80	0.297	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Silver, Total	ND		mg/kg	0.451	0.269	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Sodium, Total	ND		mg/kg	180	95.6	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Thallium, Total	ND		mg/kg	1.80	0.814	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Vanadium, Total	17.5		mg/kg	0.902	0.136	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
Zinc, Total	62.3		mg/kg	4.51	0.547	2	06/23/26 08:33	06/23/26 16:46	EPA 3050B	1,6010D	ZPC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	14.8		mg/kg	0.947	0.765	1		06/23/26 16:46	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-03
Client ID: 5FS-SW-11 (13-15)
Sample Location: Not Specified
Date Collected: 06/18/26 11:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	8610		mg/kg	9.39	3.05	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Antimony, Total	ND		mg/kg	4.69	3.61	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Arsenic, Total	6.54		mg/kg	0.939	0.406	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Barium, Total	55.0		mg/kg	0.939	0.100	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Beryllium, Total	0.488		mg/kg	0.469	0.052	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Cadmium, Total	0.077	J	mg/kg	0.939	0.052	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Calcium, Total	1770		mg/kg	9.39	5.32	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Chromium, Total	12.9		mg/kg	0.939	0.796	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Cobalt, Total	10.4		mg/kg	1.88	0.233	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Copper, Total	20.7		mg/kg	0.939	0.213	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Iron, Total	21200		mg/kg	23.5	7.51	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Lead, Total	10.1		mg/kg	4.69	0.223	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Magnesium, Total	3170		mg/kg	9.39	1.53	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Manganese, Total	251		mg/kg	0.939	0.503	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Mercury, Total	ND		mg/kg	0.082	0.054	1	06/23/26 08:46	06/23/26 12:44	EPA 7471B	1,7471B	RJG
Nickel, Total	23.7		mg/kg	2.35	0.759	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Potassium, Total	476		mg/kg	235	47.6	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Selenium, Total	ND		mg/kg	1.88	0.309	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Silver, Total	ND		mg/kg	0.469	0.280	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Sodium, Total	ND		mg/kg	188	99.5	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Thallium, Total	ND		mg/kg	1.88	0.847	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Vanadium, Total	15.6		mg/kg	0.939	0.142	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
Zinc, Total	57.1		mg/kg	4.69	0.569	2	06/23/26 08:33	06/23/26 16:49	EPA 3050B	1,6010D	ZPC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	12.9		mg/kg	0.970	0.796	1		06/23/26 16:49	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-04
Client ID: 5FS-SW-11 (7-9)
Sample Location: Not Specified
Date Collected: 06/18/26 11:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 73%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	13500		mg/kg	10.5	3.41	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Antimony, Total	ND		mg/kg	5.24	4.04	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Arsenic, Total	2.15		mg/kg	1.05	0.453	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Barium, Total	96.6		mg/kg	1.05	0.111	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Beryllium, Total	0.700		mg/kg	0.524	0.058	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Cadmium, Total	ND		mg/kg	1.05	0.058	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Calcium, Total	4230		mg/kg	10.5	5.94	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Chromium, Total	17.3		mg/kg	1.05	0.889	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Cobalt, Total	6.44		mg/kg	2.10	0.260	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Copper, Total	9.58		mg/kg	1.05	0.238	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Iron, Total	17800		mg/kg	26.2	8.39	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Lead, Total	13.2		mg/kg	5.24	0.250	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Magnesium, Total	3860		mg/kg	10.5	1.71	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Manganese, Total	245		mg/kg	1.05	0.562	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Mercury, Total	ND		mg/kg	0.098	0.064	1	06/23/26 08:46	06/23/26 12:47	EPA 7471B	1,7471B	RJG
Nickel, Total	20.4		mg/kg	2.62	0.847	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Potassium, Total	593		mg/kg	262	53.2	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Selenium, Total	0.460	J	mg/kg	2.10	0.345	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Silver, Total	ND		mg/kg	0.524	0.312	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Sodium, Total	ND		mg/kg	210	111.	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Thallium, Total	ND		mg/kg	2.10	0.946	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Vanadium, Total	14.4		mg/kg	1.05	0.158	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
Zinc, Total	86.9		mg/kg	5.24	0.635	2	06/23/26 08:33	06/23/26 16:51	EPA 3050B	1,6010D	ZPC
General Chemistry - Mansfield Lab											
Chromium, Trivalent	17.3		mg/kg	1.10	0.889	1		06/23/26 16:51	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG2231993-1										
Aluminum, Total	ND		mg/kg	4.00	1.30	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Antimony, Total	ND		mg/kg	2.00	1.54	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Arsenic, Total	ND		mg/kg	0.400	0.173	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Barium, Total	ND		mg/kg	0.400	0.042	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Beryllium, Total	ND		mg/kg	0.200	0.022	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Cadmium, Total	ND		mg/kg	0.400	0.022	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Calcium, Total	ND		mg/kg	4.00	2.27	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Chromium, Total	ND		mg/kg	0.400	0.339	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Cobalt, Total	ND		mg/kg	0.800	0.099	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Copper, Total	ND		mg/kg	0.400	0.091	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Iron, Total	ND		mg/kg	10.0	3.20	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Lead, Total	ND		mg/kg	2.00	0.095	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Magnesium, Total	ND		mg/kg	4.00	0.652	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Manganese, Total	ND		mg/kg	0.400	0.214	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Nickel, Total	ND		mg/kg	1.00	0.323	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Potassium, Total	ND		mg/kg	100	20.3	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Selenium, Total	ND		mg/kg	0.800	0.132	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Silver, Total	ND		mg/kg	0.200	0.119	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Sodium, Total	ND		mg/kg	80.0	42.4	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Thallium, Total	ND		mg/kg	0.800	0.361	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Vanadium, Total	ND		mg/kg	0.400	0.060	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC
Zinc, Total	ND		mg/kg	2.00	0.242	1	06/23/26 08:33	06/23/26 16:05	1,6010D	ZPC

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-04 Batch: WG2231999-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	06/23/26 08:46	06/23/26 12:00	1,7471B	RJG

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG2231993-2								
Aluminum, Total	102		-		80-120	-		20
Antimony, Total	114		-		80-120	-		20
Arsenic, Total	101		-		80-120	-		20
Barium, Total	106		-		80-120	-		20
Beryllium, Total	105		-		80-120	-		20
Cadmium, Total	112		-		80-120	-		20
Calcium, Total	111		-		80-120	-		20
Chromium, Total	108		-		80-120	-		20
Cobalt, Total	109		-		80-120	-		20
Copper, Total	112		-		80-120	-		20
Iron, Total	108		-		80-120	-		20
Lead, Total	110		-		80-120	-		20
Magnesium, Total	112		-		80-120	-		20
Manganese, Total	108		-		80-120	-		20
Nickel, Total	110		-		80-120	-		20
Potassium, Total	113		-		80-120	-		20
Selenium, Total	100		-		80-120	-		20
Silver, Total	108		-		80-120	-		20
Sodium, Total	113		-		80-120	-		20
Thallium, Total	104		-		80-120	-		20
Vanadium, Total	112		-		80-120	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG2231993-2					
Zinc, Total	105	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-04 Batch: WG2231999-2					
Mercury, Total	95	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2231993-3 QC Sample: L2638412-01 Client ID: 5FS-SW-15 (10-12)												
Aluminum, Total	5250	188	5670	**223**	Q	-	-		75-125	-		
Antimony, Total	ND	47.1	23.4	**50**	Q	-	-		75-125	-		
Arsenic, Total	9.13	11.3	19.3	90		-	-		75-125	-		
Barium, Total	52.8	188	247	103		-	-		75-125	-		
Beryllium, Total	0.435J	4.71	5.25	111		-	-		75-125	-		
Cadmium, Total	ND	5	5.30	106		-	-		75-125	-		
Calcium, Total	31600	943	28300	**0**	Q	-	-		75-125	-		
Chromium, Total	11.2	18.8	28.2	90		-	-		75-125	-		
Cobalt, Total	6.25	47.1	52.3	98		-	-		75-125	-		
Copper, Total	28.4	23.6	51.3	97		-	-		75-125	-		
Iron, Total	16300	94.3	13700	**0**	Q	-	-		75-125	-		
Lead, Total	30.1	50	87.4	115		-	-		75-125	-		
Magnesium, Total	12200	943	8470	**0**	Q	-	-		75-125	-		
Manganese, Total	319	47.1	357	81		-	-		75-125	-		
Nickel, Total	15.7	47.1	59.3	92		-	-		75-125	-		
Potassium, Total	581	943	1540	102		-	-		75-125	-		
Selenium, Total	0.471J	11.3	11.8	104		-	-		75-125	-		
Silver, Total	ND	4.71	4.92	104		-	-		75-125	-		
Sodium, Total	107J	943	1230	**130**	Q	-	-		75-125	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2231993-3 QC Sample: L2638412-01 Client ID: 5FS-SW-15 (10-12)												
Thallium, Total	ND	11.3	10.8	95		-	-		75-125	-		
Vanadium, Total	17.6	47.1	69.2	109		-	-		75-125	-		
Zinc, Total	135	47.1	218	**176**	Q	-	-		75-125	-		
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2231999-3 QC Sample: L2638412-01 Client ID: 5FS-SW-15 (10-12)												
Mercury, Total	0.503	1.66	2.60	**127**	Q	-	-		80-120	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET

Project Number: 4694.0001B000

Lab Number: L2638412

Report Date: 06/25/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2231993-4 QC Sample: L2638412-01 Client ID: 5FS-SW-15 (10-12)						
Aluminum, Total	5250	4680	mg/kg	11		20
Antimony, Total	ND	ND	mg/kg	NC		20
Arsenic, Total	9.13	7.81	mg/kg	16		20
Barium, Total	52.8	54.9	mg/kg	4		20
Beryllium, Total	0.435J	0.426J	mg/kg	NC		20
Cadmium, Total	ND	0.226J	mg/kg	NC		20
Calcium, Total	31600	26200	mg/kg	19		20
Chromium, Total	11.2	9.06	mg/kg	**21**	Q	20
Cobalt, Total	6.25	5.36	mg/kg	15		20
Copper, Total	28.4	28.5	mg/kg	0		20
Iron, Total	16300	12000	mg/kg	**30**	Q	20
Lead, Total	30.1	29.0	mg/kg	4		20
Magnesium, Total	12200	5160	mg/kg	**81**	Q	20
Manganese, Total	319	264	mg/kg	19		20
Nickel, Total	15.7	11.2	mg/kg	**33**	Q	20
Potassium, Total	581	522	mg/kg	11		20
Selenium, Total	0.471J	0.411J	mg/kg	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2231993-4 QC Sample: L2638412-01 Client ID: 5FS-SW-15 (10-12)						
Silver, Total	ND	ND	mg/kg	NC		20
Sodium, Total	107J	ND	mg/kg	NC		20
Thallium, Total	ND	ND	mg/kg	NC		20
Vanadium, Total	17.6	24.8	mg/kg	**34**	Q	20
Zinc, Total	135	183	mg/kg	**30**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01-04 QC Batch ID: WG2231999-4 QC Sample: L2638412-01 Client ID: 5FS-SW-15 (10-12)						
Mercury, Total	0.503	1.02	mg/kg	**68**	Q	20

INORGANICS
&
MISCELLANEOUS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-01
Client ID: 5FS-SW-15 (10-12)
Sample Location: Not Specified

Date Collected: 06/18/26 10:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.4		%	0.100	NA	1	-	06/19/26 11:24	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.2	0.25	1	06/22/26 21:30	06/23/26 13:16	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.983	0.196	1	06/23/26 01:34	06/23/26 06:21	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-02
Client ID: 5FS-SW-14 (7-9)
Sample Location: Not Specified

Date Collected: 06/18/26 10:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	84.5		%	0.100	NA	1	-	06/19/26 11:24	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.1	0.23	1	06/22/26 21:30	06/23/26 13:17	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.947	0.189	1	06/23/26 01:34	06/23/26 06:21	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-03
Client ID: 5FS-SW-11 (13-15)
Sample Location: Not Specified

Date Collected: 06/18/26 11:00
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.5		%	0.100	NA	1	-	06/19/26 11:24	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.2	0.25	1	06/22/26 21:30	06/23/26 13:18	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.970	0.194	1	06/23/26 01:34	06/23/26 06:21	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

SAMPLE RESULTS

Lab ID: L2638412-04
Client ID: 5FS-SW-11 (7-9)
Sample Location: Not Specified

Date Collected: 06/18/26 11:30
Date Received: 06/18/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	72.7		%	0.100	NA	1	-	06/19/26 11:24	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.3	0.28	1	06/22/26 21:30	06/23/26 13:19	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	1.10	0.220	1	06/23/26 01:34	06/23/26 06:21	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG2231810-1										
Cyanide, Total	ND		mg/kg	0.92	0.20	1	06/22/26 21:30	06/23/26 13:01	1,9010C/9012B	JER
General Chemistry - Westborough Lab for sample(s): 01-04 Batch: WG2231873-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	06/23/26 01:34	06/23/26 06:21	1,7196A	TN

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG2231810-2 WG2231810-3								
Cyanide, Total	80		87		80-120	9		35
General Chemistry - Westborough Lab Associated sample(s): 01-04 Batch: WG2231873-2								
Chromium, Hexavalent	82		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG2231810-4 WG2231810-5 QC Sample: L2635442-17 Client ID: MS Sample												
Cyanide, Total	ND	11	11	100		9.9	100		75-125	0		35
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG2231810-6 WG2231810-7 QC Sample: L2638425-13 Client ID: MS Sample												
Cyanide, Total	ND	9.8	ND	**0**	Q	ND	**0**	Q	75-125	NC		35
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG2231873-4 QC Sample: L2638412-03 Client ID: 5FS-SW-11 (13-15)												
Chromium, Hexavalent	ND	1450	1120	77		-	-		75-125	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET

Project Number: 4694.0001B000

Lab Number: L2638412

Report Date: 06/25/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG2230451-1 QC Sample: L2638102-01 Client ID: DUP Sample						
Solids, Total	79.4	79.6	%	0		10
General Chemistry - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG2231873-6 QC Sample: L2638412-03 Client ID: 5FS-SW-11 (13-15)						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

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(*)
L2638412-01A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-01B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-01C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-01D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2638412-01E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),CR-TI(180),TL-TI(180),ZN-TI(180),SB-TI(180),SE-TI(180),PB-TI(180),CU-TI(180),CO-TI(180),V-TI(180),HG-T(28),MN-TI(180),MG-TI(180),FE-TI(180),CA-TI(180),CD-TI(180),NA-TI(180),K-TI(180)
L2638412-01F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2638412-01G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2638412-01X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-01Y	Vial Water preserved split	NA	NA			Y	Absent	19-JUN-26 06:56	NYTCL-8260HLW-R2(14)
L2638412-01Z	Vial Water preserved split	NA	NA			Y	Absent	19-JUN-26 06:56	NYTCL-8260HLW-R2(14)
L2638412-02A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-02B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-02C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-02D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2638412-02E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),AL-TI(180),NI-TI(180),TL-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),CO-TI(180),V-TI(180),MN-TI(180),FE-TI(180),HG-T(28),MG-TI(180),CA-TI(180),K-TI(180),CD-TI(180),NA-TI(180)
L2638412-02F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2638412-02G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2638412-02X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-02Y	Vial Water preserved split	NA	NA			Y	Absent	19-JUN-26 06:56	NYTCL-8260HLW-R2(14)
L2638412-02Z	Vial Water preserved split	NA	NA			Y	Absent	19-JUN-26 06:56	NYTCL-8260HLW-R2(14)
L2638412-03A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-03B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-03C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-03D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2638412-03E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),AL-TI(180),TL-TI(180),NI-TI(180),PB-TI(180),SB-TI(180),ZN-TI(180),SE-TI(180),CU-TI(180),V-TI(180),CO-TI(180),MN-TI(180),HG-T(28),FE-TI(180),MG-TI(180),NA-TI(180),K-TI(180),CD-TI(180),CA-TI(180)
L2638412-03F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2638412-03G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2638412-03X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-03Y	Vial Water preserved split	NA	NA			Y	Absent	19-JUN-26 06:56	NYTCL-8260HLW-R2(14)
L2638412-03Z	Vial Water preserved split	NA	NA			Y	Absent	19-JUN-26 06:56	NYTCL-8260HLW-R2(14)
L2638412-04A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-04B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-04C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638412
Report Date: 06/25/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2638412-04D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2638412-04E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),NI-TI(180),AL-TI(180),TL-TI(180),CR-TI(180),SB-TI(180),ZN-TI(180),PB-TI(180),CU-TI(180),SE-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MG-TI(180),HG-T(28),MN-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)
L2638412-04F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2638412-04G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2638412-04X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-04Y	Vial Water preserved split	NA	NA			Y	Absent	19-JUN-26 06:56	NYTCL-8260HLW-R2(14)
L2638412-04Z	Vial Water preserved split	NA	NA			Y	Absent	19-JUN-26 06:56	NYTCL-8260HLW-R2(14)
L2638412-05A	Vial MeOH preserved	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638412-05B	Vial water preserved	NA	NA			Y	Absent	19-JUN-26 07:24	NYTCL-8260HLW-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT STREET	**Lab Number:**	L2638412
Project Number:	4694.0001B000	**Report Date:**	06/25/26

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:	5 FLINT STREET	**Lab Number:**	L2638412
Project Number:	4694.0001B000	**Report Date:**	06/25/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT STREET	**Lab Number:**	L2638412
Project Number:	4694.0001B000	**Report Date:**	06/25/26

Data Qualifiers

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: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638412
Report Date: 06/25/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

107 Calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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 504.1: EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,**.

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, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water
EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water
SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY KY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NV MA00030, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

06/19/26

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

L2638412

Scan QR Code for instructions

Company Name: Roux	Contact/Report To: Eric Runstrom
Street Address: 5 Flint Street, Rochester, NY	Phone #: 781.569.4031
	E-Mail: erunstrom@rouxinc.com
	Cc E-Mail: sbarrientos@rouxinc.com; rsuracci@rouxinc.com
Customer Project #: 4804.00018000	Invoice to: Roux
Project Name: 5 Flint Street	Invoice E-mail: rouxap@rouxinc.com
Site Collection Info/Facility ID (as applicable):	Purchase Order # (if applicable):
	Quote #: 00203091
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET	County / State origin of sample(s): Monroe County, New York

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [X] EQUIS [X] Other Roux MA formatted EDDS

Regulatory Program (DW, RCRA, etc.) as applicable: Part 375, Table 6.8 (a), please include TICS for both VOCs and SVOCs. Category B deliverable. Reportable [X] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other _____

Date Results Requested: 5 DAY TAT

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

Specify Container Size **: 6 | 10 | 10

Identify Container Preservative Type***: 8 | 11 | 2

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix*	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs + TICS (8260)	SVOCs + TICS (8270)	TAL Metals + total cyanide + tri and hexa Chromium (6010D)
SFS-SW-15 (10-12)	SOIL	G	[redacted]	NA	6/18/26	10:30				X	X	X
SFS-SW-14 (7-9)	SOIL	G	[redacted]	NA	6/18/26	10:00				X	X	X
SFS-SW-11 (13-15)	SOIL	G	[redacted]	NA	6/18/26	11:00				X	X	X
SFS-SW-11 (7-9)	SOIL	G	[redacted]	NA	6/18/26	11:30				X	X	X
Trip Blank	SOIL	A	NA	NA	6/18/26	08:00				X		

Lab Use Only: Proj. Mgr: | Acct.Num / Client ID: | Table #: | Profile / Template: | Prelog / Bottle Ord. ID:

Sample Comment

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:

Collected By: Printed Name E Spirito Signature

Customer Remarks / Special Conditions / Possible Hazards: NA

Coolers: | Thermometer ID: | Correction Factor (°C): | Obs Temp (°C): | Corrected Temp (°C): | [ ] On Ice

Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time	Tracking Number
ROUX	6/18/26	PACE	6/18/26 1650	
PACE	6/18/26 1650	PACE	6/18/26 1650	Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other
PACE S/C	6-18-26 1800	Norony	6-18-26 1800	
Norony	6-18-26 1930		6/18/26 2340	Page: of

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

ENV-FRM-CORO-0015_v02_110123 ©

06/19/26 0225 06/19/26/8225

Sample Delivery Group Summary

Pace Job Number : L2638412

Account Name : Roux
Project Number : 4594.0001B000
Project Name : 5 FLINT STREET

Received : 18-JUN-2026
Reviewer : Brendan Grady

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	3.4	

Condition Information

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

Volatile Organics/VPH

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

ANALYTICAL REPORT

Lab Number:	L2638828
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT STREET
Project Number:	4694.0001B000
Report Date:	07/21/26

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

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2638828-01	5FS-SW-20 (9-11)	SOIL	Not Specified	06/19/26 10:35	06/19/26
L2638828-02	5FS-SW-21 (11-13)	SOIL	Not Specified	06/19/26 11:30	06/19/26
L2638828-03	TRIP BLANK	SOIL	Not Specified	06/19/26 00:00	06/19/26
L2638828-04	5FS-SW-23B (11-13)	SOIL	Not Specified	06/19/26 14:00	06/19/26
L2638828-05	DUP-1	SOIL	Not Specified	06/19/26 12:00	06/19/26

Project Name:	5 FLINT STREET	**Lab Number:**	L2638828
Project Number:	4694.0001B000	**Report Date:**	07/21/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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:	5 FLINT STREET	**Lab Number:**	L2638828
Project Number:	4694.0001B000	**Report Date:**	07/21/26

Case Narrative (continued)

Report Revision

July 21, 2026: At the client's request, the Client ID for L2638828-04 has been changed.

Report Submission

June 29, 2026: This final report includes the results of all requested analyses.

June 26, 2026: This is a preliminary report.

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

Total Metals

L2638828-01, -02, -04, and -05: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the sample matrix.

The WG2232929-3/-4 MS/MSD recoveries performed on L2638828-01 do not apply for aluminum (0%), calcium (934%/290%), iron (0%), magnesium (518%/218%) and manganese (0%) because the sample concentrations are greater than four times the spike amounts added.

The WG2232929-3/-4 MS/MSD recoveries performed on L2638828-01 are outside the acceptance criteria for antimony (33%/39%), lead (178%/152%), and zinc (MSD 132%). A post digestion spike was performed and was within acceptance criteria.

The WG2232929-3/-4 MS/MSD RPDs performed on L2638828-01 are above the acceptance criteria for calcium (65%), iron (21%), and magnesium (35%).

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

Authorized Signature:  Kelly Stenstrom

Title: Technical Director/Representative Date: 07/21/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Organics by EPA 5035/8260 Low - Westborough Lab								
8260D	Batch QC	WG2232767-3	Methyl tert butyl ether	LCS	135	66-130	01-05	potential high bias
8260D	Batch QC (L2638828-01)	WG2232767-6	Methylene chloride	MS	63	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	Tetrachloroethene	MS	64	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	Chlorobenzene	MS	56	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	1,2-Dichloroethane	MS	66	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	Toluene	MS	66	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	Ethylbenzene	MS	59	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	1,2-Dichlorobenzene	MS	38	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	1,3-Dichlorobenzene	MS	38	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	1,4-Dichlorobenzene	MS	36	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	p/m-Xylene	MS	51	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	o-Xylene	MS	58	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	Acetone	MS	36	54-140	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	2-Butanone	MS	183	70-130	01-05	potential high bias
8260D	Batch QC (L2638828-01)	WG2232767-6	n-Butylbenzene	MS	37	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	sec-Butylbenzene	MS	45	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	tert-Butylbenzene	MS	56	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	n-Propylbenzene	MS	48	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	1,3,5-Trimethylbenzene	MS	45	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	1,2,4-Trimethylbenzene	MS	50	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-6	4-Bromofluorobenzene	Surrogate	175	70-130	-	potential high bias
8260D	Batch QC (L2638828-01)	WG2232767-7	Methylene chloride	MSD	58	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	1,1-Dichloroethane	MSD	69	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	Chloroform	MSD	64	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	Carbon tetrachloride	MSD	57	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	Tetrachloroethene	MSD	48	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	Chlorobenzene	MSD	58	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	1,2-Dichloroethane	MSD	63	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	1,1,1-Trichloroethane	MSD	69	70-130	01-05	potential low bias

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
8260D	Batch QC (L2638828-01)	WG2232767-7	Benzene	MSD	66	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	Toluene	MSD	58	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	Ethylbenzene	MSD	50	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	Trichloroethene	MSD	61	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	1,2-Dichlorobenzene	MSD	33	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	1,3-Dichlorobenzene	MSD	32	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	1,4-Dichlorobenzene	MSD	31	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	p/m-Xylene	MSD	43	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	o-Xylene	MSD	51	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	cis-1,2-Dichloroethene	MSD	65	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	Acetone	MSD	32	54-140	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	2-Butanone	MSD	214	70-130	01-05	potential high bias
8260D	Batch QC (L2638828-01)	WG2232767-7	n-Butylbenzene	MSD	29	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	sec-Butylbenzene	MSD	44	70-130	01-05	non-directional bias
8260D	Batch QC (L2638828-01)	WG2232767-7	sec-Butylbenzene	MSD	69	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	tert-Butylbenzene	MSD	49	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	n-Propylbenzene	MSD	34	70-130	01-05	potential low bias
8260D	Batch QC (L2638828-01)	WG2232767-7	n-Propylbenzene	MSD	34	70-130	01-05	non-directional bias
8260D	Batch QC (L2638828-01)	WG2232767-7	1,3,5-Trimethylbenzene	MSD	87	70-130	01-05	non-directional bias
8260D	Batch QC (L2638828-01)	WG2232767-7	1,2,4-Trimethylbenzene	MSD	154	70-130	01-05	non-directional bias
8260D	Batch QC (L2638828-01)	WG2232767-7	1,2,4-Trimethylbenzene	MSD	505	70-130	01-05	potential high bias
8260D	Batch QC (L2638828-01)	WG2232767-7	4-Bromofluorobenzene	Surrogate	315	70-130	-	potential high bias
Total Metals - Mansfield Lab								
6010D	Batch QC (L2638828-01)	WG2232929-3	Aluminum, Total	MS	0	75-125	01-02,04-05	potential low bias
6010D	Batch QC (L2638828-01)	WG2232929-3	Antimony, Total	MS	33	75-125	01-02,04-05	potential low bias
6010D	Batch QC (L2638828-01)	WG2232929-3	Calcium, Total	MS	934	75-125	01-02,04-05	potential high bias
6010D	Batch QC (L2638828-01)	WG2232929-3	Iron, Total	MS	0	75-125	01-02,04-05	potential low bias

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
6010D	Batch QC (L2638828-01)	WG2232929-3	Lead, Total	MS	178	75-125	01-02,04-05	potential high bias
6010D	Batch QC (L2638828-01)	WG2232929-3	Magnesium, Total	MS	518	75-125	01-02,04-05	potential high bias
6010D	Batch QC (L2638828-01)	WG2232929-3	Manganese, Total	MS	0	75-125	01-02,04-05	potential low bias
6010D	Batch QC (L2638828-01)	WG2232929-4	Aluminum, Total	MSD	0	75-125	01-02,04-05	potential low bias
6010D	Batch QC (L2638828-01)	WG2232929-4	Antimony, Total	MSD	39	75-125	01-02,04-05	potential low bias
6010D	Batch QC (L2638828-01)	WG2232929-4	Calcium, Total	MSD	65	75-125	01-02,04-05	non-directional bias
6010D	Batch QC (L2638828-01)	WG2232929-4	Calcium, Total	MSD	290	75-125	01-02,04-05	potential high bias
6010D	Batch QC (L2638828-01)	WG2232929-4	Iron, Total	MSD	0	75-125	01-02,04-05	potential low bias
6010D	Batch QC (L2638828-01)	WG2232929-4	Iron, Total	MSD	21	75-125	01-02,04-05	non-directional bias
6010D	Batch QC (L2638828-01)	WG2232929-4	Lead, Total	MSD	152	75-125	01-02,04-05	potential high bias
6010D	Batch QC (L2638828-01)	WG2232929-4	Magnesium, Total	MSD	35	75-125	01-02,04-05	non-directional bias
6010D	Batch QC (L2638828-01)	WG2232929-4	Magnesium, Total	MSD	218	75-125	01-02,04-05	potential high bias
6010D	Batch QC (L2638828-01)	WG2232929-4	Manganese, Total	MSD	0	75-125	01-02,04-05	potential low bias
6010D	Batch QC (L2638828-01)	WG2232929-4	Zinc, Total	MSD	132	75-125	01-02,04-05	potential high bias

ORGANICS

VOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-01
Client ID: 5FS-SW-20 (9-11)
Sample Location: Not Specified
Date Collected: 06/19/26 10:35
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/26 14:02
Analyst: AJK
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	8.6	3.9	1
1,1-Dichloroethane	1.1	J	ug/kg	1.7	0.25	1
Chloroform	2.6		ug/kg	2.6	0.24	1
Carbon tetrachloride	ND		ug/kg	1.7	0.39	1
Tetrachloroethene	ND		ug/kg	0.86	0.34	1
Chlorobenzene	ND		ug/kg	0.86	0.22	1
1,2-Dichloroethane	ND		ug/kg	1.7	0.44	1
1,1,1-Trichloroethane	ND		ug/kg	0.86	0.28	1
Benzene	ND		ug/kg	0.86	0.28	1
Toluene	ND		ug/kg	1.7	0.93	1
Ethylbenzene	ND		ug/kg	1.7	0.24	1
Vinyl chloride	ND		ug/kg	1.7	0.57	1
1,1-Dichloroethene	ND		ug/kg	1.7	0.41	1
trans-1,2-Dichloroethene	ND		ug/kg	2.6	0.23	1
Trichloroethene	ND		ug/kg	0.86	0.23	1
1,2-Dichlorobenzene	ND		ug/kg	3.4	0.25	1
1,3-Dichlorobenzene	ND		ug/kg	3.4	0.25	1
1,4-Dichlorobenzene	ND		ug/kg	3.4	0.29	1
Methyl tert butyl ether	ND		ug/kg	3.4	0.34	1
p/m-Xylene	1.9	J	ug/kg	3.4	0.96	1
o-Xylene	ND		ug/kg	1.7	0.50	1
Xylenes, Total	1.9	J	ug/kg	1.7	0.50	1
cis-1,2-Dichloroethene	ND		ug/kg	1.7	0.30	1
Acetone	71		ug/kg	17	8.2	1
2-Butanone	60		ug/kg	17	3.8	1
n-Butylbenzene	ND		ug/kg	1.7	0.28	1
sec-Butylbenzene	2.8		ug/kg	1.7	0.25	1
tert-Butylbenzene	1.6	J	ug/kg	3.4	0.20	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-01
Client ID: 5FS-SW-20 (9-11)
Sample Location: Not Specified
Date Collected: 06/19/26 10:35
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.7	0.29	1
1,3,5-Trimethylbenzene	3.7		ug/kg	3.4	0.33	1
1,2,4-Trimethylbenzene	24		ug/kg	3.4	0.57	1
Tentatively Identified Compounds						
Total TIC Compounds	549	J	ug/kg			1
Cyclohexane, propyl-	39.4	NJ	ug/kg			1
Cyclohexane, octyl-	35.8	NJ	ug/kg			1
Dodecane, 2,6,10-trimethyl-	49.5	NJ	ug/kg			1
Unknown Cyclohexane	56.2	J	ug/kg			1
Unknown	44.4	J	ug/kg			1
Unknown Alkane	39.7	J	ug/kg			1
Unknown Cyclohexane	133	J	ug/kg			1
Unknown Alkane	57.2	J	ug/kg			1
Unknown Cyclohexane	51.8	J	ug/kg			1
Cyclohexane, 1,1-dimethyl-	42.1	NJ	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	114		70-130
Dibromofluoromethane	100		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-02
Client ID: 5FS-SW-21 (11-13)
Sample Location: Not Specified
Date Collected: 06/19/26 11:30
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/26 14:28
Analyst: AJK
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.9	2.7	1
1,1-Dichloroethane	0.28	J	ug/kg	1.2	0.17	1
Chloroform	1.5	J	ug/kg	1.8	0.16	1
Carbon tetrachloride	ND		ug/kg	1.2	0.27	1
Tetrachloroethene	ND		ug/kg	0.59	0.23	1
Chlorobenzene	ND		ug/kg	0.59	0.15	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.30	1
1,1,1-Trichloroethane	ND		ug/kg	0.59	0.20	1
Benzene	ND		ug/kg	0.59	0.19	1
Toluene	ND		ug/kg	1.2	0.64	1
Ethylbenzene	ND		ug/kg	1.2	0.16	1
Vinyl chloride	ND		ug/kg	1.2	0.39	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.28	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	0.16	1
Trichloroethene	ND		ug/kg	0.59	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.3	0.17	1
1,3-Dichlorobenzene	ND		ug/kg	2.3	0.17	1
1,4-Dichlorobenzene	ND		ug/kg	2.3	0.20	1
Methyl tert butyl ether	ND		ug/kg	2.3	0.24	1
p/m-Xylene	ND		ug/kg	2.3	0.66	1
o-Xylene	ND		ug/kg	1.2	0.34	1
Xylenes, Total	ND		ug/kg	1.2	0.34	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.20	1
Acetone	30		ug/kg	12	5.6	1
2-Butanone	4.0	J	ug/kg	12	2.6	1
n-Butylbenzene	ND		ug/kg	1.2	0.20	1
sec-Butylbenzene	ND		ug/kg	1.2	0.17	1
tert-Butylbenzene	ND		ug/kg	2.3	0.14	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-02
Client ID: 5FS-SW-21 (11-13)
Sample Location: Not Specified
Date Collected: 06/19/26 11:30
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.2	0.20	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.3	0.23	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.3	0.39	1
Tentatively Identified Compounds						
Total TIC Compounds	47.8	J	ug/kg			1
Hexadecane (C16)	7.01	NJ	ug/kg			1
Unknown	3.49	J	ug/kg			1
Unknown	4.51	J	ug/kg			1
Unknown	9.08	J	ug/kg			1
Cyclohexane, octyl-	5.11	NJ	ug/kg			1
Unknown	4.23	J	ug/kg			1
Unknown Alkane	5.26	J	ug/kg			1
Unknown	3.22	J	ug/kg			1
Unknown Benzene	2.92	J	ug/kg			1
Unknown Alkane	2.99	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	95		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-03
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 06/19/26 00:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/26 12:44
Analyst: MNF
Percent Solids: Results Reported on an "AS RECEIVED" basis

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.0	2.3	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.14	1
Chloroform	1.4	J	ug/kg	1.5	0.14	1
Carbon tetrachloride	ND		ug/kg	1.0	0.23	1
Tetrachloroethene	ND		ug/kg	0.50	0.20	1
Chlorobenzene	ND		ug/kg	0.50	0.13	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.26	1
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17	1
Benzene	ND		ug/kg	0.50	0.17	1
Toluene	ND		ug/kg	1.0	0.54	1
Ethylbenzene	ND		ug/kg	1.0	0.14	1
Vinyl chloride	ND		ug/kg	1.0	0.34	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.24	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14	1
Trichloroethene	ND		ug/kg	0.50	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17	1
Methyl tert butyl ether	ND		ug/kg	2.0	0.20	1
p/m-Xylene	ND		ug/kg	2.0	0.56	1
o-Xylene	ND		ug/kg	1.0	0.29	1
Xylenes, Total	ND		ug/kg	1.0	0.29	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Acetone	ND		ug/kg	10	4.8	1
2-Butanone	ND		ug/kg	10	2.2	1
n-Butylbenzene	ND		ug/kg	1.0	0.17	1
sec-Butylbenzene	ND		ug/kg	1.0	0.15	1
tert-Butylbenzene	ND		ug/kg	2.0	0.12	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-03
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 06/19/26 00:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.0	0.17	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33	1
Tentatively Identified Compounds						
Total TIC Compounds	45.9	J	ug/kg			1
Unknown	28.2	J	ug/kg			1
Pentane	2.78	NJ	ug/kg			1
Butane, 2-Methyl-	5.37	NJ	ug/kg			1
Unknown	9.55	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	114		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	100		70-130
Dibromofluoromethane	113		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-04
Client ID: 5FS-SW-23B (11-13)
Sample Location: Not Specified
Date Collected: 06/19/26 14:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/26 14:55
Analyst: AJK
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.0	2.7	1
1,1-Dichloroethane	0.55	J	ug/kg	1.2	0.17	1
Chloroform	1.5	J	ug/kg	1.8	0.17	1
Carbon tetrachloride	ND		ug/kg	1.2	0.28	1
Tetrachloroethene	ND		ug/kg	0.60	0.23	1
Chlorobenzene	ND		ug/kg	0.60	0.15	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.31	1
1,1,1-Trichloroethane	0.22	J	ug/kg	0.60	0.20	1
Benzene	ND		ug/kg	0.60	0.20	1
Toluene	ND		ug/kg	1.2	0.65	1
Ethylbenzene	ND		ug/kg	1.2	0.17	1
Vinyl chloride	ND		ug/kg	1.2	0.40	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.28	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	0.16	1
Trichloroethene	1.5		ug/kg	0.60	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.4	0.17	1
1,3-Dichlorobenzene	ND		ug/kg	2.4	0.18	1
1,4-Dichlorobenzene	ND		ug/kg	2.4	0.20	1
Methyl tert butyl ether	ND		ug/kg	2.4	0.24	1
p/m-Xylene	0.95	J	ug/kg	2.4	0.67	1
o-Xylene	ND		ug/kg	1.2	0.35	1
Xylenes, Total	0.95	J	ug/kg	1.2	0.35	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.21	1
Acetone	22		ug/kg	12	5.8	1
2-Butanone	2.7	J	ug/kg	12	2.6	1
n-Butylbenzene	ND		ug/kg	1.2	0.20	1
sec-Butylbenzene	0.17	J	ug/kg	1.2	0.17	1
tert-Butylbenzene	ND		ug/kg	2.4	0.14	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-04
Client ID: 5FS-SW-23B (11-13)
Sample Location: Not Specified
Date Collected: 06/19/26 14:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.2	0.20	1
1,3,5-Trimethylbenzene	0.43	J	ug/kg	2.4	0.23	1
1,2,4-Trimethylbenzene	0.63	J	ug/kg	2.4	0.40	1
Tentatively Identified Compounds						
Total TIC Compounds	42.6	J	ug/kg			1
Dodecane (C12)	3.56	NJ	ug/kg			1
Unknown	3.30	J	ug/kg			1
Unknown	9.17	J	ug/kg			1
Tridecane	4.80	NJ	ug/kg			1
Unknown	3.00	J	ug/kg			1
Unknown Cyclohexane	4.16	J	ug/kg			1
Unknown	3.26	J	ug/kg			1
Unknown Alkane	4.35	J	ug/kg			1
Decane (C10)	3.28	NJ	ug/kg			1
Unknown Alkane	3.68	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	103		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-05
Client ID: DUP-1
Sample Location: Not Specified
Date Collected: 06/19/26 12:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 06/23/26 15:22
Analyst: AJK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	7.2	3.3	1
1,1-Dichloroethane	ND		ug/kg	1.4	0.21	1
Chloroform	1.8	J	ug/kg	2.2	0.20	1
Carbon tetrachloride	ND		ug/kg	1.4	0.33	1
Tetrachloroethene	ND		ug/kg	0.72	0.28	1
Chlorobenzene	ND		ug/kg	0.72	0.18	1
1,2-Dichloroethane	ND		ug/kg	1.4	0.37	1
1,1,1-Trichloroethane	ND		ug/kg	0.72	0.24	1
Benzene	ND		ug/kg	0.72	0.24	1
Toluene	ND		ug/kg	1.4	0.78	1
Ethylbenzene	ND		ug/kg	1.4	0.20	1
Vinyl chloride	ND		ug/kg	1.4	0.48	1
1,1-Dichloroethene	ND		ug/kg	1.4	0.34	1
trans-1,2-Dichloroethene	ND		ug/kg	2.2	0.20	1
Trichloroethene	ND		ug/kg	0.72	0.20	1
1,2-Dichlorobenzene	ND		ug/kg	2.9	0.21	1
1,3-Dichlorobenzene	ND		ug/kg	2.9	0.21	1
1,4-Dichlorobenzene	ND		ug/kg	2.9	0.25	1
Methyl tert butyl ether	ND		ug/kg	2.9	0.29	1
p/m-Xylene	ND		ug/kg	2.9	0.81	1
o-Xylene	ND		ug/kg	1.4	0.42	1
Xylenes, Total	ND		ug/kg	1.4	0.42	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	0.25	1
Acetone	38		ug/kg	14	6.9	1
2-Butanone	4.9	J	ug/kg	14	3.2	1
n-Butylbenzene	ND		ug/kg	1.4	0.24	1
sec-Butylbenzene	ND		ug/kg	1.4	0.21	1
tert-Butylbenzene	0.46	J	ug/kg	2.9	0.17	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-05
Client ID: DUP-1
Sample Location: Not Specified
Date Collected: 06/19/26 12:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.4	0.25	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.9	0.28	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.9	0.48	1
Tentatively Identified Compounds						
Total TIC Compounds	193	J	ug/kg			1
Unknown Alkane	28.3	J	ug/kg			1
Unknown	13.3	J	ug/kg			1
Unknown Cyclohexane	14.6	J	ug/kg			1
Unknown Alkane	16.5	J	ug/kg			1
Tridecane	13.9	NJ	ug/kg			1
Unknown	15.0	J	ug/kg			1
Unknown Alkane	23.6	J	ug/kg			1
Unknown Cyclohexane	24.5	J	ug/kg			1
Unknown Alkane	24.7	J	ug/kg			1
Cyclohexane, octyl-	18.4	NJ	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	103		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/23/26 08:49
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 01-05 Batch: WG2232767-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	1.3	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/23/26 08:49
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 01-05 Batch: WG2232767-5					
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33

Tentatively Identified Compounds			
Total TIC Compounds	7.83	J	ug/kg
Unknown	7.83	J	ug/kg

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	101		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	94		70-130
Dibromofluoromethane	104		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG2232767-3 WG2232767-4								
Methylene chloride	91		88		70-130	3		30
1,1-Dichloroethane	107		104		70-130	3		30
Chloroform	100		99		70-130	1		30
Carbon tetrachloride	116		113		70-130	3		30
Tetrachloroethene	121		117		70-130	3		30
Chlorobenzene	105		101		70-130	4		30
1,2-Dichloroethane	100		100		70-130	0		30
1,1,1-Trichloroethane	119		114		70-130	4		30
Benzene	111		107		70-130	4		30
Toluene	112		105		70-130	6		30
Ethylbenzene	117		112		70-130	4		30
Vinyl chloride	114		104		67-130	9		30
1,1-Dichloroethene	103		99		65-135	4		30
trans-1,2-Dichloroethene	125		121		70-130	3		30
Trichloroethene	107		105		70-130	2		30
1,2-Dichlorobenzene	104		103		70-130	1		30
1,3-Dichlorobenzene	105		104		70-130	1		30
1,4-Dichlorobenzene	99		98		70-130	1		30
Methyl tert butyl ether	**135**	Q	130		66-130	4		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 01-05 Batch: WG2232767-3 WG2232767-4								
p/m-Xylene	106		101		70-130	5		30
o-Xylene	117		113		70-130	3		30
cis-1,2-Dichloroethene	104		101		70-130	3		30
Acetone	103		89		54-140	15		30
2-Butanone	98		93		70-130	5		30
n-Butylbenzene	114		112		70-130	2		30
sec-Butylbenzene	115		112		70-130	3		30
tert-Butylbenzene	113		112		70-130	1		30
n-Propylbenzene	111		112		70-130	1		30
1,3,5-Trimethylbenzene	109		109		70-130	0		30
1,2,4-Trimethylbenzene	113		112		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		94		70-130
Toluene-d8	101		100		70-130
4-Bromofluorobenzene	97		101		70-130
Dibromofluoromethane	94		96		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG2232767-6 WG2232767-7 QC Sample: L2638828-01 Client ID: 5FS-SW-20 (9-11)												
Methylene chloride	ND	118	75	**63**	Q	71	**58**	Q	70-130	6		30
1,1-Dichloroethane	1.1J	118	91	77		84	**69**	Q	70-130	8		30
Chloroform	2.6	118	83	70		78	**64**	Q	70-130	7		30
Carbon tetrachloride	ND	118	93	78		69	**57**	Q	70-130	29		30
Tetrachloroethene	ND	118	76	**64**	Q	58	**48**	Q	70-130	26		30
Chlorobenzene	ND	118	67	**56**	Q	71	**58**	Q	70-130	6		30
1,2-Dichloroethane	ND	118	78	**66**	Q	76	**63**	Q	70-130	2		30
1,1,1-Trichloroethane	ND	118	100	85		83	**69**	Q	70-130	18		30
Benzene	ND	118	89	75		80	**66**	Q	70-130	11		30
Toluene	ND	118	78	**66**	Q	70	**58**	Q	70-130	11		30
Ethylbenzene	ND	118	70	**59**	Q	60	**50**	Q	70-130	14		30
Vinyl chloride	ND	118	110	89		93	76		67-130	12		30
1,1-Dichloroethene	ND	118	93	79		80	66		65-135	15		30
trans-1,2-Dichloroethene	ND	118	100	85		92	76		70-130	9		30
Trichloroethene	ND	118	83	70		74	**61**	Q	70-130	11		30
1,2-Dichlorobenzene	ND	118	45	**38**	Q	40	**33**	Q	70-130	10		30
1,3-Dichlorobenzene	ND	118	45	**38**	Q	39	**32**	Q	70-130	14		30
1,4-Dichlorobenzene	ND	118	42	**36**	Q	38	**31**	Q	70-130	11		30
Methyl tert butyl ether	ND	118	90	76		94	78		66-130	5		30

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG2232767-6 WG2232767-7 QC Sample: L2638828-01 Client ID: 5FS-SW-20 (9-11)												
p/m-Xylene	1.9J	236	120	**51**	Q	110	**43**	Q	70-130	13		30
o-Xylene	ND	236	140	**58**	Q	120	**51**	Q	70-130	9		30
cis-1,2-Dichloroethene	ND	118	83	70		79	**65**	Q	70-130	6		30
Acetone	71	118	110	**36**	Q	110	**32**	Q	54-140	4		30
2-Butanone	60	118	280	**183**	Q	320	**214**	Q	70-130	15		30
n-Butylbenzene	ND	118	44	**37**	Q	36	**29**	Q	70-130	21		30
sec-Butylbenzene	2.8	118	56	**45**	Q	87	**69**	Q	70-130	**44**	Q	30
tert-Butylbenzene	1.6J	118	66	**56**	Q	59	**49**	Q	70-130	11		30
n-Propylbenzene	ND	118	57	**48**	Q	41	**34**	Q	70-130	**34**	Q	30
1,3,5-Trimethylbenzene	3.7	118	57	**45**	Q	150	116		70-130	**87**	Q	30
1,2,4-Trimethylbenzene	24	118	84	**50**	Q	640E	**505**	Q	70-130	**154**	Q	30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	91		92		70-130
4-Bromofluorobenzene	**175**	Q	**315**	Q	70-130
Dibromofluoromethane	91		88		70-130
Toluene-d8	102		104		70-130

SEMIVOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-01
Client ID: 5FS-SW-20 (9-11)
Sample Location: Not Specified
Date Collected: 06/19/26 10:35
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/22/26 11:12
Analyst: IMK
Percent Solids: 74%
Extraction Method: EPA 3546
Extraction Date: 06/21/26 20:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	64	J	ug/kg	170	23.	1
Hexachlorobenzene	ND		ug/kg	130	24.	1
Fluoranthene	420		ug/kg	130	25.	1
Naphthalene	68	J	ug/kg	220	27.	1
Nitrobenzene	ND		ug/kg	44	19.	1
Benzo(a)anthracene	180		ug/kg	130	25.	1
Benzo(a)pyrene	160	J	ug/kg	170	53.	1
Benzo(b)fluoranthene	190		ug/kg	130	37.	1
Benzo(k)fluoranthene	64	J	ug/kg	130	35.	1
Chrysene	170		ug/kg	130	23.	1
Acenaphthylene	ND		ug/kg	170	34.	1
Anthracene	120	J	ug/kg	130	43.	1
Benzo(ghi)perylene	90	J	ug/kg	170	26.	1
Fluorene	71	J	ug/kg	220	21.	1
Phenanthrene	500		ug/kg	130	26.	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	25.	1
Indeno(1,2,3-cd)pyrene	90	J	ug/kg	170	30.	1
Pyrene	340		ug/kg	130	22.	1
Aniline	ND		ug/kg	44	16.	1
Dibenzofuran	41	J	ug/kg	220	21.	1
Pentachlorophenol	ND		ug/kg	170	48.	1
Phenol	ND		ug/kg	220	33.	1
2-Methylphenol	ND		ug/kg	220	34.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	310	34.	1
1,4-Dioxane	ND		ug/kg	33	10.	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-01
Client ID: 5FS-SW-20 (9-11)
Sample Location: Not Specified
Date Collected: 06/19/26 10:35
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	2040	J	ug/kg			1
Unknown	210	J	ug/kg			1
Unknown	1270	J	ug/kg			1
Unknown	563	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	71		25-120
Phenol-d6	77		10-120
Nitrobenzene-d5	74		23-120
2-Fluorobiphenyl	70		30-120
2,4,6-Tribromophenol	90		10-136
4-Terphenyl-d14	76		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-02
Client ID: 5FS-SW-21 (11-13)
Sample Location: Not Specified
Date Collected: 06/19/26 11:30
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/22/26 12:09
Analyst: IMK
Percent Solids: 79%
Extraction Method: EPA 3546
Extraction Date: 06/21/26 20:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	190		ug/kg	170	22.	1
Hexachlorobenzene	ND		ug/kg	120	23.	1
Fluoranthene	1500		ug/kg	120	24.	1
Naphthalene	190	J	ug/kg	210	25.	1
Nitrobenzene	ND		ug/kg	42	18.	1
Benzo(a)anthracene	580		ug/kg	120	24.	1
Benzo(a)pyrene	500		ug/kg	170	51.	1
Benzo(b)fluoranthene	580		ug/kg	120	35.	1
Benzo(k)fluoranthene	220		ug/kg	120	33.	1
Chrysene	530		ug/kg	120	22.	1
Acenaphthylene	33	J	ug/kg	170	32.	1
Anthracene	460		ug/kg	120	41.	1
Benzo(ghi)perylene	250		ug/kg	170	25.	1
Fluorene	260		ug/kg	210	20.	1
Phenanthrene	1900		ug/kg	120	25.	1
Dibenzo(a,h)anthracene	66	J	ug/kg	120	24.	1
Indeno(1,2,3-cd)pyrene	280		ug/kg	170	29.	1
Pyrene	1200		ug/kg	120	21.	1
Aniline	ND		ug/kg	42	16.	1
Dibenzofuran	190	J	ug/kg	210	20.	1
Pentachlorophenol	ND		ug/kg	170	46.	1
Phenol	ND		ug/kg	210	32.	1
2-Methylphenol	ND		ug/kg	210	32.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	33.	1
1,4-Dioxane	ND		ug/kg	31	9.6	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-02
Client ID: 5FS-SW-21 (11-13)
Sample Location: Not Specified
Date Collected: 06/19/26 11:30
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	2980	J	ug/kg			1
Unknown PAH	242	J	ug/kg			1
Unknown	1520	J	ug/kg			1
Unknown	182	J	ug/kg			1
Unknown PAH	282	J	ug/kg			1
Unknown Alkane	218	J	ug/kg			1
Unknown Alkane	235	J	ug/kg			1
Unknown	298	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	91		25-120
Phenol-d6	101		10-120
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	90		30-120
2,4,6-Tribromophenol	112		10-136
4-Terphenyl-d14	94		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-04
Client ID: 5FS-SW-23B (11-13)
Sample Location: Not Specified

Date Collected: 06/19/26 14:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/23/26 13:13
Analyst: IMK
Percent Solids: 78%

Extraction Method: EPA 3546
Extraction Date: 06/21/26 20:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	170	22.	1
Hexachlorobenzene	ND		ug/kg	130	24.	1
Fluoranthene	ND		ug/kg	130	24.	1
Naphthalene	ND		ug/kg	210	26.	1
Nitrobenzene	ND		ug/kg	42	18.	1
Benzo(a)anthracene	ND		ug/kg	130	24.	1
Benzo(a)pyrene	ND		ug/kg	170	51.	1
Benzo(b)fluoranthene	ND		ug/kg	130	36.	1
Benzo(k)fluoranthene	ND		ug/kg	130	34.	1
Chrysene	ND		ug/kg	130	22.	1
Acenaphthylene	ND		ug/kg	170	32.	1
Anthracene	ND		ug/kg	130	41.	1
Benzo(ghi)perylene	ND		ug/kg	170	25.	1
Fluorene	ND		ug/kg	210	20.	1
Phenanthrene	ND		ug/kg	130	26.	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	24.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	170	29.	1
Pyrene	ND		ug/kg	130	21.	1
Aniline	ND		ug/kg	42	16.	1
Dibenzofuran	ND		ug/kg	210	20.	1
Pentachlorophenol	ND		ug/kg	170	46.	1
Phenol	ND		ug/kg	210	32.	1
2-Methylphenol	ND		ug/kg	210	33.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	33.	1
1,4-Dioxane	ND		ug/kg	32	9.7	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-04
Client ID: 5FS-SW-23B (11-13)
Sample Location: Not Specified
Date Collected: 06/19/26 14:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	1560	J	ug/kg			1
Unknown Organic Acid	1560	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	90		25-120
Phenol-d6	99		10-120
Nitrobenzene-d5	95		23-120
2-Fluorobiphenyl	86		30-120
2,4,6-Tribromophenol	98		10-136
4-Terphenyl-d14	80		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-05
Client ID: DUP-1
Sample Location: Not Specified

Date Collected: 06/19/26 12:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 06/22/26 12:48
Analyst: IMK
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 06/21/26 20:16

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	20.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	30	J	ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	40	18.	1
Benzo(a)anthracene	ND		ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	160	48.	1
Benzo(b)fluoranthene	ND		ug/kg	120	33.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	ND		ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	23.	1
Fluorene	ND		ug/kg	200	19.	1
Phenanthrene	31	J	ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	26	J	ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	31.	1
1,4-Dioxane	ND		ug/kg	30	9.1	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-05
Client ID: DUP-1
Sample Location: Not Specified
Date Collected: 06/19/26 12:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	1340	J	ug/kg			1
Unknown	1150	J	ug/kg			1
Unknown	188	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		25-120
Phenol-d6	87		10-120
Nitrobenzene-d5	80		23-120
2-Fluorobiphenyl	78		30-120
2,4,6-Tribromophenol	95		10-136
4-Terphenyl-d14	81		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/22/26 08:19
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 06/21/26 20:01

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02,04-05 Batch: WG2231230-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	98	18.
Fluoranthene	ND		ug/kg	98	19.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	33	14.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	98	28.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	98	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
Aniline	ND		ug/kg	33	12.
Dibenzofuran	ND		ug/kg	160	15.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/22/26 08:19
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 06/21/26 20:01

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02,04-05 Batch: WG2231230-1					
1,4-Dioxane	ND		ug/kg	24	7.5
Tentatively Identified Compounds					
Total TIC Compounds	1190	J	ug/kg		
Unknown	1190	J	ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	91		25-120
Phenol-d6	92		10-120
Nitrobenzene-d5	91		23-120
2-Fluorobiphenyl	86		30-120
2,4,6-Tribromophenol	102		10-136
4-Terphenyl-d14	93		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG2231230-2 WG2231230-3								
Acenaphthene	90		80		31-137	12		50
Hexachlorobenzene	96		84		40-140	13		50
Fluoranthene	99		87		40-140	13		50
Naphthalene	84		78		40-140	7		50
Nitrobenzene	88		80		40-140	10		50
Benzo(a)anthracene	96		86		40-140	11		50
Benzo(a)pyrene	105		93		40-140	12		50
Benzo(b)fluoranthene	99		88		40-140	12		50
Benzo(k)fluoranthene	103		92		40-140	11		50
Chrysene	93		84		40-140	10		50
Acenaphthylene	91		83		40-140	9		50
Anthracene	94		86		40-140	9		50
Benzo(ghi)perylene	98		89		40-140	10		50
Fluorene	94		84		40-140	11		50
Phenanthrene	94		84		40-140	11		50
Dibenzo(a,h)anthracene	99		88		40-140	12		50
Indeno(1,2,3-cd)pyrene	106		90		40-140	16		50
Pyrene	97		85		35-142	13		50
Aniline	58		55		40-140	5		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02,04-05 Batch: WG2231230-2 WG2231230-3								
Dibenzofuran	87		77		40-140	12		50
Pentachlorophenol	99		89		17-109	11		50
Phenol	83		76		26-90	9		50
2-Methylphenol	86		78		30-130	10		50
3-Methylphenol/4-Methylphenol	86		79		30-130	8		50
1,4-Dioxane	60		53		40-140	12		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	86		76		25-120
Phenol-d6	89		80		10-120
Nitrobenzene-d5	86		77		23-120
2-Fluorobiphenyl	85		76		30-120
2,4,6-Tribromophenol	107		94		10-136
4-Terphenyl-d14	94		82		18-120

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	*Native Sample*	*MS Added*	*MS Found*	*MS %Recovery*	*Qual*	*MSD Found*	*MSD %Recovery*	*Qual*	*Recovery Limits*	*RPD*	*Qual*	*RPD Limits*
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02,04-05 QC Batch ID: WG2231230-4 WG2231230-5 QC Sample: L2638828-01 Client ID: 5FS-SW-20 (9-11)												
Acenaphthene	64J	1760	1600	91		1600	90		31-137	0		50
Hexachlorobenzene	ND	1760	1700	96		1600	90		40-140	6		50
Fluoranthene	420	1760	1900	84		2200	100		40-140	15		50
Naphthalene	68J	1760	1600	91		1600	90		40-140	0		50
Nitrobenzene	ND	1760	1600	91		1600	90		40-140	0		50
Benzo(a)anthracene	180	1760	1800	92		1900	97		40-140	5		50
Benzo(a)pyrene	160J	1760	2000	110		2000	110		40-140	0		50
Benzo(b)fluoranthene	190	1760	1900	97		1900	96		40-140	0		50
Benzo(k)fluoranthene	64J	1760	1800	100		1800	100		40-140	0		50
Chrysene	170	1760	1700	87		1800	91		40-140	6		50
Acenaphthylene	ND	1760	1600	91		1600	90		40-140	0		50
Anthracene	120J	1760	1700	96		1800	100		40-140	6		50
Benzo(ghi)perylene	90J	1760	1800	100		1800	100		40-140	0		50
Fluorene	71J	1760	1700	96		1700	95		40-140	0		50
Phenanthrene	500	1760	1800	74		2200	95		40-140	20		50
Dibenzo(a,h)anthracene	ND	1760	1800	100		1800	100		40-140	0		50
Indeno(1,2,3-cd)pyrene	90J	1760	1900	110		2000	110		40-140	5		50
Pyrene	340	1760	1800	83		2000	93		35-142	11		50
Aniline	ND	1760	1100	62		1000	56		40-140	10		50

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02,04-05 QC Batch ID: WG2231230-4 WG2231230-5 QC Sample: L2638828-01 Client ID: 5FS-SW-20 (9-11)												
Dibenzofuran	41J	1760	1500	85		1500	84		40-140	0		50
Pentachlorophenol	ND	1760	1700	96		1600	90		17-109	6		50
Phenol	ND	1760	1500	85		1500	84		26-90	0		50
2-Methylphenol	ND	1760	1600	91		1500	84		30-130	6		50
3-Methylphenol/4-Methylphenol	ND	1760	1600	91		1500	84		30-130	6		50
1,4-Dioxane	ND	1760	1000	57		1100	62		40-140	10		50

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,4,6-Tribromophenol	105		102		10-136
2-Fluorobiphenyl	83		81		30-120
2-Fluorophenol	86		86		25-120
4-Terphenyl-d14	87		85		18-120
Nitrobenzene-d5	90		87		23-120
Phenol-d6	95		93		10-120

METALS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-01
Client ID: 5FS-SW-20 (9-11)
Sample Location: Not Specified
Date Collected: 06/19/26 10:35
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 74%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	13100		mg/kg	10.3	3.34	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Antimony, Total	ND		mg/kg	5.14	3.96	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Arsenic, Total	11.2		mg/kg	1.03	0.444	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Barium, Total	100		mg/kg	1.03	0.109	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Beryllium, Total	0.774		mg/kg	0.514	0.057	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Cadmium, Total	0.108	J	mg/kg	1.03	0.057	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Calcium, Total	4260		mg/kg	10.3	5.83	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Chromium, Total	18.0		mg/kg	1.03	0.872	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Cobalt, Total	12.9		mg/kg	2.06	0.255	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Copper, Total	27.4		mg/kg	1.03	0.234	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Iron, Total	31200		mg/kg	25.7	8.23	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Lead, Total	91.9		mg/kg	5.14	0.245	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Magnesium, Total	5490		mg/kg	10.3	1.68	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Manganese, Total	556		mg/kg	1.03	0.551	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Mercury, Total	ND		mg/kg	0.109	0.071	1	06/24/26 18:52	06/24/26 21:40	EPA 7471B	1,7471B	RDB
Nickel, Total	32.9		mg/kg	2.57	0.831	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Potassium, Total	814		mg/kg	257	52.2	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Selenium, Total	ND		mg/kg	2.06	0.338	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Silver, Total	ND		mg/kg	0.514	0.306	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Sodium, Total	ND		mg/kg	206	109.	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Thallium, Total	ND		mg/kg	2.06	0.928	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Vanadium, Total	22.4		mg/kg	1.03	0.155	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
Zinc, Total	98.7		mg/kg	5.14	0.623	2	06/24/26 17:27	06/24/26 22:04	EPA 3050B	1,6010D	TLD
General Chemistry - Mansfield Lab											
Chromium, Trivalent	18.0		mg/kg	1.08	0.872	1		06/25/26 02:30	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-02
Client ID: 5FS-SW-21 (11-13)
Sample Location: Not Specified
Date Collected: 06/19/26 11:30
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 79%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4610		mg/kg	9.89	3.21	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Antimony, Total	ND		mg/kg	4.94	3.81	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Arsenic, Total	9.38		mg/kg	0.989	0.427	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Barium, Total	43.8		mg/kg	0.989	0.105	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Beryllium, Total	0.280	J	mg/kg	0.494	0.054	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Cadmium, Total	ND		mg/kg	0.989	0.054	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Calcium, Total	58100		mg/kg	9.89	5.61	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Chromium, Total	7.41		mg/kg	0.989	0.839	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Cobalt, Total	5.51		mg/kg	1.98	0.245	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Copper, Total	14.9		mg/kg	0.989	0.224	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Iron, Total	12700		mg/kg	24.7	7.91	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Lead, Total	20.6		mg/kg	4.94	0.235	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Magnesium, Total	31200		mg/kg	9.89	1.61	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Manganese, Total	252		mg/kg	0.989	0.530	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Mercury, Total	0.080	J	mg/kg	0.099	0.065	1	06/24/26 18:52	06/24/26 22:23	EPA 7471B	1,7471B	RDB
Nickel, Total	12.6		mg/kg	2.47	0.799	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Potassium, Total	533		mg/kg	247	50.1	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Selenium, Total	0.904	J	mg/kg	1.98	0.325	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Silver, Total	ND		mg/kg	0.494	0.295	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Sodium, Total	153	J	mg/kg	198	105.	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Thallium, Total	ND		mg/kg	1.98	0.892	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Vanadium, Total	11.9		mg/kg	0.989	0.149	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
Zinc, Total	69.0		mg/kg	4.94	0.599	2	06/24/26 17:27	06/24/26 23:24	EPA 3050B	1,6010D	TLD
General Chemistry - Mansfield Lab											
Chromium, Trivalent	7.41		mg/kg	1.01	0.839	1		06/25/26 02:30	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-04
Client ID: 5FS-SW-23B (11-13)
Sample Location: Not Specified
Date Collected: 06/19/26 14:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6780		mg/kg	9.90	3.22	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Antimony, Total	ND		mg/kg	4.95	3.81	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Arsenic, Total	8.06		mg/kg	0.990	0.428	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Barium, Total	56.2		mg/kg	0.990	0.105	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Beryllium, Total	0.390	J	mg/kg	0.495	0.055	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Cadmium, Total	ND		mg/kg	0.990	0.055	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Calcium, Total	3500		mg/kg	9.90	5.62	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Chromium, Total	10.1		mg/kg	0.990	0.840	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Cobalt, Total	7.10		mg/kg	1.98	0.246	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Copper, Total	16.8		mg/kg	0.990	0.225	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Iron, Total	20800		mg/kg	24.8	7.92	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Lead, Total	20.6		mg/kg	4.95	0.236	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Magnesium, Total	2790		mg/kg	9.90	1.61	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Manganese, Total	361		mg/kg	0.990	0.531	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Mercury, Total	ND		mg/kg	0.083	0.054	1	06/24/26 18:52	06/24/26 22:26	EPA 7471B	1,7471B	RDB
Nickel, Total	17.4		mg/kg	2.48	0.800	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Potassium, Total	562		mg/kg	248	50.2	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Selenium, Total	ND		mg/kg	1.98	0.326	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Silver, Total	ND		mg/kg	0.495	0.295	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Sodium, Total	110	J	mg/kg	198	105.	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Thallium, Total	ND		mg/kg	1.98	0.893	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Vanadium, Total	12.4		mg/kg	0.990	0.150	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
Zinc, Total	69.1		mg/kg	4.95	0.600	2	06/24/26 17:27	06/24/26 23:26	EPA 3050B	1,6010D	TLD
General Chemistry - Mansfield Lab											
Chromium, Trivalent	10.1		mg/kg	1.03	0.840	1		06/25/26 02:30	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-05
Client ID: DUP-1
Sample Location: Not Specified
Date Collected: 06/19/26 12:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4440		mg/kg	9.02	2.93	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Antimony, Total	ND		mg/kg	4.51	3.47	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Arsenic, Total	6.85		mg/kg	0.902	0.390	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Barium, Total	47.0		mg/kg	0.902	0.096	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Beryllium, Total	0.251	J	mg/kg	0.451	0.050	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Cadmium, Total	ND		mg/kg	0.902	0.050	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Calcium, Total	27000		mg/kg	9.02	5.11	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Chromium, Total	7.18		mg/kg	0.902	0.765	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Cobalt, Total	5.60		mg/kg	1.80	0.224	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Copper, Total	12.6		mg/kg	0.902	0.205	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Iron, Total	11400		mg/kg	22.5	7.21	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Lead, Total	15.8		mg/kg	4.51	0.215	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Magnesium, Total	14200		mg/kg	9.02	1.47	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Manganese, Total	175		mg/kg	0.902	0.483	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Mercury, Total	0.060	J	mg/kg	0.082	0.053	1	06/24/26 18:52	06/24/26 22:35	EPA 7471B	1,7471B	RDB
Nickel, Total	13.1		mg/kg	2.25	0.728	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Potassium, Total	470		mg/kg	225	45.7	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Selenium, Total	1.07	J	mg/kg	1.80	0.297	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Silver, Total	ND		mg/kg	0.451	0.269	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Sodium, Total	106	J	mg/kg	180	95.6	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Thallium, Total	ND		mg/kg	1.80	0.813	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Vanadium, Total	11.0		mg/kg	0.902	0.136	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
Zinc, Total	63.2		mg/kg	4.51	0.546	2	06/24/26 17:27	06/24/26 23:28	EPA 3050B	1,6010D	TLD
General Chemistry - Mansfield Lab											
Chromium, Trivalent	7.18		mg/kg	0.956	0.765	1		06/25/26 02:30	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02,04-05 Batch: WG2232929-1										
Aluminum, Total	ND		mg/kg	4.00	1.30	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Antimony, Total	ND		mg/kg	2.00	1.54	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Arsenic, Total	ND		mg/kg	0.400	0.173	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Barium, Total	ND		mg/kg	0.400	0.042	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Beryllium, Total	ND		mg/kg	0.200	0.022	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Cadmium, Total	ND		mg/kg	0.400	0.022	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Calcium, Total	ND		mg/kg	4.00	2.27	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Chromium, Total	ND		mg/kg	0.400	0.339	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Cobalt, Total	ND		mg/kg	0.800	0.099	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Copper, Total	ND		mg/kg	0.400	0.091	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Iron, Total	ND		mg/kg	10.0	3.20	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Lead, Total	0.098	J	mg/kg	2.00	0.095	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Magnesium, Total	ND		mg/kg	4.00	0.652	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Manganese, Total	ND		mg/kg	0.400	0.214	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Nickel, Total	ND		mg/kg	1.00	0.323	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Potassium, Total	ND		mg/kg	100	20.3	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Selenium, Total	ND		mg/kg	0.800	0.132	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Silver, Total	ND		mg/kg	0.200	0.119	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Sodium, Total	ND		mg/kg	80.0	42.4	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Thallium, Total	ND		mg/kg	0.800	0.361	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Vanadium, Total	ND		mg/kg	0.400	0.060	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD
Zinc, Total	ND		mg/kg	2.00	0.242	1	06/24/26 17:27	06/24/26 21:59	1,6010D	TLD

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02,04-05 Batch: WG2232935-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	06/24/26 18:52	06/24/26 21:34	1,7471B	RDB

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,04-05 Batch: WG2232929-2								
Aluminum, Total	102		-		80-120	-		20
Antimony, Total	98		-		80-120	-		20
Arsenic, Total	97		-		80-120	-		20
Barium, Total	104		-		80-120	-		20
Beryllium, Total	103		-		80-120	-		20
Cadmium, Total	100		-		80-120	-		20
Calcium, Total	108		-		80-120	-		20
Chromium, Total	102		-		80-120	-		20
Cobalt, Total	102		-		80-120	-		20
Copper, Total	105		-		80-120	-		20
Iron, Total	106		-		80-120	-		20
Lead, Total	104		-		80-120	-		20
Magnesium, Total	102		-		80-120	-		20
Manganese, Total	104		-		80-120	-		20
Nickel, Total	102		-		80-120	-		20
Potassium, Total	111		-		80-120	-		20
Selenium, Total	98		-		80-120	-		20
Silver, Total	101		-		80-120	-		20
Sodium, Total	113		-		80-120	-		20
Thallium, Total	100		-		80-120	-		20
Vanadium, Total	104		-		80-120	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,04-05 Batch: WG2232929-2					
Zinc, Total	96	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-02,04-05 Batch: WG2232935-2					
Mercury, Total	98	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,04-05 QC Batch ID: WG2232929-3 WG2232929-4 QC Sample: L2638828-01 Client ID: 5FS-SW-20 (9-11)												
Aluminum, Total	13100	213	12100	**0**	Q	13100	**0**	Q	75-125	8		20
Antimony, Total	ND	53.2	17.5	**33**	Q	20.0	**39**	Q	75-125	13		20
Arsenic, Total	11.2	12.8	25.3	110		25.8	119		75-125	2		20
Barium, Total	100	213	310	99		311	103		75-125	0		20
Beryllium, Total	0.774	5.32	6.02	99		5.92	101		75-125	2		20
Cadmium, Total	0.108J	5.64	5.53	98		5.39	100		75-125	3		20
Calcium, Total	4260	1060	14200	**934**	Q	7220	**290**	Q	75-125	**65**	Q	20
Chromium, Total	18.0	21.3	37.6	92		38.4	100		75-125	2		20
Cobalt, Total	12.9	53.2	63.4	95		63.2	99		75-125	0		20
Copper, Total	27.4	26.6	50.7	88		51.9	96		75-125	2		20
Iron, Total	31200	106	25000	**0**	Q	31000	**0**	Q	75-125	**21**	Q	20
Lead, Total	91.9	56.4	192	**178**	Q	174	**152**	Q	75-125	10		20
Magnesium, Total	5490	1060	11000	**518**	Q	7710	**218**	Q	75-125	**35**	Q	20
Manganese, Total	556	53.2	404	**0**	Q	374	**0**	Q	75-125	8		20
Nickel, Total	32.9	53.2	81.4	91		82.9	98		75-125	2		20
Potassium, Total	814	1060	1790	92		1770	94		75-125	1		20
Selenium, Total	ND	12.8	11.3	88		10.5	86		75-125	7		20
Silver, Total	ND	5.32	5.18	97		4.83	95		75-125	7		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02,04-05 QC Batch ID: WG2232929-3 WG2232929-4 QC Sample: L2638828-01 Client ID: 5FS-SW-20 (9-11)												
Sodium, Total	ND	1060	1300	122		1240	122		75-125	5		20
Thallium, Total	ND	12.8	12.0	94		11.9	97		75-125	1		20
Vanadium, Total	22.4	53.2	72.9	95		74.3	102		75-125	2		20
Zinc, Total	98.7	53.2	155	106		166	**132**	Q	75-125	7		20
Total Metals - Mansfield Lab Associated sample(s): 01-02,04-05 QC Batch ID: WG2232935-3 WG2232935-4 QC Sample: L2638828-01 Client ID: 5FS-SW-20 (9-11)												
Mercury, Total	ND	1.88	1.90	101		1.86	102		80-120	2		20

INORGANICS
&
MISCELLANEOUS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-01
Client ID: 5FS-SW-20 (9-11)
Sample Location: Not Specified

Date Collected: 06/19/26 10:35
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	74.2		%	0.100	NA	1	-	06/20/26 15:42	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.3	0.28	1	06/22/26 21:30	06/23/26 13:45	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	1.08	0.216	1	06/23/26 03:08	06/25/26 02:30	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-02
Client ID: 5FS-SW-21 (11-13)
Sample Location: Not Specified

Date Collected: 06/19/26 11:30
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.0		%	0.100	NA	1	-	06/20/26 15:42	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.2	0.26	1	06/22/26 21:30	06/23/26 13:48	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	1.01	0.202	1	06/23/26 03:08	06/25/26 02:30	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-04
Client ID: 5FS-SW-23B (11-13)
Sample Location: Not Specified

Date Collected: 06/19/26 14:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.9		%	0.100	NA	1	-	06/20/26 15:42	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.2	0.25	1	06/22/26 21:30	06/23/26 13:49	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	1.03	0.205	1	06/23/26 03:08	06/25/26 02:30	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2638828-05
Client ID: DUP-1
Sample Location: Not Specified

Date Collected: 06/19/26 12:00
Date Received: 06/19/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.7		%	0.100	NA	1	-	06/20/26 15:42	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.1	0.23	1	06/22/26 21:30	06/23/26 13:50	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.956	0.191	1	06/23/26 03:08	06/25/26 02:30	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02,04-05 Batch: WG2231808-1										
Cyanide, Total	ND		mg/kg	0.88	0.19	1	06/22/26 21:30	06/23/26 13:36	1,9010C/9012B	JER
General Chemistry - Westborough Lab for sample(s): 01-02,04-05 Batch: WG2231900-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	06/23/26 03:08	06/25/26 02:30	1,7196A	TN

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01-02,04-05		Batch: WG2231808-2		WG2231808-3			
Cyanide, Total	96		86		80-120	11		35
General Chemistry - Westborough Lab	Associated sample(s): 01-02,04-05		Batch: WG2231900-2					
Chromium, Hexavalent	86		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05 QC Batch ID: WG2231808-4 WG2231808-5 QC Sample: L2638828-01 Client ID: 5FS-SW-20 (9-11)												
Cyanide, Total	ND	12	14	110		14	100		75-125	10		35
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05 QC Batch ID: WG2231900-4 WG2231900-5 QC Sample: L2638828-01 Client ID: 5FS-SW-20 (9-11)												
Chromium, Hexavalent	ND	1680	1630	97		1440	87		75-125	0		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET

Project Number: 4694.0001B000

Lab Number: L2638828

Report Date: 07/21/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05 QC Batch ID: WG2230921-1 QC Sample: L2638828-01 Client ID: 5FS-SW-20 (9-11)						
Solids, Total	74.2	75.5	%	2		10
General Chemistry - Westborough Lab Associated sample(s): 01-02,04-05 QC Batch ID: WG2231900-7 QC Sample: L2638828-01 Client ID: 5FS-SW-20 (9-11)						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

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(*)
L2638828-01A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01A1	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01A2	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01B1	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01B2	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01C1	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01C2	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2638828-01D1	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2638828-01D2	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2638828-01E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),TL-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),CU-TI(180),ZN-TI(180),SB-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)
L2638828-01E1	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),TL-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),CU-TI(180),ZN-TI(180),SB-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2638828-01E2	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),TL-TI(180),CR-TI(180),PB-TI(180),SE-TI(180),CU-TI(180),ZN-TI(180),SB-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)
L2638828-01F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		HEXCR-7196(30)
L2638828-01F1	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		HEXCR-7196(30)
L2638828-01F2	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		HEXCR-7196(30)
L2638828-01G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14)
L2638828-01G1	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14)
L2638828-01G2	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14)
L2638828-01X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01X1	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01X2	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-01Y	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)
L2638828-01Y1	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)
L2638828-01Y2	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)
L2638828-01Z	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)
L2638828-01Z1	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)
L2638828-01Z2	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)
L2638828-02A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-02B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-02C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-02D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2638828-02E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),NI-TI(180),AL-TI(180),TL-TI(180),PB-TI(180),CU-TI(180),ZN-TI(180),SB-TI(180),SE-TI(180),CO-TI(180),V-TI(180),MG-TI(180),FE-TI(180),HG-T(28),MN-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2638828-02F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		HEXCR-7196(30)
L2638828-02G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14)
L2638828-02X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-02Y	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)
L2638828-02Z	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)
L2638828-03A	Vial MeOH preserved	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-03B	Vial water preserved	NA	NA			Y	Absent	20-JUN-26 10:14	NYTCL-8260HLW-R2(14)
L2638828-04A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-04B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-04C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-04D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2638828-04E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),TL-TI(180),CR-TI(180),AL-TI(180),NI-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),V-TI(180),CO-TI(180),MN-TI(180),MG-TI(180),FE-TI(180),HG-T(28),K-TI(180),CA-TI(180),NA-TI(180),CD-TI(180)
L2638828-04F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		HEXCR-7196(30)
L2638828-04G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14)
L2638828-04X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-04Y	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)
L2638828-04Z	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)
L2638828-05A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-05B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-05C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-05D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2638828-05E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),AL-TI(180),TL-TI(180),NI-TI(180),CR-TI(180),SE-TI(180),CU-TI(180),SB-TI(180),PB-TI(180),ZN-TI(180),V-TI(180),CO-TI(180),HG-T(28),FE-TI(180),MN-TI(180),MG-TI(180),CD-TI(180),K-TI(180),CA-TI(180),NA-TI(180)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2638828
Report Date: 07/21/26

Container Information

Container ID	*Container Type*	*Cooler*	*Initial pH*	*Final pH*	*Temp deg C*	*Pres*	*Seal*	*Frozen Date/Time*	*Analysis(*)*
L2638828-05F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		HEXCR-7196(30)
L2638828-05G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14)
L2638828-05X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2638828-05Y	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)
L2638828-05Z	Vial Water preserved split	NA	NA			Y	Absent	20-JUN-26 12:35	NYTCL-8260HLW-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT STREET	**Lab Number:**	L2638828
Project Number:	4694.0001B000	**Report Date:**	07/21/26

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:	5 FLINT STREET	**Lab Number:**	L2638828
Project Number:	4694.0001B000	**Report Date:**	07/21/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT STREET	**Lab Number:**	L2638828
Project Number:	4694.0001B000	**Report Date:**	07/21/26

Data Qualifiers

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: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2638828
Report Date: 07/21/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

107 Calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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 504.1: EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,**.

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, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water
EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water
SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY KY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NV MA00030, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

L2638828

Scan QR Code for instructions

Company Name: Roux	Contact/Report To: Eric Runstrom
Street Address: 5 Flint Street, Rochester, NY	Phone #: 781.569.4031
	E-Mail: erunstrom@rouxinc.com
	Cc E-Mail: sbarrientos@rouxinc.com; rouxap@rouxinc.com
Customer Project #: 4894.00018000	Invoice to: Roux
Project Name: 5 Flint Street	Invoice E-mail: rouxap@rouxinc.com
Site Collection Info/Facility ID (as applicable):	Purchase Order # (if applicable):
	Quote #: 00203091
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET	County / State origin of sample(s): Monroe County, New York

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [X] EQUIS [X] Other Roux MA formatted EDDS

Regulatory Program (DW, RCRA, etc.) as applicable: Part 375, Table 6.8 (a), please include TICS for both VOCs and SVOCs. Category B deliverable. Reportable [X] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other _____

Date Results Requested: Standard - 5 DAY TAT

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 6 | 10 | 10

Identify Container Preservative Type***: 8 | 11 | 2

Analysis Requested

#	Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs + TICS (8260)	SVOCs + TICS (8270)	TAL Metals + total cyanide + tri and hexa Chromium (6010D)	Sample Comment
01	5FS-SW-20 (9-11)	SOIL	G	NA	NA	6/19/26	10:35				X	X	X	MS/MSD
02	5FS-SW-21 (11-13)	SOIL	G	NA	NA	6/19/26	11:30				X	X	X	[redacted]
03	Trip Blank	SOIL	G	NA	NA	6/19/26	08:00				X			
04	5FS-SW-23B (11-13)	SOIL	G	NA	NA	6/19/26	14:00				X	X	X	
05	DUP-1	SOIL	G	NA	NA	6/19/26	12:00				X	X	X	

Lab Use Only: Proj. Mgr: | Accitium / Client ID: | Table #: | Profile / Template: | Prelog / Bottle Ord. ID:

Preservation non-conformance identified to sample.

Additional Instructions from Pace®:

Collected By: E. Spirito

Printed Name: E. Spirito

Signature:

Customer Remarks / Special Conditions / Possible Hazards: NA

# Coolers	Thermometer ID	Correction Factor (°C)	Obs Temp (°C)	Corrected Temp (°C)	[ ] On Ice

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
ROUX	6/19/26 12:05	SECURE STORAGE PACE	6/19/26 16:05
SECURE STORAGE PACE	6/19/26 1605	W Mor PACE	6/19/26 1728
W Mor PACE	6/19/26 1728	ROCH S/C PACE	6/19/26 1728
ROC S/C	6.19.26 1810	NORM	6.19.26 1810
NORM	6.19.26 1930		6/19 2300
	6/20 230		

Tracking Number:

Delivered by: [ ] Courier [ ] FedEx [ ] UPS [ ] Other

Page: of

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

ENV-FRM-CORO-0019_v02_110123 ©

Sample Delivery Group Summary

Pace Job Number : L2638828

Account Name : Roux
Project Number : 4594.0001B000
Project Name : 5 FLINT STREET

Received : 19-JUN-2026
Reviewer : Monique Irving

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	5.3	

Condition Information

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

Volatile Organics/VPH

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

ANALYTICAL REPORT

Lab Number:	L2639381
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT STREET
Project Number:	4694.0001B000
Report Date:	06/30/26

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

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2639381-01	5FS-MW-1	WATER	Not Specified	06/23/26 12:20	06/23/26
L2639381-02	DUP-1	WATER	Not Specified	06/23/26 13:00	06/23/26
L2639381-03	FIELD BLANK	WATER	Not Specified	06/23/26 12:40	06/23/26
L2639381-04	TRIP BLANK	WATER	Not Specified	06/23/26 00:00	06/23/26

Project Name:	5 FLINT STREET	**Lab Number:**	L2639381
Project Number:	4694.0001B000	**Report Date:**	06/30/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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:	5 FLINT STREET	**Lab Number:**	L2639381
Project Number:	4694.0001B000	**Report Date:**	06/30/26

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: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative

Date: 06/30/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Organics by GC/MS - Westborough Lab								
8260D	Batch QC (L2639381-01)	WG2235278-6	Acetone	MS	150	58-148	01-04	potential high bias

ORGANICS

VOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-01
Client ID: 5FS-MW-1
Sample Location: Not Specified
Date Collected: 06/23/26 12:20
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/26/26 17:27
Analyst: JKH

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
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	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
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
Vinyl chloride	ND		ug/l	1.0	0.07	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
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	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Acetone	3.8	J	ug/l	5.0	1.5	1
2-Butanone	2.6	J	ug/l	5.0	1.9	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

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-01
Client ID: 5FS-MW-1
Sample Location: Not Specified
Date Collected: 06/23/26 12:20
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	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
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	94		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	85		70-130
Dibromofluoromethane	112		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-02
Client ID: DUP-1
Sample Location: Not Specified
Date Collected: 06/23/26 13:00
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/26/26 17:53
Analyst: JKH

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
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	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
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
Vinyl chloride	ND		ug/l	1.0	0.07	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
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	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Acetone	5.1		ug/l	5.0	1.5	1
2-Butanone	3.8	J	ug/l	5.0	1.9	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

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-02
Client ID: DUP-1
Sample Location: Not Specified
Date Collected: 06/23/26 13:00
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	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
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	87		70-130
Dibromofluoromethane	114		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-03
Client ID: FIELD BLANK
Sample Location: Not Specified
Date Collected: 06/23/26 12:40
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/26/26 18:20
Analyst: JKH

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
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	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
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
Vinyl chloride	ND		ug/l	1.0	0.07	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
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	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Acetone	3.6	J	ug/l	5.0	1.5	1
2-Butanone	ND		ug/l	5.0	1.9	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

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-03
Client ID: FIELD BLANK
Sample Location: Not Specified
Date Collected: 06/23/26 12:40
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	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
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	98		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	117		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-04
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 06/23/26 00:00
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 06/26/26 18:46
Analyst: JKH

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
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	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
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
Vinyl chloride	ND		ug/l	1.0	0.07	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
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	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Acetone	3.3	J	ug/l	5.0	1.5	1
2-Butanone	ND		ug/l	5.0	1.9	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

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-04
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 06/23/26 00:00
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	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
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	100		70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	119		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/26/26 12:03
Analyst: GMT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG2235278-5					
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
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	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
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
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
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Acetone	ND		ug/l	5.0	1.5

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 06/26/26 12:03
Analyst: GMT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 01-04 Batch: WG2235278-5					
2-Butanone	ND		ug/l	5.0	1.9
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
n-Propylbenzene	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
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	96		70-130
Toluene-d8	97		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	117		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG2235278-3 WG2235278-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	99		100		70-130	1		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	94		100		63-132	6		20
Tetrachloroethene	96		100		70-130	4		20
Chlorobenzene	98		100		75-130	2		20
1,2-Dichloroethane	90		92		70-130	2		20
1,1,1-Trichloroethane	96		100		67-130	4		20
Benzene	100		100		70-130	0		20
Toluene	95		98		70-130	3		20
Ethylbenzene	94		98		70-130	4		20
Vinyl chloride	96		100		55-140	4		20
1,1-Dichloroethene	100		110		61-145	10		20
trans-1,2-Dichloroethene	110		110		70-130	0		20
Trichloroethene	97		110		70-130	13		20
1,2-Dichlorobenzene	100		100		70-130	0		20
1,3-Dichlorobenzene	99		100		70-130	1		20
1,4-Dichlorobenzene	100		100		70-130	0		20
Methyl tert butyl ether	90		91		63-130	1		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 Batch: WG2235278-3 WG2235278-4								
p/m-Xylene	100		100		70-130	0		20
o-Xylene	95		100		70-130	5		20
cis-1,2-Dichloroethene	110		110		70-130	0		20
Acetone	97		88		58-148	10		20
2-Butanone	76		74		63-138	3		20
n-Butylbenzene	92		97		53-136	5		20
sec-Butylbenzene	90		95		70-130	5		20
tert-Butylbenzene	89		93		70-130	4		20
n-Propylbenzene	91		95		69-130	4		20
1,3,5-Trimethylbenzene	94		97		64-130	3		20
1,2,4-Trimethylbenzene	94		98		70-130	4		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	89		89		70-130
Toluene-d8	97		97		70-130
4-Bromofluorobenzene	89		87		70-130
Dibromofluoromethane	108		105		70-130

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG2235278-6 WG2235278-7 QC Sample: L2639381-01 Client ID: 5FS-MW-1												
Methylene chloride	ND	10	12	120		11	110		70-130	9		20
1,1-Dichloroethane	ND	10	12	120		12	120		70-130	0		20
Chloroform	ND	10	12	120		11	110		70-130	9		20
Carbon tetrachloride	ND	10	12	120		12	120		63-132	0		20
Tetrachloroethene	ND	10	12	120		12	120		70-130	0		20
Chlorobenzene	ND	10	12	120		12	120		75-130	0		20
1,2-Dichloroethane	ND	10	10	100		10	100		70-130	0		20
1,1,1-Trichloroethane	ND	10	12	120		12	120		67-130	0		20
Benzene	ND	10	12	120		12	120		70-130	0		20
Toluene	ND	10	12	120		12	120		70-130	0		20
Ethylbenzene	ND	10	12	120		11	110		70-130	9		20
Vinyl chloride	ND	10	12	120		12	120		55-140	0		20
1,1-Dichloroethene	ND	10	13	130		12	120		61-145	8		20
trans-1,2-Dichloroethene	ND	10	13	130		13	130		70-130	0		20
Trichloroethene	ND	10	13	130		11	110		70-130	17		20
1,2-Dichlorobenzene	ND	10	12	120		11	110		70-130	9		20
1,3-Dichlorobenzene	ND	10	12	120		12	120		70-130	0		20
1,4-Dichlorobenzene	ND	10	12	120		12	120		70-130	0		20
Methyl tert butyl ether	ND	10	10	100		9.9	99		63-130	1		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-04 QC Batch ID: WG2235278-6 WG2235278-7 QC Sample: L2639381-01 Client ID: 5FS-MW-1												
p/m-Xylene	ND	20	24	120		24	120		70-130	0		20
o-Xylene	ND	20	23	115		23	115		70-130	0		20
cis-1,2-Dichloroethene	ND	10	13	130		12	120		70-130	8		20
Acetone	3.8J	10	15	**150**	Q	13	130		58-148	14		20
2-Butanone	2.6J	10	13	130		12	120		63-138	8		20
n-Butylbenzene	ND	10	12	120		11	110		53-136	9		20
sec-Butylbenzene	ND	10	12	120		11	110		70-130	9		20
tert-Butylbenzene	ND	10	11	110		11	110		70-130	0		20
n-Propylbenzene	ND	10	12	120		11	110		69-130	9		20
1,3,5-Trimethylbenzene	ND	10	12	120		11	110		64-130	9		20
1,2,4-Trimethylbenzene	ND	10	12	120		11	110		70-130	9		20

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	86		87		70-130
4-Bromofluorobenzene	89		89		70-130
Dibromofluoromethane	102		100		70-130
Toluene-d8	97		98		70-130

SEMIVOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-01
Client ID: 5FS-MW-1
Sample Location: Not Specified
Sample Depth:
Matrix: Water
Analytical Method: 1,8270E
Analytical Date: 06/24/26 23:02
Analyst: SMZ

Date Collected: 06/23/26 12:20
Date Received: 06/23/26
Field Prep: Not Specified
Extraction Method: EPA 3510C
Extraction Date: 06/24/26 09:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Nitrobenzene	ND		ug/l	2.0	0.20	1
Aniline	ND		ug/l	2.0	0.67	1
Dibenzofuran	ND		ug/l	2.0	0.40	1
Phenol	ND		ug/l	5.0	0.35	1
2-Methylphenol	ND		ug/l	5.0	2.3	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	1.4	1
Tentatively Identified Compounds						
Total TIC Compounds	43.3	J	ug/l			1
Unknown	31.9	J	ug/l			1
Unknown Organic Acid	4.60	J	ug/l			1
Unknown Organic Acid	6.80	J	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	37		21-120
Phenol-d6	29		10-120
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	56		15-120
2,4,6-Tribromophenol	65		10-120
4-Terphenyl-d14	55		41-149

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-01
Client ID: 5FS-MW-1
Sample Location: Not Specified

Date Collected: 06/23/26 12:20
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 06/24/26 23:53
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 06/24/26 09:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.02	1
Fluoranthene	ND		ug/l	0.10	0.03	1
Naphthalene	0.07	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	0.04	J	ug/l	0.10	0.03	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.03	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.03	1
Chrysene	ND		ug/l	0.10	0.03	1
Acenaphthylene	ND		ug/l	0.10	0.02	1
Anthracene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.02	1
Fluorene	ND		ug/l	0.10	0.03	1
Phenanthrene	ND		ug/l	0.10	0.04	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.02	1
Pyrene	ND		ug/l	0.10	0.04	1
Pentachlorophenol	ND		ug/l	0.80	0.06	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	37		21-120
Phenol-d6	25		10-120
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	54		15-120
2,4,6-Tribromophenol	71		10-120
4-Terphenyl-d14	52		41-149

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-02
Client ID: DUP-1
Sample Location: Not Specified

Date Collected: 06/23/26 13:00
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E
Analytical Date: 06/24/26 23:59
Analyst: SMZ

Extraction Method: EPA 3510C
Extraction Date: 06/24/26 09:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Nitrobenzene	ND		ug/l	2.0	0.20	1
Aniline	ND		ug/l	2.0	0.67	1
Dibenzofuran	ND		ug/l	2.0	0.40	1
Phenol	ND		ug/l	5.0	0.35	1
2-Methylphenol	ND		ug/l	5.0	2.3	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	1.4	1
Tentatively Identified Compounds						
Total TIC Compounds	63.2	J	ug/l			1
Unknown Alkane	6.00	J	ug/l			1
Unknown Organic Acid	5.40	J	ug/l			1
Unknown	24.1	J	ug/l			1
Unknown Alkane	5.50	J	ug/l			1
Unknown	5.00	J	ug/l			1
Unknown Organic Acid	8.40	J	ug/l			1
Unknown	4.80	J	ug/l			1
Unknown	4.00	J	ug/l			1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-02
Client ID: DUP-1
Sample Location: Not Specified
Date Collected: 06/23/26 13:00
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	29		21-120
Phenol-d6	23		10-120
Nitrobenzene-d5	43		23-120
2-Fluorobiphenyl	40		15-120
2,4,6-Tribromophenol	55		10-120
4-Terphenyl-d14	52		41-149

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-02
Client ID: DUP-1
Sample Location: Not Specified

Date Collected: 06/23/26 13:00
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 06/25/26 00:46
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 06/24/26 09:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.02	1
Fluoranthene	0.03	J	ug/l	0.10	0.03	1
Naphthalene	0.05	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	0.05	J	ug/l	0.10	0.03	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.03	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.03	1
Chrysene	ND		ug/l	0.10	0.03	1
Acenaphthylene	ND		ug/l	0.10	0.02	1
Anthracene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.02	1
Fluorene	ND		ug/l	0.10	0.03	1
Phenanthrene	ND		ug/l	0.10	0.04	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.02	1
Pyrene	ND		ug/l	0.10	0.04	1
Pentachlorophenol	ND		ug/l	0.80	0.06	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	30		21-120
Phenol-d6	20		10-120
Nitrobenzene-d5	44		23-120
2-Fluorobiphenyl	42		15-120
2,4,6-Tribromophenol	64		10-120
4-Terphenyl-d14	50		41-149

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-03
Client ID: FIELD BLANK
Sample Location: Not Specified

Date Collected: 06/23/26 12:40
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E
Analytical Date: 06/25/26 00:18
Analyst: SMZ

Extraction Method: EPA 3510C
Extraction Date: 06/24/26 09:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Nitrobenzene	ND		ug/l	2.0	0.20	1
Aniline	ND		ug/l	2.0	0.67	1
Dibenzofuran	ND		ug/l	2.0	0.40	1
Phenol	ND		ug/l	5.0	0.35	1
2-Methylphenol	ND		ug/l	5.0	2.3	1
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	1.4	1
Tentatively Identified Compounds						
Total TIC Compounds	60.1	J	ug/l			1
Unknown	4.50	J	ug/l			1
Unknown	7.70	J	ug/l			1
Unknown	42.4	J	ug/l			1
Unknown Organic Acid	5.50	J	ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	39		21-120
Phenol-d6	29		10-120
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	52		15-120
2,4,6-Tribromophenol	63		10-120
4-Terphenyl-d14	54		41-149

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

SAMPLE RESULTS

Lab ID: L2639381-03
Client ID: FIELD BLANK
Sample Location: Not Specified

Date Collected: 06/23/26 12:40
Date Received: 06/23/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8270E-SIM
Analytical Date: 06/25/26 01:04
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 06/24/26 09:32

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS-SIM - Westborough Lab						
Acenaphthene	ND		ug/l	0.10	0.02	1
Fluoranthene	ND		ug/l	0.10	0.03	1
Naphthalene	0.04	J	ug/l	0.10	0.02	1
Benzo(a)anthracene	ND		ug/l	0.10	0.03	1
Benzo(a)pyrene	ND		ug/l	0.10	0.02	1
Benzo(b)fluoranthene	ND		ug/l	0.10	0.03	1
Benzo(k)fluoranthene	ND		ug/l	0.10	0.03	1
Chrysene	ND		ug/l	0.10	0.03	1
Acenaphthylene	ND		ug/l	0.10	0.02	1
Anthracene	ND		ug/l	0.10	0.02	1
Benzo(ghi)perylene	ND		ug/l	0.10	0.02	1
Fluorene	ND		ug/l	0.10	0.03	1
Phenanthrene	ND		ug/l	0.10	0.04	1
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.02	1
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.02	1
Pyrene	ND		ug/l	0.10	0.04	1
Pentachlorophenol	ND		ug/l	0.80	0.06	1
Hexachlorobenzene	ND		ug/l	0.80	0.01	1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	40		21-120
Phenol-d6	26		10-120
Nitrobenzene-d5	58		23-120
2-Fluorobiphenyl	54		15-120
2,4,6-Tribromophenol	71		10-120
4-Terphenyl-d14	52		41-149

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 06/24/26 20:12
Analyst: SMZ

Extraction Method: EPA 3510C
Extraction Date: 06/24/26 09:32

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-03 Batch: WG2232639-1					
Nitrobenzene	ND		ug/l	2.0	0.20
Aniline	ND		ug/l	2.0	0.67
Dibenzofuran	ND		ug/l	2.0	0.40
Phenol	ND		ug/l	5.0	0.35
2-Methylphenol	ND		ug/l	5.0	2.3
3-Methylphenol/4-Methylphenol	ND		ug/l	5.0	1.4

Tentatively Identified Compounds			
Total TIC Compounds	48.8	J	ug/l
Unknown	4.40	J	ug/l
Unknown	44.4	J	ug/l

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	45		21-120
Phenol-d6	35		10-120
Nitrobenzene-d5	57		23-120
2-Fluorobiphenyl	61		15-120
2,4,6-Tribromophenol	64		10-120
4-Terphenyl-d14	59		41-149

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 06/24/26 23:35
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 06/24/26 09:32

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-03 Batch: WG2232641-1					
Acenaphthene	ND		ug/l	0.10	0.02
Fluoranthene	ND		ug/l	0.10	0.03
Naphthalene	0.04	J	ug/l	0.10	0.02
Benzo(a)anthracene	ND		ug/l	0.10	0.03
Benzo(a)pyrene	ND		ug/l	0.10	0.02
Benzo(b)fluoranthene	ND		ug/l	0.10	0.03
Benzo(k)fluoranthene	ND		ug/l	0.10	0.03
Chrysene	ND		ug/l	0.10	0.03
Acenaphthylene	ND		ug/l	0.10	0.02
Anthracene	ND		ug/l	0.10	0.02
Benzo(ghi)perylene	ND		ug/l	0.10	0.02
Fluorene	ND		ug/l	0.10	0.03
Phenanthrene	ND		ug/l	0.10	0.04
Dibenzo(a,h)anthracene	ND		ug/l	0.10	0.02
Indeno(1,2,3-cd)pyrene	ND		ug/l	0.10	0.02
Pyrene	ND		ug/l	0.10	0.04
Pentachlorophenol	ND		ug/l	0.80	0.06
Hexachlorobenzene	ND		ug/l	0.80	0.01

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E-SIM
Analytical Date: 06/24/26 23:35
Analyst: JJW

Extraction Method: EPA 3510C
Extraction Date: 06/24/26 09:32

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS-SIM - Westborough Lab for sample(s): 01-03 Batch: WG2232641-1					

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	46		21-120
Phenol-d6	30		10-120
Nitrobenzene-d5	63		23-120
2-Fluorobiphenyl	58		15-120
2,4,6-Tribromophenol	75		10-120
4-Terphenyl-d14	56		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 Batch: WG2232639-2 WG2232639-3								
Nitrobenzene	70		60		40-140	15		30
Aniline	51		49		40-140	4		30
Dibenzofuran	60		54		40-140	11		30
Phenol	42		38		12-110	10		30
2-Methylphenol	65		58		30-130	11		30
3-Methylphenol/4-Methylphenol	65		57		30-130	13		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	49		43		21-120
Phenol-d6	39		35		10-120
Nitrobenzene-d5	67		58		23-120
2-Fluorobiphenyl	59		52		15-120
2,4,6-Tribromophenol	69		60		10-120
4-Terphenyl-d14	58		51		41-149

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-03 Batch: WG2232641-2 WG2232641-3								
Acenaphthene	61		54		40-140	12		40
Fluoranthene	60		56		40-140	7		40
Naphthalene	64		56		40-140	13		40
Benzo(a)anthracene	60		55		40-140	9		40
Benzo(a)pyrene	67		62		40-140	8		40
Benzo(b)fluoranthene	63		56		40-140	12		40
Benzo(k)fluoranthene	68		65		40-140	5		40
Chrysene	62		57		40-140	8		40
Acenaphthylene	71		63		40-140	12		40
Anthracene	62		57		40-140	8		40
Benzo(ghi)perylene	69		63		40-140	9		40
Fluorene	65		57		40-140	13		40
Phenanthrene	61		56		40-140	9		40
Dibenzo(a,h)anthracene	69		64		40-140	8		40
Indeno(1,2,3-cd)pyrene	64		59		40-140	8		40
Pyrene	59		56		40-140	5		40
Pentachlorophenol	96		87		40-140	10		40
Hexachlorobenzene	77		70		40-140	10		40

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-03 Batch: WG2232641-2 WG2232641-3								

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	50		45		21-120
Phenol-d6	35		32		10-120
Nitrobenzene-d5	73		63		23-120
2-Fluorobiphenyl	64		55		15-120
2,4,6-Tribromophenol	84		74		10-120
4-Terphenyl-d14	54		51		41-149

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG2232639-4 WG2232639-5 QC Sample: L2639381-01 Client ID: 5FS-MW-1												
Nitrobenzene	ND	20	13	65		14	70		40-140	7		30
Aniline	ND	20	8.4	42		8.5	43		40-140	1		30
Dibenzofuran	ND	20	12	60		13	65		40-140	8		30
Phenol	ND	20	7.3	37		7.9	40		12-110	8		30
2-Methylphenol	ND	20	12	60		13	65		30-130	8		30
3-Methylphenol/4-Methylphenol	ND	20	12	60		14	70		30-130	15		30

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,4,6-Tribromophenol	67		75		10-120
2-Fluorobiphenyl	55		61		15-120
2-Fluorophenol	42		44		21-120
4-Terphenyl-d14	55		64		41-149
Nitrobenzene-d5	63		64		23-120
Phenol-d6	33		36		10-120

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG2232641-4 WG2232641-5 QC Sample: L2639381-01 Client ID: 5FS-MW-1												
Acenaphthene	ND	20	12	60		13	65		40-140	8		40
Fluoranthene	ND	20	12	60		14	70		40-140	15		40
Naphthalene	0.07J	20	12	60		13	65		40-140	8		40
Benzo(a)anthracene	0.04J	20	12	60		14	70		40-140	15		40
Benzo(a)pyrene	ND	20	14	70		16	80		40-140	13		40
Benzo(b)fluoranthene	ND	20	13	65		15	75		40-140	14		40
Benzo(k)fluoranthene	ND	20	14	70		16	80		40-140	13		40
Chrysene	ND	20	12	60		14	70		40-140	15		40
Acenaphthylene	ND	20	13	65		15	75		40-140	14		40
Anthracene	ND	20	12	60		14	70		40-140	15		40
Benzo(ghi)perylene	ND	20	14	70		16	80		40-140	13		40
Fluorene	ND	20	12	60		14	70		40-140	15		40
Phenanthrene	ND	20	12	60		14	70		40-140	15		40
Dibenzo(a,h)anthracene	ND	20	14	70		16	80		40-140	13		40
Indeno(1,2,3-cd)pyrene	ND	20	13	65		16	80		40-140	21		40
Pyrene	ND	20	12	60		14	70		40-140	15		40
Pentachlorophenol	ND	20	19	95		22	110		40-140	15		40
Hexachlorobenzene	ND	20	15	75		17	85		40-140	13		40

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits

Semivolatile Organics by GC/MS-SIM - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG2232641-4 WG2232641-5 QC Sample: L2639381-01 Client ID: 5FS-MW-1

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,4,6-Tribromophenol	79		93		10-120
2-Fluorobiphenyl	60		64		15-120
2-Fluorophenol	41		44		21-120
4-Terphenyl-d14	56		63		41-149
Nitrobenzene-d5	66		70		23-120
Phenol-d6	28		31		10-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

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(*)
L2639381-01A	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-01A1	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-01A2	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-01B	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-01B1	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-01B2	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-01C	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-01C1	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-01C2	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-01D	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)
L2639381-01D1	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)
L2639381-01D2	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)
L2639381-01E	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)
L2639381-01E1	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)
L2639381-01E2	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)
L2639381-02A	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-02B	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-02C	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-02D	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)
L2639381-02E	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2639381
Report Date: 06/30/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2639381-03A	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-03B	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-03C	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-03D	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)
L2639381-03E	Amber 100ml unpreserved	NA	NA			Y	Absent		NYTCL-8270-RVT(7),NYTCL-8270-SIM-RVT(7)
L2639381-04A	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2639381-04B	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT STREET	**Lab Number:**	L2639381
Project Number:	4694.0001B000	**Report Date:**	06/30/26

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:	5 FLINT STREET	**Lab Number:**	L2639381
Project Number:	4694.0001B000	**Report Date:**	06/30/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT STREET	**Lab Number:**	L2639381
Project Number:	4694.0001B000	**Report Date:**	06/30/26

Data Qualifiers

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: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2639381
Report Date: 06/30/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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 504.1: EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,**.

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, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water
EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water
SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY KY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NV MA00030, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

06/24/26

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

L2639381

Scan QR Code for instructions

Company Name: Roux	Contact/Report To: Eric Runstrom
Street Address: 5 Flint Street, Rochester, NY	Phone #: 781.569.4031
	E-Mail: erunstrom@rouxinc.com
	Cc E-Mail: sbarrientos@rouxinc.com; nsuracl@rouxinc.com
Customer Project #: 4894.0001B000	Invoice to: Roux
Project Name: 5 Flint Street	Invoice E-mail: rouxap@rouxinc.com
Site Collection Info/Facility ID (as applicable):	Purchase Order # (if applicable):
	Quote #: 00203091
Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET	County / State origin of sample(s): Monroe County, New York

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [X] EDDS [X] Other Roux MA formatted EDDS

Regulatory Program (DW, RCRA, etc.) as applicable: Part 375, Table 6.8 (a), please include TICS for both VOCs and SVOCs. Category B deliverable. Reportable [X] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other _____

Date Results Requested:

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (BI), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Specify Container Size **: 6 | 10 | 10

Identify Container Preservative Type***: 8 | 11 | 2

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Customer Sample ID	Matrix*	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs + TICS (8260)	SVOCs + TICS (8270)	TAL Metals + total cyanide + tri and hexa Chromium (6010D)	Sample Comment
-01 5FS-MW-1	GW	G	NA	NA	6/23/26	12:20	15			X	X		MS/MSD
-02 DUP-1	GW	G	NA	NA	6/23/26	13:00	5			X	X		
-03 Field Blank	GW	G	NA	NA	6/23/26	12:40	5			X	X		
-04 Trip Blank	GW	G	NA	NA	6/23/26	08:00	2			X			

Lab Use Only: Proj. Mgr: | Acctnum / Client ID: | Table #: | Profile / Template: | Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample.

Additional Instructions from Pace®:

Collected By: Printed Name E. Spirito Signature Emily Spirito

Customer Remarks / Special Conditions / Possible Hazards: NA

Coolers: | Thermometer ID: | Correction Factor (°C): | Obs. Temp. (°C): | Corrected Temp. (°C): | [ ] On Ice

Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time
Emily Spirito ROUX	6/23/26 14:30	Pace Roch Svc Ctr	6/23/26 1430
Roc S/C	6-23-26 18:00	NORM	6/23/26 18:00
NORM	6-23-26 19:30	Pace	6-23 23:15
Pace	6-24 2:15		

Tracking Number:

Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

Page: of

0617717 610715

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.paclabs.com/hubfs/pas-standard-terms.pdf.

Sample Delivery Group Summary

Pace Job Number : L2639381

Account Name : Roux
Project Number : 4594.0001B000
Project Name : 5 FLINT STREET

Received : 23-JUN-2026
Reviewer : Brendan Grady

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	3.4	

Condition Information

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

Volatile Organics/VPH

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

ANALYTICAL REPORT

Lab Number:	L2641560
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT ST.
Project Number:	4694.0001B000
Report Date:	07/09/26

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

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2641560-01	5FS-SW-12C (8-10)	SOIL	Not Specified	07/01/26 08:10	07/01/26
L2641560-02	5FS-SW-12D (8-10)	SOIL	Not Specified	07/01/26 09:00	07/01/26
L2641560-03	5FS-SW-10D (8-10)	SOIL	Not Specified	07/01/26 11:30	07/01/26
L2641560-04	5FS-SW-10C (4-6)	SOIL	Not Specified	07/01/26 12:15	07/01/26
L2641560-05	5FS-SW-13 (8-10)	SOIL	Not Specified	07/01/26 13:45	07/01/26
L2641560-06	TRIP BLANK	WATER	Not Specified	07/01/26 00:00	07/01/26

Project Name:	5 FLINT ST.	**Lab Number:**	L2641560
Project Number:	4694.0001B000	**Report Date:**	07/09/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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: 5 FLINT ST. **Lab Number:** L2641560
Project Number: 4694.0001B000 **Report Date:** 07/09/26

Case Narrative (continued)

Report Submission

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

Volatile Organics

L2641560-01: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2641560-01: The surrogate recovery is outside the acceptance criteria for 1,2-dichloroethane-d4 (140%); however, the sample was not re-analyzed due to coelution with obvious interferences.

L2641560-02: The surrogate recovery is outside the method acceptance criteria for and dibromofluoromethane (69%) due to interference with the Internal Standard.

L2641560-02: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (347%) and 4-bromofluorobenzene (221%); however, the sample was not re-analyzed due to coelution with obvious interferences.

The L2641560-06 Trip Blank has a concentration above the reporting limit for Acetone; however, it is within the method allowances for common laboratory contaminants. The associated samples are reported and no qualification of the results is required.

Total Metals

L2641560-01 through -05: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the sample matrix.

Chromium, Hexavalent

The WG2236492-4 Insoluble MS recovery performed on L2641560-01 is outside the acceptance criteria for chromium, hexavalent (64%). The Soluble MS recovery for chromium, hexavalent (54%) was also outside criteria. This has been attributed to matrix interference. A post-spike was performed with a recovery of 103%.

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: 07/09/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Organics by EPA 5035/8260 High - Westborough Lab								
8260D	5FS-SW-12C (8-10)	L2641560-01	1,2-Dichloroethane-d4	Surrogate	140	70-130	-	potential high bias
8260D	Batch QC	WG2237552-3	Acetone	LCS	146	54-140	01,05	potential high bias
Volatile Organics by EPA 5035/8260 Low - Westborough Lab								
8260D	5FS-SW-12D (8-10)	L2641560-02	Toluene-d8	Surrogate	347	70-130	-	potential high bias
8260D	5FS-SW-12D (8-10)	L2641560-02	4-Bromofluorobenzene	Surrogate	221	70-130	-	potential high bias
8260D	5FS-SW-12D (8-10)	L2641560-02	Dibromofluoromethane	Surrogate	69	70-130	-	potential low bias
8260D	Batch QC	WG2238042-3	1,1-Dichloroethane	LCS	160	70-130	03	potential high bias
8260D	Batch QC	WG2238042-4	1,1-Dichloroethane	LCSD	34	70-130	03	non-directional bias
Volatile Organics by GC/MS - Westborough Lab								
8260D	Batch QC	WG2237545-3	Acetone	LCS	146	54-140	02,04	potential high bias
Semivolatile Organics by GC/MS - Westborough Lab								
8270E	5FS-SW-12C (8-10)	L2641560-01 D	Nitrobenzene-d5	Surrogate	122	23-120	-	potential high bias
8270E	5FS-SW-13 (8-10)	L2641560-05	4-Terphenyl-d14	Surrogate	170	18-120	-	potential high bias
8270E	Batch QC	WG2237026-2	Phenol	LCS	97	26-90	01-05	potential high bias
8270E	Batch QC	WG2237026-3	Phenol	LCSD	102	26-90	01-05	potential high bias
Total Metals - Mansfield Lab								
6010D	Batch QC (L2641254-01)	WG2237978-3	Aluminum, Total	MS	787	75-125	01-05	potential high bias
6010D	Batch QC (L2641254-01)	WG2237978-3	Antimony, Total	MS	40	75-125	01-05	potential low bias
6010D	Batch QC (L2641254-01)	WG2237978-3	Cobalt, Total	MS	127	75-125	01-05	potential high bias
6010D	Batch QC (L2641254-01)	WG2237978-3	Iron, Total	MS	1300	75-125	01-05	potential high bias
6010D	Batch QC (L2641254-01)	WG2237978-3	Manganese, Total	MS	3600	75-125	01-05	potential high bias
6010D	Batch QC (L2641254-01)	WG2237978-3	Selenium, Total	MS	50	75-125	01-05	potential low bias
6010D	Batch QC (L2641254-01)	WG2237978-4	Chromium, Total	Duplicate	27	NA	01-05	non-directional bias
General Chemistry - Westborough Lab								
7196A	Batch QC (L2641560-01)	WG2236492-4	Chromium, Hexavalent	MS	64	75-125	01-05	potential low bias

ORGANICS

VOLATILES

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-01
Client ID: 5FS-SW-12C (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 08:10
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/05/26 20:12
Analyst: AJK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
Methylene chloride	ND		ug/kg	310	140	1
1,1-Dichloroethane	ND		ug/kg	62	9.0	1
Chloroform	ND		ug/kg	93	8.7	1
Carbon tetrachloride	ND		ug/kg	62	14.	1
Tetrachloroethene	ND		ug/kg	31	12.	1
Chlorobenzene	ND		ug/kg	31	7.9	1
1,2-Dichloroethane	ND		ug/kg	62	16.	1
1,1,1-Trichloroethane	ND		ug/kg	31	10.	1
Benzene	ND		ug/kg	31	10.	1
Toluene	ND		ug/kg	62	34.	1
Ethylbenzene	ND		ug/kg	62	8.8	1
Vinyl chloride	ND		ug/kg	62	21.	1
1,1-Dichloroethene	ND		ug/kg	62	15.	1
trans-1,2-Dichloroethene	ND		ug/kg	93	8.5	1
Trichloroethene	ND		ug/kg	31	8.5	1
1,2-Dichlorobenzene	ND		ug/kg	120	9.0	1
1,3-Dichlorobenzene	ND		ug/kg	120	9.2	1
1,4-Dichlorobenzene	ND		ug/kg	120	11.	1
Methyl tert butyl ether	ND		ug/kg	120	12.	1
p/m-Xylene	ND		ug/kg	120	35.	1
o-Xylene	53	J	ug/kg	62	18.	1
Xylenes, Total	53	J	ug/kg	62	18.	1
cis-1,2-Dichloroethene	ND		ug/kg	62	11.	1
Acetone	ND		ug/kg	620	300	1
2-Butanone	ND		ug/kg	620	140	1
n-Butylbenzene	200		ug/kg	62	10.	1
sec-Butylbenzene	750		ug/kg	62	9.1	1
tert-Butylbenzene	200		ug/kg	120	7.4	1

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-01
Client ID: 5FS-SW-12C (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 08:10
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
n-Propylbenzene	190		ug/kg	62	11.	1
1,3,5-Trimethylbenzene	12	J	ug/kg	120	12.	1
1,2,4-Trimethylbenzene	ND		ug/kg	120	21.	1
Tentatively Identified Compounds						
Total TIC Compounds	51300	J	ug/kg			1
Unknown Cycloalkane	2830	J	ug/kg			1
Unknown	2720	J	ug/kg			1
Unknown Cycloalkane	2690	J	ug/kg			1
Unknown	5600	J	ug/kg			1
Pentane, 2,3-dimethyl-	2820	NJ	ug/kg			1
Unknown Cyclopentane	2580	J	ug/kg			1
Unknown Cyclopentane	2080	J	ug/kg			1
Cyclohexane, 1,1-dimethyl-	5680	NJ	ug/kg			1
Cyclohexane, butyl-	3900	NJ	ug/kg			1
Unknown Cyclohexane	20400	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	**140**	Q	70-130
Toluene-d8	96		70-130
4-Bromofluorobenzene	121		70-130
Dibromofluoromethane	80		70-130

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-02
Client ID: 5FS-SW-12D (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 09:00
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/05/26 18:17
Analyst: AJK
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	4.7	2.2	1
1,1-Dichloroethane	ND		ug/kg	0.94	0.14	1
Chloroform	ND		ug/kg	1.4	0.13	1
Carbon tetrachloride	ND		ug/kg	0.94	0.22	1
Tetrachloroethene	ND		ug/kg	0.47	0.18	1
Chlorobenzene	ND		ug/kg	0.47	0.12	1
1,2-Dichloroethane	ND		ug/kg	0.94	0.24	1
1,1,1-Trichloroethane	ND		ug/kg	0.47	0.16	1
Benzene	0.90		ug/kg	0.47	0.16	1
Toluene	1.2		ug/kg	0.94	0.51	1
Ethylbenzene	ND		ug/kg	0.94	0.13	1
Vinyl chloride	ND		ug/kg	0.94	0.31	1
1,1-Dichloroethene	ND		ug/kg	0.94	0.22	1
trans-1,2-Dichloroethene	ND		ug/kg	1.4	0.13	1
Trichloroethene	ND		ug/kg	0.47	0.13	1
1,2-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,3-Dichlorobenzene	ND		ug/kg	1.9	0.14	1
1,4-Dichlorobenzene	ND		ug/kg	1.9	0.16	1
Methyl tert butyl ether	ND		ug/kg	1.9	0.19	1
p/m-Xylene	ND		ug/kg	1.9	0.53	1
o-Xylene	1.5		ug/kg	0.94	0.27	1
Xylenes, Total	1.5		ug/kg	0.94	0.27	1
cis-1,2-Dichloroethene	ND		ug/kg	0.94	0.16	1
Acetone	20		ug/kg	9.4	4.5	1
2-Butanone	5.7	J	ug/kg	9.4	2.1	1
n-Butylbenzene	6.8		ug/kg	0.94	0.16	1
sec-Butylbenzene	40		ug/kg	0.94	0.14	1
tert-Butylbenzene	14		ug/kg	1.9	0.11	1

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-02 Date Collected: 07/01/26 09:00

Client ID: 5FS-SW-12D (8-10) Date Received: 07/01/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	2.0		ug/kg	0.94	0.16	1
1,3,5-Trimethylbenzene	ND		ug/kg	1.9	0.18	1
1,2,4-Trimethylbenzene	0.35	J	ug/kg	1.9	0.31	1
Tentatively Identified Compounds						
Total TIC Compounds	2130	J	ug/kg			1
Octane, 2,6-dimethyl-	209	NJ	ug/kg			1
Unknown	280	J	ug/kg			1
Unknown Cyclohexane	122	J	ug/kg			1
Unknown	121	J	ug/kg			1
Unknown Cyclohexane	312	J	ug/kg			1
Unknown Alkane	122	J	ug/kg			1
Unknown Cyclohexane	249	J	ug/kg			1
Cyclohexane, 1,1,3-trimethyl-	237	NJ	ug/kg			1
Unknown	303	J	ug/kg			1
Unknown Cyclohexane	175	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	98		70-130
Toluene-d8	**347**	Q	70-130
4-Bromofluorobenzene	**221**	Q	70-130
Dibromofluoromethane	**69**	Q	70-130

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-03
Client ID: 5FS-SW-10D (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 11:30
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/06/26 13:12
Analyst: BAD
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	6.6	3.0	1
1,1-Dichloroethane	ND		ug/kg	1.3	0.19	1
Chloroform	1.3	J	ug/kg	2.0	0.18	1
Carbon tetrachloride	ND		ug/kg	1.3	0.30	1
Tetrachloroethene	ND		ug/kg	0.66	0.26	1
Chlorobenzene	ND		ug/kg	0.66	0.17	1
1,2-Dichloroethane	ND		ug/kg	1.3	0.34	1
1,1,1-Trichloroethane	ND		ug/kg	0.66	0.22	1
Benzene	ND		ug/kg	0.66	0.22	1
Toluene	ND		ug/kg	1.3	0.71	1
Ethylbenzene	ND		ug/kg	1.3	0.18	1
Vinyl chloride	ND		ug/kg	1.3	0.44	1
1,1-Dichloroethene	ND		ug/kg	1.3	0.31	1
trans-1,2-Dichloroethene	ND		ug/kg	2.0	0.18	1
Trichloroethene	1.6		ug/kg	0.66	0.18	1
1,2-Dichlorobenzene	ND		ug/kg	2.6	0.19	1
1,3-Dichlorobenzene	ND		ug/kg	2.6	0.19	1
1,4-Dichlorobenzene	ND		ug/kg	2.6	0.22	1
Methyl tert butyl ether	ND		ug/kg	2.6	0.26	1
p/m-Xylene	ND		ug/kg	2.6	0.73	1
o-Xylene	ND		ug/kg	1.3	0.38	1
Xylenes, Total	ND		ug/kg	1.3	0.38	1
cis-1,2-Dichloroethene	ND		ug/kg	1.3	0.23	1
Acetone	98		ug/kg	13	6.3	1
2-Butanone	21		ug/kg	13	2.9	1
n-Butylbenzene	ND		ug/kg	1.3	0.22	1
sec-Butylbenzene	ND		ug/kg	1.3	0.19	1
tert-Butylbenzene	4.2		ug/kg	2.6	0.15	1

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-03 Date Collected: 07/01/26 11:30

Client ID: 5FS-SW-10D (8-10) Date Received: 07/01/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.3	0.22	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.6	0.25	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.6	0.44	1
Tentatively Identified Compounds						
Total TIC Compounds	232	J	ug/kg			1
Unknown Cycloalkane	18.4	J	ug/kg			1
Unknown	21.0	J	ug/kg			1
Unknown Cycloalkane	18.2	J	ug/kg			1
Unknown Aromatic	17.7	J	ug/kg			1
Unknown	25.2	J	ug/kg			1
1,1,4-Trimethylcyclohexane	17.2	NJ	ug/kg			1
Cyclopentane, 1,2,4-trimethyl-	36.6	NJ	ug/kg			1
Unknown	34.3	J	ug/kg			1
Unknown	16.8	J	ug/kg			1
Unknown	26.3	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	125		70-130
Dibromofluoromethane	104		70-130

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-04
Client ID: 5FS-SW-10C (4-6)
Sample Location: Not Specified
Date Collected: 07/01/26 12:15
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/05/26 18:55
Analyst: AJK
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	7.1	3.2	1
1,1-Dichloroethane	ND		ug/kg	1.4	0.20	1
Chloroform	ND		ug/kg	2.1	0.20	1
Carbon tetrachloride	ND		ug/kg	1.4	0.32	1
Tetrachloroethene	ND		ug/kg	0.71	0.28	1
Chlorobenzene	ND		ug/kg	0.71	0.18	1
1,2-Dichloroethane	ND		ug/kg	1.4	0.36	1
1,1,1-Trichloroethane	ND		ug/kg	0.71	0.24	1
Benzene	0.33	J	ug/kg	0.71	0.23	1
Toluene	1.4		ug/kg	1.4	0.77	1
Ethylbenzene	0.25	J	ug/kg	1.4	0.20	1
Vinyl chloride	ND		ug/kg	1.4	0.47	1
1,1-Dichloroethene	ND		ug/kg	1.4	0.34	1
trans-1,2-Dichloroethene	ND		ug/kg	2.1	0.19	1
Trichloroethene	ND		ug/kg	0.71	0.19	1
1,2-Dichlorobenzene	ND		ug/kg	2.8	0.20	1
1,3-Dichlorobenzene	ND		ug/kg	2.8	0.21	1
1,4-Dichlorobenzene	ND		ug/kg	2.8	0.24	1
Methyl tert butyl ether	ND		ug/kg	2.8	0.28	1
p/m-Xylene	1.4	J	ug/kg	2.8	0.79	1
o-Xylene	ND		ug/kg	1.4	0.41	1
Xylenes, Total	1.4	J	ug/kg	1.4	0.41	1
cis-1,2-Dichloroethene	ND		ug/kg	1.4	0.25	1
Acetone	91		ug/kg	14	6.8	1
2-Butanone	7.8	J	ug/kg	14	3.1	1
n-Butylbenzene	ND		ug/kg	1.4	0.24	1
sec-Butylbenzene	ND		ug/kg	1.4	0.21	1
tert-Butylbenzene	ND		ug/kg	2.8	0.17	1

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-04 Date Collected: 07/01/26 12:15

Client ID: 5FS-SW-10C (4-6) Date Received: 07/01/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.4	0.24	1
1,3,5-Trimethylbenzene	0.36	J	ug/kg	2.8	0.27	1
1,2,4-Trimethylbenzene	0.56	J	ug/kg	2.8	0.47	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	109		70-130

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-05
Client ID: 5FS-SW-13 (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 13:45
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/05/26 21:28
Analyst: AJK
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
Methylene chloride	ND		ug/kg	540	250	1
1,1-Dichloroethane	ND		ug/kg	110	16.	1
Chloroform	ND		ug/kg	160	15.	1
Carbon tetrachloride	ND		ug/kg	110	25.	1
Tetrachloroethene	ND		ug/kg	54	21.	1
Chlorobenzene	ND		ug/kg	54	14.	1
1,2-Dichloroethane	ND		ug/kg	110	28.	1
1,1,1-Trichloroethane	ND		ug/kg	54	18.	1
Benzene	420		ug/kg	54	18.	1
Toluene	ND		ug/kg	110	59.	1
Ethylbenzene	ND		ug/kg	110	15.	1
Vinyl chloride	ND		ug/kg	110	36.	1
1,1-Dichloroethene	ND		ug/kg	110	26.	1
trans-1,2-Dichloroethene	ND		ug/kg	160	15.	1
Trichloroethene	ND		ug/kg	54	15.	1
1,2-Dichlorobenzene	ND		ug/kg	220	16.	1
1,3-Dichlorobenzene	ND		ug/kg	220	16.	1
1,4-Dichlorobenzene	ND		ug/kg	220	19.	1
Methyl tert butyl ether	ND		ug/kg	220	22.	1
p/m-Xylene	45000		ug/kg	220	61.	1
o-Xylene	100	J	ug/kg	110	32.	1
Xylenes, Total	45000	J	ug/kg	110	32.	1
cis-1,2-Dichloroethene	ND		ug/kg	110	19.	1
Acetone	ND		ug/kg	1100	520	1
2-Butanone	ND		ug/kg	1100	240	1
n-Butylbenzene	2300		ug/kg	110	18.	1
sec-Butylbenzene	1300		ug/kg	110	16.	1
tert-Butylbenzene	ND		ug/kg	220	13.	1

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-05 Date Collected: 07/01/26 13:45

Client ID: 5FS-SW-13 (8-10) Date Received: 07/01/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
n-Propylbenzene	2200		ug/kg	110	19.	1
1,3,5-Trimethylbenzene	25000		ug/kg	220	21.	1
1,2,4-Trimethylbenzene	45000	E	ug/kg	220	36.	1
Tentatively Identified Compounds						
Total TIC Compounds	153000	J	ug/kg			1
Unknown	11600	J	ug/kg			1
Unknown Cyclohexane	13200	J	ug/kg			1
Unknown	7880	J	ug/kg			1
Unknown Cyclohexane	28000	J	ug/kg			1
Unknown Alkane	7200	J	ug/kg			1
Cyclohexane, ethyl-	19300	NJ	ug/kg			1
Unknown Cyclohexane	9980	J	ug/kg			1
Cyclohexane, propyl-	20800	NJ	ug/kg			1
Cyclohexane, 1,1,3-trimethyl-	14100	NJ	ug/kg			1
1-Ethyl-4-methylcyclohexane	21000	NJ	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	112		70-130
Dibromofluoromethane	81		70-130

Project Name: 5 FLINT ST.
Lab Number: L2641560
Project Number: 4694.0001B000
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-05 D
Client ID: 5FS-SW-13 (8-10)
Sample Location: Not Specified

Date Collected: 07/01/26 13:45
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/08/26 00:34
Analyst: MNF
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
1,2,4-Trimethylbenzene	45000		ug/kg	2200	360	10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	111		70-130
Dibromofluoromethane	94		70-130

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-06
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 07/01/26 00:00
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/03/26 17:59
Analyst: MJV

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
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	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
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
Vinyl chloride	ND		ug/l	1.0	0.07	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
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	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Acetone	9.3		ug/l	5.0	1.5	1
2-Butanone	ND		ug/l	5.0	1.9	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

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-06
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 07/01/26 00:00
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	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
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	120		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	85		70-130
Dibromofluoromethane	117		70-130

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/03/26 09:51
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 06 Batch: WG2237057-5					
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
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	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
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
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
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Acetone	ND		ug/l	5.0	1.5

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/03/26 09:51
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 06 Batch: WG2237057-5					
2-Butanone	ND		ug/l	5.0	1.9
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
n-Propylbenzene	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
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	86		70-130
Dibromofluoromethane	111		70-130

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/05/26 15:05
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02,04 Batch: WG2237545-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	0.33	J	ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/05/26 15:05
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02,04 Batch: WG2237545-5					
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33

Tentatively Identified Compounds			
Total TIC Compounds	7.98	J	ug/kg
Unknown	2.30	J	ug/kg
Unknown	5.68	J	ug/kg

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	116		70-130

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/05/26 15:05
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 01,05 Batch: WG2237552-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	ND		ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
Tetrachloroethene	16	J	ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Vinyl chloride	ND		ug/kg	50	17.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8
Trichloroethene	ND		ug/kg	25	6.8
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
Acetone	ND		ug/kg	500	240

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/05/26 15:05
Analyst: AJK

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 01,05 Batch: WG2237552-5					
2-Butanone	ND		ug/kg	500	110
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
n-Propylbenzene	ND		ug/kg	50	8.6
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.
Tentatively Identified Compounds					
Total TIC Compounds	399	J	ug/kg		
Unknown	284	J	ug/kg		
Unknown	115	J	ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	116		70-130

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/06/26 11:22
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 03 Batch: WG2238042-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.92	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/06/26 11:22
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 03 Batch: WG2238042-5					
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/07/26 19:40
Analyst: JFI

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 05 Batch: WG2238814-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	ND		ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Vinyl chloride	ND		ug/kg	50	17.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8
Trichloroethene	ND		ug/kg	25	6.8
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
Acetone	ND		ug/kg	500	240

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/07/26 19:40
Analyst: JFI

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 05 Batch: WG2238814-5					
2-Butanone	ND		ug/kg	500	110
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
n-Propylbenzene	ND		ug/kg	50	8.6
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	100		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	105		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 06 Batch: WG2237057-3 WG2237057-4								
Methylene chloride	100		110		70-130	10		20
1,1-Dichloroethane	120		120		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	110		110		63-132	0		20
Tetrachloroethene	120		110		70-130	9		20
Chlorobenzene	110		110		75-130	0		20
1,2-Dichloroethane	120		120		70-130	0		20
1,1,1-Trichloroethane	110		110		67-130	0		20
Benzene	110		110		70-130	0		20
Toluene	110		100		70-130	10		20
Ethylbenzene	110		110		70-130	0		20
Vinyl chloride	120		130		55-140	8		20
1,1-Dichloroethene	100		100		61-145	0		20
trans-1,2-Dichloroethene	99		95		70-130	4		20
Trichloroethene	100		100		70-130	0		20
1,2-Dichlorobenzene	110		110		70-130	0		20
1,3-Dichlorobenzene	110		110		70-130	0		20
1,4-Dichlorobenzene	110		100		70-130	10		20
Methyl tert butyl ether	85		91		63-130	7		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 06 Batch: WG2237057-3 WG2237057-4								
p/m-Xylene	115		115		70-130	0		20
o-Xylene	115		115		70-130	0		20
cis-1,2-Dichloroethene	99		100		70-130	1		20
Acetone	110		130		58-148	17		20
2-Butanone	99		110		63-138	11		20
n-Butylbenzene	120		110		53-136	9		20
sec-Butylbenzene	100		100		70-130	0		20
tert-Butylbenzene	100		100		70-130	0		20
n-Propylbenzene	100		100		69-130	0		20
1,3,5-Trimethylbenzene	100		100		64-130	0		20
1,2,4-Trimethylbenzene	100		100		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	117		120		70-130
Toluene-d8	100		105		70-130
4-Bromofluorobenzene	85		84		70-130
Dibromofluoromethane	112		107		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,04 Batch: WG2237545-3 WG2237545-4								
Methylene chloride	103		110		70-130	7		30
1,1-Dichloroethane	112		122		70-130	9		30
Chloroform	97		106		70-130	9		30
Carbon tetrachloride	109		122		70-130	11		30
Tetrachloroethene	109		114		70-130	4		30
Chlorobenzene	100		108		70-130	8		30
1,2-Dichloroethane	104		113		70-130	8		30
1,1,1-Trichloroethane	108		120		70-130	11		30
Benzene	101		109		70-130	8		30
Toluene	104		110		70-130	6		30
Ethylbenzene	103		111		70-130	7		30
Vinyl chloride	109		117		67-130	7		30
1,1-Dichloroethene	97		109		65-135	12		30
trans-1,2-Dichloroethene	98		108		70-130	10		30
Trichloroethene	100		111		70-130	10		30
1,2-Dichlorobenzene	102		104		70-130	2		30
1,3-Dichlorobenzene	99		106		70-130	7		30
1,4-Dichlorobenzene	98		105		70-130	7		30
Methyl tert butyl ether	95		99		66-130	4		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02,04 Batch: WG2237545-3 WG2237545-4								
p/m-Xylene	103		113		70-130	9		30
o-Xylene	101		110		70-130	9		30
cis-1,2-Dichloroethene	93		105		70-130	12		30
Acetone	**146**	Q	122		54-140	18		30
2-Butanone	93		102		70-130	9		30
n-Butylbenzene	104		106		70-130	2		30
sec-Butylbenzene	104		115		70-130	10		30
tert-Butylbenzene	102		112		70-130	9		30
n-Propylbenzene	102		112		70-130	9		30
1,3,5-Trimethylbenzene	95		99		70-130	4		30
1,2,4-Trimethylbenzene	93		97		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		104		70-130
Toluene-d8	106		102		70-130
4-Bromofluorobenzene	102		103		70-130
Dibromofluoromethane	97		98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 01,05 Batch: WG2237552-3 WG2237552-4								
Methylene chloride	103		110		70-130	7		30
1,1-Dichloroethane	112		122		70-130	9		30
Chloroform	97		106		70-130	9		30
Carbon tetrachloride	109		122		70-130	11		30
Tetrachloroethene	109		114		70-130	4		30
Chlorobenzene	100		108		70-130	8		30
1,2-Dichloroethane	104		113		70-130	8		30
1,1,1-Trichloroethane	108		120		70-130	11		30
Benzene	101		109		70-130	8		30
Toluene	104		110		70-130	6		30
Ethylbenzene	103		111		70-130	7		30
Vinyl chloride	109		117		67-130	7		30
1,1-Dichloroethene	97		109		65-135	12		30
trans-1,2-Dichloroethene	98		108		70-130	10		30
Trichloroethene	100		111		70-130	10		30
1,2-Dichlorobenzene	102		104		70-130	2		30
1,3-Dichlorobenzene	99		106		70-130	7		30
1,4-Dichlorobenzene	98		105		70-130	7		30
Methyl tert butyl ether	95		99		66-130	4		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 01,05 Batch: WG2237552-3 WG2237552-4								
p/m-Xylene	103		113		70-130	9		30
o-Xylene	101		110		70-130	9		30
cis-1,2-Dichloroethene	93		105		70-130	12		30
Acetone	**146**	Q	122		54-140	18		30
2-Butanone	93		102		70-130	9		30
n-Butylbenzene	104		106		70-130	2		30
sec-Butylbenzene	104		115		70-130	10		30
tert-Butylbenzene	102		112		70-130	9		30
n-Propylbenzene	102		112		70-130	9		30
1,3,5-Trimethylbenzene	95		99		70-130	4		30
1,2,4-Trimethylbenzene	93		97		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	102		104		70-130
Toluene-d8	106		102		70-130
4-Bromofluorobenzene	102		103		70-130
Dibromofluoromethane	97		98		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 03 Batch: WG2238042-3 WG2238042-4								
Methylene chloride	112		107		70-130	5		30
1,1-Dichloroethane	**160**	Q	113		70-130	**34**	Q	30
Chloroform	108		102		70-130	6		30
Carbon tetrachloride	108		100		70-130	8		30
Tetrachloroethene	118		109		70-130	8		30
Chlorobenzene	116		110		70-130	5		30
1,2-Dichloroethane	113		114		70-130	1		30
1,1,1-Trichloroethane	111		104		70-130	7		30
Benzene	122		117		70-130	4		30
Toluene	118		113		70-130	4		30
Ethylbenzene	116		111		70-130	4		30
Vinyl chloride	129		119		67-130	8		30
1,1-Dichloroethene	110		106		65-135	4		30
trans-1,2-Dichloroethene	107		104		70-130	3		30
Trichloroethene	118		112		70-130	5		30
1,2-Dichlorobenzene	107		102		70-130	5		30
1,3-Dichlorobenzene	111		104		70-130	7		30
1,4-Dichlorobenzene	110		105		70-130	5		30
Methyl tert butyl ether	116		116		66-130	0		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 03 Batch: WG2238042-3 WG2238042-4								
p/m-Xylene	116		112		70-130	4		30
o-Xylene	110		106		70-130	4		30
cis-1,2-Dichloroethene	105		101		70-130	4		30
Acetone	111		115		54-140	4		30
2-Butanone	91		100		70-130	9		30
n-Butylbenzene	120		114		70-130	5		30
sec-Butylbenzene	114		107		70-130	6		30
tert-Butylbenzene	108		101		70-130	7		30
n-Propylbenzene	122		111		70-130	9		30
1,3,5-Trimethylbenzene	113		106		70-130	6		30
1,2,4-Trimethylbenzene	111		106		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110		110		70-130
Toluene-d8	106		108		70-130
4-Bromofluorobenzene	110		101		70-130
Dibromofluoromethane	100		100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 05 Batch: WG2238814-3 WG2238814-4								
Methylene chloride	86		88		70-130	2		30
1,1-Dichloroethane	96		101		70-130	5		30
Chloroform	96		102		70-130	6		30
Carbon tetrachloride	104		111		70-130	7		30
Tetrachloroethene	97		103		70-130	6		30
Chlorobenzene	94		100		70-130	6		30
1,2-Dichloroethane	97		106		70-130	9		30
1,1,1-Trichloroethane	106		112		70-130	6		30
Benzene	96		102		70-130	6		30
Toluene	96		102		70-130	6		30
Ethylbenzene	100		106		70-130	6		30
Vinyl chloride	98		102		67-130	4		30
1,1-Dichloroethene	104		112		65-135	7		30
trans-1,2-Dichloroethene	101		105		70-130	4		30
Trichloroethene	98		103		70-130	5		30
1,2-Dichlorobenzene	89		102		70-130	14		30
1,3-Dichlorobenzene	92		104		70-130	12		30
1,4-Dichlorobenzene	90		103		70-130	13		30
Methyl tert butyl ether	96		104		66-130	8		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 05 Batch: WG2238814-3 WG2238814-4								
p/m-Xylene	103		111		70-130	7		30
o-Xylene	102		108		70-130	6		30
cis-1,2-Dichloroethene	94		99		70-130	5		30
Acetone	89		96		54-140	8		30
2-Butanone	83		87		70-130	5		30
n-Butylbenzene	104		117		70-130	12		30
sec-Butylbenzene	90		103		70-130	13		30
tert-Butylbenzene	98		115		70-130	16		30
n-Propylbenzene	101		114		70-130	12		30
1,3,5-Trimethylbenzene	101		114		70-130	12		30
1,2,4-Trimethylbenzene	101		115		70-130	13		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	100		105		70-130
Toluene-d8	103		105		70-130
4-Bromofluorobenzene	100		107		70-130
Dibromofluoromethane	102		100		70-130

SEMIVOLATILES

Project Name: 5 FLINT ST.
Lab Number: L2641560
Project Number: 4694.0001B000
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-01 D2
Client ID: 5FS-SW-12C (8-10)
Sample Location: Not Specified

Date Collected: 07/01/26 08:10
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/07/26 12:48
Analyst: MRG
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 07/04/26 03:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Phenanthrene	56000		ug/kg	1200	240	10

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-01 D
Client ID: 5FS-SW-12C (8-10)
Sample Location: Not Specified
Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/06/26 13:25
Analyst: JG
Percent Solids: 82%

Date Collected: 07/01/26 08:10
Date Received: 07/01/26
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 07/04/26 03:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	4600		ug/kg	800	100	5
Hexachlorobenzene	ND		ug/kg	600	110	5
Fluoranthene	37000		ug/kg	600	120	5
Naphthalene	2900		ug/kg	1000	120	5
Nitrobenzene	ND		ug/kg	200	88.	5
Benzo(a)anthracene	20000		ug/kg	600	110	5
Benzo(a)pyrene	16000		ug/kg	800	240	5
Benzo(b)fluoranthene	19000		ug/kg	600	170	5
Benzo(k)fluoranthene	5400		ug/kg	600	160	5
Chrysene	19000		ug/kg	600	100	5
Acenaphthylene	5300		ug/kg	800	150	5
Anthracene	16000		ug/kg	600	200	5
Benzo(ghi)perylene	7800		ug/kg	800	120	5
Fluorene	10000		ug/kg	1000	98.	5
Phenanthrene	46000	E	ug/kg	600	120	5
Dibenzo(a,h)anthracene	2200		ug/kg	600	120	5
Indeno(1,2,3-cd)pyrene	8000		ug/kg	800	140	5
Pyrene	34000		ug/kg	600	100	5
Aniline	ND		ug/kg	200	75.	5
Dibenzofuran	4400		ug/kg	1000	95.	5
Pentachlorophenol	ND		ug/kg	800	220	5
Phenol	ND		ug/kg	1000	150	5
2-Methylphenol	ND		ug/kg	1000	160	5
3-Methylphenol/4-Methylphenol	ND		ug/kg	1400	160	5
1,4-Dioxane	ND		ug/kg	150	46.	5

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-01 D Date Collected: 07/01/26 08:10

Client ID: 5FS-SW-12C (8-10) Date Received: 07/01/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	54700	J	ug/kg			5
Unknown PAH	3620	J	ug/kg			5
Unknown PAH	3750	J	ug/kg			5
Unknown Naphthalene	2680	J	ug/kg			5
Unknown PAH	5060	J	ug/kg			5
Unknown PAH	4040	J	ug/kg			5
Unknown PAH	3600	J	ug/kg			5
Unknown Naphthalene	2710	J	ug/kg			5
Unknown PAH	2440	J	ug/kg			5
Unknown	2100	J	ug/kg			5
Unknown PAH	2750	J	ug/kg			5
Unknown PAH	3130	J	ug/kg			5
Unknown PAH	7720	J	ug/kg			5
Unknown PAH	3470	J	ug/kg			5
Unknown	4520	J	ug/kg			5
Unknown	3110	J	ug/kg			5

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	105		25-120
Phenol-d6	113		10-120
Nitrobenzene-d5	**122**	Q	23-120
2-Fluorobiphenyl	113		30-120
2,4,6-Tribromophenol	124		10-136
4-Terphenyl-d14	119		18-120

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-02
Client ID: 5FS-SW-12D (8-10)
Sample Location: Not Specified
Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/05/26 13:37
Analyst: IMK
Percent Solids: 83%

Date Collected: 07/01/26 09:00
Date Received: 07/01/26
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 07/04/26 03:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	20.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	ND		ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	39	17.	1
Benzo(a)anthracene	ND		ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	160	48.	1
Benzo(b)fluoranthene	ND		ug/kg	120	33.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	ND		ug/kg	120	20.	1
Acenaphthylene	34	J	ug/kg	160	30.	1
Anthracene	ND		ug/kg	120	38.	1
Benzo(ghi)perylene	ND		ug/kg	160	23.	1
Fluorene	ND		ug/kg	200	19.	1
Phenanthrene	ND		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	27.	1
Pyrene	ND		ug/kg	120	20.	1
Aniline	ND		ug/kg	39	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	43.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	30.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	31.	1
1,4-Dioxane	ND		ug/kg	30	9.1	1

Project Name: 5 FLINT ST.
Lab Number: L2641560
Project Number: 4694.0001B000
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-02
Client ID: 5FS-SW-12D (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 09:00
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	7140	J	ug/kg			1
Unknown Alkane	314	J	ug/kg			1
Unknown Alkane	630	J	ug/kg			1
Unknown Alkane	754	J	ug/kg			1
Unknown Cycloalkane	306	J	ug/kg			1
Unknown Alkane	368	J	ug/kg			1
Unknown Alkane	623	J	ug/kg			1
Unknown	304	J	ug/kg			1
Unknown	340	J	ug/kg			1
Unknown Alkane	421	J	ug/kg			1
Unknown	380	J	ug/kg			1
Unknown	386	J	ug/kg			1
Unknown	1430	J	ug/kg			1
Unknown	308	J	ug/kg			1
Unknown Cycloalkane	275	J	ug/kg			1
Unknown Alkane	299	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	92		25-120
Phenol-d6	103		10-120
Nitrobenzene-d5	84		23-120
2-Fluorobiphenyl	83		30-120
2,4,6-Tribromophenol	75		10-136
4-Terphenyl-d14	78		18-120

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-03
Client ID: 5FS-SW-10D (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 11:30
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/05/26 13:56
Analyst: IMK
Percent Solids: 68%
Extraction Method: EPA 3546
Extraction Date: 07/04/26 03:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	200	25.	1
Hexachlorobenzene	ND		ug/kg	150	27.	1
Fluoranthene	46	J	ug/kg	150	28.	1
Naphthalene	ND		ug/kg	240	30.	1
Nitrobenzene	ND		ug/kg	49	22.	1
Benzo(a)anthracene	34	J	ug/kg	150	28.	1
Benzo(a)pyrene	ND		ug/kg	200	60.	1
Benzo(b)fluoranthene	ND		ug/kg	150	41.	1
Benzo(k)fluoranthene	ND		ug/kg	150	39.	1
Chrysene	28	J	ug/kg	150	25.	1
Acenaphthylene	ND		ug/kg	200	38.	1
Anthracene	ND		ug/kg	150	48.	1
Benzo(ghi)perylene	ND		ug/kg	200	29.	1
Fluorene	ND		ug/kg	240	24.	1
Phenanthrene	42	J	ug/kg	150	30.	1
Dibenzo(a,h)anthracene	ND		ug/kg	150	28.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	200	34.	1
Pyrene	42	J	ug/kg	150	24.	1
Aniline	ND		ug/kg	49	18.	1
Dibenzofuran	ND		ug/kg	240	23.	1
Pentachlorophenol	ND		ug/kg	200	54.	1
Phenol	ND		ug/kg	240	37.	1
2-Methylphenol	ND		ug/kg	240	38.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	350	38.	1
1,4-Dioxane	ND		ug/kg	37	11.	1

Project Name: 5 FLINT ST.
Lab Number: L2641560
Project Number: 4694.0001B000
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-03
Client ID: 5FS-SW-10D (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 11:30
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	6390	J	ug/kg			1
Unknown	470	J	ug/kg			1
Unknown Cycloalkane	290	J	ug/kg			1
Unknown Alkane	284	J	ug/kg			1
Unknown	238	J	ug/kg			1
Unknown	289	J	ug/kg			1
Unknown	1710	J	ug/kg			1
Unknown Alkane	237	J	ug/kg			1
Unknown Alkane	300	J	ug/kg			1
Unknown Alkane	315	J	ug/kg			1
Unknown Alkane	336	J	ug/kg			1
Unknown	285	J	ug/kg			1
Unknown Alkane	266	J	ug/kg			1
Unknown	372	J	ug/kg			1
Unknown Alkane	496	J	ug/kg			1
Unknown Alkane	501	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	88		25-120
Phenol-d6	97		10-120
Nitrobenzene-d5	89		23-120
2-Fluorobiphenyl	81		30-120
2,4,6-Tribromophenol	83		10-136
4-Terphenyl-d14	77		18-120

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-04
Client ID: 5FS-SW-10C (4-6)
Sample Location: Not Specified
Date Collected: 07/01/26 12:15
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/05/26 14:16
Analyst: IMK
Percent Solids: 80%
Extraction Method: EPA 3546
Extraction Date: 07/04/26 03:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	360		ug/kg	160	21.	1
Hexachlorobenzene	ND		ug/kg	120	23.	1
Fluoranthene	5200		ug/kg	120	23.	1
Naphthalene	1100		ug/kg	200	25.	1
Nitrobenzene	ND		ug/kg	41	18.	1
Benzo(a)anthracene	3100		ug/kg	120	23.	1
Benzo(a)pyrene	3000		ug/kg	160	50.	1
Benzo(b)fluoranthene	3800		ug/kg	120	34.	1
Benzo(k)fluoranthene	1300		ug/kg	120	33.	1
Chrysene	2900		ug/kg	120	21.	1
Acenaphthylene	640		ug/kg	160	32.	1
Anthracene	1500		ug/kg	120	40.	1
Benzo(ghi)perylene	1700		ug/kg	160	24.	1
Fluorene	720		ug/kg	200	20.	1
Phenanthrene	5300		ug/kg	120	25.	1
Dibenzo(a,h)anthracene	450		ug/kg	120	24.	1
Indeno(1,2,3-cd)pyrene	1900		ug/kg	160	28.	1
Pyrene	4400		ug/kg	120	20.	1
Aniline	ND		ug/kg	41	15.	1
Dibenzofuran	510		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	45.	1
Phenol	ND		ug/kg	200	31.	1
2-Methylphenol	ND		ug/kg	200	32.	1
3-Methylphenol/4-Methylphenol	68	J	ug/kg	290	32.	1
1,4-Dioxane	ND		ug/kg	31	9.4	1

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-04
Client ID: 5FS-SW-10C (4-6)
Sample Location: Not Specified
Date Collected: 07/01/26 12:15
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	12000	J	ug/kg			1
Unknown	1170	J	ug/kg			1
Unknown PAH	528	J	ug/kg			1
Unknown PAH	596	J	ug/kg			1
Unknown Thiophene	354	J	ug/kg			1
Unknown PAH	371	J	ug/kg			1
Unknown PAH	750	J	ug/kg			1
Unknown PAH	878	J	ug/kg			1
Unknown PAH	1860	J	ug/kg			1
Unknown	832	J	ug/kg			1
Unknown	1490	J	ug/kg			1
Toluene	484	NJ	ug/kg			1
Unknown Ketone	376	J	ug/kg			1
Unknown PAH	924	J	ug/kg			1
Unknown	419	J	ug/kg			1
Unknown	941	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	84		25-120
Phenol-d6	92		10-120
Nitrobenzene-d5	85		23-120
2-Fluorobiphenyl	76		30-120
2,4,6-Tribromophenol	81		10-136
4-Terphenyl-d14	71		18-120

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-05
Client ID: 5FS-SW-13 (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 13:45
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/05/26 14:35
Analyst: IMK
Percent Solids: 81%
Extraction Method: EPA 3546
Extraction Date: 07/04/26 03:17

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	21.	1
Hexachlorobenzene	ND		ug/kg	120	23.	1
Fluoranthene	240		ug/kg	120	23.	1
Naphthalene	1300		ug/kg	200	25.	1
Nitrobenzene	ND		ug/kg	40	18.	1
Benzo(a)anthracene	69	J	ug/kg	120	23.	1
Benzo(a)pyrene	51	J	ug/kg	160	49.	1
Benzo(b)fluoranthene	65	J	ug/kg	120	34.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	88	J	ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	240		ug/kg	120	39.	1
Benzo(ghi)perylene	32	J	ug/kg	160	24.	1
Fluorene	360		ug/kg	200	20.	1
Phenanthrene	1500		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	31	J	ug/kg	160	28.	1
Pyrene	310		ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	32.	1
1,4-Dioxane	ND		ug/kg	30	9.3	1

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-05
Client ID: 5FS-SW-13 (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 13:45
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	69800	J	ug/kg			1
Unknown Alkane	3840	J	ug/kg			1
Unknown	6130	J	ug/kg			1
Unknown Benzene	4120	J	ug/kg			1
Unknown Benzene	6060	J	ug/kg			1
Unknown Naphthalene	4210	J	ug/kg			1
Unknown	2950	J	ug/kg			1
Unknown	4920	J	ug/kg			1
Unknown Alkane	5710	J	ug/kg			1
Unknown Alkane	4340	J	ug/kg			1
Unknown	4840	J	ug/kg			1
Unknown Benzene	7090	J	ug/kg			1
Unknown Cycloalkane	3840	J	ug/kg			1
Unknown	3500	J	ug/kg			1
Unknown	5280	J	ug/kg			1
Unknown Alkane	3000	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	80		25-120
Phenol-d6	96		10-120
Nitrobenzene-d5	103		23-120
2-Fluorobiphenyl	74		30-120
2,4,6-Tribromophenol	74		10-136
4-Terphenyl-d14	**170**	Q	18-120

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 07/05/26 07:51
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 07/04/26 03:17

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG2237026-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Fluoranthene	ND		ug/kg	99	19.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	33	14.
Benzo(a)anthracene	ND		ug/kg	99	19.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	26.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Aniline	ND		ug/kg	33	12.
Dibenzofuran	ND		ug/kg	160	16.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.

Project Name: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 07/05/26 07:51
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 07/04/26 03:17

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-05 Batch: WG2237026-1					
1,4-Dioxane	ND		ug/kg	25	7.6
Tentatively Identified Compounds					
Total TIC Compounds	1390	J	ug/kg		
Unknown	1390	J	ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	94		25-120
Phenol-d6	102		10-120
Nitrobenzene-d5	96		23-120
2-Fluorobiphenyl	80		30-120
2,4,6-Tribromophenol	95		10-136
4-Terphenyl-d14	87		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG2237026-2 WG2237026-3								
Acenaphthene	98		102		31-137	4		50
Hexachlorobenzene	98		102		40-140	4		50
Fluoranthene	102		106		40-140	4		50
Naphthalene	93		100		40-140	7		50
Nitrobenzene	105		111		40-140	6		50
Benzo(a)anthracene	100		107		40-140	7		50
Benzo(a)pyrene	114		122		40-140	7		50
Benzo(b)fluoranthene	112		125		40-140	11		50
Benzo(k)fluoranthene	104		109		40-140	5		50
Chrysene	102		109		40-140	7		50
Acenaphthylene	90		96		40-140	6		50
Anthracene	101		107		40-140	6		50
Benzo(ghi)perylene	104		113		40-140	8		50
Fluorene	100		104		40-140	4		50
Phenanthrene	98		103		40-140	5		50
Dibenzo(a,h)anthracene	104		113		40-140	8		50
Indeno(1,2,3-cd)pyrene	106		117		40-140	10		50
Pyrene	100		106		35-142	6		50
Aniline	73		75		40-140	3		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-05 Batch: WG2237026-2 WG2237026-3								
Dibenzofuran	92		95		40-140	3		50
Pentachlorophenol	94		98		17-109	4		50
Phenol	**97**	Q	**102**	Q	26-90	5		50
2-Methylphenol	96		102		30-130	6		50
3-Methylphenol/4-Methylphenol	96		101		30-130	5		50
1,4-Dioxane	74		75		40-140	1		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	98		103		25-120
Phenol-d6	108		112		10-120
Nitrobenzene-d5	103		108		23-120
2-Fluorobiphenyl	84		88		30-120
2,4,6-Tribromophenol	106		110		10-136
4-Terphenyl-d14	96		98		18-120

METALS

Project Name: 5 FLINT ST.
Lab Number: L2641560
Project Number: 4694.0001B000
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-01
Client ID: 5FS-SW-12C (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 08:10
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	8520		mg/kg	9.28	3.02	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	4.64	3.57	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Arsenic, Total	7.03		mg/kg	0.928	0.401	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Barium, Total	59.9		mg/kg	0.928	0.098	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.513		mg/kg	0.464	0.051	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.158	J	mg/kg	0.928	0.051	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Calcium, Total	5060		mg/kg	9.28	5.26	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Chromium, Total	13.3		mg/kg	0.928	0.787	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Cobalt, Total	9.04		mg/kg	1.86	0.230	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Copper, Total	17.3		mg/kg	0.928	0.211	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Iron, Total	20800		mg/kg	23.2	7.42	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Lead, Total	16.9		mg/kg	4.64	0.221	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Magnesium, Total	4590		mg/kg	9.28	1.51	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Manganese, Total	482		mg/kg	0.928	0.497	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Mercury, Total	0.093		mg/kg	0.082	0.054	1	07/07/26 10:19	07/07/26 13:22	EPA 7471B	1,7471B	RJG
Nickel, Total	22.9		mg/kg	2.32	0.750	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Potassium, Total	432		mg/kg	232	47.0	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	1.86	0.305	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Silver, Total	ND		mg/kg	0.464	0.276	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Sodium, Total	ND		mg/kg	186	98.4	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	1.86	0.837	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Vanadium, Total	15.8		mg/kg	0.928	0.140	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
Zinc, Total	57.8		mg/kg	4.64	0.562	2	07/07/26 08:35	07/07/26 17:25	EPA 3050B	1,6010D	JMF
General Chemistry - Mansfield Lab											
Chromium, Trivalent	13.3		mg/kg	0.973	0.787	1		07/07/26 17:25	NA	107,-	

Project Name: 5 FLINT ST.
Lab Number: L2641560
Project Number: 4694.0001B000
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-02
Client ID: 5FS-SW-12D (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 09:00
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 83%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7990		mg/kg	9.31	3.03	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	4.66	3.58	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Arsenic, Total	6.42		mg/kg	0.931	0.402	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Barium, Total	48.2		mg/kg	0.931	0.099	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.466		mg/kg	0.466	0.051	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.166	J	mg/kg	0.931	0.051	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Calcium, Total	1770		mg/kg	9.31	5.28	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Chromium, Total	11.4		mg/kg	0.931	0.790	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Cobalt, Total	9.08		mg/kg	1.86	0.231	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Copper, Total	14.7		mg/kg	0.931	0.211	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Iron, Total	18700		mg/kg	23.3	7.45	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Lead, Total	11.4		mg/kg	4.66	0.222	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Magnesium, Total	2980		mg/kg	9.31	1.52	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Manganese, Total	583		mg/kg	0.931	0.499	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Mercury, Total	ND		mg/kg	0.087	0.057	1	07/07/26 10:19	07/07/26 13:25	EPA 7471B	1,7471B	RJG
Nickel, Total	21.6		mg/kg	2.33	0.752	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Potassium, Total	391		mg/kg	233	47.2	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	1.86	0.306	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Silver, Total	ND		mg/kg	0.466	0.278	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Sodium, Total	ND		mg/kg	186	98.7	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	1.86	0.840	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Vanadium, Total	13.8		mg/kg	0.931	0.141	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
Zinc, Total	52.8		mg/kg	4.66	0.564	2	07/07/26 08:35	07/07/26 17:29	EPA 3050B	1,6010D	JMF
General Chemistry - Mansfield Lab											
Chromium, Trivalent	11.4		mg/kg	0.963	0.790	1		07/07/26 17:29	NA	107,-	

Project Name: 5 FLINT ST.
Lab Number: L2641560
Project Number: 4694.0001B000
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-03
Client ID: 5FS-SW-10D (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 11:30
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 68%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6830		mg/kg	11.6	3.77	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	5.81	4.47	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Arsenic, Total	6.34		mg/kg	1.16	0.502	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Barium, Total	37.6		mg/kg	1.16	0.123	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.376	J	mg/kg	0.581	0.064	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.163	J	mg/kg	1.16	0.064	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Calcium, Total	2680		mg/kg	11.6	6.58	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Chromium, Total	10.3		mg/kg	1.16	0.985	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Cobalt, Total	8.79		mg/kg	2.32	0.288	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Copper, Total	16.7		mg/kg	1.16	0.264	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Iron, Total	16900		mg/kg	29.0	9.29	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Lead, Total	11.1		mg/kg	5.81	0.276	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Magnesium, Total	2740		mg/kg	11.6	1.89	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Manganese, Total	134		mg/kg	1.16	0.622	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Mercury, Total	ND		mg/kg	0.104	0.068	1	07/07/26 10:19	07/07/26 13:28	EPA 7471B	1,7471B	RJG
Nickel, Total	19.3		mg/kg	2.90	0.938	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Potassium, Total	298		mg/kg	290	58.9	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	2.32	0.382	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Silver, Total	ND		mg/kg	0.581	0.346	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Sodium, Total	ND		mg/kg	232	123.	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	2.32	1.05	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Vanadium, Total	12.6		mg/kg	1.16	0.175	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
Zinc, Total	63.7		mg/kg	5.81	0.704	2	07/07/26 08:35	07/07/26 17:33	EPA 3050B	1,6010D	JMF
General Chemistry - Mansfield Lab											
Chromium, Trivalent	10.3		mg/kg	1.18	0.985	1		07/07/26 17:33	NA	107,-	

Project Name: 5 FLINT ST.
Lab Number: L2641560
Project Number: 4694.0001B000
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-04
Client ID: 5FS-SW-10C (4-6)
Sample Location: Not Specified
Date Collected: 07/01/26 12:15
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	4740		mg/kg	9.72	3.16	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	4.86	3.74	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Arsenic, Total	9.67		mg/kg	0.972	0.420	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Barium, Total	79.7		mg/kg	0.972	0.103	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.322	J	mg/kg	0.486	0.053	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.363	J	mg/kg	0.972	0.053	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Calcium, Total	70700		mg/kg	9.72	5.51	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Chromium, Total	7.51		mg/kg	0.972	0.824	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Cobalt, Total	3.66		mg/kg	1.94	0.241	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Copper, Total	23.3		mg/kg	0.972	0.220	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Iron, Total	12800		mg/kg	24.3	7.77	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Lead, Total	593		mg/kg	4.86	0.231	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Magnesium, Total	17700		mg/kg	9.72	1.58	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Manganese, Total	264		mg/kg	0.972	0.521	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Mercury, Total	1.44		mg/kg	0.098	0.064	1	07/07/26 10:19	07/07/26 13:38	EPA 7471B	1,7471B	RJG
Nickel, Total	9.61		mg/kg	2.43	0.785	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Potassium, Total	656		mg/kg	243	49.3	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	1.94	0.320	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Silver, Total	ND		mg/kg	0.486	0.290	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Sodium, Total	339		mg/kg	194	103.	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	1.94	0.876	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Vanadium, Total	17.4		mg/kg	0.972	0.147	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
Zinc, Total	437		mg/kg	4.86	0.589	2	07/07/26 08:35	07/07/26 17:37	EPA 3050B	1,6010D	JMF
General Chemistry - Mansfield Lab											
Chromium, Trivalent	7.51		mg/kg	0.995	0.824	1		07/07/26 17:37	NA	107,-	

Project Name: 5 FLINT ST.
Lab Number: L2641560
Project Number: 4694.0001B000
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-05
Client ID: 5FS-SW-13 (8-10)
Sample Location: Not Specified
Date Collected: 07/01/26 13:45
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6520		mg/kg	9.68	3.15	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	4.84	3.73	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Arsenic, Total	4.10		mg/kg	0.968	0.418	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Barium, Total	42.1		mg/kg	0.968	0.103	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.320	J	mg/kg	0.484	0.053	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.098	J	mg/kg	0.968	0.053	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Calcium, Total	2060		mg/kg	9.68	5.49	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Chromium, Total	9.58		mg/kg	0.968	0.821	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Cobalt, Total	6.92		mg/kg	1.94	0.240	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Copper, Total	12.0		mg/kg	0.968	0.220	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Iron, Total	16000		mg/kg	24.2	7.75	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Lead, Total	8.46		mg/kg	4.84	0.230	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Magnesium, Total	2540		mg/kg	9.68	1.58	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Manganese, Total	192		mg/kg	0.968	0.519	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Mercury, Total	ND		mg/kg	0.078	0.051	1	07/07/26 10:19	07/07/26 13:41	EPA 7471B	1,7471B	RJG
Nickel, Total	17.6		mg/kg	2.42	0.782	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Potassium, Total	313		mg/kg	242	49.1	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	1.94	0.319	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Silver, Total	ND		mg/kg	0.484	0.288	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Sodium, Total	277		mg/kg	194	103.	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	1.94	0.874	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Vanadium, Total	11.1		mg/kg	0.968	0.146	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
Zinc, Total	48.4		mg/kg	4.84	0.587	2	07/07/26 08:35	07/07/26 17:41	EPA 3050B	1,6010D	JMF
General Chemistry - Mansfield Lab											
Chromium, Trivalent	9.58		mg/kg	0.990	0.821	1		07/07/26 17:41	NA	107,-	

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG2237960-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	07/07/26 10:19	07/07/26 12:02	1,7471B	RJG

Prep Information

Digestion Method: EPA 7471B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-05 Batch: WG2237978-1										
Aluminum, Total	ND		mg/kg	4.00	1.30	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Antimony, Total	ND		mg/kg	2.00	1.54	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Arsenic, Total	ND		mg/kg	0.400	0.173	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Barium, Total	ND		mg/kg	0.400	0.042	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Beryllium, Total	ND		mg/kg	0.200	0.022	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Cadmium, Total	ND		mg/kg	0.400	0.022	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Calcium, Total	ND		mg/kg	4.00	2.27	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Chromium, Total	ND		mg/kg	0.400	0.339	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Cobalt, Total	ND		mg/kg	0.800	0.099	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Copper, Total	ND		mg/kg	0.400	0.091	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Iron, Total	ND		mg/kg	10.0	3.20	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Lead, Total	ND		mg/kg	2.00	0.095	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Magnesium, Total	ND		mg/kg	4.00	0.652	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Manganese, Total	ND		mg/kg	0.400	0.214	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Nickel, Total	ND		mg/kg	1.00	0.323	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Potassium, Total	ND		mg/kg	100	20.3	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Selenium, Total	ND		mg/kg	0.800	0.132	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Silver, Total	ND		mg/kg	0.200	0.119	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Sodium, Total	ND		mg/kg	80.0	42.4	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Thallium, Total	ND		mg/kg	0.800	0.361	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Vanadium, Total	ND		mg/kg	0.400	0.060	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF
Zinc, Total	ND		mg/kg	2.00	0.242	1	07/07/26 08:35	07/07/26 10:55	1,6010D	JMF

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641560
Report Date: 07/09/26

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 3050B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG2237960-2								
Mercury, Total	100		-		80-120	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG2237978-2					
Aluminum, Total	104	-	80-120	-	20
Antimony, Total	109	-	80-120	-	20
Arsenic, Total	104	-	80-120	-	20
Barium, Total	108	-	80-120	-	20
Beryllium, Total	109	-	80-120	-	20
Cadmium, Total	104	-	80-120	-	20
Calcium, Total	113	-	80-120	-	20
Chromium, Total	106	-	80-120	-	20
Cobalt, Total	107	-	80-120	-	20
Copper, Total	108	-	80-120	-	20
Iron, Total	114	-	80-120	-	20
Lead, Total	110	-	80-120	-	20
Magnesium, Total	106	-	80-120	-	20
Manganese, Total	111	-	80-120	-	20
Nickel, Total	107	-	80-120	-	20
Potassium, Total	110	-	80-120	-	20
Selenium, Total	104	-	80-120	-	20
Silver, Total	108	-	80-120	-	20
Sodium, Total	110	-	80-120	-	20
Thallium, Total	109	-	80-120	-	20
Vanadium, Total	112	-	80-120	-	20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 Batch: WG2237978-2					
Zinc, Total	102	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG2237960-3 QC Sample: L2641254-01 Client ID: MS Sample												
Mercury, Total	ND	1.82	1.82	100		-	-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG2237978-3 QC Sample: L2641254-01 Client ID: MS Sample												
Aluminum, Total	9570	169	10900	**787**	Q	-	-		75-125	-		
Antimony, Total	ND	42.2	16.8	**40**	Q	-	-		75-125	-		
Arsenic, Total	9.77	10.1	20.9	110		-	-		75-125	-		
Barium, Total	87.9	169	298	124		-	-		75-125	-		
Beryllium, Total	1.04	4.22	5.41	103		-	-		75-125	-		
Cadmium, Total	0.165J	4.48	4.44	99		-	-		75-125	-		
Calcium, Total	812	845	1700	105		-	-		75-125	-		
Chromium, Total	13.1	16.9	33.3	120		-	-		75-125	-		
Cobalt, Total	14.2	42.2	67.7	**127**	Q	-	-		75-125	-		
Copper, Total	7.46	21.1	30.0	107		-	-		75-125	-		
Iron, Total	18400	84.5	19500	**1300**	Q	-	-		75-125	-		
Lead, Total	16.4	44.8	71.0	122		-	-		75-125	-		
Magnesium, Total	975	845	1840	102		-	-		75-125	-		
Manganese, Total	1380	42.2	2900	**3600**	Q	-	-		75-125	-		
Nickel, Total	9.41	42.2	52.4	102		-	-		75-125	-		
Potassium, Total	549	845	1370	97		-	-		75-125	-		
Selenium, Total	ND	10.1	5.08	**50**	Q	-	-		75-125	-		
Silver, Total	ND	4.22	3.88	92		-	-		75-125	-		
Sodium, Total	ND	845	882	104		-	-		75-125	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG2237978-3 QC Sample: L2641254-01 Client ID: MS Sample												
Thallium, Total	ND	10.1	9.75	96		-	-		75-125	-		
Vanadium, Total	26.8	42.2	72.0	107		-	-		75-125	-		
Zinc, Total	43.8	42.2	84.7	97		-	-		75-125	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT ST.

Project Number: 4694.0001B000

Lab Number: L2641560

Report Date: 07/09/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG2237960-4 QC Sample: L2641254-01 Client ID: DUP Sample						
Mercury, Total	ND	ND	mg/kg	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT ST.

Project Number: 4694.0001B000

Lab Number: L2641560

Report Date: 07/09/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG2237978-4 QC Sample: L2641254-01 Client ID: DUP Sample						
Aluminum, Total	9570	10000	mg/kg	4		20
Antimony, Total	ND	ND	mg/kg	NC		20
Arsenic, Total	9.77	10.5	mg/kg	7		20
Barium, Total	87.9	94.8	mg/kg	8		20
Beryllium, Total	1.04	1.13	mg/kg	8		20
Cadmium, Total	0.165J	0.177J	mg/kg	NC		20
Calcium, Total	812	846	mg/kg	4		20
Chromium, Total	13.1	17.2	mg/kg	**27**	Q	20
Cobalt, Total	14.2	16.1	mg/kg	13		20
Copper, Total	7.46	8.23	mg/kg	10		20
Iron, Total	18400	20800	mg/kg	12		20
Lead, Total	16.4	17.3	mg/kg	5		20
Magnesium, Total	975	1000	mg/kg	3		20
Manganese, Total	1380	1620	mg/kg	16		20
Nickel, Total	9.41	10.5	mg/kg	11		20
Potassium, Total	549	564	mg/kg	3		20
Selenium, Total	ND	ND	mg/kg	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT ST.

Project Number: 4694.0001B000

Lab Number: L2641560

Report Date: 07/09/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-05 QC Batch ID: WG2237978-4 QC Sample: L2641254-01 Client ID: DUP Sample						
Silver, Total	ND	ND	mg/kg	NC		20
Sodium, Total	ND	ND	mg/kg	NC		20
Thallium, Total	ND	ND	mg/kg	NC		20
Vanadium, Total	26.8	29.2	mg/kg	9		20
Zinc, Total	43.8	46.5	mg/kg	6		20

INORGANICS
&
MISCELLANEOUS

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-01
Client ID: 5FS-SW-12C (8-10)
Sample Location: Not Specified

Date Collected: 07/01/26 08:10
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.2		%	0.100	NA	1	-	07/02/26 11:41	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.1	0.24	1	07/05/26 22:10	07/06/26 14:33	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.973	0.195	1	07/02/26 08:56	07/03/26 09:49	1,7196A	LOF

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-02
Client ID: 5FS-SW-12D (8-10)
Sample Location: Not Specified

Date Collected: 07/01/26 09:00
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.1		%	0.100	NA	1	-	07/02/26 11:41	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.1	0.24	1	07/05/26 22:10	07/06/26 14:34	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.963	0.192	1	07/02/26 08:56	07/03/26 09:49	1,7196A	LOF

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-03
Client ID: 5FS-SW-10D (8-10)
Sample Location: Not Specified

Date Collected: 07/01/26 11:30
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	67.8		%	0.100	NA	1	-	07/02/26 11:41	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.4	0.29	1	07/05/26 22:10	07/06/26 14:35	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	1.18	0.236	1	07/02/26 08:56	07/03/26 09:49	1,7196A	LOF

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-04
Client ID: 5FS-SW-10C (4-6)
Sample Location: Not Specified

Date Collected: 07/01/26 12:15
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.4		%	0.100	NA	1	-	07/02/26 11:41	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.1	0.24	1	07/05/26 22:10	07/06/26 14:36	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.995	0.199	1	07/02/26 08:56	07/03/26 09:49	1,7196A	LOF

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

SAMPLE RESULTS

Lab ID: L2641560-05
Client ID: 5FS-SW-13 (8-10)
Sample Location: Not Specified

Date Collected: 07/01/26 13:45
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.8		%	0.100	NA	1	-	07/02/26 11:41	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.1	0.24	1	07/05/26 22:10	07/06/26 14:37	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.990	0.198	1	07/02/26 08:56	07/03/26 09:49	1,7196A	LOF

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-05 Batch: WG2236492-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	07/02/26 08:56	07/03/26 09:49	1,7196A	LOF
General Chemistry - Westborough Lab for sample(s): 01-05 Batch: WG2237288-1										
Cyanide, Total	ND		mg/kg	0.88	0.19	1	07/05/26 22:10	07/06/26 14:14	1,9010C/9012B	JER

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG2236492-2								
Chromium, Hexavalent	91		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-05 Batch: WG2237288-2 WG2237288-3								
Cyanide, Total	101		100		80-120	1		35

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG2236492-4 QC Sample: L2641560-01 Client ID: 5FS-SW-12C (8-10)												
Chromium, Hexavalent	ND	1730	1100	**64**	Q	-	-		75-125	-		
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG2237288-4 WG2237288-5 QC Sample: L2641507-02 Client ID: MS Sample												
Cyanide, Total	0.29J	11	12	100		12	100		75-125	0		35
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG2237288-6 WG2237288-7 QC Sample: L2641507-03 Client ID: MS Sample												
Cyanide, Total	ND	11	12	110		11	100		75-125	10		35

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT ST.

Project Number: 4694.0001B000

Lab Number: L2641560

Report Date: 07/09/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG2236492-6 QC Sample: L2641560-01 Client ID: 5FS-SW-12C (8-10)						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-05 QC Batch ID: WG2236590-1 QC Sample: L2641059-04 Client ID: DUP Sample						
Solids, Total	83.5	82.7	%	1		10

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

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(*)
L2641560-01A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-01B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-01C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-01D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2641560-01E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),TL-TI(180),CR-TI(180),NI-TI(180),AL-TI(180),PB-TI(180),ZN-TI(180),SB-TI(180),CU-TI(180),SE-TI(180),CO-TI(180),V-TI(180),MG-TI(180),FE-TI(180),HG-T(28),MN-TI(180),K-TI(180),NA-TI(180),CA-TI(180),CD-TI(180)
L2641560-01F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641560-01G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641560-01X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-01Y	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 06:52	NYTCL-8260HLW-R2(14)
L2641560-01Z	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 06:52	NYTCL-8260HLW-R2(14)
L2641560-02A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-02B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-02C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-02D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2641560-02E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),AL-TI(180),TL-TI(180),PB-TI(180),SE-TI(180),SB-TI(180),ZN-TI(180),CU-TI(180),V-TI(180),CO-TI(180),MN-TI(180),FE-TI(180),HG-T(28),MG-TI(180),CD-TI(180),NA-TI(180),K-TI(180),CA-TI(180)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2641560-02F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641560-02G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641560-02X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-02Y	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 06:52	NYTCL-8260HLW-R2(14)
L2641560-02Z	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 06:52	NYTCL-8260HLW-R2(14)
L2641560-03A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-03B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-03C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-03D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2641560-03E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),TL-TI(180),AL-TI(180),NI-TI(180),CU-TI(180),SB-TI(180),SE-TI(180),ZN-TI(180),PB-TI(180),V-TI(180),CO-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),CD-TI(180),CA-TI(180),NA-TI(180),K-TI(180)
L2641560-03F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641560-03G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641560-03X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-03Y	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 06:52	NYTCL-8260HLW-R2(14)
L2641560-03Z	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 06:52	NYTCL-8260HLW-R2(14)
L2641560-04A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-04B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-04C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-04D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641560
Report Date: 07/09/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2641560-04E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),TL-TI(180),NI-TI(180),AL-TI(180),CR-TI(180),ZN-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),SE-TI(180),CO-TI(180),V-TI(180),MN-TI(180),FE-TI(180),MG-TI(180),HG-T(28),CA-TI(180),K-TI(180),CD-TI(180),NA-TI(180)
L2641560-04F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2641560-04G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2641560-04X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-04Y	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 06:52	NYTCL-8260HLW-R2(14)
L2641560-04Z	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 06:52	NYTCL-8260HLW-R2(14)
L2641560-05A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-05B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-05C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-05D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2641560-05E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),CR-TI(180),TL-TI(180),AL-TI(180),SE-TI(180),ZN-TI(180),SB-TI(180),CU-TI(180),PB-TI(180),CO-TI(180),V-TI(180),MG-TI(180),FE-TI(180),HG-T(28),MN-TI(180),NA-TI(180),CA-TI(180),CD-TI(180),K-TI(180)
L2641560-05F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641560-05G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641560-05X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641560-05Y	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 06:52	NYTCL-8260HLW-R2(14)
L2641560-05Z	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 07:34	NYTCL-8260HLW-R2(14)
L2641560-06A	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260(14)
L2641560-06B	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT ST.	**Lab Number:**	L2641560
Project Number:	4694.0001B000	**Report Date:**	07/09/26

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:	5 FLINT ST.	**Lab Number:**	L2641560
Project Number:	4694.0001B000	**Report Date:**	07/09/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT ST.	**Lab Number:**	L2641560
Project Number:	4694.0001B000	**Report Date:**	07/09/26

Data Qualifiers

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: 5 FLINT ST. **Lab Number:** L2641560

Project Number: 4694.0001B000 **Report Date:** 07/09/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

107 Calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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 504.1: EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,**.

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, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water
EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water
SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY KY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NV MA00030, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

L2691560

07/02/26

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name: Roux

Street Address: 5Flint St, ~~10 Flint Street~~, Rochester, NY

Customer Project #: ~~4860.00018000~~ SK 46094.0001B000

Project Name: ~~10 Flint Street - PDI Phase 2 Sampling~~ 5 Flint St.

Site Collection Info/Facility ID (as applicable):

Contact/Report To: Eric Runstrom

Phone #: 781.569.4031

E-Mail: erunstrom@rouxinc.com, ebertentos@rouxinc.com

Cc E-Mail: skerivan@rouxinc.com

Invoice to: Roux

Invoice E-mail: rouxap@rouxinc.com

Purchase Order # (if applicable):

Quote #: 00203091

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

County / State origin of sample(s): Monroe County, New York

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [X] EQUIS [X] Other Roux MA EDD

Regulatory Program (DW, RCRA, etc.) as applicable: Part 375, Table 6.8 (a), please include TICS for both VOCs and SVOCs. Category B deliverable. Reportable [X] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other _____

Date Results Requested: 5 day TAT

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

Specify Container Size **: 6, 10

Identify Container Preservative Type***: 8, 11

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

	Customer Sample ID	Matrix*	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs + TICS 8260C	SVOCs + TICS (8270)	TAL Metals + total cyanide + tri and hexa Chromium (80100)	Lab Use Only	Proj. Mgr:	Acct/Num / Client ID:	Table #:	Profile / Template:	Prelog / Bottle Ord. ID:	Sample Comment	Preservation non-conformance identified for sample
01	5FS-SW-12C(8-10)	SOil	G	N/A	N/A	7/1/26	8:10	7	N/A	N/A	X	X	X								
02	5FS-SW-12D(8-10)	SOil	G	N/A	N/A	7/1/26	9:00	7	N/A	N/A	X	X	X								
03	5FS-SW-10D(8-10)	SOil	G	N/A	N/A	7/1/26	11:30	7	N/A	N/A	X	X	X								
04	5FS-SW-10C (4-6)	SOil	G	N/A	N/A	7/1/26	12:15	7	N/A	N/A	X	X	X								
05	5FS-SW-13(8-10)	SOil	G	N/A	N/A	7/1/26	13:45	7	N/A	N/A	X	X	X								
06	TRIP BLANK	SOil	G	N/A	N/A	7/1/26	8:00	3	N/A	N/A	X										

Additional Instructions from Pace®:

Collected By: Printed Name: Shannon Keenan

Signature:

Customer Remarks / Special Conditions / Possible Hazards: NA

Coolers | Thermometer ID: | Correction Factor (°C): | Obs. Temp (°C): | Corrected Temp (°C): | [ ] On Ice

Relinquished by/Company: (Signature)	Date/Time:	Received by/Company: (Signature)	Date/Time:
ROUX	7/1/26 1541	PACE ROCH Svc Ctr	7/1/26 1541
Roux S/C	7.1.26 18:00	NORMN	7.1.26 18:00
NORMN	7.1.26 19:30	K Rue	7.1 2006
	7.2 2:29		07/02/26 02:20

Tracking Number:

Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other

Page: of

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

ENV-FRM-CORO-0019_v02_110123 ©

Sample Delivery Group Summary

Pace Job Number : L2641560

Account Name : Roux
Project Number : 4694.0001B000
Project Name : 5 FLINT ST.

Received : 01-JUL-2026
Reviewer : Gregory Ramos

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	3.2	

Condition Information

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

Volatile Organics/VPH

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

ANALYTICAL REPORT

Lab Number:	L2641561
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT ST.
Project Number:	4694.0001B000
Report Date:	07/14/26

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

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2641561-01	5FS-SW-12E (12-14)	SOIL	Not Specified	07/01/26 10:00	07/01/26
L2641561-02	TRIP BLANK	WATER	Not Specified	07/01/26 00:00	07/01/26

Project Name:	5 FLINT ST.	**Lab Number:**	L2641561
Project Number:	4694.0001B000	**Report Date:**	07/14/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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: 5 FLINT ST. **Lab Number:** L2641561
Project Number: 4694.0001B000 **Report Date:** 07/14/26

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.

Sample Receipt

The analyses performed were specified by the client.

Volatile Organics

L2641561-01: The analysis of Volatile Organics by EPA Method 5035/8260 Low Level could not be performed due to the elevated concentrations of non-target compounds in the sample.

L2641561-01: The surrogate recoveries are outside the acceptance criteria for toluene-d8 (132%) and 4-bromofluorobenzene (138%); however, the sample was not re-analyzed due to coelution with obvious interferences.

L2641561-02: The Trip Blank has a result for acetone present above the reporting limit. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required.

Total Metals

L2641561-01: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the sample matrix.

The WG2239850-1 Method Blank associated with L2641561-01 has a concentration above the reporting limit for calcium. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

Chromium, Hexavalent

The WG2239851-6 Soluble MS recovery performed on L2641964-01 was outside the acceptance criteria for

Project Name:	5 FLINT ST.	**Lab Number:**	L2641561
Project Number:	4694.0001B000	**Report Date:**	07/14/26

Case Narrative (continued)

chromium, hexavalent (74%). This has been attributed to matrix interference. A post-spike was performed with a recovery of 85%.

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

Authorized Signature: Caitlin Walukevich

Title: Technical Director/Representative Date: 07/14/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Organics by EPA 5035/8260 High - Westborough Lab								
8260D	5FS-SW-12E (12-14)	L2641561-01	Toluene-d8	Surrogate	132	70-130	-	potential high bias
8260D	5FS-SW-12E (12-14)	L2641561-01	4-Bromofluorobenzene	Surrogate	138	70-130	-	potential high bias
Semivolatile Organics by GC/MS - Westborough Lab								
8270E	5FS-SW-12E (12-14)	L2641561-01	2,4,6-Tribromophenol	Surrogate	161	10-136	-	potential high bias
8270E	Laboratory Method Bl	WG2239918-1	Phenol-d6	Surrogate	124	10-120	-	potential high bias
8270E	Batch QC	WG2239918-2	Pentachlorophenol	LCS	110	17-109	01	potential high bias
8270E	Batch QC	WG2239918-2	Phenol	LCS	122	26-90	01	potential high bias
8270E	Batch QC	WG2239918-2	Phenol-d6	Surrogate	131	10-120	-	potential high bias
8270E	Batch QC	WG2239918-2	Nitrobenzene-d5	Surrogate	124	23-120	-	potential high bias
8270E	Batch QC	WG2239918-3	Phenol	LCSD	113	26-90	01	potential high bias
8270E	Batch QC	WG2239918-3	Phenol-d6	Surrogate	122	10-120	-	potential high bias
Total Metals - Mansfield Lab								
6010D	Batch QC (L2641964-01)	WG2239850-3	Aluminum, Total	MS	0	75-125	01	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Antimony, Total	MS	38	75-125	01	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Calcium, Total	MS	414	75-125	01	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Iron, Total	MS	0	75-125	01	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Magnesium, Total	MS	326	75-125	01	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Manganese, Total	MS	216	75-125	01	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Sodium, Total	MS	60	75-125	01	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Zinc, Total	MS	59	75-125	01	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Aluminum, Total	MSD	31	75-125	01	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Antimony, Total	MSD	35	75-125	01	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Arsenic, Total	MSD	23	75-125	01	non-directional bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Arsenic, Total	MSD	130	75-125	01	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Calcium, Total	MSD	26	75-125	01	non-directional bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Calcium, Total	MSD	840	75-125	01	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Iron, Total	MSD	1560	75-125	01	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Lead, Total	MSD	22	75-125	01	non-directional bias

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT ST.

Project Number: 4694.0001B000

Lab Number: L2641561

Report Date: 07/14/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
6010D	Batch QC (L2641964-01)	WG2239850-4	Magnesium, Total	MSD	228	75-125	01	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Manganese, Total	MSD	386	75-125	01	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Sodium, Total	MSD	29	75-125	01	non-directional bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Zinc, Total	MSD	27	75-125	01	non-directional bias

ORGANICS

VOLATILES

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641561
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641561-01
Client ID: 5FS-SW-12E (12-14)
Sample Location: Not Specified
Date Collected: 07/01/26 10:00
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/13/26 22:44
Analyst: BAD
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
Methylene chloride	ND		ug/kg	450	210	1
1,1-Dichloroethane	ND		ug/kg	90	13.	1
Chloroform	ND		ug/kg	140	13.	1
Carbon tetrachloride	ND		ug/kg	90	21.	1
Tetrachloroethene	ND		ug/kg	45	18.	1
Chlorobenzene	ND		ug/kg	45	12.	1
1,2-Dichloroethane	ND		ug/kg	90	23.	1
1,1,1-Trichloroethane	ND		ug/kg	45	15.	1
Benzene	44	J	ug/kg	45	15.	1
Toluene	66	J	ug/kg	90	49.	1
Ethylbenzene	34	J	ug/kg	90	13.	1
Vinyl chloride	ND		ug/kg	90	30.	1
1,1-Dichloroethene	ND		ug/kg	90	22.	1
trans-1,2-Dichloroethene	ND		ug/kg	140	12.	1
Trichloroethene	ND		ug/kg	45	12.	1
1,2-Dichlorobenzene	ND		ug/kg	180	13.	1
1,3-Dichlorobenzene	ND		ug/kg	180	13.	1
1,4-Dichlorobenzene	ND		ug/kg	180	15.	1
Methyl tert butyl ether	ND		ug/kg	180	18.	1
p/m-Xylene	800		ug/kg	180	51.	1
o-Xylene	30	J	ug/kg	90	26.	1
Xylenes, Total	830	J	ug/kg	90	26.	1
cis-1,2-Dichloroethene	ND		ug/kg	90	16.	1
Acetone	ND		ug/kg	900	440	1
2-Butanone	ND		ug/kg	900	200	1
n-Butylbenzene	130		ug/kg	90	15.	1
sec-Butylbenzene	230		ug/kg	90	13.	1
tert-Butylbenzene	54	J	ug/kg	180	11.	1

Project Name: 5 FLINT ST. **Lab Number:** L2641561

Project Number: 4694.0001B000 **Report Date:** 07/14/26

SAMPLE RESULTS

Lab ID: L2641561-01 Date Collected: 07/01/26 10:00

Client ID: 5FS-SW-12E (12-14) Date Received: 07/01/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
n-Propylbenzene	180		ug/kg	90	15.	1
1,3,5-Trimethylbenzene	1200		ug/kg	180	17.	1
1,2,4-Trimethylbenzene	860		ug/kg	180	30.	1
Tentatively Identified Compounds						
Total TIC Compounds	100000	J	ug/kg			1
Unknown Cycloalkane	6770	J	ug/kg			1
Hexane, 3-methyl-	6470	NJ	ug/kg			1
Unknown Cycloalkane	34900	J	ug/kg			1
Cyclohexane, 1,1-dimethyl-	9140	NJ	ug/kg			1
Unknown	7180	J	ug/kg			1
Unknown Alkane	9400	J	ug/kg			1
Unknown Cycloalkane	8430	J	ug/kg			1
Hexane, 2,4-dimethyl-	6000	NJ	ug/kg			1
Pentane, 2,3-dimethyl-	6240	NJ	ug/kg			1
Unknown Cycloalkane	5960	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	**132**	Q	70-130
4-Bromofluorobenzene	**138**	Q	70-130
Dibromofluoromethane	94		70-130

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641561
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641561-02
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 07/01/26 00:00
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/06/26 18:57
Analyst: GMT

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
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	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
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
Vinyl chloride	ND		ug/l	1.0	0.07	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
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	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Acetone	11		ug/l	5.0	1.5	1
2-Butanone	ND		ug/l	5.0	1.9	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

Project Name: 5 FLINT ST. **Lab Number:** L2641561

Project Number: 4694.0001B000 **Report Date:** 07/14/26

SAMPLE RESULTS

Lab ID: L2641561-02 Date Collected: 07/01/26 00:00

Client ID: TRIP BLANK Date Received: 07/01/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	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
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	102		70-130
Toluene-d8	103		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	109		70-130

Project Name: 5 FLINT ST. **Lab Number:** L2641561

Project Number: 4694.0001B000 **Report Date:** 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/06/26 10:40
Analyst: GMT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG2238144-5					
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
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	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
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
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
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Acetone	ND		ug/l	5.0	1.5

Project Name: 5 FLINT ST. **Lab Number:** L2641561

Project Number: 4694.0001B000 **Report Date:** 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/06/26 10:40
Analyst: GMT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02 Batch: WG2238144-5					
2-Butanone	ND		ug/l	5.0	1.9
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
n-Propylbenzene	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
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	110		70-130

Project Name: 5 FLINT ST. **Lab Number:** L2641561

Project Number: 4694.0001B000 **Report Date:** 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/13/26 14:05
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 01 Batch: WG2241292-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	14	J	ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Vinyl chloride	ND		ug/kg	50	17.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8
Trichloroethene	ND		ug/kg	25	6.8
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
Acetone	ND		ug/kg	500	240

Project Name: 5 FLINT ST. **Lab Number:** L2641561

Project Number: 4694.0001B000 **Report Date:** 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/13/26 14:05
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 01 Batch: WG2241292-5					
2-Butanone	ND		ug/kg	500	110
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
n-Propylbenzene	ND		ug/kg	50	8.6
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	104		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	95		70-130
Dibromofluoromethane	95		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG2238144-3 WG2238144-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	130		130		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	120		120		63-132	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	110		110		75-130	0		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	120		120		67-130	0		20
Benzene	110		110		70-130	0		20
Toluene	110		110		70-130	0		20
Ethylbenzene	110		110		70-130	0		20
Vinyl chloride	130		130		55-140	0		20
1,1-Dichloroethene	130		130		61-145	0		20
trans-1,2-Dichloroethene	120		120		70-130	0		20
Trichloroethene	100		100		70-130	0		20
1,2-Dichlorobenzene	110		110		70-130	0		20
1,3-Dichlorobenzene	110		110		70-130	0		20
1,4-Dichlorobenzene	110		110		70-130	0		20
Methyl tert butyl ether	110		110		63-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02 Batch: WG2238144-3 WG2238144-4								
p/m-Xylene	115		115		70-130	0		20
o-Xylene	110		110		70-130	0		20
cis-1,2-Dichloroethene	120		110		70-130	9		20
Acetone	110		110		58-148	0		20
2-Butanone	96		93		63-138	3		20
n-Butylbenzene	100		100		53-136	0		20
sec-Butylbenzene	100		110		70-130	10		20
tert-Butylbenzene	110		120		70-130	9		20
n-Propylbenzene	110		110		69-130	0		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		104		70-130
Toluene-d8	104		103		70-130
4-Bromofluorobenzene	96		96		70-130
Dibromofluoromethane	109		107		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 01 Batch: WG2241292-3 WG2241292-4								
Methylene chloride	90		98		70-130	9		30
1,1-Dichloroethane	103		109		70-130	6		30
Chloroform	94		99		70-130	5		30
Carbon tetrachloride	92		96		70-130	4		30
Tetrachloroethene	98		101		70-130	3		30
Chlorobenzene	95		100		70-130	5		30
1,2-Dichloroethane	95		102		70-130	7		30
1,1,1-Trichloroethane	95		100		70-130	5		30
Benzene	98		104		70-130	6		30
Toluene	95		100		70-130	5		30
Ethylbenzene	98		102		70-130	4		30
Vinyl chloride	104		109		67-130	5		30
1,1-Dichloroethene	97		100		65-135	3		30
trans-1,2-Dichloroethene	97		101		70-130	4		30
Trichloroethene	94		100		70-130	6		30
1,2-Dichlorobenzene	93		98		70-130	5		30
1,3-Dichlorobenzene	96		100		70-130	4		30
1,4-Dichlorobenzene	92		96		70-130	4		30
Methyl tert butyl ether	86		93		66-130	8		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 01 Batch: WG2241292-3 WG2241292-4								
p/m-Xylene	98		102		70-130	4		30
o-Xylene	94		99		70-130	5		30
cis-1,2-Dichloroethene	90		97		70-130	7		30
Acetone	92		91		54-140	1		30
2-Butanone	90		99		70-130	10		30
n-Butylbenzene	104		106		70-130	2		30
sec-Butylbenzene	101		103		70-130	2		30
tert-Butylbenzene	98		99		70-130	1		30
n-Propylbenzene	106		109		70-130	3		30
1,3,5-Trimethylbenzene	101		104		70-130	3		30
1,2,4-Trimethylbenzene	101		104		70-130	3		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	103		102		70-130
Toluene-d8	103		102		70-130
4-Bromofluorobenzene	104		103		70-130
Dibromofluoromethane	98		98		70-130

SEMIVOLATILES

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641561
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641561-01
Client ID: 5FS-SW-12E (12-14)
Sample Location: Not Specified
Date Collected: 07/01/26 10:00
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/11/26 09:49
Analyst: CMM
Percent Solids: 78%
Extraction Method: EPA 3546
Extraction Date: 07/10/26 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	170	22.	1
Hexachlorobenzene	ND		ug/kg	130	24.	1
Fluoranthene	ND		ug/kg	130	24.	1
Naphthalene	ND		ug/kg	210	26.	1
Nitrobenzene	ND		ug/kg	42	18.	1
Benzo(a)anthracene	ND		ug/kg	130	24.	1
Benzo(a)pyrene	ND		ug/kg	170	51.	1
Benzo(b)fluoranthene	ND		ug/kg	130	35.	1
Benzo(k)fluoranthene	ND		ug/kg	130	34.	1
Chrysene	ND		ug/kg	130	22.	1
Acenaphthylene	ND		ug/kg	170	32.	1
Anthracene	ND		ug/kg	130	41.	1
Benzo(ghi)perylene	ND		ug/kg	170	25.	1
Fluorene	ND		ug/kg	210	20.	1
Phenanthrene	ND		ug/kg	130	26.	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	24.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	170	29.	1
Pyrene	ND		ug/kg	130	21.	1
Aniline	ND		ug/kg	42	16.	1
Dibenzofuran	ND		ug/kg	210	20.	1
Pentachlorophenol	ND		ug/kg	170	46.	1
Phenol	ND		ug/kg	210	32.	1
2-Methylphenol	ND		ug/kg	210	33.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	300	33.	1
1,4-Dioxane	ND		ug/kg	32	9.7	1

Project Name: 5 FLINT ST. **Lab Number:** L2641561

Project Number: 4694.0001B000 **Report Date:** 07/14/26

SAMPLE RESULTS

Lab ID: L2641561-01 Date Collected: 07/01/26 10:00

Client ID: 5FS-SW-12E (12-14) Date Received: 07/01/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	6680	J	ug/kg			1
Unknown Cycloalkane	316	J	ug/kg			1
Unknown Alkane	265	J	ug/kg			1
Unknown Alkane	277	J	ug/kg			1
Unknown	348	J	ug/kg			1
Unknown Cycloalkane	306	J	ug/kg			1
Unknown	480	J	ug/kg			1
Unknown Alkane	252	J	ug/kg			1
Unknown Alkane	352	J	ug/kg			1
Unknown Cycloalkane	325	J	ug/kg			1
Unknown Cycloalkane	419	J	ug/kg			1
Unknown	254	J	ug/kg			1
Unknown	313	J	ug/kg			1
Unknown Alkane	333	J	ug/kg			1
Unknown	591	J	ug/kg			1
Unknown	1850	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	105		25-120
Phenol-d6	109		10-120
Nitrobenzene-d5	107		23-120
2-Fluorobiphenyl	113		30-120
2,4,6-Tribromophenol	**161**	Q	10-136
4-Terphenyl-d14	120		18-120

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 07/11/26 13:18
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 07/10/26 14:18

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2239918-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	98	18.
Fluoranthene	ND		ug/kg	98	19.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	33	14.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	98	27.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	98	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
Aniline	ND		ug/kg	33	12.
Dibenzofuran	ND		ug/kg	160	15.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	26.

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 07/11/26 13:18
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 07/10/26 14:18

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01 Batch: WG2239918-1					
1,4-Dioxane	ND		ug/kg	24	7.5

Tentatively Identified Compounds			
Total TIC Compounds	1730	J	ug/kg
Unknown	1590	J	ug/kg
Unknown	143	J	ug/kg

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	107		25-120
Phenol-d6	**124**	Q	10-120
Nitrobenzene-d5	116		23-120
2-Fluorobiphenyl	93		30-120
2,4,6-Tribromophenol	110		10-136
4-Terphenyl-d14	100		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2239918-2 WG2239918-3								
Acenaphthene	109		103		31-137	6		50
Hexachlorobenzene	113		104		40-140	8		50
Fluoranthene	113		107		40-140	5		50
Naphthalene	106		102		40-140	4		50
Nitrobenzene	130		124		40-140	5		50
Benzo(a)anthracene	115		105		40-140	9		50
Benzo(a)pyrene	125		117		40-140	7		50
Benzo(b)fluoranthene	120		115		40-140	4		50
Benzo(k)fluoranthene	119		108		40-140	10		50
Chrysene	112		106		40-140	6		50
Acenaphthylene	112		104		40-140	7		50
Anthracene	114		108		40-140	5		50
Benzo(ghi)perylene	117		111		40-140	5		50
Fluorene	114		106		40-140	7		50
Phenanthrene	111		103		40-140	7		50
Dibenzo(a,h)anthracene	117		111		40-140	5		50
Indeno(1,2,3-cd)pyrene	121		116		40-140	4		50
Pyrene	113		104		35-142	8		50
Aniline	88		75		40-140	16		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01 Batch: WG2239918-2 WG2239918-3								
Dibenzofuran	105		97		40-140	8		50
Pentachlorophenol	**110**	Q	100		17-109	10		50
Phenol	**122**	Q	**113**	Q	26-90	8		50
2-Methylphenol	123		116		30-130	6		50
3-Methylphenol/4-Methylphenol	125		117		30-130	7		50
1,4-Dioxane	82		76		40-140	8		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	114		107		25-120
Phenol-d6	**131**	Q	**122**	Q	10-120
Nitrobenzene-d5	**124**	Q	116		23-120
2-Fluorobiphenyl	95		90		30-120
2,4,6-Tribromophenol	118		108		10-136
4-Terphenyl-d14	103		95		18-120

METALS

Project Name: 5 FLINT ST.
Lab Number: L2641561
Project Number: 4694.0001B000
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641561-01
Client ID: 5FS-SW-12E (12-14)
Sample Location: Not Specified
Date Collected: 07/01/26 10:00
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 78%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6610		mg/kg	9.80	3.18	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	4.90	3.77	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Arsenic, Total	5.13		mg/kg	0.980	0.423	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Barium, Total	32.0		mg/kg	0.980	0.104	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.381	J	mg/kg	0.490	0.054	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.280	J	mg/kg	0.980	0.054	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Calcium, Total	1810		mg/kg	9.80	5.56	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Chromium, Total	9.82		mg/kg	0.980	0.831	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Cobalt, Total	6.77		mg/kg	1.96	0.243	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Copper, Total	15.6		mg/kg	0.980	0.222	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Iron, Total	15800		mg/kg	24.5	7.84	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Lead, Total	8.70		mg/kg	4.90	0.233	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Magnesium, Total	2580		mg/kg	9.80	1.60	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Manganese, Total	484		mg/kg	0.980	0.525	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Mercury, Total	ND		mg/kg	0.085	0.055	1	07/10/26 16:52	07/10/26 19:22	EPA 7471B	1,7471B	CME
Nickel, Total	17.8		mg/kg	2.45	0.792	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Potassium, Total	431		mg/kg	245	49.7	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	1.96	0.322	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Silver, Total	ND		mg/kg	0.490	0.292	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Sodium, Total	ND		mg/kg	196	104.	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	1.96	0.884	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Vanadium, Total	12.1		mg/kg	0.980	0.148	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF
Zinc, Total	52.9		mg/kg	4.90	0.594	2	07/10/26 15:38	07/11/26 06:42	EPA 3050B	1,6010D	JMF

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641561
Report Date: 07/14/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG2239850-1										
Aluminum, Total	ND		mg/kg	4.00	1.30	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Antimony, Total	ND		mg/kg	2.00	1.54	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Arsenic, Total	ND		mg/kg	0.400	0.173	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Barium, Total	0.101	J	mg/kg	0.400	0.042	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Beryllium, Total	ND		mg/kg	0.200	0.022	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Cadmium, Total	ND		mg/kg	0.400	0.022	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Calcium, Total	32.7		mg/kg	4.00	2.27	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Chromium, Total	ND		mg/kg	0.400	0.339	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Cobalt, Total	ND		mg/kg	0.800	0.099	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Copper, Total	0.157	J	mg/kg	0.400	0.091	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Iron, Total	9.18	J	mg/kg	10.0	3.20	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Lead, Total	ND		mg/kg	2.00	0.095	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Magnesium, Total	3.64	J	mg/kg	4.00	0.652	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Manganese, Total	ND		mg/kg	0.400	0.214	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Nickel, Total	0.686	J	mg/kg	1.00	0.323	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Potassium, Total	ND		mg/kg	100	20.3	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Selenium, Total	ND		mg/kg	0.800	0.132	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Silver, Total	ND		mg/kg	0.200	0.119	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Sodium, Total	ND		mg/kg	80.0	42.4	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Thallium, Total	ND		mg/kg	0.800	0.361	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Vanadium, Total	ND		mg/kg	0.400	0.060	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Zinc, Total	0.610	J	mg/kg	2.00	0.242	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01 Batch: WG2239853-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	07/10/26 16:52	07/10/26 19:06	1,7471B	CME

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641561
Report Date: 07/14/26

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2239850-2								
Aluminum, Total	104		-		80-120	-		20
Antimony, Total	106		-		80-120	-		20
Arsenic, Total	101		-		80-120	-		20
Barium, Total	107		-		80-120	-		20
Beryllium, Total	109		-		80-120	-		20
Cadmium, Total	101		-		80-120	-		20
Calcium, Total	115		-		80-120	-		20
Chromium, Total	103		-		80-120	-		20
Cobalt, Total	104		-		80-120	-		20
Copper, Total	105		-		80-120	-		20
Iron, Total	113		-		80-120	-		20
Lead, Total	104		-		80-120	-		20
Magnesium, Total	107		-		80-120	-		20
Manganese, Total	111		-		80-120	-		20
Nickel, Total	108		-		80-120	-		20
Potassium, Total	111		-		80-120	-		20
Selenium, Total	101		-		80-120	-		20
Silver, Total	96		-		80-120	-		20
Sodium, Total	111		-		80-120	-		20
Thallium, Total	99		-		80-120	-		20
Vanadium, Total	105		-		80-120	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2239850-2					
Zinc, Total	101	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 01 Batch: WG2239853-2					
Mercury, Total	106	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2239850-3 WG2239850-4 QC Sample: L2641964-01 Client ID: MS Sample												
Aluminum, Total	8210	184	7060	**0**	Q	8270	**31**	Q	75-125	16		20
Antimony, Total	ND	45.9	17.7	**38**	Q	16.8	**35**	Q	75-125	5		20
Arsenic, Total	8.40	11	18.6	93		23.5	**130**	Q	75-125	**23**	Q	20
Barium, Total	65.8	184	229	89		266	104		75-125	15		20
Beryllium, Total	0.463J	4.59	4.97	108		5.52	114		75-125	10		20
Cadmium, Total	0.057J	4.86	4.40	90		4.82	94		75-125	9		20
Calcium, Total	10900	918	14700	**414**	Q	19000	**840**	Q	75-125	**26**	Q	20
Chromium, Total	12.3	18.4	27.8	84		31.2	98		75-125	12		20
Cobalt, Total	5.17	45.9	41.6	79		44.8	82		75-125	7		20
Copper, Total	12.0	22.9	36.4	106		40.5	118		75-125	11		20
Iron, Total	15900	91.8	15500	**0**	Q	17400	**1560**	Q	75-125	12		20
Lead, Total	25.0	48.6	64.7	82		80.4	108		75-125	**22**	Q	20
Magnesium, Total	5460	918	8450	**326**	Q	7660	**228**	Q	75-125	10		20
Manganese, Total	315	45.9	414	**216**	Q	501	**386**	Q	75-125	19		20
Nickel, Total	16.0	45.9	58.1	92		63.1	98		75-125	8		20
Potassium, Total	361	918	1270	99		1420	110		75-125	11		20
Selenium, Total	ND	11	10.5	95		11.8	102		75-125	12		20
Silver, Total	ND	4.59	3.76	82		4.10	85		75-125	9		20
Sodium, Total	1070	918	1620	**60**	Q	2170	114		75-125	**29**	Q	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2239850-3 WG2239850-4 QC Sample: L2641964-01 Client ID: MS Sample												
Thallium, Total	ND	11	10.4	94		11.5	99		75-125	10		20
Vanadium, Total	11.6	45.9	55.5	96		61.0	102		75-125	9		20
Zinc, Total	72.4	45.9	99.4	**59**	Q	131	122		75-125	**27**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01 QC Batch ID: WG2239853-3 WG2239853-4 QC Sample: L2641964-01 Client ID: MS Sample												
Mercury, Total	ND	1.56	1.70	109		2.02	109		80-120	17		20

INORGANICS
&
MISCELLANEOUS

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641561-01
Client ID: 5FS-SW-12E (12-14)
Sample Location: Not Specified

Date Collected: 07/01/26 10:00
Date Received: 07/01/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	77.6		%	0.100	NA	1	-	07/10/26 19:51	121,2540G	FGA
Cyanide, Total	ND		mg/kg	1.3	0.27	1	07/12/26 12:10	07/13/26 13:14	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	1.03	0.206	1	07/10/26 13:27	07/11/26 13:11	1,7196A	OJP

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG2239851-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	07/10/26 13:27	07/11/26 13:11	1,7196A	OJP
General Chemistry - Westborough Lab for sample(s): 01 Batch: WG2240333-1										
Cyanide, Total	ND		mg/kg	0.83	0.18	1	07/12/26 12:10	07/13/26 13:08	1,9010C/9012B	JER

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG2239851-2								
Chromium, Hexavalent	97		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01 Batch: WG2240333-2 WG2240333-3								
Cyanide, Total	80		92		80-120	21		35

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2239851-4 WG2239851-5 QC Sample: L2641964-01 Client ID: MS Sample												
Chromium, Hexavalent	ND	1070	1030	96		1160	81		75-125	15		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2240333-4 WG2240333-5 QC Sample: L2641964-01 Client ID: MS Sample												
Cyanide, Total	ND	12	13	110		12	100		75-125	10		35
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2240333-6 WG2240333-7 QC Sample: L2643679-22 Client ID: MS Sample												
Cyanide, Total	ND	12	12	100		13	110		75-125	10		35

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT ST.

Project Number: 4694.0001B000

Lab Number: L2641561

Report Date: 07/14/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2239851-7 QC Sample: L2641964-01 Client ID: DUP Sample						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01 QC Batch ID: WG2240045-1 QC Sample: L2643227-02 Client ID: DUP Sample						
Solids, Total	85.3	89.3	%	5		10

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641561
Report Date: 07/14/26

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(*)
L2641561-01A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641561-01B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641561-01C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641561-01D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),TS(7),HEXCR-7196(30)
L2641561-01E	Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),CR-TI(180),TL-TI(180),PB-TI(180),ZN-TI(180),CU-TI(180),SB-TI(180),SE-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MG-TI(180),MN-TI(180),HG-T(28),CD-TI(180),K-TI(180),CA-TI(180),NA-TI(180)
L2641561-01F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),TS(7),HEXCR-7196(30)
L2641561-01G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),TS(7),HEXCR-7196(30)
L2641561-01X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641561-01Y	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 06:52	NYTCL-8260HLW-R2(14)
L2641561-01Z	Vial Water preserved split	NA	NA			Y	Absent	02-JUL-26 06:52	NYTCL-8260HLW-R2(14)
L2641561-02A	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2641561-02B	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT ST.	**Lab Number:**	L2641561
Project Number:	4694.0001B000	**Report Date:**	07/14/26

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:	5 FLINT ST.	**Lab Number:**	L2641561
Project Number:	4694.0001B000	**Report Date:**	07/14/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT ST.	**Lab Number:**	L2641561
Project Number:	4694.0001B000	**Report Date:**	07/14/26

Data Qualifiers

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: 5 FLINT ST. **Lab Number:** L2641561

Project Number: 4694.0001B000 **Report Date:** 07/14/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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 504.1: EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,**.

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, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water
EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water
SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY KY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NV MA00030, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

ON HOLD!

L2691561

07/02/26

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

LAB USE ONLY- Affix Workorder/Login Label Here

Scan QR Code for instructions

Company Name: Roux

Street Address: 5 Flint St, ~~10 Flint Street~~, Rochester, NY

Customer Project #: 4880.0001B000 46094.0001B000

Project Name: ~~10 Flint Street - PDI Phase 2 Sampling~~ 5 Flint St

Site Collection Info/Facility ID (as applicable):

Contact/Report To: Eric Runstrom

Phone #: 781.569.4031

E-Mail: erunstrom@rouxinc.com, stanlenine@rouxinc.com

Cc E-Mail: akarivan@rouxinc.com

Invoice to: Roux

Invoice E-mail: rouxap@rouxinc.com

Purchase Order # (if applicable):

Quote #: 00203091

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET

County / State origin of sample(s): Monroe County, New York

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [X] EQUIS [X] Other Roux MA EDD

Regulatory Program (DW, RCRA, etc.) as applicable: Part 375, Table 6.8 (a), please include TICS for both VOCs and SVOCs. Category B deliverable.

Reportable [X] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other _____

Date Results Requested: 5 day TAT

DW PWSID # or WW Permit # as applicable:

Field Filtered (if applicable): [ ] Yes [X] No

Analysis:

Specify Container Size **: 6 10

Identify Container Preservative Type***: 8 11

Analysis Requested

**Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other

*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod. Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

* Matrix Codes (Insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

Customer Sample ID	Matrix*	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs + TICS 8260C	SVOCs + TICS (6270)	TAL Metals + total cyanide + tri and hexa Chromium (6010D)	Sample Comment
SFS - SW-12E (12-14)	Soil	G	N/A	N/A	7/1/26	10:00	7	N/A	N/A	X	X	X	HOLD
Trip Blank	Soil	G	N/A	N/A	7/1/26	8:00	3	N/A	N/A	X			

Lab Use Only: Proj. Mgr: ; AcctNum / Client ID: ; Table #: ; Profile / Template: ; Prelog / Bottle Ord. ID:

Preservation non-conformance identified for samples.

Additional Instructions from Pace®:

Collected By: Printed Name: Shannon Keenan Signature:

Customer Remarks / Special Conditions / Possible Hazards: NA

Coolers: Thermometer ID: Correction Factor (°C): Obs. Temp (°C): Corrected Temp (°C): [ ] On Ice

Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time	Tracking Number:
ROUX	7/1/26 1541	Pace Roch Svc Ctr	7/1/26 1541	
Roc S/C	7.1.26 18:00		7.1.26 18:00	Delivered by: [ ] In-Person [ ] Courier
	7.1.26 19:30		7.1 2300	[ ] FedEx [ ] UPS [ ] Other
	7.2 2:20		07/02/26 02:30	Page: of

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

ENV-FRM-CORO-0018_v02_110123 ©

Sample Delivery Group Summary

Pace Job Number : L2641561

Account Name : Roux
Project Number : 4694.0001B000
Project Name : 5 FLINT ST.

Received : 01-JUL-2026
Reviewer : Gregory Ramos

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	3.2	

Condition Information

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

Volatile Organics/VPH

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

ANALYTICAL REPORT

Lab Number:	L2641963
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT ST.
Project Number:	4694.0001B000
Report Date:	07/10/26

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

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641963
Report Date: 07/10/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2641963-01	5FS-PE-3 (0-2)	SOIL	Not Specified	07/02/26 08:40	07/02/26
L2641963-02	5FS-PE-3B (4-5)	SOIL	Not Specified	07/02/26 10:00	07/02/26
L2641963-03	5FS-PE-3B (12-14)	SOIL	Not Specified	07/02/26 10:15	07/02/26
L2641963-04	TRIP BLANK	WATER	Not Specified	07/02/26 00:00	07/02/26

Project Name:	5 FLINT ST.	**Lab Number:**	L2641963
Project Number:	4694.0001B000	**Report Date:**	07/10/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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:	5 FLINT ST.	**Lab Number:**	L2641963
Project Number:	4694.0001B000	**Report Date:**	07/10/26

Case Narrative (continued)

Report Submission

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

Volatile Organics

L2641963-04: The Trip Blank has a concentration above the reporting limit for Acetone; however, it is within the method allowances for common laboratory contaminants. The associated samples are reported and no qualification of the results is required.

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: Cristin Walker

Title: Technical Director/Representative Date: 07/10/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT ST.

Project Number: 4694.0001B000

Lab Number: L2641963

Report Date: 07/10/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Organics by EPA 5035/8260 Low - Westborough Lab								
8260D	Batch QC	WG2238042-3	1,1-Dichloroethane	LCS	160	70-130	01-03	potential high bias
8260D	Batch QC	WG2238042-4	1,1-Dichloroethane	LCSD	34	70-130	01-03	non-directional bias

ORGANICS

VOLATILES

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641963
Report Date: 07/10/26

SAMPLE RESULTS

Lab ID: L2641963-01
Client ID: 5FS-PE-3 (0-2)
Sample Location: Not Specified
Date Collected: 07/02/26 08:40
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/06/26 13:39
Analyst: BAD
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.1	2.3	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.15	1
Chloroform	0.63	J	ug/kg	1.5	0.14	1
Carbon tetrachloride	ND		ug/kg	1.0	0.24	1
Tetrachloroethene	ND		ug/kg	0.51	0.20	1
Chlorobenzene	ND		ug/kg	0.51	0.13	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.26	1
1,1,1-Trichloroethane	ND		ug/kg	0.51	0.17	1
Benzene	ND		ug/kg	0.51	0.17	1
Toluene	ND		ug/kg	1.0	0.56	1
Ethylbenzene	ND		ug/kg	1.0	0.14	1
Vinyl chloride	ND		ug/kg	1.0	0.34	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.24	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14	1
Trichloroethene	ND		ug/kg	0.51	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.0	0.20	1
p/m-Xylene	ND		ug/kg	2.0	0.57	1
o-Xylene	ND		ug/kg	1.0	0.30	1
Xylenes, Total	ND		ug/kg	1.0	0.30	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Acetone	ND		ug/kg	10	4.9	1
2-Butanone	ND		ug/kg	10	2.3	1
n-Butylbenzene	ND		ug/kg	1.0	0.17	1
sec-Butylbenzene	ND		ug/kg	1.0	0.15	1
tert-Butylbenzene	ND		ug/kg	2.0	0.12	1

Project Name: 5 FLINT ST.
Lab Number: L2641963
Project Number: 4694.0001B000
Report Date: 07/10/26

SAMPLE RESULTS

Lab ID: L2641963-01
Client ID: 5FS-PE-3 (0-2)
Sample Location: Not Specified
Date Collected: 07/02/26 08:40
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.0	0.18	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.20	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.34	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	118		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	107		70-130

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641963
Report Date: 07/10/26

SAMPLE RESULTS

Lab ID: L2641963-02
Client ID: 5FS-PE-3B (4-5)
Sample Location: Not Specified
Date Collected: 07/02/26 10:00
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/06/26 14:06
Analyst: BAD
Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.1	2.3	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.15	1
Chloroform	0.73	J	ug/kg	1.5	0.14	1
Carbon tetrachloride	ND		ug/kg	1.0	0.23	1
Tetrachloroethene	ND		ug/kg	0.51	0.20	1
Chlorobenzene	ND		ug/kg	0.51	0.13	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.26	1
1,1,1-Trichloroethane	ND		ug/kg	0.51	0.17	1
Benzene	ND		ug/kg	0.51	0.17	1
Toluene	ND		ug/kg	1.0	0.55	1
Ethylbenzene	ND		ug/kg	1.0	0.14	1
Vinyl chloride	ND		ug/kg	1.0	0.34	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.24	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14	1
Trichloroethene	ND		ug/kg	0.51	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17	1
Methyl tert butyl ether	ND		ug/kg	2.0	0.20	1
p/m-Xylene	ND		ug/kg	2.0	0.57	1
o-Xylene	ND		ug/kg	1.0	0.29	1
Xylenes, Total	ND		ug/kg	1.0	0.29	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Acetone	55		ug/kg	10	4.9	1
2-Butanone	6.3	J	ug/kg	10	2.2	1
n-Butylbenzene	ND		ug/kg	1.0	0.17	1
sec-Butylbenzene	ND		ug/kg	1.0	0.15	1
tert-Butylbenzene	ND		ug/kg	2.0	0.12	1

Project Name: 5 FLINT ST. **Lab Number:** L2641963

Project Number: 4694.0001B000 **Report Date:** 07/10/26

SAMPLE RESULTS

Lab ID: L2641963-02 Date Collected: 07/02/26 10:00

Client ID: 5FS-PE-3B (4-5) Date Received: 07/02/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.0	0.17	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.20	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.34	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	122		70-130
Toluene-d8	109		70-130
4-Bromofluorobenzene	108		70-130
Dibromofluoromethane	113		70-130

Project Name: 5 FLINT ST. **Lab Number:** L2641963

Project Number: 4694.0001B000 **Report Date:** 07/10/26

SAMPLE RESULTS

Lab ID: L2641963-03 Date Collected: 07/02/26 10:15

Client ID: 5FS-PE-3B (12-14) Date Received: 07/02/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Matrix: Soil

Analytical Method: 1,8260D

Analytical Date: 07/06/26 14:33

Analyst: BAD

Percent Solids: 80%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.9	2.7	1
1,1-Dichloroethane	ND		ug/kg	1.2	0.17	1
Chloroform	0.85	J	ug/kg	1.8	0.16	1
Carbon tetrachloride	ND		ug/kg	1.2	0.27	1
Tetrachloroethene	ND		ug/kg	0.59	0.23	1
Chlorobenzene	ND		ug/kg	0.59	0.15	1
1,2-Dichloroethane	ND		ug/kg	1.2	0.30	1
1,1,1-Trichloroethane	ND		ug/kg	0.59	0.20	1
Benzene	ND		ug/kg	0.59	0.20	1
Toluene	ND		ug/kg	1.2	0.64	1
Ethylbenzene	ND		ug/kg	1.2	0.16	1
Vinyl chloride	ND		ug/kg	1.2	0.39	1
1,1-Dichloroethene	ND		ug/kg	1.2	0.28	1
trans-1,2-Dichloroethene	ND		ug/kg	1.8	0.16	1
Trichloroethene	ND		ug/kg	0.59	0.16	1
1,2-Dichlorobenzene	ND		ug/kg	2.4	0.17	1
1,3-Dichlorobenzene	ND		ug/kg	2.4	0.17	1
1,4-Dichlorobenzene	ND		ug/kg	2.4	0.20	1
Methyl tert butyl ether	ND		ug/kg	2.4	0.24	1
p/m-Xylene	ND		ug/kg	2.4	0.66	1
o-Xylene	ND		ug/kg	1.2	0.34	1
Xylenes, Total	ND		ug/kg	1.2	0.34	1
cis-1,2-Dichloroethene	ND		ug/kg	1.2	0.20	1
Acetone	32		ug/kg	12	5.6	1
2-Butanone	3.3	J	ug/kg	12	2.6	1
n-Butylbenzene	ND		ug/kg	1.2	0.20	1
sec-Butylbenzene	ND		ug/kg	1.2	0.17	1
tert-Butylbenzene	ND		ug/kg	2.4	0.14	1

Project Name: 5 FLINT ST. **Lab Number:** L2641963

Project Number: 4694.0001B000 **Report Date:** 07/10/26

SAMPLE RESULTS

Lab ID: L2641963-03 Date Collected: 07/02/26 10:15

Client ID: 5FS-PE-3B (12-14) Date Received: 07/02/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.2	0.20	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.4	0.23	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.4	0.39	1
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	119		70-130
Toluene-d8	107		70-130
4-Bromofluorobenzene	104		70-130
Dibromofluoromethane	113		70-130

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641963
Report Date: 07/10/26

SAMPLE RESULTS

Lab ID: L2641963-04
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 07/02/26 00:00
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/07/26 17:43
Analyst: BAD

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
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	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
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
Vinyl chloride	ND		ug/l	1.0	0.07	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
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	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Acetone	7.8		ug/l	5.0	1.5	1
2-Butanone	ND		ug/l	5.0	1.9	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

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641963
Report Date: 07/10/26

SAMPLE RESULTS

Lab ID: L2641963-04
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 07/02/26 00:00
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by GC/MS - Westborough Lab						
n-Propylbenzene	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
Tentatively Identified Compounds						
No Tentatively Identified Compounds	ND		ug/l			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	123		70-130
Toluene-d8	86		70-130
4-Bromofluorobenzene	78		70-130
Dibromofluoromethane	122		70-130

Project Name: 5 FLINT ST. **Lab Number:** L2641963

Project Number: 4694.0001B000 **Report Date:** 07/10/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/06/26 11:22
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 01-03 Batch: WG2238042-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	0.92	J	ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8

Project Name: 5 FLINT ST. **Lab Number:** L2641963

Project Number: 4694.0001B000 **Report Date:** 07/10/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/06/26 11:22
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 Low - Westborough Lab for sample(s): 01-03 Batch: WG2238042-5					
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	108		70-130
4-Bromofluorobenzene	102		70-130
Dibromofluoromethane	104		70-130

Project Name: 5 FLINT ST. **Lab Number:** L2641963

Project Number: 4694.0001B000 **Report Date:** 07/10/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/07/26 09:13
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG2238774-5					
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
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	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
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
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
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Acetone	ND		ug/l	5.0	1.5

Project Name: 5 FLINT ST. **Lab Number:** L2641963

Project Number: 4694.0001B000 **Report Date:** 07/10/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/07/26 09:13
Analyst: PID

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 04 Batch: WG2238774-5					
2-Butanone	ND		ug/l	5.0	1.9
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
n-Propylbenzene	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
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/l		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	117		70-130
Toluene-d8	87		70-130
4-Bromofluorobenzene	82		70-130
Dibromofluoromethane	116		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641963
Report Date: 07/10/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 01-03 Batch: WG2238042-3 WG2238042-4								
Methylene chloride	112		107		70-130	5		30
1,1-Dichloroethane	**160**	Q	113		70-130	**34**	Q	30
Chloroform	108		102		70-130	6		30
Carbon tetrachloride	108		100		70-130	8		30
Tetrachloroethene	118		109		70-130	8		30
Chlorobenzene	116		110		70-130	5		30
1,2-Dichloroethane	113		114		70-130	1		30
1,1,1-Trichloroethane	111		104		70-130	7		30
Benzene	122		117		70-130	4		30
Toluene	118		113		70-130	4		30
Ethylbenzene	116		111		70-130	4		30
Vinyl chloride	129		119		67-130	8		30
1,1-Dichloroethene	110		106		65-135	4		30
trans-1,2-Dichloroethene	107		104		70-130	3		30
Trichloroethene	118		112		70-130	5		30
1,2-Dichlorobenzene	107		102		70-130	5		30
1,3-Dichlorobenzene	111		104		70-130	7		30
1,4-Dichlorobenzene	110		105		70-130	5		30
Methyl tert butyl ether	116		116		66-130	0		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641963
Report Date: 07/10/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 Low - Westborough Lab Associated sample(s): 01-03 Batch: WG2238042-3 WG2238042-4								
p/m-Xylene	116		112		70-130	4		30
o-Xylene	110		106		70-130	4		30
cis-1,2-Dichloroethene	105		101		70-130	4		30
Acetone	111		115		54-140	4		30
2-Butanone	91		100		70-130	9		30
n-Butylbenzene	120		114		70-130	5		30
sec-Butylbenzene	114		107		70-130	6		30
tert-Butylbenzene	108		101		70-130	7		30
n-Propylbenzene	122		111		70-130	9		30
1,3,5-Trimethylbenzene	113		106		70-130	6		30
1,2,4-Trimethylbenzene	111		106		70-130	5		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	110		110		70-130
Toluene-d8	106		108		70-130
4-Bromofluorobenzene	110		101		70-130
Dibromofluoromethane	100		100		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641963
Report Date: 07/10/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG2238774-3 WG2238774-4								
Methylene chloride	98		93		70-130	5		20
1,1-Dichloroethane	110		110		70-130	0		20
Chloroform	100		100		70-130	0		20
Carbon tetrachloride	130		120		63-132	8		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	96		97		75-130	1		20
1,2-Dichloroethane	120		110		70-130	9		20
1,1,1-Trichloroethane	120		110		67-130	9		20
Benzene	100		100		70-130	0		20
Toluene	89		87		70-130	2		20
Ethylbenzene	90		88		70-130	2		20
Vinyl chloride	98		95		55-140	3		20
1,1-Dichloroethene	100		100		61-145	0		20
trans-1,2-Dichloroethene	100		100		70-130	0		20
Trichloroethene	100		100		70-130	0		20
1,2-Dichlorobenzene	100		98		70-130	2		20
1,3-Dichlorobenzene	100		97		70-130	3		20
1,4-Dichlorobenzene	100		95		70-130	5		20
Methyl tert butyl ether	91		94		63-130	3		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641963
Report Date: 07/10/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 04 Batch: WG2238774-3 WG2238774-4								
p/m-Xylene	95		95		70-130	0		20
o-Xylene	95		95		70-130	0		20
cis-1,2-Dichloroethene	100		96		70-130	4		20
Acetone	90		100		58-148	11		20
2-Butanone	120		110		63-138	9		20
n-Butylbenzene	85		82		53-136	4		20
sec-Butylbenzene	94		89		70-130	5		20
tert-Butylbenzene	99		93		70-130	6		20
n-Propylbenzene	87		83		69-130	5		20
1,3,5-Trimethylbenzene	89		86		64-130	3		20
1,2,4-Trimethylbenzene	87		83		70-130	5		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	118		120		70-130
Toluene-d8	88		88		70-130
4-Bromofluorobenzene	79		77		70-130
Dibromofluoromethane	113		113		70-130

INORGANICS
&
MISCELLANEOUS

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641963
Report Date: 07/10/26

SAMPLE RESULTS

Lab ID: L2641963-01
Client ID: 5FS-PE-3 (0-2)
Sample Location: Not Specified

Date Collected: 07/02/26 08:40
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.2		%	0.100	NA	1	-	07/09/26 10:16	121,2540G	ROI

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641963
Report Date: 07/10/26

SAMPLE RESULTS

Lab ID: L2641963-02
Client ID: 5FS-PE-3B (4-5)
Sample Location: Not Specified

Date Collected: 07/02/26 10:00
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	80.2		%	0.100	NA	1	-	07/09/26 10:16	121,2540G	ROI

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641963
Report Date: 07/10/26

SAMPLE RESULTS

Lab ID: L2641963-03
Client ID: 5FS-PE-3B (12-14)
Sample Location: Not Specified

Date Collected: 07/02/26 10:15
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	79.5		%	0.100	NA	1	-	07/09/26 10:16	121,2540G	ROI

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT ST.

Project Number: 4694.0001B000

Lab Number: L2641963

Report Date: 07/10/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-03 QC Batch ID: WG2239202-1 QC Sample: L2642923-01 Client ID: DUP Sample						
Solids, Total	85.8	85.8	%	0		10

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641963
Report Date: 07/10/26

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(*)
L2641963-01A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-01B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-01C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-01D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2641963-01X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-01Y	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641963-01Z	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641963-02A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-02B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-02C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-02D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2641963-02X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-02Y	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641963-02Z	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641963-03A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-03B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-03C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-03D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2641963-03X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641963-03Y	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641963-03Z	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641963-04A	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)
L2641963-04B	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260-R2(14)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641963
Report Date: 07/10/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT ST.	**Lab Number:**	L2641963
Project Number:	4694.0001B000	**Report Date:**	07/10/26

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:	5 FLINT ST.	**Lab Number:**	L2641963
Project Number:	4694.0001B000	**Report Date:**	07/10/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT ST.	**Lab Number:**	L2641963
Project Number:	4694.0001B000	**Report Date:**	07/10/26

Data Qualifiers

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: 5 FLINT ST. **Lab Number:** L2641963

Project Number: 4694.0001B000 **Report Date:** 07/10/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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 504.1: EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,**.

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, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water
EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water
SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY KY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NV MA00030, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

NEW YORK CHAIN OF CUSTODY

Pace ANALYTICAL SERVICES

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
Woodcliff Lake, NJ 07677: 123 Tice Blvd, Suite 101
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page of

Date Rec'd in Lab 7/3/26

L2641963
ROUX – BENCH

L2641963

Client Information

Client: ROUX
Address: 42 S Washington St
Rochester, NY
Phone: 781-569-4031
Fax:
Email: NBarrientos@Rouxinc.com

Project Information

Project Name: 5 Flint St
Project Location: 5 Flint St
Project #: 46094.0001B000
(Use Project name as Project #) ☐
Project Manager: Eric Burstrom
PACE Quote #: 00203091

Turn-Around Time

Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days: 5 day TAT

Deliverables

☐ ASP-A ☐ ASP-
☐ EQuIS (1 File) ☒ EQuIS
☒ Other ROUX MA EDD

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 Pace ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

ANALYSIS

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

PACE Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs + TICs (8260)	SVOC + TICs (8270)	TAL Metals + Total Cyanide + Hg (6010D)	Total Bottle	Sample Specific Comments
41963-1	SFS-PE-3 (0-2)	7/2/26	8:40	Soil	SK	X				
-2	SFS-PE-3B (4-5)	7/2/26	10:00	Soil	SK	X				
-3	SFS-PE-3B (12-14)	7/2/26	10:15	Soil	SK	X				
-4	Trip Blank	7/2/26	8:00	AQ	SK	X				

Container Type: E
Preservative: A

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

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	7/2/26 1420	W Mot Pace	7/2/26 1424
W Mot Pace	7/2/26 1426	Roux s/c Pace	7/2/26 1426
Roux S/C	7.2.26 18:00	NORMN	7.2.26 18:00
NORMN	7.2.26 19:20	Pace	7.2 2320
Pace	7.3 1:40	[signature]	7/3/26 1:40

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 PACE'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 29-Jan-2025)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION

STANDBY CONTRACTOR AUTHORIZATION FORM

For Standby Response, Investigation & Remediation, and Laboratory Services

General Information

Region: 8 Spill No.: 2602807 **CallOut ID:** 154082

CallOut Date: 06/30/2026

Contract No.: C100913 **PIN (if applicable):** 11537

Contractor Selected: PACE ANALYTICAL SERVICES, LLC

Spill Information - **Name:** TOYOTA OF BATAVIA LEAKING DRUM **County:** Genesee
Address: 3899 WEST MAIN STREET ROAD, BATAVIA

SCOPE OF WORK (Provide brief detailed description):

6/30/26

TOYOTA OF BATAVIA LEAKING DRUMS. NYSDEC SPILL #2602807. CALLOUT #11537

1 SAMPLING EVENT, 1 SAMPLE PER EVENT, SOIL SAMPLE FOR WASTE CHARACTERIZATION: PCB, RCRA 8 Metals (Totals), Flashpoint, Total Halogens (TOX 9020), TCL VOC, TCL SVOC, pH.

CAT A DELIVERABLES, STANDARD TAT

NYSDEC PM: CARLA CRAMPTON 585-991-2799 CARLA.CRAMPTON@DEC.NY.GOV

T&R PM: MONTANA YASTREMSKI 607-661-2297 myastremski@momentumenvironmental.com

ANTICIPATED END DATE OF CALLOUT 7/30/26

Serial_No:07102611:33

ESTIMATED BUDGET: $5,000.00

This serves as authorization to incur costs up to the budgeted amount indicated, to perform the scope of work outlined above in connection with the above-referenced spill/site call out number. The contractor is responsible for immediately notifying the DER project manager if it becomes apparent that the scope of work can not be completed within the budget and/or the scope of work should be amended. The contractor should not incur costs that exceed the budget or perform activities outside the scope of work without the verbal or written approval of the DER project manager. The DER project manager must confirm that approval in writing in an amended Standby Contractor Authorization Form signed by the DER project manager and Rep within two business days.

DER Project Manager Name/Title:

CARLA CRAMPTON
(Print)

CARLA CRAMPTON
Approved Electronically

Date: 7/1/2026

Authorized DER Representative Name/Title:

MICHAEL F. ZAMIARSKI
(Print)

MICHAEL F. ZAMIARSKI
Approved Electronically

Date: 7/1/2026

Serial_No:07102611:33

NEW YORK CHAIN OF CUSTODY

Pace

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
Woodcliff Lake, NJ 07677: 123 Tice Blvd, Suite 101
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page of

Date Rec'd in Lab 7/3/26

L2641963
ROUX – BENCH

L2641963

Project Information

Project Name: 5 Flint St
Project Location: 5 Flint St
Project # 41004.0001B000
(Use Project name as Project #)
Project Manager: Eric Brunstrom
PACE Quote #: 00203091

Client Information

Client: ROUX
Address: 42 S Washington St
Rochester, NY
Phone: 781-519-4031
Fax:
Email: NDBarrientos@Roux.com

Turn-Around Time

Standard ☐ Due Date:
Rush (only if pre approved) ☐ # of Days: 5 day TAT

These samples have been previously analyzed by Pace ☐

Other project specific requirements/comments:

Please specify Metals or TAL.

Deliverables

☐ ASP-A ☐ ASP-
☐ EQuIS (1 File) ☒ EQuIS
☒ Other ROUX MA EDD

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

Sample Filtration

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

PACE Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOCs + TICs (8260)	BNAs + TICs (8270)	TAL Metals + Total Cyanide + Hexavalent Chromium (6010D)	Total Solids (%)	Sample Specific Comments
41963-1	SFS-PE-3 (0-2)	7/2/26	8:40	SO11	SK	X				
-2	SFS-PE-3B (4-5)	7/2/26	10:00	SO11	SK	X			X	
-3	SFS-PE-3B (12-14)	7/2/26	10:15	SO11	SK	X			X	
-4	TRIP BLANK	7/2/26	8:00	AQ	SK	X				

Preservative Code: A = None, B = HCl, C = HNO3, D = H2SO4, E = NaOH, F = MeOH, G = NaHSO4, H = Na2S2O3, I = Zn Ac/NaOH, J = 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: E
Preservative: A

Relinquished By	Date/Time	Received By	Date/Time
[signature]	7/2/26 1426	W Mor Pace	7/2/26 1426
W Mor Pace	7/2/26 1426	Roux SK Pace	7/2/26 1426
Roux SK	7.2.26 18:00	NDBarrientos	7.2.26 18:00
NDBarrientos	7.2.26 19:20	[signature]	7.2 2320
[signature]	7.3 1:40	[signature]	7/3/26 1:40

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 PACE'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 29-Jan-2025)

Rec'd/SECURE STORAGE PACE 7/8/26 | RELINQ/ SECURE STORAGE PACE 7/8/26 1232 | REC'D/ Map PACE ROCH SUCTR 7/8/26 1232

Sample Delivery Group Summary

Pace Job Number : L2641963

Account Name : Roux
Project Number : 4694.0001B000
Project Name : 5 FLINT ST.

Received : 02-JUL-2026
Reviewer : Mohammed Wahed

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	4.8	

Condition Information

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

Volatile Organics/VPH

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

ANALYTICAL REPORT

Lab Number:	L2641964
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT ST.
Project Number:	4694.0001B000
Report Date:	07/14/26

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

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2641964-01	5FS-SW-10E (8-10)	SOIL	Not Specified	07/02/26 12:00	07/02/26
L2641964-02	DUP-2	SOIL	Not Specified	07/02/26 12:15	07/02/26
L2641964-03	TRIP BLANK	WATER	Not Specified	07/02/26 00:00	07/02/26

Project Name:	5 FLINT ST.	**Lab Number:**	L2641964
Project Number:	4694.0001B000	**Report Date:**	07/14/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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:	5 FLINT ST.	**Lab Number:**	L2641964
Project Number:	4694.0001B000	**Report Date:**	07/14/26

Case Narrative (continued)

Report Submission

July 14, 2026: This final report includes the results of the following analyses:

L2641964-01 and -02: Volatile Organics, Semivolatile Organics, Total Metals, Trivalent Chromium, Hexavalent Chromium, and Total Cyanide.

July 09, 2026: This is a preliminary report.

Please note that your project has contingency samples on hold. Contact your project manager to request additional analyses within 3 business days of receiving this report. Requests made after this time frame will be reported separately.

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

Volatile Organics

L2641964-03: The Trip Blank has a concentration above the reporting limit for acetone; however, it is within the method allowances for common laboratory contaminants. The associated samples are reported and no qualification of the results is required.

Total Metals

L2641964-01 and -02: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the sample matrix.

The WG2239850-1 Method Blank associated with L2641964-01 and -02 has a concentration above the reporting limit for calcium. Since the associated sample concentrations are either greater than 10x the blank concentration or non-detect to the RL for this target analyte, no corrective action is required. Any results detected below the reporting limit are qualified with a "B".

The WG2239850-3/-4 MS/MSD recoveries performed on L2641964-01 are outside the acceptance criteria for antimony (38%/35%), arsenic (MSD130%), sodium (MS 60%) and zinc (MS 59%). A post digestion spike was performed and was within acceptance criteria.

Project Name:	5 FLINT ST.	**Lab Number:**	L2641964
Project Number:	4694.0001B000	**Report Date:**	07/14/26

Case Narrative (continued)

The WG2239850-3/-4 MS/MSD recoveries performed on L2641964-01 do not apply for aluminum (0%/31%), calcium (414%/840%), iron (0%/1560%), magnesium (326%/228%) and manganese (216%/386%) because the sample concentrations are greater than four times the spike amounts added.
The WG2239850-3/-4 MS/MSD RPDs performed on L2641964-01 are above the acceptance criteria for arsenic (23%), calcium (26%), lead (22%), sodium (29%) and zinc (27%).

Chromium, Hexavalent
The WG2239851-6 Soluble MS recovery performed on L2641964-01 was outside the acceptance criteria for chromium, hexavalent (74%). This has been attributed to matrix interference. A post-spike was performed with a recovery of 85%.

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: 07/14/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Semivolatile Organics by GC/MS - Westborough Lab								
8270E	5FS-SW-10E (8-10)	L2641964-01	2,4,6-Tribromophenol	Surrogate	157	10-136	-	potential high bias
8270E	DUP-2	L2641964-02	Nitrobenzene-d5	Surrogate	145	23-120	-	potential high bias
8270E	Laboratory Method Bl	WG2239918-1	Phenol-d6	Surrogate	124	10-120	-	potential high bias
8270E	Batch QC	WG2239918-2	Pentachlorophenol	LCS	110	17-109	01-02	potential high bias
8270E	Batch QC	WG2239918-2	Phenol	LCS	122	26-90	01-02	potential high bias
8270E	Batch QC	WG2239918-2	Phenol-d6	Surrogate	131	10-120	-	potential high bias
8270E	Batch QC	WG2239918-2	Nitrobenzene-d5	Surrogate	124	23-120	-	potential high bias
8270E	Batch QC	WG2239918-3	Phenol	LCSD	113	26-90	01-02	potential high bias
8270E	Batch QC	WG2239918-3	Phenol-d6	Surrogate	122	10-120	-	potential high bias
8270E	Batch QC (L2641964-01)	WG2239918-4	Pentachlorophenol	MS	120	17-109	01-02	potential high bias
8270E	Batch QC (L2641964-01)	WG2239918-4	2,4,6-Tribromophenol	Surrogate	138	10-136	-	potential high bias
8270E	Batch QC (L2641964-01)	WG2239918-5	Pentachlorophenol	MSD	130	17-109	01-02	potential high bias
8270E	Batch QC (L2641964-01)	WG2239918-5	2,4,6-Tribromophenol	Surrogate	142	10-136	-	potential high bias
Total Metals - Mansfield Lab								
6010D	Batch QC (L2641964-01)	WG2239850-3	Aluminum, Total	MS	0	75-125	01-02	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Antimony, Total	MS	38	75-125	01-02	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Calcium, Total	MS	414	75-125	01-02	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Iron, Total	MS	0	75-125	01-02	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Magnesium, Total	MS	326	75-125	01-02	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Manganese, Total	MS	216	75-125	01-02	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Sodium, Total	MS	60	75-125	01-02	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-3	Zinc, Total	MS	59	75-125	01-02	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Aluminum, Total	MSD	31	75-125	01-02	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Antimony, Total	MSD	35	75-125	01-02	potential low bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Arsenic, Total	MSD	23	75-125	01-02	non-directional bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Arsenic, Total	MSD	130	75-125	01-02	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Calcium, Total	MSD	26	75-125	01-02	non-directional bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Calcium, Total	MSD	840	75-125	01-02	potential high bias

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT ST.

Project Number: 4694.0001B000

Lab Number: L2641964

Report Date: 07/14/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
6010D	Batch QC (L2641964-01)	WG2239850-4	Iron, Total	MSD	1560	75-125	01-02	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Lead, Total	MSD	22	75-125	01-02	non-directional bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Magnesium, Total	MSD	228	75-125	01-02	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Manganese, Total	MSD	386	75-125	01-02	potential high bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Sodium, Total	MSD	29	75-125	01-02	non-directional bias
6010D	Batch QC (L2641964-01)	WG2239850-4	Zinc, Total	MSD	27	75-125	01-02	non-directional bias

ORGANICS

VOLATILES

Project Name: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-01 D
Client ID: 5FS-SW-10E (8-10)
Sample Location: Not Specified

Date Collected: 07/02/26 12:00
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/12/26 23:33
Analyst: AJK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
Methylene chloride	ND		ug/kg	3100	1400	10
1,1-Dichloroethane	ND		ug/kg	610	89.	10
Chloroform	ND		ug/kg	920	86.	10
Carbon tetrachloride	ND		ug/kg	610	140	10
Tetrachloroethene	ND		ug/kg	310	120	10
Chlorobenzene	ND		ug/kg	310	78.	10
1,2-Dichloroethane	ND		ug/kg	610	160	10
1,1,1-Trichloroethane	ND		ug/kg	310	100	10
Benzene	150	J	ug/kg	310	100	10
Toluene	ND		ug/kg	610	330	10
Ethylbenzene	ND		ug/kg	610	86.	10
Vinyl chloride	ND		ug/kg	610	200	10
1,1-Dichloroethene	ND		ug/kg	610	150	10
trans-1,2-Dichloroethene	ND		ug/kg	920	84.	10
Trichloroethene	ND		ug/kg	310	84.	10
1,2-Dichlorobenzene	ND		ug/kg	1200	88.	10
1,3-Dichlorobenzene	ND		ug/kg	1200	91.	10
1,4-Dichlorobenzene	ND		ug/kg	1200	100	10
Methyl tert butyl ether	ND		ug/kg	1200	120	10
p/m-Xylene	220000		ug/kg	1200	340	10
o-Xylene	360	J	ug/kg	610	180	10
Xylenes, Total	220000	J	ug/kg	610	180	10
cis-1,2-Dichloroethene	ND		ug/kg	610	110	10
Acetone	ND		ug/kg	6100	3000	10
2-Butanone	ND		ug/kg	6100	1400	10
n-Butylbenzene	6700		ug/kg	610	100	10
sec-Butylbenzene	4200		ug/kg	610	90.	10
tert-Butylbenzene	760	J	ug/kg	1200	72.	10

Project Name: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-01 D Date Collected: 07/02/26 12:00

Client ID: 5FS-SW-10E (8-10) Date Received: 07/02/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
n-Propylbenzene	960		ug/kg	610	100	10
1,3,5-Trimethylbenzene	90000		ug/kg	1200	120	10
1,2,4-Trimethylbenzene	160000		ug/kg	1200	200	10
Tentatively Identified Compounds						
Total TIC Compounds	559000	J	ug/kg			10
Unknown Cycloalkane	40800	J	ug/kg			10
Unknown Cycloalkane	63800	J	ug/kg			10
Octane, 2,6-dimethyl-	38400	NJ	ug/kg			10
Unknown	52800	J	ug/kg			10
Unknown Cycloalkane	114000	J	ug/kg			10
Cyclohexane, propyl-	65000	NJ	ug/kg			10
Cyclohexane, ethyl-	67900	NJ	ug/kg			10
Cyclohexane, 1,1-dimethyl-	36700	NJ	ug/kg			10
Unknown	28200	J	ug/kg			10
Unknown	51000	J	ug/kg			10

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	87		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	103		70-130
Dibromofluoromethane	84		70-130

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641964
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-02
Client ID: DUP-2
Sample Location: Not Specified
Date Collected: 07/02/26 12:15
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/12/26 22:54
Analyst: AJK
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
Methylene chloride	ND		ug/kg	270	120	1
1,1-Dichloroethane	ND		ug/kg	54	7.9	1
Chloroform	ND		ug/kg	82	7.6	1
Carbon tetrachloride	ND		ug/kg	54	12.	1
Tetrachloroethene	ND		ug/kg	27	11.	1
Chlorobenzene	ND		ug/kg	27	6.9	1
1,2-Dichloroethane	ND		ug/kg	54	14.	1
1,1,1-Trichloroethane	ND		ug/kg	27	9.1	1
Benzene	ND		ug/kg	27	9.0	1
Toluene	ND		ug/kg	54	30.	1
Ethylbenzene	ND		ug/kg	54	7.7	1
Vinyl chloride	ND		ug/kg	54	18.	1
1,1-Dichloroethene	ND		ug/kg	54	13.	1
trans-1,2-Dichloroethene	ND		ug/kg	82	7.4	1
Trichloroethene	ND		ug/kg	27	7.4	1
1,2-Dichlorobenzene	ND		ug/kg	110	7.8	1
1,3-Dichlorobenzene	ND		ug/kg	110	8.0	1
1,4-Dichlorobenzene	ND		ug/kg	110	9.3	1
Methyl tert butyl ether	ND		ug/kg	110	11.	1
p/m-Xylene	4800		ug/kg	110	30.	1
o-Xylene	40	J	ug/kg	54	16.	1
Xylenes, Total	4800	J	ug/kg	54	16.	1
cis-1,2-Dichloroethene	ND		ug/kg	54	9.5	1
Acetone	ND		ug/kg	540	260	1
2-Butanone	ND		ug/kg	540	120	1
n-Butylbenzene	530		ug/kg	54	9.1	1
sec-Butylbenzene	270		ug/kg	54	7.9	1
tert-Butylbenzene	56	J	ug/kg	110	6.4	1

Project Name: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-02 Date Collected: 07/02/26 12:15

Client ID: DUP-2 Date Received: 07/02/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
n-Propylbenzene	58		ug/kg	54	9.3	1
1,3,5-Trimethylbenzene	6500		ug/kg	110	10.	1
1,2,4-Trimethylbenzene	8500		ug/kg	110	18.	1
Tentatively Identified Compounds						
Total TIC Compounds	59000	J	ug/kg			1
Cyclohexane, propyl-	11000	NJ	ug/kg			1
Unknown	5580	J	ug/kg			1
Unknown Cycloalkane	3950	J	ug/kg			1
Unknown Cycloalkane	3920	J	ug/kg			1
Unknown Alkane	3360	J	ug/kg			1
Cyclohexane, ethyl-	7020	NJ	ug/kg			1
Cyclohexane, 1,1,3-trimethyl-	5520	NJ	ug/kg			1
Unknown Cycloalkane	10400	J	ug/kg			1
Octane, 2,6-dimethyl-	4660	NJ	ug/kg			1
Cyclohexane, butyl-	3580	NJ	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	85		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	105		70-130
Dibromofluoromethane	85		70-130

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641964
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-03
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 07/02/26 00:00
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Water
Analytical Method: 1,8260D
Analytical Date: 07/06/26 19:23
Analyst: GMT

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
Tetrachloroethene	ND		ug/l	0.50	0.18	1
Chlorobenzene	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
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
Vinyl chloride	ND		ug/l	1.0	0.07	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
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	0.17	1
p/m-Xylene	ND		ug/l	2.5	0.70	1
o-Xylene	ND		ug/l	2.5	0.70	1
Xylenes, Total	ND		ug/l	2.5	0.70	1
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70	1
Acetone	11		ug/l	5.0	1.5	1
2-Butanone	ND		ug/l	5.0	1.9	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

Project Name: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-03 Date Collected: 07/02/26 00:00

Client ID: TRIP BLANK Date Received: 07/02/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

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

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	99		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	109		70-130

Project Name: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/06/26 10:40
Analyst: GMT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG2238144-5					
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
Tetrachloroethene	ND		ug/l	0.50	0.18
Chlorobenzene	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
Benzene	ND		ug/l	0.50	0.16
Toluene	ND		ug/l	2.5	0.70
Ethylbenzene	ND		ug/l	2.5	0.70
Vinyl chloride	ND		ug/l	1.0	0.07
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
1,4-Dichlorobenzene	ND		ug/l	2.5	0.70
Methyl tert butyl ether	ND		ug/l	2.5	0.17
p/m-Xylene	ND		ug/l	2.5	0.70
o-Xylene	ND		ug/l	2.5	0.70
Xylenes, Total	ND		ug/l	2.5	0.70
cis-1,2-Dichloroethene	ND		ug/l	2.5	0.70
Acetone	ND		ug/l	5.0	1.5

Project Name: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/06/26 10:40
Analyst: GMT

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 03 Batch: WG2238144-5					
2-Butanone	ND		ug/l	5.0	1.9
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
n-Propylbenzene	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

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	107		70-130
Toluene-d8	101		70-130
4-Bromofluorobenzene	98		70-130
Dibromofluoromethane	110		70-130

Project Name: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/12/26 16:32
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 01-02 Batch: WG2240624-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	34	J	ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Vinyl chloride	ND		ug/kg	50	17.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8
Trichloroethene	ND		ug/kg	25	6.8
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
Acetone	ND		ug/kg	500	240

Project Name: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/12/26 16:32
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 01-02 Batch: WG2240624-5					
2-Butanone	ND		ug/kg	500	110
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
n-Propylbenzene	ND		ug/kg	50	8.6
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.
Tentatively Identified Compounds					
No Tentatively Identified Compounds	ND		ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	106		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	109		70-130
Dibromofluoromethane	118		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG2238144-3 WG2238144-4								
Methylene chloride	110		110		70-130	0		20
1,1-Dichloroethane	130		130		70-130	0		20
Chloroform	110		110		70-130	0		20
Carbon tetrachloride	120		120		63-132	0		20
Tetrachloroethene	110		110		70-130	0		20
Chlorobenzene	110		110		75-130	0		20
1,2-Dichloroethane	110		110		70-130	0		20
1,1,1-Trichloroethane	120		120		67-130	0		20
Benzene	110		110		70-130	0		20
Toluene	110		110		70-130	0		20
Ethylbenzene	110		110		70-130	0		20
Vinyl chloride	130		130		55-140	0		20
1,1-Dichloroethene	130		130		61-145	0		20
trans-1,2-Dichloroethene	120		120		70-130	0		20
Trichloroethene	100		100		70-130	0		20
1,2-Dichlorobenzene	110		110		70-130	0		20
1,3-Dichlorobenzene	110		110		70-130	0		20
1,4-Dichlorobenzene	110		110		70-130	0		20
Methyl tert butyl ether	110		110		63-130	0		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 03 Batch: WG2238144-3 WG2238144-4								
p/m-Xylene	115		115		70-130	0		20
o-Xylene	110		110		70-130	0		20
cis-1,2-Dichloroethene	120		110		70-130	9		20
Acetone	110		110		58-148	0		20
2-Butanone	96		93		63-138	3		20
n-Butylbenzene	100		100		53-136	0		20
sec-Butylbenzene	100		110		70-130	10		20
tert-Butylbenzene	110		120		70-130	9		20
n-Propylbenzene	110		110		69-130	0		20
1,3,5-Trimethylbenzene	110		110		64-130	0		20
1,2,4-Trimethylbenzene	110		110		70-130	0		20

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	105		104		70-130
Toluene-d8	104		103		70-130
4-Bromofluorobenzene	96		96		70-130
Dibromofluoromethane	109		107		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 01-02 Batch: WG2240624-3 WG2240624-4								
Methylene chloride	110		93		70-130	17		30
1,1-Dichloroethane	114		94		70-130	19		30
Chloroform	108		92		70-130	16		30
Carbon tetrachloride	127		104		70-130	20		30
Tetrachloroethene	120		103		70-130	15		30
Chlorobenzene	113		100		70-130	12		30
1,2-Dichloroethane	106		94		70-130	12		30
1,1,1-Trichloroethane	126		104		70-130	19		30
Benzene	112		96		70-130	15		30
Toluene	113		100		70-130	12		30
Ethylbenzene	113		98		70-130	14		30
Vinyl chloride	105		78		67-130	30		30
1,1-Dichloroethene	111		87		65-135	24		30
trans-1,2-Dichloroethene	117		94		70-130	22		30
Trichloroethene	119		103		70-130	14		30
1,2-Dichlorobenzene	111		101		70-130	9		30
1,3-Dichlorobenzene	112		102		70-130	9		30
1,4-Dichlorobenzene	110		100		70-130	10		30
Methyl tert butyl ether	103		95		66-130	8		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 01-02 Batch: WG2240624-3 WG2240624-4								
p/m-Xylene	113		100		70-130	12		30
o-Xylene	110		100		70-130	10		30
cis-1,2-Dichloroethene	109		92		70-130	17		30
Acetone	132		104		54-140	24		30
2-Butanone	88		82		70-130	7		30
n-Butylbenzene	108		91		70-130	17		30
sec-Butylbenzene	119		102		70-130	15		30
tert-Butylbenzene	119		104		70-130	13		30
n-Propylbenzene	115		100		70-130	14		30
1,3,5-Trimethylbenzene	104		92		70-130	12		30
1,2,4-Trimethylbenzene	102		90		70-130	13		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	95		93		70-130
Toluene-d8	104		104		70-130
4-Bromofluorobenzene	101		104		70-130
Dibromofluoromethane	101		98		70-130

SEMIVOLATILES

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641964
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-01
Client ID: 5FS-SW-10E (8-10)
Sample Location: Not Specified
Date Collected: 07/02/26 12:00
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/11/26 10:09
Analyst: CMM
Percent Solids: 82%
Extraction Method: EPA 3546
Extraction Date: 07/10/26 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	21.	1
Hexachlorobenzene	ND		ug/kg	120	23.	1
Fluoranthene	59	J	ug/kg	120	23.	1
Naphthalene	140	J	ug/kg	200	25.	1
Nitrobenzene	ND		ug/kg	40	18.	1
Benzo(a)anthracene	27	J	ug/kg	120	23.	1
Benzo(a)pyrene	ND		ug/kg	160	49.	1
Benzo(b)fluoranthene	ND		ug/kg	120	34.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	26	J	ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	24.	1
Fluorene	44	J	ug/kg	200	20.	1
Phenanthrene	100	J	ug/kg	120	25.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	56	J	ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	32.	1
1,4-Dioxane	ND		ug/kg	30	9.3	1

Project Name: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-01 Date Collected: 07/02/26 12:00

Client ID: 5FS-SW-10E (8-10) Date Received: 07/02/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	29000	J	ug/kg			1
Unknown Benzene	4290	J	ug/kg			1
Unknown	1440	J	ug/kg			1
Unknown	1970	J	ug/kg			1
Unknown Alkane	2190	J	ug/kg			1
Unknown	1660	J	ug/kg			1
Unknown	2430	J	ug/kg			1
Unknown Cycloalkane	1140	J	ug/kg			1
Unknown Benzene	3460	J	ug/kg			1
Unknown Alkane	1620	J	ug/kg			1
Unknown Alkane	1400	J	ug/kg			1
Unknown Benzene	1440	J	ug/kg			1
Unknown	1620	J	ug/kg			1
Unknown Alkane	1220	J	ug/kg			1
Unknown Alkane	1490	J	ug/kg			1
Unknown Alkane	1600	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	104		25-120
Phenol-d6	107		10-120
Nitrobenzene-d5	108		23-120
2-Fluorobiphenyl	108		30-120
2,4,6-Tribromophenol	**157**	Q	10-136
4-Terphenyl-d14	118		18-120

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641964
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-02
Client ID: DUP-2
Sample Location: Not Specified
Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/11/26 11:08
Analyst: CMM
Percent Solids: 81%

Date Collected: 07/02/26 12:15
Date Received: 07/02/26
Field Prep: Not Specified
Extraction Method: EPA 3546
Extraction Date: 07/10/26 17:30

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	21.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	54	J	ug/kg	120	23.	1
Naphthalene	650		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	40	18.	1
Benzo(a)anthracene	24	J	ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	160	49.	1
Benzo(b)fluoranthene	ND		ug/kg	120	34.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	36	J	ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	100	J	ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	24.	1
Fluorene	320		ug/kg	200	19.	1
Phenanthrene	520		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	91	J	ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	31.	1
1,4-Dioxane	ND		ug/kg	30	9.2	1

Project Name: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-02 Date Collected: 07/02/26 12:15

Client ID: DUP-2 Date Received: 07/02/26

Sample Location: Not Specified Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	190000	J	ug/kg			1
Unknown Cycloalkane	10700	J	ug/kg			1
Unknown Alkane	15500	J	ug/kg			1
Unknown Cycloalkane	14700	J	ug/kg			1
Unknown Naphthalene	8520	J	ug/kg			1
Unknown Alkane	12300	J	ug/kg			1
Unknown Benzene	23800	J	ug/kg			1
Unknown Cycloalkane	12100	J	ug/kg			1
Unknown	9390	J	ug/kg			1
Unknown	12600	J	ug/kg			1
Unknown	13600	J	ug/kg			1
Unknown Alkane	7730	J	ug/kg			1
Unknown Alkane	8000	J	ug/kg			1
Unknown Benzene	21400	J	ug/kg			1
Unknown Alkane	10900	J	ug/kg			1
Unknown Cycloalkane	8380	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	96		25-120
Phenol-d6	102		10-120
Nitrobenzene-d5	**145**	Q	23-120
2-Fluorobiphenyl	95		30-120
2,4,6-Tribromophenol	124		10-136
4-Terphenyl-d14	112		18-120

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 07/11/26 13:18
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 07/10/26 14:18

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG2239918-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	98	18.
Fluoranthene	ND		ug/kg	98	19.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	33	14.
Benzo(a)anthracene	ND		ug/kg	98	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	98	27.
Benzo(k)fluoranthene	ND		ug/kg	98	26.
Chrysene	ND		ug/kg	98	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	98	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	98	20.
Dibenzo(a,h)anthracene	ND		ug/kg	98	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	98	16.
Aniline	ND		ug/kg	33	12.
Dibenzofuran	ND		ug/kg	160	15.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	25.
3-Methylphenol/4-Methylphenol	ND		ug/kg	230	26.

Project Name: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 07/11/26 13:18
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 07/10/26 14:18

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01-02 Batch: WG2239918-1					
1,4-Dioxane	ND		ug/kg	24	7.5
Tentatively Identified Compounds					
Total TIC Compounds	1730	J	ug/kg		
Unknown	1590	J	ug/kg		
Unknown	143	J	ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	107		25-120
Phenol-d6	**124**	Q	10-120
Nitrobenzene-d5	116		23-120
2-Fluorobiphenyl	93		30-120
2,4,6-Tribromophenol	110		10-136
4-Terphenyl-d14	100		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG2239918-2 WG2239918-3								
Acenaphthene	109		103		31-137	6		50
Hexachlorobenzene	113		104		40-140	8		50
Fluoranthene	113		107		40-140	5		50
Naphthalene	106		102		40-140	4		50
Nitrobenzene	130		124		40-140	5		50
Benzo(a)anthracene	115		105		40-140	9		50
Benzo(a)pyrene	125		117		40-140	7		50
Benzo(b)fluoranthene	120		115		40-140	4		50
Benzo(k)fluoranthene	119		108		40-140	10		50
Chrysene	112		106		40-140	6		50
Acenaphthylene	112		104		40-140	7		50
Anthracene	114		108		40-140	5		50
Benzo(ghi)perylene	117		111		40-140	5		50
Fluorene	114		106		40-140	7		50
Phenanthrene	111		103		40-140	7		50
Dibenzo(a,h)anthracene	117		111		40-140	5		50
Indeno(1,2,3-cd)pyrene	121		116		40-140	4		50
Pyrene	113		104		35-142	8		50
Aniline	88		75		40-140	16		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 Batch: WG2239918-2 WG2239918-3								
Dibenzofuran	105		97		40-140	8		50
Pentachlorophenol	**110**	Q	100		17-109	10		50
Phenol	**122**	Q	**113**	Q	26-90	8		50
2-Methylphenol	123		116		30-130	6		50
3-Methylphenol/4-Methylphenol	125		117		30-130	7		50
1,4-Dioxane	82		76		40-140	8		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	114		107		25-120
Phenol-d6	**131**	Q	**122**	Q	10-120
Nitrobenzene-d5	**124**	Q	116		23-120
2-Fluorobiphenyl	95		90		30-120
2,4,6-Tribromophenol	118		108		10-136
4-Terphenyl-d14	103		95		18-120

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG2239918-4 WG2239918-5 QC Sample: L2641964-01 Client ID: 5FS-SW-10E (8-10)												
Acenaphthene	ND	1600	1600	100		1600	100		31-137	0		50
Hexachlorobenzene	ND	1600	1800	110		1900	120		40-140	5		50
Fluoranthene	59J	1600	1700	110		1800	110		40-140	6		50
Naphthalene	140J	1600	1700	110		1700	110		40-140	0		50
Nitrobenzene	ND	1600	1500	94		1600	100		40-140	6		50
Benzo(a)anthracene	27J	1600	1600	100		1600	100		40-140	0		50
Benzo(a)pyrene	ND	1600	1900	120		1900	120		40-140	0		50
Benzo(b)fluoranthene	ND	1600	1800	110		1900	120		40-140	5		50
Benzo(k)fluoranthene	ND	1600	1800	110		1800	110		40-140	0		50
Chrysene	26J	1600	1600	100		1700	110		40-140	6		50
Acenaphthylene	ND	1600	1500	94		1600	100		40-140	6		50
Anthracene	ND	1600	1600	100		1700	110		40-140	6		50
Benzo(ghi)perylene	ND	1600	1700	110		1800	110		40-140	6		50
Fluorene	44J	1600	1700	110		1700	110		40-140	0		50
Phenanthrene	100J	1600	1700	110		1700	110		40-140	0		50
Dibenzo(a,h)anthracene	ND	1600	1700	110		1700	110		40-140	0		50
Indeno(1,2,3-cd)pyrene	ND	1600	1700	110		1700	110		40-140	0		50
Pyrene	56J	1600	1700	110		1800	110		35-142	6		50
Aniline	ND	1600	1100	69		980	61		40-140	12		50

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641964
Report Date: 07/14/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Client ID: 5FS-SW-10E (8-10)	Associated sample(s): 01-02		QC Batch ID: WG2239918-4			WG2239918-5			QC Sample: L2641964-01			
Dibenzofuran	ND	1600	1500	94		1600	100		40-140	6		50
Pentachlorophenol	ND	1600	1900	**120**	Q	2000	**130**	Q	17-109	5		50
Phenol	ND	1600	1400	88		1400	88		26-90	0		50
2-Methylphenol	ND	1600	1400	88		1400	88		30-130	0		50
3-Methylphenol/4-Methylphenol	ND	1600	1400	88		1500	94		30-130	7		50
1,4-Dioxane	ND	1600	1000	63		1100	69		40-140	10		50

Surrogate	MS % Recovery	MS Qualifier	MSD % Recovery	MSD Qualifier	Acceptance Criteria
2,4,6-Tribromophenol	**138**	Q	**142**	Q	10-136
2-Fluorobiphenyl	92		96		30-120
2-Fluorophenol	96		97		25-120
4-Terphenyl-d14	102		109		18-120
Nitrobenzene-d5	96		98		23-120
Phenol-d6	97		97		10-120

METALS

Project Name: 5 FLINT ST.
Lab Number: L2641964
Project Number: 4694.0001B000
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-01
Client ID: 5FS-SW-10E (8-10)
Sample Location: Not Specified
Date Collected: 07/02/26 12:00
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	8210		mg/kg	9.42	3.06	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	4.71	3.62	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Arsenic, Total	8.40		mg/kg	0.942	0.407	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Barium, Total	65.8		mg/kg	0.942	0.100	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.463	J	mg/kg	0.471	0.052	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.057	J	mg/kg	0.942	0.052	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Calcium, Total	10900		mg/kg	9.42	5.34	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Chromium, Total	12.3		mg/kg	0.942	0.798	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Cobalt, Total	5.17		mg/kg	1.88	0.234	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Copper, Total	12.0		mg/kg	0.942	0.214	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Iron, Total	15900		mg/kg	23.5	7.53	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Lead, Total	25.0		mg/kg	4.71	0.224	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Magnesium, Total	5460		mg/kg	9.42	1.53	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Manganese, Total	315		mg/kg	0.942	0.505	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Mercury, Total	ND		mg/kg	0.081	0.053	1	07/10/26 16:52	07/10/26 19:12	EPA 7471B	1,7471B	CME
Nickel, Total	16.0		mg/kg	2.35	0.761	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Potassium, Total	361		mg/kg	235	47.7	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	1.88	0.310	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Silver, Total	ND		mg/kg	0.471	0.281	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Sodium, Total	1070		mg/kg	188	99.8	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	1.88	0.849	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Vanadium, Total	11.6		mg/kg	0.942	0.142	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
Zinc, Total	72.4		mg/kg	4.71	0.571	2	07/10/26 15:38	07/11/26 06:25	EPA 3050B	1,6010D	JMF
General Chemistry - Mansfield Lab											
Chromium, Trivalent	12.3		mg/kg	0.976	0.798	1		07/11/26 13:11	NA	107,-	

Project Name: 5 FLINT ST.
Lab Number: L2641964
Project Number: 4694.0001B000
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-02
Client ID: DUP-2
Sample Location: Not Specified
Date Collected: 07/02/26 12:15
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 81%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	6550		mg/kg	9.76	3.17	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	4.88	3.76	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Arsenic, Total	4.02		mg/kg	0.976	0.422	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Barium, Total	41.2		mg/kg	0.976	0.103	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.342	J	mg/kg	0.488	0.054	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.138	J	mg/kg	0.976	0.054	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Calcium, Total	4060		mg/kg	9.76	5.54	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Chromium, Total	9.56		mg/kg	0.976	0.828	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Cobalt, Total	5.66		mg/kg	1.95	0.242	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Copper, Total	13.7		mg/kg	0.976	0.222	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Iron, Total	16700		mg/kg	24.4	7.81	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Lead, Total	10.7		mg/kg	4.88	0.232	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Magnesium, Total	2730		mg/kg	9.76	1.59	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Manganese, Total	1180		mg/kg	0.976	0.523	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Mercury, Total	ND		mg/kg	0.078	0.051	1	07/10/26 16:52	07/10/26 19:25	EPA 7471B	1,7471B	CME
Nickel, Total	16.9		mg/kg	2.44	0.789	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Potassium, Total	432		mg/kg	244	49.5	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	1.95	0.321	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Silver, Total	ND		mg/kg	0.488	0.291	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Sodium, Total	134	J	mg/kg	195	103.	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	1.95	0.880	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Vanadium, Total	10.8		mg/kg	0.976	0.147	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
Zinc, Total	50.9		mg/kg	4.88	0.592	2	07/10/26 15:38	07/11/26 06:45	EPA 3050B	1,6010D	JMF
General Chemistry - Mansfield Lab											
Chromium, Trivalent	9.56		mg/kg	0.984	0.828	1		07/11/26 13:11	NA	107,-	

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641964
Report Date: 07/14/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG2239850-1										
Aluminum, Total	ND		mg/kg	4.00	1.30	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Antimony, Total	ND		mg/kg	2.00	1.54	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Arsenic, Total	ND		mg/kg	0.400	0.173	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Barium, Total	0.101	J	mg/kg	0.400	0.042	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Beryllium, Total	ND		mg/kg	0.200	0.022	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Cadmium, Total	ND		mg/kg	0.400	0.022	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Calcium, Total	32.7		mg/kg	4.00	2.27	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Chromium, Total	ND		mg/kg	0.400	0.339	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Cobalt, Total	ND		mg/kg	0.800	0.099	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Copper, Total	0.157	J	mg/kg	0.400	0.091	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Iron, Total	9.18	J	mg/kg	10.0	3.20	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Lead, Total	ND		mg/kg	2.00	0.095	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Magnesium, Total	3.64	J	mg/kg	4.00	0.652	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Manganese, Total	ND		mg/kg	0.400	0.214	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Nickel, Total	0.686	J	mg/kg	1.00	0.323	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Potassium, Total	ND		mg/kg	100	20.3	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Selenium, Total	ND		mg/kg	0.800	0.132	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Silver, Total	ND		mg/kg	0.200	0.119	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Sodium, Total	ND		mg/kg	80.0	42.4	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Thallium, Total	ND		mg/kg	0.800	0.361	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Vanadium, Total	ND		mg/kg	0.400	0.060	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF
Zinc, Total	0.610	J	mg/kg	2.00	0.242	1	07/10/26 15:38	07/11/26 06:59	1,6010D	JMF

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01-02 Batch: WG2239853-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	07/10/26 16:52	07/10/26 19:06	1,7471B	CME

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000
Lab Number: L2641964
Report Date: 07/14/26

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG2239850-2								
Aluminum, Total	104		-		80-120	-		20
Antimony, Total	106		-		80-120	-		20
Arsenic, Total	101		-		80-120	-		20
Barium, Total	107		-		80-120	-		20
Beryllium, Total	109		-		80-120	-		20
Cadmium, Total	101		-		80-120	-		20
Calcium, Total	115		-		80-120	-		20
Chromium, Total	103		-		80-120	-		20
Cobalt, Total	104		-		80-120	-		20
Copper, Total	105		-		80-120	-		20
Iron, Total	113		-		80-120	-		20
Lead, Total	104		-		80-120	-		20
Magnesium, Total	107		-		80-120	-		20
Manganese, Total	111		-		80-120	-		20
Nickel, Total	108		-		80-120	-		20
Potassium, Total	111		-		80-120	-		20
Selenium, Total	101		-		80-120	-		20
Silver, Total	96		-		80-120	-		20
Sodium, Total	111		-		80-120	-		20
Thallium, Total	99		-		80-120	-		20
Vanadium, Total	105		-		80-120	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG2239850-2					
Zinc, Total	101	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 01-02 Batch: WG2239853-2					
Mercury, Total	106	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 (8-10)	QC Batch ID: WG2239850-3					WG2239850-4			QC Sample: L2641964-01		Client ID: 5FS-SW-10E	
Aluminum, Total	8210	184	7060	**0**	Q	8270	**31**	Q	75-125	16		20
Antimony, Total	ND	45.9	17.7	**38**	Q	16.8	**35**	Q	75-125	5		20
Arsenic, Total	8.40	11	18.6	93		23.5	**130**	Q	75-125	**23**	Q	20
Barium, Total	65.8	184	229	89		266	104		75-125	15		20
Beryllium, Total	0.463J	4.59	4.97	108		5.52	114		75-125	10		20
Cadmium, Total	0.057J	4.86	4.40	90		4.82	94		75-125	9		20
Calcium, Total	10900	918	14700	**414**	Q	19000	**840**	Q	75-125	**26**	Q	20
Chromium, Total	12.3	18.4	27.8	84		31.2	98		75-125	12		20
Cobalt, Total	5.17	45.9	41.6	79		44.8	82		75-125	7		20
Copper, Total	12.0	22.9	36.4	106		40.5	118		75-125	11		20
Iron, Total	15900	91.8	15500	**0**	Q	17400	**1560**	Q	75-125	12		20
Lead, Total	25.0	48.6	64.7	82		80.4	108		75-125	**22**	Q	20
Magnesium, Total	5460	918	8450	**326**	Q	7660	**228**	Q	75-125	10		20
Manganese, Total	315	45.9	414	**216**	Q	501	**386**	Q	75-125	19		20
Nickel, Total	16.0	45.9	58.1	92		63.1	98		75-125	8		20
Potassium, Total	361	918	1270	99		1420	110		75-125	11		20
Selenium, Total	ND	11	10.5	95		11.8	102		75-125	12		20
Silver, Total	ND	4.59	3.76	82		4.10	85		75-125	9		20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01-02 (8-10)	QC Batch ID: WG2239850-3					WG2239850-4			QC Sample: L2641964-01		Client ID: 5FS-SW-10E	
Sodium, Total	1070	918	1620	**60**	Q	2170	114		75-125	**29**	Q	20
Thallium, Total	ND	11	10.4	94		11.5	99		75-125	10		20
Vanadium, Total	11.6	45.9	55.5	96		61.0	102		75-125	9		20
Zinc, Total	72.4	45.9	99.4	**59**	Q	131	122		75-125	**27**	Q	20
Total Metals - Mansfield Lab Associated sample(s): 01-02 (8-10)	QC Batch ID: WG2239853-3					WG2239853-4			QC Sample: L2641964-01		Client ID: 5FS-SW-10E	
Mercury, Total	ND	1.56	1.70	109		2.02	109		80-120	17		20

INORGANICS
&
MISCELLANEOUS

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-01
Client ID: 5FS-SW-10E (8-10)
Sample Location: Not Specified

Date Collected: 07/02/26 12:00
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	82.0		%	0.100	NA	1	-	07/10/26 20:47	121,2540G	FGA
Cyanide, Total	ND		mg/kg	1.1	0.24	1	07/12/26 12:10	07/13/26 13:15	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.976	0.195	1	07/10/26 13:27	07/11/26 13:11	1,7196A	OJP

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

SAMPLE RESULTS

Lab ID: L2641964-02
Client ID: DUP-2
Sample Location: Not Specified

Date Collected: 07/02/26 12:15
Date Received: 07/02/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.3		%	0.100	NA	1	-	07/10/26 20:47	121,2540G	FGA
Cyanide, Total	ND		mg/kg	1.2	0.25	1	07/12/26 12:10	07/13/26 13:18	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.984	0.197	1	07/10/26 13:27	07/11/26 13:11	1,7196A	OJP

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG2239851-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	07/10/26 13:27	07/11/26 13:11	1,7196A	OJP
General Chemistry - Westborough Lab for sample(s): 01-02 Batch: WG2240333-1										
Cyanide, Total	ND		mg/kg	0.83	0.18	1	07/12/26 12:10	07/13/26 13:08	1,9010C/9012B	JER

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG2239851-2								
Chromium, Hexavalent	97		-		80-120	-		
General Chemistry - Westborough Lab Associated sample(s): 01-02 Batch: WG2240333-2 WG2240333-3								
Cyanide, Total	80		92		80-120	21		35

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG2239851-4 WG2239851-5 QC Sample: L2641964-01 Client ID: 5FS-SW-10E (8-10)												
Chromium, Hexavalent	ND	1070	1030	96		1160	81		75-125	15		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG2240333-4 WG2240333-5 QC Sample: L2641964-01 Client ID: 5FS-SW-10E (8-10)												
Cyanide, Total	ND	12	13	110		12	100		75-125	10		35
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG2240333-6 WG2240333-7 QC Sample: L2643679-22 Client ID: MS Sample												
Cyanide, Total	ND	12	12	100		13	110		75-125	10		35

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT ST.

Project Number: 4694.0001B000

Lab Number: L2641964

Report Date: 07/14/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG2239851-7 QC Sample: L2641964-01 Client ID: 5FS-SW-10E (8-10)						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20
General Chemistry - Westborough Lab Associated sample(s): 01-02 QC Batch ID: WG2240047-1 QC Sample: L2641964-01 Client ID: 5FS-SW-10E (8-10)						
Solids, Total	82.0	83.0	%	1		10

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

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(*)
L2641964-01A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01A1	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01A2	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01B1	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01B2	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01C1	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01C2	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01D	Plastic 60ml unpreserved	NA	NA			Y	Absent		TS(7)
L2641964-01D1	Plastic 60ml unpreserved	NA	NA			Y	Absent		TS(7)
L2641964-01D2	Plastic 60ml unpreserved	NA	NA			Y	Absent		TS(7)
L2641964-01E	Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TRICR-CALC(30),TL-TI(180),SB-TI(180),ZN-TI(180),CU-TI(180),PB-TI(180),SE-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)
L2641964-01E1	Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TRICR-CALC(30),TL-TI(180),SB-TI(180),ZN-TI(180),CU-TI(180),PB-TI(180),SE-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2641964-01E2	Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),AL-TI(180),CR-TI(180),NI-TI(180),TRICR-CALC(30),TL-TI(180),SB-TI(180),ZN-TI(180),CU-TI(180),PB-TI(180),SE-TI(180),CO-TI(180),V-TI(180),FE-TI(180),MN-TI(180),HG-T(28),MG-TI(180),K-TI(180),NA-TI(180),CD-TI(180),CA-TI(180)
L2641964-01F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641964-01F1	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641964-01F2	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641964-01G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641964-01G1	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641964-01G2	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641964-01X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01X1	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01X2	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-01Y	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641964-01Y1	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641964-01Y2	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641964-01Z	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641964-01Z1	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641964-01Z2	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641964-02A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-02B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-02C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-02D	Plastic 60ml unpreserved	NA	NA			Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT ST.
Project Number: 4694.0001B000

Lab Number: L2641964
Report Date: 07/14/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2641964-02E	Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),CR-TI(180),TRICR-CALC(30),NI-TI(180),TL-TI(180),AL-TI(180),SE-TI(180),CU-TI(180),ZN-TI(180),PB-TI(180),SB-TI(180),V-TI(180),CO-TI(180),MG-TI(180),FE-TI(180),HG-T(28),MN-TI(180),CD-TI(180),K-TI(180),CA-TI(180),NA-TI(180)
L2641964-02F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641964-02G	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2641964-02X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2641964-02Y	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641964-02Z	Vial Water preserved split	NA	NA			Y	Absent	03-JUL-26 06:43	NYTCL-8260HLW-R2(14)
L2641964-03A	Vial HCl preserved	NA	NA			Y	Absent		NYTCL-8260(14)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT ST.	**Lab Number:**	L2641964
Project Number:	4694.0001B000	**Report Date:**	07/14/26

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:	5 FLINT ST.	**Lab Number:**	L2641964
Project Number:	4694.0001B000	**Report Date:**	07/14/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT ST.	**Lab Number:**	L2641964
Project Number:	4694.0001B000	**Report Date:**	07/14/26

Data Qualifiers

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: 5 FLINT ST. **Lab Number:** L2641964

Project Number: 4694.0001B000 **Report Date:** 07/14/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

107 Calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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 504.1: EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,**.

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, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water
EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water
SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY KY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NV MA00030, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

L2641964
ROUX – BENCH

L2641964

Pace ANALYTICAL SERVICES

NEW YORK CHAIN OF CUSTODY

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

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

Service Centers
Woodcliff Lake, NJ 07677: 123 Tice Blvd, Suite 101
Albany, NY 12205: 14 Walker Way
Tonawanda, NY 14150: 275 Cooper Ave, Suite 105

Page of

Date Rec'd in Lab 7/3/26

Project Information
Project Name: 5 Flint St
Project Location: 5 Flint St
Project #: 41014.1001B000
(Use Project name as Project #) ☐
Project Manager: Eric Runstrom
PACE Quote #: DO203091

Turn-Around Time
Standard ☐ Rush (only if pre approved) ☐ Due Date: # of Days: 5 day TAT

Deliverables
☐ ASP-A ☐ ASP-
☐ EQuIS (1 File) ☒ EQuIS (4 File)
☒ Other ROUX NYA EDD

PO #

Client Information
Client: ROUX
Address: 42 S Washington Rochester NY
Phone: 781-569-4031
Fax:
Email: SBarrientos@rouxinc.com

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 Pace ☐

Other project specific requirements/comments:

ON HOLD!

Please specify Metals or TAL.

ANALYSIS

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

Total Bottles

PACE Lab ID (Lab Use Only)	Sample ID	Collection Date	Collection Time	Sample Matrix	Sampler's Initials	VOC + TICS (8260)	SVOC + TICS (8270)	TAL Metals + Hg (CN + Trivalent Cr) (6010D)	Sample Specific Comments
41964 - 1	SFS - SW - 10E (8-10)	7/2/26	12:00	Soil	SK	X	X	X	HOLD! MS/MSD
-2	DUP - 2	7/2/26	12:15	Soil	SK	X	X	X	HOLD!
-3	Trip Blank	7/2/26	8:00	Soil	SK	X			

Container Type: E A A
Preservative: A A A

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

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

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

Relinquished By:	Date/Time	Received By:	Date/Time
[signature]	7/2/26 1426	W Mot Pace	7/2/26 1426
W Mot Pace	7/2/26 1426	Roch S/C Pace	7/2/26 1426
Roc S/C	7-2-26 1840	[signature]	7-2-26 1840
[signature]	7-2-26 19:20	[signature]	7-2 2300
[signature]	7-3 1:40	[signature]	7/3/26 1:40

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 PACE'S TERMS & CONDITIONS. (See reverse side.)

Form No: 01-25 HC (rev. 29-Jan-2025)

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF ENVIRONMENTAL REMEDIATION

STANDBY CONTRACTOR AUTHORIZATION FORM

For Standby Response, Investigation & Remediation, and Laboratory Services

General Information

Region: 9 Spill No.: 2602807 **CallOut ID:** 154082

CallOut Date: 06/30/2026

Contract No.: C100913 **PIN (if applicable):** 11537

Contractor Selected: PACE ANALYTICAL SERVICES, LLC

Spill Information - **Name:** TOYOTA OF BATAVIA LEAKING DRUM **County:** Genesee
Address: 3899 WEST MAIN STREET ROAD, BATAVIA

SCOPE OF WORK (Provide brief detailed description):

6/30/26

TOYOTA OF BATAVIA LEAKING DRUMS, NYSDEC SPILL #2602807, CALLOUT #11537

1 SAMPLING EVENT, 1 SAMPLE PER EVENT, SOIL SAMPLE FOR WASTE CHARACTERIZATION: PCB, RCRA 8 Metals (Totals), Flashpoint, Total Halogens (TOX 9020), TCL VOC, TCL SVOC, pH.

CAT A DELIVERABLES, STANDARD TAT

NYSDEC PM: CARLA CRAMPTON 585-991-2799 CARLA.CRAMPTON@DEC.NY.GOV

T&R PM: MONTANA YASTREMSKI 607-661-2297 myastremski@momentumenvironmental.com

ANTICIPATED END DATE OF CALLOUT 7/30/26

Serial_No:07142617:53

ESTIMATED BUDGET: $5,000.00

This serves as authorization to incur costs up to the budgeted amount indicated, to perform the scope of work outlined above in connection with the above-referenced spill/site call out number. The contractor is responsible for immediately notifying the DER project manager if it becomes apparent that the scope of work can not be completed within the budget and/or the scope of work should be amended. The contractor should not incur costs that exceed the budget or perform activities outside the scope of work without the verbal or written approval of the DER project manager. The DER project manager must confirm that approval in writing in an amended Standby Contractor Authorization Form signed by the DER project manager and Rep within two business days.

DER Project Manager Name/Title:

CARLA CRAMPTON
(Print)

CARLA CRAMPTON
Approved Electronically

Date: 7/1/2026

Authorized DER Representative Name/Title:

MICHAEL F. ZAMIARSKI
(Print)

MICHAEL F. ZAMIARSKI
Approved Electronically

Date: 7/1/2026

Serial_No:07142617:53

Sample Delivery Group Summary

Pace Job Number : L2641964

Account Name : Roux
Project Number : 4694.0001B000
Project Name : 5 FLINT ST.

Received : 02-JUL-2026
Reviewer : Mohammed Wahed

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	4.8	

Condition Information

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

Volatile Organics/VPH

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

ANALYTICAL REPORT

Lab Number:	L2645073
Client:	Roux 2850 Clover Street Pittsford, NY 14534
ATTN:	Eric Runstrom
Phone:	(716) 713-3937
Project Name:	5 FLINT STREET
Project Number:	4694.0001B000
Report Date:	07/21/26

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

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Lab Sample ID	Client ID	Matrix	Sample Location	Collection Date/Time	Receive Date
L2645073-01	5FS-SW-22B (6-8)	SOIL	Not Specified	07/16/26 10:05	07/16/26
L2645073-02	TRIP BLANK	SOIL	Not Specified	07/16/26 00:00	07/16/26
L2645073-03	5FS-SW-10F (12-14.5)	SOIL	Not Specified	07/16/26 10:40	07/16/26
L2645073-04	DUP-7	SOIL	Not Specified	07/16/26 11:00	07/16/26

Project Name:	5 FLINT STREET	**Lab Number:**	L2645073
Project Number:	4694.0001B000	**Report Date:**	07/21/26

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 Pace 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 and solids are reported on a dry weight basis unless otherwise noted. Tissues are reported "as received" or on a wet 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, Pace'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 Pace Project Manager and made arrangements for Pace 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: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Case Narrative (continued)

Report Submission

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

Volatile Organics

L2645073-03: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (238%); however, the sample was not re-analyzed due to coelution with obvious interferences.

L2645073-04: The surrogate recovery is outside the acceptance criteria for 4-bromofluorobenzene (291%); however, the sample was not re-analyzed due to coelution with obvious interferences.

Total Metals

L2645073-01, -03 and -04: The sample has elevated detection limits for all elements, with the exception of mercury, due to the dilution required by the sample matrix.

Chromium, Hexavalent

The WG2243468-5 Soluble MS recovery performed on L2645073-04 was outside the acceptance criteria for chromium, hexavalent (65%). This has been attributed to matrix interference. A post-spike was performed with a recovery of 101%.

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

Authorized Signature: Caitlin Walukevich

Caitlin Walukevich

Title: Technical Director/Representative

Date: 07/21/26

QC OUTLIER SUMMARY REPORT

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Method	Client ID (Native ID)	Lab ID	Parameter	QC Type	Recovery/RPD (%)	QC Limits (%)	Associated Samples	Data Quality Assessment
Volatile Organics by EPA 5035/8260 Low - Westborough Lab								
8260D	5FS-SW-10F (12-14.5)	L2645073-03	4-Bromofluorobenzene	Surrogate	238	70-130	-	potential high bias
8260D	DUP-7	L2645073-04	4-Bromofluorobenzene	Surrogate	291	70-130	-	potential high bias
Volatile Organics by GC/MS - Westborough Lab								
8260D	Batch QC	WG2243975-3	Acetone	LCS	141	54-140	02-04	potential high bias
8260D	Batch QC	WG2243975-3	2-Butanone	LCS	134	70-130	02-04	potential high bias
8260D	Batch QC	WG2243975-4	Acetone	LCSD	143	54-140	02-04	potential high bias
8260D	Batch QC	WG2243975-4	2-Butanone	LCSD	143	70-130	02-04	potential high bias
Total Metals - Mansfield Lab								
6010D	Batch QC (L2645036-02)	WG2243044-3	Aluminum, Total	MS	0	75-125	01,03-04	potential low bias
6010D	Batch QC (L2645036-02)	WG2243044-3	Antimony, Total	MS	47	75-125	01,03-04	potential low bias
6010D	Batch QC (L2645036-02)	WG2243044-3	Calcium, Total	MS	0	75-125	01,03-04	potential low bias
6010D	Batch QC (L2645036-02)	WG2243044-3	Chromium, Total	MS	72	75-125	01,03-04	potential low bias
6010D	Batch QC (L2645036-02)	WG2243044-3	Iron, Total	MS	0	75-125	01,03-04	potential low bias
6010D	Batch QC (L2645036-02)	WG2243044-3	Magnesium, Total	MS	0	75-125	01,03-04	potential low bias
6010D	Batch QC (L2645036-02)	WG2243044-3	Manganese, Total	MS	0	75-125	01,03-04	potential low bias
6010D	Batch QC (L2645036-02)	WG2243044-3	Potassium, Total	MS	32	75-125	01,03-04	potential low bias
6010D	Batch QC (L2645036-02)	WG2243044-3	Zinc, Total	MS	70	75-125	01,03-04	potential low bias
6010D	Batch QC (L2645036-02)	WG2243044-4	Calcium, Total	Duplicate	42	NA	01,03-04	non-directional bias
6010D	Batch QC (L2645036-02)	WG2243044-4	Copper, Total	Duplicate	57	NA	01,03-04	non-directional bias
6010D	Batch QC (L2645036-02)	WG2243044-4	Nickel, Total	Duplicate	22	NA	01,03-04	non-directional bias

ORGANICS

VOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-01
Client ID: 5FS-SW-22B (6-8)
Sample Location: Not Specified
Date Collected: 07/16/26 10:05
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/18/26 17:57
Analyst: MNF
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
Methylene chloride	ND		ug/kg	390	180	1
1,1-Dichloroethane	ND		ug/kg	79	11.	1
Chloroform	ND		ug/kg	120	11.	1
Carbon tetrachloride	ND		ug/kg	79	18.	1
Tetrachloroethene	ND		ug/kg	39	15.	1
Chlorobenzene	ND		ug/kg	39	10.	1
1,2-Dichloroethane	ND		ug/kg	79	20.	1
1,1,1-Trichloroethane	ND		ug/kg	39	13.	1
Benzene	ND		ug/kg	39	13.	1
Toluene	ND		ug/kg	79	43.	1
Ethylbenzene	ND		ug/kg	79	11.	1
Vinyl chloride	ND		ug/kg	79	26.	1
1,1-Dichloroethene	ND		ug/kg	79	19.	1
trans-1,2-Dichloroethene	ND		ug/kg	120	11.	1
Trichloroethene	ND		ug/kg	39	11.	1
1,2-Dichlorobenzene	ND		ug/kg	160	11.	1
1,3-Dichlorobenzene	ND		ug/kg	160	12.	1
1,4-Dichlorobenzene	ND		ug/kg	160	13.	1
Methyl tert butyl ether	ND		ug/kg	160	16.	1
p/m-Xylene	ND		ug/kg	160	44.	1
o-Xylene	ND		ug/kg	79	23.	1
Xylenes, Total	ND		ug/kg	79	23.	1
cis-1,2-Dichloroethene	ND		ug/kg	79	14.	1
Acetone	ND		ug/kg	790	380	1
2-Butanone	ND		ug/kg	790	170	1
n-Butylbenzene	33	J	ug/kg	79	13.	1
sec-Butylbenzene	94		ug/kg	79	12.	1
tert-Butylbenzene	12	J	ug/kg	160	9.3	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-01
Client ID: 5FS-SW-22B (6-8)
Sample Location: Not Specified
Date Collected: 07/16/26 10:05
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 High - Westborough Lab						
n-Propylbenzene	56	J	ug/kg	79	13.	1
1,3,5-Trimethylbenzene	220		ug/kg	160	15.	1
1,2,4-Trimethylbenzene	1200		ug/kg	160	26.	1
Tentatively Identified Compounds						
Total TIC Compounds	9220	J	ug/kg			1
Unknown	1610	J	ug/kg			1
Unknown Cycloalkane	679	J	ug/kg			1
trans-Decalin, 2-methyl-	851	NJ	ug/kg			1
Unknown Cyclohexane	1030	J	ug/kg			1
Unknown	718	J	ug/kg			1
Unknown	887	J	ug/kg			1
Cyclohexane, methyl-	850	NJ	ug/kg			1
Unknown Cyclohexane	945	J	ug/kg			1
Cyclohexane, propyl-	686	NJ	ug/kg			1
Unknown	962	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	115		70-130
Toluene-d8	89		70-130
4-Bromofluorobenzene	97		70-130
Dibromofluoromethane	118		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-02
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 07/16/26 00:00
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/19/26 15:51
Analyst: AJK
Percent Solids: Results Reported on an "AS RECEIVED" basis

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.0	2.3	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.14	1
Chloroform	ND		ug/kg	1.5	0.14	1
Carbon tetrachloride	ND		ug/kg	1.0	0.23	1
Tetrachloroethene	ND		ug/kg	0.50	0.20	1
Chlorobenzene	ND		ug/kg	0.50	0.13	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.26	1
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17	1
Benzene	ND		ug/kg	0.50	0.17	1
Toluene	ND		ug/kg	1.0	0.54	1
Ethylbenzene	ND		ug/kg	1.0	0.14	1
Vinyl chloride	ND		ug/kg	1.0	0.34	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.24	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14	1
Trichloroethene	ND		ug/kg	0.50	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17	1
Methyl tert butyl ether	ND		ug/kg	2.0	0.20	1
p/m-Xylene	ND		ug/kg	2.0	0.56	1
o-Xylene	ND		ug/kg	1.0	0.29	1
Xylenes, Total	ND		ug/kg	1.0	0.29	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Acetone	ND		ug/kg	10	4.8	1
2-Butanone	ND		ug/kg	10	2.2	1
n-Butylbenzene	ND		ug/kg	1.0	0.17	1
sec-Butylbenzene	ND		ug/kg	1.0	0.15	1
tert-Butylbenzene	ND		ug/kg	2.0	0.12	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-02
Client ID: TRIP BLANK
Sample Location: Not Specified
Date Collected: 07/16/26 00:00
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.0	0.17	1
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19	1
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33	1
Tentatively Identified Compounds						
Total TIC Compounds	13.5	J	ug/kg			1
Unknown Cycloalkane	5.63	J	ug/kg			1
Unknown	2.55	J	ug/kg			1
Butane, 2-Methyl-	2.95	NJ	ug/kg			1
Pentane	2.35	NJ	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	116		70-130
Toluene-d8	106		70-130
4-Bromofluorobenzene	110		70-130
Dibromofluoromethane	106		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-03
Client ID: 5FS-SW-10F (12-14.5)
Sample Location: Not Specified
Date Collected: 07/16/26 10:40
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/19/26 21:28
Analyst: AJK
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.1	2.3	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.15	1
Chloroform	ND		ug/kg	1.5	0.14	1
Carbon tetrachloride	ND		ug/kg	1.0	0.23	1
Tetrachloroethene	ND		ug/kg	0.51	0.20	1
Chlorobenzene	ND		ug/kg	0.51	0.13	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.26	1
1,1,1-Trichloroethane	ND		ug/kg	0.51	0.17	1
Benzene	0.27	J	ug/kg	0.51	0.17	1
Toluene	ND		ug/kg	1.0	0.55	1
Ethylbenzene	ND		ug/kg	1.0	0.14	1
Vinyl chloride	ND		ug/kg	1.0	0.34	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.24	1
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14	1
Trichloroethene	ND		ug/kg	0.51	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17	1
Methyl tert butyl ether	ND		ug/kg	2.0	0.20	1
p/m-Xylene	ND		ug/kg	2.0	0.57	1
o-Xylene	0.82	J	ug/kg	1.0	0.30	1
Xylenes, Total	0.82	J	ug/kg	1.0	0.30	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Acetone	27		ug/kg	10	4.9	1
2-Butanone	ND		ug/kg	10	2.2	1
n-Butylbenzene	5.4		ug/kg	1.0	0.17	1
sec-Butylbenzene	18		ug/kg	1.0	0.15	1
tert-Butylbenzene	5.3		ug/kg	2.0	0.12	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-03
Client ID: 5FS-SW-10F (12-14.5)
Sample Location: Not Specified
Date Collected: 07/16/26 10:40
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.0	0.17	1
1,3,5-Trimethylbenzene	0.40	J	ug/kg	2.0	0.20	1
1,2,4-Trimethylbenzene	0.55	J	ug/kg	2.0	0.34	1
Tentatively Identified Compounds						
Total TIC Compounds	1240	J	ug/kg			1
Unknown Cyclohexane	91.9	J	ug/kg			1
Unknown Alkane	150	J	ug/kg			1
Unknown Cyclohexane	92.9	J	ug/kg			1
Unknown	110	J	ug/kg			1
Unknown	93.6	J	ug/kg			1
Unknown Alkane	90.8	J	ug/kg			1
Unknown Cyclohexane	165	J	ug/kg			1
Unknown	134	J	ug/kg			1
Unknown	162	J	ug/kg			1
Unknown Cyclohexane	145	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	109		70-130
Toluene-d8	111		70-130
4-Bromofluorobenzene	**238**	Q	70-130
Dibromofluoromethane	99		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-04
Client ID: DUP-7
Sample Location: Not Specified
Date Collected: 07/16/26 11:00
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8260D
Analytical Date: 07/19/26 21:54
Analyst: AJK
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
Methylene chloride	ND		ug/kg	5.2	2.4	1
1,1-Dichloroethane	ND		ug/kg	1.0	0.15	1
Chloroform	ND		ug/kg	1.6	0.14	1
Carbon tetrachloride	ND		ug/kg	1.0	0.24	1
Tetrachloroethene	ND		ug/kg	0.52	0.20	1
Chlorobenzene	ND		ug/kg	0.52	0.13	1
1,2-Dichloroethane	ND		ug/kg	1.0	0.27	1
1,1,1-Trichloroethane	ND		ug/kg	0.52	0.17	1
Benzene	0.27	J	ug/kg	0.52	0.17	1
Toluene	0.72	J	ug/kg	1.0	0.56	1
Ethylbenzene	ND		ug/kg	1.0	0.15	1
Vinyl chloride	ND		ug/kg	1.0	0.35	1
1,1-Dichloroethene	ND		ug/kg	1.0	0.25	1
trans-1,2-Dichloroethene	ND		ug/kg	1.6	0.14	1
Trichloroethene	ND		ug/kg	0.52	0.14	1
1,2-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,3-Dichlorobenzene	ND		ug/kg	2.1	0.15	1
1,4-Dichlorobenzene	ND		ug/kg	2.1	0.18	1
Methyl tert butyl ether	ND		ug/kg	2.1	0.21	1
p/m-Xylene	ND		ug/kg	2.1	0.58	1
o-Xylene	1.2		ug/kg	1.0	0.30	1
Xylenes, Total	1.2		ug/kg	1.0	0.30	1
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18	1
Acetone	26		ug/kg	10	5.0	1
2-Butanone	ND		ug/kg	10	2.3	1
n-Butylbenzene	7.9		ug/kg	1.0	0.17	1
sec-Butylbenzene	28		ug/kg	1.0	0.15	1
tert-Butylbenzene	8.0		ug/kg	2.1	0.12	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-04
Client ID: DUP-7
Sample Location: Not Specified
Date Collected: 07/16/26 11:00
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Volatile Organics by EPA 5035/8260 Low - Westborough Lab						
n-Propylbenzene	ND		ug/kg	1.0	0.18	1
1,3,5-Trimethylbenzene	8.2		ug/kg	2.1	0.20	1
1,2,4-Trimethylbenzene	6.0		ug/kg	2.1	0.35	1
Tentatively Identified Compounds						
Total TIC Compounds	649	J	ug/kg			1
Unknown Cyclohexane	50.6	J	ug/kg			1
Unknown Cycloalkane	46.3	J	ug/kg			1
Unknown Cycloalkane	65.1	J	ug/kg			1
Unknown Alkane	42.8	J	ug/kg			1
Unknown Cyclohexane	153	J	ug/kg			1
Cyclohexane, 1,1-dimethyl-	74.9	NJ	ug/kg			1
Unknown Alkane	41.0	J	ug/kg			1
Pentane, 2,3-dimethyl-	52.2	NJ	ug/kg			1
Unknown	64.8	J	ug/kg			1
Cyclopentane, 1,1,3-trimethyl-	57.9	NJ	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	108		70-130
Toluene-d8	115		70-130
4-Bromofluorobenzene	**291**	Q	70-130
Dibromofluoromethane	98		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/18/26 10:36
Analyst: JFI

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 01 Batch: WG2243583-5					
Methylene chloride	ND		ug/kg	250	110
1,1-Dichloroethane	ND		ug/kg	50	7.2
Chloroform	ND		ug/kg	75	7.0
Carbon tetrachloride	ND		ug/kg	50	12.
Tetrachloroethene	ND		ug/kg	25	9.8
Chlorobenzene	ND		ug/kg	25	6.4
1,2-Dichloroethane	ND		ug/kg	50	13.
1,1,1-Trichloroethane	ND		ug/kg	25	8.4
Benzene	ND		ug/kg	25	8.3
Toluene	ND		ug/kg	50	27.
Ethylbenzene	ND		ug/kg	50	7.0
Vinyl chloride	ND		ug/kg	50	17.
1,1-Dichloroethene	ND		ug/kg	50	12.
trans-1,2-Dichloroethene	ND		ug/kg	75	6.8
Trichloroethene	ND		ug/kg	25	6.8
1,2-Dichlorobenzene	ND		ug/kg	100	7.2
1,3-Dichlorobenzene	ND		ug/kg	100	7.4
1,4-Dichlorobenzene	ND		ug/kg	100	8.6
Methyl tert butyl ether	ND		ug/kg	100	10.
p/m-Xylene	ND		ug/kg	100	28.
o-Xylene	ND		ug/kg	50	14.
Xylenes, Total	ND		ug/kg	50	14.
cis-1,2-Dichloroethene	ND		ug/kg	50	8.8
Acetone	ND		ug/kg	500	240

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/18/26 10:36
Analyst: JFI

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by EPA 5035/8260 High - Westborough Lab for sample(s): 01 Batch: WG2243583-5					
2-Butanone	ND		ug/kg	500	110
n-Butylbenzene	ND		ug/kg	50	8.4
sec-Butylbenzene	ND		ug/kg	50	7.3
tert-Butylbenzene	ND		ug/kg	100	5.9
n-Propylbenzene	ND		ug/kg	50	8.6
1,3,5-Trimethylbenzene	ND		ug/kg	100	9.6
1,2,4-Trimethylbenzene	ND		ug/kg	100	17.

Tentatively Identified Compounds			
Total TIC Compounds	370	J	ug/kg
Unknown	370	J	ug/kg

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	127		70-130
Toluene-d8	90		70-130
4-Bromofluorobenzene	84		70-130
Dibromofluoromethane	121		70-130

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/19/26 15:25
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-04 Batch: WG2243975-5					
Methylene chloride	ND		ug/kg	5.0	2.3
1,1-Dichloroethane	ND		ug/kg	1.0	0.14
Chloroform	ND		ug/kg	1.5	0.14
Carbon tetrachloride	ND		ug/kg	1.0	0.23
Tetrachloroethene	ND		ug/kg	0.50	0.20
Chlorobenzene	ND		ug/kg	0.50	0.13
1,2-Dichloroethane	ND		ug/kg	1.0	0.26
1,1,1-Trichloroethane	ND		ug/kg	0.50	0.17
Benzene	ND		ug/kg	0.50	0.17
Toluene	ND		ug/kg	1.0	0.54
Ethylbenzene	ND		ug/kg	1.0	0.14
Vinyl chloride	ND		ug/kg	1.0	0.34
1,1-Dichloroethene	ND		ug/kg	1.0	0.24
trans-1,2-Dichloroethene	ND		ug/kg	1.5	0.14
Trichloroethene	ND		ug/kg	0.50	0.14
1,2-Dichlorobenzene	ND		ug/kg	2.0	0.14
1,3-Dichlorobenzene	ND		ug/kg	2.0	0.15
1,4-Dichlorobenzene	ND		ug/kg	2.0	0.17
Methyl tert butyl ether	ND		ug/kg	2.0	0.20
p/m-Xylene	ND		ug/kg	2.0	0.56
o-Xylene	ND		ug/kg	1.0	0.29
Xylenes, Total	ND		ug/kg	1.0	0.29
cis-1,2-Dichloroethene	ND		ug/kg	1.0	0.18
Acetone	ND		ug/kg	10	4.8

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8260D
Analytical Date: 07/19/26 15:25
Analyst: MNF

Parameter	Result	Qualifier	Units	RL	MDL
Volatile Organics by GC/MS - Westborough Lab for sample(s): 02-04 Batch: WG2243975-5					
2-Butanone	ND		ug/kg	10	2.2
n-Butylbenzene	ND		ug/kg	1.0	0.17
sec-Butylbenzene	ND		ug/kg	1.0	0.15
tert-Butylbenzene	ND		ug/kg	2.0	0.12
n-Propylbenzene	ND		ug/kg	1.0	0.17
1,3,5-Trimethylbenzene	ND		ug/kg	2.0	0.19
1,2,4-Trimethylbenzene	ND		ug/kg	2.0	0.33
Tentatively Identified Compounds					
Total TIC Compounds	2.73	J	ug/kg		
Unknown	2.73	J	ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
1,2-Dichloroethane-d4	112		70-130
Toluene-d8	102		70-130
4-Bromofluorobenzene	96		70-130
Dibromofluoromethane	101		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 01 Batch: WG2243583-3 WG2243583-4								
Methylene chloride	89		85		70-130	5		30
1,1-Dichloroethane	95		92		70-130	3		30
Chloroform	98		97		70-130	1		30
Carbon tetrachloride	98		96		70-130	2		30
Tetrachloroethene	103		96		70-130	7		30
Chlorobenzene	95		92		70-130	3		30
1,2-Dichloroethane	102		107		70-130	5		30
1,1,1-Trichloroethane	103		101		70-130	2		30
Benzene	95		93		70-130	2		30
Toluene	92		90		70-130	2		30
Ethylbenzene	95		91		70-130	4		30
Vinyl chloride	96		91		67-130	5		30
1,1-Dichloroethene	106		101		65-135	5		30
trans-1,2-Dichloroethene	98		96		70-130	2		30
Trichloroethene	94		95		70-130	1		30
1,2-Dichlorobenzene	93		90		70-130	3		30
1,3-Dichlorobenzene	92		88		70-130	4		30
1,4-Dichlorobenzene	92		90		70-130	2		30
Methyl tert butyl ether	93		95		66-130	2		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by EPA 5035/8260 High - Westborough Lab Associated sample(s): 01 Batch: WG2243583-3 WG2243583-4								
p/m-Xylene	101		96		70-130	5		30
o-Xylene	100		96		70-130	4		30
cis-1,2-Dichloroethene	101		102		70-130	1		30
Acetone	126		133		54-140	5		30
2-Butanone	116		124		70-130	7		30
n-Butylbenzene	92		88		70-130	4		30
sec-Butylbenzene	83		79		70-130	5		30
tert-Butylbenzene	94		89		70-130	5		30
n-Propylbenzene	89		85		70-130	5		30
1,3,5-Trimethylbenzene	91		87		70-130	4		30
1,2,4-Trimethylbenzene	92		88		70-130	4		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	108		112		70-130
Toluene-d8	97		96		70-130
4-Bromofluorobenzene	93		92		70-130
Dibromofluoromethane	109		111		70-130

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-04 Batch: WG2243975-3 WG2243975-4								
Methylene chloride	101		105		70-130	4		30
1,1-Dichloroethane	114		116		70-130	2		30
Chloroform	105		109		70-130	4		30
Carbon tetrachloride	106		108		70-130	2		30
Tetrachloroethene	100		101		70-130	1		30
Chlorobenzene	100		103		70-130	3		30
1,2-Dichloroethane	117		121		70-130	3		30
1,1,1-Trichloroethane	106		109		70-130	3		30
Benzene	107		109		70-130	2		30
Toluene	99		102		70-130	3		30
Ethylbenzene	101		102		70-130	1		30
Vinyl chloride	112		113		67-130	1		30
1,1-Dichloroethene	101		105		65-135	4		30
trans-1,2-Dichloroethene	100		105		70-130	5		30
Trichloroethene	106		111		70-130	5		30
1,2-Dichlorobenzene	101		102		70-130	1		30
1,3-Dichlorobenzene	100		101		70-130	1		30
1,4-Dichlorobenzene	97		97		70-130	0		30
Methyl tert butyl ether	103		107		66-130	4		30

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Volatile Organics by GC/MS - Westborough Lab Associated sample(s): 02-04 Batch: WG2243975-3 WG2243975-4								
p/m-Xylene	100		102		70-130	2		30
o-Xylene	98		100		70-130	2		30
cis-1,2-Dichloroethene	99		103		70-130	4		30
Acetone	**141**	Q	**143**	Q	54-140	1		30
2-Butanone	**134**	Q	**143**	Q	70-130	6		30
n-Butylbenzene	103		104		70-130	1		30
sec-Butylbenzene	101		102		70-130	1		30
tert-Butylbenzene	98		99		70-130	1		30
n-Propylbenzene	105		106		70-130	1		30
1,3,5-Trimethylbenzene	101		102		70-130	1		30
1,2,4-Trimethylbenzene	103		104		70-130	1		30

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
1,2-Dichloroethane-d4	113		115		70-130
Toluene-d8	99		100		70-130
4-Bromofluorobenzene	103		104		70-130
Dibromofluoromethane	104		104		70-130

SEMIVOLATILES

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-01
Client ID: 5FS-SW-22B (6-8)
Sample Location: Not Specified

Date Collected: 07/16/26 10:05
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/18/26 07:11
Analyst: CMM
Percent Solids: 76%

Extraction Method: EPA 3546
Extraction Date: 07/17/26 14:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	180	23.	1
Hexachlorobenzene	ND		ug/kg	130	24.	1
Fluoranthene	160		ug/kg	130	25.	1
Naphthalene	380		ug/kg	220	27.	1
Nitrobenzene	ND		ug/kg	44	19.	1
Benzo(a)anthracene	76	J	ug/kg	130	25.	1
Benzo(a)pyrene	57	J	ug/kg	180	53.	1
Benzo(b)fluoranthene	100	J	ug/kg	130	37.	1
Benzo(k)fluoranthene	ND		ug/kg	130	35.	1
Chrysene	110	J	ug/kg	130	23.	1
Acenaphthylene	ND		ug/kg	180	34.	1
Anthracene	100	J	ug/kg	130	43.	1
Benzo(ghi)perylene	48	J	ug/kg	180	26.	1
Fluorene	ND		ug/kg	220	21.	1
Phenanthrene	510		ug/kg	130	27.	1
Dibenzo(a,h)anthracene	ND		ug/kg	130	25.	1
Indeno(1,2,3-cd)pyrene	47	J	ug/kg	180	30.	1
Pyrene	180		ug/kg	130	22.	1
Aniline	ND		ug/kg	44	16.	1
Dibenzofuran	ND		ug/kg	220	21.	1
Pentachlorophenol	ND		ug/kg	180	48.	1
Phenol	ND		ug/kg	220	33.	1
2-Methylphenol	ND		ug/kg	220	34.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	320	34.	1
1,4-Dioxane	ND		ug/kg	33	10.	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-01
Client ID: 5FS-SW-22B (6-8)
Sample Location: Not Specified
Date Collected: 07/16/26 10:05
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	176000	J	ug/kg			1
Unknown Alkane	9440	J	ug/kg			1
Unknown Alkane	6590	J	ug/kg			1
Unknown Benzene	11200	J	ug/kg			1
Unknown Alkane	12100	J	ug/kg			1
Unknown Cycloalkane	11500	J	ug/kg			1
Unknown	12400	J	ug/kg			1
Unknown	11200	J	ug/kg			1
Unknown Alkane	8900	J	ug/kg			1
Unknown Alkane	12600	J	ug/kg			1
Unknown Alkane	18400	J	ug/kg			1
Unknown	12100	J	ug/kg			1
Unknown Alkane	10500	J	ug/kg			1
Unknown Cycloalkane	7060	J	ug/kg			1
Unknown	15600	J	ug/kg			1
Unknown	16600	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	74		25-120
Phenol-d6	73		10-120
Nitrobenzene-d5	78		23-120
2-Fluorobiphenyl	68		30-120
2,4,6-Tribromophenol	99		10-136
4-Terphenyl-d14	86		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-03
Client ID: 5FS-SW-10F (12-14.5)
Sample Location: Not Specified

Date Collected: 07/16/26 10:40
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/18/26 06:32
Analyst: CMM
Percent Solids: 84%

Extraction Method: EPA 3546
Extraction Date: 07/17/26 14:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	20.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	60	J	ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	40	17.	1
Benzo(a)anthracene	29	J	ug/kg	120	22.	1
Benzo(a)pyrene	ND		ug/kg	160	48.	1
Benzo(b)fluoranthene	ND		ug/kg	120	33.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	28	J	ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	23.	1
Fluorene	27	J	ug/kg	200	19.	1
Phenanthrene	83	J	ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	60	J	ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	280	31.	1
1,4-Dioxane	ND		ug/kg	30	9.1	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-03
Client ID: 5FS-SW-10F (12-14.5)
Sample Location: Not Specified
Date Collected: 07/16/26 10:40
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	10500	J	ug/kg			1
Unknown Alkane	545	J	ug/kg			1
Unknown Alkane	846	J	ug/kg			1
Unknown Cycloalkane	497	J	ug/kg			1
Unknown Alkane	485	J	ug/kg			1
Unknown Alkane	1210	J	ug/kg			1
Unknown Cycloalkane	514	J	ug/kg			1
Unknown	791	J	ug/kg			1
Unknown Alkane	655	J	ug/kg			1
Unknown Benzene	453	J	ug/kg			1
Unknown Cycloalkane	941	J	ug/kg			1
Unknown Alkane	648	J	ug/kg			1
Unknown	1220	J	ug/kg			1
Unknown Alkane	636	J	ug/kg			1
Unknown	449	J	ug/kg			1
Unknown Alkane	637	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	69		25-120
Phenol-d6	70		10-120
Nitrobenzene-d5	70		23-120
2-Fluorobiphenyl	67		30-120
2,4,6-Tribromophenol	94		10-136
4-Terphenyl-d14	77		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-04
Client ID: DUP-7
Sample Location: Not Specified

Date Collected: 07/16/26 11:00
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Analytical Method: 1,8270E
Analytical Date: 07/18/26 06:12
Analyst: CMM
Percent Solids: 82%

Extraction Method: EPA 3546
Extraction Date: 07/17/26 14:04

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Acenaphthene	ND		ug/kg	160	21.	1
Hexachlorobenzene	ND		ug/kg	120	22.	1
Fluoranthene	43	J	ug/kg	120	23.	1
Naphthalene	ND		ug/kg	200	24.	1
Nitrobenzene	ND		ug/kg	40	18.	1
Benzo(a)anthracene	ND		ug/kg	120	23.	1
Benzo(a)pyrene	ND		ug/kg	160	49.	1
Benzo(b)fluoranthene	ND		ug/kg	120	34.	1
Benzo(k)fluoranthene	ND		ug/kg	120	32.	1
Chrysene	23	J	ug/kg	120	21.	1
Acenaphthylene	ND		ug/kg	160	31.	1
Anthracene	ND		ug/kg	120	39.	1
Benzo(ghi)perylene	ND		ug/kg	160	24.	1
Fluorene	65	J	ug/kg	200	20.	1
Phenanthrene	140		ug/kg	120	24.	1
Dibenzo(a,h)anthracene	ND		ug/kg	120	23.	1
Indeno(1,2,3-cd)pyrene	ND		ug/kg	160	28.	1
Pyrene	48	J	ug/kg	120	20.	1
Aniline	ND		ug/kg	40	15.	1
Dibenzofuran	ND		ug/kg	200	19.	1
Pentachlorophenol	ND		ug/kg	160	44.	1
Phenol	ND		ug/kg	200	30.	1
2-Methylphenol	ND		ug/kg	200	31.	1
3-Methylphenol/4-Methylphenol	ND		ug/kg	290	31.	1
1,4-Dioxane	ND		ug/kg	30	9.2	1

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-04
Client ID: DUP-7
Sample Location: Not Specified
Date Collected: 07/16/26 11:00
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor
Semivolatile Organics by GC/MS - Westborough Lab						
Tentatively Identified Compounds						
Total TIC Compounds	48700	J	ug/kg			1
Unknown	2840	J	ug/kg			1
Unknown	4600	J	ug/kg			1
Unknown Alkane	3170	J	ug/kg			1
Unknown Alkane	3970	J	ug/kg			1
Unknown Alkane	2350	J	ug/kg			1
Unknown	3370	J	ug/kg			1
Unknown	3020	J	ug/kg			1
Unknown Alkane	3700	J	ug/kg			1
Unknown Cycloalkane	5260	J	ug/kg			1
Unknown	2740	J	ug/kg			1
Unknown Alkane	2360	J	ug/kg			1
Unknown Cycloalkane	3360	J	ug/kg			1
Unknown	2240	J	ug/kg			1
Unknown Alkane	2760	J	ug/kg			1
Unknown	3000	J	ug/kg			1

Surrogate	% Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		25-120
Phenol-d6	74		10-120
Nitrobenzene-d5	79		23-120
2-Fluorobiphenyl	75		30-120
2,4,6-Tribromophenol	100		10-136
4-Terphenyl-d14	87		18-120

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 07/18/26 00:38
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 07/17/26 02:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03-04 Batch: WG2243130-1					
Acenaphthene	ND		ug/kg	130	17.
Hexachlorobenzene	ND		ug/kg	99	18.
Fluoranthene	ND		ug/kg	99	19.
Naphthalene	ND		ug/kg	160	20.
Nitrobenzene	ND		ug/kg	33	14.
Benzo(a)anthracene	ND		ug/kg	99	18.
Benzo(a)pyrene	ND		ug/kg	130	40.
Benzo(b)fluoranthene	ND		ug/kg	99	28.
Benzo(k)fluoranthene	ND		ug/kg	99	26.
Chrysene	ND		ug/kg	99	17.
Acenaphthylene	ND		ug/kg	130	25.
Anthracene	ND		ug/kg	99	32.
Benzo(ghi)perylene	ND		ug/kg	130	19.
Fluorene	ND		ug/kg	160	16.
Phenanthrene	ND		ug/kg	99	20.
Dibenzo(a,h)anthracene	ND		ug/kg	99	19.
Indeno(1,2,3-cd)pyrene	ND		ug/kg	130	23.
Pyrene	ND		ug/kg	99	16.
Aniline	ND		ug/kg	33	12.
Dibenzofuran	ND		ug/kg	160	16.
Pentachlorophenol	ND		ug/kg	130	36.
Phenol	ND		ug/kg	160	25.
2-Methylphenol	ND		ug/kg	160	26.
3-Methylphenol/4-Methylphenol	ND		ug/kg	240	26.

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Analytical Method: 1,8270E
Analytical Date: 07/18/26 00:38
Analyst: CMM

Extraction Method: EPA 3546
Extraction Date: 07/17/26 02:34

Parameter	Result	Qualifier	Units	RL	MDL
Semivolatile Organics by GC/MS - Westborough Lab for sample(s): 01,03-04 Batch: WG2243130-1					
1,4-Dioxane	ND		ug/kg	25	7.6
Tentatively Identified Compounds					
Total TIC Compounds	1120	J	ug/kg		
Unknown	1120	J	ug/kg		

Surrogate	%Recovery	Qualifier	Acceptance Criteria
2-Fluorophenol	76		25-120
Phenol-d6	80		10-120
Nitrobenzene-d5	77		23-120
2-Fluorobiphenyl	81		30-120
2,4,6-Tribromophenol	109		10-136
4-Terphenyl-d14	87		18-120

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03-04 Batch: WG2243130-2 WG2243130-3								
Acenaphthene	78		79		31-137	1		50
Hexachlorobenzene	92		92		40-140	0		50
Fluoranthene	81		83		40-140	2		50
Naphthalene	75		77		40-140	3		50
Nitrobenzene	75		77		40-140	3		50
Benzo(a)anthracene	79		80		40-140	1		50
Benzo(a)pyrene	92		94		40-140	2		50
Benzo(b)fluoranthene	88		91		40-140	3		50
Benzo(k)fluoranthene	91		91		40-140	0		50
Chrysene	80		82		40-140	2		50
Acenaphthylene	78		80		40-140	3		50
Anthracene	80		82		40-140	2		50
Benzo(ghi)perylene	88		88		40-140	0		50
Fluorene	80		82		40-140	2		50
Phenanthrene	78		80		40-140	3		50
Dibenzo(a,h)anthracene	86		88		40-140	2		50
Indeno(1,2,3-cd)pyrene	85		87		40-140	2		50
Pyrene	82		82		35-142	0		50
Aniline	55		54		40-140	2		50

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Semivolatile Organics by GC/MS - Westborough Lab Associated sample(s): 01,03-04 Batch: WG2243130-2 WG2243130-3								
Dibenzofuran	74		76		40-140	3		50
Pentachlorophenol	102		100		17-109	2		50
Phenol	71		72		26-90	1		50
2-Methylphenol	71		73		30-130	3		50
3-Methylphenol/4-Methylphenol	73		74		30-130	1		50
1,4-Dioxane	61		62		40-140	2		50

Surrogate	LCS %Recovery	Qual	LCSD %Recovery	Qual	Acceptance Criteria
2-Fluorophenol	73		74		25-120
Phenol-d6	76		76		10-120
Nitrobenzene-d5	73		73		23-120
2-Fluorobiphenyl	73		74		30-120
2,4,6-Tribromophenol	105		106		10-136
4-Terphenyl-d14	80		80		18-120

METALS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-01
Client ID: 5FS-SW-22B (6-8)
Sample Location: Not Specified
Date Collected: 07/16/26 10:05
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 76%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7340		mg/kg	10.1	3.27	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	5.04	3.88	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Arsenic, Total	5.44		mg/kg	1.01	0.435	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Barium, Total	51.0		mg/kg	1.01	0.107	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.416	J	mg/kg	0.504	0.055	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.115	J	mg/kg	1.01	0.055	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Calcium, Total	7760		mg/kg	10.1	5.71	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Chromium, Total	11.3		mg/kg	1.01	0.854	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Cobalt, Total	6.54		mg/kg	2.01	0.250	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Copper, Total	18.0		mg/kg	1.01	0.229	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Iron, Total	16400		mg/kg	25.2	8.06	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Lead, Total	24.0		mg/kg	5.04	0.240	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Magnesium, Total	5170		mg/kg	10.1	1.64	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Manganese, Total	231		mg/kg	1.01	0.540	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Mercury, Total	0.094	J	mg/kg	0.107	0.070	1	07/17/26 13:46	07/17/26 19:04	EPA 7471B	1,7471B	CME
Nickel, Total	17.4		mg/kg	2.52	0.814	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Potassium, Total	507		mg/kg	252	51.1	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	2.01	0.331	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Silver, Total	ND		mg/kg	0.504	0.300	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Sodium, Total	173	J	mg/kg	201	107.	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	2.01	0.909	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Vanadium, Total	12.6		mg/kg	1.01	0.152	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
Zinc, Total	73.9		mg/kg	5.04	0.610	2	07/17/26 12:51	07/17/26 20:13	EPA 3050B	1,6010D	JMF
General Chemistry - Mansfield Lab											
Chromium, Trivalent	11.3		mg/kg	1.05	0.854	1		07/20/26 05:17	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-03
Client ID: 5FS-SW-10F (12-14.5)
Sample Location: Not Specified
Date Collected: 07/16/26 10:40
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 84%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7240		mg/kg	9.04	2.94	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	4.52	3.48	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Arsenic, Total	4.99		mg/kg	0.904	0.390	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Barium, Total	37.7		mg/kg	0.904	0.096	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.404	J	mg/kg	0.452	0.050	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.178	J	mg/kg	0.904	0.050	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Calcium, Total	2640		mg/kg	9.04	5.12	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Chromium, Total	10.5		mg/kg	0.904	0.766	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Cobalt, Total	7.50		mg/kg	1.81	0.224	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Copper, Total	18.8		mg/kg	0.904	0.205	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Iron, Total	16600		mg/kg	22.6	7.23	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Lead, Total	10.9		mg/kg	4.52	0.215	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Magnesium, Total	2770		mg/kg	9.04	1.47	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Manganese, Total	340		mg/kg	0.904	0.484	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Mercury, Total	ND		mg/kg	0.087	0.057	1	07/17/26 13:46	07/17/26 19:08	EPA 7471B	1,7471B	CME
Nickel, Total	17.1		mg/kg	2.26	0.730	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Potassium, Total	497		mg/kg	226	45.8	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	1.81	0.297	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Silver, Total	0.492		mg/kg	0.452	0.269	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Sodium, Total	ND		mg/kg	181	95.8	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	1.81	0.815	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Vanadium, Total	12.2		mg/kg	0.904	0.136	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
Zinc, Total	50.1		mg/kg	4.52	0.548	2	07/17/26 12:51	07/17/26 20:17	EPA 3050B	1,6010D	JMF
General Chemistry - Mansfield Lab											
Chromium, Trivalent	10.5		mg/kg	0.958	0.766	1		07/20/26 05:17	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-04
Client ID: DUP-7
Sample Location: Not Specified
Date Collected: 07/16/26 11:00
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil
Percent Solids: 82%

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Prep Method	Analytical Method	Analyst
Total Metals - Mansfield Lab											
Aluminum, Total	7180		mg/kg	9.34	3.04	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Antimony, Total	ND		mg/kg	4.67	3.60	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Arsenic, Total	4.50		mg/kg	0.934	0.404	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Barium, Total	42.2		mg/kg	0.934	0.099	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Beryllium, Total	0.373	J	mg/kg	0.467	0.051	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Cadmium, Total	0.143	J	mg/kg	0.934	0.051	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Calcium, Total	6560		mg/kg	9.34	5.30	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Chromium, Total	11.0		mg/kg	0.934	0.792	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Cobalt, Total	6.66		mg/kg	1.87	0.232	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Copper, Total	16.3		mg/kg	0.934	0.212	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Iron, Total	15900		mg/kg	23.4	7.47	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Lead, Total	9.95		mg/kg	4.67	0.222	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Magnesium, Total	4180		mg/kg	9.34	1.52	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Manganese, Total	208		mg/kg	0.934	0.501	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Mercury, Total	ND		mg/kg	0.089	0.058	1	07/17/26 13:46	07/17/26 19:11	EPA 7471B	1,7471B	CME
Nickel, Total	16.7		mg/kg	2.34	0.755	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Potassium, Total	485		mg/kg	234	47.4	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Selenium, Total	ND		mg/kg	1.87	0.307	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Silver, Total	0.478		mg/kg	0.467	0.278	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Sodium, Total	ND		mg/kg	187	99.0	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Thallium, Total	ND		mg/kg	1.87	0.843	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Vanadium, Total	11.6		mg/kg	0.934	0.141	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
Zinc, Total	52.6		mg/kg	4.67	0.566	2	07/17/26 12:51	07/17/26 20:21	EPA 3050B	1,6010D	JMF
General Chemistry - Mansfield Lab											
Chromium, Trivalent	11.0		mg/kg	0.977	0.792	1		07/20/26 05:17	NA	107,-	

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03-04 Batch: WG2243044-1										
Aluminum, Total	ND		mg/kg	4.00	1.30	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Antimony, Total	ND		mg/kg	2.00	1.54	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Arsenic, Total	ND		mg/kg	0.400	0.173	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Barium, Total	ND		mg/kg	0.400	0.042	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Beryllium, Total	ND		mg/kg	0.200	0.022	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Cadmium, Total	ND		mg/kg	0.400	0.022	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Calcium, Total	ND		mg/kg	4.00	2.27	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Chromium, Total	ND		mg/kg	0.400	0.339	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Cobalt, Total	ND		mg/kg	0.800	0.099	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Copper, Total	ND		mg/kg	0.400	0.091	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Iron, Total	ND		mg/kg	10.0	3.20	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Lead, Total	ND		mg/kg	2.00	0.095	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Magnesium, Total	ND		mg/kg	4.00	0.652	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Manganese, Total	ND		mg/kg	0.400	0.214	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Nickel, Total	ND		mg/kg	1.00	0.323	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Potassium, Total	ND		mg/kg	100	20.3	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Selenium, Total	ND		mg/kg	0.800	0.132	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Silver, Total	ND		mg/kg	0.200	0.119	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Sodium, Total	ND		mg/kg	80.0	42.4	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Thallium, Total	ND		mg/kg	0.800	0.361	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Vanadium, Total	ND		mg/kg	0.400	0.060	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF
Zinc, Total	ND		mg/kg	2.00	0.242	1	07/17/26 12:51	07/17/26 17:36	1,6010D	JMF

Prep Information

Digestion Method: EPA 3050B

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
Total Metals - Mansfield Lab for sample(s): 01,03-04 Batch: WG2243045-1										
Mercury, Total	ND		mg/kg	0.083	0.054	1	07/17/26 13:46	07/17/26 17:42	1,7471B	CME

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Prep Information

Digestion Method: EPA 7471B

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-04 Batch: WG2243044-2								
Aluminum, Total	101		-		80-120	-		20
Antimony, Total	109		-		80-120	-		20
Arsenic, Total	100		-		80-120	-		20
Barium, Total	104		-		80-120	-		20
Beryllium, Total	105		-		80-120	-		20
Cadmium, Total	102		-		80-120	-		20
Calcium, Total	106		-		80-120	-		20
Chromium, Total	103		-		80-120	-		20
Cobalt, Total	104		-		80-120	-		20
Copper, Total	105		-		80-120	-		20
Iron, Total	105		-		80-120	-		20
Lead, Total	101		-		80-120	-		20
Magnesium, Total	98		-		80-120	-		20
Manganese, Total	105		-		80-120	-		20
Nickel, Total	104		-		80-120	-		20
Potassium, Total	107		-		80-120	-		20
Selenium, Total	103		-		80-120	-		20
Silver, Total	103		-		80-120	-		20
Sodium, Total	106		-		80-120	-		20
Thallium, Total	99		-		80-120	-		20
Vanadium, Total	107		-		80-120	-		20

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	LCS %Recovery	LCSD %Recovery	%Recovery Limits	RPD	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-04 Batch: WG2243044-2					
Zinc, Total	100	-	80-120	-	20
Total Metals - Mansfield Lab Associated sample(s): 01,03-04 Batch: WG2243045-2					
Mercury, Total	99	-	80-120	-	20

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-04 QC Batch ID: WG2243044-3 QC Sample: L2645036-02 Client ID: MS Sample												
Aluminum, Total	8810	170	7120	**0**	Q	-	-		75-125	-		
Antimony, Total	ND	42.6	20.2	**47**	Q	-	-		75-125	-		
Arsenic, Total	3.26	10.2	12.3	88		-	-		75-125	-		
Barium, Total	78.8	170	238	94		-	-		75-125	-		
Beryllium, Total	0.387J	4.26	4.43	104		-	-		75-125	-		
Cadmium, Total	0.216J	4.51	4.31	96		-	-		75-125	-		
Calcium, Total	16100	851	9260	**0**	Q	-	-		75-125	-		
Chromium, Total	21.8	17	34.0	**72**	Q	-	-		75-125	-		
Cobalt, Total	7.80	42.6	46.5	91		-	-		75-125	-		
Copper, Total	51.3	21.3	73.3	103		-	-		75-125	-		
Iron, Total	15700	85.1	14400	**0**	Q	-	-		75-125	-		
Lead, Total	58.9	45.1	98.8	88		-	-		75-125	-		
Magnesium, Total	10500	851	7950	**0**	Q	-	-		75-125	-		
Manganese, Total	281	42.6	252	**0**	Q	-	-		75-125	-		
Nickel, Total	19.2	42.6	56.0	86		-	-		75-125	-		
Potassium, Total	2830	851	3100	**32**	Q	-	-		75-125	-		
Selenium, Total	ND	10.2	9.43	92		-	-		75-125	-		
Silver, Total	0.326J	4.26	4.50	106		-	-		75-125	-		
Sodium, Total	148J	851	969	114		-	-		75-125	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-04 QC Batch ID: WG2243044-3 QC Sample: L2645036-02 Client ID: MS Sample												
Thallium, Total	ND	10.2	10.2	100		-	-		75-125	-		
Vanadium, Total	30.8	42.6	82.1	120		-	-		75-125	-		
Zinc, Total	131	42.6	161	**70**	Q	-	-		75-125	-		
Total Metals - Mansfield Lab Associated sample(s): 01,03-04 QC Batch ID: WG2243045-3 QC Sample: L2645036-02 Client ID: MS Sample												
Mercury, Total	0.077J	1.62	1.67	103		-	-		80-120	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-04 QC Batch ID: WG2243044-4 QC Sample: L2645036-02 Client ID: DUP Sample						
Aluminum, Total	8810	8230	mg/kg	7		20
Antimony, Total	ND	ND	mg/kg	NC		20
Arsenic, Total	3.26	3.82	mg/kg	16		20
Barium, Total	78.8	79.9	mg/kg	1		20
Beryllium, Total	0.387J	0.493	mg/kg	NC		20
Cadmium, Total	0.216J	0.218J	mg/kg	NC		20
Calcium, Total	16100	10500	mg/kg	**42**	Q	20
Chromium, Total	21.8	23.0	mg/kg	5		20
Cobalt, Total	7.80	8.02	mg/kg	3		20
Copper, Total	51.3	91.7	mg/kg	**57**	Q	20
Iron, Total	15700	15100	mg/kg	4		20
Lead, Total	58.9	67.5	mg/kg	14		20
Magnesium, Total	10500	8710	mg/kg	19		20
Manganese, Total	281	268	mg/kg	5		20
Nickel, Total	19.2	23.9	mg/kg	**22**	Q	20
Potassium, Total	2830	2570	mg/kg	10		20
Selenium, Total	ND	ND	mg/kg	NC		20

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET

Project Number: 4694.0001B000

Lab Number: L2645073

Report Date: 07/21/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-04 QC Batch ID: WG2243044-4 QC Sample: L2645036-02 Client ID: DUP Sample						
Silver, Total	0.326J	0.427J	mg/kg	NC		20
Sodium, Total	148J	201	mg/kg	NC		20
Thallium, Total	ND	ND	mg/kg	NC		20
Vanadium, Total	30.8	28.6	mg/kg	7		20
Zinc, Total	131	159	mg/kg	19		20
Total Metals - Mansfield Lab Associated sample(s): 01,03-04 QC Batch ID: WG2243045-4 QC Sample: L2645036-02 Client ID: DUP Sample						
Mercury, Total	0.077J	0.062J	mg/kg	NC		20

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Serial Dilution Analysis
Batch Quality Control

Lab Number: L2645073
Report Date: 07/21/26

Parameter	Native Sample	Serial Dilution	Units	% D	Qual	RPD Limits
Total Metals - Mansfield Lab Associated sample(s): 01,03-04 QC Batch ID: WG2243044-6 QC Sample: L2645036-02 Client ID: DUP Sample						
Zinc, Total	131	140	mg/kg	7		20

INORGANICS
&
MISCELLANEOUS

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-01
Client ID: 5FS-SW-22B (6-8)
Sample Location: Not Specified

Date Collected: 07/16/26 10:05
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	76.0		%	0.100	NA	1	-	07/17/26 10:40	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.2	0.26	1	07/17/26 12:30	07/17/26 17:15	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	1.05	0.210	1	07/19/26 00:51	07/20/26 05:17	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-03
Client ID: 5FS-SW-10F (12-14.5)
Sample Location: Not Specified

Date Collected: 07/16/26 10:40
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	83.5		%	0.100	NA	1	-	07/17/26 10:40	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.2	0.24	1	07/17/26 12:30	07/17/26 17:18	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.958	0.192	1	07/19/26 00:51	07/20/26 05:17	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

SAMPLE RESULTS

Lab ID: L2645073-04
Client ID: DUP-7
Sample Location: Not Specified

Date Collected: 07/16/26 11:00
Date Received: 07/16/26
Field Prep: Not Specified

Sample Depth:
Matrix: Soil

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab										
Solids, Total	81.9		%	0.100	NA	1	-	07/17/26 10:40	121,2540G	ROI
Cyanide, Total	ND		mg/kg	1.2	0.24	1	07/17/26 12:30	07/17/26 17:19	1,9010C/9012B	JER
Chromium, Hexavalent	ND		mg/kg	0.977	0.195	1	07/19/26 00:51	07/20/26 05:17	1,7196A	TN

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

Method Blank Analysis
Batch Quality Control

Parameter	Result	Qualifier	Units	RL	MDL	Dilution Factor	Date Prepared	Date Analyzed	Analytical Method	Analyst
General Chemistry - Westborough Lab for sample(s): 01,03-04 Batch: WG2242988-1										
Cyanide, Total	ND		mg/kg	0.97	0.20	1	07/17/26 12:30	07/17/26 17:09	1,9010C/9012B	JER
General Chemistry - Westborough Lab for sample(s): 01,03-04 Batch: WG2243468-1										
Chromium, Hexavalent	ND		mg/kg	0.800	0.160	1	07/19/26 00:51	07/20/26 05:17	1,7196A	TN

Lab Control Sample Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	LCS %Recovery	Qual	LCSD %Recovery	Qual	%Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab	Associated sample(s): 01,03-04		Batch: WG2242988-2		WG2242988-3			
Cyanide, Total	90		84		80-120	7		35
General Chemistry - Westborough Lab	Associated sample(s): 01,03-04		Batch: WG2243468-2					
Chromium, Hexavalent	105		-		80-120	-		

Matrix Spike Analysis
Batch Quality Control

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Parameter	Native Sample	MS Added	MS Found	MS %Recovery	Qual	MSD Found	MSD %Recovery	Qual	Recovery Limits	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03-04 QC Batch ID: WG2242988-4 WG2242988-5 QC Sample: L2645073-01 Client ID: 5FS-SW-22B (6-8)												
Cyanide, Total	ND	13	12	93		12	92		75-125	1		35
General Chemistry - Westborough Lab Associated sample(s): 01,03-04 QC Batch ID: WG2243468-4 QC Sample: L2645073-04 Client ID: DUP-7												
Chromium, Hexavalent	ND	1570	1430	91		-	-		75-125	-		

Lab Duplicate Analysis

Batch Quality Control

Project Name: 5 FLINT STREET

Project Number: 4694.0001B000

Lab Number: L2645073

Report Date: 07/21/26

Parameter	Native Sample	Duplicate Sample	Units	RPD	Qual	RPD Limits
General Chemistry - Westborough Lab Associated sample(s): 01,03-04 QC Batch ID: WG2242919-1 QC Sample: L2645036-02 Client ID: DUP Sample						
Solids, Total	89.6	89.5	%	0		10
General Chemistry - Westborough Lab Associated sample(s): 01,03-04 QC Batch ID: WG2243468-6 QC Sample: L2645073-04 Client ID: DUP-7						
Chromium, Hexavalent	ND	ND	mg/kg	NC		20

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

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(*)
L2645073-01A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-01B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-01C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-01D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2645073-01E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),NI-TI(180),AL-TI(180),CR-TI(180),TL-TI(180),PB-TI(180),ZN-TI(180),CU-TI(180),SE-TI(180),SB-TI(180),V-TI(180),CO-TI(180),HG-T(28),MG-TI(180),MN-TI(180),FE-TI(180),CA-TI(180),CD-TI(180),NA-TI(180),K-TI(180)
L2645073-01F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2645073-01G	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2645073-01X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-01Y	Vial Water preserved split	NA	NA			Y	Absent	17-JUL-26 08:28	NYTCL-8260HLW-R2(14)
L2645073-01Z	Vial Water preserved split	NA	NA			Y	Absent	17-JUL-26 08:28	NYTCL-8260HLW-R2(14)
L2645073-02A	Vial MeOH preserved	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-02B	Vial water preserved	NA	NA			Y	Absent	17-JUL-26 08:04	NYTCL-8260HLW-R2(14)
L2645073-02C	Vial water preserved	NA	NA			Y	Absent	17-JUL-26 08:04	NYTCL-8260HLW-R2(14)
L2645073-03A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-03B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-03C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-03D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)

*Values in parentheses indicate holding time in days

Project Name: 5 FLINT STREET
Project Number: 4694.0001B000

Lab Number: L2645073
Report Date: 07/21/26

Container Information

Container ID	Container Type	Cooler	Initial pH	Final pH	Temp deg C	Pres	Seal	Frozen Date/Time	Analysis(*)
L2645073-03E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),BA-TI(180),AS-TI(180),AG-TI(180),AL-TI(180),NI-TI(180),CR-TI(180),TL-TI(180),SE-TI(180),ZN-TI(180),CU-TI(180),PB-TI(180),SB-TI(180),CO-TI(180),V-TI(180),FE-TI(180),HG-T(28),MG-TI(180),MN-TI(180),K-TI(180),CD-TI(180),CA-TI(180),NA-TI(180)
L2645073-03F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2645073-03G	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		TCN-9010(14),NYTCL-8270(14),HEXCR-7196(30)
L2645073-03X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-03Y	Vial Water preserved split	NA	NA			Y	Absent	17-JUL-26 08:28	NYTCL-8260HLW-R2(14)
L2645073-03Z	Vial Water preserved split	NA	NA			Y	Absent	17-JUL-26 08:28	NYTCL-8260HLW-R2(14)
L2645073-04A	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-04B	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-04C	5 gram Encore Sampler	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-04D	Plastic 2oz unpreserved for TS	NA	NA			Y	Absent		TS(7)
L2645073-04E	Metals Only-Glass 60mL/2oz unpreserved	NA	NA			Y	Absent		BE-TI(180),AS-TI(180),BA-TI(180),AG-TI(180),CR-TI(180),TL-TI(180),NI-TI(180),AL-TI(180),PB-TI(180),SB-TI(180),ZN-TI(180),CU-TI(180),SE-TI(180),V-TI(180),CO-TI(180),MN-TI(180),FE-TI(180),HG-T(28),MG-TI(180),NA-TI(180),CD-TI(180),K-TI(180),CA-TI(180)
L2645073-04F	Glass 120ml/4oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2645073-04G	Glass 250ml/8oz unpreserved	NA	NA			Y	Absent		NYTCL-8270(14),TCN-9010(14),HEXCR-7196(30)
L2645073-04X	Vial MeOH preserved split	NA	NA			Y	Absent		NYTCL-8260HLW-R2(14)
L2645073-04Y	Vial Water preserved split	NA	NA			Y	Absent	17-JUL-26 08:28	NYTCL-8260HLW-R2(14)
L2645073-04Z	Vial Water preserved split	NA	NA			Y	Absent	17-JUL-26 08:28	NYTCL-8260HLW-R2(14)

*Values in parentheses indicate holding time in days

Project Name:	5 FLINT STREET	**Lab Number:**	L2645073
Project Number:	4694.0001B000	**Report Date:**	07/21/26

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:	5 FLINT STREET	**Lab Number:**	L2645073
Project Number:	4694.0001B000	**Report Date:**	07/21/26

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

Report Format: DU Report with 'J' Qualifiers

Project Name:	5 FLINT STREET	**Lab Number:**	L2645073
Project Number:	4694.0001B000	**Report Date:**	07/21/26

Data Qualifiers

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: 5 FLINT STREET
Project Number: 4694.0001B000
Lab Number: L2645073
Report Date: 07/21/26

REFERENCES

1 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods. EPA SW-846. Third Edition. Updates I - VI, 2018.

107 Calculation method.

121 Standard Methods for the Examination of Water and Wastewater. APHA-AWWA-WEF. Standard Methods Online.

LIMITATION OF LIABILITIES

Pace Analytical Services 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 Pace Analytical Services shall be to re-perform the work at it's own expense. In no event shall Pace Analytical Services 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 Pace Analytical Services.

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.

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

Certification Information

The following analytes are not included in our Primary NELAP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
EPA 8260D: NPW: 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene; SCM: Iodomethane (methyl iodide), 1,2,4,5-Tetramethylbenzene; 4-Ethyltoluene.
EPA 8270E: NPW: Dimethylnaphthalene,1,4-Diphenylhydrazine, alpha-Terpineol, Azobenzene; SCM: Dimethylnaphthalene,1,4-Diphenylhydrazine.
SM4500: NPW: Amenable Cyanide; SCM: Total Phosphorus, TKN, NO2, NO3.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
SM 2540D: TSS.
Biological Tissue Matrix: EPA 3050B

PAS-MAN1 Mansfield Facility – 120 Forbes Blvd. Mansfield, MA 02048
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.
MADEP-APH.

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028
EPA 524.2: 1,3,5-Trichlorobenzene, m/p-Xylene, o-xylene.
EPA 625.1: 1,2-Dichlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, N-Nitrosodiphenylamine.
EPA 8081B NPW and SCM: Alachlor, Endrin Ketone, Hexachlorobenzene.
EPA 8260D NPW: Tetrahydrofuran, 1,3,5-Trichlorobenzene; **SCM:** TAME, TBEE, Diethyl ether, DIPE, Tetrahydrofuran. 1,3,5-Trichlorobenzene, Freon-113.
EPA 8270E: NPW: Carbazole, 1-Methylnaphthalene, Pentachloronitrobenzene; **SCM:** Carbazole, 1-Methylnaphthalene.
EPA TO-13: Air: Benzo(e)pyrene, 1-Methylnaphthalene, 2-Methylnaphthalene, Perylene.
EPA TO-4A Pesticide Air: delta-BHC, Endosulfan I, Endosulfan II, Endosulfan Sulfate, Endrin, Endrin Aldehyde, Endrin Ketone, Hexachlorobenzene, Methoxychlor.
SM4500: NPW: Amenable Cyanide; **SCM:** Total Phosphorus, TKN, NH3, NECi: NO2, NO3, ASTMD516.

The following test method is not included in our New Jersey Secondary NELAP Scope of Accreditation:

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (via Alpha SOP 23528)

The following analytes are included in our Massachusetts DEP Scope of Accreditation:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581

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 504.1: EDB, DBCP.
Microbiology: **SM9215B; SM9223-P/A, SM9223B-Colilert-QT,**.

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, SM4500CL-G, EPA 1664, EPA 420.1, SM4500-CN-CE, SM2540D, EPA 300: Chloride, Sulfate, Nitrate.**
Microbiology: **SM9223B-Colilert-QT; Enterolert-QT.**

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048

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, Ca, Cr, Cu, Fe, Pb, Mg, Mn, Ni, K, Se, Ag, Na, TL, Zn.
EPA 245.1: Hg. **EPA 245.7:** Hg.
SM2340B

ENV-FORM-WES2-0065 v03 Certificate/Approval Program Summary

PAS-ELON East Longmeadow Facility – 39 Spruce Street East Longmeadow, MA 01028

Drinking Water
EPA 300.0: NO3, NO2, Fl, Cl, SO4. **NECI Reductase**: NO3, NO2.
SM4500F-C, SM4500Cl-B, SM4500CN-C,E, EPA 180.1, SM2320B, SM 2540C, SM4500H-B, SM4500SO4-E.
EPA 537.1; EPA 524.2: THMs and VOCs; **EPA 504.1:** EDB, DBCP.
Microbiology: SM9223-P/A: TC/EC; SM9223B-Colilert-enumeration: TC/EC; HPC-Simplate.

Non-Potable Water
SM4500H-B, SM2510B, SM2540C, SM2320B, SM4500Cl-B, SM4500NH3-B, C, EPA 350.1, NECi: NO3, **SM4500NH3-B, C: TKN, SM4500P-E: Ortho Phosphate, SM4500P-B, E: Total Phosphorus, EPA 410.4, SM5210B, SM5310C, SM4500CN-C, E, SM2540D, SM4500Cl-G, SM4500SO4-E, EPA 1664, EPA 420.1, EPA 300.0:** Cl, SO4, NO3.
EPA 624.1: Volatile Halocarbons, Volatile 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 Extractables and Base/Neutrals
Microbiology: SM9223B-Colilert: E. coli (Ambient and Wastewater), **SM9223B-Colilert-18:** Fecal Coliform (Wastewater).

Certification IDs:

PAS-WES2 Westborough Facility – 8 Walkup Dr. Westborough, MA 01581
CT PH-0826, IL 200077, IN C-MA-03, KY KY98045, ME MA00086, MD 348, MA M-MA086, NH 2064, NJ MA935, NY 11148, NC (NPW/SCM) 666, OR MA-1316, PA 68-03671, RI LAO00065, TX T104704476, VT VT-0935, VA 460195.

PAS-MANS Mansfield Facility – 320 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, CA 3117, CO MA00030, CT PH-0825, IL 200081, IN C-MA-04, KY KY98046, LA 85084, ME MA00030, MD 350, MA M-MA00030, MI 9110, MN 025-999-495, NV MA00030, NH 2062, NJ MA015, NY 11627, NC (NPW/SCM) 685, OR MA-0262, PA 68-02089, RI LAO00299, TX T-104704419, UT MA00030, VT VT-0015, VA 460194, WA C954.

PAS-MAN1 Mansfield Air Lab Facility – 120 Forbes Blvd. Mansfield, MA 02048
ANAB/DoD L2474, LA 245052, ME MA01156, MN 025-999-498, NH 2249, NJ MA025, NY 12191, OR 4203, TX T104704583, VA 460311, WA C1104.

PAS-ELON East Longmeadow Facility – 39 Spruce St. East Longmeadow, MA 01028
CT PH-0821, ME MA00100, MI 9100, NC (DENR) 652, NC (DW) 25703, MA M-MA100, NH (Secondary) 2516, NH (Primary) 2557, NJ MA007, NY 10899, PA 68-05812, RI LAO00373, VA 460217, VT-255716, WV DEP 419, WV-DW 9979C, LA 05130, LA-DW LA042, MD-DW 373, OH 87781.

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

Pace® Location Requested (City/State):

CHAIN-OF-CUSTODY Analytical Request Document

Chain-of-Custody is a LEGAL DOCUMENT - Complete all relevant fields

L2645073
ROUX – BENCH

L2645073

Company Name: Roux
Street Address: 5 Flint Street, Rochester, NY
Customer Project #: 4894.0001B000
Project Name: 5 Flint Street
Site Collection Info/Facility ID (as applicable):

Contact/Report To: Eric Runstrom
Phone #: 781.569.4031
E-Mail: erunstrom@rouxinc.com
Cc E-Mail: sbarrientos@rouxinc.com; nsurack@rouxinc.com, anaperalace rouxinc.com
Invoice to: Roux
Invoice E-mail: rouxap@rouxinc.com
Purchase Order # (if applicable):
Quote #: 00203091

Time Zone Collected: [ ] AK [ ] PT [ ] MT [ ] CT [X] ET
County / State origin of sample(s): Monroe County, New York

Data Deliverables: [ ] Level II [ ] Level III [ ] Level IV [X] EQUIS [X] Other Roux MA formatted EDDS

Regulatory Program (DW, RCRA, etc.) as applicable: Part 375, Table 6.8 (a), please include TICS for both VOCs and SVOCs. Category B deliverable.
Reportable: [X] Yes [ ] No

Rush (Pre-approval required): [ ] Same Day [ ] 1 Day [ ] 2 Day [ ] 3 Day Other _____
Date Results Requested: ~~ASAP~~ 3 DAY TAT

DW PWSID # or WW Permit # as applicable:
Field Filtered (if applicable): [ ] Yes [X] No
Analysis:

Specify Container Size **: 6 | 10 | 10
Identify Container Preservative Type***: 8 | 11 | 2
Analysis Requested

** Container Size: (1) 1L, (2) 500mL, (3) 250mL, (4) 125mL, (5) 100mL, (6) 40mL vial, (7) EnCore, (8) TerraCore, (9) 90mL, (10) Other
*** Preservative Types: (1) None, (2) HNO3, (3) H2SO4, (4) HCl, (5) NaOH, (6) Zn Acetate, (7) NaHSO4, (8) Sod Thiosulfate, (9) Ascorbic Acid, (10) MeOH, (11) Other

Lab Use Only: Proj. Mgr: | Acctnum / Client ID: | Table #: | Profile / Template: | Prelog / Bottle Ord. ID:

Preservation non-conformance identified for sample:

* Matrix Codes (insert in Matrix box below): Drinking Water (DW), Ground Water (GW), Wastewater (WW), Product (P), Soil/Solid (SS), Oil (OL), Wipe (WP), Tissue (TS), Bioassay (B), Vapor (V), Surface Water (SW), Sediment (SED), Sludge (SL), Caulk (CK), Leachate (LL), Biosolid (BS), Other (OT)

	Customer Sample ID	Matrix *	Comp / Grab	Composite Start Date	Composite Start Time	Collected or Composite End Date	Collected or Composite End Time	# Cont.	Residual Chlorine Result	Residual Chlorine Units	VOCs + TICS (8260)	SVOCs + TICS (8270)	TAL Metals + total cyanide + tri and hexa Chromium (6010D)	Sample Comment
1	5FS-SW-22B (6-8)	Soil	G	NA	NA	7/16/26	10:05				X	X	X	
2	Trip Blank	AQ	G	NA	NA	7/16/26	08:00				X			
3	5FS-SW-10F (12-14.5)	Soil	G	NA	NA	7/16/26	10:40				X	X	X	
4	DUP-7	Soil	G	NA	NA	7/16/26	11:00				X	X	X	

Additional Instructions from Pace®:

Collected By: Printed Name: E. Spirito
Signature: Emily E Spirito

Customer Remarks / Special Conditions / Possible Hazards: NA

Coolers: | Thermometer ID: | Correction Factor (°C): | Obs. Temp (°C): | Corrected Temp (°C): | [ ] On Ice

Relinquished by/Company: (Signature)	Date/Time	Received by/Company: (Signature)	Date/Time
E. Spirito / Roux Emily E Spirito	7/16/26 13:20	W Mot Pace	7/24/26 1332
W Mot Pace	7/24/26 1322	Rocit S/c Pace	7/24/26 1332
Roc S/c	7.16.26 18:00	Nonpace	7.16.26 18:00
Nonpace	7.16.26 19:30		7/16 2300

Tracking Number:
Delivered by: [ ] In-Person [ ] Courier [ ] FedEx [ ] UPS [ ] Other
Page: of

Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace® Terms and Conditions found at https://info.pacelabs.com/hubfs/pas-standard-terms.pdf.

ENV-FRM-CORO-0019_v02_110123 ©

Nonpace 7.17 1:40 Mabel Pace 7/17 0140

Sample Delivery Group Summary

Pace Job Number : L2645073

Account Name : Roux
Project Number : 4694.0001B000
Project Name : 5 FLINT STREET

Received : 16-JUL-2026
Reviewer : Maile Kolton

Delivery Information

Samples Delivered By : Pace Courier

Chain of Custody : Present

Cooler Information

Cooler	Seal/Seal#	Preservation	Temperature(°C)	Additional Information
A	Absent/	Ice	4.3	

Condition Information

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

Volatile Organics/VPH

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

APPENDIX F

Quality Assurance Project Plan (QAPP) / Field Sampling Plan (FSP)

QUALITY ASSURANCE PROJECT PLAN/FIELD SAMPLING PLAN

5 Flint Street
Rochester, New York
BCP Site No. C828162B

August 5, 2026

Prepared for:

5 Flint Street LLC

Prepared by:

Roux Environmental Engineering and Geology, D.P.C.
209 Shafter Street
Islandia, New York 11749

Roux Associates, Inc.
200 Summit Drive, Suite 500
Burlington, Massachusetts 01803

4694.0001BM000.126.RCV

Environmental Consulting
& Management
+1.800.322.ROUX
rouxinc.com

Table of Contents

1. Introduction 1
   1.1 Purpose 1
2. Sampling Objectives 2
3. Project Organization 3
4. Project Documentation, And Reporting 5
   4.1 Field Logbooks 5
   4.2 Field Datasheets 5
   4.3 Data Storage 6
5. Sampling Locations, Analytical Suites, and Frequency 7
   5.1 End Point Soil Sampling 7
   5.2 Offsite Backfill/On-Site Reuse Soil Sampling 7
   5.3 ISS Material Performance Testing QA/QC Sampling 9
      5.3.1 Wet Cylinder Sampling 9
      5.3.2 ISS Coring 9
   5.4 Disposal Characterization Sampling 9
6. Field Sampling Procedures 10
   6.1 End Point Soil Sampling 10
   6.2 Offsite Backfill/On-Site Reuse Soil Sampling 10
   6.3 ISS Material Performance Testing QA/QC Sampling 10
      6.3.1 Wet Cylinder Sampling 10
      6.3.2 ISS Coring 11
   6.4 Disposal Characterization Sampling 11
7. Sample Handling and Analysis 12
   7.1 Field Sample Handling 12
      7.1.1 ISS Material Performance Testing Sampling Storage and Handling 12
   7.2 Sample Custody Documentation 12
   7.3 Sample Shipment 12
   7.4 Quality Assurance/Quality Control 13
8. Site Control Procedures 15
   8.1 Decontamination 15
   8.2 Management of Investigation Derived Waste 15

Tables

1. Field and Laboratory QC Summary
2. Interim Remedial Measure Sampling Summary
3. Preservation, Holding Times, and Sample Containers

Table of Contents (Continued)

Attachments

1. Professional Profiles
2. NYSDEC PFAS Sampling Guidance
3. Roux's Standard Operating Procedures
4. Laboratory's Standard Operating Procedures

1. Introduction

Roux Associates, Inc. and Roux Environmental Engineering and Geology, D.P.C. (collectively referred to as Roux), on behalf of 5 Flint Street LLC (referred to herein as Requestor or 5 Flint), has prepared this Quality Assurance Project Plan/Field Sampling Plan (QAPP/FSP) to describe the measures that will be taken to ensure that the data generated during performance of the Remedial Action Work Plan (RAWP) at the 5 Flint Street, Rochester, New York Site (the "Site") are of quality sufficient to meet project-specific data quality objectives (DQOs). This QAPP/FSP also includes field sampling procedures.

The Site is in the New York State Department of Environmental Conservation (NYSDEC) Brownfield Cleanup Program (BCP), BCP Site # C828162B. Although the redevelopment plan for the Site is not finalized, it is anticipated that when development is completed, the development plan will be consistent with the City master development plan for the Vacuum Oil Brownfield Opportunity Area (BOA) and the Site's use restrictions.[1]

This QAPP/FSP was prepared in accordance with the guidance provided in NYSDEC Technical Guidance DER-10 Technical Guidance for Site Investigation and Remediation (DER-10), the NYSDEC BCP Guide, and the United States Environmental Protection Agency's (USEPA's) Guidance for the Data Quality Objectives Process (EPA QA/G 4).

1.1 Purpose

The QAPP/FSP describes in detail the field sampling and quality assurance/quality control (QA/QC) methods to be used during material sampling tasks, including but not limited to, soil and groundwater sampling performed during excavation, performance verification for In-Situ Stabilization (ISS), and waste characterization.

This QAPP/FSP provides guidelines and procedures to be followed by field personnel during performance of sampling during the RAWP. Information contained in this QAPP/FSP relates to:

- Sampling objectives (Section 2);
- Project organization (Section 3);
- Sampling locations, analytical suites, sampling frequencies and analytical laboratory (Section 4);
- Field sampling procedures (Section 5);
- Sample handling, sample analysis, and quality assurance/quality control (Section 6); and
- Site control procedures and decontamination (Section 7).

[1] City Vacuum Oil - South Genesee River Corridor Brownfield Opportunity Area (BOA). Additional information on this BOA can be found online: https://www.cityofrochester.gov/VacuumOilBOA/

2. Sampling Objectives

The sampling program is designed to meet the data quality objectives (DQOs) set forth in DER-10. Specifically, analytical parameters selected for each sample, as described in Section 4, are comprehensive, and are intended to meet the following objectives:

- collecting of end point samples due to ISS obstructions (if necessary);
- analyze offsite backfill/on-Site reuse soil to evaluate its suitability for use as backfill that meets the lower of the NYSDEC Part 375 Restricted Residential Soil Cleanup Objectives (RRSCOs) for human health or the SCOs for PGSCOs presented in Table 6.8 (b) of the latest revision of Title 6 of New York Code of Rules and Regulations (NYCRR) Part 375 (Part 375);
- ISS material performance testing to ensure the ISS performance requirements for strength and permeability are met; and
- aid waste characterization for disposal.

Sampling procedures are discussed in Section 5 of this QAPP/FSP. A discussion of the DQOs and quality assurance/quality control is provided in Section 6.

3. Project Organization

A general and generic summary of the overall management structure and responsibilities of project team members are presented below. Contact information for the Roux team and primary subcontractors is provided in the table below. Professional profiles for the team are provided in **Attachment 1.**

Project Principal

Ian Reed will serve as Project Principal. The Project Principal is responsible for defining project objectives and bears ultimate responsibility for the successful completion of the RAWP.

Remedial Engineer

The Remedial Engineer for this project will be Noelle Clarke, P.E. The Remedial Engineer is a registered professional engineer licensed by the State of New York. The Remedial Engineer will have primary direct responsibility for implementation of the RAWP and future remedial program for the Site. The Remedial Engineer will certify in the Final Engineering Report (FER) that the RAWP activities were observed by qualified environmental professionals under her direct supervision as well as any other relevant provisions of ECL 27-1419 have been achieved in full conformance with the RAWP.

Project Manager

Eric Runstrom of Roux will serve as Project Manager. The Project Manager will provide overall management for the implementation of the scope of work and will coordinate all field activities. The Project Manager is also responsible for data review/interpretation and report preparation.

On-Site Qualified Person

Nicholas Suraci will act as a Qualified Person who is a direct report to the Remedial Engineer and will be on-Site at all times. The Qualified Person will provide project updates to the Remedial Engineer and Project Manager to coordinate all Site activities and bears the responsibility for the successful execution of the field program. The Qualified Person will direct the activities of the technical staff in the field, as well as all subcontractors. The Qualified Person will also assist in the interpretation of data and in report preparation.

Laboratory Project Manager

Candance Fox of Pace Analytical Services will be the Laboratory Project Manager. The Laboratory Project Manager is responsible for sample container preparation, sample custody in the laboratory, and completion of the required analysis through oversight of the laboratory staff. The Laboratory Project Manager will ensure that quality assurance procedures are followed and that an acceptable laboratory report is prepared and submitted. The Laboratory Project Manager reports to the Project Principal and Project Manager.

Quality Assurance Officer

Alex Wirth of Roux will serve as the Quality Assurance Officer (QAO) for this project. The QAO is responsible for conducting reviews, inspections, and audits to ensure that the data collection is conducted in accordance with the FSP and QAPP. The QAO's responsibilities range from ensuring effective field equipment decontamination procedures and proper sample collection to the review of all laboratory analytical data for completeness and usefulness. The QAO reports to the Project Manager and makes independent recommendations to the Field Team Leader.

Roux Personnel	Title	Contact Information
Ian Reed Executive Vice President / Principal Hydrogeologist	Project Principal	(781) 569-4000 ireed@rouxinc.com
Noelle Clarke, P.E. Principal Engineer	Project Principal/ Engineer of Record	(631) 232-2600 nclarke@rouxinc.com
Eric Runstrom Project Geologist	Project Manager	(781) 569-4000 erunstrom@rouxinc.com
Nicholas Suraci Project Scientist	On-Site Qualified Person	(716) 725-6969 nsuraci@rouxinc.com
Alex Wirth Technical Director	Quality Assurance Officer	(585) 895-4957 awirth@rouxinc.com
James Hauri Senior Scientist	Data Usability Summary Report Preparation	781-569-4054 jhauri@rouxinc.com

Subcontractor	Company Name	Contact Information
Laboratory Analysis	Pace® Analytical Services Laboratory, Westborough, MA	(800) 624-9220 Candace.Fox@pacelabs.com
Drilling	To Be Determined	To Be Determined
Remedial Contractor	Roux DPC	(716) 856-0599 mlesakowski@rouxinc.com
Surveying	Nussbaumer & Clarke, Inc.	(716) 688-0766 gkoester@nussclarke.com>

4. Project Documentation, And Reporting

The following sections provide an overview of the procedures and requirements for recordkeeping and reporting. Field logbooks and field datasheets will provide the means of recording the data collection activities during field activities. All field logbooks and data sheets will be scanned on a weekly basis to create PDF files for electronic archiving with the central project file. Reporting of data collected and responsibilities related to reporting are discussed below.

4.1 Field Logbooks

Field logbooks will be used to document field activities and observations. The field notes will be clear, with sufficient detail so that events can be reconstructed later if necessary. Field logbooks will document any field deviations from the RAWP, as well as the reasons for the changes. Requirements for logbook entries include the following:

- Field activity logbooks will be kept for each task.
- Logbooks will be bound, with consecutively numbered pages.
- Removal of any pages, even if illegible, is prohibited.
- Entries will be made legibly with black (or dark) waterproof ink.
- Unbiased, accurate language will be used.
- Entries will be made while activities are in progress or as soon afterward as possible (the date and time that the notation is made will be noted as well as the time of the observation itself).
- Each consecutive day's first entry will begin on a new, blank page.
- The date and time, based on a 24-hour clock (e.g., 0900 a.m. for 9 a.m. and 2100 for 9 p.m.), will be recorded on each page.
- When field activity is complete, the logbook will be entered into the permanent project file.

In addition to the preceding requirements, the person recording the information will initial and date each page of the field logbook. If more than one individual makes entries on the same page, each recorder will initial and date each entry. Logbook corrections will be made by drawing a single line through the original entry, allowing the original entry to be read. The corrected entry will be written next to the original entry. Corrections will be initialed and dated. Separate logbooks for each activity may be needed because several field activities may occur at once.

4.2 Field Datasheets

Field datasheets will be utilized when appropriate to achieve efficient and standardized recording of field measurements and observations. The type of field data sheet and the information recorded on it may vary by activity. At a minimum, field datasheets will be completed for each sample to document the unique sample identifier assigned, provide information on whether the sample is representative of a field sample or a field-based quality control sample (e.g., field blank, field duplicate), provide information regarding the sample media, sample date, sample location, sample GPS coordinates, and sampling team members for every sample. All datasheets must be entered into electronic format. Datasheets may also be used to document information such as habitat descriptions, sample characteristics (e.g., color, texture, etc.), water level gauging data, surface water and groundwater sample field observations and measurements (e.g., pH, temperature, color, clarity, etc.). A reference date and activity will be entered into the logbook to refer to the field data sheets being generated. The field data sheets will be put into electronic format and become a permanent record within the project file.

4.3 Data Storage

In addition to data collected during field activities as described in the RAWP, other data that will need to be maintained throughout the RAWP implementation will include laboratory analytical data, photographs, project correspondence (i.e., letters and emails), and deliverable reports. In general, all project documents will be maintained in electronic format and stored in a project specific folder designated on the Roux Associates network. All electronic files will be backed up in accordance with Roux Associates IT Policy.

All data generated by the laboratories will be requested in EQuIS or EQuIS-compatible electronic data deliverable (EDD) format. The laboratory data will be imported into the project database and managed in accordance with the data management procedures in this QAPP.

One copy of all final documents submitted by Roux to a client or regulatory agency is maintained in a central digital repository. Archiving of the digital repository occurs at least once per day Monday through Friday. All other project files for completed projects will be retained for seven years from the date of completion of the project, unless a longer period is required by the client or NYSDEC. Project completion refers to completion of all work at the Site, not the completion of individual phases or tasks.

5. Sampling Locations, Analytical Suites, and Frequency

The sampling to be completed during the RAWP includes end point sampling due to ISS obstructions (if needed), offsite fill/on-Site reuse soil sampling (if needed), ISS material performance testing, and waste characterization sampling of soil, groundwater, and concrete materials (as needed).

A discussion of the sampling schedule for each sampling objective is provided below, while the assumed number of field samples to be collected for each location, including quality control (QC) samples, is shown in **Table 2**. Specifics regarding the collection of samples at each location and for each task are provided in **Section 5** of this QAPP/FSP.

5.1 End Point Soil Sampling

As discussed in the RAWP, the proposed extents of the excavation and ISS areas do not intersect with any known sub-surface utilities. Removal of other known or suspected sub-surface obstructions (e.g. buried concrete foundations) will be attempted prior to remedy implementation. However, if sub-surface utilities or obstructions are identified which cannot reasonably be removed and which limit remedy implementation, ISS will be completed around the perimeter of the obstruction and end point samples will be collected in these areas. End point samples collected will be submitted for laboratory analysis of:

- Part 375 Target Compound List (TCL) VOC's by EPA Method 8260D including tentatively identified compounds (TICs);
- Part 375 TCL SVOCs by EPA Method 8270E including TICs; and
- Part 375 Target Analyte List (TAL) metals by USEPA Methods 6010D/7470A.

If these samples do not meet the Site's soil cleanup objectives, these samples will be considered Documentation samples [per DER-10 Section 1.3(b)12] used to document the level of contamination remaining at the boundary with the utility or obstruction.

5.2 Offsite Backfill/On-Site Reuse Soil Sampling

For offsite fill/on-Site reuse soil materials requiring chemical testing, the following samples shall be collected:

- One sample for pre-qualification chemical testing at the source location, including the following:
    1. Chemical testing shall be performed at a minimum for the full suite of analytical parameters listed in Table 375-6.8(a) of the latest revision of Part 375. Samples will be analyzed for the full suite of analytical parameters (TAL metals including hexavalent chromium; TCL VOCs + TICs and SVOCs + TICs, TCL pesticides/herbicides, and PCBs), total cyanide and Emerging Contaminants (1,4-dioxane and PFAS).
    2. Backfill/on-Site reuse soil materials excluding those materials that do not require sampling as described below, shall meet criteria presented in Section 2.0 of this QAPP.
    3. Backfill/on-Site reuse soil materials that exceed the criteria presented in Section 2.0 of this QAPP shall not be imported to the Site without prior approval of the NYSDEC.
    4. The backfill/on-Site reuse soil material will be free of extraneous debris or solid waste as well as staining/sheen and odors.

5. If the NYSDEC project manager agrees in writing that the material originated from a virgin source, then a minimum of one sample (i.e., the pre-qualification sample) will be collected and analyzed per source.

- The sampling frequency will comply with DER-10 Table 5.4(e)10 shown below unless otherwise prior approval has been obtained from the NYSDEC project manager.

Table 5.4(e)10
Recommended Number of Soil Samples for Soil Imported To or Exported From a Site

Contaminant	VOCs	SVOCs, Inorganics & PCBs/Pesticides	
Soil Quantity (cubic yards)	Discrete Samples	Composite	Discrete Samples/Composite
0-50	1	1	3-5 discrete samples from different locations in the fill being provided will comprise a composite sample for analysis
50-100	2	1	
100-200	3	1	
200-300	4	1	
300-400	4	2	
400-500	5	2	
500-800	6	2	
800-1000	7	2	
➢ 1000	Add an additional 2 VOC and 1 composite for each additional 1000 Cubic yards or consult with DER		

The source of the offsite fill/on-Site reuse soil must be documented by the supplier, including the location where the fill/on-Site reuse soil was obtained and a brief history of the site that is the source of the fill.

Samples of offsite backfill/on-Site reuse soil will be analyzed for the full suite of Part 375 parameters (TAL metals including hexavalent chromium; TCL VOCs and SVOCs, TCL pesticides/herbicides, and PCBs), total cyanide and Emerging Contaminants (1,4-dioxane and PFAS).

Reporting limits for PFAS and 1,4-dioxane will be in accordance with the NYSDEC's current guidance. All PFAS compounds in soil will be analyzed and reported to 0.5 ug/kg. 1,4-Dioxane will be analyzed and reported to 0.1 mg/kg.

The following materials may be imported, without chemical testing, to be used as backfill beneath pavement, buildings or as part of the site cover system, provided that it contains less than 10 percent by weight material that would pass through a size 100 sieve and consists of:

- gravel, rock or stone, consisting of virgin material from a permitted mine or quarry; or
- recycled concrete or brick from a NYSDEC registered construction and demolition debris processing facility if the material conforms to the requirements of Section 304 of the 2002 New York State Department of Transportation Standard Construction and Materials Volume 1.

Soils that meet 'general' fill requirements under 6 NYCRR Part 360.13, but do not meet backfill or cover soil objectives for this site, will not be imported onto the site without prior approval by NYSDEC project manager. Material from industrial sites, spill sites, other environmental remediation sites, or potentially contaminated sites will not be imported to the site.

All materials proposed for import onto the site will be approved by the Remedial Engineer and will be in compliance with provisions in this QAPP/FSP prior to receipt at the site. A Request to Import/Reuse Fill or Soil form, which can be found at http://www.dec.ny.gov/regulations/67386.html, will be prepared and submitted to the NYSDEC project manager allowing a minimum of 5 business days for review.

5.3 ISS Material Performance Testing QA/QC Sampling

5.3.1 Wet Cylinder Sampling

Samples of the ISS material will be collected to ensure the ISS performance requirements for strength and permeability have been met in accordance with NYSDEC ISS QA/QC Guidance (provided in Appendix G of the RAWP). Samples for performance testing will be collected from the freshly mixed ISS material. Samples of the fresh (wet) ISS material will be collected using contractor provided sampling equipment advanced to pre-determined depths. The wet samples will be collected at a frequency of one per every 500 cubic yards of ISS material, as identified on the ISS Performance Criteria table. Sample collection depths shall be randomly varied between shallow, intermediate, and deeper intervals of the mix cells to obtain adequate distribution and representativeness of sampling. At a minimum, 10 percent of the samples will be collected from the bottom 5 feet of cells sampled and at least 10 percent of the samples will be collected from the edges of the sampled cells at the cell overlaps.

5.3.2 ISS Coring

To confirm thorough mixing of the ISS material and that the required depths of ISS mixing are achieved, the partially solidified mass will be cored using a rock core to collect core samples of the ISS material at a frequency of one core per every 5,000 square feet of treated soil. Accordingly, a total of 10 cores will be collected from the ISS cells. Core locations will be selected with consideration for site logistics and construction sequence. Core borehole locations shall be biased towards areas with the greatest soil contamination and/or locations where difficulties in the ISS process were encountered and/or where obstructions were left in place.

5.4 Disposal Characterization Sampling

To assist with the determination of disposal of the concrete building foundation and other subsurface concrete materials generated at the Site, representative samples will be sampled in a manner consistent with this QAPP/FSP for parameters required by the Waste Management Facility. Environmental samples will be submitted to an Environmental Laboratory Approval Program (ELAP) laboratory.

If excavated soils are determined to be unsuitable for on-Site reuse, soil samples will be collected from these soils as required for off-Site disposal. Groundwater removed from excavations to facilitate remedial actions, including the capping of utilities, will be containerized for off-Site disposal and/or for subsequent discharge into the municipal sewer system through an approved Monroe County Department of Environmental Services (DES) Discharge Permit. Soil and groundwater samples will be collected and analyzed for any parameters that may be required by the disposal facilities. Groundwater discharged into the municipal sewer system will be treated and sampled to meet requirements of the Monroe County DES Discharge Permit.

6. Field Sampling Procedures

This section provides a detailed discussion of the field procedures to be used during sampling of the various materials being evaluated as part of the remedial action. Additional details regarding sampling procedures and protocols are described in Roux's relevant SOPs, which are provided in **Attachment 3**.

6.1 End Point Soil Sampling

Soil borings for end point sampling will be advanced using a Geoprobe direct-push drill rig or an excavator. Soil samples will be collected continuously during boring advancement and placed immediately thereafter into new Ziploc® bags for field screening (as outlined above) for lithology and evidence of contamination (e.g., staining, odors, and/or visible free product) and recording headspace using a PID. After a minimum of 15 minutes for equilibration with the headspace in the Ziploc® bag, each sample will be screened for organic vapors using a PID equipped with a 10.6 eV lamp.

The soil from each five foot interval will be observed for lithology and evidence of contamination (e.g., staining, odors, and/or visible free product) and placed immediately thereafter into large Ziploc® bags for recording headspace using a PID. After a minimum of 15 minutes for equilibration with the headspace in the Ziploc® bag, each sample will be screened for organic vapors using a PID equipped with a 10.6 eV lamp. Soil samples will be submitted for laboratory analysis from soils exhibiting the highest PID response, or other visual indications of impacts. These samples will be placed in the laboratory-supplied containers, placed in an iced cooler (4°C), and shipped to the laboratory under chain of custody procedures in accordance with Roux's SOPs in Attachment 3.

6.2 Offsite Backfill/On-Site Reuse Soil Sampling

All imported fill/on-Site reuse soil material samples will be collected using pre-cleaned stainless steel sampling tools (e.g., trowels, spatulas) and placed immediately thereafter into new Ziploc® bags for field screening and recording headspace using a PID. After a minimum of 15 minutes for equilibration with the headspace in the Ziploc® bag, each sample will be screened for organic vapors using a PID equipped with a 10.6 eV lamp. In general, where composite samples are required for offsite fill/on-Site reuse soil material samples, composite samples will be collected from a minimum of three locations across the stockpiled materials. The exception is for VOC samples, which will be collected as grab samples (discrete). Samples will be placed in the laboratory-supplied containers, placed in an iced cooler (4°C), and shipped to the laboratory under chain of custody procedures in accordance with Roux's SOPs in Attachment 3.

6.3 ISS Material Performance Testing QA/QC Sampling

6.3.1 Wet Cylinder Sampling

Wet samples of ISS material will be collected using an electronic, hydraulic, or mechanical sampler capable of reaching the full depth of each cell to be sampled. The sampler shall be capable of collecting wet samples from precise, discrete intervals of no more than two vertical feet and shall be able to indicate the specific depth of each wet sample collected. Each sample will be run through a 3/8-inch wire mesh screen and prepared into 3"x 6" specimen cylinders for UCS and 2"x4" specimen cylinders for hydraulic conductivity. Samples of the mixed soil will be properly stored on-Site prior to being transferred to the analytical laboratory for testing. The performance testing samples will be analysed in accordance with the approved testing methods: ASTM D5084 for hydraulic conductivity, ASTM D1633 for UCS. ISS material performance testing samples will be collected for testing at various cure times including, but not necessarily limited to 7, 14, and 28 days.

6.3.2 ISS Coring

In accordance with the NYSDEC Guidance, to visually confirm the integrity of the mixed soil after curing, cored of ISS treated material will be collected via drilling. For high-strength material, a rock core is frequently required. Driven split spoons (typically using Direct Push tools but potentially using augers as well) may be used to collect core samples of the ISS material for lower strength materials. Cores must be no longer than five feet. If less than 60% of the core material is recovered from any of the coring runs, one new core hole must be drilled adjacent to the previous location. If the recovery from the adjacent core hole continues to be less than 60%, the contractor may abandon the location with Roux approval.

Following completion of each coring location, the borings will be filled with grout using tremie methods. Core samples and related equipment will be visually inspected for the following criteria, and the results recorded:

- Visible NAPL;
- Uniformity of the mix vertically and horizontally within each cell;
- Non-mechanical induced cracking within the core; and
- Percent of core sample recovered.

In addition, indirect indications of unmixed NAPL will be recorded, such as:

- NAPL coating on drilling tools; and
- NAPL in drill wash tub if water-based drilling methods are employed.

All performance testing results will be provided to the NYSDEC prior to final acceptance of any completed ISS areas.

6.4 Disposal Characterization Sampling

Concrete building foundation and other subsurface concrete samples will be collected using a hammer drill with clean masonry bits and/or a hammer and chisel. As discussed above, representative samples of concrete will be sampled at up to four locations and composited. Sample compositing will be performed by combining the discrete samples of the concrete and crushing this material to an appropriate size as required by the laboratory for analysis.

Details for the collection of soil samples are provided below. Additional necessary precautions will be taken when sampling for emerging contaminates in the field, incuding but not limited to:

- Using the proper field clothing or personal protective equipment (i.e. no materials will contain Gore-Tex or Tyvek);
- Avoid sampling equipment components/containers making contact with aluminum foil, low density polyethylene (LDPE), glass, or polytetrafluoroethylene materials;
- Following PFAS field sampling guidelines (i.e., using sampling materials made from high density polyethylene [HDPE], silicon, or stainless steel and avoid using equipment containing Teflon and using sharpies, permanent markers, adhesives, and waterproof/plastic clipboards and notebooks); and
- Utilizing regular ice cubes for sample presevation and only Alconox for decontamination.

7. Sample Handling and Analysis

To ensure quality data acquisition and collection of representative samples, there are selective procedures to minimize sample degradation or contamination. These include procedures for preservation of the samples, as well as sample packaging, shipping procedures, and QA/QC.

7.1 Field Sample Handling

A discussion of the proposed number and types of samples to be collected during each task, as well as the analyses to be performed, can be found in Section 4 of this QAPP/FSP. The types of containers, volumes, and preservation techniques for the aforementioned testing parameters are presented in Table 3.

7.1.1 ISS Material Performance Testing Sampling Storage and Handling

All ISS treated or mixed soil samples collected will be properly preserved according to laboratory requirements, placed in appropriate containers, and transported under chain of custody to an accredited laboratory. Samples will be cured on-site for three days in a cooler with at least 2 inches of water in the bottom (to maintain humid condition) at ambient temperature of 60 degrees Fahrenheit ± 10 degrees. Samples will be maintained on-Site in a neat and orderly fashion in damp and unfrozen conditions.

7.2 Sample Custody Documentation

The purpose of documenting sample custody is to ensure that the integrity and handling of the samples is not subject to question. Sample custody will be maintained from the point of sampling through the analysis (and return of unused sample portion, if applicable).

Each individual collecting samples is personally responsible for the care and custody of the samples. All sample labels should be pre printed or filled out using waterproof ink. The technical staff will review all field activities with the Field Team Leader to determine whether proper custody procedures were followed during the field work and to decide if additional samples are required.

All samples being shipped offsite for analysis must be accompanied by a properly completed chain of custody form. The sample numbers will be listed on the chain of custody form. When transferring the possession of samples, individuals relinquishing and receiving will sign, date, and note the time on the record. This record documents transfer of custody of samples from the sampler to another person, to/from a secure storage area, and to the laboratory.

Samples will be packaged for shipment and dispatched to the appropriate laboratory for analysis with a separate signed custody record enclosed in each sample box or cooler. Shipping containers will be locked and/or secured with strapping tape in at least two locations for shipment to the laboratory.

7.3 Sample Shipment

If sample shipment is necessary, sample packaging and shipping procedures are based upon USEPA specifications, as well as DOT regulations. The procedures vary according to potential sample analytes, concentration, and matrix and are designed to provide optimum protection for the samples and the public. Sample packaging and shipment must be performed using the general outline described below.

All samples will be shipped within 24 hours of collection and will be preserved appropriately from the time of sample collection. A description of the sample packing and shipping procedures is presented below:

1. Prepare cooler(s) for shipment:
   - tape drain(s) of cooler shut;
   - affix “This Side Up” arrow labels and “Fragile” labels on each cooler; and
   - place mailing label with laboratory address on top of cooler(s).
2. Arrange sample containers in groups by sample number.
3. Ensure that all bottle labels are completed correctly. Place clear tape over bottle labels to prevent moisture accumulation from causing the label to peel off.
4. Arrange containers in front of assigned coolers.
5. Place packaging material approximately at the bottom of the cooler to act as a cushion for the sample containers.
6. Arrange containers in the cooler so that they are not in contact with the cooler or other samples.
7. Fill remaining spaces with packaging material.
8. Ensure all containers are firmly packed in packaging material.
9. If ice is required to preserve the samples, ice cubes should be repackaged in Ziploc® bags and placed on top of the packaging material. Cooler temperature needs to maintained at 4°C.
10. Sign chain of custody form (or obtain signature) and indicate the time and date it was relinquished to courier as appropriate.
11. Separate chain of custody forms. Seal proper copies within a large Ziploc® bag and tape to inside cover of cooler. Retain copies of all forms.
12. Close lid and latch.
13. Secure each cooler using custody seals.
14. Tape cooler shut on both ends.
15. Relinquish to overnight delivery service as appropriate. Retain air bill receipt for project records. (Note: All samples will be shipped for “NEXT A.M.” delivery).

7.4 Quality Assurance/Quality Control

The primary intended use for the remedial action data is to characterize Site conditions during and after the remedial action activities are undertaken at the Site. The primary DQO of the PDI endpoint sampling and imported fill/on-Site reuse soil sampling programs, therefore, is that data be accurate and precise, and hence representative of the actual Site conditions. Accuracy refers to the ability of the laboratory to obtain a true value (i.e., compared to a standard) and is assessed through the use of laboratory quality control (QC) samples, including laboratory control samples and matrix spike samples, as well as through the use of surrogates, which are compounds not typically found in the environment that are injected into the samples prior to analysis. Precision refers to the ability to replicate a value and is assessed through both field and laboratory duplicate samples.

Sensitivity is also a critical issue in generating representative data. Laboratory equipment must be of sufficient sensitivity to detect target compounds and analytes at levels below NYSDEC standards and guidelines whenever possible. Equipment sensitivity can be decreased by field or laboratory contamination of samples, and by sample matrix effects. Assessment of instrument sensitivity is performed through the analysis of reagent blanks, near-detection-limit standards, and response factors. Potential field and/or

laboratory contamination is assessed through use of trip blanks, method blanks, and equipment rinse blanks (also called “field blanks”). Field blanks for PFAS will be collected at a minimum frequency of one per day. A laboratory SOP for analysis of PFAS is included in Attachment 4.

Table 1 lists the requirements for field and laboratory QC samples that will be analyzed to assess data accuracy and precision, as well as to determine if equipment sensitivity has been compromised. **Table 2** lists the number/type of field and QA/QC samples that will be collected during the remedial action. **Table 3** lists the preservation, holding times and sample container information.

All remedial action analyses will be performed in accordance with the NYSDEC Analytical Services Protocol (ASP), using USEPA SW 846 methods. The laboratory will have a ELAP certification for the analytical method to be used.

All laboratory data are to be reported in NYSDEC ASP Category B deliverables and will be delivered to NYSDEC in electronic data deliverable (EDD) format as described on NYSDEC’s website (http://www.dec.ny.gov/chemical/62440.html). A Data Usability Summary Report (DUSR) will be prepared meeting the requirements in Section 2.2(a)1.ii and Appendix 2B of DER-10 for all data packages generated for the remedial action. James Hauri of Roux, who is independent from the project team, will review the analytical data for quality assurance and quality control in accordance with NYSDEC standards. The professional profile for James Hauri is provided in Attachment 1.

8. Site Control Procedures

Site control procedures, including decontamination and waste handling and disposal, are discussed below. Site control procedures have been developed to minimize both the risk of exposure to contamination and the spread of contamination during field activities at the Site. All personnel who come into designated work areas, including contractors and observers, will be required to adhere strictly to the conditions imposed herein and to the provisions of a Site-Specific Health and Safety Plan (HASP). The HASP is included as Appendix C to the RAWP.

8.1 Decontamination

In an attempt to avoid the spread of contamination, all drilling and sampling equipment must be decontaminated after the completion of each boring in a properly designed and located decontamination area. Detailed procedures for the decontamination of field and sampling equipment are included in Roux's SOPs for the Decontamination of Field Equipment located in Attachment 3. The location of the decontamination area will be determined prior to the start of field operations. The decontamination area will be constructed to ensure that all wash water generated during decontamination can be collected and containerized for proper disposal. Only "PFAS-free" water will be used for decontamination of sample equipment onsite. Only Alconox will be used as decontamination detergent (Liquinox shall not be used).

8.2 Management of Investigation Derived Waste

Management of investigation derived waste will be completed in accordance with NYSDEC DER-10, Section 3.3 (e).

Following sample collection, boreholes will be backfilled with soil cuttings in reverse order (last material out first material back in borehole to within one foot of the ground surface with an upper bentonite plug and restored with like materials to surrounding grade. Soil cuttings with NAPL and/or grossly contaminated will be placed into Department of Transportation (DOT) approved 55-gallon drums, sealed and labeled, characterized, and disposed off-site at a permitted facility. All fluids generated including but limited to decontamination fluids, well development water and purge water generated during sampling will be discharged into the municipal sewer system through an approved Monroe County DES Discharge Permit or placed into DOT approved 55-gallon drums, sealed and labeled characterized, and disposed off-site at a permitted facility.

TABLES

1. Field and Laboratory QC Summary
2. Interim Remedial Measure Sampling Summary
3. Preservation, Holding Times, and Sample Containers

Table 1. Field and Laboratory QC Summary

QC Check Type	Minimum Frequency	Use
Field QC		
Duplicate	1 per matrix per 20 samples or SDG*	Precision
Trip Blank	1 per VOC cooler	Sensitivity
Field Blank (PFAS)	1 per day when sampling for PFAS	Sensitivity
Equipment Blank	1 per day when sampling for PFAS	Sensitivity
Laboratory QC		
Laboratory Control Sample	1 per matrix per SDG	Accuracy
Matrix Spike/Matrix Spike Duplicate/Matrix Duplicate**	1 per matrix per SDG	Accuracy/Precision
Surrogate Spike	All organics samples	Accuracy
Laboratory Duplicate	1 per matrix per SDG	Precision
Method Blank	1 per matrix per SDG	Sensitivity

* SDG - Sample Delivery Group - Assumes a single extraction or preparation
** Provided to lab by field sampling personnel
PFAS - Per- and Polyfluoroalkyl Substances

Table 2. Soil Sampling Plan

Sample Type	Sample Medium	Target Analytes	Field Samples	Sample Intervals	Duplicate[1]	Trip Blanks[2]	Matrix Spike[1]	Spike Duplicate[1]	Total No. of Samples
End Point Soil Sampling	Soil Sampling	TCL VOCs + TICs, TCL SVOCs + TICs & TAL Metals	1		1	1	1	1	6
Offsite Backfill and On-Site Reuse Soil	Soil Sampling	TCL VOCs +TICs	25	See Table 5.4(e)10 in QAPP	7	7	7	7	53
		TCL SVOCs +TICs	11		4	0	4	4	23
		TCL Pesticides	11		4	0	4	4	23
		TCL Herbicides	11		4	0	4	4	23
		TCL PCBs	11		4	0	4	4	23
		TAL Metals	11		4	0	4	4	23
		PFAS	11		4	0	4	4	23
		1,4-Dioxane	11		4	0	4	4	23
		Total Cyanide	11		4	0	4	4	23
		Hexavalent Chromium	11		4	0	4	4	23

Notes:

Totals are estimated based on scope of work as written, actual sample quantities may vary based on field conditions. QA/QC sample quantities will be adjusted accordingly.

[1] Based on 1 per 20 samples or 1 per Sample Delivery Group (3 days max)

[2] Based on 1 cooler per day

NA = Not Applicable

TCL - USEPA Contract Laboratory Program Target Compound List

USEPA - United States Environmental Protection Agency

VOCs - Volatile Organic Compounds

SVOCs - Semivolatile Organic Compounds

TAL - Target Analyte List

TICs - Tentatively Identified Compounds

Table 3. Preservation, Holding Times and Sample Containers

Analysis	Matrix	Bottle Type	Preservation(a)	Holding Time(b)
Part 375 TAL Metals via EPA 6010D / 7471B	Soil	4 oz amber glass, teflon lined cap	Cool to 4°C	180 days, Hg 28 days, Cn 14 days
Hexavalent Chromium	Soil	4 oz wide mouth glass, teflon lined cap	Cool to 4°C	30 days from sample collection
1,4-Dioxane via EPA 8270E	Soil	4 oz wide mouth glass, teflon lined cap	Cool to 4°C	14 days from sample collection
Per- and Polyfluoroalkyl Substances (PFAS) via EPA 1633/537	Soil	8 oz plastic container (non teflon lined)	Cool to 4°C	28 days from sample collection
Target Compound List (TCL)				
Part 375 TCL Volatile Organic Compounds (VOCs) via EPA 8260D, including TICs	Soil	Encore Samplers	Cool to 4°C	48 hours from sample collection to extract, 14 days for analysis after extraction
Part 375 TCL Semivolatile Organic Compounds (SVOCs) SW-846 8270E, including TICs	Soil	4 oz amber glass, teflon lined cap	Cool to 4°C	14 days from sample collection to extract, 40 days to analysis after extraction
Part 375 TCL Pesticides via EPA 8081B	Soil	4 oz wide mouth glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis
Part 375 TCL Herbicides via EPA 8051B	Soil	4 oz wide mouth glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis
Part 375 TCL Polychlorinated biphenyls (PCBs) via EPA 8082A	Soil	4 oz amber glass, teflon lined cap	Cool to 4°C	14 days to extract, 40 days to analysis

(a) All soil and groundwater samples to be preserved in ice during collection and transport

(b) Days from date of sample collection.

TAL - Target Analyte List

TCL - USEPA Contract Laboratory Program Target Compound List

TICs - Tentatively Identified Compounds

Gas chromatography-mass spectrometry (GC/MS) in selected ion monitoring (SIM) mode

ATTACHMENTS

1. Professional Profiles
2. NYSDEC PFAS Sampling Guidance
3. Roux's Standard Operating Procedures
4. Laboratory's Standard Operating Procedures

ATTACHMENT 1

Professional Profiles

PROFESSIONAL PROFILE



CONTACT INFORMATION

Main: (631) 232-2600
Direct: (631) 630-2341
Email: nclarke@rouxinc.com
Website: www.rouxinc.com

209 Shafter Street
Islandia, NY 11749

EDUCATION

BS, Civil Engineering,
Manhattan College, 1991
ME, Environmental Engineering,
Manhattan College, 1994

PROFESSIONAL LICENSES

Professional Engineer in New York

Noelle M. Clarke, PE

Principal Engineer

EXPERIENCE SUMMARY

Thirty-two years' experience: Principal Engineer/Senior Engineer at Remedial Engineering, P.C./Roux; Project Engineer at Camp Dresser & McKee.

TECHNICAL SPECIALTIES

Feasibility studies, pilot testing, remedial design, implementation, construction management, and startup evaluations for remediation of soil, groundwater, soil vapor and sediment. Phase I/Phase II Environmental Site Assessments (ESA). Extensive experience at brownfields redevelopment sites, former industrial facilities, and public works facilities. Evaluation and design of storm water drainage systems. Evaluation, design, and construction management for new and existing wastewater treatment processes.

REPRESENTATIVE PROJECTS

- Principal Engineer providing due diligence support for real estate transactions on multiple projects in the New York metropolitan area. Projects have included multi-family housing (both affordable and market rate), retail/ commercial, community services and industrial properties. Services have included Phase I and Phase II ESAs.
- Principal Engineer for a Brownfield redevelopment of a property adjacent to a dry cleaning solvent distribution facility in Brooklyn, New York under the NYSDEC BCP. The site was previously a warehouse built on a former freight railyard that serviced the dry cleaning solvent facility. Offloading spillage on site and migration from the offsite facility resulted in significant soil, groundwater, and vapor contamination with chlorinated VOCs. The site was developed into multifamily housing with first floor retail use. Pre-remediation and posts-remediation Phase I ESAs were prepared by Roux. The remedy, as summarized in the Remedial Action Work Plan, consisted of soil hot spot removal, a physical barrier to limit on site groundwater migration, a permeable reactive wall to treat groundwater and mitigate offsite migration, and a sub slab depressurization system. Roux, under the direction of Ms. Clarke, provided full-time oversight of the remediation and prepared the Final Engineering Report and Site management Plan. The Certificate of Completion for the Site was obtained in October 2015 and Roux is currently providing post-remediation monitoring services.
- Principal Engineer for a Brownfield redevelopment in Brooklyn, New York at a mixed-use multifamily housing/neighborhood retail complex with a former onsite dry cleaner under the NYSDEC BCP. There is soil, groundwater, and vapor contamination from chlorinated VOCs from the former onsite dry cleaner, as well as groundwater contamination from offsite dry cleaners. The remedy, described in the Remedial Action Work Plan prepared by Roux, consisted of hot spot soil removal, *in situ* groundwater treatment and a sub slab depressurization system for vapor mitigation in the existing buildings. The NYSDEC accepted the Final Engineering Report prepared by Roux and the Site received a Certificate of Completion from NYSDEC in 2016 and Roux is currently providing post-remediation monitoring services.
- Principal Engineer for a complex dredging project for a major petroleum company on the Allegheny River in New York. The goal of the project was to remove 1,000 tons of petroleum impacted sediments from the river. Work included Site investigation, remedial investigation, alternatives evaluation, remedial design, planning and extensive regulatory permitting with multiple federal, state, and local agencies. The remediation work was completed in 2021.

- Principal engineer for the investigation and remediation of a former petroleum refinery located in Olean, New York under the NYSDEC BCP. The work included site investigation and preparation of an Alternatives Analysis Report (to document analysis of engineering options and remedy recommendation), Remedial Action Work Plan and remedial design documents to address the environmental impacts associated with the historical operations. The selected remedy includes excavation of shallow soil, in-situ stabilization of 25,000 cubic yards of deep petroleum impacted soil and capping. The work is being completed in phases beginning in 2022, with an anticipated completion date of 2024.
- Principal Engineer for the alternatives evaluation, remedy selection, regulatory negotiation, preparation of design documents (drawings, specifications, and permit applications) and permitting for all remedial components in support of redevelopment at a former metals manufacturing site in Staten Island, New York under the NYSDEC Voluntary Cleanup Program (VCP). The remedy included dredging and onsite disposal of stream sediments; consolidation and capping of fill material across the site; in-place abandonment of the Site's former sewer system; installation of drainage swales for storm water management; and wetland bank stabilization and mitigation/restoration. Required permits and regulatory approvals for the project included a Joint Permit from the USACE and NYSDEC; a NYSDEC SPDES equivalency permit for discharge of treated water to the Arthur Kill, a New York State Department of State Coastal Management Program (CMP) Federal Consistency Assessment; a New York City Waterfront Revitalization Program Consistency Assessment, a modification of topography authorization from New York City Department of City Planning; and a New York City Department of Environmental Protection permit for temporary discharge to a combined sewer. Also required by the USACE and National Marine Fisheries, was preparation of an Essential Fish Habitat Study, in support of the Joint Permit application. Permitting activities included preparation of the various permit applications, forms and supporting documentation, as well as follow up meetings and correspondence to finalize the authorizations.
- Principal Engineer for the design, bidding, contractor selection, and remedial construction phase at a former metals manufacturing facility in Staten Island under the NYSDEC VCP. Responsibilities included finalizing biddable construction documents, issuing to bidders, preparing addenda, and evaluating bids for presentation to the client. Following contractor selection Roux was heavily involved in coordinating with the client, regulators, and contractor for mobilization to the site in late 2006. During the construction Ms. Clarke provided support to the onsite construction manager regarding field changes, design revisions to account for unexpected conditions and contractor questions. The Final Engineering Report summarizing the construction activities was accepted by NYSDEC.
- Principal-in-Charge of an investigation and remediation project at a former petroleum refinery and current distribution facility located in Buffalo, New York. The site entered the NYSDEC BCP in 2006. Roux completed the BCP application and supported the application process. The work included assessing and remediating the potential environmental impacts associated with historical Site operations. These activities have included preparing multiple work plans and directing the activities of another consultant performing the fieldwork and preparing reports of results for field investigations including soil boring and sampling, well installation and groundwater sampling, aquifer pump testing, and groundwater/separate phase modeling. An in situ chemical oxidation system was designed, installed, and was operated as an IRM to remediate an area of free product and impacted groundwater discharging to the Buffalo River in OU-4.
- For the same petroleum Site in Buffalo, New York, multiple Alternatives Analysis Reports (to document analysis of engineering options and remedy recommendation), Remedial Action Work Plans and remedial design documents have been prepared to address the environmental impacts associated with the five Operable Units (OU) on the Site. Remedial construction for OU-1 was completed in 2007 and included excavation and disposal of impacted soil. The Final Construction Certification Report for OU-1 was accepted by the NYSDEC. The Alternatives Analysis Report and Remedial Design for OU-4 were submitted and approved by NYSDEC. The remedy for OU-4 included excavation and onsite consolidation of river sediments and site soil, stabilization of 1,400 linear feet of river embankment using tiered slopes, rip rap, and reinforced bioengineering, slurry wall groundwater containment, low permeability capping, a stormwater collection system and constructed wetland treatment for stormwater. Various vegetative measures were incorporated into the design in order to promote vegetative growth and enhance wildlife habitats. The remedial construction was completed in 2013 and 2014 and preparation of the Final Construction Completion Report was completed in 2015. The Alternatives Analysis Reports for OU-2 and OU-3 were submitted to NYSDEC. For OU-2, bench scale studies of stabilization/solidification agents were completed and evaluated for treatment of lead and petroleum impacted soil. In addition, field pilot studies of multiple options to treat petroleum impacted soils were completed and evaluated. Design of a stormwater collection system for portions of OU-2 and OU-3 was completed in 2010 and construction was completed in 2014 under the direction of Ms. Clarke.

- For the same petroleum terminal in Buffalo, New York, the work also included performing activities related to the operation of the remediation systems at the Site. These activities have included preparing a feasibility study work plan for improving water management systems at the site; preparing a work plan, directing the field work, and preparing an evaluation summary report for startup and testing of a portion of the groundwater extraction system at the Site; and assisting in preparation of plans to upgrade the existing treatment facilities at the Site.
- For the same petroleum terminal in Buffalo, New York, the work also included preparation of design documents and a completion report for in-place closure of the site's former in-ground oil water separator. In addition, a vapor enhanced extraction pilot study work plan was prepared and implemented at the site for recovery of separate-phase product in one portion of the site located adjacent to the Buffalo River. The results of the VER pilot testing, along with the results of chemical oxidation pilot testing conducted at the site, have been summarized in a Remedial Action Selection report, which recommended implementation of chemical oxidation in this portion of the site. A conceptual plan for implementation of chemical oxidation was submitted with the selection document. The work also included maintaining contact with regulatory agencies regarding the status of activities at the Terminal; preparing compliance monitoring reports for submittal to the regulatory agencies; overall project coordination; and budget management and tracking.
- Principal Engineer for the investigation, design, and implementation of a soil remediation project at a 4-acre former oil terminal in Cold Spring Harbor, New York under the NYSDEC spills program. The remedy completed included excavation and offsite disposal of approximately 20,000 tons of petroleum contaminated and/or hazardous lead contaminated soil in accordance with the future use of the site under an Environmental Easement. Additional activities completed by Roux at the site included asbestos remediation followed by building demolition, UST removal, and cesspool remediation. Roux prepared a Final Engineering Report, which was accepted by NYSDEC and resulted in the closure of the spill number for the Site.
- Principal Engineer for the investigation, design, and implementation of a soil remediation project at a portion of a former oil terminal in Sag Harbor, New York. The remedy completed included excavation and offsite disposal of approximately 2,000 tons of petroleum contaminated soil from beneath an active public roadway under the NYSDEC spills program. The remedy included extensive traffic control and coordination with Village of Sag Harbor officials, dewatering, water treatment, temporary water discharge of treated water to Sag Harbor and restoration of the public roadway in accordance with the Village of Sag Harbor Department of Public Works requirements. Roux prepared a Final Engineering Report, which was accepted by NYSDEC and resulted in the closure of the spill number for the Site.
- Project Manager for preparation of a work plan, direction the field activities and preparation of a summary report for investigation of the storm-water collection system at a petroleum terminal in Buffalo, New York. The objectives of the storm sewer investigation were to: prepare a detailed map of the Site's sewer system; re-establish connections that may have become blocked by debris; investigate the structural integrity of the storm sewers; locate areas of groundwater infiltration and assess infiltration rate and quality; assess wet and dry-weather flow and quality; and identify areas contributing surface water to the collection system, including hydrologic modeling using TR-55. Based on the results of the investigation, several improvements to the sewer system were recommended, including eliminating inlets to the system in areas of the site where no active operations currently take place and rehabilitation and/or installation of new sewers to restore flow by gravity to the treatment system.
- Principal Engineer for the investigation, remedial design, construction oversight and operation and maintenance of a bioventing and soil vapor extraction system at the Site of a diesel UST failure in Brooklyn. A free product recovery system was also designed, installed, and operated by Roux. Investigation activities included the use of the sonic drilling technique to advance twelve wells to 85 feet below grade through cobbles and boulders for delineation of separate phase product, soil, and groundwater impacts. Eight wells were converted to combination biovent/SVE wells. Design included specification of SVE and biovent blowers, piping, valves, and an automatic control system. Product only pumps were also designed and installed in three wells. Approximately 2,000 gallons of product were recovered by the two systems and the spill was closed by NYSDEC in 2011.
- Principal Engineer for a Brownfield redevelopment in Staten Island, New York of a former retail service station site under the NYSDEC BCP. There is soil, groundwater, and vapor contamination from petroleum-related constituents in the vicinity of the former gasoline piping and pump island (the petroleum source area), as well as historic fill across the entire site. The remedy, described in the Remedial Action Work Plan prepared by Roux, consisted of a sealed sheet pile containment wall around the petroleum source area, a Site Cover System across the entire site, comprised of concrete building slab/walkways, asphalt parking areas and limited landscaped areas and a sub-slab depressurization system to prevent vapor intrusion into the proposed retail building. A certificate of completion from NYSDEC was obtained in 2020.

- Project Manager for the remedial design at a Superfund Site in Nanuet, New York for the New York State Department of Environmental Conservation. The work included preparation of a preliminary design report, which evaluated two alternatives for handling hazardous soils and sediments at the site contaminated with volatile organic compounds. Each alternative was evaluated on the basis of technical feasibility, cost, and schedule for implementation. Based upon this evaluation, off-site disposal was recommended over on-site treatment. The report presented a site-wide conceptual plan for remediation, including soil/sediment excavation, staging and sampling; stream diversion; excavation dewatering; temporary on-site groundwater treatment; and long term monitoring. Duties also included managing and tracking all project budgets and serving as the main client contact.
- Principal Engineer for the design and specification of a large-scale (750 scfm) soil vapor extraction (SVE) pilot system with thermal oxidation off-gas treatment for a client in Brazil. Responsibilities included equipment sizing and specification, selection of materials of construction, SVE well and equipment layout, description of general startup procedures and preparation of a pilot test work plan. The pilot test work plan included a description of the pilot test operating procedures to be followed, operating parameters to be monitored and data to be collected and analyzed. The work also included conducting the pilot test activities and generating a report that included plans for expanding the SVE system across the Site. The work also included technical support for evaluating and optimizing system performance.
- Project Manager for a storm sewer study at the former metals manufacturing facility in Staten Island, New York as part of the Voluntary Cleanup Program for the Site to identify contaminated infiltration sources, provide an accurate site drainage map, and verify contributing areas to each outfall. The investigation included field inspections, surveying, dye testing, and sampling during varying tidal conditions. The storm sewer map prepared was used for future sewer closure and site redevelopment planning.
- Principal engineer for the design of a new storm water collection system for a metals manufacturing site in Staten Island, New York under the NYSDEC VCP. The design included evaluation and hydrologic modeling of the system using the USG Soil Conservation Service TR-55 hydrologic analysis model, inlet structure and pipe sizing and layout, outfall design and specification of materials and methods of construction for all system components.
- Principal-in-Charge of the operation, maintenance, monitoring and reporting activities at multiple active and former petroleum storage and distribution terminals located in New York for a large petroleum company. The work includes operation, maintenance, and performance/compliance monitoring services at the sites that currently have active remediation systems installed and monitoring, sampling, and reporting services at sites without systems. The remediation systems include groundwater extraction and treatment, free product recovery, bio-sparging, and soil vapor extraction/air sparging. At these sites, Roux is responsible for: maintaining and troubleshooting the various system components to reduce downtime to the extent possible; repairing and/or replacing equipment as needed; coordinating the upgrading of the electrical systems, as needed, to meet current building code requirements; expanding systems to meet regulatory requirements, as needed; optimizing system performance; collecting performance monitoring samples and data to track the efficiency of the treatment systems; and collecting compliance monitoring data.
- Principal Engineer for at multiple petroleum terminals in New York State for groundwater quality and surface water quality sampling and monitoring well gauging as required by the New York State Department of Environmental Conservation, as well as quarterly reporting for all sites. The work has also included collection of soil quality data at several sites and performance of an electromagnetic survey to support the divestiture and redevelopment of one of these sites. Based on these results, soil removal activities were performed at one of the former terminals in order to obtain regulatory closure of the site. Roux successfully completed the remedial activities to the satisfaction of the regulator and received closure for the client of the open spill number. Regulatory closure of another of these former terminals was obtained based upon the results of ongoing groundwater monitoring and reporting.
- Project Engineer for design of a 2.6-mgd groundwater treatment system at the Fireman's Training Center for Nassau County Department of Public Works on Long Island. The work included design of air strippers, exhaust stacks, liquid-phase GAC treatment units, and all chemical feed and storage facilities, including unit sizing, selection of materials of construction, equipment layout, and coordination with other disciplines. The work also included development of the "mass balance" for the facility.
- Task leader in charge of overseeing a bioventing pilot study conducted by a subconsultant, to treat contaminated vadose zone soils at the Fireman’s Training Center site in Nassau County, New York. The work included development of a preliminary design report for the full-scale implementation of bioventing at the site based upon the results of the pilot study.
- Project Engineer for the design, specification, construction, and operation of an air sparging and soil vapor extraction pilot at

the Long Island terminal of a large petrochemical distributor. The pilot was designed to treat contaminated ground water and vadose zone soils resulting from a one-million-gallon gasoline spill at the site. The work included development of the field sampling program and sampling and evaluation of various parameters to determine the pilot's radius of influence and effectiveness. The work also included performing data analysis and preparation of the pilot study report, which recommended full scale implementation of air sparging at the site. The site-wide implementation of air sparging and expansion of the site's existing vapor extraction system at the same Long Island petrochemical terminal was also part of the work. Responsibilities included design, specification, and layout of all mechanical equipment, vapor extraction, and air sparging wells and new vapor extraction/air sparging piping.

- Task leader responsible for investigating alternatives for the treatment of gasoline contaminated off-gas from air stripping operations a Long Island petrochemical terminal. Based on this evaluation, biofiltration was selected for piloting. Responsibilities included design of a pilot unit; development of sampling and data collection procedures; construction oversight and "troubleshooting" for the unit; coordination of data collection activities; and compilation and analysis of the pilot data.
- Project Engineer for the design of a 0.50-mgd groundwater treatment facility at a Long Island petrochemical terminal. Responsibilities included the design, specification, and layout of mechanical equipment, including the air stripping tower, vapor phase granular activated carbon off-gas treatment, centrifugal blowers, ductwork, influent pump, and concrete wet well. Responsible for shop drawing review during the construction phase.
- Project Manager for an investigation at a gasoline service station with soil and groundwater contamination. Responsible for reviewing and evaluating the work of another consultant that performed the soil and groundwater sampling and conducted remedial activities at the site including investigation summary reports; remedial designs; remediation progress reports; correspondence with regulators; and plans for future work at the Site. The work also included mapping the groundwater flow patterns in the area of the service station and mapping the areal and vertical extent of the groundwater contamination. Responsible for project coordination and budget management and tracking.
- Project Manager for the field investigation, feasibility evaluation, and remedial design at Superfund Site in Spring Valley, New York for the New York State Department of Environmental Conservation. The work included development of a work plan and site operations plan. The field investigations included Geoprobe soil borings; groundwater monitoring well installation; groundwater sampling; aquifer pump testing; and vapor extraction pilot testing. Work also included conducting the field operations for the vapor extraction pilot and producing a summary report of the field investigation results. The report presented an evaluation of the cost and feasibility of several alternatives for remediation of the site. It recommended reducing the level of effort of the remediation presented in the Record of Decision, based on lower levels of contamination encountered during the investigation. Duties also included project coordination, budget management and tracking, and development of subcontract agreements.
- Project Engineer for upgrades to the Spring Creek Auxiliary Water Pollution Control Plant for the City of New York. The work included the evaluation, design, and specification of a two-stage odor control system, chemical storage and feed facilities and new effluent disinfection system.
- Project Engineer responsible for preparation of design documents for the replacement of the sodium hypochlorite pumps and piping at the Mamaroneck Wastewater Treatment Plant for Westchester County Department of Environmental Facilities in New York.
- Project Engineer for design of upgrades to the New Rochelle Wastewater Treatment Facility for Westchester County Department of Environmental Facilities in New York. Designed upgrades to the main influent pump station, including rehabilitation of the existing influent pumps and replacement of the magnetic drives with new variable frequency drives. Responsibilities also included design of a submersible automatic duplex sump pump system, new primary sludge pumps and piping and new primary and secondary settling tank equipment. The work also included assisting the County during the bidding and contractor selection phase and preparing addenda to the contract documents.
- Project Manager for the construction of upgrades to the New Rochelle Wastewater Treatment Facility. Responsibilities included overseeing the shop drawing logging and distribution process; reviewing mechanical equipment shop drawings; addressing contractor questions regarding the contract documents; and coordinating with the resident engineer in the field and the electrical and general contractors.
- Project Engineer for the performance evaluation of the Harriman Wastewater Treatment Plant for the Orange County Department of Environmental Facilities and Services. Responsibilities included documentation of the existing conditions at the plant and evaluation of the historical and current performance of the plant with respect to its potential for expansion. A summary report was prepared, which included evaluations of the existing plant processes with respect to

standard design criteria, typical design practices and receiving water considerations. This summary report served as the basis for the facilities plan prepared as the next phase of the project.

- Project Engineer for the facilities plan for the upgrade of the Harriman Wastewater Treatment Plant. Responsibilities included evaluation of alternatives for expanding the plant's treatment capacity. A report was prepared, which recommended the conversion of the existing oxidation ditches to sequencing batch reactors (SBR) in order to increase the plant's treatment capacity to 6.0 mgd within the limited space available on the site.
- Project Engineer for the Gates-Chili-Ogden Pump Station and Force main design for Monroe County, New York. The design consisted of a new 36 mgd wet pit/dry pit pump station, influent sewer, and force main. Responsibilities included evaluating influent pumping conditions, and design of the influent sewer, manual influent bar racks and a duplex automatic submersible sump pump system for the station.
- Project Manager for the Flow Augmentation Needs Study (FANS) for Suffolk County Department of Public Works, New York. Responsibilities included coordinating and implementing the annual wetland monitoring effort for collection of data to characterize the vegetation communities and surface water and groundwater conditions at four freshwater wetland sites in Suffolk County. Duties also included maintaining a database of all vegetation data collected; developing and refining equations to characterize the groundwater table and wetlands vegetation in all monitoring areas; evaluating potential impacts of sewering on sensitive wetlands; and evaluating the need for any mitigation of these sites as triggered by vegetation changes correlated to groundwater drawdown. Responsibilities also included coordinating the production of a draft and final annual monitoring report summarizing the findings of the program.

PRESENTATIONS

Sparging Targets Submerged Residual Saturation Contamination, written with D. Bennett and L. Buchanan. Presented at the 66th New York Water Environment Federation Association Annual Meeting, New York, New York, February 1994.

Suffolk County Wetlands – Flow Augmentation Needs Study, written with M. A. Taylor and R. Southard. In Proceedings of the Annual Meeting, Hydrology and Hydrogeology of Urban and Urbanizing Areas. American Institute of Hydrology, April 1996.

PROFESSIONAL PROFILE



CONTACT INFORMATION
Main: (781) 569-4000
Direct: (781) 569-4030
Email: ireed@rouxinc.com
Website: www.rouxinc.com

200 Summit Drive, Suite 500
Burlington, MA 01803

EDUCATION
BS, Environmental Science,
Springfield College, 1997

Ian T. Reed

Vice President | Principal Hydrogeologist

EXPERIENCE SUMMARY
Over 20 years of experience: Vice President – Roux, New England Office (current); Principal/Office Manager – Roux Associates, New England Office (2012-2017); Senior Hydrogeologist/Project Manager, Roux (2005-2012); Project Hydrogeologist, Roux (2001-2005); Associate Hydrogeologist, Aqua Science Engineer, Inc. – San Francisco, CA (1998-2001); Associate Geologist, Parsons ES – Boston, MA (1997-1998); Emerald Excavating – Plymouth, MA (1993-1997).

TECHNICAL SPECIALTIES
Development, implementation, and management of comprehensive site investigations, implement remedial work plans, environmental investigations, and construction management.

Development and implementation of project/regulatory closure strategies for challenging sites in New England and New York.

Management and support for construction/redevelopment projects including Brownfields regulatory stewardship. Regulatory liaison and customer support with extensive experience in New England and New York.

Investigation and remedial implementations of impacted sediments including development and implementation of investigations in navigable waterways in New England. Scopes have included conventional sediment sample collections as well as innovative qualitative analysis (Sediment Profile Imagining). Sediment remediation scopes have included dredging, sheet pile installations, and engineered natural systems.

Management of environment and construction projects for oil and gas industry including pipeline maintenance and repairs, facility compliance, engineering support and construction management in MA, CT, RI, NY, and NJ.

Management and support of litigation projects for both petroleum and industrial clients. Currently technical expert for major oil company on challenging petroleum site investigation and remediation strategies.

Management and strategic support for challenging insurance claim cases in Massachusetts and New Hampshire. General duties performed have included both federal, state and local reporting, project and construction management, litigation support, soil/sediment excavation/dredge/removal management, emergency response management, soil and groundwater sampling, soil gas surveys, stream gauging, sediment investigations, soil immunoassay/XRF testing and hazardous materials surveys/ demo management, GIS data evaluations and mapping, UXO geophysical surveys, treatment system installations, Cone Penetration Testing, phytoremediation implementation, data tabulation and report preparation.

REPRESENTATIVE PROJECTS

- **Project Principal, Major Oil Company**. Manager of a complex dredging project on the Allegheny River to remove petroleum impacted sediments. Included the Site Investigation, Remedial Investigation, Alternative Feasibility Study, regulatory permitting and planning for upcoming dredge of 1,000 tons of sediment. Project requires the relocation of the largest documented population of a federally listed endangered mussel species.
- **Project Principal, Major Oil Company, Active Bulk Storage and Pipeline Facilities.** Manager of environment and construction projects at both active terminals and pipeline facilities on the east coast (Florida to Maine). Work scopes have included various types of

permitting, pipeline corrosion/dent inspections and repairs, OWS design and installation, Method 21/LDAR inspections, AST annual inspections, building upgrades including demo surveys and general construction management, containment dike surveys and secondary containment evaluations and designs. Safety awards received by Major Oil Company multiple times over the last several years.

- **Project Principal, Major Oil Company, Pipeline Facilities.** Provided engineering and technical support for securing > 100 wetland and various construction permits (state, local, federal). Developed risk reduction plans, engineering design for stream & RR crossings. Work scopes included assisting with foreign lines, dent anomalies (>1,000). Permits include CWA Order of Conditions, DOT access, road opening/construction, NHESP VMP & OMP, Water Quality Cert., and US Army Corp.
- **Project Principal, Major Petroleum Co., Former Petroleum Refinery, Upstate New York.** This Site is one of the 1st refineries in the US, at one time encompassing 700+ acres of land now in various stages of investigation, cleanup, and redevelopment. Roux currently has several roles and manages many aspects of the overall project. Serving as technical consultant for this client reviewing all regulatory submittals and overall strategy to achieve site closure through both the NY State Brownfields and Spills Programs. Serves as liaison to regulators, local stake holders and construction/redevelopment firms. Additional value added has included significant identified cost efficiencies during both remediation and redevelopment.
- **Expert/Technical Witness and Project Principal, Major Oil Company, Rochester, New York.** Oversaw large-sale investigation of several 100+ acre former refinery. Assisted with 3rd party negotiations and regulatory liaison.
- **Project Manager, Oil Company, Albany, New York**. Project Manager in-charge for large scale dredging project on the Hudson River to remove petroleum impacted sediments and soil. Included the removal of 3,000 tons of sediment, installation of sheet pile wall, carbon trench and phyto-remediation plot. Work performed in accordance with Stip. Agreement with NYSDEC. Included various stages of client advocacy. Project was completed on-time and under budget resulting in significant cost savings to the client.
- **Project Manager, Oil Company, Newington, New Hampshire.** Project Manager in-charge for large scale remediation and regulatory closure of former petroleum terminal on navigational waterway.
- **Project Principal, Multiple Spill Sites for Insurance Co., New Hampshire and Massachusetts.** Assist local insurance company with complex emergency response spills including development of closure strategy and oversight/management of response actions.
- **Project Manager, Demolition of Former Bulk Storage Facilities, New England, and New York.** Oversaw and managed team during the demolition of several facilities including completing the hazardous materials surveys, ACM removal, building demo and soil excavations.
- **Litigation Project Manager, Several Projects.** Managed litigation teams for several large-scale litigation, allocation, and facility assessment projects. Included the development and design of significant GIS and database systems to assist in the review of large quantities of both analytical and geographic information.
- **Project Manager for Several Secondary Containment System Evaluation Projects on Petroleum Bulk Storage Facilities in Several States.** Included both aerial and conventional surveys/mapping, use of 3D AutoCAD/GIS for evaluating secondary containment requirements in accordance with local, state, and federal programs. Project work also included the development of complex containment system designs and engineering oversight.
- **Project Manager, Major Oil Company, Everett, Massachusetts.** Project Manager-in-Charge for massive exploration, investigation, and rehabilitation of storm water collection system for former refinery and active petroleum bulk storage facility. Included the mapping of 5 miles of piping, extensive reconstruction, and abandonment of large-scale and deep structures in an active loading rack and terminal. Included the oversight of numerous subcontractors performing permit required CSEs with Marine Chemist certs.
- **Field Manager, USARMY, Seneca, New York and Falmouth, Massachusetts.** Oversaw numerous geophysical surveys, locating unexploded ordinance (UXO) and radioactive materials at a former US Army Depot (storing tactical nuclear weapons) and at on a former anti-tank weapons range. Responsible for performing extensive and thorough geophysical surveys using GPS and GIS mapping. Required compliance of strict UXO and radiation safety programs.
- **Project Manager, Oil Company, Upstate New York.** Project Manager in-charge and point of contact with NYSDEC project managers for emergency response following release of 30,000 gallons of Jet Fuel from a bulk storage facility in New York. Oversaw initial cleanup, following by rapid subsurface investigation to identify leak location and product plume.
- **Task/Field Manager, Major Oil Company, Several Locations.** Manager for multiple bulk petroleum storage and distribution facilities/terminals located in New England and New York.

Schedule, coordination, and oversight of all field operations including remediation system O&M, subsurface investigations, product recovery, surface water sampling, groundwater sampling events, waste management including soil excavation/removal.

- **Hydrogeologist/Field Manager, Stratford, Connecticut.** Site Assessments for Major Design Plant including Phase II Site Assessments of various industrial properties. Assessments included property inspection and review of state and federal documents, aerial photographs, and environmental databases. Historical land use research and interviews with property occupants and municipal personnel were conducted as part of these assessments.
- **Field Manager, Retail Service Station, Manteca, California.** Oversaw down-gradient groundwater investigation, domestic well sampling, cone penetration testing.

PROFESSIONAL TRAININGS

Operator Qualification (OQ) Training (several tasks)

OSHA 29 CFR 1910.120 40-Hour Safety Training

OSHA 29 CFR 1910.120 8-Hour Annual Refresher

Confined Space Safety Training

DOT HM-181/126F Certificate

Red Cross Certified, First Aid and CPR

ExxonMobil Loss Prevention System Training

Radiation Safety and Monitoring/Measurement

PROFESSIONAL PROFILE



CONTACT INFORMATION
Main: (781) 569-4000
Direct: (781) 569-4054
Email: jhauri@rouxinc.com
Website: www.rouxinc.com

200 Summit Drive, Suite 500
Burlington, MA 01803

EDUCATION

PhD, Environmental Engineering, University of California, 2001
MS, Environmental Science (concentration in environmental chemistry), Indiana University, 1993
BA, Biochemistry, University of Texas, 1991

James Hauri, PhD

Senior Scientist I

EXPERIENCE SUMMARY

Dr. Hauri is a broad-based environmental scientist with more than twenty years of experience in environmental science, engineering, and chemistry. His professional experience includes Roux, Senior Scientist I (2022 – present); Assumption University, Associate Professor (tenured), (2007-2012, 2014-2022) and Assistant Professor (2001-2007); Exponent, Senior Scientist (part-time: 2014-2015) (full-time: 2012-2014); Harvard University, School of Public Health, Visiting Scientist (part time: 2008-2012); CH2M-Hill, Environmental Consultant (2001); San Francisco Estuary Institute, Intern, (1997-1998); and Southwest Research Institute, Scientist (1993-1994).

TECHNICAL SPECIALTIES

Dr. Hauri's multidisciplinary background has included field sampling, environmental analytical chemistry, toxicity testing and data analysis. Much of his work has explored the nexus between the chemistry and ecotoxicity of environmental contaminants.

Dr. Hauri's areas of expertise include:

- Heavy metal speciation and toxicology;
- Environmental data analysis and validation;
- Analysis of ecotoxicology data; and
- Aquatic chemistry and contamination.

REPRESENTATIVE PROJECTS

Chemistry and Toxicology

- **Deep Water Horizon Oil Spill.** Evaluated the appropriateness of new methods to solubilize oil used with toxicity tests during the DWH spill. Compared the composition and concentration changes in polycyclic aromatic hydrocarbons (PAHs) associated with the new preparatory methods with field collected samples in order to determine if the toxicity tests performed were relevant to the actual toxicity expected to be seen in the field.
- **Alameda Corridor Transportation Authority (ACTA).** Provided technical expertise to gain a unique temporary discharge waiver for a multi-billion-dollar construction project in California. ACTA gained a waiver to discharge dewatering effluent during construction into the LA-Long Beach Harbor. The waiver regulated the effluent based on bioavailable (labile) metal concentration rather than total or dissolved concentrations, and then the project ensured non-detect labile metal concentration via the addition of EDTA.

REPRESENTATIVE EXPERT RETENTIONS/APPEARANCES

Analytical Environmental Chemistry

- Knurr, B. and J. Hauri (2021) Connecting Bomb Calorimetry to Environmental Issues: Two Bomb Calorimetry Experiments. Presented at the Fall ACS National Meeting, August 22-26. Atlanta, GA.
- Hauri, J. and B. Niece. (2018) Fingerprinting White Wines with Excitation-Emission Matrix Fluorescence. Poster presented at the Fall ACS National Meeting, August 19-23. Boston, MA.
- Hauri, J. (2017) Variation to the Excitation-Emission Matrix Fluorescence Characterization of Allochthonous Dissolved Organic Carbon due to pH changes. Poster presented 38th Annual Society of Environmental Toxicology and Chemistry National Meeting, 12 - 16 November, Minneapolis, MN.

- J. Hauri and K. Wirzbicki. (2011) Excitation-Emission Matrix Fluorescence Characterization of Dissolved Organic Carbon Leached from Leaves from Various Tree Species. Poster presented at the Society of Environmental Toxicology and Chemistry National Meeting, 13 - 17 November, Boston, MA.
- Miller, M. and J.F. Hauri. (2005) Development of an HPLC/UV Method for the Detection of Ibuprofen in River Water. Poster presented at the National Conference on Undergraduate Research, April 21-23, Lexington, VA.
- Parnass, K. and J.F. Hauri. (2004) Development of an HPLC/UV Method for the Measurement of Environmentally Relevant Concentrations of Ibuprofen. Poster presented at the North Atlantic Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, June 9-11, Portsmouth, RI.

Chemistry and Toxicology

- S. Kane Driscoll, J. Hauri, K. Kulacki, A. M. Morrison, M. McArdle, A. Schierz, K. Yozzo, and M. Edwards. (2016) The Influence of Mixing Energy on the Concentration and Composition of Oil in Laboratory Toxicity Tests. Poster presented 37th Annual Society of Environmental Toxicology and Chemistry National Meeting, 6 - 10 November, Orlando, FL.
- Yozzo, K. S. Kane Driscoll, J. Hauri, M. McArdle, and A.M. Morrison. (2016) Review of Current Literature of Cardiotoxicity of Oil to Early Life Stages of Fish and the Use in Injury Assessments. Presentation at 37th Annual Society of Environmental Toxicology and Chemistry National Meeting, 6 - 10 November, Orlando, FL.
- Kane Driscoll, S., R. Wells Whittlesey, J. Hauri, K. Kulacki, A. Schierz, T.L. Morse, A.M. Morrison, and K. Yozzo. (2016) The Influence of Mixing energy on the Concentration, Composition, Toxicity, and Relevance of the Laboratory Toxicity Tests. Poster presented at the Gulf of Mexico Oil Spill and Ecosystem Science Conference. 1-4 February, Tampa Bay, Fl.
- Frazier, K., K. Cushing, and J. Hauri (2010) A visual documentation of acute toxicity in zooplankton. Poster presented at the North Atlantic Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, June 2-4, Narragansett, RI.
- Hauri, J.F. and A.J. Horne. (2002) Copper toxicity reduction via EDTA addition: a real-world application. Presentation at the Society of Environmental Toxicology and Chemistry National Meeting, 16 - 20 November, Salt Lake City, UT.
- Hauri, J.F. and A.J. Horne. (2002) Copper toxicity reduction via EDTA addition: a real-world application. Poster presented at the American Chemical Society National Meeting, 18-22 August, Boston, MA.
- Hauri, J.F., K.D. Zoh, A. Steding, and A.J. Horne. (1999) Trinitrotoluene toxicity reduction to Ceriodaphnia dubia by humic acid complexation. Poster presented at the 19th NALMS Annual Meeting, 1-4 December, Reno, Nevada.
- Hauri, J.F., and A.J. Horne. (1997) Toxicity and chemistry of copper in urban runoff from San Francisco Bay creeks. Presented before the CALMS Annual Meeting, November, California.
- Hauri, J.F., and A.J. Horne. (1997) Influence of food on bioavailability of copper in the 7-day Ceriodaphnia dubia bioassay. Poster presented at the 18th SETAC Annual Meeting, 16-27 November, San Francisco, California.
- Hauri, J.F., and A.J. Horne. (1997) Toxicity and chemistry of copper in urban runoff from San Francisco Bay creeks. Presented before the 17th NALMS Annual Meeting, 2-6 December, Houston, Texas

Misc. Environmental Chemistry

- Drumm, E., and J. Hauri (2020) Analysis of Existing Water Quality Datasets of Lake Quinsigamond, Massachusetts. Poster accepted at North Atlantic Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, April 13-14, Avery Point, CT. Accepted, but conference was cancelled.
- Hauri, J. (2007) Adapting research for laboratory experiments in undergraduate environmental chemistry courses. Presented at the 234th ACS National Meeting, August 19-23, Boston, MA.
- Kulevich, S. J. Van Doren, and J. Hauri. (2006) Green arsenic remediation. Presented at the 231st ACS National Meeting, March 26-30, Atlanta, GA.
- Hauri, J. and B. Niece. (2005) Removal of Ibuprofen through a Wastewater Treatment Plant. Poster presented Society of Environmental Toxicology and Chemistry National Meeting, 14 - 17 November, Baltimore, MD.
- Hauri, J.F., P. Frank, and A.J. Horne. (1999) Acid mine drainage in rural and urban environments. Presented before the 19th NALMS Annual Meeting, 1-4 December, Reno, Nevada.

PROFESSIONAL AFFILIATIONS

American Chemistry Society (ACS)

Society of Environmental Toxicology and Chemistry (SETAC)

NAC SETAC – board of directors 2005-2008, VP 2008-2009, Pres 2009-2010

PUBLICATIONS

Analytical Environmental Chemistry

Knurr, B. and J.F. Hauri. (2020) An Alternative to Recycling: Measurement of Combustion Enthalpies of Plastics via Bomb Calorimetry. Journal of Chemical Education. V.97, pp 1465-1469.

Niece, B. and J.F. Hauri. (2013) Determination of Mercury in Fish: A Low-Cost Implementation of Cold-Vapor Atomic Absorbance for the Undergraduate Environmental Chemistry Laboratory. Journal of Chemical Education. V.90 (14), pp 487–489.

Hauri, J. and B. Niece. (2011) Leaching of silver from silver-impregnated food containers. Journal of Chemical Education. V.88 (10), pp 1407–1409.

Chemistry and Toxicology

Hauri, J.F. and A.J. Horne. (2006) Copper toxicity reduction via EDTA addition: a real-world application. Water Environment Research. v. 78, pp. 2508-2513.

Hauri, J.F. and A.J. Horne. (2004) Reduction in Labile Copper in the 7 Day Ceriodaphnia dubia Toxicity Test due to the interaction with zooplankton food. Chemosphere. v. 56, pp. 717-723.

Misc. Environmental Chemistry

Hauri, J.F., C. Daughton, and R. Klaper. (2016) The Challenge: Establishing Policy in an Uncertain World: What can be done to address emerging environmental contaminants having indeterminate or subtle ecological or human impacts? Environmental Toxicology and Chemistry. V.35(2), pp. 266-270.

Hauri, J.F. and L.A. Schaider. (2009) Remediation of Acid Mine Drainage with Sulfate Reducing Bacteria. Journal of Chemical Education. v. 86 (2), pp. 216-218. Other Publications

Lincoln, R., C. Amarasiriwardena, J. Shine, A. Ettinger, C. Paciorek, J. Hauri, R. Wright, J. Spengler (2011) Meconium as a biomarker for prenatal metals exposure: Methodological considerations and variations in serial samples over time (Diss. Chapter). Biomarkers of Metals Exposure in Two High-Risk Communities. School of Public Health, Harvard University.

Hauri, J.F. (1998) Scoping study of air deposition monitoring information relevant to water quality of San Francisco Bay, Final Report. Bay Area Stormwater Management Agencies Association.

Hauri, J.F., and Alex J. Horne. (1997) Bioavailability and toxicity of heavy metals in urban runoff in simulated natural conditions. University of California Water Resources Center.

PROFESSIONAL PROFILE



CONTACT INFORMATION
Main: (781) 569-4000
Direct: (781) 569-4031
Email: erunstrom@rouxinc.com
Website: www.rouxinc.com

200 Summit Drive, Suite 500
Burlington, MA 01803

EDUCATION
BS, Geology University of Massachusetts, Amherst, 2006

PROFESSIONAL LICENSES
Licensed Site Professional Association (Associate)

Eric Runstrom

Senior Geologist I | Project Manager

EXPERIENCE SUMMARY
Mr. Runstrom has eighteen years of experience, including Senior Geologist I and Project Manager (2019-Present), Project Geologist (2013-2019), Staff Geologist (2011-2013) at Roux; and Geologist at Sovereign Consulting Inc. (2006-2010).

TECHNICAL SPECIALTIES
Mr. Runstrom's technical specialties include designing and implementing environmental remediation projects, conducting environmental site assessments and environmental due diligence. Focus on management of comprehensive site investigations including environmental assessment and risk characterization; evaluation of remedial alternatives; development and implementation of remedial work plans; regulatory reporting and permitting; quality control; and health and safety compliance. Mr. Runstrom has extensive experience managing site assessment, remedial construction and soil excavation projects including management of subcontractors, data collection and waste characterization and management. Mr. Runstrom also has experience with wetland regulations & sensitive resource area permitting for oil and gas industry rights-of-ways in MA, CT, RI, and NJ.

REPRESENTATIVE PROJECTS

- **Senior Project Manager, Major Oil Company.** Managed and oversaw remedial action and monitoring work scopes at a former refinery and active petroleum bulk storage facility in accordance with a Remedy Implementation Plan (RIP). The RIP addressed 8 Areas of Concern (AOCs) across the terminal and included soil excavation, use of engineered barriers and site controls, and passive and active LNAPL recovery. Short term response actions were conducted concurrently with ongoing comprehensive remedial actions in response to spills and/or release typically as either Release Abatement Measures (RAM) or Immediate Response Actions (IRA). Responsibilities involved the scheduling and coordination of RIP, RAM, and/or IRA activities with the client, terminal personnel, and subcontractors. Also prepared associated work scopes and budgets and assisted with the overall regulatory strategy for the site.
- **Senior Project Manager, Major Oil Company, Everett, Massachusetts.** Developed and implemented environmental assessment work plans for the assessment and delineation of petroleum hydrocarbons and metals (primarily lead and organic lead) impacted areas for a former refinery and active petroleum bulk storage facility. Managed development of updated site risk characterization and selection of remedial action alternatives to advance site towards permanent solution.
- **Project Manager, Major Oil Company.** Developed and managed a LNAPL investigation at a former refinery and active petroleum bulk storage facility. Work included delineation of 8 different plumes, advancement of over 50 soil borings, installation of over 40 monitoring wells, collection of over 100 soil samples and gauging and sampling of monitoring wells. Evaluated collected data and historical data to develop remedial action plans to address each LNAPL plume and advance site towards permanent solution.
- **Project Manager, Major Oil Company.** Developed and oversaw investigation and rehabilitation of storm water system structures and piping (SWS) for a former refinery and active petroleum bulk storage facility. Included remote video survey of approximately 2,500 feet of SWS to evaluate structural integrity of the stormwater system, identifying where petroleum seeps were infiltrating into the network, and implementing appropriate remedial response measures. Major activities included use of line jetting equipment to clean SWS and excavation activities to facilitate repair and abandonment of SWS, and associated

management and disposal of impacted soils and sediments. Included the oversight of subcontractors performing permit required CSEs with Marine Chemist certs.

- **Project Manager, Major Oil Company, Upstate New York.** Managed and oversaw soil excavation and abandoned subsurface pipeline cleaning and removal activities at 9-acre NYSDEC Brownfields Cleanup Program Site, located on one of the first oil storage and refining centers in the Northeast. Project included the removal and disposal of over 5,000 cubic yards of impacted soil and over 1,500 linear feet of piping. Work included planning and implementation of engineering and trenching protective system designs, development of soil excavation and pipe removal plans, confirmatory endpoint sampling plan, and waste management plan including steps to minimize and control dust, vapors, and odors.
- **Project Manager, Major Oil Company.** Developed and oversaw large scale survey and confirmatory testing of over 8,500 linear feet of suspected asbestos insulated pipelines. Project included planning and implementation of work plans to abate and dispose of approximately 3,000 linear feet of asbestos insulation. Work including several elevated work areas requiring the use of scaffolding and aerial lifts to safely access work areas in accordance with OSHA requirements. Included the management and oversight of subcontractors performing asbestos abatement and confirmatory testing activities, and proper management and disposal of asbestos containing waste.
- **Senior, Project & Staff Geologist, Phase I Environmental Site Assessments.** Conducted, oversaw, and managed multiple Phase I Environmental Site Assessments in accordance with ASTM E1527-13 throughout New England for due diligence of commercial and industrial facilities, and residential buildings. Associated activities included agency contact, database management and interpretation, site inspections, identification of recognized environmental conditions (RECs), and report preparation. Based on Phase I findings, provide recommendations to clients, legal counsel, and lenders on potential liabilities and, and recommendations for additional due diligence.
- **Staff Geologist-Project Manager, Major Oil Company, Pipeline Facilities.** Provided technical support for securing over 100 wetland and various construction and access permits (state, local, federal). Developed risk reduction plans, engineering design for stream & RR crossings. Work scopes included assisting with foreign lines, dent, and corrosion anomalies. Conducted site walks and oversaw wetland delineation activities, corresponded with state, local and federal agencies, and presented at local Conservation Committees to obtain required permits. Permits include CWA Order of Conditions, DOT access, road opening, NHESP VMP & OMP, Water Quality Cert., and US Army Corp.
- **Staff Geologist, Petroleum Product Bulk Storage and Distribution Facility, East Providence, Rhode Island.** Conduct field tasks such as groundwater monitoring and sampling, contractor oversite and management, product recovery system operation & maintenance. Responsible for remedial system sampling and maintenance, surface/groundwater treatment system sampling and repairs, and groundwater monitoring and sampling. Conducted groundwater product recovery & pump maintenance as well as hazardous waste inspections of waste recovery systems/ containers and the storm sewer & remedial system inspections.
- **Staff Geologist, Petroleum Bulk Storage and Distribution Facility, East Providence, Rhode Island.** Oversaw the installation of an Engineered Natural System (ENS) to treat shallow groundwater and surface water in East Providence, Rhode Island. Provided oversight of installation of permeable reactive barrier, subsurface flow constructed treatment wetland, and contingency treatment system. Work was completed to fulfil the requirements of the Rhode Island Department of Environmental Management.
- **Staff Geologist, Shipping Freight Facility Inspections, multiple locations, Massachusetts/Rhode Island/New Hampshire.** Provided stormwater permitting to multiple facilities throughout New England. Coordinated and conducted inspections of facilities. Prepared stormwater pollution prevention plans (SWPPPs) and Stormwater Management Plans (SWMPs) in accordance with Federal and state industrial discharge permits.

PROFESSIONAL TRAININGS

OSHA 29 CFR 1910.120 40-Hour Safety Training

OSHA 29 CFR 1910.120 8-Hour Annual Refresher

OSHA Excavation and Trenching Safety Regulations

Confined Space Safety Training

DOT HM-181/126F Certificate

Red Cross Certified, First Aid and CPR

Loss Prevention System Training

PROFESSIONAL PROFILE



CONTACT INFORMATION

Main: (585) 895-6800
Direct: (585) 698-6842
Email: awirth@rouxinc.com
Website: www.rouxinc.com

2850 Clover Street, Suite 3
Pittsford, NY 14534

EDUCATION

BS, Earth Science, Geology/Environmental Science, State University of New York College at Buffalo

PROFESSIONAL TRAININGS

OSHA 40-hour certified
OSHA 8-hour current
NYSDEC SWPPP Qualified Inspector
DOT Operator Qualification certified
Loss Prevention System certified

Alex Wirth

Technical Director

EXPERIENCE SUMMARY

Mr. Wirth is an experienced, proficient, and analytical engineering professional focused on providing progressive technical and management solutions. He encompasses over twenty-two years of project management experience; excellent knowledge in conceptual engineering, construction, planning, litigation support, settlement negotiations, design and cost estimating; proven interpersonal skills; and a superior record of financial management. He holds a BS in Earth Science and Geology from the State University of New York College at Buffalo. He is currently a Technical Director for Roux (2025-present). His past experience includes Principal/Senior Geologist at Rocterra, LLC (2011-2025), Contract Project Manager/Senior Geologist at Greenstar Environmental Solutions (2011-2025), Project Manager/Senior Geologist at Kleinfelder (2003-2015; 2018-2025 Part Time/Flex).

TECHNICAL SPECIALTIES

Mr. Wirth has conducted, managed or overseen investigations and remediations at many sites located across the Northeast and has experience within the Industrial, Pharmaceutical, Oil & Gas, and Brownfields/Real Estate markets. Mr. Wirth's areas of expertise include contaminant investigation and remediation, brownfield redevelopment, litigation technical support, and settlement negotiations.

REPRESENTATIVE PROJECTS

- Provided project management, investigation, remedial design, operation and optimization, litigation support, third-party oversight, and monitoring at a pharmaceutical manufacturing facility with a chlorinated solvent plume.
- Provided on-site management for the decommissioning of a landfill facility in New York. Activities included ongoing maintenance and long-term monitoring for PFAS, heavy metals, and PCB litigation support.
- Provided brownfield investigation, remediation, monitoring and responsible party settlement negotiations at multiple sites in New York.
- Provided third-party oversight and litigation support for a major petroleum release site including residential indoor air emergency response measures.
- Provided review and optimization of existing process engineering systems via mechanical and/or technology-based improvements, providing value-added services and engineering design solutions across sites in New York, New Jersey, and Pennsylvania.
- Provided litigation support for critical Environmental Impact Statement (EIS) and State Environmental Quality Review Act (SEQR) evaluations at an environmentally sensitive development site in New York.

ATTACHMENT 2

NYSDEC PFAS Sampling Guidance

NEW YORK STATE OF OPPORTUNITY.

Department of Environmental Conservation

SAMPLING, ANALYSIS, AND ASSESSMENT OF PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS)

Under NYSDEC's Part 375 Remedial Programs

April 2023



www.dec.ny.gov

Table of Contents

Objective 1
Applicability 1
Field Sampling Procedures 1
Analysis and Reporting 2
Routine Analysis 2
Additional Analysis 2
Data Assessment and Application to Site Cleanup 3
Water Sample Results 3
Soil Sample Results 3
Testing for Imported Soil 4
Appendix A - Quality Assurance Project Plan (QAPP) Guidelines for PFAS 5
Appendix B - Sampling Protocols for PFAS in Soils, Sediments and Solids 6
Appendix C - Sampling Protocols for PFAS in Monitoring Wells 8
Appendix D - Sampling Protocols for PFAS in Surface Water 10
Appendix E - Sampling Protocols for PFAS in Private Water Supply Wells 12
Appendix F - Sampling Protocols for PFAS in Fish 14
Appendix G - PFAS Analyte List 22
Appendix H - Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids 24

ERRATA SHEET for

SAMPLING, ANALYSIS, AND ASSESSMENT OF PER- AND POLYFLUOROALKYL SUBSTANCES (PFAS) Under NYSDEC's Part 375 Remedial Programs Issued January 17, 2020

Citation and Page Number	Current Text	Corrected Text	Date
Title of Appendix I, page 32	Appendix H	Appendix I	2/25/2020
Document Cover, page 1	Guidelines for Sampling and Analysis of PFAS	Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs	9/15/2020
Data Assessment and Application to Site Cleanup Page 3	Until such time as Ambient Water Quality Standards (AWQS) and Soil Cleanup Objectives (SCOs) for PFOA and PFOS are published	Until such time as Soil Cleanup Objectives (SCOs) for PFOA and PFOS are published	3/28/2023
Water Sample Results Page 3	PFOA and PFOS should be further assessed and considered as potential contaminants of concern in groundwater or surface water if PFOA or PFOS is detected in any water sample at or above 10 ng/L (ppt) and is determined to be attributable to the site, either by a comparison of upgradient and downgradient levels, or the presence of soil source areas, as defined below.	NYSDEC has adopted ambient water quality guidance values for PFOA and PFOS. Groundwater samples should be compared to the human health criteria of 6.7 ng/l (ppt) for PFOA and 2.7 ng/l (ppt) for PFOS. These guidance values also include criteria for surface water for PFOS applicable for aquatic life, which may be applicable at some sites. Drinking water sample results should be compared to the NYS maximum contaminant level (MCL) of 10 ng/l (ppt).Analysis to determine if PFOA and PFOS concentrations are attributable to the site should include a comparison between upgradient and downgradient levels, and the presence of soil source areas, as defined below.	3/28/2023
Soil Sample Results Page 3	Soil cleanup objectives for PFOA and PFOS have been proposed in an upcoming revision to 6 NYCRR Part 375-6. Until SCOs are in effect, the following are to be used as guidance values:	NYSDEC will delay adding soil cleanup objectives for PFOA and PFOS to 6 NYCRR Part 375-6 until the PFAS rural soil background study has been completed. Until SCOs are in effect, the following are to be used as guidance values:	3/28/2023
Protection of Groundwater Page 3	PFOA (ppb) 1.1 PFOS (ppb) 3.7	PFOA (ppb) 0.8 PFOS (ppb) 1.0	3/28/2023

Citation and Page Number	Current Text	Corrected Text	Date
Footnote 2 Page 3	The movement of PFAS in the environment is being aggressively researched at this time; that research will eventually result in more accurate models for the behaviors of these chemicals. In the meantime, DEC has calculated the guidance value for the protection of groundwater using the same procedure used for all other chemicals, as described in Section 7.7 of the Technical Support Document (http://www.dec.ny.gov/docs/remediation_hudson_pdf/techsuppdoc.pdf).	The Protection of Groundwater values are based on the above referenced ambient groundwater guidance values. Details on that calculation are available in the following document, prepared for the February 2022 proposed changes to Part 375 (https://www.dec.ny.gov/docs/remediation_hudson_pdf/part375techsupport.pdf). The movement of PFAS in the environment is being aggressively researched at this time; that research will eventually result in more accurate models for the behaviors of these chemicals. In the meantime, DEC has calculated the guidance value for the protection of groundwater using the same procedure used for all other chemicals, as described in Section 7.7 of the Technical Support Document (http://www.dec.ny.gov/docs/remediation_hudson_pdf/techsuppdoc.pdf).	3/28/2023
Testing for Imported Soil Page 4	If the concentrations of PFOA and PFOS in leachate are at or above 10 ppt (the Maximum Contaminant Levels established for drinking water by the New York State Department of Health), then the soil is not acceptable.	If the concentrations of PFOA and PFOS in leachate are at or above the ambient water quality guidance values for groundwater, then the soil is not acceptable.	3/28/2023
Routine Analysis, page 9	"However, laboratories analyzing environmental samples…PFOA and PFOS in drinking water by EPA Method 537, 537.1 or ISO 25101."	"However, laboratories analyzing environmental samples…PFOA and PFOS in drinking water by EPA Method 537, 537.1, ISO 25101, or Method 533."	9/15/2020
Additional Analysis, page 9, new paragraph regarding soil parameters	None	"In cases where site-specific cleanup objectives for PFOA and PFOS are to be assessed, soil parameters, such as Total Organic Carbon (EPA Method 9060), soil pH (EPA Method 9045), clay content (percent), and cation exchange capacity (EPA Method 9081), should be included in the analysis to help evaluate factors affecting the leachability of PFAS in site soils."	9/15/2020

Citation and Page Number	Current Text	Corrected Text	Date
Data Assessment and Application to Site Cleanup Page 10	Until such time as Ambient Water Quality Standards (AWQS) and Soil Cleanup Objectives (SCOs) for PFAS are published, the extent of contaminated media potentially subject to remediation should be determined on a case-by-case basis using the procedures discussed below and the criteria in DER-10. Target levels for cleanup of PFAS in other media, including biota and sediment, have not yet been established by the DEC.	Until such time as Ambient Water Quality Standards (AWQS) and Soil Cleanup Objectives (SCOs) for PFOA and PFOS are published, the extent of contaminated media potentially subject to remediation should be determined on a case-by-case basis using the procedures discussed below and the criteria in DER-10. Preliminary target levels for cleanup of PFOA and PFOS in other media, including biota and sediment, have not yet been established by the DEC.	9/15/2020
Water Sample Results Page 10	PFAS should be further assessed and considered as a potential contaminant of concern in groundwater or surface water (…) If PFAS are identified as a contaminant of concern for a site, they should be assessed as part of the remedy selection process in accordance with Part 375 and DER-10.	PFOA and PFOS should be further assessed and considered as potential contaminants of concern in groundwater or surface water (…) If PFOA and/or PFOS are identified as contaminants of concern for a site, they should be assessed as part of the remedy selection process in accordance with Part 375 and DER-10.	9/15/2020

Citation and Page Number	Current Text	Corrected Text	Date
Soil Sample Results, page 10	"The extent of soil contamination for purposes of delineation and remedy selection should be determined by having certain soil samples tested by Synthetic Precipitation Leaching Procedure (SPLP) and the leachate analyzed for PFAS. Soil exhibiting SPLP results above 70 ppt for either PFOA or PFOS (individually or combined) are to be evaluated during the cleanup phase."	"Soil cleanup objectives for PFOA and PFOS will be proposed in an upcoming revision to 6 NYCRR Part 375-6. Until SCOs are in effect, the following are to be used as guidance values. " [Interim SCO Table] "PFOA and PFOS results for soil are to be compared against the guidance values listed above. These guidance values are to be used in determining whether PFOA and PFOS are contaminants of concern for the site and for determining remedial action objectives and cleanup requirements. Site-specific remedial objectives for protection of groundwater can also be presented for evaluation by DEC. Development of site-specific remedial objectives for protection of groundwater will require analysis of additional soil parameters relating to leachability. These additional analyses can include any or all the parameters listed above (soil pH, cation exchange capacity, etc.) and/or use of SPLP. As the understanding of PFAS transport improves, DEC welcomes proposals for site-specific remedial objectives for protection of groundwater. DEC will expect that those may be dependent on additional factors including soil pH, aqueous pH, % organic carbon, % Sand/Silt/Clay, soil cations: K, Ca, Mg, Na, Fe, Al, cation exchange capacity, and anion exchange capacity. Site-specific remedial objectives should also consider the dilution attenuation factor (DAF). The NJDEP publication on DAF can be used as a reference: https://www.nj.gov/dep/srp/guidance/rs/daf.pdf. "	9/15/2020

Citation and Page Number	Current Text	Corrected Text	Date
Testing for Imported Soil Page 11	Soil imported to a site for use in a soil cap, soil cover, or as backfill is to be tested for PFAS in general conformance with DER-10, Section 5.4(e) for the PFAS Analyte List (Appendix F) using the analytical procedures discussed below and the criteria in DER-10 associated with SVOCs. If PFOA or PFOS is detected in any sample at or above 1 µg/kg, then soil should be tested by SPLP and the leachate analyzed for PFAS. If the SPLP results exceed 10 ppt for either PFOA or PFOS (individually) then the source of backfill should be rejected, unless a site-specific exemption is provided by DER. SPLP leachate criteria is based on the Maximum Contaminant Levels proposed for drinking water by New York State's Department of Health, this value may be updated based on future Federal or State promulgated regulatory standards. Remedial parties have the option of analyzing samples concurrently for both PFAS in soil and in the SPLP leachate to minimize project delays. Category B deliverables should be submitted for backfill samples, though a DUSR is not required.	Testing for PFAS should be included any time a full TAL/TCL analyte list is required. Results for PFOA and PFOS should be compared to the applicable guidance values. If PFOA or PFOS is detected in any sample at or above the guidance values then the source of backfill should be rejected, unless a site-specific exemption is provided by DER based on SPLP testing, for example. If the concentrations of PFOA and PFOS in leachate are at or above 10 ppt (the Maximum Contaminant Levels established for drinking water by the New York State Department of Health), then the soil is not acceptable. PFOA, PFOS and 1,4-dioxane are all considered semi-volatile compounds, so composite samples are appropriate for these compounds when sampling in accordance with DER-10, Table 5.4(e)10. Category B deliverables should be submitted for backfill samples, though a DUSR is not required.	9/15/2020

Citation and Page Number	Current Text	Corrected Text	Date
Footnotes	None	[1] TOP Assay analysis of highly contaminated samples, such as those from an AFFF (aqueous film-forming foam) site, can result in incomplete oxidation of the samples and an underestimation of the total perfluoroalkyl substances. [2] The movement of PFAS in the environment is being aggressively researched at this time; that research will eventually result in more accurate models for the behaviors of these chemicals. In the meantime, DEC has calculated the soil cleanup objective for the protection of groundwater using the same procedure used for all other chemicals, as described in Section 7.7 of the Technical Support Document (http://www.dec.ny.gov/docs/remediation_hudson_pdf/techsuppdoc.pdf).	9/15/2020
Additional Analysis, page 9	In cases… soil parameters, such as Total Organic Carbon (EPA Method 9060), soil…	In cases… soil parameters, such as Total Organic Carbon (Lloyd Kahn), soil…	1/8/2021
Appendix A, General Guidelines, fourth bullet	List the ELAP-approved lab(s) to be used for analysis of samples	List the ELAP- certified lab(s) to be used for analysis of samples	1/8/2021
Appendix E, Laboratory Analysis and Containers	Drinking water samples collected using this protocol are intended to be analyzed for PFAS by ISO Method 25101.	Drinking water samples collected using this protocol are intended to be analyzed for PFAS by EPA Method 537, 537.1, 533, or ISO Method 25101	1/8/2021
Water Sample Results Page 9	"In addition, further assessment of water may be warranted if either of the following screening levels are met: a. any other individual PFAS (not PFOA or PFOS) is detected in water at or above 100 ng/L; or b. total concentration of PFAS (including PFOA and PFOS) is detected in water at or above 500 ng/L"	Deleted	6/15/2021

Citation and Page Number	Current Text	Corrected Text	Date
Routine Analysis, Page XX	Currently, New York State Department of Health's Environmental Laboratory Approval Program (ELAP)… criteria set forth in the DER's laboratory guidelines for PFAS in non-potable water and solids (Appendix H - Laboratory Guidelines for Analysis of PFAS in Non-Potable Water and Solids).	Deleted	5/31/2022
Analysis and Reporting, Page XX	As of October 2020, the United States Environmental Protection Agency (EPA) does not have a validated method for analysis of PFAS for media commonly analyzed under DER remedial programs (non-potable waters, solids). DER has developed the following guidelines to ensure consistency in analysis and reporting of PFAS.	Deleted	5/31/2022
Routine Analysis, Page XX	LC-MS/MS analysis for PFAS using methodologies based on EPA Method 537.1 is the procedure to use for environmental samples. Isotope dilution techniques should be utilized for the analysis of PFAS in all media.	EPA Method 1633 is the procedure to use for environmental samples.	
Soil Sample Results, Page XX	Soil cleanup objectives for PFOA and PFOS will be proposed in an upcoming revision to 6 NYCRR Part 375-6	Soil cleanup objectives for PFOA and PFOS have been proposed in an upcoming revision to 6 NYCRR Part 375-6	
Appendix A	"Include in the text… LC-MS/MS for PFAS using methodologies based on EPA Method 537.1"	"Include in the text ….EPA Method 1633"	
Appendix A	"Laboratory should have ELAP certification for PFOA and PFOS in drinking water by EPA Method 537, 537.1, EPA Method 533, or ISO 25101"	Deleted	
Appendix B	"Samples collected using this protocol are intended to be analyzed for PFAS using methodologies based on EPA Method 537.1"	"Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633"	

Citation and Page Number	Current Text	Corrected Text	Date
Appendix C	"Samples collected using this protocol are intended to be analyzed for PFAS using methodologies based on EPA Method 537.1"	"Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633"	
Appendix D	"Samples collected using this protocol are intended to be analyzed for PFAS using methodologies based on EPA Method 537.1"	"Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633"	
Appendix G		Updated to include all forty PFAS analytes in EPA Method 533	
Appendix H		Deleted	
Appendix I	Appendix I	Appendix H	
Appendix H	"These guidelines are intended to be used for the validation of PFAS analytical results for projects within the Division of Environmental Remediation (DER) as well as aid in the preparation of a data usability summary report."	"These guidelines are intended to be used for the validation of PFAS using EPA Method 1633 for projects within the Division of Environmental Remediation (DER)."	
Appendix H	"The holding time is 14 days…"	"The holding time is 28 days…"	
Appendix H, Initial Calibration	"The initial calibration should contain a minimum of five standards for linear fit…"	"The initial calibration should contain a minimum of six standards for linear fit…"	
Appendix H, Initial Calibration	Linear fit calibration curves should have an R^2 value greater than 0.990.	Deleted	
Appendix H, Initial Calibration Verification	Initial Calibration Verification Section	Deleted	
Appendix H	secondary Ion Monitoring Section	Deleted	
Appendix H	Branched and Linear Isomers Section	Deleted	

Sampling, Analysis, and Assessment of Per- and Polyfluoroalkyl Substances (PFAS) Under NYSDEC's Part 375 Remedial Programs

Objective

New York State Department of Environmental Conservation's Division of Environmental Remediation (DER) performs or oversees sampling of environmental media and subsequent analysis of PFAS as part of remedial programs implemented under 6 NYCRR Part 375. To ensure consistency in sampling, analysis, reporting, and assessment of PFAS, DER has developed this document which summarizes currently accepted procedures and updates previous DER technical guidance pertaining to PFAS.

Applicability

All work plans submitted to DEC pursuant to one of the remedial programs under Part 375 shall include PFAS sampling and analysis procedures that conform to the guidelines provided herein.

As part of a site investigation or remedial action compliance program, whenever samples of potentially affected media are collected and analyzed for the standard Target Analyte List/Target Compound List (TAL/TCL), PFAS analysis should also be performed. Potentially affected media can include soil, groundwater, surface water, and sediment. Based upon the potential for biota to be affected, biota sampling and analysis for PFAS may also be warranted as determined pursuant to a Fish and Wildlife Impact Analysis. Soil vapor sampling for PFAS is not required.

Field Sampling Procedures

DER-10 specifies technical guidance applicable to DER's remedial programs. Given the prevalence and use of PFAS, DER has developed "best management practices" specific to sampling for PFAS. As specified in DER-10 Chapter 2, quality assurance procedures are to be submitted with investigation work plans. Typically, these procedures are incorporated into a work plan, or submitted as a stand-alone document (e.g., a Quality Assurance Project Plan). Quality assurance guidelines for PFAS are listed in Appendix A - Quality Assurance Project Plan (QAPP) Guidelines for PFAS.

Field sampling for PFAS performed under DER remedial programs should follow the appropriate procedures outlined for soils, sediments, or other solids (Appendix B), non-potable groundwater (Appendix C), surface water (Appendix D), public or private water supply wells (Appendix E), and fish tissue (Appendix F).

QA/QC samples (e.g. duplicates, MS/MSD) should be collected as specified in DER-10, Section 2.3(c). For sampling equipment coming in contact with aqueous samples only, rinsate or equipment blanks should be collected. Equipment blanks should be collected at a minimum frequency of one per day per site or one per twenty samples, whichever is more frequent.

Analysis and Reporting

The investigation work plan should describe analysis and reporting procedures, including laboratory analytical procedures for the methods discussed below. As specified in DER-10 Section 2.2, laboratories should provide a full Category B deliverable. In addition, a Data Usability Summary Report (DUSR) should be prepared by an independent, third-party data validator. Electronic data submissions should meet the requirements provided at: https://www.dec.ny.gov/chemical/62440.html.

DER has developed a *PFAS Analyte List* (Appendix G) for remedial programs to understand the nature of contamination at sites. It is expected that reported results for PFAS will include, at a minimum, all the compounds listed. If lab and/or matrix specific issues are encountered for any analytes, the DER project manager, in consultation with the DER chemist, will make case-by-case decisions as to whether certain analytes may be temporarily or permanently discontinued from analysis at each site. As with other contaminants that are analyzed for at a site, the *PFAS Analyte List* may be refined for future sampling events based on investigative findings.

Routine Analysis

EPA Method 1633 is the procedure to use for environmental samples. Reporting limits for PFOA and PFOS in aqueous samples should not exceed 2 ng/L. Reporting limits for PFOA and PFOS in solid samples should not exceed 0.5 µg/kg. Reporting limits for all other PFAS in aqueous and solid media should be as close to these limits as possible. If laboratories indicate that they are not able to achieve these reporting limits for the entire *PFAS Analyte List*, site-specific decisions regarding acceptance of elevated reporting limits for specific PFAS can be made by the DER project manager in consultation with the DER chemist. Data review guidelines were developed by DER to ensure data comparability and usability (Appendix H - Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids).

Additional Analysis

Additional laboratory methods for analysis of PFAS may be warranted at a site, such as the Synthetic Precipitation Leaching Procedure (SPLP) and Total Oxidizable Precursor Assay (TOP Assay).

In cases where site-specific cleanup objectives for PFOA and PFOS are to be assessed, soil parameters, such as Total Organic Carbon (Lloyd Kahn), soil pH (EPA Method 9045), clay content (percent), and cation exchange capacity (EPA Method 9081), should be included in the analysis to help evaluate factors affecting the leachability of PFAS in site soils.

SPLP is a technique used to determine the mobility of chemicals in liquids, soils and wastes, and may be useful in determining the need for addressing PFAS-containing material as part of the remedy. SPLP by EPA Method 1312 should be used unless otherwise specified by the DER project manager in consultation with the DER chemist.

Impacted materials can be made up of PFAS that are not analyzable by routine analytical methodology. A TOP Assay can be utilized to conceptualize the amount and type of oxidizable PFAS which could be liberated in the environment, which approximates the maximum concentration of perfluoroalkyl substances that could be generated if all polyfluoroalkyl substances were oxidized. For example, some polyfluoroalkyl substances may degrade or transform to form perfluoroalkyl substances (such as PFOA or PFOS), resulting in an increase in perfluoroalkyl substance concentrations as contaminated groundwater moves away from a source. The TOP Assay converts, through oxidation, polyfluoroalkyl substances (precursors) into perfluoroalkyl substances that can be detected by routine analytical methodology.[1]

[1] TOP Assay analysis of highly contaminated samples, such as those from an AFFF (aqueous film-forming foam) site, can result in incomplete oxidation of the samples and an underestimation of the total perfluoroalkyl substances.

Commercial laboratories have adopted methods which allow for the quantification of targeted PFAS in air and biota. The EPA's Office of Research and Development (ORD) is currently developing methods which allow for air emissions characterization of PFAS, including both targeted and non-targeted analysis of PFAS. Consult with the DER project manager and the DER chemist for assistance on analyzing biota/tissue and air samples.

Data Assessment and Application to Site Cleanup

Until such time as Soil Cleanup Objectives (SCOs) for PFOA and PFOS are published, the extent of contaminated media potentially subject to remediation should be determined on a case-by-case basis using the procedures discussed below and the criteria in DER-10. Preliminary target levels for cleanup of PFOA and PFOS in other media, including biota and sediment, have not yet been established by the DEC.

Water Sample Results

NYSDEC has adopted ambient water quality guidance values for PFOA and PFOS. Groundwater samples should be compared to the human health criteria of 6.7 ng/l (ppt) for PFOA and 2.7 ng/l (ppt) for PFOS. These human health criteria should also be applied to surface water that is used as a water supply. This guidance also includes criteria for surface water for PFOS applicable for aquatic life, which may be applicable at some sites. Drinking water sample results should be compared to the NYS maximum contaminant level (MCL) of 10 ng/l (ppt). Analysis to determine if PFOA and PFOS concentrations are attributable to the site should include a comparison between upgradient and downgradient levels, and the presence of soil source areas, as defined below.

If PFOA and/or PFOS are identified as contaminants of concern for a site, they should be assessed as part of the remedy selection process in accordance with Part 375 and DER-10.

Soil Sample Results

NYSDEC will delay adding soil cleanup objectives for PFOA and PFOS to 6 NYCRR Part 375-6 until the PFAS rural soil background study has been completed. Until SCOs are in effect, the following are to be used as guidance values:

Guidance Values for Anticipated Site Use	PFOA (ppb)	PFOS (ppb)
Unrestricted	0.66	0.88
Residential	6.6	8.8
Restricted Residential	33	44
Commercial	500	440
Industrial	600	440
Protection of Groundwater[2]	0.8	1.0

PFOA and PFOS results for soil are to be compared against the guidance values listed above. These guidance values are to be used in determining whether PFOA and PFOS are contaminants of concern for the site and for determining remedial action objectives and cleanup requirements. Site-specific remedial objectives for protection of groundwater can also be presented for evaluation by DEC. Development of site-specific remedial objectives for protection of groundwater will require analysis of additional soil parameters relating to leachability. These

[2] The Protection of Groundwater values are based on the above referenced ambient groundwater guidance values. Details on that calculation are available in the following document, prepared for the February 2022 proposed changes to Part 375 (https://www.dec.ny.gov/docs/remediation_hudson_pdf/part375techsupport.pdf). The movement of PFAS in the environment is being aggressively researched at this time; that research will eventually result in more accurate models for the behaviors of these chemicals. In the meantime, DEC has calculated the guidance value for the protection of groundwater using the same procedure used for all other chemicals, as described in Section 7.7 of the Technical Support Document (http://www.dec.ny.gov/docs/remediation_hudson_pdf/techsuppdoc.pdf).

additional analyses can include any or all the parameters listed above (soil pH, cation exchange capacity, etc.) and/or use of SPLP.

As the understanding of PFAS transport improves, DEC welcomes proposals for site-specific remedial objectives for protection of groundwater. DEC will expect that those may be dependent on additional factors including soil pH, aqueous pH, % organic carbon, % Sand/Silt/Clay, soil cations: K, Ca, Mg, Na, Fe, Al, cation exchange capacity, and anion exchange capacity. Site-specific remedial objectives should also consider the dilution attenuation factor (DAF). The NJDEP publication on DAF can be used as a reference: https://www.nj.gov/dep/srp/guidance/rs/daf.pdf.

Testing for Imported Soil

Testing for PFAS should be included any time a full TAL/TCL analyte list is required. Results for PFOA and PFOS should be compared to the applicable guidance values. If PFOA or PFOS is detected in any sample at or above the guidance values then the source of backfill should be rejected, unless a site-specific exemption is provided by DER based on SPLP testing, for example. If the concentrations of PFOA and PFOS in leachate are at or above the ambient water quality guidance values for groundwater, then the soil is not acceptable.

PFOA, PFOS and 1,4-dioxane are all considered semi-volatile compounds, so composite samples are appropriate for these compounds when sampling in accordance with DER-10, Table 5.4(e)10. Category B deliverables should be submitted for backfill samples, though a DUSR is not required.

Appendix A - Quality Assurance Project Plan (QAPP) Guidelines for PFAS

The following guidelines (general and PFAS-specific) can be used to assist with the development of a QAPP for projects within DER involving sampling and analysis of PFAS.

General Guidelines in Accordance with DER-10

- Document/work plan section title – Quality Assurance Project Plan
- Summarize project scope, goals, and objectives
- Provide project organization including names and resumes of the project manager, Quality Assurance Officer (QAO), field staff, and Data Validator
    - The QAO should not have another position on the project, such as project or task manager, that involves project productivity or profitability as a job performance criterion
- List the ELAP certified lab(s) to be used for analysis of samples
- Include a site map showing sample locations
- Provide detailed sampling procedures for each matrix
- Include Data Quality Usability Objectives
- List equipment decontamination procedures
- Include an "Analytical Methods/Quality Assurance Summary Table" specifying:
    - Matrix type
    - Number or frequency of samples to be collected per matrix
    - Number of field and trip blanks per matrix
    - Analytical parameters to be measured per matrix
    - Analytical methods to be used per matrix with minimum reporting limits
    - Number and type of matrix spike and matrix spike duplicate samples to be collected
    - Number and type of duplicate samples to be collected
    - Sample preservation to be used per analytical method and sample matrix
    - Sample container volume and type to be used per analytical method and sample matrix
    - Sample holding time to be used per analytical method and sample matrix
- Specify Category B laboratory data deliverables and preparation of a DUSR

Specific Guidelines for PFAS

- Include in the text that sampling for PFAS will take place
- Include in the text that PFAS will be analyzed by EPA Method 1633
- Include the list of PFAS compounds to be analyzed (*PFAS Analyte List*)
- Include the laboratory SOP for PFAS analysis
- List the minimum method-achievable Reporting Limits for PFAS
    - Reporting Limits should be less than or equal to:
        - Aqueous – 2 ng/L (ppt)
        - Solids – 0.5 µg/kg (ppb)
- Include the laboratory Method Detection Limits for the PFAS compounds to be analyzed
-
- Include detailed sampling procedures
    - Precautions to be taken
    - Pump and equipment types
    - Decontamination procedures
    - Approved materials only to be used
- Specify that regular ice only will be used for sample shipment
- Specify that equipment blanks should be collected at a minimum frequency of 1 per day per site for each matrix

Appendix B - Sampling Protocols for PFAS in Soils, Sediments and Solids

General

The objective of this protocol is to give general guidelines for the collection of soil, sediment and other solid samples for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Containers

Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633.

The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in to contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer.

A list of acceptable equipment is provided below, but other equipment may be considered appropriate based on sampling conditions.

- stainless steel spoon
- stainless steel bowl
- steel hand auger or shovel without any coatings

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Sampling is often conducted in areas where a vegetative turf has been established. In these cases, a pre-cleaned trowel or shovel should be used to carefully remove the turf so that it may be replaced at the conclusion of sampling. Surface soil samples (e.g. 0 to 6 inches below surface) should then be collected using a pre-cleaned, stainless steel spoon. Shallow subsurface soil samples (e.g. 6 to ~36 inches below surface) may be collected by digging a hole using a pre-cleaned hand auger or shovel. When the desired subsurface depth is reached, a pre-cleaned hand auger or spoon shall be used to obtain the sample.

When the sample is obtained, it should be deposited into a stainless steel bowl for mixing prior to filling the sample containers. The soil should be placed directly into the bowl and mixed thoroughly by rolling the material into the middle until the material is homogenized. At this point the material within the bowl can be placed into the laboratory provided container.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at 4 ± 2º Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- Request appropriate data deliverable (Category B) and an electronic data deliverable

Documentation

A soil log or sample log shall document the location of the sample/borehole, depth of the sample, sampling equipment, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate. Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appropriate rain gear (PVC, polyurethane, or rubber rain gear are acceptable), bug spray, and sunscreen should be used that does not contain PFAS. Well washed cotton coveralls may be used as an alternative to bug spray and/or sunscreen.

PPE that contains PFAS is acceptable when site conditions warrant additional protection for the samplers and no other materials can be used to be protective. Documentation of such use should be provided in the field notes.

Appendix C - Sampling Protocols for PFAS in Monitoring Wells

General

The objective of this protocol is to give general guidelines for the collection of groundwater samples for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Container

Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633.

The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include: stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials including plumbers tape and sample bottle cap liners with a PTFE layer.

A list of acceptable equipment is provided below, but other equipment may be considered appropriate based on sampling conditions.

- stainless steel inertia pump with HDPE tubing
- peristaltic pump equipped with HDPE tubing and silicone tubing
- stainless steel bailer with stainless steel ball
- bladder pump (identified as PFAS-free) with HDPE tubing

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Monitoring wells should be purged in accordance with the sampling procedure (standard/volume purge or low flow purge) identified in the site work plan, which will determine the appropriate time to collect the sample. If sampling using standard purge techniques, additional purging may be needed to reduce turbidity levels, so samples contain a limited amount of sediment within the sample containers. Sample containers that contain sediment may cause issues at the laboratory, which may result in elevated reporting limits and other issues during the sample preparation that can compromise data usability. Sampling personnel should don new nitrile gloves prior to sample collection due to the potential to contact PFAS containing items (not related to the sampling equipment) during the purging activities.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at 4 ± 2º Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- Collect one equipment blank per day per site and minimum 1 equipment blank per 20 samples. The equipment blank shall test the new and decontaminated sampling equipment utilized to obtain a sample for residual PFAS contamination. This sample is obtained by using laboratory provided PFAS-free water and passing the water over or through the sampling device and into laboratory provided sample containers
- Additional equipment blank samples may be collected to assess other equipment that is utilized at the monitoring well
- Request appropriate data deliverable (Category B) and an electronic data deliverable

Documentation

A purge log shall document the location of the sample, sampling equipment, groundwater parameters, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate. Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appropriate rain gear (PVC, polyurethane, or rubber rain gear are acceptable), bug spray, and sunscreen should be used that does not contain PFAS. Well washed cotton coveralls may be used as an alternative to bug spray and/or sunscreen.

PPE that contains PFAS is acceptable when site conditions warrant additional protection for the samplers and no other materials can be used to be protective. Documentation of such use should be provided in the field notes.

Appendix D - Sampling Protocols for PFAS in Surface Water

General

The objective of this protocol is to give general guidelines for the collection of surface water samples for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Container

Samples collected using this protocol are intended to be analyzed for PFAS using EPA Method 1633.

The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include: stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials including sample bottle cap liners with a PTFE layer.

A list of acceptable equipment is provided below, but other equipment may be considered appropriate based on sampling conditions.

- stainless steel cup

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Where conditions permit, (e.g. creek or pond) sampling devices (e.g. stainless steel cup) should be rinsed with site medium to be sampled prior to collection of the sample. At this point the sample can be collected and poured into the sample container.

If site conditions permit, samples can be collected directly into the laboratory container.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at 4 ± 2º Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- Collect one equipment blank per day per site and minimum 1 equipment blank per 20 samples. The equipment blank shall test the new and decontaminated sampling equipment utilized to obtain a sample for residual PFAS contamination. This sample is obtained by using laboratory provided PFAS-free water and passing the water over or through the sampling device and into laboratory provided sample containers
- Request appropriate data deliverable (Category B) and an electronic data deliverable

Documentation

A sample log shall document the location of the sample, sampling equipment, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate. Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appropriate rain gear (PVC, polyurethane, or rubber rain gear are acceptable), bug spray, and sunscreen should be used that does not contain PFAS. Well washed cotton coveralls may be used as an alternative to bug spray and/or sunscreen.

PPE that contains PFAS is acceptable when site conditions warrant additional protection for the samplers and no other materials can be used to be protective. Documentation of such use should be provided in the field notes.

Appendix E - Sampling Protocols for PFAS in Private Water Supply Wells

General

The objective of this protocol is to give general guidelines for the collection of water samples from private water supply wells (with a functioning pump) for PFAS analysis. The sampling procedure used should be consistent with Sampling Guidelines and Protocols – Technological Background and Quality Control/Quality Assurance for NYS DEC Spill Response Program – March 1991 (http://www.dec.ny.gov/docs/remediation_hudson_pdf/sgpsect5.pdf), with the following limitations.

Laboratory Analysis and Container

Drinking water samples collected using this protocol are intended to be analyzed for PFAS by EPA Method 537, 537.1, 533, or ISO Method 25101. The preferred material for containers is high density polyethylene (HDPE). Pre-cleaned sample containers, coolers, sample labels, and a chain of custody form will be provided by the laboratory.

Equipment

Acceptable materials for sampling include stainless steel, HDPE, PVC, silicone, acetate, and polypropylene. Additional materials may be acceptable if pre-approved by New York State Department of Environmental Conservation's Division of Environmental Remediation.

No sampling equipment components or sample containers should come in contact with aluminum foil, low density polyethylene, glass, or polytetrafluoroethylene (PTFE, Teflon™) materials (e.g. plumbers tape), including sample bottle cap liners with a PTFE layer.

Equipment Decontamination

Standard two step decontamination using detergent (Alconox is acceptable) and clean, PFAS-free water will be performed for sampling equipment. All sources of water used for equipment decontamination should be verified in advance to be PFAS-free through laboratory analysis or certification.

Sampling Techniques

Locate and assess the pressure tank and determine if any filter units are present within the building. Establish the sample location as close to the well pump as possible, which is typically the spigot at the pressure tank. Ensure sampling equipment is kept clean during sampling as access to the pressure tank spigot, which is likely located close to the ground, may be obstructed and may hinder sample collection.

Prior to sampling, a faucet downstream of the pressure tank (e.g., washroom sink) should be run until the well pump comes on and a decrease in water temperature is noted which indicates that the water is coming from the well. If the homeowner is amenable, staff should run the water longer to purge the well (15+ minutes) to provide a sample representative of the water in the formation rather than standing water in the well and piping system including the pressure tank. At this point a new pair of nitrile gloves should be donned and the sample can be collected from the sample point at the pressure tank.

Sample Identification and Logging

A label shall be attached to each sample container with a unique identification. Each sample shall be included on the chain of custody (COC).

Quality Assurance/Quality Control

- Immediately place samples in a cooler maintained at 4 ± 2º Celsius using ice
- Collect one field duplicate for every sample batch, minimum 1 duplicate per 20 samples. The duplicate shall consist of an additional sample at a given location
- Collect one matrix spike / matrix spike duplicate (MS/MSD) for every sample batch, minimum 1 MS/MSD per 20 samples. The MS/MSD shall consist of an additional two samples at a given location and identified on the COC
- If equipment was used, collect one equipment blank per day per site and a minimum 1 equipment blank per 20 samples. The equipment blank shall test the new and decontaminated sampling equipment utilized to obtain a sample for residual PFAS contamination. This sample is obtained by using laboratory provided PFAS-free water and passing the water over or through the sampling device and into laboratory provided sample containers.
- A field reagent blank (FRB) should be collected at a rate of one per 20 samples. The lab will provide a FRB bottle containing PFAS free water and one empty FRB bottle. In the field, pour the water from the one bottle into the empty FRB bottle and label appropriately.
- Request appropriate data deliverable (Category B) and an electronic data deliverable
- For sampling events where multiple private wells (homes or sites) are to be sampled per day, it is acceptable to collect QC samples at a rate of one per 20 across multiple sites or days.

Documentation

A sample log shall document the location of the private well, sample point location, owner contact information, sampling equipment, purge duration, duplicate sample, visual description of the material, and any other observations or notes determined to be appropriate and available (e.g. well construction, pump type and location, yield, installation date). Additionally, care should be performed to limit contact with PFAS containing materials (e.g. waterproof field books, food packaging) during the sampling process.

Personal Protection Equipment (PPE)

For most sampling Level D PPE is anticipated to be appropriate. The sampler should wear nitrile gloves while conducting field work and handling sample containers.

Field staff shall consider the clothing to be worn during sampling activities. Clothing that contains PTFE material (including GORE-TEX®) or that have been waterproofed with PFAS materials should be avoided. All clothing worn by sampling personnel should have been laundered multiple times.

Appendix F - Sampling Protocols for PFAS in Fish

This appendix contains a copy of the current SOP developed by the Division of Fish and Wildlife (DFW) entitled "General Fish Handling Procedures for Contaminant Analysis" (Ver. 8). This SOP should be followed when collecting fish for contaminant analysis. Note, however, that the Bureau of Ecosystem Health will not be supplying bags or tags. All supplies are the responsibility of the collector

Procedure Name: General Fish Handling Procedures for Contaminant Analysis

Number: FW-005

Purpose: This procedure describes data collection, fish processing and delivery of fish collected for contaminant monitoring. It contains the chain of custody and collection record forms that should be used for the collections.

Organization: Environmental Monitoring Section
Bureau of Ecosystem Health
Division of Fish and Wildlife (DFW)
New York State Department of Environmental Conservation (NYSDEC)
625 Broadway
Albany, New York 12233-4756

Version: 8

Previous Version Date: 21 March 2018

Summary of Changes to this Version: Updated bureau name to Bureau of Ecosystem Health. Added direction to list the names of all field crew on the collection record. Minor formatting changes on chain of custody and collection records.

Originator or Revised by: Wayne Richter, Jesse Becker

Date: 26 April 2019

Quality Assurance Officer and Approval Date: Jesse Becker, 26 April 2019

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

GENERAL FISH HANDLING PROCEDURES FOR CONTAMINANT ANALYSES

A. Original copies of all continuity of evidence (i.e., Chain of Custody) and collection record forms must accompany delivery of fish to the lab. A copy shall be directed to the Project Leader or as appropriate, Wayne Richter. All necessary forms will be supplied by the Bureau of Ecosystem Health. Because some samples may be used in legal cases, it is critical that each section is filled out completely. Each Chain of Custody form has three main sections:

   1. The top box is to be filled out **and signed** by the person responsible for the fish collection (e.g., crew leader, field biologist, researcher). This person is responsible for delivery of the samples to DEC facilities or personnel (e.g., regional office or biologist).

   2. The second section is to be filled out **and signed** by the person responsible for the collections while being stored at DEC, before delivery to the analytical lab. This may be the same person as in (1), but it is still required that they complete the section. Also important is the **range of identification numbers** (i.e., tag numbers) included in the sample batch.

   3. Finally, the bottom box is to record any transfers between DEC personnel and facilities. Each subsequent transfer should be **identified, signed, and dated**, until laboratory personnel take possession of the fish.

B. The following data are required on each **Fish Collection Record** form:

   1. Project and Site Name.

   2. DEC Region.

   3. All personnel (and affiliation) involved in the collection.

   4. Method of collection (gill net, hook and line, etc.)

   5. Preservation Method.

C. The following data are to be taken on each fish collected and recorded on the **Fish Collection Record** form:

   1. Tag number - Each specimen is to be individually jaw tagged at time of collection with a unique number. Make sure the tag is turned out so that the number can be read without opening the bag. Use tags in sequential order. For small fish or composite samples place the tag inside the bag with the samples. The Bureau of Ecosystem Health can supply the tags.

   2. Species identification (please be explicit enough to enable assigning genus and species). Group fish by species when processing.

   3. Date collected.

   4. Sample location (waterway and nearest prominent identifiable landmark).

   5. Total length (nearest mm or smallest sub-unit on measuring instrument) and weight (nearest g or

smallest sub-unit of weight on weighing instrument). Take all measures as soon as possible with calibrated, protected instruments (e.g. from wind and upsets) and prior to freezing.

6. Sex - fish may be cut enough to allow sexing or other internal investigation, but do not eviscerate. Make any incision on the right side of the belly flap or exactly down the midline so that a left-side fillet can be removed.

D. General data collection recommendations:

1. It is helpful to use an ID or tag number that will be unique. It is best to use metal striped bass or other uniquely numbered metal tags. If uniquely numbered tags are unavailable, values based on the region, water body and year are likely to be unique: for example, R7CAY11001 for Region 7, Cayuga Lake, 2011, fish 1. If the fish are just numbered 1 through 20, we have to give them new numbers for our database, making it more difficult to trace your fish to their analytical results and creating an additional possibility for errors.

2. Process and record fish of the same species sequentially. Recording mistakes are less likely when all fish from a species are processed together. Starting with the bigger fish species helps avoid missing an individual.

3. If using Bureau of Ecosystem Health supplied tags or other numbered tags, use tags in sequence so that fish are recorded with sequential Tag Numbers. This makes data entry and login at the lab and use of the data in the future easier and reduces keypunch errors.

4. Record length and weight as soon as possible after collection and before freezing. Other data are recorded in the field upon collection. An age determination of each fish is optional, but if done, it is recorded in the appropriate “Age” column.

5. For composite samples of small fish, record the number of fish in the composite in the Remarks column. Record the length and weight of each individual in a composite. All fish in a composite sample should be of the same species and members of a composite should be visually matched for size.

6. Please submit photocopies of topographic maps or good quality navigation charts indicating sampling locations. GPS coordinates can be entered in the Location column of the collection record form in addition to or instead for providing a map. These records are of immense help to us (and hopefully you) in providing documented location records which are not dependent on memory and/or the same collection crew. In addition, they may be helpful for contaminant source trackdown and remediation/control efforts of the Department.

7. When recording data on fish measurements, it will help to ensure correct data recording for the data recorder to call back the numbers to the person making the measurements.

E. Each fish is to be placed in its own individual plastic bag. For small fish to be analyzed as a composite, put all of the fish for one composite in the same bag but use a separate bag for each composite. It is important to individually bag the fish to avoid difficulties or cross contamination when processing the fish for chemical analysis. Be sure to include the fish’s tag number inside the bag, preferably attached to the fish with the tag number turned out so it can be read. Tie or otherwise secure the bag closed. **The Bureau of Ecosystem Health will supply the bags.** If necessary, food grade bags may be procured from a suitable vendor (e.g., grocery store). It is preferable to redundantly label each bag with a manila tag tied between the knot and the body of the bag. This tag should be labeled with the project name, collection location, tag number, collection date, and fish species. If scales are collected, the scale envelope should be labeled with

the same information.

F. Groups of fish, by species, are to be placed in one large plastic bag per sampling location. **The Bureau of Ecosystem Health will supply the larger bags.** Tie or otherwise secure the bag closed. Label the site bag with a manila tag tied between the knot and the body of the bag. The tag should contain: project, collection location, collection date, species and **tag number ranges**. Having this information on the manila tag enables lab staff to know what is in the bag without opening it.

G. Do not eviscerate, fillet or otherwise dissect the fish unless specifically asked to. If evisceration or dissection is specified, the fish must be cut along the exact midline or on the right side so that the left side fillet can be removed intact at the laboratory. If filleting is specified, the procedure for taking a standard fillet (SOP PREPLAB 4) must be followed, including removing scales.

H. Special procedures for PFAS: Unlike legacy contaminants such as PCBs, which are rarely found in day to day life, PFAS are widely used and frequently encountered. Practices that avoid sample contamination are therefore necessary. While no standard practices have been established for fish, procedures for water quality sampling can provide guidance. The following practices should be used for collections when fish are to be analyzed for PFAS:

No materials containing Teflon.
No Post-it notes.
No ice packs; only water ice or dry ice.
Any gloves worn must be powder free nitrile.
No Gore-Tex or similar materials (Gore-Tex is a PFC with PFOA used in its manufacture).
No stain repellent or waterproof treated clothing; these are likely to contain PFCs.
Avoid plastic materials, other than HDPE, including clipboards and waterproof notebooks.
Wash hands after handling any food containers or packages as these may contain PFCs.
Keep pre-wrapped food containers and wrappers isolated from fish handling.
Wear clothing washed at least six times since purchase.
Wear clothing washed without fabric softener.
Staff should avoid cosmetics, moisturizers, hand creams and similar products on the day of sampling as many of these products contain PFCs (Fujii et al. 2013). Sunscreen or insect repellent should not contain ingredients with “fluor” in their name. Apply any sunscreen or insect repellent well downwind from all materials. Hands must be washed after touching any of these products.

I. All fish must be kept at a temperature <45° F (<8° C) immediately following data processing. As soon as possible, freeze at -20° C ± 5° C. Due to occasional freezer failures, daily freezer temperature logs are required. The freezer should be locked or otherwise secured to maintain chain of custody.

J. In most cases, samples should be delivered to the Analytical Services Unit at the Hale Creek field station. Coordinate delivery with field station staff and send copies of the collection records, continuity of evidence forms and freezer temperature logs to the field station. For samples to be analyzed elsewhere, non-routine collections or other questions, contact Wayne Richter, Bureau of Ecosystem Health, NYSDEC, 625 Broadway, Albany, New York 12233-4756, 518-402-8974, or the project leader about sample transfer. Samples will then be directed to the analytical facility and personnel noted on specific project descriptions.

K. A recommended equipment list is at the end of this document.

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
DIVISION OF FISH AND WILDLIFE
FISH COLLECTION RECORD

Project and Site Name _____ DEC Region _____

Collections made by (include all crew) _____

Sampling Method: □Electrofishing □Gill netting □Trap netting □Trawling □Seining □Angling □Other _____

Preservation Method: □Freezing □Other _____ Notes (SWFDB survey number): _____

FOR LAB USE ONLY- LAB ENTRY NO.	COLLECTION OR TAG NO.	SPECIES	DATE TAKEN	LOCATION	AGE	SEX &/OR REPROD. CONDIT	LENGTH ( )	WEIGHT ( )	REMARKS

richter: revised 2011, 5/7/15, 10/4/16, 3/20/17; becker: 3/23/17, 4/26/19

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION
CHAIN OF CUSTODY

I, _____, of _____ collected the
(Print Name) (Print Business Address)

following on _____, 20____ from _____
(Date) (Water Body)

in the vicinity of _____
(Landmark, Village, Road, etc.)

Town of _____, in _____ County.

Item(s) _____

_____

Said sample(s) were in my possession and handled according to standard procedures provided to me prior to collection. The sample(s) were placed in the custody of a representative of the New York State Department of Environmental Conservation on _____, 20_____.

_____ _____
Signature Date

I, _____, received the above mentioned sample(s) on the date specified and assigned identification number(s) _____ to the sample(s). I have recorded pertinent data for the sample(s) on the attached collection records. The sample(s) remained in my custody until subsequently transferred, prepared or shipped at times and on dates as attested to below.

_____ _____
Signature Date

SECOND RECIPIENT (Print Name)	TIME & DATE	PURPOSE OF TRANSFER
SIGNATURE	UNIT	
THIRD RECIPIENT (Print Name)	TIME & DATE	PURPOSE OF TRANSFER
SIGNATURE	UNIT	
FOURTH RECIPIENT (Print Name)	TIME & DATE	PURPOSE OF TRANSFER
SIGNATURE	UNIT	
RECEIVED IN LABORATORY BY (Print Name)	TIME & DATE	REMARKS
SIGNATURE	UNIT	
LOGGED IN BY (Print Name)	TIME & DATE	ACCESSION NUMBERS
SIGNATURE	UNIT	

richter: revised 21 April 2014; becker: 23 March 2017, 26 April, 2019

NOTICE OF WARRANTY

By signature to the chain of custody (reverse), the signatory warrants that the information provided is truthful and accurate to the best of his/her ability. The signatory affirms that he/she is willing to testify to those facts provided and the circumstances surrounding the same. Nothing in this warranty or chain of custody negates responsibility nor liability of the signatories for the truthfulness and accuracy of the statements provided.

HANDLING INSTRUCTIONS

On day of collection, collector(s) name(s), address(es), date, geographic location of capture (attach a copy of topographic map or navigation chart), species, number kept of each species, and description of capture vicinity (proper noun, if possible) along with name of Town and County must be indicated on reverse.

Retain organisms in manila tagged plastic bags to avoid mixing capture locations. Note appropriate information on each bag tag.

Keep samples as cool as possible. Put on ice if fish cannot be frozen within 12 hours. If fish are held more than 24 hours without freezing, they will not be retained or analyzed.

Initial recipient (either DEC or designated agent) of samples from collector(s) is responsible for obtaining and recording information on the collection record forms which will accompany the chain of custody. This person will seal the container using packing tape and writing his signature, the time and the date across the tape onto the container with indelible marker. Any time a seal is broken, for whatever purpose, the incident must be recorded on the Chain of Custody (reason, time, and date) in the purpose of transfer block. Container then is resealed using new tape and rewriting signature, with time and date.

EQUIPMENT LIST

Scale or balance of appropriate capacity for the fish to be collected.

Fish measuring board.

Plastic bags of an appropriate size for the fish to be collected and for site bags.

Individually numbered metal tags for fish.

Manila tags to label bags.

Small envelops, approximately 2” x 3.5”, if fish scales are to be collected.

Knife for removing scales.

Chain of custody and fish collection forms.

Clipboard.

Pens or markers.

Paper towels.

Dish soap and brush.

Bucket.

Cooler.

Ice.

Duct tape.

Appendix G – PFAS Analyte List

Group	Chemical Name	Abbreviation	CAS Number
Perfluoroalkyl sulfonic acids	Perfluorobutanesulfonic acid	PFBS	375-73-5
	Perfluoropentanesulfonic acid	PFPeS	2706-91-4
	Perfluorohexanesulfonic acid	PFHxS	355-46-4
	Perfluoroheptanesulfonic acid	PFHpS	375-92-8
	Perfluorooctanesulfonic acid	PFOS	1763-23-1
	Perfluorononanesulfonic acid	PFNS	68259-12-1
	Perfluorodecanesulfonic acid	PFDS	335-77-3
	Perfluorododecanesulfonic acid	PFDoS	79780-39-5
Perfluoroalkyl carboxylic acids	Perfluorobutanoic acid	PFBA	375-22-4
	Perfluoropentanoic acid	PFPeA	2706-90-3
	Perfluorohexanoic acid	PFHxA	307-24-4
	Perfluoroheptanoic acid	PFHpA	375-85-9
	Perfluorooctanoic acid	PFOA	335-67-1
	Perfluorononanoic acid	PFNA	375-95-1
	Perfluorodecanoic acid	PFDA	335-76-2
	Perfluoroundecanoic acid	PFUnA	2058-94-8
	Perfluorododecanoic acid	PFDoA	307-55-1
	Perfluorotridecanoic acid	PFTrDA	72629-94-8
	Perfluorotetradecanoic acid	PFTeDA	376-06-7
Per- and Polyfluoroether carboxylic acids	Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6
	4,8-Dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
	Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
	Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
	Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6
Fluorotelomer sulfonic acids	4:2 Fluorotelomer sulfonic acid	4:2-FTS	757124-72-4
	6:2 Fluorotelomer sulfonic acid	6:2-FTS	27619-97-2
	8:2 Fluorotelomer sulfonic acid	8:2-FTS	39108-34-4
Fluorotelomer carboxylic acids	3:3 Fluorotelomer carboxylic acid	3:3 FTCA	356-02-5
	5:3 Fluorotelomer carboxylic acid	5:3 FTCA	914637-49-3
	7:3 Fluorotelomer carboxylic acid	7:3 FTCA	812-70-4
Perfluorooctane sulfonamides	Perfluorooctane sulfonamide	PFOSA	754-91-6
	N-methylperfluorooctane sulfonamide	NMeFOSA	31506-32-8
	N-ethylperfluorooctane sulfonamide	NEtFOSA	4151-50-2
Perfluorooctane sulfonamidoacetic acids	N-methylperfluorooctane sulfonamidoacetic acid	N-MeFOSAA	2355-31-9
	N-ethylperfluorooctane sulfonamidoacetic acid	N-EtFOSAA	2991-50-6
Perfluorooctane sulfonamide ethanols	N-methylperfluorooctane sulfonamidoethanol	MeFOSE	24448-09-7
	N-ethylperfluorooctane sulfonamidoethanol	EtFOSE	1691-99-2

Group	Chemical Name	Abbreviation	CAS Number
Ether sulfonic acids	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (F-53B Major)	9Cl-PF3ONS	756426-58-1
	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid (F-53B Minor)	11Cl-PF3OUdS	763051-92-9
	Perfluoro(2-ethoxyethane) sulfonic acid	PFEESA	113507-82-7

Appendix H - Data Review Guidelines for Analysis of PFAS in Non-Potable Water and Solids

General

These guidelines are intended to be used for the validation of PFAS using EPA Method 1633 for projects within the Division of Environmental Remediation (DER). Data reviewers should understand the methodology and techniques utilized in the analysis. Consultation with the end user of the data may be necessary to assist in determining data usability based on the data quality objectives in the Quality Assurance Project Plan. A familiarity with the laboratory's Standard Operating Procedure may also be needed to fully evaluate the data. If you have any questions, please contact DER's Quality Assurance Officer, Dana Barbarossa, at dana.barbarossa@dec.ny.gov.

Preservation and Holding Time

Samples should be preserved with ice to a temperature of less than 6°C upon arrival at the lab. The holding time is 28 days to extraction for aqueous and solid samples. The time from extraction to analysis for aqueous samples is 28 days and 40 days for solids.

Temperature greatly exceeds 6ºC upon arrival at the lab*	Use professional judgement to qualify detects and non-detects as estimated or rejected
Holding time exceeding 28 days to extraction	Use professional judgement to qualify detects and non-detects as estimated or rejected if holding time is grossly exceeded

*Samples that are delivered to the lab immediately after sampling may not meet the thermal preservation guidelines. Samples are considered acceptable if they arrive on ice or an attempt to chill the samples is observed.

Initial Calibration

The initial calibration should contain a minimum of six standards for linear fit and six standards for a quadratic fit. The relative standard deviation (RSD) for a quadratic fit calibration should be less than 20%.

The low-level calibration standard should be within 50% - 150% of the true value, and the mid-level calibration standard within 70% - 130% of the true value.

%RSD >20%	J flag detects and UJ non detects

Continuing Calibration Verification

Continuing calibration verification (CCV) checks should be analyzed at a frequency of one per ten field samples. If CCV recovery is very low, where detection of the analyte could be in question, ensure a low level CCV was analyzed and use to determine data quality.

CCV recovery <70 or >130%	J flag results

Blanks

There should be no detections in the method blanks above the reporting limits. Equipment blanks, field blanks, rinse blanks etc. should be evaluated in the same manner as method blanks. Use the most contaminated blank to evaluate the sample results.

Blank Result	Sample Result	Qualification
Any detection	<Reporting limit	Qualify as ND at reporting limit
Any detection	>Reporting Limit and >10x the blank result	No qualification
>Reporting limit	>Reporting limit and <10x blank result	J+ biased high

Field Duplicates

A blind field duplicate should be collected at rate of one per twenty samples. The relative percent difference (RPD) should be less than 30% for analyte concentrations greater than two times the reporting limit. Use the higher result for final reporting.

RPD >30%	Apply J qualifier to parent sample

Lab Control Spike

Lab control spikes should be analyzed with each extraction batch or one for every twenty samples. In the absence of lab derived criteria, use 70% - 130% recovery criteria to evaluate the data.

Recovery <70% or >130% (lab derived criteria can also be used)	Apply J qualifier to detects and UJ qualifier to non detects

Matrix Spike/Matrix Spike Duplicate

One matrix spike and matrix spike duplicate should be collected at a rate of one per twenty samples. Use professional judgement to reject results based on out of control MS/MSD recoveries.

Recovery <70% or >130% (lab derived criteria can also be used)	Apply J qualifier to detects and UJ qualifier to non detects of parent sample only
RPD >30%	Apply J qualifier to detects and UJ qualifier to non detects of parent sample only

Extracted Internal Standards (Isotope Dilution Analytes)

Problematic analytes (e.g. PFBA, PFPeA, fluorotelomer sulfonates) can have wider recoveries without qualification. Qualify corresponding native compounds with a J flag if outside of the range.

Recovery <50% or >150%	Apply J qualifier
Recovery <25% or >150% for poor responding analytes	Apply J qualifier
Isotope Dilution Analyte (IDA) Recovery <10%	Reject results

Signal to Noise Ratio

The signal to noise ratio for the quantifier ion should be at least 3:1. If the ratio is less than 3:1, the peak is discernable from the baseline noise and symmetrical, the result can be reported. If the peak appears to be baseline noise and/or the shape is irregular, qualify the result as tentatively identified.

Reporting Limits

If project-specific reporting limits were not met, please indicate that in the report along with the reason (e.g. over dilution, dilution for non-target analytes, high sediment in aqueous samples).

Peak Integrations

Target analyte peaks should be integrated properly and consistently when compared to standards. Ensure branched isomer peaks are included for PFAS where standards are available. Inconsistencies should be brought to the attention of the laboratory or identified in the data review summary report.

ATTACHMENT 3

Roux's Standard Operating Procedures

Date: May 5, 2000

1.0 PURPOSE

The purpose for this standard operating procedure (SOP) is to establish the guidelines for decontamination of all field equipment potentially exposed to contamination during drilling, and soil and water sampling. The objective of decontamination is to ensure that all drilling, and soil-sampling and water-sampling equipment is decontaminated (free of potential contaminants): 1) prior to being brought onsite to avoid the introduction of potential contaminants to the site; 2) between drilling and sampling events/activities onsite to eliminate the potential for cross-contamination between boreholes and/or wells; and 3) prior to the removal of equipment from the site to prevent the transportation of potentially contaminated equipment offsite.

In considering decontamination procedures, state and federal regulatory agency requirements must be considered because of potential variability between state and federal requirements and because of variability in the requirements of individual states. Decontamination procedures must be in compliance with state and/or federal protocols in order that regulatory agency(ies) scrutiny of the procedures and data collected do not result in non-acceptance (invalidation) of the work undertaken and data collected.

2.0 PROCEDURE FOR DRILLING EQUIPMENT

The following is a minimum decontamination procedure for drilling equipment. Drilling equipment decontamination procedures, especially any variation from the method itemized below, will be documented on an appropriate field form or in the field notebook.

2.1 The rig and all associated equipment should be properly decontaminated by the contractor before arriving at the test site.

2.2 The augers, drilling casings, rods, samplers, tools, rig, and any piece of equipment that can come in contact (directly or indirectly) with the soil, will be steam cleaned onsite prior to set up for drilling to ensure proper decontamination.

2.3 The same steam cleaning procedures will be followed between boreholes (at a fixed on-site location[s], if appropriate) and before leaving the site at the end of the study.

2.4 All on-site steam cleaning (decontamination) activities will be monitored and documented by a member(s) of the staff of Roux Associates, Inc.

2.5 If drilling activities are conducted in the presence of thick, sticky oils (e.g., PCBs) which coat drilling equipment, then special decontamination procedures may have to be utilized before steam cleaning (e.g., hexane scrub and wash).

2.6 Containment of decontamination fluids may be necessary (e.g., rinseate from steam cleaning) or will be required (e.g., hexane), and disposal must be in accordance with state and/or federal procedures.

3.0 PROCEDURE FOR SOIL-SAMPLING EQUIPMENT

The following is a minimum decontamination procedure for soil-sampling equipment (e.g., split spoons, stainless-steel spatulas). Soil-sampling equipment decontamination procedures, especially any variation from the method itemized below, will be documented on an appropriate field form or in the field notebook.

3.1 Wear disposable gloves while cleaning equipment to avoid cross-contamination and change gloves as needed.

3.2 Steam clean the sampler or rinse with potable water. If soil-sampling activities are conducted in the presence of thick, sticky oils (e.g., PCBs) which coat sampling equipment, then special decontamination procedures may have to be utilized before steam cleaning and washing in detergent solution (e.g., hexane scrub and wash).

3.3 Prepare a non-phosphate, laboratory-grade detergent solution and distilled or potable water in a clean bucket.

3.4 Disassemble the sampler, as necessary and immerse all parts and other sampling equipment in the solution.

3.5 Scrub all equipment in the bucket with a brush to remove any adhering particles.

3.6 Rinse all equipment with copious amounts of potable water followed by distilled or deionized water.

3.7 Place clean equipment on a clean plastic sheet (e.g., polyethylene)

3.8 Reassemble the cleaned sampler, as necessary.

3.9 Transfer the sampler to the driller (or helper) making sure that this individual is also wearing clean gloves or wrap the equipment with a suitable material (e.g., plastic bag, aluminum foil.

As part of the decontamination procedure for soil-sampling equipment, state and/or federal protocols must be considered. These may require procedures above those specified as minimum for Roux Associates, Inc., such as the use of nitric acid, acetone, etc. Furthermore, the containment and proper disposal of decontamination fluids must be considered with respect to regulatory agency(ies) requirements.

4.0 PROCEDURE FOR WATER-SAMPLING EQUIPMENT

The following is a decontamination procedure for water-sampling equipment (e.g., bailers, pumps). Water-sampling equipment decontamination procedures, especially any variation from the method itemized below, will be documented on an appropriate field form or in the field notebook.

4.1 Decontamination procedures for bailers follow:

a. Wear disposable gloves while cleaning bailer to avoid cross-contamination and change gloves as needed.

b. Prepare a non-phosphate, laboratory-grade detergent solution and potable water in a bucket.

c. Disassemble bailer (if applicable) and discard cord in an appropriate manner and scrub each part of the bailer with a brush and solution.

d. Rinse with potable water and reassemble bailer.

e. Rinse with copious amounts of distilled or deionized water.

f. Air dry.

g. Wrap equipment with a suitable material (e.g., clean plastic bag, aluminum foil).

h. Rinse bailer at least three times with distilled or deionized water before use.

4.2 Decontamination procedures for pumps follow:

a. Wear disposable gloves while cleaning pump to avoid cross-contamination and change gloves as needed.

b. Prepare a non-phosphate, laboratory-grade detergent solution and potable water in a clean bucket, clean garbage can, or clean 55-gallon drum.

c. Flush the pump and discharge hose (if not disposable) with the detergent solution and discard disposable tubing and/or cord in an appropriate manner.

d. Flush the pump and discharge hose (if not disposable) with potable water.

e. Place the pump on clear plastic sheeting.

f. Wipe any pump-related equipment (e.g., electrical lines, cables, discharge hose) that entered the well with a clean cloth and detergent solution, and rinse or wipe with a clean cloth and potable water.

g. Air dry.

h. Wrap equipment with a suitable material (e.g., clean plastic bag).

As part of the decontamination procedure for water-sampling equipment, state and/or federal protocols must be considered. These may require procedures above those specified as minimum for Roux Associates, Inc., such as the use of nitric acid, acetone, etc. Furthermore, the containment and proper disposal of decontamination fluids must be considered with respect to regulatory agency(ies) requirements.

Date: May 5, 2000

1.0 PURPOSE

The purpose of this Standard Operating Procedure (SOP) is to establish guidelines for the collection of soil samples for laboratory analysis. This SOP is applicable to soil samples collected from split-spoon samplers during drilling, hand auger samples, grab samples from stockpiled soils, surface samples, test pit samples, etc.

2.0 CONSIDERATIONS

Soil samples may be collected in either a random or biased manner. Random samples can be based on a grid system or statistical methodology. Biased samples can be collected in areas of visible impact or suspected source areas. Soil samples can be collected at the surface, shallow subsurface, or at depth. When samples are collected at depth the water content should be noted, since generally "soil sampling" is restricted to the unsaturated zone. Equipment selection will be determined by the depth of the sample to be collected. A thorough description of the sampling locations and proposed methods of sample collection should be included in the work plan.

Commonly, surface sampling refers to the collection of samples at a 0 to 6-inch depth interval. Certain regulatory agencies may define the depth interval of a surface sample differently, and this must be defined in the work plan. Collection of surface soil samples is most efficiently accomplished with the use of a stainless-steel trowel or scoop. For samples at greater depths a decontaminated bucket auger or power auger may be needed to advance the hole to the point of sample collection. Another clean bucket auger should then be used to collect the sample. To collect samples at depths of greater than approximately six feet the use of a drill rig and split spoon samples will usually be necessary. In some situations, sample locations are accessed with the use of a backhoe.

3.0 MATERIALS/EQUIPMENT

a. A work plan which outlines soil sampling requirements.

b. Field notebook, field form(s), maps, chain-of-custody forms, and custody seals.

c. Decontamination supplies (including: non-phosphate, laboratory grade detergent, buckets, brushes, potable water, distilled water, regulatory-required reagents, aluminum foil, plastic sheeting, etc.).

d. Sampling device (split-spoon sampler, stainless steel hand auger, stainless steel trowel, etc.).

e. Stainless steel spoons or spatulas.

f. Disposable sampling gloves.

g. Laboratory-supplied sample containers with labels.

h. Cooler with blue or wet ice.

i. Plastic sheeting.

j. Black pen and indelible marker.

k. Zip-lock bags and packing material.

l. Tape measure.

m. Paper towels or clean rags.

n. Masking and packing tape.

o. Overnight (express) mail forms.

4.0 DECONTAMINATION

All reusable sampling equipment will be thoroughly cleaned according to the decontamination SOP. Where possible, thoroughly pre-cleaned and wrapped sampling equipment should be used and dedicated to individual sampling locations. Disposable items such as sampling gloves, aluminum foil, and plastic sheeting will be changed after each use and discarded in an appropriate manner.

5.0 PROCEDURE

5.1 Prior to collecting soil samples, ensure that all sampling equipment has been thoroughly cleaned according to the decontamination SOP. If samples are to be collected at depth, then the boring must be advanced with thoroughly cleaned equipment to the desired sampling horizon and a different thoroughly cleaned sampler must be used to collect the sample.

5.2 Using disposable gloves and a pre-cleaned, stainless steel spatula or spoon, extract the soil sample from the sampler, measure the recovery, and separate the wash from the true sample. Where allowed by regulatory agency(ies), disposable plastic spoons may be used.

5.3 Place the sample in a laboratory-supplied, pre-cleaned sample container. This should be done as quickly as possible and this is especially important when sampling for volatile organic compounds (VOCs). Samples to be analyzed for VOCs must be collected prior to other constituents.

5.4 The sample container will be labeled with appropriate information such as, client name, site location, sample identification (location, depth, etc.), date and time of collection, and sampler's initials.

5.5 Using the remaining portion of soil from the sampler, log the sample in detail and record sediment characteristics (color, odor, moisture, texture, density, consistency, organic content, layering, grain size, etc.).

5.6 If soil samples are to be composited in the field, then equal portions from selected locations will be placed on a clean plastic sheet and homogenized. Alternately, several samples may be submitted to the laboratory for compositing by weight. The method used is dependent upon regulatory requirements. Specific compositing procedures shall be approved by the appropriate regulatory agency and described in the work plan. Samples to be analyzed for VOCs will not be composited unless required by a regulatory agency.

5.7 After the sample has been collected, labeled, and logged in detail, it is placed in a zip-lock bag and stored in a cooler at 4°C.

5.8 A chain-of-custody form is completed for all samples collected. One copy is retained and two are sent with the samples in a zip-lock bag to the laboratory. A custody seal is placed on the cooler prior to shipment.

5.9 Samples collected from Monday to Friday are to be delivered to the laboratory within 24 hours of collection. If Saturday delivery is unavailable, samples collected on Friday must be delivered by Monday morning. Check the work plan to determine if any analytes require a shorter delivery time.

5.10 The field notebook and appropriate forms should include, but not be limited to the following: client name, site location, sample location, sample depth, sample identification, date and time collected, sampler's name, method of sample collection, number and type of containers, geologic description of material, description of decontamination procedures, etc. A site map should be prepared with exact measurements to each sample location in case follow-up sampling is necessary.

5.11 All reusable sampling equipment must be thoroughly cleaned in accordance with the decontamination SOP. Following the final decontamination (after all samples are collected) the sampling equipment is wrapped in aluminum foil. Discard any gloves, foil, plastic, etc. in an appropriate manner that is consistent with site conditions.

END OF PROCEDURE

Date: May 5, 2000

1.0 PURPOSE

The purpose of this standard operating procedure (SOP) is to establish guidelines for sample handling which will allow consistent and accurate results. Valid chemistry data are integral to investigations that characterize media-quality conditions. Thus, this SOP is designed to ensure that once samples are collected, they are preserved, packed and delivered in a manner which will maintain sample integrity to as great an extent as possible. The procedures outlined are applicable to most sampling events and any required modifications must be clearly described in the work plan.

2.0 CONSIDERATIONS

Sample containers, sampling equipment decontamination, quality assurance/quality control (QA/QC), sample preservation, and sample handling are all components of this SOP.

2.1 Sample Containers

Prior to collection of a sample, considerations must be given to the type of container that will be used to store and transport the sample. The type and number of containers selected is usually based on factors such as sample matrix, potential contaminants to be encountered, analytical methods requested, and the laboratory's internal quality assurance requirements. In most cases, the overriding considerations will be the analytical methodology, or the state or federal regulatory requirements because these regulations generally encompass the other factors. The sample container selected is usually based on some combination of the following criteria:

a. Reactivity of Container Material with Sample

Choosing the proper composition of sample containers will help to ensure that the chemical and physical integrity of the sample is maintained. For sampling potentially hazardous material, glass is the recommended container type because it is chemically inert to most substances. Plastic containers are not recommended for most hazardous wastes because the potential exists for contaminants to adsorb to the surface of the plastic or for the plasticizer to leach into the sample.

In some instances, however, the sample characteristics or analytes of interest may dictate that plastic containers be used instead of glass. Because some metals species will adhere to the sides of the glass containers in an aqueous matrix, plastic bottles (e.g., nalgene) must be used for samples collected for metals analysis. A separate, plastic

container should accompany glass containers if metals analysis is to be performed along with other analyses. Likewise, other sample characteristics may dictate that glass cannot be used. For example, in the case of a strong alkali waste or hydrofluoric solution, plastic containers may be more suitable because glass containers may be etched by these compounds and create adsorptive sites on the container's surface.

b. Volume of the Container

The volume of sample to be collected will be dictated by the analysis being performed and the sample matrix. The laboratory must supply bottles of sufficient volume to perform the required analysis. In most cases, the methodology dictates the volume of sample material required to complete the analysis. However, individual laboratories may provide larger volume containers for various analytes to ensure sufficient quantities for duplicates or other QC checks.

To facilitate transfer of the sample from the sampler into the container and to minimize spillage and sample disturbance, wide-mouth containers are recommended. Aqueous volatile organic samples must be placed into 40-milliliter (ml) glass vials with polytetrafluoroethylene (PTFE) (e.g., TeflonTM) septums. Non-aqueous volatile organic samples should be collected in the same type of vials or in 4-ounce (oz) wide-mouth jars provided by the laboratory. These jars should have PTFE-lined screw caps.

c. Color of Container

Whenever possible, amber glass containers should be used to prevent photodegradation of the sample, except when samples are being collected for metals analysis. If amber containers are not available, then containers holding samples should be protected from light (i.e., place in cooler with ice immediately after filling).

d. Container Closures

Container closures must screw on and off the containers and form a leak-proof seal. Container caps must not be removed until the container is ready to be filled with the sample, and the container cap must be replaced (securely) immediately after filling it. Closures should be constructed of a material which is inert with respect to the sampled material, such as PTFE (e.g., TeflonTM). Alternately, the closure may be separated from the sample by a closure liner that is inert to the sample material such as PTFE sheeting. If soil or sediment samples are being collected, the threads of the container must be wiped clean with a dedicated paper towel or cloth, so the cap can be threaded properly.

e. Decontamination of Sample Containers

Sample containers must be laboratory cleaned by the laboratory performing the analysis. The cleaning procedure is dictated by the specific analysis to be performed on the sample. Sample containers must be carefully examined to ensure that all containers appear clean. Do not mistake the preservative as unwanted residue. The bottles should not be field cleaned. If there is any question regarding the integrity of the bottle, then the laboratory must be contacted immediately and the bottle(s) replaced.

f. Sample Bottle Storage and Transport

No matter where the sample bottles are, whether at the laboratory waiting to be packed for shipment or in the field waiting to be filled with sample, care must be taken to avoid contamination. Sample shuttles or coolers, and sample bottles must be stored and transported in clean environments. Sample bottles and clean sampling equipment must never be stored near solvents, gasoline, or other equipment that is a potential source of cross-contamination. When under chain of custody, sample bottles must be secured in locked vehicles, and custody sealed in shuttles or in the presence of authorized personnel. Information which documents that proper storage and transport procedures have been followed must be included in the field notebook and on appropriate field forms.

2.2 Decontamination of Sampling Equipment

Proper decontamination of all re-usable sampling equipment is critical for all sampling episodes. The SOP for Decontamination of Field Equipment and SOPs for method-specific or instrument-specific tasks must also be referred to for guidance for decontamination of various types of equipment.

2.3 Quality Assurance/Quality Control Samples

QA/QC samples are intended to provide control over the proper collection and tracking of environmental measurements, and subsequent review, interpretation and validation of generated analytical data. The SOPs for Collection of Quality Control Samples, for Evaluation and Validation of Data, and for Field Record Keeping and Quality Assurance/Quality Control must be referred to for detailed guidance regarding these respective procedures. SOPs for method-specific or instrument-specific tasks must also be referred to for guidance for QA/QC procedures.

2.4 Sample Preservation Requirements

Certain analytical methodologies for specific analytes require chemical additives in order to stabilize and maintain sample integrity. Generally, this is accomplished under the following two scenarios:

a. Sample bottles are preserved at the laboratory prior to shipment into the field.

b. Preservatives are added in the field immediately after the samples are collected.

Many laboratories provide pre-preserved bottles as a matter of convenience and to help ensure that samples will be preserved immediately upon collection. A problem associated with this method arises if not enough sample could be collected, resulting in too much preservative in the sample. More commonly encountered problems with this method include the possibility of insufficient preservative provided to achieve the desired pH level or the need for additional preservation due to chemical reactions caused by the addition of sample liquids to pre-preserved bottles. The use of pre-preserved bottles is acceptable; however, field sampling teams must always be prepared to add additional preservatives to samples if the aforementioned situations occur. Furthermore, care must be exercised not to overfill sample bottles containing preservatives to prevent the sample and preservative from spilling and therefore diluting the preservative (i.e., not having enough preservative for the volume of sample).

When samples are preserved after collection, special care must be taken. The transportation and handling of concentrated acids in the field requires additional preparation and adherence to appropriate preservation procedures. All preservation acids used in the field should be trace-metal or higher-grade.

2.5 Sample Handling

After the proper sample bottles have been received under chain-of-custody, properly decontaminated equipment has been used to collect the sample, and appropriate preservatives have been added to maintain sample integrity, the final step for the field personnel is checking the sample bottles prior to proper packing and delivery of the samples to the laboratory.

All samples should be organized and the labels checked for accuracy. The caps should be checked for tightness and any 40-ml volatile organic compound (VOC) bottles must be checked for bubbles. Each sample bottle must be placed in an individual Ziploc® bag to protect the label, and placed on ice. The bottles must be carefully packed to prevent breakage during transport. When several bottles have been collected for an individual sample, they should not be placed adjacent to each other in the cooler to prevent possible breakage of all bottles for a given sample. If there are any samples which are known or suspected to be highly

contaminated, these should be placed in an individual cooler under separate chain-of-custody to prevent possible cross contamination. Sufficient ice (wet or blue packs) should be placed in the cooler to maintain the temperature at 4 degrees Celsius (°C) until delivery at the laboratory. Consult the work plan to determine if a particular ice is specified as the preservation for transportation (e.g., the United States Environmental Protection Agency does not like the use of blue packs because they claim that the samples will not hold at 4°C). If additional coolers are required, then they should be purchased. The chain-of-custody form should be properly completed, placed in a "zip-lock" bag, and placed in the cooler. One copy must be maintained for the project files. The cooler should be sealed with packing tape and a custody seal. The custody seal number should be noted in the field book. Samples collected from Monday through Friday will be delivered to the laboratory within 24 hours of collection. If Saturday delivery is not available, samples collected on Friday must be delivered by Monday morning. Check the work plan to determine if certain analytes require a shorter delivery time. If overnight mail is utilized, then the shipping bill must be maintained for the files and the laboratory must be called the following day to confirm receipt.

3.0 EQUIPMENT AND MATERIALS

3.1 General equipment and materials may include, but not necessarily be limited to, the following:

a. Sample bottles of proper size and type with labels.

b. Cooler with ice (wet or blue pack).

c. Field notebook, appropriate field form(s), chain-of-custody form(s), custody seals.

d. Black pen and indelible marker.

e. Packing tape, "bubble wrap," and "zip-lock" bags.

f. Overnight (express) mail forms and laboratory address.

g. Health and safety plan (HASP).

h. Work plan/scope of work.

i. Pertinent SOPs for specified tasks and their respective equipment and materials.

3.2 Preservatives for specific samples/analytes as specified by the laboratory. Preservatives must be stored in secure, spillproof glass containers with their content, concentration, and date of preparation and expiration clearly labeled.

3.3 Miscellaneous equipment and materials including, but not necessarily limited to, the following:

a. Graduated pipettes.

b. Pipette bulbs.

c. Litmus paper.

d. Glass stirring rods.

e. Protective goggles.

f. Disposable gloves.

g. Lab apron.

h. First aid kit.

i. Portable eye wash station.

j. Water supply for immediate flushing of spillage, if appropriate.

k. Shovel and container for immediate containerization of spillage-impacted soils, if appropriate.

4.0 PROCEDURE

4.1 Examine all bottles and verify that they are clean and of the proper type, number, and volume for the sampling to be conducted.

4.2 Label bottles carefully and clearly with project name and number, site location, sample identification, date, time, and the sampler's initials using an indelible marker.

4.3 Collect samples in the proper manner (refer to specific sampling SOPs).

4.4 Conduct preservation activities as required after each sample has been collected. Field preservation must be done immediately and must not be done later than 30 minutes after sample collection.

4.5 Conduct QC sampling, as required.

4.6 Seal each container carefully and place in an individual "zip lock" bag.

4.7 Organize and carefully pack all samples in the cooler immediately after collection (e.g., bubble wrap). Insulate samples so that breakage will not occur.

4.8 Complete and place the chain-of-custody form in the cooler after all samples have been collected. Maintain one copy for the project file. If the cooler is to be transferred several times prior to shipment or delivery to the laboratory, it may be easier to tape the chain-of-custody to the exterior of the sealed cooler. When exceptionally hazardous samples are known or suspected to be present, this should be identified on the chain-of-custody as a courtesy to the laboratory personnel.

4.9 Add additional ice as necessary to ensure that it will last until receipt by the laboratory.

4.10 Seal the cooler with packing tape and a custody seal. Record the number of the custody seal in the field notebook and on the field form. If there are any exceptionally hazardous samples, then shipping regulations should be examined to ensure the sample containers and coolers are in compliance and properly labeled.

4.11 Samples collected from Monday through Friday will be delivered to the laboratory within 24 hours of collection. If Saturday delivery is not available, samples collected on Friday must be delivered by Monday morning. Check the work plan to determine if certain analytes require a shorter delivery time.

4.12 Maintain the shipping bill for the project files if overnight mail is utilized and call the laboratory the following day to confirm receipt.

END OF PROCEDURE

Date: May 5, 2000

1.0 PURPOSE

The purpose of this standard operating procedure (SOP) is to establish guidelines for screening soil samples for volatile organic vapors using a portable photoionization detector (PID). This SOP is applicable to soil samples collected from split-spoon samplers during drilling, hand auger samples, and grab samples from stockpiled soils.

2.0 CONSIDERATIONS

The primary objective of photoionization screening of soil samples is to obtain a qualitative understanding of the distribution of volatile organic compounds (VOCs) in soil. The proper design of an organic vapor screening program requires an understanding of site hydrogeology, potential source areas, and potential constituents of concern. Sample locations and frequency must be fully defined in the work plan. The work plan should outline the type of lamp to be utilized in the PID based on the ionization potentials and response factors of the constituents of concern. The work plan must also clearly describe the heating or equilibration procedures to be employed if they differ from those described in this SOP. Regardless of the specific equilibration procedure employed, it is imperative that each sample be treated identically to allow the photoionization results from different locations to be compared. Observations such as water, clay, and organic content should be noted to facilitate interpretation of the data. Every effort should be made to collect a representative portion of soil from the sampling device.

3.0 MATERIALS/EQUIPMENT

a. A work plan which outlines photoionization screening requirements.

b. Decontamination supplies (including: non-phosphate, laboratory grade detergent, buckets, brushes, potable water, distilled water, regulatory-required reagents [e.g., acetone, nitric acid, hexane, etc.], aluminum foil, plastic sheeting, etc.).

c. Field notebook, field form(s), maps, chain-of-custody forms.

d. Sampling device (split-spoon sampler, stainless steel hand auger, stainless steel trowel, etc.).

e. Stainless steel spoons or spatulas.

f. Disposable plastic spoons.

g. Plastic sheeting.

h. Aluminum foil.

i. Mason jars or driller's jars.

j. Water bath (hot plate, extension cord, water tray, thermometer).

k. Photoionization detector with charging unit.

l. Calibration gases with regulator.

m. Indelible marker.

n. Masking tape.

o. Disposable sampling gloves.

4.0 DECONTAMINATION

Where possible, thoroughly pre-cleaned and wrapped sampling equipment must be used and dedicated to individual sampling locations. Disposable items such as sampling gloves, aluminum foil, and sample jars will be changed after each use and discarded in an appropriate manner. If only photoionization results are to be obtained, then split-spoon samples and hand augers may be cleaned with a soap and water wash and potable water rinse or steam cleaning, and a final distilled water rinse. However, if samples are to be collected concurrently for laboratory analytical results, then all reusable sampling equipment must be thoroughly decontaminated according to the SOP for decontamination of field equipment.

5.0 CALIBRATION

The PID must be calibrated according to the manufacturer's specifications at a minimum frequency of once per day prior to collecting photoionization readings. In addition, periodic checks (e.g., every 2 hours or every ten samples) with the standard gas will be conducted to confirm that the calibration has not drifted. The time, date, and calibration procedure must be clearly documented in the field notebook and the calibration log. If at any time the photoionization results appear erratic or inconsistent with field observations, then the unit must be recalibrated. If calibration is difficult to achieve, then the unit's lamp should be checked for dirt or moisture and cleaned, as necessary. During humid or wet conditions, the unit should be calibrated on a more frequent basis as determined by field personnel.

6.0 PROCEDURE

6.1 Extract the soil sample from the sampler, quickly measure the recovery, and separate the wash from the true sample by using a dedicated, stainless steel spatula. Where allowed by regulatory agency(ies), disposable plastic spoons may be used.

6.2 Place the sample in a pre-cleaned glass jar (as quickly as possible to avoid loss of VOCs) filling the jar half full. Place an aluminum foil seal between the glass and metal cap and screw tight.

6.3 Label jars with the boring number, depth of sample, date of collection and blow counts. In addition, the field personnel will ensure the following: samples are taken at appropriate depths; unrepresentative portions of the sample are discarded properly; that the sampler is decontaminated properly between use; and the driller uses proper methods during sample collection and does not use oil or grease on tools entering the borehole.

6.4 Log the sample in detail and record sediment characteristics (color, odor, moisture, texture, density, consistency, organic content, and layering).

6.5 After the sample has been collected, heat the sample under controlled conditions in a water bath for a 2 minute period.

6.6 Ensure that the PID has been calibrated and that the calibration information is documented in the field book. Pierce the aluminum foil seal with the probe from the PID and measure the relative concentration of VOCs in the headspace of the soil sample. The initial (peak) reading must be recorded.

6.7 Record the PID reading in the field notebook, on an appropriate field form, and on the base map, if appropriate.

6.8 Place any material not representative of the interval sampled in a pile with the other cuttings from the borehole.

6.9 If only photoionization results are to be obtained, then reusable sampling devices may be cleaned with a soap and water wash and a potable water rinse. The sampler will then be rinsed with distilled water, assembled and placed on plastic sheeting for reuse. A more rigorous decontamination procedure is required when samples are also being collected for laboratory analysis. Refer to the SOP for collection of soil samples for laboratory analysis for additional information.

END OF PROCEDURE

ATTACHMENT 4

Laboratory's Standard Operating Procedures

Pace ANALYTICAL SERVICES	**ENV-SOP-MANS-0111 v01 Preparation and Analysis of PFAS in Aqueous, Solid, and Tissue by EPA Method 1633**
	Effective Date: 08/07/2024

Management Approval:
John Trimble Approved on 8/7/2024 11:55:41 AM
Laura Vanasse Approved on 8/7/2024 11:32:33 AM
Pete Henriksen Approved on 8/7/2024 10:20:05 AM
Jason Hebert Approved on 8/7/2024 12:02:07 PM

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1.0 SCOPE & APPLICATION

This standard operating procedure (SOP) describes the laboratory procedure used by Alpha, a Pace Analytical Laboratory for the determination of the per- and polyfluoroalkyl substances (PFAS) by liquid chromatography/mass spectrometry (LC-MS/MS) following EPA 1633, published January 2024. This SOP is applicable to aqueous (all non-potable water and leachate), solid (soil, biosolids, sediment), and tissue matrices.

The instrumental portion of this method is for use only by analysts experienced with LC-MS/MS or under the close supervision of such qualified persons. The laboratory must demonstrate the ability to generate acceptable results using the procedures in Sections 11.3.1 and 11.3.2.

By their very nature, many components of PFAS present analytical challenges unique to this class of analytes. For example, PFAS analytes readily adhere to the walls of the sample containers and may also stratify in the container.

1.1 Target Analyte List, Limits of Detection & Quantitation (LOD & LOQ)

The target analytes that can be determined by this SOP and the associated LODs and LOQs are provided in Appendix A, Tables 1, 2, and 3.

LOQs are established in accordance with PAS policies and procedures for method validation, determination of detection limits (LOD), and quantitation limits (LOQ). Refer to laboratory SOP ID 1732 (Detection Limit (DL), Limit of Detection (LOD) & Limit of Quantitation (LOQ)) for additional information. DL and LOQ are routinely verified and updated when needed. DL and LOQ are always adjusted to account for actual sample amounts used and for dilution.

The reporting limit (RL) is the value to which analytes are reported as detected or non-detect in the final report. When the RL is less than the lower limit of quantitation (LLOQ), all detections and non-detects at the RL are qualitative. The LLOQ is the lowest point of the calibration curve used for each target analyte.

1.2 Reference Methods & Documents

This SOP is based on reference method EPA 1633 (2024). If the laboratory procedure is modified from the reference method, a list of modifications and rationale for the modifications is provided in Section 14.0. Modifications are permitted when allowed by the regulatory program for which test results will be used and when the modification has been validated comparable and equivalent to the reference method.

1.3 Quantitation Range

The quantitation range for each target analyte in this procedure is defined in Appendix A, Table 5: Calibration Standard Concentrations.

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1.4 Program Specific Requirements

Not Applicable.

2.0 SUMMARY OF METHOD

Environmental samples are prepared and extracted using method-specific procedures. Sample extracts are subjected to cleanup procedures designed to remove interferences. Analyses of the sample extracts are conducted by LC-MS/MS in the multiple reaction monitoring (MRM) mode. Sample concentrations are determined by isotope dilution or extracted internal standard quantification (see Section 9.2.1) using isotopically labeled compounds added to the samples before extraction.

Individual PFAS analytes are identified through peak analysis of the quantification and confirmation ions, where applicable. Where linear and branched isomers are present in the sample and either qualitative or quantitative standards containing branched and linear isomers are commercially available, the PFAS analyte is reported as a single analyte consisting of the sum of the linear and branched isomer concentrations.

Quantitative determination of target analyte concentrations is made with respect to an isotopically labeled PFAS standard; the concentrations are then used to convert raw peak areas in sample chromatograms to final concentrations.

Results for target analytes are recovery corrected by the method of quantification (i.e., either isotope dilution or extracted internal standard quantification, see Section 9.2.1). Recoveries of isotopically labeled extracted internal standards (EIS) are determined by comparison to the responses of one of seven non-extracted internal standards (NIS) and are used as general indicators of overall analytical quality.

The quality of the analysis is assured through reproducible calibration and testing of the extraction, cleanup, and LC-MS/MS systems.

- Aqueous samples are spiked with isotopically labeled standards (EIS), extracted using solid-phase extraction (SPE) cartridges and undergo cleanup using carbon before analysis.

- Solid samples are spiked with EIS, extracted into basic methanol, and cleaned up by carbon and SPE cartridges before analysis.

- Tissue samples are spiked with EIS, extracted in methanol with potassium hydroxide followed by acetonitrile, and cleaned up by carbon and SPE cartridges before analysis.

3.0 INTERFERENCES

Solvents, reagents, glassware, and other sample processing hardware may yield artifacts and elevated baselines causing misinterpretation of chromatograms. Specific selection of reagents and solvents is required.

Clean all equipment prior to, and after, each use to avoid PFAS cross-contamination. Typical cleaning solvents include water, methanol, and methanolic ammonium hydroxide. The residual PFAS content of disposable plasticware and filters must be verified by batch/lot number and may be used without cleaning if PFAS levels are less than the Method Detection Limit (MDL).

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Prior to use, glassware must be solvent rinsed and then air dried. A solvent rinse procedure using methanolic ammonium hydroxide (1%) and methanol is recommended.

Sample manifold ports and transfer tubing should be inspected regularly for signs of wear and/or discoloration. When such observations are made, the associated components should be replaced.

All parts of the SPE manifold must be cleaned between samples by rinsing with methanolic ammonium hydroxide (1%) and air drying prior to use. Smaller parts, like the needles, adapters, reservoirs, transfer lines, and stopcocks associated with the manifold should be rinsed with tap water prior to rinsing with methanolic ammonium hydroxide (1%) and air drying. After loading the samples but prior to elution procedures, the chamber should be rinsed with methanolic ammonium hydroxide (1%).

All materials used in the analysis must be demonstrated to be free from interferences by running method blanks (Section 11.1.1) at the beginning and with each extraction batch (samples started through the extraction process on a given batch to a maximum of 20 field samples).

Reagent water (Section 8.1) can be used to simulate water samples and Ottawa sand and/or reagent-grade sand (Section 7.3) can be used to simulate soils. Fish fillets (tilapia/ cod), chicken breast or other similar animal tissue (see Section 7.3) may be used as the reference matrix for tissue. The laboratory must verify that the source product used does not contain PFAS in detectable amounts.

Interferences co-extracted from samples will vary considerably from source to source, depending on the diversity of the site being sampled. Interfering compounds may be present at concentrations several orders of magnitude higher than the native PFAS. Because low levels of PFAS are measured by this method, elimination of interferences is essential. The cleanup steps given in Section 9.3 can be used to reduce or eliminate these interferences and thereby permit reliable determination of the PFAS at the levels shown in Tables 1, 2 and 3. The most frequently encountered interferences are fluoropolymers; however, bile salts (e.g., Taurodeoxycholic Acid [TDCA]) may be present in various matrices, including fish and wastewaters, and can interfere in the chromatography. For this reason, analysis of a standard containing TDCA is required as part of establishing the initial chromatographic conditions (see Sections 8.3.2 and 8.3.3) and each analytical sequence (see Section 9.4).

4.0 DEFINITIONS

Refer to the Laboratory Quality Manual for a glossary of common lab terms and definitions.

- **Extracted Internal Standard (EIS) quantification:** The response of the target compound is compared to the response of the isotopically labeled analog of another compound with chemical and retention time similarities.
- **Isotope dilution (ID) quantitation:** A means of determining a naturally occurring (native) compound by reference to the same compound in which one or more atoms has been isotopically enriched. The labeled PFAS are spiked into each sample and allow identification and correction of the concentration of the native compounds in the analytical process.
- **Isotopically labeled compound:** An analog of a target analyte in the method which has been synthesized with one or more atoms in the structure replaced by a stable (non-radioactive) isotope of that atom. Common stable isotopes used are 13C (Carbon-13) or Deuterium (D or 2H). These labeled compounds do not occur in nature, so they can be used for isotope dilution quantitation or other method-specific purposes.

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- **Minimum Level of quantitation (ML):** The lowest level at which the entire analytical system must give a recognizable signal and acceptable calibration point for the analyte. The ML represents the lowest concentration at which an analyte can be measured with a known level of confidence. It may be equivalent to the concentration of the lowest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.
- **PAS:** Acronym for Pace® Analytical Services, LLC

5.0 HEALTH & SAFETY

The following sections provide general health and safety information about chemicals and materials that may be present in the laboratory.

- The toxicity or carcinogenicity of each chemical material used in the laboratory has not been fully established. Each chemical should be regarded as a potential health hazard and exposure to these compounds should be as low as reasonably achievable.
- The laboratory maintains documentation of hazard assessments and OSHA regulations regarding the safe handling of the chemicals specified in each method. Safety data sheets for all hazardous chemicals are available to all personnel. Employees must abide by the health, safety and environmental (EHS) policies and procedures specified in this SOP and in the Pace® Chemical Hygiene / Safety Manual (COR-MAN-0001).
- Personal protective equipment (PPE) such as safety glasses, gloves, and a laboratory coat must be worn in designated areas and while handling samples and chemical materials to protect against physical contact with samples that contain potentially hazardous chemicals and exposure to chemical materials used in the procedure.
- Concentrated corrosives present additional hazards and are damaging to skin and mucus membranes. For procedures that require use of acids, use acids in a fume hood whenever possible with PPE designed for handing these materials. If eye or skin contact occurs, flush with large volumes of water. When working with acids, always add acid to water to prevent violent reactions. For procedures that that emit large volumes of solvents (evaporation/concentration processes), these activities must be performed in a fume hood or apparatus that reduces exposure.

6.0 SAMPLE COLLECTION, PRESERVATION, HOLDING TIME & STORAGE

PAS does not offer sample collection services for this test method. PAS advises customers to collect samples in accordance with a sampling plan and collection procedures appropriate to meet regulatory requirements and data quality objectives for the project. The minimum sample amounts required for the test are provided in this section.

PAS provides containers for the collection of samples upon client request. The routine container type and size is provided in the following table along with requirements for sample size, preservation and holding time. Refer to Bottle Order Preparation (ENV-SOP-WEST-0005), or however named, for procedures related to preparation of bottle kits.

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Container Type, Minimum Sample Amount, Preservation, and Holding Time

Matrix	Container Size & Type[1]	Minimum Sample Amount[2]	Preservation	Holding Time
Aqueous (non-potable water)	2 x 500 mL linerless HDPE 1 x 125 mL linerless HDPE[3]	500 mL	Thermal: 0-6°C (or ≤ -20°C)	Collection to Preparation: 28 Days (or 90 Days) Preparation to Analysis: 28 Days
Aqueous (leachate)	2 x 125 mL linerless HDPE	100 mL	Thermal: 0-6°C (or ≤ -20°C)	Collection to Preparation: 28 Days (or 90 Days) Preparation to Analysis: 28 Days
Solid (sediment and soil)	3 oz/ 90 mL linerless polypropylene wide mouth	5 g	Thermal: 0-6°C or ≤ -20°C	Collection to Preparation: 90 Days Preparation to Analysis: 28 Days
Solid (biosolid)	3 oz/ 90 mL linerless polypropylene wide mouth	0.5 g	Thermal: 0-6°C or ≤ -20°C	Collection to Preparation: 90 Days Preparation to Analysis: 28 Days
Tissue[4]	3 oz/ 90 mL linerless polypropylene wide mouth	2 g	Thermal: ≤ -20°C	Collection to Preparation: 90 Days Preparation to Analysis: 28 Days

[1] *Default container type provided in sample kit. To allow room for expansion during freezing (if necessary), aqueous sample containers should not be overfilled. Aqueous sample containers should be filled only to the appropriate gradation marked on the container, or to the shoulder of the container if no gradations are provided.*

[2] *Nominal amount of sample required for each discrete test. Solid and biosolid sample amounts reflect dry weight.*

[3] *Used for pre-screening analyses.*

[4] *Container listed here will be used for tissue homogenate; samples may be received at the laboratory as whole fish or filets wrapped in aluminum foil or food grade polyethylene wrap. Ideally fish should be frozen upon collection and shipped to the laboratory as soon as possible.*

Note: Project-specific requirements dictate which storage condition applies. The storage condition to be used for each project must be formally documented in written form (QAPP or otherwise) before samples are received. Without any prior indication from the client, the lab will store all aqueous and solid/biosolid samples at 0-6°C until extraction, with a 28-day holding time (collection to prep) for aqueous matrices and a 90-day holding time (collection to prep) for solid/biosolid matrices.

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Thermal preservation is checked and recorded on receipt in accordance with laboratory SOP (ENV-SOP-WEST-0003, Sample Receipt and Login), or however named.

After receipt, samples are stored as listed above until sample preparation. Prepared sample extracts of all matrices are stored at 0-6°C until sample analysis.

After analysis, samples are retained as stated in the Pace® standard terms and conditions, unless otherwise specified in the analytical services contract. Samples are then disposed of in accordance with Federal, State, and Local regulations.

7.0 EQUIPMENT & SUPPLIES

Use of equivalent instrumentation, support equipment, and supplies from alternative vendors is acceptable so long as they meet the specifications as stated in the reference method.

Due to the possibility of adsorption of analytes onto glass, plastic containers are used for all standard, sample, and extraction preparations. Any time a new lot of SPE cartridges, solvents, cryovials, or autosampler vials are used, it must be demonstrated that a MB is reasonably free of contamination and that the criteria in Section 11.1.1 are met.

7.1 Instrumentation

- High-performance liquid chromatograph (HPLC) equipped with tandem quadrupole mass spectrometer – Sciex 5500+ or equivalent
- Agilent Zorbax RRHD Eclipse Plus C18, 2.1 x 50 mm (1.8 µm) analytical column (Agilent Part # 959757-902), or equivalent
- Guard cartridge/column – Agilent Zorbax Eclipse Plus C18, 2.1 x 5 mm, 1.8 um (Agilent Part# 821725-901), or equivalent
- Trap/delay column – InfinityLab PFC Delay Column, 4.6 x 30 mm (Agilent Part# 5062-8100), or equivalent

7.2 Support Equipment

- Oven – Capable of maintaining a temperature of 105 ± 5 ºC
- Analytical balance – Capable of weighing 0.0001 g
- Top loading balance – Capable of weighing 0.01 g
- Calibrated mechanical variable volume pipettes with disposable HDPE or polypropylene tips (10 µL to 5 mL) – used for preparation of calibration standards and spiked samples
- Point of Use water preparation system – Thermo Scientific Barnstead E-Pure; model 7119 – Used for QC samples to verify the systems are PFAS free
- Ultrasonic mixer – Fisherbrand; Model CPX3800 – 5.7L, 40 kHZ, 120V, 2.9 Amp with timer
- Analog or digital vortex mixer, single or multi-tube (Fisher Scientific 02-215-452, or equivalent)
- Variable speed mixing table (VWR Model 3500 Orbital Shaker, or equivalent)

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- Centrifuge (Beckman Allegra 6, Hettich Rotanta 460, or equivalent), capable of reaching at least 3000 rpm (~2000 RCF)
- Vacuum Pump – Sufficient capacity to maintain a vacuum of approximately 10 to 15 inches of mercury for extraction cartridges. GAST model # DOA-P704-AA, Waters Cat# 725000417, 115V, 60Hz, 4.2A
- Vacuum manifold for SPE Cartridges – Waters Cat# WAT200609: SPE Vacuum manifold, or equivalentCat
- Vacuum tubing – 1/4” ID, 5/8” OD, 3/16” wall; Fisher Scientific part# 14-176-6B or equivalent
- PE Transfer tubing – 1/8” X .062 x 500ft, Freelin Wade part# 1C-109-10 or equivalent.

7.3 Supplies

- Solid Phase Extraction (SPE) cartridges – Phenomenex part# CS0-9216, 250 mg WAX/20mL, or equivalent
- Carbon Cleanup cartridges – Phenomenex part# 8B-S528-CAJ, 50 mg GCB, or equivalent
- SPE reservoirs – 60 mL, Phenomenex part# AH0-7189, or equivalent
- SPE adapter caps – Supelco part# 57267 (Adapter cap for 12, 20 & 60 mL SPE tubes)
- Disposable liners for Vacuum Manifold – Waters part# 20685 or equivalent
- Silanized glass wool (Pyrex 3950 or equivalent)
- Reference matrix: Aqueous – reagent water
- Reference matrix: Solid – Ottawa sand
- Reference matrix: Tissue – fish fillets, chicken breast or similar animal tissue. First preference will be frozen cod fillets.
- Bottles – HDPE or PP, with linerless HDPE or polypropylene caps. Various sizes. QEC item # 6212-Q016/BC-150-PACE (500 mL), 6212-Q008BC-P (250 mL), 6213-U004BC-P (125 mL), 6214-003PPGBC-P (90 mL)
- Screw top vials, Polypropylene 0.7-mL with polypropylene caps – used in sample analysis and pre-screening (Waters Cat # 186005219 and 186004169 or equivalent)
- 15- and 50-mL conical polypropylene tubes with polypropylene screw caps for preparing and storing extract solutions and for collection of eluents (Fisher Scientific 05-527-90 and 14-432-22, or equivalent)
- 500-mL conical polypropylene centrifuge bottles for sample centrifugation (Fisher Scientific 07-200-621 or equivalent)
- Extract/Standard storage containers – 15-mL, 8-mL, or 4-mL narrow-mouth HDPE container - Thermo Scientific item# 2002-9050, 2002-9025, 2002-9125; 2.0-mL screw-top polypropylene cryogenic vials – Grainger item# 6EMV1/ Wheaton item# W985872;1.5-mL snap-cap polypropylene microcentrifuge tubes - Fisher item# 05-408-129; or equivalent
- pH Paper, range 0-14 - (VWR Cat# BD3539.606 or equivalent), 0.5-unit readability

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- Disposable glass and plastic pipets

8.0 REAGENTS & STANDARDS

Refer to laboratory SOP (ENV-SOP-MANS-0112, Reagent, Solvent, and Standard Control), or however named, for information regarding standard and reagent tracking and traceability. All reagents and stock standards are commercially prepared, when available. Expiration and storage requirements are defined per manufacturer.

8.1 Reagents

Use of equivalent reagents from alternative vendors is acceptable so long as the substitution meets the performance specifications required by the reference method.

- Acetic acid – ACS grade or equivalent, store at room temperature; VWR cat# BDH3098-3.8LP or equivalent
- Acetonitrile – UV grade or equivalent, verified before use, store at room temperature; Honeywell Cat# 018-4 or equivalent (for extraction)
- Ammonium acetate – ACS or equivalent, store at 2-8° C, replace 2 years after opening date; VWR BDH9204-500G or equivalent.
- 1M aqueous ammonium acetate (Waters Cat# 186006693-1) used for mobile phase additive; store as indicated by manufacturer.
- Ammonium hydroxide – certified ACS+ grade or equivalent, 30% in water, store at room temperature; Fisher A470-500 or equivalent
- Formic acid – greater than 96% purity or equivalent, store at room temperature; Acros 147930010 or equivalent
- Methanol – HPLC grade or better, 99.9% purity, store at room temperature; Honeywell CAT# 230-4 or equivalent
- Mobile Phase A – 2 mM ammonium acetate in 95:5 water/acetonitrile. Aliquot 0.4 mL of aqueous 5M ammonium acetate in 949.6 mL of water and 50 mL of acetonitrile. Alternatively, dissolve 0.154 g of neat ammonium acetate into 950 mL of water and 50 mL of acetonitrile. Store at room temperature; shelf life is 2 months.
- Mobile Phase B – Acetonitrile, Ultra HPLC grade or equivalent; OmniSolv AX0142-1 or equivalent
- Potassium hydroxide – certified ACS or equivalent, store at room temperature, replace after 2 years; Fisher P250-500 or equivalent.
- Reagent water – Laboratory reagent water, test by lot/batch number for residual PFAS content.

8.2 Standards

Use of equivalent standards from alternative vendors is acceptable so long as they are traceable to a national standard, when commercially available. Follow manufacturer's recommended storage conditions and expiration dates.

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8.2.1 Primary PFAS Standard

- EPA Method 1633 Native PFAS Standard mix from Wellington Laboratories (item# EPA-1633STK) – used to prepare the calibration standards and to spike the reference QC samples prepared/analyzed with every batch of samples. Also used to prepare an intermediate standard for calibration standard preparation and low-level QC sample spiking, as described below.

8.2.2 Secondary PFAS Standard

- Method 1633-PFCs-Calibration Standard mix from Absolute Standards (item# 65735) – used to prepare the ICV standard as described below.

8.2.3 Extracted Internal Standard (EIS)

- Mass-labelled PFAS Extraction Standard mix from Wellington Laboratories (item# MPFAC-HIF-ES) – used to prepare analytical standards and spike each sample prior to extraction.

8.2.4 Non-extracted Internal Standard (NIS)

- Mass-labelled PFAS Injection Standard mix from Wellington Laboratories (item# MPFAC-HIF-IS) – used to prepare analytical standards and spike sample extracts prior to instrumental analysis.

8.2.5 Bile Salt (TDCA) Standard

- Neat Taurodeoxycholic acid from Cayman Chemical (item# 15935), or equivalent – used to prepare analytical standards for bile salt interference check.

8.3 Formulations

Prepare standard solutions from materials of known purity and composition or purchase as solutions or mixtures with certification to their purity, concentration, and authenticity. Observe the safety precautions in Section 5.

Purchase of commercial standard solutions or mixtures is highly recommended for this method; however, when these are not available, preparation of stock solutions from neat materials may be necessary. If the chemical purity is 98% or greater, the weight may be used without correction to calculate the concentration of the standard.

When not being used, store standard solutions in the dark at 4 °C, unless the vendor recommends otherwise, in tightly sealed screw-capped vials. Place a mark on the vial at the level of the solution so that solvent loss by evaporation can be detected. Replace the solution if solvent loss has occurred.

Note: 18O-mass labeled perfluoroalkyl sulfonates may undergo isotopic exchange with water under certain conditions, which lowers the isotopic purity of the standards over time.

The laboratory must maintain records of the certificates for all standards for traceability purposes. Copies of the certificates should be provided as part of the data packages in order to check that proper calculations were performed.

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8.3.1 Analytical and Preparation Reagents

Analytical and Preparation reagents are stored in plastic or glass containers under ambient conditions. Expiries are listed with each reagent.

- Instrument Blank Mix (IBLK Mix) – Methanol with 4% water, 1% ammonium hydroxide and 0.625% acetic acid – add ammonium hydroxide (3.3 mL, 30%), reagent water (1.67 mL) and acetic acid (0.625 mL) to methanol (94.4 mL); store at room temperature, replace after 1 month. This solution is used to prepare the instrument blank (Sections 8.3.3.3 and 9.2.5) and sample extract dilutions.
- Mobile Phase A – 2 mM ammonium acetate in 95:5 water: acetonitrile. Aliquot 2.0 mL of aqueous 1M ammonium acetate in 948 mL of water and 50 mL of acetonitrile. Store at room temperature; replace after 2 months or less.
- Mobile Phase B – Acetonitrile, HPLC grade or equivalent; Omnisolv AX0142-1 or equivalent
- Acetic acid (0.1%) - dissolve acetic acid (1 mL) in reagent water (1 L); store at room temperature, replace after 3 months.
- Aqueous ammonium hydroxide (3%) – add ammonium hydroxide (10 mL, 30%) to reagent water (90 mL), store at room temperature, replace after 3 months.
- Methanolic ammonium hydroxide (0.3%) – add ammonium hydroxide (1 mL, 30%) to methanol (99 mL), store at room temperature, replace after 1 month.
- Methanolic ammonium hydroxide (1%) – add ammonium hydroxide (3.3 mL, 30%) to methanol (97 mL), store at room temperature, replace after 1 month.
- Methanolic ammonium hydroxide (2%) – add ammonium hydroxide (6.6 mL, 30%) to methanol (93.4 mL), store at room temperature, replace after 1 month.
- Formic acid (aqueous, 0.1 M) – dissolve formic acid (4.6 g / 3.77 mL) in reagent water (1 L), store at room temperature, replace after 2 years.
- Formic acid (aqueous, 0.3 M) – dissolve formic acid (13.8 g / 11.31 mL) in reagent water (1 L), store at room temperature, replace after 2 years.
- Formic acid (aqueous, 5% v/v) – mix 5 mL formic acid with 95 mL reagent water, store at room temperature, replace after 2 years.
- Formic acid (aqueous, 50% v/v) – mix 50 mL formic acid with 50 mL reagent water, store at room temperature, replace after 2 years.
- Formic acid (methanolic 1:1, 0.1 M formic acid/methanol) – mix equal volumes of methanol and 0.1 M formic acid, store at room temperature, replace after 2 years.
- Methanolic potassium hydroxide (0.05 M KOH) – add 3.3 g of potassium hydroxide to 1 L of methanol, store at room temperature, replace after 3 months.

8.3.2 Intermediate Standards

Intermediate standards are stored in plastic containers as listed below. Expiries are listed with each formulation.

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- TDCA Stock Solution: Dissolve 10 mg of neat TDCA into 5 mL of MeOH; final concentration equals 2000 µg/mL. Store frozen (<0°C) when not in use; replace after 1 year, or sooner if degradation is observed.
- STK-10X Solution: Dilute 200 µL of EPA-1633STK with 1.8 mL of MeOH for a final volume of 2 mL; final concentrations vary by analyte – 25, 50, 100, 125, 250, or 625 ng/mL. Store at 0-6°C when not in use; replace every time a new lot of 1633STK is used, or after 1 month.

8.3.3 Working Solutions

Working solutions are stored in plastic containers under refrigerated conditions at 0-6°C and expire 1 month from the date of preparation.

8.3.3.1 Calibration Standards

A series of calibration solutions containing the target analytes and the EIS and NIS is used to establish the initial calibration of the analytical instrument. The concentration of the method analytes in the solutions varies to encompass the working range of the instrument, while the concentrations of the EIS and NIS (and TDCA) remain constant. The calibration solutions are prepared using the standards and intermediate standards described above. The final solvent composition will match the solvent mix of sample extracts, which contain methanol with 4% water, 1% ammonium hydroxide and 0.625% acetic acid. Calibration standard solutions do not undergo solid phase extraction/cleanup. Prepare the calibration standard solutions according to the table below. Following all formulations listed in this SOP will require 3 ampoules of the 1633STK mix to prepare a full calibration set; other final volumes may be prepared. If the lab follows all formulations in this SOP as written, the remaining volumes of 1633STK and STK-10X solutions after preparing the calibration should be enough to spike approximately 40 sets of aqueous batch QC. The remainder of MPFAC-HIF-ES and MPFAC-HIF-IS mixes should provide enough volume to spike approximately 40-45 samples.

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Component[1]	L1	L2 (LOQ)	L3	L4	L5 (CCV)	L6	L7	L8	L9
STK-10X	20	16	40						
EPA-1633STK				20	100	100	200	400	500
MPFAC-HIF-ES	25	10	10	10	25	10	10	10	10
MPFAC-HIF-IS	25	10	10	10	25	10	10	10	10
TDCA Stock	25				25				10
IBLK Mix	4905	1964	1940	1960	4825	1880	1780	1580	1470
Final Volume	5000	2000	2000	2000	5000	2000	2000	2000	2000

[1]*All values listed are µL*

8.3.3.2 Initial Calibration Verification Standard (ICV)

Prepare the ICV standard using the Absolute Standards 1633 PFC Mix, following the table below; expected concentration for all compounds in the ICV will be 10 ng/mL. The ICV is prepared from a separate, second source (or separate manufacturer lot) than that used for the calibration solutions. If a second source or lot is unavailable, a separate preparation using the same stocks is acceptable.

Component	Volume used (µL)
1633 PFC Mix	20
MPFAC-HIF-ES	20
MPFAC-HIF-IS	20
IBLK Mix	3940
ICV Final Volume	4000

8.3.3.3 Instrument Blank

A solvent blank is analyzed at the beginning of each analytical sequence, to demonstrate clean instrumental background, and after samples containing high levels of target compounds (e.g., calibration, CCV) to monitor carryover from the previous injection. The instrument blank consists of clean reagent fortified with the EIS and NIS for quantitation purposes. Prepare the IBLK using the IBLK mix (Section 8.3.1) and an appropriate volume of EIS and NIS; alternatively, prep the IBLK from 1887 µL of 1% Methanolic ammonium hydroxide, 80 µL of reagent water, 12.5 µL of acetic acid, and 10 µL each of EIS and NIS.

9.0 PROCEDURE

9.1 Equipment Preparation

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9.1.1 Instrument Setup

9.1.1.1 Routine Instrument Operating Conditions

Example LC Gradient

Step	Total Time (min)	Flow Rate (µL/min)	A: 5% Acetonitrile w/ 10mM Ammonium Acetate (%)	B: Acetonitrile (%)
1	0.00	400	80	20
2	6.00	400	0	100
3	6.50	400	0	100
4	6.51	400	80	20
5	8.50	400	80	20

Example MS Parameters

MS Parameter	Setting or Value
Sample Loop	100 µL
Injection Volume	2 µL
Column Oven Temperature	40° C
MRM Scan Window	60 sec
Curtain Gas (CUR)	30.0
Collision Gas (CAD)	9
Ion Spray Voltage (IS)	-4500 V
Source Temperature (TEM)	450° C
Ion Source Gas 1 (GS1)	30.0
Ion Source Gas 2 (GS2)	50.0

9.1.1.2 Mass Calibration

The mass spectrometer must undergo mass calibration to ensure accurate assignments by the instrument. This mass calibration must be performed at least annually to maintain instrument sensitivity and stability. Mass calibration must be repeated on an as-needed basis (e.g., QC failures, ion masses fall outside of the instrument required mass window, major instrument maintenance, or if the instrument is moved). Mass calibration must be performed using the calibration compounds and procedures prescribed by the manufacturer. The procedures used for mass calibration and mass calibration verification must evaluate an ion range that encompasses the ion range (Q1 and Q2 m/z) of the analytes of interest of this method.

9.1.1.3 Mass Calibration Verification

A mass calibration verification must be performed following mass calibration, prior to standard and sample analyses. Mass verification checks must also be performed after any subsequent mass calibrations. The laboratory must follow the instructions for the individual instrument software to confirm the mass calibration, mass resolution and peak relative response. If the manufacturer's

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instructions include options for evaluation of mass resolution, the tightest resolution requirements (typically called unit resolution) must be met.

9.1.1.4 Retention Time (RT) calibration

Once RT windows have been confirmed for each target analyte, EIS, and NIS compound, then once per ICAL and at the beginning of the analytical sequence, the position of all target analyte, EIS, and NIS peaks shall be set using the midpoint standard of the ICAL curve when ICAL is performed. When an ICAL is not performed, the initial CCV retention times or the midpoint standard of the ICAL curve can be used to establish the RT window position.

The RTs for the target analytes, EIS, and NIS compounds must fall within 0.4 minutes of the predicted retention times from the midpoint standard of the ICAL or initial daily CCV, whichever was used to establish the RT window position for the analytical batch. All branched isomer peaks identified in either the calibration standard or the qualitative (technical grade) standard also must fall within 0.4 minutes of the predicted retention times from the midpoint standard of the ICAL or initial daily CCV. For all target analytes with exact corresponding isotopically labeled analogs, target analytes must elute within 0.1 minutes of the associated EIS compound.

When establishing the chromatographic conditions, it is important to consider the potential interference of bile salts (i.e. TDCA) during analyses of samples. Analytical conditions must be set to allow a separation of at least 1 minute between TDCA and the retention time window of PFOS. The method requires this evaluation when establishing the chromatographic conditions, regardless of the sample matrices to be analyzed.

9.1.2 Support Equipment

Refer to laboratory SOP (ENV-SOP-WEST-0036 Balance Calibration Verification, ENV-SOP-WEST-0123 Pipette and Bottle Top Verification), or however named, for additional information on calibration requirements for support equipment that may be used in this procedure.

9.2 Calibration

Refer to corporate POL ENV-POL-CORQ-0005, *Acceptable Calibration Practices for Instrument Testing*, for general laboratory calibration policies and procedures.

9.2.1 Calibration Frequency

Prior to the analysis of samples, and after a successful mass calibration check, each LC-MS/MS system must be calibrated at a minimum of 6 standard concentrations (Section 8.3.3.1 and Appendix A, Table 5). This method procedure calibrates and quantifies 40 PFAS target analytes, using the isotopically labeled compounds added to the sample prior to extraction, by one of two approaches (see Appendix A, Table 4 for quantitation associations):

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- Isotope Dilution quantification (ID), whereby the response of the target compound is compared to the response of its isotopically labeled analog; twenty-four target compounds are quantified in this way.
- Extracted Internal Standard quantification (EIS), whereby the response of the target compound is compared to the response of the isotopically labeled analog of another compound with chemical and retention time similarities; sixteen target compounds are quantified in this way.

Each LC-MS/MS system must be calibrated whenever the laboratory takes corrective action that might change or affect the initial calibration criteria, or if either the CCV or ISC acceptance criteria have not been met.

Each time a modification is made to this method, the laboratory is required to repeat the procedure in Sections 11.3.1 and 11.3.2. If calibration will be affected by the change, the instrument must be recalibrated.

9.2.2 Calibration Levels

Calibration standards are stored in plastic containers under refrigerated conditions (0-6°C).

Concentrations for calibration solutions are presented in Appendix A, Table 5. A minimum of six contiguous calibration standards are required for a valid analysis when using a linear calibration model, with at least five of the six calibration standards being within the quantitation range (e.g., from the LOQ to the highest calibration standard). If a second-order calibration model is used, then a minimum of seven calibration standards are required, with at least six of the seven calibration standards within the quantitation range. The lowest level calibration standard must be at a concentration less than or equal to the Limit of Quantitation (LOQ) and must meet a signal-to-noise ratio of 3:1 for the quantitation and confirmation ions that exist and must meet ion ratio requirements described in Section 10.1.1.3. If the analyte has no confirmation ion, then a 10:1 signal to noise ratio is required. All initial calibration requirements listed in Section 9.2.4 and 9.2.5 must be met.

Note: Additional calibration standards, at levels lower than the lowest calibration standard listed in the method, may be added to accommodate a lower limit of quantitation if the instrument sensitivity allows. Calibration standards at the high end of the calibration may be eliminated if the linearity of the instrument is exceeded or at the low end if those calibration standards do not meet the S/N ratio criterion of 3:1 (for quantitation and confirmation ions that exist; 10:1 for analytes with no confirmation ion), so long as the required number of calibration points is met. All analytes with commercially available stable isotope analogues must be quantified using isotope dilution.

9.2.3 Calibration Sequence

Calibration standards must be analyzed in sequence from lowest to highest concentration to minimize the chance that carryover from a higher concentration standard will boost the area of a lower concentration standard. A typical sequence for days when calibration is required is shown below.

Description	Comment
ICAL L1	

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Description	Comment
ICAL L2	Also used as ISC (Section 9.2.4.4)
ICAL L3	
ICAL L4	
ICAL L5	Also used as bracketing/closing CCV (Section 9.2.4.5)
ICAL L6	
ICAL L7	
ICAL L8	
ICAL L9	
IBLK	Any detections must be <MDL
ICV	%R must be 70 – 130%
CCV (ISC)	%R must be 70-130%; begins and ends Analytical Sequence

9.2.4 Calibration Evaluation

If the criteria for initial calibration are not met, inspect the system for problems and take corrective actions to achieve the criteria. This may require the preparation and analysis of fresh calibration standards. All initial calibration criteria must be met before any samples or required blanks are analyzed.

9.2.4.1 Curve Fit

One of the following two approaches must be used to evaluate the linearity of the instrument calibration. Weighting (typically 1/x or 1/x2) is allowed for linear and non-linear regressions.

- Option 1: Calculate the relative standard deviation (RSD) of the Relative Response (RR) or Response Factor (RF) values of the initial calibration standards for each native compound and isotopically labeled compound. See Section 10.2.1 for calculation of RR and RF. The RSD must be ≤ 20% to establish instrument linearity.

- Option 2: Calculate the relative standard error (RSE) for each native compound and EIS compound for all the initial calibration standards that were analyzed. The RSE for all method analytes must be ≤ 20% to establish instrument linearity.

If these criteria cannot be met, corrective action should be taken to restrict the range of calibration, reanalyze and/or reprepare the ICAL standards, or perform instrument maintenance and/or re-optimization.

If more than the minimum number of standards are analyzed and levels are excluded from the calibration, only the lowest or highest standards may be excluded, except as noted here. The removal of calibration levels from the interior of the curve is allowed only when there is sound technical reason for doing so and when the level is removed for all analytes; for example, when it can be proven that the wrong standard was analyzed for the calibration level or there is obvious evidence that the instrument malfunctioned during injection of the standard. The removal of any calibration level from the interior of the curve must be approved by the department supervisor/manager. Management approval and

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the rationale for the level removal must be documented and kept with the technical record.

9.2.4.2 Relative Error (% RE)

Although not required by the method, it may be useful to compare the actual responses for each standard to the calibration model; percent error of >30% between the calculated and expected concentrations of an analyte in any standard may be cause for concern.

9.2.4.3 Initial Calibration Verification (ICV)

As part of the IDOC and once after each ICAL, analyze an ICV sample prepared from a second source (different from the source of the ICAL standards). If a second vendor is not available, then a different lot of the standard from the same vendor should be used. The ICV should be prepared and analyzed just like a CCV. Acceptance criteria for the ICV are identical to the CCVs: the calculated concentration for each analyte must be within ± 30% of the expected value. If measured analyte concentrations are not of acceptable accuracy, correct the problem and rerun the ICV. If the problem persists, repeat the ICAL. Samples are not to be analyzed until the ICAL has been verified by acceptable ICV accuracy.

9.2.4.4 Instrument Sensitivity Check (ISC)

The lowest calibration standard within the quantitation range must be analyzed at the beginning of the analytical sequence. The signal-to-noise ratio of the ISC must be ≥ 3:1 for the quantification ions and the confirmation ions, or ≥ 10:1 if the analyte only has a quantification ion. Recovery of the native and EIS compounds for the ISC must be within 70-130%. If the requirements cannot be met, the problem should be corrected before analyses can proceed.

The lowest calibration standard within the quantitation range must be analyzed at the beginning of the analytical sequence. The signal-to-noise ratio of the ISC must be ≥ 3:1 for the quantification ions and the confirmation ions, or ≥ 10:1 if the analyte only has a quantification ion. Recovery of the native and EIS compounds for the ISC must be within 70-130%. If the requirements cannot be met, the problem should be corrected before analyses can proceed.

9.2.4.5 Continuing Calibration Verification (CCV)

After a passing MS resolution and a successful initial calibration is achieved and prior to the analysis of any samples, the calibration is verified by injecting an aliquot of the appropriate concentration ICAL standard, analyzed with the same conditions used during the ICAL. CCV is performed at the beginning of each analytical sequence, after every ten samples, and at the end of the analytical sequence. In this context, a “sample” is defined as a field sample: MBs, CCVs, LCSs, MSs, FDs, TBs and MSDs are not counted as samples. All CCV analyses are performed using a mid-level ICAL standard, except for the daily Instrument Sensitivity Check, as noted above.

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Calculate concentration for each native and EIS compound in the CCV; the recovery of native and EIS compounds for the CCVs must be within 70 – 130%. If the CCV criteria are not met, take corrective action (possibly including recalibration) and reanalyze any extracts that were analyzed between the last passing CCV and the one that failed. Alternately, the analyst may immediately analyze two CCVs for confirmation. If both confirmation CCV analyses meet the recovery criteria, analysis may proceed; however, the analyst must rerun any samples that were analyzed after the failing CCV and before the 2 passing CCVs. If either of the 2 confirmation CCV analyses fails to meet the acceptance criteria take corrective action and recalibrate the LC-MS/MS.

If an individual target compound recovery in a CCV is above the upper control limit and all associated samples are ND for that compound, the data for those samples may be reported. In such cases, a narrative statement must be included in the report indicating the specific compound result that was biased high in the CCV, and that samples were ND for that compound and thus reportable.

9.2.5 Initial Calibration Blank (ICB) / Continuing Calibration Blank (CCB)

One instrument blank (IBLK) is analyzed immediately following the highest ICAL standard analyzed (ICB), each analysis day prior to sample analysis, and following each bracketing CCV in a sequence (CCB), to check for carryover and instrument contamination. The concentration of each analyte must be ≤ the MDL-equivalent concentration in each IBLK/ICB/CCB. If the IBLK does not pass this requirement after the highest ICAL standard, the acquisition method should be adjusted to reduce the amount of carryover observed. Alternately, the calibration should be performed using a lower concentration for the highest standard until the acceptance criteria is met.

If unacceptable contamination is persistent in blanks, analyze additional instrument blanks until the response of the analyte is no longer detectable, or perform additional troubleshooting steps to identify and minimize other potential sources of PFAS contamination.

9.3 Sample Preparation

This section describes the sample preparation procedures for aqueous samples (Section 9.3.3), solid samples (soil, sediment or biosolid; Section 9.3.6), and tissue samples (Section 9.3.9). For solid samples, percent solids are determined using the procedures in Section 9.3.2. This section also describes the solid phase extraction (SPE) and extract cleanup protocols for all matrices.

Note: The laboratory may choose to pre-screen some samples prior to performing the analysis, following the protocol described in Appendix D. For aqueous samples, use the smaller secondary container to perform the pre-screening. If high levels of PFAS are present in the sample, a lower volume is required for analysis.

Do not use any fluoropolymer articles or task wipes in these extraction procedures. Use only HDPE or polypropylene wash bottles and centrifuge tubes. Reagents and solvents for cleaning may be kept in glass containers.

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9.3.1 Homogenization & Subsampling

Refer to laboratory SWI ENV-SWI-WEST-0128, Subsampling of Soil / Solid Samples, or however named, for information regarding the handling, homogenization, and splitting of samples to ensure that a representative aliquot is used for preparation.

The laboratory may subsample the aqueous samples as described in Appendix E; however, subsampling must meet project-specific requirements. The laboratory must notify the client that subsampling has occurred. Subsampling is acceptable for samples which require greater than a 10X dilution for over-range detections (or are known/expected to be highly contaminated), and for samples which fail the acceptance criteria for EIS compounds (see Appendix B, Tables 10-12). Other sample matrix characteristics which may require subsampling are described in Appendix G. When subsampling is required to manage high concentrations, no less than 250 µL of aqueous or leachate samples may be subsampled - if greater dilution is required, serial dilution must be employed. When subsampling is required to manage challenging matrices, no less than 1 mL of samples may be subsampled. For solid and tissue samples, no less than 10% of the target sample mass should be used for reduced-mass extractions, to help ensure the extracted mass is representative of the bulk sample. This means no less than 0.5 g for solids and no less than 0.2 g for tissues may be used for sample preparation.

Tissue sample homogenization will be performed in the Pace Green Bay facility, following SOP ENV-SOP-GBAY-0129 v05 *Sample Homogenization Compositing and Sub-Sampling*.

9.3.2 Determination of Percent Solids

Aqueous samples received with visually observable solids will be handled following the decision tree presented in Appendix G. No TSS pre-test will be performed on aqueous samples prior to preparation.

Percent solids analysis must be performed on all solid samples (excluding tissues) prior to preparation and analysis. All solid samples will be logged in for both 1633 and percent solids analysis. The percent solids analysis will follow the Method SM2540G protocol.

9.3.3 Aqueous Sample Processing

Per the parent method, this protocol is applicable to aqueous samples containing up to 100 mg/L solids per sample, and the procedure requires the preparation of the entire sample where possible. Smaller sample volumes may be analyzed for samples containing solids greater than specified for this method, or when unavoidable due to high levels of PFAS. The typical sample size is 500 mL; however, sample size may vary, depending on project requirements, applicable regulations, and sample characteristics. The sample is to be analyzed in its entirety and should not be filtered.

Leachate samples are analyzed using a 100 mL sample volume. Therefore, they must not be included in the same sample preparation batch as aqueous samples analyzed using 500 mL sample volumes. Otherwise, leachate samples are handled identically to all other aqueous samples.

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1) Visually inspect each sample and note any matrix characteristics which may pose challenges during SPE and require additional processing; see Appendix G for more information.

2) Weigh each sample bottle (with the lid) to the nearest 0.1 g. The volume of the aqueous sample analyzed is determined by weighing the full sample bottle and then the empty sample bottle after extraction is complete.

3) Prepare a method blank and two LCSs using PFAS-free water in HDPE bottles. Select a volume of water that is typical of the samples in the batch (i.e., 500 mL; 100 mL for leachate samples). Spike one LCS sample with native standard solution at 2x the LOQ (64 µL of STK-10X mix). This aliquot (LLLCS) will serve to verify the LOQ. Spike the other LCS sample at a concentration near the mid-level calibration point (40 µL of EPA-1633STK). This aliquot will serve as the traditional LCS.

Note: If matrix spikes are required for a specific project, spike the field sample bottles designated for use as MS/MSD samples in the same manner as the LCS.

4) Spike 20 µL of EIS solution (Section 8.2.3) directly into the sample in the original bottle (or subsampled bottle) as well as to the bottles prepared for the QC samples. Mix by capping and inverting the sample containers.

5) Check that the pH is 6.5 ± 0.5. If necessary, adjust pH with 50% formic acid or ammonium hydroxide (or with 5% formic acid and 3% aqueous ammonium hydroxide). The sample is now ready for solid phase extraction (SPE) and cleanup.

9.3.4 Solid Phase Extraction of Aqueous Samples

Note: Carbon cleanup is required. Carbon cleanup may remove analytes if the sample has a very low organic carbon content (this is unusual for non-drinking water environmental samples). This will be apparent if the isotope dilution standard recoveries are significantly higher on the reanalysis.

1) Pack clean silanized glass wool to half the height of a WAX SPE cartridge barrel; repeat for the total number of samples in the batch.

2) For each sample and QC aliquot, set up the vacuum manifold with one WAX SPE cartridge plus a reservoir adaptor and reservoir for each cartridge; label each reservoir with the associated sample ID. If using plastic transfer lines instead of reservoirs, ensure the connecting caps are snug in each cartridge and the transfer lines are placed within the appropriate sample; label each cartridge tube with the associated sample ID.

3) Pre-condition the cartridges by washing them with 15 mL of 1% methanolic ammonium hydroxide followed by 5 mL of 0.3M formic acid. Perform each rinse separately. Do not allow the WAX SPE to go dry. Discard the wash solvents.

4) Pour the sample into the reservoir (do not use a pipette), taking care to avoid splashing while loading; or, if using transfer lines, begin opening the stopcocks on the vacuum manifold. Adjust the vacuum/stopcocks to pass each sample through

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the cartridge at approximately 5-10 mL/min; discard the eluate. Retain the empty sample bottle for later rinsing (Section 9.3.5).

Note: In the event the SPE cartridge begins to clog during aqueous sample loading, abandon the loading step and attempt to rinse and dry the clogged cartridge, following the protocol below. The cartridge is then ready for elution. If the clogging prevents the rinse from passing through the cartridge, it will not be possible to collect an extract for the associated sample. See Appendix G for more information.

5) Rinse the walls of the reservoir with 5 mL reagent water twice, followed by 5 mL of 1:1 0.1M formic acid/methanol and pass those rinses through the cartridge using vacuum. If using sample transfer lines for loading, add the 3 rinses to the bottle and load through the transfer lines to the cartridge, one reagent at a time. Dry the cartridge by pulling air through for approximately 5 minutes. Discard the rinse solution.

6) After the WAX cartridges are sufficiently dry, rinse the GCB cartridges with 5 mL of 1% methanolic ammonium hydroxide; discard the rinsate. Do not allow the GCB to go completely dry.

7) Connect the outlet of the WAX cartridges to the inlet of the GCB cartridges to stack them on the manifold and allow for cleanup of the extract as part of elution. Ensure that the WAX cartridges are returned to their original locations on the manifold to avoid cross contamination. Continue to the elution steps in the next section.

9.3.5 Elution of Aqueous Sample Extracts

1) Place clean collection tubes inside the manifold, ensuring that the extract delivery tips do not touch the walls of the tubes. Resume vacuum and ensure a proper seal is achieved. DO NOT add NIS to these collection tubes.

2) Add 5 mL of 1% methanolic ammonium hydroxide to each empty sample bottle. Cap the bottle and rotate to ensure all internal surfaces of each bottle are rinsed; avoid vigorous shaking when rinsing the 500 mL aqueous sample bottles with only 5 mL of methanol – any evaporation/vaporization will contribute to loss of extract here. After rinsing the inside of the sample bottle, pour the rinse from the bottle or use a plastic transfer pipette to transfer the rinse to the SPE reservoir, using it to wash the walls of the reservoir. If using sample transfer lines, simply transfer this rinse from each sample container to its associated cartridge using vacuum. Allow the elution solvent to soak the SPE sorbent for 2 minutes before using vacuum to pull the elution solvent through the cartridge and into the collection tubes in a slow, dropwise manner.

3) Air dry the empty sample bottle after the rinse is transferred. Weigh the empty bottle with the cap on and subtract that from the weight of the bottle with sample, determined in Section 9.3.3, step 2.

4) Add 25 µL of concentrated acetic acid and 20 µL of NIS mix to each sample extract in its collection tube and vortex to mix. Transfer a portion of each extract into an autosampler vial for LC-MS/MS analysis. Cap the collection tubes containing the remaining extracts and store at 0 - 6 °C.

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9.3.6 Solid Sample (excluding tissues) Processing

Any solid sample received containing <50% solids (>50% moisture; >10 g target mass for 5 g dry weight) should be re-logged and prepared as a biosolid, using a target dry weight of 0.5 g. Any solid or biosolid sample received containing <5% solids (>95% moisture; >10 g target mass for 0.5 g dry weight) should be re-logged and prepared as a leachate sample, using no more than 100 mL of sample for extraction.

1) Mix the sample in its original jar. If it is impractical to mix the sample within its container, transfer the sample to a larger container. Mix the sample thoroughly, stirring from the bottom to the top and in a circular motion along the sides of the jar, breaking particles up by pressing against the side of the container. The homogenized sample should be even in color and have no separate layers. Store the homogenized material in its original container or in multiple smaller containers.

2) Determine the percent solids as per Section 9.3.2.

Note: The target sample weight for sediment or soil is 5 g dry weight. The target sample weight for biosolids is 0.5 g dry weight. Small amounts of reagent-free water used for method blanks (10% of sample weight or less) can be added to unusually dry samples. This is an option, not a requirement.

3) Check the LIMS system for the percent solids data associated with the samples to be prepared. Using the percent solids data and the calculation below, weigh out an aliquot of each solid sample, not dried, into a 50 mL polypropylene centrifuge tube. Sample mass should be within ±0.2 g of target mass for soil and sediment samples, and within ±0.02 g of target mass for biosolids samples. Sample aliquot should provide 5 g dry weight (Wi_{Dry} below) for soil and sediment or 0.5 g dry weight for biosolids. Because biosolid samples are analyzed with a 0.5 g sample mass, they must not be included in the same sample preparation batch as solid samples analyzed with 5 g sample masses. Any solid sample received containing <50% solids (>50% moisture; >10 g target mass for 5 g dry weight) should be re-logged and prepared as a biosolid, using a target dry weight of 0.5 g. Any solid or biosolid sample received containing <5% solids (>95% moisture; >10 g target mass for 0.5 g dry weight) should be re-logged and prepared as a leachate sample, using no more than 100 mL of sample for extraction.

$$Solid\ Sample\ Target\ Mass\ (g) = \frac{Wi_{Dry}\ (g)}{\%\ solids\ (decimal)}$$

4) Prepare batch QC samples using 5 g of reference solid wetted with 2.5 g of reagent water for the method blank and two LCSs (use 0.5 g of reference solid with 0.25 g of reagent water for biosolid extraction batches). The addition of reagent water to the sand provides a matrix closer in composition to real-world samples. Spike one LCS sample with native standard solution at 2x the LOQ (80 µL of STK-10X mix). This aliquot (LLLCS) will serve to verify the LOQ. Spike the other LCS sample at a concentration near the mid-level calibration point (40 µL of EPA-1633STK). This aliquot will serve as the traditional LCS.

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Note: If matrix spikes are required for a specific project, spike the field sample bottles designated for use as MS/MSD samples in the same manner as the LCS.

5) Spike 20 µL of EIS solution (Section 8.2.3) directly into each centrifuge tube containing the aliquoted field and QC samples. Vortex or shake the sample to disperse the standard and allow to equilibrate for approximately 30 minutes.

6) Add 15 mL of 0.3% methanolic ammonium hydroxide to each centrifuge tube. Vortex to disperse, then shake for 30 minutes on a variable speed mixing table. Centrifuge at 3000 rpm (~2000 RCF) for 10 minutes and transfer the supernatant to a clean, labeled 50 mL polypropylene centrifuge tube.

7) Add 15 mL of 0.3% methanolic ammonium hydroxide to the remaining solid sample in each centrifuge tube. Vortex to disperse, then shake for 30 minutes on a variable speed mixing table. Centrifuge at 3000 rpm (~2000 RCF) for 10 minutes and decant the supernatant from the second extraction into the centrifuge tube with the supernatant from the first extraction.

8) Dilute to approximately 40 mL with reagent water. A separate centrifuge tube marked at the 40 mL level may be kept for a visual reference to get the approximate volume. Samples containing excess water may yield extracts that are greater than 40 mL in volume; therefore, do not add water to these.

9) Check that the pH is 6.5 ± 0.5. If necessary, adjust pH with 50% formic acid or ammonium hydroxide (or with 5% formic acid and 3% aqueous ammonium hydroxide). The extract is now ready for solid phase extraction (SPE) and cleanup.

9.3.7 Solid Phase Extraction of Solid Samples

1) Pack clean silanized glass wool to half the height of a WAX SPE cartridge barrel; repeat for the total number of samples in the batch.

2) For each sample and QC aliquot, set up the vacuum manifold with one WAX SPE cartridge plus a reservoir adaptor and reservoir for each cartridge; label each reservoir with the associated sample ID. If using plastic transfer lines instead of reservoirs, ensure the connecting caps are snug in each cartridge and the transfer lines are placed within the appropriate sample; label each cartridge tube with the associated sample ID.

3) Pre-condition the cartridges by washing them with 15 mL of 1% methanolic ammonium hydroxide followed by 5 mL of 0.3M formic acid. Perform each rinse separately. Do not allow the WAX SPE to go dry. Discard the wash solvents.

4) Pour the sample into the reservoir (do not use a pipette), taking care to avoid splashing while loading; or, if using transfer lines, begin opening the stopcocks on the vacuum manifold. Adjust the vacuum/stopcocks to pass each sample through the cartridge at approximately 5-10 mL/min; discard the eluate. Retain the empty sample bottle for later rinsing (Section 9.3.8).

5) Rinse the walls of the reservoir with 5 mL reagent water twice, followed by 5 mL of 1:1 0.1M formic acid/methanol and pass those rinses through the cartridge using

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vacuum. If using sample transfer lines for loading, add the 3 rinses to the bottle and load through the transfer lines to the cartridge, one reagent at a time. Dry the cartridge by pulling air through for approximately 5 minutes. Discard the rinse solution.

6) After the WAX cartridges are sufficiently dry, rinse the GCB cartridges with 5 mL of 1% methanolic ammonium hydroxide; discard the rinsate. Do not allow the GCB to go completely dry.

7) Connect the outlet of the WAX cartridges to the inlet of the GCB cartridges to stack them on the manifold and allow for cleanup of the extract as part of elution. Ensure that the WAX cartridges are returned to their original locations on the manifold to avoid cross contamination. Continue to the elution steps in the next section.

9.3.8 Elution of Solid Sample Extracts

1) Place a clean collection tube in the manifold rack for each sample and QC aliquot, ensuring the extract delivery needles are not touching the walls of the tubes. Resume vacuum and ensure a proper seal is achieved. DO NOT add NIS to these collection tubes.

2) Rinse the inside of each sample's centrifuge tube using 5 mL of 1% methanolic ammonium hydroxide. Then pour the rinse from each bottle (or use a plastic transfer pipette) to transfer the rinse to the associated SPE reservoir, washing the walls of the reservoir. If using sample transfer lines, simply transfer this rinse from each sample container to its associated cartridge using vacuum. Allow the elution solvent to soak the SPE sorbent for 2 minutes, then use vacuum to pull the elution solvent through the cartridge and into the collection tubes in a slow, dropwise manner.

3) Add 25 µL of concentrated acetic acid and 20 µL of NIS mix to each sample extract in its collection tube and vortex to mix. Transfer a portion of each extract into an autosampler vial for LC-MS/MS analysis. Cap the collection tubes containing the remaining extracts and store at 0 - 6 °C.

9.3.9 Tissue Sample Processing

Prior to processing tissue samples, the laboratory must determine the exact tissue to be analyzed. Common requests for analysis of fish tissue include whole fish with the skin on, whole fish with the skin removed, edible fish fillets (filleted in the field or by the laboratory), specific organs, and other portions. Once the appropriate tissue has been determined, the samples must be prepared and homogenized.

Pace utilizes the Green Bay location for tissue homogenization, following ENV-SOP-GBAY-0129 (Sample Homogenization, Compositing, and Subsampling; specifically, Section 9.4).

1) For each sample, weigh a 2 g aliquot of homogenized tissue into a 50 mL polypropylene centrifuge tube. Reseal the container with the remaining homogenized portion of the sample and return it to frozen storage in case it needs to be used for reanalysis. The default sample weight for tissue is 2 g wet weight; however, a 1 g sample may be used. Higher sample weights are not recommended for this method.

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2) Prepare the batch QC samples using 2 g of reference tissue matrix for the method blank and two LCSs. Spike one LCS sample with native standard solutions at 2x the LOQ (80 µL of STK-10X mix). This aliquot (LLLCS) will serve to verify the LOQ. Spike the other LCS sample at a concentration near the mid-level calibration point (40 µL of EPA1633-STK). This aliquot will serve as the traditional LCS.

Note: If matrix spikes are required for a specific project, spike the field sample bottles designated for use as MS/MSD samples in the same manner as the LCS.

3) Spike 20 µL of EIS solution (Section 8.2.3) directly into each field and QC sample. Vortex and allow to equilibrate for approximately 30 minutes.

4) Add 15 mL of 0.05M KOH in methanol to each sample. Vortex to disperse the tissue then place tubes on a variable speed mixing table to shake for 1 hour. Centrifuge at 3000 rpm (~2000 RCF) for 10 minutes and collect the supernatant in a 125mL sample bottle.

5) Add 10 mL of acetonitrile to remaining tissue in the centrifuge tube, vortex to mix and disperse the tissue. Sonicate for 30 minutes. Centrifuge at 3000 rpm (~2000 RCF) for 10 minutes and collect the supernatant, adding it to the 125mL bottle containing the initial extract.

6) Dilute to approximately 75 mL with reagent water. A separate bottle marked at the 75 mL level may be used to get the approximate volume.

7) Check that the pH is 6.5 ± 0.5. If necessary, adjust pH with 50% formic acid or ammonium hydroxide (or with 5% formic acid and 3% aqueous ammonium hydroxide). The extract is now ready for solid phase extraction (SPE) and cleanup.

9.3.10 Solid Phase Extraction of Tissue Samples

1) Pack clean silanized glass wool to half the height of a WAX SPE cartridge barrel; repeat for the total number of samples in the batch.

2) For each sample and QC aliquot, set up the vacuum manifold with one WAX SPE cartridge plus a reservoir adaptor and reservoir for each cartridge; label each reservoir with the associated sample ID. If using plastic transfer lines instead of reservoirs, ensure the connecting caps are snug in each cartridge and the transfer lines are placed within the appropriate sample; label each cartridge tube with the associated sample ID.

3) Pre-condition the cartridges by washing them with 15 mL of 1% methanolic ammonium hydroxide followed by 5 mL of 0.3M formic acid. Perform each rinse separately. Do not allow the WAX SPE to go dry. Discard the wash solvents.

4) Pour the sample into the reservoir (do not use a pipette), taking care to avoid splashing while loading; or, if using transfer lines, begin opening the stopcocks on the vacuum manifold. Adjust the vacuum/stopcocks to pass each sample through the cartridge at approximately 5-10 mL/min; discard the eluate. Retain the empty sample bottle for later rinsing (Section 9.3.8).

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5) Rinse the walls of the reservoir with 5 mL reagent water twice, followed by 5 mL of 1:1 0.1M formic acid/methanol and pass those rinses through the cartridge using vacuum. If using sample transfer lines for loading, add the 3 rinses to the bottle and load through the transfer lines to the cartridge, one reagent at a time. Dry the cartridge by pulling air through for approximately 5 minutes. Discard the rinse solution.

6) After the WAX cartridges are sufficiently dry, rinse the GCB cartridges with 5 mL of 1% methanolic ammonium hydroxide; discard the rinsate. Do not allow the GCB to go completely dry.

7) Connect the outlet of the WAX cartridges to the inlet of the GCB cartridges to stack them on the manifold and allow for cleanup of the extract as part of elution. Ensure that the WAX cartridges are returned to their original locations on the manifold to avoid cross contamination. Continue to the elution steps in the next section.

9.3.11 Elution of Tissue Sample Extracts

1) Place a clean collection tube in the manifold rack for each sample and QC aliquot, ensuring the extract delivery needles are not touching the walls of the tubes. Resume vacuum and ensure a proper seal is achieved. DO NOT add NIS to these collection tubes.

2) Rinse the inside of each sample's centrifuge tube using 5 mL of 1% methanolic ammonium hydroxide. Then pour the rinse from each bottle (or use a plastic transfer pipette) to transfer the rinse to the associated SPE reservoir, washing the walls of the reservoir. If using sample transfer lines, simply transfer this rinse from each sample container to its associated cartridge using vacuum. Allow the elution solvent to soak the SPE sorbent for 2 minutes, then use vacuum to pull the elution solvent through the cartridge and into the collection tubes in a slow, dropwise manner.

3) Add 25 µL of concentrated acetic acid and 20 µL of NIS mix to each sample extract in its collection tube and vortex to mix. Transfer a portion of each extract into an autosampler vial for LC-MS/MS analysis. Cap the collection tubes containing the remaining extracts and store at 0 - 6 °C.

9.4 Analysis

9.4.1 Sequence Preparation

Analysis of sample extracts for PFAS by LC-MS/MS is performed running manufacturer's data acquisition software. The mass spectrometer is run with unit mass resolution in the multiple reaction monitoring (MRM) mode.

1) Perform mass calibration and mass calibration verification, establish the operating conditions, and perform an initial calibration prior to analyzing samples. Only after all performance criteria are met may blanks, MDLs, IDOC/LCS, and samples be analyzed.

2) Each day of analysis, the column must be thoroughly flushed with 100% Acetonitrile for at least 30 minutes to clear any accumulated impurities and interferences from the sample pathway and equilibrate the system. It is also good practice to open the purge valve(s) on the pumps for the first ~1 minute of flush time and/or use the "purge"

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function available as part of the pump functionality. Additionally, it is good practice to purge the autosampler injector flow path daily prior to analysis by using the "purge" function, if available. The column should then be equilibrated to the analysis starting conditions by flushing for approximately 15 mins with 50:50 Mobile Phase A: Mobile Phase B and finally approximately 15 mins with 80:20 Mobile Phase A: Mobile Phase B (acquisition starting conditions). Ensure that system pressure is stable.

3) Following any initial priming injections on days when a calibration is not needed, an ISC and an instrument blank will be analyzed to demonstrate system suitability and the absence of system contamination prior to sample analysis.

4) After acceptable ISC and IBLK results are confirmed, load and submit extracted samples for analysis, typically starting with batch QC with field samples following. A CCV and CCB must be analyzed after every 10 (or fewer) field samples.

9.4.2 Routine Analytical Sequence

After a successful initial calibration has been completed, samples may be analyzed; an example analytical sequence is provided below. The volume injected for samples and QCs must be identical to the volume used for calibration. Standards and sample extracts must be brought to room temperature and vortexed prior to aliquoting into an instrument vial to ensure homogeneity of the extract.

- ISC
- CCV
- Instrument Blank
- Method Blank
- LLLCS
- LCS
- Samples (10 or fewer)
- CCV
- CCB
- Samples (10 or fewer)
- CCV

If the results are acceptable, the closing CCV analysis may be used as the opening solution for the next analytical sequence.

If the response exceeds the calibration range for any sample, extracts are diluted as per Section 9.4.3 to bring all target responses within the calibration range.

Note: If the analytes that exceed the calibration range in the original analysis are known to not be of concern for the specific project (e.g., are not listed in a discharge permit), then the laboratory may consult with the client regarding the possibility of reporting that sample from the undiluted analysis.

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9.4.3 Sample Dilutions

If the measured concentration for any compound exceeds the calibration range of the system, dilute an aliquot of the sample extract with the IBLK mix solution by a factor no greater than 10x, refortify the NIS compounds to initial concentration, and analyze the diluted extract. If the responses for each applicable EIS in the diluted extract meet the S/N and retention time requirements in Section 10.1.1, and the EIS recoveries from the analysis of the diluted extract, corrected for the dilution, are within the limits presented in Table 10, 11 or 12 (according to sample matrix), then the compounds associated with those EISs may be quantified. The EIS recoveries, compound concentrations, detection limits, and LOQs are adjusted to account for the dilution.

If the EIS responses in the diluted extract do not meet the S/N and retention time requirements listed in Section 10.1.1, then the compound cannot be measured reliably in the diluted extract. In such cases, subsample a smaller aliquot of any affected aqueous sample and dilute it to 500 mL with reagent water and re-extract the sample. For solid sample matrices, prepare a smaller aliquot of soil, biosolid, sediment, or tissue and re-extract the sample. The reduced sample volume (or mass) chosen for the re-extraction should reflect the dilution applied to the original extract (i.e., if the original aqueous sample extract was analyzed at a 10X dilution, 50 mL should be subsampled for the re-extraction). See Section 9.3.1 for more guidance. The reported compound concentrations, detection limits, and LOQs are adjusted to account for the reduced sample volume (or mass) that is extracted.

If the recovery of any isotopically labeled compound is outside of the acceptance limits (Appendix B) in the original, undiluted analysis, a diluted aqueous sample or smaller aliquot (for solids and tissue) should be prepared and analyzed.

10.0 DATA ANALYSIS & CALCULATIONS

10.1 Data Analysis

10.1.1 Qualitative Identification

A native, EIS, or NIS compound is positively identified in a standard, blank, sample, or QC sample when all criteria in Sections 10.1.1.1 through 10.1.1.3 are met.

10.1.1.1 Signal-to-Noise Ratio (S/N)

Peak responses of the quantitation and confirmation ions must be at least three times the background noise level (S/N 3:1). The quantitation ion must have a S/N ≥ 10:1 if there is no confirmation ion. If the S/N ratio is not met in a standard or QC sample due to high background noise, the laboratory must correct the issue (e.g., perform instrument troubleshooting). If the S/N ratio is not met in a blank or sample, then the analyte is to be considered a non-detect.

10.1.1.2 RT Criteria

Target analyte, EIS analyte, and NIS analyte RTs must fall within 0.4 minutes of the predicted retention times from the midpoint standard of the ICAL or initial daily CCV, whichever was used to establish the RT window position for the

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analytical batch. The retention time window used must be of sufficient width to detect earlier-eluting branched isomers. For all method analytes with exact corresponding isotopically labeled analogs, method analytes must elute within 0.1 minutes of the associated EIS.

10.1.1.3 Ion Ratio Criteria

For any reported compound detection, the ratio of the total (branched and linear isomer) quantification ion response to the total (branched and linear isomer) confirmation ion response – referred to as the Ion Ratio – must fall within ± 50% of the ratio observed in the mid-point ICAL standard. The ion ratio requirement does not apply for PFBA, PFPeA, NMeFOSE, NEtFOSE, PFMPA, and PFMBA because suitable secondary transitions are unavailable (not detectable or inadequate S/N).

10.1.2 Manual Integration

Manual integration is sometimes necessary to correct inaccurate automated integrations but must never be used to meet QC criteria or to substitute for proper instrument maintenance and/or method set-up. To assure that all manual integrations are justified and proper all manual integrations must be performed, documented, reviewed, and approved in accordance with corporate SOP ENV-SOP-CORQ-0006, *Manual Integration*. Refer to this SOP for guidance on manual integration techniques and required procedures.

10.1.2.1 Branched Isomer Integration

The response of all isomers in the quantitative standards should be used to define integration parameters and ion ratios. In samples, the total integrated response should include the branched isomer peaks that have been identified in the quantitative standard, if present. For compounds with identified branched and linear isomer peaks, the reported concentration is the sum of all isomers. If standards (either quantitative or qualitative) containing a mix of isomers are not available for purchase for a particular compound, only the linear isomer can be identified and quantitated in samples.

10.1.2.2 Qualification

If the field sample result does not meet all criteria stated in Section 10.1.1, and all sample preparation avenues (e.g., extract cleanup, sample dilution, etc.) have been exhausted, the result may only be reported with a data qualifier alerting the data user that the result could not be confirmed because it did not meet the method-required criteria and therefore should be considered an estimated value. If the criteria listed above are not met for the standards, the laboratory must stop analysis of samples and correct the issue.

10.2 Calculations

Refer to laboratory SOP (ENV-SOP-WEST-0124, Common Laboratory Calculations), or however named, for equations used to perform common calculations.

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10.2.1 ICAL Relative Response (RR) and Response Factor (RF)

The response ratio (RR) for each native compound calibrated by isotope dilution is calculated according to the equation below, separately for each of the calibration standards, using the areas of the quantification ions shown in Table 4. RR is used for the 24 compounds measured by true isotope dilution quantification.

$$RR = \frac{Area_t M_{EIS}}{Area_{EIS} M_t}$$

Where:

$Area_t$ = Measured area of the quantitation ion for the target analyte.

$Area_{EIS}$ = Measured area of the quantitation ion for the corresponding labeled PFAS used as the EIS in the calibration standards.

M_{EIS} = Concentration of the isotopically labeled PFAS uses as the EIS in the calibration standards (ng/L)

M_t = Concentration of the target analyte in the calibration standard (ng/L)

Similarly, the response factor (RF) for each native compound calibrated by extracted internal standard is calculated according to the equation below. RF is used for the 16 compounds measured by extracted internal standard quantification.

$$RF = \frac{Area_t M_{EIS}}{Area_{EIS} M_t}$$

Where:

$Area_t$ = Measured area of the quantitation ion for the target analyte.

$Area_{EIS}$ = Measured area of the quantitation ion for the corresponding labeled PFAS used as the EIS in the calibration standards.

M_{EIS} = Concentration of the isotopically labeled PFAS uses as the EIS in the calibration standards (ng/L)

M_t = Concentration of the target analyte in the calibration standard (ng/L)

A response factor (RF_S) is calculated for each EIS compound in the calibration standard using the equation below. RF_S is used for the 24 isotopically labeled compounds measured by non-extracted internal standard quantification.

$$RF_S = \frac{Area_{EIS} M_{NIS}}{Area_{NIS} M_{EIS}}$$

Where:

$Area_{EIS}$ = Measured area of the quantitation ion for the EIS compound added to the sample before extraction.

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$Area_{NIS}$ = Measured area of the quantitation ion for the NIS compound in the calibration standard.

M_{NIS} = Concentration of the NIS compound in the calibration standard (ng/L).

M_{EIS} = Concentration of the EIS compound in the calibration standard (ng/L).

10.2.2 Target Analyte Concentration

Concentrations of the target analytes are determined with respect to the extracted internal standard (EIS) which is added to the sample prior to extraction (see Table 4). Other equations may be used if the laboratory demonstrates that those equations produce the same numerical result as produced by the equation below.

$$\boldsymbol{Concentration\ (ng/Lor ng/g) = \frac{Area_N M_{EIS}}{Area_{EIS}(\overline{RR}\ or\ \overline{RF})}\ x\ DF\ x \frac{Vf}{Vi}}$$

Where:

$Area_N$ = The measured area of the quantitation ion for the native (unlabeled) PFAS.

$Area_{EIS}$ = The measured area of the quantitation ion for the EIS.

M_{EIS} = The expected concentration of the EIS in the extract (ng/L)

$\boldsymbol{\overline{RR}}$ = Average response ratio used to quantify target compounds by the isotope dilution method.

$\boldsymbol{\overline{RF}}$ = Average response ratio used to quantify target compounds by the extracted internal standard method.

DF = Dilution Factor. If no extract dilution was performed, then DF=1.

Vf = Final extract volume (L)

Vi = Initial sample volume (L) or weight (g)

10.2.3 EIS Concentration

The EIS compounds are quantitated with respect to an NIS, as shown in Table 4, using the response ratios or response factors from the most recent initial calibration. Other equations may be used if the laboratory demonstrates that those equations produce the same numerical result as produced by the equation below.

$$Concentration\ (ng/L\ or\ ng/g) = \frac{Area_{EIS} M_{NIS}}{Area_{NIS}\overline{RF_S}}\ x\ DF\ x \frac{Vf}{Vi}$$

Where:

$Area_{EIS}$ = The measured area of the quantitation ion for the EIS.

$Area_{NIS}$ = The measured area of the quantitation ion for the associated NIS.

M_{NIS} = The expected concentration of the NIS in the extract (ng/L)

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$\overline{RF_S}$ = Average response factor used to quantify the EIS compound by the non-extracted internal standard method.

DF = Dilution Factor. If no extract dilution was performed, then DF=1.

Vf = Final extract volume (L)

Vi = Initial sample volume (L) or weight (g)

10.2.4 Relative Error (%RE)

$$\%\ Relative\ Error = \left(\frac{x'i - xi}{xi}\right) x\ 100$$

Where:

xi = True value of the calibration standard

x'i = Measured concentration of the calibration standard

10.2.5 Percent Relative Standard Deviation

$$\%\ Relative\ Standard\ Deviation = \left(\frac{S}{\bar{\bar{x}}}\right) x\ 100$$

Where:

S = Standard Deviation

X = Mean

10.2.6 Standard Deviation

$$S = \left(\frac{\sum (x_i - \bar{x})^2}{(n-1)}\right)$$

Where:

S = standard deviation

n = size of the population

x_i = each value of the population

$\bar{x}$ = population mean

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10.2.7 Mean

$$\bar{x} = \frac{\left(\sum_{i=1}^{n} x_i\right)}{n}$$

Where:

$\bar{x}$ = population mean

x_i = each value of the population

n = number of values in the population

10.3 Reporting

All results for aqueous samples will be reported in ng/L. All results for solid samples will be reported in ng/g, on a dry-weight basis, and the percent solids for each sample will be reported separately. All results for tissue samples will be reported in ng/g, on a wet-weight basis. All QC data will be reported with the sample results. See Appendix A for specific reporting limits in all matrices.

Unless specified otherwise by a regulatory authority or in a discharge permit, results for analytes that meet the identification criteria are reported down to the concentration of the LOQ established by the laboratory.

Results for any analyte found in a sample or extract that has been diluted will be reported at the least dilute level for which the measured concentration is within the calibration range (e.g., above the LOQ for the analyte and below the highest calibration standard) and in which isotopically labeled compound recoveries are within their respective QC acceptance criteria. This may require reporting results for some analytes from different analyses.

Recoveries of all associated EIS compounds will be reported for all field samples and QC Quality Control & Method Performance

10.4 Quality Control

Prepare and analyze the following QC samples with each batch of samples. Refer to Appendix B for acceptance criteria and required corrective action(s).

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QC Check	Acronym	Frequency
Method Blank	MB	1 per batch of 20 or fewer samples.
Laboratory Control Sample	LCS	1 per batch of 20 or fewer samples.
Low Level Laboratory Control Sample	LLLCS	1 per batch of 20 or fewer samples.
Matrix Spike	MS	1 pair per batch of 20 or fewer samples (if required/requested)
MS Duplicate	MSD	
Sample Duplicate	DUP	1 per AFFF or F3 sample.
Extracted Internal Standard	EIS	All CAL standards, batch QC and field samples.
Non-extracted Internal Standard	NIS	All CAL standards, batch QC and field samples.

The minimum quality control requirements of this method consist of an initial demonstration of laboratory capability, analysis of samples spiked with isotopically labeled compounds to evaluate and document data quality, and analysis of standards and blanks as tests of continued performance. Laboratory performance is compared to established performance criteria to determine if the results of analyses meet the performance characteristics of the method.

If the method is to be applied to a sample matrix other than water (e.g., soils, biosolids, tissue), the appropriate alternative reference matrix is substituted for the reagent water matrix in all performance tests.

The laboratory must make an initial demonstration of the ability to generate acceptable precision and recovery with this method. This demonstration is described in Section 11.3.2.

Analyses of method blanks (MBs) are required on an on-going basis to demonstrate the extent of background contamination in any reagents or equipment used to prepare and analyze field samples. The procedures and criteria for analyses of MBs are described in Section 11.1.1.

The laboratory must spike all samples with isotopically labeled compounds to monitor method performance. These evaluations are described in Sections 11.1.4 and 11.1.5. When results of these spikes indicate atypical method performance for samples, the samples are diluted to evaluate whether the performance issue is caused by the sample matrix. Procedures for dilution are given in Section 9.4.3.

The laboratory must, on an ongoing basis, demonstrate that the analytical system is in control through calibration verification (CCV) and the analysis of blanks and ongoing precision and recovery standards spiked at low (LLLCS) and mid-level concentrations (LCS). These procedures are given in Sections 9.2.4.5, 11.1.1 and 11.1.2.

10.4.1 Method Blank (MB)

A method blank is analyzed with each extraction batch to demonstrate freedom from contamination. The matrix for the method blank must be similar to the sample matrix for the batch (e.g., reagent water blank, solids matrix blank, or tissue blank [Section 7.3]).

Analyze the extract of the method blank aliquot before the analysis of the LCSs.

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If any PFAS is found in the MB 1) at a concentration greater than the LOQ for the analyte, 2) at a concentration greater than one-third the regulatory compliance limit, or 3) at a concentration greater than one-tenth the concentration in a sample in the extraction batch, whichever is greatest, analysis of samples must be halted, and the problem corrected. Other project-specific requirements may apply; therefore, the laboratory may adopt more stringent acceptance limits for the method blank at their discretion. If the contamination is traceable to the extraction batch, samples affected by the blank must be re-extracted and analyzed along with a new MB and LCS/LLLCS, provided enough sample volume is available and the samples are still within holding time. Reanalysis or re-extraction is not required if the samples are not impacted. Samples are not impacted when the MB detection is not present in the sample, or the sample concentration is ≥10x the concentration of the detection in the MB.

If the new blank also exhibits contamination and additional volume of the associated sample(s) is not available for re-extraction and analysis, the laboratory must document and report the failures (e.g., as qualifiers on results), unless the failures are not required to be reported as determined by the regulatory/control authority.

10.4.2 Laboratory Control Sample (LCS) / Low-Level LCS (LLLCS)

Analyze the extract of the LCS and LLLCS to ensure the analytical process is under control.

Compute the percent recovery of the native compounds by the appropriate quantification method depending on the compound. Compute the percent recovery of each isotopically labeled compound by the non-extracted internal standard quantitation method.

For the target analytes and EIS compounds, compare the recovery to the LCS and LLLCS limits given in Tables 7 through 10 (or 12). LCS, LLLCS, and EIS results must meet the acceptance criteria in these tables. If all compounds meet the acceptance criteria, system performance is acceptable, and analysis of blanks and aqueous samples may proceed. If, however, any individual concentration falls outside of the given range, the extraction/concentration processes are not being performed properly for that compound. In this event correct the problem, re-extract all affected samples, including any QC samples, and repeat the analysis. Samples are unaffected if the LCS or LLLCS recovery is above the acceptance criteria and the sample is ND for the failing compound.

10.4.3 Matrix Spike (MS)

Matrix spikes generally are not required for methods that employ isotope dilution quantification because deleterious effects of the matrix should be evident in the recoveries of the EIS compounds spiked into every sample. The analysis of matrix spike samples may help diagnose the potential impact of matrix interferences for specific target analytes or sample matrices. See Appendix E for MS/MSD, MS/DUP sample selection guidance.

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10.4.4 Extracted Internal Standard (EIS)

To assess method performance on the sample matrix, the laboratory must spike all samples with the EIS solution. Analyze each sample according to the procedures in this SOP. Compute the percent recovery of the EIS compound concentration using the NIS quantitation method and the equation in Section 10.2.3.

The recovery of each EIS compound in an aqueous sample must be within the limits in Table 10, which are the required QC acceptance limits for aqueous samples, including landfill leachates. The recovery of each EIS compound in soil, sediment, or biosolid samples must be within the limits in Table 11. The recovery of each EIS compound in tissue samples must be within the limits in Table 12. The limits presented in Tables 10, 11, and 12 are the required QC acceptance limits for these matrices derived from the multi-laboratory validation study. If the recovery of any EIS falls outside of these limits, method performance is unacceptable for that EIS in that sample. Additional cleanup procedures or limited dilution of the sample extract may be employed to attempt to bring the EIS recovery within the acceptance normal range.

If the recovery cannot be brought within the acceptance limits after extract dilution or additional cleanup procedures have been employed, then the laboratory must take a smaller aliquot of any affected aqueous sample, dilute it to 500 mL with reagent water and prepare and analyze the diluted sample, or must prepare and analyze a smaller aliquot of soil, sediment, biosolid, or tissue sample, per Section 9.4.3.

10.4.5 Non-extracted Internal Standard (NIS)

To assess method performance, the laboratory must spike all sample extracts with the NIS solution. Analyze each sample extract according to the procedures in this SOP. Percent recovery of the NIS compound is calculated by comparing the measured response in each analysis to the average response of the same compound measured in the ICAL.

Calculate the ratio of the NIS peak areas from the QC and field samples relative to the mean area of the corresponding NIS in the most recent initial calibration to check for possible bad injections of NIS solution or loss of instrument sensitivity.

The NIS areas in the field samples and QC samples must be within 50 to 200% of the mean area of the corresponding NIS in the most recent initial calibration (i.e., within a factor of 2). If the areas are low for all the field samples and QC samples in the batch, it suggests a loss of instrument sensitivity, while low areas in only some field or QC samples suggests a possible bad injection.

10.5 Instrument QC

Perform the following checks to verify instrument performance. Refer to Appendix B for acceptance criteria and required corrective action.

Instrument Check	Acronym	Frequency
Mass Calibration		Annually and on as-needed basis
Mass Calibration Verification		After mass calibration

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Instrument Check	Acronym	Frequency
Initial Calibration	ICAL	Prior to analysis, and on as-needed basis
Initial Calibration Verification	ICV	Following each ICAL
Instrument Blank	IBLK/ICB	Daily prior to analysis and after high standards
Instrument Sensitivity Check	ISC	Daily prior to analysis
Continuing Calibration Verification	CCV	At the beginning (ISC) and every 10 samples
Continuing Calibration Blank	CCB	After each bracketing CCV
RT Window	RTW	During ICAL and at the beginning of each analytical sequence

10.6 Method Performance

10.6.1 Method Validation

Refer to corporate SOP ENV-SOP-CORQ-0011, *Method Validation and Instrument Verification*, for general requirements and procedures for method validation.

Establish Detection Limit (DL) and limits of quantitation (LOQ) at initial method set up and verify the DL and LOQ on an on-going basis thereafter. Refer to corporate policy and/or SOP for DL and LOQ requirements and procedures.

10.6.2 Demonstration of Capability (DOC)

Refer to laboratory SOP ENV-SOP-WEST-0122 Demonstration of Capability, or however named, for information regarding the laboratory's procedures for initial and ongoing Demonstration of Capability.

Prior to unsupervised (independent) work on any client sample, analysts that prepare or analyze samples must have successful initial demonstration of capability (IDOC) and must successfully demonstrate on-going proficiency on an annual basis (see below for details). Successful means the initial or on-going DOC met criteria, documentation of the DOC is complete, and the DOC record is in the employee’s training file.

Each DOC requires the extraction and analysis of four aliquots of the reference matrix type to be tested, prepared in the same way as the mid-level LCS. At least one method blank, matching the matrix being analyzed, must be prepared with the DOC batch. If more than one MB was prepared and analyzed with the DOC batch, all blank results must be reported. All sample processing steps that are to be used for processing samples, including preparation and extraction, must be included in this test.

Using the results of the four analyses, compute the average percent recovery (%REC) and the relative standard deviation (RSD) of the concentration of each target compound. There are no mean or RSD criteria for EIS compounds in the DOC; %REC of each DOC sample should meet the criteria in Appendix B, Tables 10, 11, or 12, depending on the matrix.

For each target compound, compare RSD and %REC to the corresponding limits for initial precision and recovery in Appendix B, Tables 7, 8, or 9, depending on the matrix.

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If RSD and %REC for all compounds meet the acceptance criteria, system performance is acceptable, and analysis of blanks and samples may begin. If, however, any individual RSD exceeds the precision limit or any individual %REC falls outside the range for recovery, system performance is unacceptable for that compound. Correct the problem and repeat the test.

11.0 Data Review & Corrective Action

11.1 Data Review

The data review process of Pace® Analytical Services includes a series of checks performed at different stages of the process by different people to ensure that SOPs were followed, the analytical record is complete and properly documented, QC criteria were met, proper corrective actions were taken for QC failure and other nonconformance(s), and test results are reported with proper qualification, when necessary.

The review and checks that are performed by the employee performing the task is called primary review.

All data and test results are also peer reviewed. This process, known as secondary review, is performed to verify SOPs were followed, that calibration, instrument performance, and QC criteria were met and/or proper corrective actions were taken, qualitative ID and quantitative measurement is accurate, all manual integrations are justified, documented, and approved in accordance with the Pace® Analytical Services SOP for manual integration, calculations are correct, the analytical record is complete and traceable, and that results are properly qualified.

Lastly, a third-level review, called a completeness check, is performed by reporting or project management staff to verify the test report is complete.

Refer to laboratory SWI ENV-SWI-WEST-0087 SVOA Data Review Work Instructions for specific instructions and requirements for each step of the data review process.

11.2 Corrective Action

Corrective action is required when QC or sample results are not within acceptance criteria.

Refer to Appendix B for a complete summary of QC, acceptance criteria, and recommended corrective actions for QC associated with this test method.

If corrective action is not taken or was not successful, the decision/outcome must be documented in the analytical record. The primary analyst has primary responsibility for taking corrective action when QA/QC criteria are not met. Secondary data reviewers must verify that appropriate action was taken and/or that results reported with QC failure are properly qualified.

Corrective action is also required when carryover is suspected and when results are over range. Samples analyzed after a high concentration sample must be checked for carryover and reanalyzed if carryover is suspected. Carryover is usually indicated by low concentration detects of the analyte in successive samples analyzed after the high concentration sample.

Sample results at concentrations above the upper limit of quantitation must be diluted and reanalyzed. The result in the diluted samples should be within the working concentration range

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of the instrument calibration. If dilution is not performed, any result reported above the upper range is considered a qualitative measurement and must be qualified as an estimated value.

12.0 POLLUTION PREVENTION & WASTE MANAGEMENT

Refer to laboratory guide ENV-GUI-WEST-0020 Hazardous Waste Management and Disposal, or however named, for waste handling and management practices pertaining to the waste streams created at this facility.

Pace® proactively seeks ways to minimize waste generated during work processes. Some examples of pollution prevention include but are not limited to reduced solvent extraction, solvent capture, use of reusable cycletainers for solvent management, and real-time purchasing.

The EPA requires that laboratory waste management practices comply with all applicable federal and state laws and regulations. Excess reagents, samples, and method process wastes are characterized and disposed of in an acceptable manner in accordance with the Pace® Chemical Hygiene Plan / Safety Manual. Refer to this manual for these procedures.

13.0 MODIFICATIONS

The procedures in this SOP have been modified from the reference test method as follows:

Modification	Section of Reference Method Modified	Justification for Modification	Validation of Modification
Updated EIS quantitation matching for select compounds (PFMPA, 7:3FTCA, ADONA, 9Cl-PF3ONS, 11Cl-PF3OUdS)	Section 20, Table 10	Improved performance, more appropriate correlation	MDL, IDOC, PT
Updated product ion used for measurement of 13C4-PFOA from m/z 172 to m/z 372	Section 20, Table 10	Match ion transition used for EIS 13C8-PFOA and native PFOA	MDL, IDOC, PT
Increased SPE sorbent bed to 250mg, tube size to 20mL	Section 6.7.1	Wider cartridge improves sample loading, reduces chances of clogs	MDL, IDOC, PT
Increased allowable sample loading rate to 5-10 mL/min	Section 12.1.4	Reduced Sample processing time	MDL, IDOC, PT
Omit TSS for aqueous samples	Section 11.1 (11.1.1.5), 11.2.4	Reduced sample processing time	MDL, IDOC, PT
Solid matrix extraction: reduced liquid-solid shake/decant steps to 2; omitted concentration step	Section 11.3 (11.3.4, 11.3.6, 11.3.9)	Improved performance & reduced sample processing time	MDL, IDOC, PT
GCB cartridges: eliminated dGCB + syringe filtration	Section 11.3.7, 11.4.7, 12.1, 12.2.3, 12.2.4, 12.3.3, 12.4.3	Improved performance, reduced sample processing time, & ease of use	MDL, IDOC, PT

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Modification	Section of Reference Method Modified	Justification for Modification	Validation of Modification
Tissue matrix extraction: reduced liquid-solid shake/decant steps to 2; reduced shake time; omitted concentration step	Section 11.4.4, 11.4.6, 11.4.8	Improved performance & reduced sample processing time	MDL, IDOC, PT
Clearly defined the characteristics used to distinguish Aqueous vs. Biosolid vs. Solid matrices	n/a	Increased clarity in process decision making, improved first-run performance	MDL, IDOC, PT

When applicable, comparability and/or equivalency studies necessary to validate the modification as required per corporate SOP ENV-SOP-CORQ-0011, *Method Validation and Instrument Verification*, are retained by local quality personnel for historical reference.

14.0 RESPONSIBILITIES

- PAS employees that perform any part this procedure in their work activities must have a signed Read and Acknowledgement Statement (R&A) in their training file for the version(s) of the SOP that were in effect during the time the employee performed the activity.
- PAS supervisors and managers, however named, are responsible for training employees on the procedures in this SOP, implementing the SOP in the work area, and monitoring on-going adherence to the SOP in the work area(s) they oversee.
- PAS employees are responsible for following the procedures in this SOP. Unauthorized deviations or departures from this SOP are not allowed except with documented approval from the local QM and only when those deviations do not violate the Pace® Code of Ethics or Professional Conduct (COR-POL-0004) or associated policy and procedure(s). Hand-edits or manual changes to the SOP are not permitted. If a change is desired or necessary, Pace® employees must follow the procedures for document revision specified in corporate SOPs ENV-SOP-CORQ-0015, *Document Management* and ENV-SOP-CORQ-0016, *SOP for Creation of SOP and SWI.*

15.0 ATTACHMENTS

- Appendix A: Routine Analyte Limits (DL, LOQ), Analytical Parameters, and Calibration
- Appendix B: QC Summary & Corrective Action; Table: Method Acceptance Criteria
- Appendix C: State/Program Specific Requirements
- Appendix D: Sample Pre-screening Instructions
- Appendix E: Aqueous Sample Subsampling Instructions
- Appendix F: MS/MSD, MS/DUP Selection Protocols
- Appendix G: Aqueous Sample Management Decision Guide
- Appendix H: Aqueous Sample Centrifugation Protocol

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- Appendix I: Separation and Analysis of Liquid-Solid Biphasic Matrices
- Appendix J: TCLP/SPLP by 1633
- Appendix K: Wipe Analysis by 1633
- Appendix L: Articles of Commerce Analysis via Cryomill Processing
- Appendix M: Procedure for Total Oxidizable Precursors (TOP)

16.0 REFERENCES

- ENV-POL-CORQ-0005, *Acceptable Calibration Practices*, current version.
- ENV-SOP-CORQ-0006, *Manual Integration*, current version.
- ENV-SOP-CORQ-0011, *Method Validation and Instrument Verification*, current version.
- ENV-SOP-CORQ-0015, *Document Management*, current version.
- ENV-SOP-CORQ-0016, *Standard Operating Procedures and Standard Work Instructions,* current version.
- COR-POL-0004, *Code of Ethics and Professional Conduct*, current version.
- COR-MAN-001, *Pace® Safety Manua*l, current version.
- ENV-MAN-WEST-0001, *Quality Manual*, current version.
- TNI Standard, “Volume 1 Management and Technical Requirements for Laboratories Performing Environmental Analysis”, current version.
- “Working with Carcinogens,” Department of Health, Education, & Welfare, Public Health Service, Centers for Disease Control, NIOSH, Publication 77-206, August 1977, NTIS PB-277256.
- “OSHA Safety and Health Standards, General Industry,” OSHA 2206, 29 CFR 1910.
- “Safety in Academic Chemistry Laboratories,” ACS Committee on Chemical Safety, 1979.
- “Standard Methods for the Examination of Water and Wastewater,” 18th edition and later revisions, American Public Health Association, 1015 15th St, NW, Washington, DC 20005, 1-35: Section 1090 (Safety), 1992.
- “Standard Practice for Sampling Water,” ASTM Annual Book of Standards, ASTM, 1916 Race Street, Philadelphia, PA 19103-1187, 1980.
- “Handbook of Analytical Quality Control in Water and Wastewater Laboratories,” USEPA EMSL, Cincinnati, OH 45268, EPA 600/4-79-019, April 1979.
- “Less is Better: Laboratory Chemical Management for Waste Reduction,” American Chemical Society, 1993. Available from the American Chemical Society's Department of Government Relations and Science Policy, 1155 16th Street NW, Washington, DC 20036.
- “Environmental Management Guide for Small Laboratories,” USEPA, Small Business Division, Washington DC, EPA 233-B-00-001, May 2000.

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- "The Waste Management Manual for Laboratory Personnel," American Chemical Society, 1990. Available from the American Chemical Society's Department of Government Relations and Science Policy, 1155 16th Street NW, Washington, DC 20036.
- SERDP. Single-Laboratory Validation Study of PFAS by Isotope Dilution LC-MS/MS. ER19-1409. January 26, 2022.
- Woudneh, Million B., Bharat Chandramouli, Coreen Hamilton, Richard Grace, 2019, "Effects of Sample Storage on the Quantitative Determination of 29 PFAS: Observation of Analyte Interconversions during Storage", Environmental Science and Technology 53(21): 12576-12585.
- EPA. Method 1633, Analysis of Per- and Polyfluoroalkyl Substances (PFAS) in Aqueous, Solid, Biosolids, and Tissue Samples by LC-MS/MS. January 2024.
- Standard Method for the Examination of Water and Wastewater, 23rd Edition, 2017 – Total, Fixed, and Volatile Solids in Solid and Semisolid Samples, Method 2540.

17.0 REVISION HISTORY

Revisions Made from Prior Version

Section	Description of Change
	N/A: new document

Document Succession: This version replaces the following document(s):

Document Number	Version	Document Title	Effective Date:
N/A	N/A	N/A	N/A

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Appendix A: Routine Analyte Limits (DL, LOQ), Analytical Parameters, and Calibration

DL and LOQ are always adjusted to account for actual amounts used and for dilution. Values listed are as of effective date of this SOP. DL and LOQ are subject to change. Contact quality personnel for current information. See Table 4 below for more information regarding analyte detection and quantitation.

Table 1: Standard Analyte List – Aqueous and Landfill Leachate Matrices

Analyte Abbreviation	CAS #	Aqueous (ng/L)		Leachate (ng/L)	
		DL	LOQ	DL	LOQ
PFBA	375-73-5	0.527	6.4	2.64	32
PFPeA	2706-91-4	0.359	3.2	1.79	16
PFHxA	355-46-4	0.245	1.6	1.22	8
PFHpA	375-92-8	0.238	1.6	1.19	8
PFOA	1763-23-1	0.263	1.6	1.31	8
PFNA	68259-12-1	0.266	1.6	1.33	8
PFDA	335-77-3	0.210	1.6	1.05	8
PFUnA	79780-39-5	0.178	1.6	0.892	8
PFDoA	375-73-5	0.214	1.6	1.07	8
PFTrDA	2706-91-4	0.187	1.6	0.934	8
PFTeDA	355-46-4	0.160	1.6	0.801	8
PFBS	375-73-5	0.402	1.6	2.01	8
PFPeS	2706-91-4	0.206	1.6	1.03	8
PFHxS	355-46-4	0.133	1.6	0.665	8
PFHpS	375-92-8	0.201	1.6	1.00	8
PFOS	1763-23-1	0.264	1.6	1.32	8
PFNS	68259-12-1	0.203	1.6	1.02	8
PFDS	335-77-3	0.140	1.6	0.699	8
PFDoS	79780-39-5	0.242	1.6	1.21	8
4:2 FTS	757124-72-4	0.910	6.4	4.55	32
6:2 FTS	27619-97-2	4.82	6.4	24.1	32
8:2 FTS	39108-34-4	1.22	6.4	6.11	32
PFOSA	754-91-6	0.097	1.6	.484	8
NMeFOSA	31506-32-8	0.226	1.6	1.13	8
NEtFOSA	4151-50-2	0.351	1.6	1.76	8

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Analyte Abbreviation	CAS #	Aqueous (ng/L)		Leachate (ng/L)	
		DL	LOQ	DL	LOQ
NMeFOSAA	2355-31-9	0.483	1.6	2.41	8
NEtFOSAA	2991-50-6	0.478	1.6	2.39	8
NMeFOSE	24448-09-7	1.30	16	6.52	80
NEtFOSE	1691-99-2	1.10	16	5.50	80
HFPO-DA	13252-13-6	1.60	6.4	8.02	32
ADONA	919005-14-4	0.376	6.4	1.88	32
PFMPA	377-73-1	0.244	3.2	1.22	16
PFMBA	863090-89-5	0.360	3.2	1.80	16
NFDHA	151772-58-6	0.541	3.2	2.71	16
9Cl-PF3ONS	756426-58-1	0.442	6.4	2.21	32
11Cl-PF3OUdS	763051-92-9	0.447	6.4	2.23	32
PFEESA	113507-82-7	0.330	3.2	1.65	16
3:3 FTCA	356-02-5	0.535	8	2.68	40
5:3 FTCA	914637-49-3	4.26	40	21.3	200
7:3 FTCA	812-70-4	3.18	40	15.9	200

Table 2: Standard Analyte List – Solid and Biosolid Matrices

Analyte Abbreviation	CAS #	Solid (ng/g)		Biosolid (ng/g)	
		DL	LOQ	DL	LOQ
PFBA	375-73-5	0.028	0.8	0.28	8
PFPeA	2706-91-4	0.038	0.4	0.38	4
PFHxA	355-46-4	0.016	0.2	0.16	2
PFHpA	375-92-8	0.012	0.2	0.12	2
PFOA	1763-23-1	0.026	0.2	0.26	2
PFNA	68259-12-1	0.012	0.2	0.12	2
PFDA	335-77-3	0.035	0.2	0.35	2
PFUnA	79780-39-5	0.013	0.2	0.13	2
PFDoA	375-73-5	0.021	0.2	0.21	2
PFTrDA	2706-91-4	0.016	0.2	0.16	2
PFTeDA	355-46-4	0.024	0.2	0.24	2
PFBS	375-73-5	0.020	0.2	0.20	2

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Analyte Abbreviation	CAS #	Solid (ng/g)		Biosolid (ng/g)	
		DL	LOQ	DL	LOQ
PFPeS	2706-91-4	0.027	0.2	0.27	2
PFHxS	355-46-4	0.020	0.2	0.20	2
PFHpS	375-92-8	0.045	0.2	0.45	2
PFOS	1763-23-1	0.031	0.2	0.31	2
PFNS	68259-12-1	0.029	0.2	0.29	2
PFDS	335-77-3	0.015	0.2	0.15	2
PFDoS	79780-39-5	0.022	0.2	0.22	2
4:2 FTS	757124-72-4	0.078	0.8	0.78	8
6:2 FTS	27619-97-2	0.148	0.8	1.48	8
8:2 FTS	39108-34-4	0.259	0.8	2.59	8
PFOSA	754-91-6	0.011	0.2	0.11	2
NMeFOSA	31506-32-8	0.026	0.2	0.26	2
NEtFOSA	4151-50-2	0.022	0.2	0.22	2
NMeFOSAA	2355-31-9	0.086	0.2	0.86	2
NEtFOSAA	2991-50-6	0.044	0.2	0.44	2
NMeFOSE	24448-09-7	0.121	2.0	1.21	20
NEtFOSE	1691-99-2	0.081	2.0	0.81	20
HFPO-DA	13252-13-6	0.039	0.8	0.39	8
ADONA	919005-14-4	0.030	0.8	0.30	8
PFMPA	377-73-1	0.017	0.4	0.17	4
PFMBA	863090-89-5	0.024	0.4	0.24	4
NFDHA	151772-58-6	0.083	0.4	0.83	4
9Cl-PF3ONS	756426-58-1	0.029	0.8	0.29	8
11Cl-PF3OUdS	763051-92-9	0.040	0.8	0.40	8
PFEESA	113507-82-7	0.046	0.4	0.46	4
3:3 FTCA	356-02-5	0.092	1.0	0.92	10
5:3 FTCA	914637-49-3	0.236	5.0	2.36	50
7:3 FTCA	812-70-4	0.365	5.0	3.65	50

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Table 3: Standard Analyte List – Tissue Matrices

Analyte Abbreviation	CAS #	DL (ng/g)	LOQ (ng/g)
PFBA	375-73-5	0.215	2.0
PFPeA	2706-91-4	0.088	1.0
PFHxA	355-46-4	0.044	0.5
PFHpA	375-92-8	0.062	0.5
PFOA	1763-23-1	0.070	0.5
PFNA	68259-12-1	0.099	0.5
PFDA	335-77-3	0.102	0.5
PFUnA	79780-39-5	0.093	0.5
PFDoA	375-73-5	0.052	0.5
PFTrDA	2706-91-4	0.067	0.5
PFTeDA	355-46-4	0.039	0.5
PFBS	375-73-5	0.044	0.5
PFPeS	2706-91-4	0.029	0.5
PFHxS	355-46-4	0.075	0.5
PFHpS	375-92-8	0.093	0.5
PFOS	1763-23-1	0.084	0.5
PFNS	68259-12-1	0.065	0.5
PFDS	335-77-3	0.056	0.5
PFDoS	79780-39-5	0.062	0.5
4:2 FTS	757124-72-4	0.222	2.0
6:2 FTS	27619-97-2	0.934	2.0
8:2 FTS	39108-34-4	0.249	2.0
PFOSA	754-91-6	0.051	0.5
NMeFOSA	31506-32-8	0.139	0.5
NEtFOSA	4151-50-2	0.115	0.5
NMeFOSAA	2355-31-9	0.089	0.5
NEtFOSAA	2991-50-6	0.106	0.5
NMeFOSE	24448-09-7	0.598	5.0
NEtFOSE	1691-99-2	0.410	5.0
HFPO-DA	13252-13-6	0.072	2.0

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Analyte Abbreviation	CAS #	DL (ng/g)	LOQ (ng/g)
ADONA	919005-14-4	0.139	2.0
PFMPA	377-73-1	0.078	1.0
PFMBA	863090-89-5	0.086	1.0
NFDHA	151772-58-6	0.113	1.0
9Cl-PF3ONS	756426-58-1	0.179	2.0
11Cl-PF3OUdS	763051-92-9	0.228	2.0
PFEESA	113507-82-7	0.069	1.0
3:3 FTCA	356-02-5	0.145	2.5
5:3 FTCA	914637-49-3	1.54	12.5
7:3 FTCA	812-70-4	1.26	12.5

Table 4: Identification and Quantification Information for Target Analytes, Extracted Internal Standards and Non-extracted Internal Standards.

Analyte Name	CAS #	Analyte Abbreviation	Parent Ion Mass	Quantification Ion Mass	Confirmation Ion Mass	Quantification Reference Compound
Perfluorobutanoic acid	375-73-5	PFBA	213	169	NA	13C4-PFBA
Perfluoropentanoic acid	2706-91-4	PFPeA	263	219	69	13C5-PFPeA
Perfluorohexanoic acid	355-46-4	PFHxA	313	269	119	13C5-PFHxA
Perfluoroheptanoic acid	375-92-8	PFHpA	363	319	169	13C4-PFHpA
Perfluorooctanoic acid	1763-23-1	PFOA	413	369	169	13C8-PFOA
Perfluorononanoic acid	68259-12-1	PFNA	463	419	219	13C9-PFNA
Perfluorodecanoic acid	335-77-3	PFDA	513	469	219	13C6-PFDA
Perfluoroundecanoic acid	79780-39-5	PFUnA	563	519	269	13C7-PFUnA
Perfluorododecanoic acid	375-73-5	PFDoA	613	569	319	13C2-PFDoA
Perfluorotridecanoic acid	2706-91-4	PFTrDA	663	619	169	13C2-PFDoA
Perfluorotetradecanoic acid	355-46-4	PFTeDA	713	669	169	13C2-PFTeDA
Perfluorobutanesulfonic acid	375-73-5	PFBS	299	80	99	13C3-PFBS
Perfluoropentansulfonic acid	2706-91-4	PFPeS	349	80	99	13C3-PFHxS
Perfluorohexanesulfonic acid	355-46-4	PFHxS	399	80	99	13C3-PFHxS

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Analyte Name	CAS #	Analyte Abbreviation	Parent Ion Mass	Quantification Ion Mass	Confirmation Ion Mass	Quantification Reference Compound
Perfluoroheptanesulfonic acid	375-92-8	PFHpS	449	80	99	13C8-PFOS
Perfluorooctanesulfonic acid	1763-23-1	PFOS	499	80	99	13C8-PFOS
Perfluorononanesulfonic acid	68259-12-1	PFNS	549	80	99	13C8-PFOS
Perfluorodecanesulfonic acid	335-77-3	PFDS	599	80	99	13C8-PFOS
Perfluorododecanesulfonic acid	79780-39-5	PFDoS	699	80	99	13C8-PFOS
1H,1H, 2H, 2H-Perfluorohexane sulfonic acid	757124-72-4	4:2 FTS	327	307	81	13C2-4:2FTS
1H,1H, 2H, 2H-Perfluorooctane sulfonic acid	27619-97-2	6:2 FTS	427	407	81	13C2-6:2FTS
1H,1H, 2H, 2H-Perfluorodecane sulfonic acid	39108-34-4	8:2 FTS	527	507	81	13C2-8:2FTS
Perfluorooctanesulfonamide	754-91-6	PFOSA	498	78	478	13C8-PFOSA
N-methyl perfluorooctanesulfonamide	31506-32-8	NMeFOSA	512	219	169	D3-NMeFOSA
N-ethyl perfluorooctanesulfonamide	4151-50-2	NEtFOSA	526	219	169	D5-NEtFOSA
N-methyl perfluorooctanesulfonamidoacetic acid	2355-31-9	NMeFOSAA	570	419	483	D3-NMeFOSAA
N-ethyl perfluorooctanesulfonamidoacetic acid	2991-50-6	NEtFOSAA	584	419	526	D5-NEtFOSAA
N-methyl perfluorooctanesulfonamidoethanol	24448-09-7	NMeFOSE	616	59	NA	D7-NMeFOSE
N-ethyl perfluorooctanesulfonamidoethanol	1691-99-2	NEtFOSE	630	59	NA	D9-NEtFOSE
Hexafluoropropylene oxide dimer acid (GenX)	13252-13-6	HFPO-DA	285	169	185	13C3-HFPODA
4,8-Dioxa-3H-perfluorononanoic acid	919005-14-4	ADONA	377	251	85	13C4-PFHpA
Perfluoro-3-methoxypropanoic acid	377-73-1	PFMPA	229	85	NA	13C4-PFBA
Perfluoro-4-methoxybutanoic acid	863090-89-5	PFMBA	279	85	NA	13C5-PFPeA
Nonafluoro-3,6-dioxaheptanoic acid	151772-58-6	NFDHA	295	201	85	13C5-PFHxA

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Analyte Name	CAS #	Analyte Abbreviation	Parent Ion Mass	Quantification Ion Mass	Confirmation Ion Mass	Quantification Reference Compound
9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid	756426-58-1	9Cl-PF3ONS	531	351	533→353	13C8-PFOS
11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	763051-92-9	11Cl-PF3OUdS	631	451	633→453	13C8-PFOS
Perfluoro(2-ethoxyethane)sulfonic acid	113507-82-7	PFEESA	315	135	83	13C5-PFHxA
3-Perfluoropropyl propanoic acid (FPrPA)	356-02-5	3:3FTCA	241	177	117	13C5-PFPeA
2H,2H,3H,3H-Perfluorooctanoic acid (FPePA)	914637-49-3	5:3FTCA	341	237	217	13C5-PFHxA
3-Perfluoroheptyl propanoic acid (FHpPA)	812-70-4	7:3FTCA	441	337	317	13C9-PFNA
Extracted Internal Standard Compounds (EIS)						
Perfluoro-n-[13C4] butanoic acid	NA	13C4-PFBA	217	172	NA	13C3-PFBA
Perfluoro-n-[13C5] pentanoic acid	NA	13C5-PFPeA	268	223	NA	13C2-PFHxA
Perfluoro-n-[1,2,3,4,6-13C5] hexanoic acid	NA	13C5-PFHxA	318	273	NA	13C2-PFHxA
Perfluoro-n-[1,2,3,4-13C4] heptanoic acid	NA	13C4-PFHpA	367	322	NA	13C2-PFHxA
Perfluoro-n-[13C8] octanoic acid	NA	13C8-PFOA	421	376	NA	13C4-PFOA
Perfluoro-n-[13C9] nonanoic acid	NA	13C9-PFNA	472	427	NA	13C5-PFNA
Perfluoro-n-[1,2,3,4,5,6-13C6] decanoic acid	NA	13C6-PFDA	519	474	NA	13C2-PFDA
Perfluoro-n-[1,2,3,4,5,6,7-13C7] undecanoic acid	NA	13C7-PFUnA	570	525	NA	13C2-PFDA
Perfluoro-n-[1,2-13C2] dodecanoic acid	NA	13C2-PFDoA	615	570	NA	13C2-PFDA
Perfluoro-n-[1,2-13C2] tetradecanoic acid	NA	13C2-PFTeDA	715	670	NA	13C2-PFDA
Perfluoro-1-[2,3,4-13C3] butanesulfonic acid	NA	13C3-PFBS	302	80	NA	18O2-PFHxS
Perfluoro-1-[1,2,3-13C3] hexanesulfonic acid	NA	13C3-PFHxS	402	80	NA	18O2-PFHxS

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Analyte Name	CAS #	Analyte Abbreviation	Parent Ion Mass	Quantification Ion Mass	Confirmation Ion Mass	Quantification Reference Compound
Perfluoro-1-[13C8] octanesulfonic acid	NA	13C8-PFOS	507	80	NA	13C4-PFOS
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2] hexanesulfonic acid	NA	13C2-4:2FTS	329	81	NA	18O2-PFHxS
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2] octanesulfonic acid	NA	13C2-6:2FTS	429	81	NA	18O2-PFHxS
1H,1H,2H,2H-Perfluoro-1-[1,2-13C2] decanesulfonic acid	NA	13C2-8:2FTS	529	81	NA	18O2-PFHxS
Perfluoro-1-[13C8] octanesulfonamide	NA	13C8-PFOSA	506	78	NA	13C4-PFOS
N-methyl-D3-perfluoro-1-octanesulfonamide	NA	D3-NMeFOSA	515	219	NA	13C4-PFOS
N-ethyl-D5-perfluoro-1-octanesulfonamide	NA	D5-NEtFOSA	531	219	NA	13C4-PFOS
N-methyl-D3-perfluoro-1-octanesulfonamidoacetic acid	NA	D3-NMeFOSAA	573	419	NA	13C4-PFOS
N-ethyl-D5-perfluoro-1-octanesulfonamidoacetic acid	NA	D5-NEtFOSAA	589	419	NA	13C4-PFOS
N-methyl-D7-perfluorooctanesulfonamidoethanol	NA	D7-NMeFOSE	623	59	NA	13C4-PFOS
N-ethyl-D9-perfluorooctanesulfonamidoethanol	NA	D9-NEtFOSE	639	59	NA	13C4-PFOS
Tetrafluoro-2-heptafluoropropoxy-13C3-propanoic acid	NA	13C3-HFPO-DA	287	169	NA	13C2-PFHxA
Non-extracted Internal Standard Compounds (NIS)						
Perfluoro-n-[2,3,4-13C3] butanoic acid	NA	13C3-PFBA	216	172	NA	NA
Perfluoro-n-[1,2-13C2]hexanoic acid	NA	13C2-PFHxA	315	270	NA	NA
Perfluoro-n-[1,2,3,4-13C4]octanoic acid	NA	13C4-PFOA	417	172	NA	NA
Perfluoro-n-[1,2,3,4,5-13C5] nonanoic acid	NA	13C5-PFNA	468	423	NA	NA

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Analyte Name	CAS #	Analyte Abbreviation	Parent Ion Mass	Quantification Ion Mass	Confirmation Ion Mass	Quantification Reference Compound
Perfluoro-n-[1,2-13C2]decanoic acid	NA	13C2-PFDA	515	470	NA	NA
Perfluoro-1-hexane[18O2]sulfonic acid	NA	18O2-PFHxS	403	84	NA	NA
Perfluoro-n-[1,2,3,4-13C4] octanesulfonic acid	NA	13C4-PFOS	503	80	NA	NA

Table 5: Calibration Standard Concentrations (ng/mL)

Compound	L1	L2 (ISC)	L3	L4	L5 (CCV)	L6	L7	L8	L9
Perfluoroalkyl carboxylic acids									
PFBA	0.4	0.8	2	10	20	50	100	200	250
PFPeA	0.2	0.4	1	5	10	25	50	100	125
PFHxA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
PFHpA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
PFOA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
PFNA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
PFDA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
PFUnA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
PFDoA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
PFTrDA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
PFTeDA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
Perfluoroalkyl sulfonic acids									
PFBS	0.089	0.178	0.444	2.22	4.44	11.1	22.2	44.4	55.5
PFPeS	0.094	0.188	0.470	2.35	4.70	11.8	23.5	47.0	58.8
PFHxS	0.091	0.182	0.456	2.28	4.56	11.4	22.8	45.6	57.0
PFHpS	0.095	0.190	0.476	2.38	4.76	11.9	23.8	47.6	59.5
PFOS	0.093	0.186	0.464	2.32	4.64	11.6	23.2	46.4	58.0
PFNS	0.096	0.192	0.480	2.40	4.80	12.0	24.0	48.0	60.0
PFDS	0.096	0.193	0.482	2.41	4.82	12.1	24.1	48.2	60.3
PFDoS	0.097	0.194	0.484	2.42	4.84	12.1	24.2	48.4	60.5
Fluorotelomer sulfonic acids									
4:2FTS	0.375	0.750	1.87	9.37	18.7	46.9	93.7	187	234
6:2FTS	0.380	0.761	1.90	9.51	19.0	47.6	95.1	190	238
8:2FTS	0.384	0.768	1.92	9.6	19.2	48	96	192	240
Perfluorooctane sulfonamides									

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Compound	L1	L2 (ISC)	L3	L4	L5 (CCV)	L6	L7	L8	L9
PFOSA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
NMeFOSA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
NEtFOSA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
Perfluorooctane sulfonamidoacetic acids									
NMeFOSAA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
NEtFOSAA	0.1	0.2	0.5	2.5	5	12.5	25	50	62.5
Perfluorooctane sulfonamide ethanols									
NMeFOSE	1	2	5	25	50	125	250	500	625
NEtFOSE	1	2	5	25	50	125	250	500	625
Per- and polyfluoroether carboxylic acids									
HFPO-DA	0.4	0.8	2	10	20	50	100	200	250
ADONA	0.378	0.756	1.89	9.45	18.9	47.25	94.5	189	236.25
PFMPA	0.2	0.4	1	5	10	25	50	100	125
PFMBA	0.2	0.4	1	5	10	25	50	100	125
NFDHA	0.2	0.4	1	5	10	25	50	100	125
Ether sulfonic acids									
9Cl-PF3ONS	0.373	0.746	1.87	9.33	18.7	46.7	93.3	187	233
11Cl-PF3OUdS	0.377	0.754	1.89	9.43	18.9	47.2	94.3	189	236
PFEESA	0.178	0.357	0.892	4.46	8.92	22.3	44.6	89.2	112
Fluorotelomer Carboxylic Acids									
3:3FTCA	0.5	1	2.5	12.5	25	62.5	125	250	312.5
5:3FTCA	2.5	5	12.5	62.5	125	312.5	625	1250	1560
7:3FTCA	2.5	5	12.5	62.5	125	312.5	625	1250	1560
Extracted Internal Standards (EIS)									
13C4-PFBA	10	10	10	10	10	10	10	10	10
13C5-PFPeA	5	5	5	5	5	5	5	5	5
13C5-PFHxA	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
13C4-PFHpA	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
13C8-PFOA	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
13C9-PFNA	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
13C6-PFDA	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
13C7-PFUnA	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
13C2-PFDoA	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
13C2-PFTeDA	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
13C3-PFBS	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33	2.33
13C3-PFHxS	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37
13C8-PFOS	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40
13C2-4:2FTS	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69	4.69

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Compound	L1	L2 (ISC)	L3	L4	L5 (CCV)	L6	L7	L8	L9
13C2-6:2FTS	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76	4.76
13C2-8:2FTS	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
13C8-PFOSA	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
D3-NMeFOSA	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
D5-NEtFOSA	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
D3-NMeFOSAA	5	5	5	5	5	5	5	5	5
D5-NEtFOSAA	5	5	5	5	5	5	5	5	5
D7-NMeFOSE	25	25	25	25	25	25	25	25	25
D9-NEtFOSE	25	25	25	25	25	25	25	25	25
13C3-HFPODA	10	10	10	10	10	10	10	10	10
Non-Extracted Internal Standards (NIS)									
13C3-PFBA	5	5	5	5	5	5	5	5	5
13C2-PFHxA	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
13C4-PFOA	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
13C5-PFNA	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
13C2-PFDA	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25	1.25
18O2-PFHxS	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37	2.37
13C4-PFOS	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40	2.40

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Appendix B: QC Summary & Corrective Action Table; Method Acceptance Criteria

Table 6: QC Summary & Corrective Action

QC Item	Frequency	Acceptance Criteria	Corrective Action	Qualification
Demonstration of Capability (DOC)	Initially, prior to analyzing field samples and annually thereafter.	See Method Acceptance Criteria for each matrix in the Tables below.	Identify and correct source of problem, repeat.	None. Do not proceed with analysis.
Mass Calibration	Annually and on as-needed basis.	Must meet manufacturer's acceptance criteria.	Identify and correct source of problem, repeat.	None. Do not proceed with analysis.
Mass Calibration Verification	After each Mass Calibration performed.	Must meet manufacturer's acceptance criteria.	Identify and correct source of problem, repeat Mass Calibration.	None. Do not proceed with analysis.
Initial Calibration (ICAL)	At instrument set up, after CCV failure and/or major maintenance.	Must meet one of the curve fit options presented in Section 9.2.4.	Identify and correct source of problem, repeat.	None. Do not proceed with analysis.
Initial Calibration Verification (ICV)	After Each ICAL.	All analytes must be within ± 30% of their true values. (%R)	Identify and correct source of problem, re-analyze. If repeat failure, repeat ICAL. Analysis may proceed if it can be demonstrated that the ICV exceedance has no impact on analytical measurements. For example, the ICV %R is high, CCV is within criteria, and the analyte is not detected in sample(s).	Qualify analytes with ICV out of criteria when results are unaffected; otherwise, correct the problem and repeat ICV.
Initial Calibration Blank (ICB)	After highest concentration ICAL standard.	Must meet criteria specified in Section 9.2.5: all detections ≤MDL concentration.	Identify and correct source of contamination or performance issue. Alternately, calibrate using a lower concentration standard for the highest point.	No samples shall be analyzed until ICB has met acceptance criteria.
RT Window Position	Once per ICAL and at the beginning of the analytical window.	Position is set using the mid-point of the ICAL on the day ICAL is performed; otherwise, opening CCV is used. RT Window is ± 60 secs from RT position.	NA	NA
Instrument Sensitivity Check (ISC)	Daily before sample analysis.	All native and isotopically labelled compounds within ± 30% recovery.	Identify and correct source of problem and reanalyze ISC. If problem persists, repeat ICAL.	No samples shall be analyzed until ISC has met acceptance

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QC Item	Frequency	Acceptance Criteria	Corrective Action	Qualification
				criteria. See Section 9.2.4.5 for exceptions.
Bile Salts Check	With each ICAL and daily with each CCV	Bile Salt peak detected >1 min outside RT window for PFOS.	Identify and correct source of problem, then reevaluate Bile Salts separation from PFOS.	No samples shall be analyzed until Bile Salts Check has met acceptance criteria.
Continuing Calibration Verification (CCV)	Daily before sample analysis, after every 10 samples, and at end of analytical sequence.	All native and isotopically labelled compounds within ±30% recovery.	See Section 9.2.4.5 for required corrective actions based on circumstance.	Qualify analytes with CCV out of criteria.
Instrument Blank (IBLK) / Continuing Calibration Blank (CCB)	Daily prior to analysis and after high standards, including CCV.	Must meet criteria specified in Section 9.2.5: all detections ≤MDL concentration.	Identify and correct source of contamination or performance issue. Reanalyze IBLK.	No samples shall be analyzed until IBLK has met acceptance criteria.
Extracted Internal Standards (EIS)	Every field sample, standard and QC sample.	See Method Acceptance Criteria for each matrix in the Tables below.	If batch QC is acceptable, reanalyze to confirm. If confirmed, re-extract and reanalyze samples. If reprep is within acceptance, report reprep data. If failure is confirmed by reprep, qualify as matrix impacted.	Qualify outages and explain in case narrative.
Non-extracted Internal Standards (NIS)	Every field sample, standard and QC sample.	NIS areas in all samples must be within 50 – 200% of the average area of the corresponding NIS in the ICAL.	Troubleshoot instrument performance. Reanalyze samples.	Qualify outages and explain in case narrative.
Method Blank (MB)	1 per batch of 20 or fewer samples.	Must meet criteria specified in Section 10.4.1: all detections ≤MDL concentration.	If IBLK is acceptable, reanalyze MB to confirm. If confirmed, re-extract and reanalyze associated impacted samples (if sufficient sample remains). If insufficient sample remains for reprep, narrate and report data associated with unacceptable MB. See Section 10.4.1 for more details.	Qualify outages and explain in case narrative.

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QC Item	Frequency	Acceptance Criteria	Corrective Action	Qualification
LCS/LLLCS	1 pair per batch of 20 or fewer samples.	See Method Acceptance Criteria for each matrix in the Tables below; must meet criteria specified in Section 10.4.2.	If most recent ISC/CCV is acceptable, reanalyze LCS to confirm. If low-failure results are confirmed, re-extract and reanalyze associated samples (if sufficient sample remains). If insufficient sample remains for reprep, narrate and report data associated with low-failure LCS. If high-failure results are confirmed and sample(s) is ND for failing compound, narrate and report sample data.	Qualify outages and explain in case narrative.
MS/MSD	1 pair per batch of 20 or fewer samples. (If requested)	RSD ≤30% between MS/MSD	If possible, reprep to confirm.	Qualify outages and explain in case narrative.
Laboratory Duplicate	1 per AFFF sample; 1 per prep batch for all other matrices (if requested).	RSD ≤30% between parent/DUP	If possible, reprep to confirm.	Qualify outages and explain in case narrative.

Table 7: DOC/LCS/LLLCS Acceptance Limits for Aqueous & Landfill Leachate Matrices

Target Analyte	DOC Mean Recovery (%)	DOC RSD (%)	LCS/LLLCS Recovery (%)
PFBA	70-135	21	70-140
PFPeA	70-135	23	65-135
PFHxA	70-135	24	70-145
PFHpA	70-135	28	70-150
PFOA	65-155	27	70-150
PFNA	70-140	28	70-150
PFDA	65-140	26	70-140
PFUnA	70-135	29	70-145
PFDoA	70-130	21	70-140
PFTrDA	60-145	29	65-140
PFTeDA	70-145	27	60-140
PFBS	70-140	23	60-145
PFPeS	70-135	25	65-140
PFHxS	70-135	27	65-145
PFHpS	70-140	30	70-150
PFOS	70-140	29	55-150
PFNS	70-135	29	65-145
PFDS	70-135	30	60-145

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Target Analyte	DOC Mean Recovery (%)	DOC RSD (%)	LCS/LLLCS Recovery (%)
PFDoS	45-135	35	50-145
4:2FTS	70-135	27	70-145
6:2FTS	70-135	32	65-155
8:2FTS	70-140	33	60-150
PFOSA	70-135	22	70-145
NMeFOSA	70-135	30	60-150
NEtFOSA	70-130	26	65-145
NMeFOSAA	65-140	32	50-140
NEtFOSAA	70-135	28	70-145
NMeFOSE	70-135	29	70-145
NEtFOSE	70-130	21	70-135
HFPO-DA	70-135	23	70-140
ADONA	70-135	23	65-145
PFMPA	60-140	23	55-140
PFMBA	65-145	27	60-150
NFDHA	65-140	37	50-150
9Cl-PF3ONS	70-145	30	70-155
11Cl-PF3OUdS	50-150	35	55-160
PFEESA	70-135	25	70-140
3:3FTCA	70-130	23	65-130
5:3FTCA	70-130	24	70-135
7:3FTCA	55-130	34	50-145

Table 8: DOC/LCS/LLLCS Acceptance Limits for Solid & Biosolid Matrices

Target Analyte	DOC Mean Recovery (%)	DOC RSD (%)	LCS/LLLCS Recovery (%)
PFBA	70-140	17	70-140
PFPeA	70-140	26	60-150
PFHxA	70-135	23	65-140
PFHpA	70-140	21	65-145
PFOA	70-140	23	70-150
PFNA	65-145	24	70-155
PFDA	70-145	26	70-155
PFUnA	70-145	26	70-155
PFDoA	70-145	25	70-150
PFTrDA	55-160	26	65-150
PFTeDA	70-145	24	65-150
PFBS	60-145	25	65-145
PFPeS	65-140	29	55-160
PFHxS	65-145	28	60-150
PFHpS	70-140	27	65-155
PFOS	70-135	27	65-160
PFNS	70-140	27	55-140

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Target Analyte	DOC Mean Recovery (%)	DOC RSD (%)	LCS/LLLCS Recovery (%)
PFDS	50-150	31	40-155
PFDoS	40-140	40	25-160
4:2FTS	70-135	27	60-150
6:2FTS	60-160	50	55-200
8:2FTS	70-140	27	70-150
PFOSA	70-140	19	70-140
NMeFOSA	65-145	26	70-155
NEtFOSA	70-135	19	70-140
NMeFOSAA	65-145	31	65-155
NEtFOSAA	60-150	31	65-165
NMeFOSE	70-140	19	70-140
NEtFOSE	70-135	17	70-135
HFPO-DA	70-140	25	70-145
ADONA	70-155	26	70-160
PFMPA	70-140	25	30-140
PFMBA	55-145	33	60-150
NFDHA	45-145	27	60-155
9Cl-PF3ONS	65-135	23	70-150
11Cl-PF3OUdS	50-135	31	45-160
PFEESA	70-140	20	70-140
3:3FTCA	45-155	32	45-130
5:3FTCA	70-135	28	60-130
7:3FTCA	70-145	39	60-150

Table 9: DOC/LCS/LLLCS Acceptance Limits for Tissue Matrix

Target Analyte	DOC Mean Recovery (%)	DOC RSD (%)	LCS/LLLCS Recovery (%)
PFBA	70-135	20	60-140
PFPeA	70-130	20	60-145
PFHxA	70-140	20	60-160
PFHpA	70-140	20	60-145
PFOA	70-130	25	60-150
PFNA	70-140	20	60-145
PFDA	70-135	20	60-150
PFUnA	70-135	20	60-155
PFDoA	70-135	20	60-140
PFTrDA	55-160	20	60-150
PFTeDA	70-140	25	60-140
PFBS	70-145	20	60-150
PFPeS	70-150	20	60-145
PFHxS	70-140	25	60-155
PFHpS	70-145	20	60-140
PFOS	70-135	30	60-160

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Target Analyte	DOC Mean Recovery (%)	DOC RSD (%)	LCS/LLLCS Recovery (%)
PFNS	60-130	20	45-140
PFDS	55-135	20	50-140
PFDoS	25-145	45	25-140
4:2FTS	65-140	30	55-150
6:2FTS	70-140	25	60-150
8:2FTS	70-150	25	60-170
PFOSA	70-140	20	60-150
NMeFOSA	70-140	30	60-160
NEtFOSA	70-140	40	60-150
NMeFOSAA	70-140	20	60-145
NEtFOSAA	70-140	25	60-145
NMeFOSE	60-150	20	40-180
NEtFOSE	70-145	40	60-205
HFPO-DA	70-140	25	60-145
ADONA	70-145	20	55-165
PFMPA	70-145	40	25-145
PFMBA	70-140	20	60-150
NFDHA	70-155	30	60-180
9Cl-PF3ONS	70-140	20	60-170
11Cl-PF3OUdS	65-140	20	50-170
PFEESA	70-145	25	50-150
3:3FTCA	55-130	25	30-140
5:3FTCA	70-145	20	60-160
7:3FTCA	70-155	20	60-200

Table 10: Acceptance Limits for EIS and NIS Compounds in Aqueous & Landfill Leachate Matrices

Labeled Compound	Aqueous Recovery (%)	Landfill Leachate Recovery (%)
13C4-PFBA	5-130	5-130
13C5-PFPeA	40-130	40-130
13C5-PFHxA	40-130	40-130
13C4-PFHpA	40-130	40-130
13C8-PFOA	40-130	40-130
13C9-PFNA	40-130	40-130
13C6-PFDA	40-130	40-130
13C7-PFUnA	30-130	40-130
13C2-PFDoA	10-130	35-130
13C2-PFTeDA	10-130	25-130
13C3-PFBS	40-135	40-130
13C3-PFHxS	40-130	40-130
13C8-PFOS	40-130	40-130

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Labeled Compound	Aqueous Recovery (%)	Landfill Leachate Recovery (%)
13C2-4:2FTS	40-200	40-220
13C2-6:2FTS	40-200	40-170
13C2-8:2FTS	40-300	40-145
13C8-PFOSA	40-130	40-130
D3-NMeFOSA	10-130	40-130
D5-NEtFOSA	10-130	35-130
D3-NMeFOSAA	40-170	35-130
D5-NEtFOSAA	25-135	30-130
D7-NMeFOSE	10-130	20-130
D9-NEtFOSE	10-130	20-130
13C3-HFPODA	40-130	40-130
13C3-PFBA	50-200	50-200
13C2-PFHxA	50-200	50-200
13C4-PFOA	50-200	50-200
13C5-PFNA	50-200	50-200
13C2-PFDA	50-200	50-200
18O2-PFHxS	50-200	50-200
13C4-PFOS	50-200	50-200

Table 11: Acceptance Limits for EIS and NIS Compounds in Solid & Biosolid Matrices

Labeled Compound	Solids Recovery (%)	Biosolids Recovery (%)
13C4-PFBA	8-130	5-130
13C5-PFPeA	35-130	35-130
13C5-PFHxA	40-130	40-130
13C4-PFHpA	40-130	40-130
13C8-PFOA	40-130	40-130
13C9-PFNA	40-130	40-145
13C6-PFDA	40-130	40-130
13C7-PFUnA	40-130	40-130
13C2-PFDoA	40-130	40-130
13C2-PFTeDA	20-130	10-160
13C3-PFBS	40-135	40-150
13C3-PFHxS	40-130	40-140
13C8-PFOS	40-130	40-130
13C2-4:2FTS	40-165	40-300
13C2-6:2FTS	40-215	40-300
13C2-8:2FTS	40-275	40-300

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Labeled Compound	Solids Recovery (%)	Biosolids Recovery (%)
13C8-PFOSA	40-130	20-140
D3-NMeFOSA	10-130	20-130
D5-NEtFOSA	10-130	20-130
D3-NMeFOSAA	40-135	30-150
D5-NEtFOSAA	40-150	20-140
D7-NMeFOSE	20-130	25-130
D9-NEtFOSE	15-130	20-130
13C3-HFPODA	40-130	40-130
13C3-PFBA	50-200	50-200
13C2-PFHxA	50-200	50-200
13C4-PFOA	50-200	50-200
13C5-PFNA	50-200	50-200
13C2-PFDA	50-200	50-200
18O2-PFHxS	50-200	50-200
13C4-PFOS	50-200	50-200

Table 12: Acceptance Limits for EIS and NIS Compounds in Tissue Matrices

Labeled Compound	Tissue Recovery (%)
13C4-PFBA	5-130
13C5-PFPeA	10-185
13C5-PFHxA	25-170
13C4-PFHpA	25-150
13C8-PFOA	25-150
13C9-PFNA	35-185
13C6-PFDA	30-150
13C7-PFUnA	30-180
13C2-PFDoA	35-180
13C2-PFTeDA	20-160
13C3-PFBS	25-190
13C3-PFHxS	35-175
13C8-PFOS	40-160
13C2-4:2FTS	30-300
13C2-6:2FTS	35-300
13C2-8:2FTS	40-365
13C8-PFOSA	25-180
D3-NMeFOSA	5-130
D5-NEtFOSA	5-130

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Labeled Compound	Tissue Recovery (%)
D3-NMeFOSAA	30-250
D5-NEtFOSAA	30-235
D7-NMeFOSE	5-160
D9-NEtFOSE	5-130
13C3-HFPODA	20-185
13C3-PFBA	50-200
13C2-PFHxA	50-200
13C4-PFOA	50-200
13C5-PFNA	50-200
13C2-PFDA	50-200
18O2-PFHxS	50-200
13C4-PFOS	50-200

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Appendix C: State/Program Specific Requirements

This appendix provides program specific requirements that supersede or supplement the main body of the SOP. When analyzing samples under DoD compliance, these requirements are applicable.

QC Item	SOP Section	Requirement
Instrument Blank	9.2.5	No analytes detected > ½ LOQ.
Method Blank	11.1.1	No analytes detected > ½ LOQ.
AFFF Sample Duplicate	Appendix E	All AFFF samples shall be prepared and analyzed in duplicate in the same manner as aqueous samples (e.g., solid phase extraction, extracted internal standards, carbon cleanup, etc.).
Laboratory Duplicate	Appendices B & F	One per preparatory batch. RPD of all analytes should be ≤ 30% between sample and DUP. RPD criterion does not apply if both results are below the LOQ.

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Appendix D: Sample Pre-screening Instructions

Samples that are known or suspected to contain high levels of analytes may be pre-screened using the following procedure. These are example procedures using smaller sample aliquots spiked with EIS and NIS and no clean up procedures. Other pre-screening procedures may be used.

Aqueous Samples

1) Weight out 10 (±0.1) g of sample into a 50-mL centrifuge tube.
2) Add 50 µL of EIS to the sample and vortex to mix.
3) Filter 1 mL of the sample through 0.2-µm membrane filter into a microvial. Sample is ready for instrumental analysis.

Solid and Tissue Samples

1) Weigh 1.0 (±0.1) g sample into 50-mL polypropylene centrifuge tubes.
2) Add 20 mL of 0.3% methanolic ammonium hydroxide to the sample. Vortex and mix on a shaker table (or equivalent) for 10 min. Allow to settle and/or centrifuge to produce a clear extract.
3) Filter using a filter vial:
    a. Add 20 µL of EIS to a clean filter vial (chamber).
    b. Add 400 µL of clear extract from step 2 (e.g., by adding extract until it reaches the fill line), carefully vortex to mix.
    c. Use filter/plunger part and filter.
4) Transfer 30 µL of filtrate to a ~300 µL polypropylene microvial and dilute to 300 µL with 0.3% methanolic ammonium hydroxide. Add NIS (1.5 µL) to the resulting solution.
5) The extract is now a 10x dilution.
6) Sample is ready for instrumental screening analysis.
7) Calculate results using the equivalent sample weight computed as follows:

$$Equivalent\ Weight = Sample\ weight\ (g) x \frac{0.4\ mL}{20\ mL}$$

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Appendix E: Aqueous Sample Subsampling Instructions

Note: Because some target analytes may be stratified within the sample (e.g., AFFF-contaminated media, surfactants), or adhere to the walls of the sample container, subsampling may only be done on a project-specific basis. Subsampling has been shown to increase uncertainty in PFAS analysis, especially on foaming samples.

If a reduced sample size is required, transfer a weighed subsample using the following subsampling procedure to a 60-mL HDPE bottle and dilute to approximately 60 mL using reagent water. This container is now considered the "sample bottle."

1) Gently invert sample 3-4 times being careful to avoid foam formation and subsample immediately (do not let stand).
2) If foam forms and more than 5 mL is required – pour sample, avoiding any foam.
3) If foaming forms and a volume less than 5 mL is required – pipette from ½ cm below the foam.
4) If no foam forms – pour or pipette based on volume required.

Required Protocol for AFFF and FFF (F3) Concentrates

Samples composed of AFFF or F3 will be subsampled consistently, with approximately **0.02 g of AFFF/F3 material** aliquoted for each discrete sample preparation/analysis; each AFFF or F3 concentrate sample analyzed under DoD direction **must be prepared in duplicate**. After creating and documenting the subsample aliquot, add approximately 60 mL of reagent water, cap the vessel, and shake vigorously by hand for 20-30 seconds. After adding the reagent water and agitating, allow **at least 3 hours** for the subsample aliquot to fully dissolve in the water. If dissolution is incomplete after 3 hours, agitate again and wait another 3 hours; consider applying continuous agitation (orbital shaker) if full dissolution of the aliquot into water requires extended time. Following the extended dissolution time, prepared AFFF/F3 samples should be prepared and analyzed following the routine protocols for aqueous sample processing. Aqueous reporting limits (MDL/LOD/LOQ) will be used, with values adjusted to account for the actual sample aliquot, assuming 1 g/mL; this constitutes a 25,000X nominal adjustment factor for AFFF/F3 reporting limits, relative to nominal aqueous reporting limits.

Pace **STRONGLY DISCOURAGES** clients from sending AFFF concentrate material for analysis; this protocol is designed for "as-prepared" AFFF materials (i.e. pre-diluted to application concentration) and newer generation 'Fluorine Free Foam' (F3) concentrates. If F3 material (concentrate or as-prepared) or as-prepared AFFF material is received, follow the normal routines described in the first paragraph above. If an AFFF concentrate material (usually of a thick gel-like consistency) is received for analysis, the lab shall prepare a 3% (w/w) aqueous solution from the received sample (in the smallest volume feasible) prior to subsampling and diluting 0.02 g for extraction. Handling of AFFF concentrate should ideally be done in an isolated area outside of the PFAS processing area to prevent gross lab contamination. Following the two dilution steps, the nominal adjustment factor for AFFF concentrate material is 833,333X (8.33×10^5) relative to nominal aqueous reporting limits.

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Appendix F: MS/MSD, MS/DUP SAMPLE SELECTION PROTOCOL

Project-specific requirements may include that matrix spikes (MS), matrix spike duplicates (MSD), and/or laboratory duplicates (DUP) be prepared and analyzed with project samples. The client/field team should identify those samples which are designated for these additional QC procedures and provide additional sample material for them. In the event that samples are received for such a project without additional containers for MS/MSD/DUP, prep analysts will select samples to be used for this purpose following a hierarchy of preference, as defined below.

Note: Any kind of blank (Field Blank, Trip Blank, Equipment Blank, Rinsate Blank, etc.) will not be used for MS/MSD/DUP analysis.

1) First preference is to use client-designated samples as MS/MSD samples. This designation should show up on the prep worklist, in the comments. It is possible that SR will miss adding this comment to the sample, but this designation will be present in the COC from the client, on the right side of the COC under “Comments/Remarks/Cooler ID.” When a client designates a sample to be used for MS/MSD analysis, they will typically provide us with more than 2 bottles (often 4, sometimes as many as 6).

2) Lacking a client-designated MS/MSD sample, the next preference is to use any sample received with more than 2 bottles provided. If an analyst selects a set of samples for prep in which none of the samples are client-designated for MS/MSD, the analyst should check for any samples in the set that were received with 3 or more bottles. If there is a sample with 3 or more bottles, pull 3 of them and use one for the parent sample and spike the other two for analysis as MS/MSD samples.

3) Lacking any samples received with 3 or more bottles, the prep analyst must use two different parent samples to create an MS/DUP pair. Find two samples out of the set of samples selected for prep which were received with 2 bottles and pull both bottles for each sample. Pick one sample (pair of bottles) to be used for parent/MS prep and the other sample (pair of bottles) to be used for parent/DUP. The sample selected for parent/MS will have one bottle spiked with targets and one prepped as normal, with no added spiking. The bottle which is spiked should be identified in the LIMS as MS. The sample selected for parent/DUP will have both bottles prepared following normal procedures but one of the two should be identified in the LIMS as DUP.

4) If all samples in a particular prep batch were all received in just one bottle, analysis of an MS/MSD or MS/DUP pair will not be possible. This should be an uncommon occurrence, as prep analysts will attempt to adjust batching to ensure that every prep batch contains an MS/MSD or MS/DUP for projects which require the additional QC.

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Appendix G: Aqueous Sample Management Decision Guide

NOTE: No TSS pre-test will be performed on aqueous samples received for 1633 analysis.

Per Method 1633, Section 11.1.1.5, “laboratories may utilize other documented strategies for minimizing the disruptions due to SPE clogging and slow extractions.” Follow the guide below to evaluate aqueous sample matrices for solid material and determine the appropriate preparation approach; a matching decision tree is included at the end of this appendix.

If potential interferences other than settled solids are observed, take action to mitigate the impacts on data quality. Examples of other sample characteristics that could lead the lab to take precautionary measures with a field sample (i.e., prepare from reduced volume) include: presence of standing foam in the sample after shaking, thick/viscous matrix, collected from a known highly contaminated site/project, client notes indicating potential high concentrations, and knowledge of potential hazards to safety, equipment performance, or process integrity due to sample composition. Consider any visible indications of particulate matter including settled solids collected on the bottom of the container, cloudiness and/or dark color of the sample, suspended solids within the sample, increased viscosity, etc. If uncertain, seek a second opinion from another analyst, supervisor, or operations director; these matrix characteristics may require reduced-volume extraction. The lab will attempt to use the largest volume possible (i.e., the smallest reduction possible) when performing a reduced-volume extraction to manage challenging matrix characteristics, and no less than 1 mL of sample will be used in this case.

1) Allow samples to sit for at least 15 minutes to allow solids in the matrix to settle to the bottom of the container.

2) Visually inspect each sample for settled solids collected in the bottom of the container and follow the appropriate protocol based on observation:

    a. If no solids are observed in the bottom of the container, proceed to step 3.

    b. If solids are observed in the bottom of the container with an approximate depth <1/2 cm (<5 mm), proceed to step 5.

    c. If solids are observed in the bottom of the container with an approximate depth >1/2 cm (>5 mm), proceed to step 7.

    d. If solids observed in the container make up approximately 5% or more of the total sample volume, proceed to step 9.

No Settled Solids Observed:

3) Do not take any additional action to prepare for extraction and follow routine protocols.

4) If the SPE cartridge begins to clog during sample loading (see Identifying Cartridge Clogging section below), abandon loading of the remaining sample volume and proceed to the cartridge rinsing and drying described in step 10 of Section 9.3.4.

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a. Document the inability to load the entire sample volume due to cartridge clogging. If the resulting EIS recoveries are below the method acceptance ranges, this documentation provides the rationale for re-extraction from reduced volume.

b. The sample bottle rinse described in step 12 of Section 9.3.5 must be omitted; simply add the 5 mL of 1% methanolic ammonium hydroxide directly to the reservoir/cartridge.

c. If the cartridge clog prevents the cartridge rinses or elution solvent from passing through the cartridge, document that an extract could not be collected for that sample. Submit the sample for re-extraction from reduced volume. Notify the group leader and prep team of this necessity and, based on the total volume loaded in the first extraction attempt, provide a suggested reduction factor (i.e., reduce volume 5X, 10X, 20X, etc.).

Settled Solids Depth <1/2 cm Observed:

5) Do not take any additional action to prepare for extraction and follow routine protocols; however, be aware that there is a higher probability that the SPE cartridge will clog, and care must be taken in sample loading to attempt to pass the entire sample through the sorbent.

6) If the SPE cartridge begins to clog during sample loading (see Identifying Cartridge Clogging section below), abandon loading of the remaining sample volume and proceed to the cartridge rinsing and drying described in step 10 of Section 9.3.4.

a. The sample bottle rinse described in step 12 of Section 9.3.5 must be omitted; simply add the 5 mL of 1% methanolic ammonium hydroxide directly to the reservoir/cartridge.

b. Document the inability to load the entire sample volume due to cartridge clogging. If the resulting EIS recoveries are below the method acceptance ranges, this documentation provides the rationale for re-extraction following centrifugation; however,

c. If the cartridge clog prevents the cartridge rinses or elution solvent from passing through the cartridge, document that an extract could not be collected for that sample. Submit the sample for re-extraction with sample centrifugation (See Aqueous Sample Centrifugation Protocol in Appendix H). Notify the group leader and prep team of this necessity.

i. If, in the judgment of an experienced analyst, the nature of the solids present in the sample is of a nature that would preclude successful centrifugation and decantation, the decision should be confirmed with the group supervisor and/or another experienced analyst; once confirmed, the sample is submitted for re-extraction from reduced volume. Notify the group of this necessity and, based on the total volume loaded in the first extraction attempt, provide a suggested reduction factor (i.e., reduce volume 5X, 10X, 20X, etc.).

ii. If the centrifuged sample clogs the cartridge in the second extraction, see step 6 above; if there is sufficient sample remaining for another re-extraction, submit the sample for re-extraction from reduced volume as described in (i) above. If there is not sufficient sample remaining for another re-extraction, narrate any quality exceedances and report data for all runs.

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Settled Solids Depth >1/2 cm Observed:

7) The sample will need to be centrifuged before performing SPE. Instead of following the routine sample extraction procedures, refer to Appendix H for the Aqueous Sample Centrifugation Protocol.

8) Document the decision to centrifuge the sample prior to SPE.

    a. If resulting EIS recoveries are below the method acceptance ranges, this documentation provides evidence that the results are impacted by matrix interference.

        i. Report the data with a narrative statement explaining that the results are matrix-impacted.

        ii. Alternately, submit the sample for re-extraction from reduced volume to attempt to provide data with compliant EIS recoveries.

    b. If the decanted sample clogs the SPE and prevents successful collection of the extract, document that detail and submit the sample for re-extraction from reduced volume. Notify the group of this necessity and, based on the total volume loaded in the first extraction attempt, provide a suggested reduction factor (i.e., reduce volume 5X, 10X, 20X, etc.) for the re-extraction.

Settled Solids Observed to be ≥ 5% of Total Volume:

9) Shake the sample to thoroughly homogenize it, then immediately subsample 1 mL into a pre-labeled 50mL centrifuge tube and add reagent water to approximately 40 mL. At 5% solids, a sample contains 50,000 mg/L, so 1 mL contains 50 mg of solid material.

10) Spike the diluted subsample with EIS as normal and proceed with extraction.

11) If the SPE cartridge begins to clog during sample loading (see Identifying Cartridge Clogging section below), abandon loading of the remaining sample volume and proceed to the cartridge rinsing and drying described in step 10 of Section 9.3.4.

    a. Document the inability to load the entire sample volume due to cartridge clogging.

    b. The sample bottle rinse described in step 12 of Section 9.3.5 must be omitted; simply add the 5 mL of 1% methanolic ammonium hydroxide directly to the reservoir/cartridge.

    c. If the cartridge clog prevents the cartridge rinses or elution solvent from passing through the cartridge, document that an extract could not be collected for that sample.

12) If the cartridge clogs during extraction and causes failing results, the lab will contact the client and notify them that sample extraction failed due to the nature of the matrix, and that they must decide between two options for reprocessing the sample:

    a. Apply biosolid matrix protocols, following Sections 9.3.6 through 9.3.8 of this SOP. Use 0.5 g of sample for extraction; do not submit for % solids analysis and report results as ng/g, on a wet weight basis.

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b. Attempt to separate and analyze the aqueous and solid phases separately. If the client selects this option, follow the protocol detailed in Appendix I.

Identifying Cartridge Clogging

During the loading phase of the SPE process, some samples may cause their cartridges to clog, preventing the entire sample from being loaded through, and sometimes preventing an extract from being collected. If you have a sample that slows down considerably during the loading process, you may need to abandon loading the remainder of the sample. The goal is to stop the process before the cartridge seizes up completely, so that a sample extract can still be collected from the cartridge.

When Clogs Start

Some of the first visual indications of a cartridge becoming clogged include: discoloration of the cartridge frit and/or sorbent bed, reduced drip rate of the sample through the cartridge, and coloration or sedimentation on the bottom of the reservoir.

When a cartridge starts to clog, it is important to stop the process before the cartridge seizes up completely. Take the actions listed below; an evaluation must be made to decide whether each cartridge can reasonably be used further without seizing up completely.

- Do not continue to add any more sample volume to the reservoir of the clogging cartridge.
- If there is substantial volume remaining in the reservoir (i.e., > 10 mL) and the cartridge is in apparent imminent danger of seizing completely, close the manifold port to stop sample loading. Carefully remove the cartridge-adaptor-reservoir assembly for the sample in question and pour whatever sample volume remains in the reservoir back into the original sample bottle. This volume will be included in the evaluation of extracted sample volume (initial volume).
- If the reservoir on the clogging cartridge empties before the other samples have finished loading, close the manifold port to prevent the cartridge from drying.
- If sample volume remains in any of the slowed cartridges after the loading of the other samples is finished, close all the manifold ports and focus pressure on the slowed cartridge in an attempt to load the volume remaining in the reservoir. (Do this one at a time for multiple clogs.) If the cartridge appears to be in imminent danger of seizing up completely, do not attempt to load the volume remaining in the reservoir; follow the steps in the second bullet of this section.

Abandoning Sample Loading

If the decision is made to abandon sample loading, take the following actions. Some of these are partial duplicates of the actions listed in the section above.

- If any sample remains in the reservoir, carefully remove the cartridge-adaptor-reservoir assembly for the sample in question and pour whatever sample volume remains in the reservoir back into the

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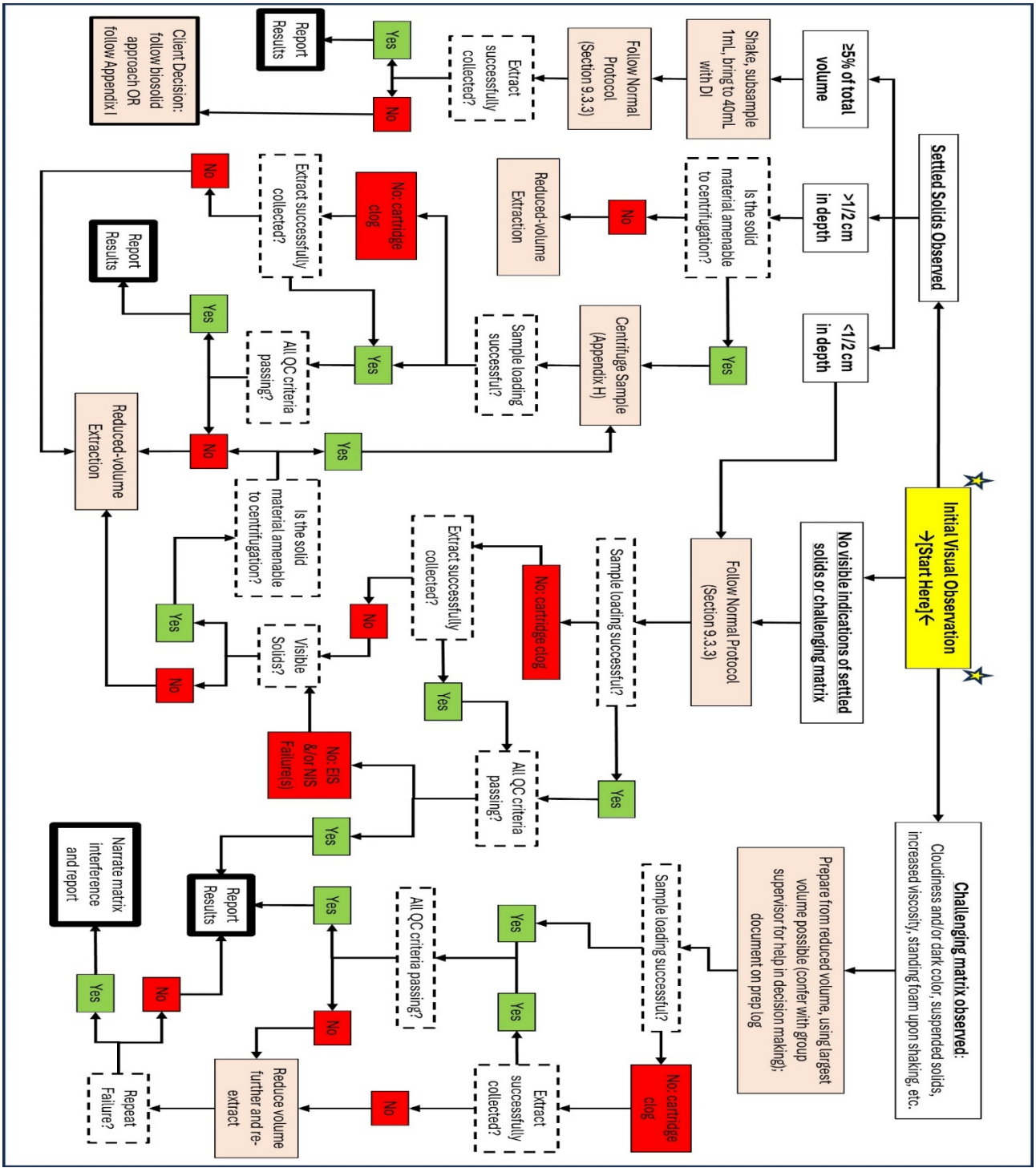
original sample bottle. This volume will be included in the evaluation of extracted sample volume (initial volume).

- Use the cartridge from the abandoned sample and finish the SPE process to collect what extract is available.
- The sample bottle rinse described in step 12 of Section 9.3.5 must be omitted; simply add the 5 mL of 1% methanolic ammonium hydroxide directly to the reservoir/cartridge.
- Weigh the sample in its original bottle to establish the “empty bottle” weight (aka post-extraction weight).

Fully Clogged Cartridges

Samples will have to be re-extracted when cartridges clog so fully that the extraction process cannot be taken to completion to collect a sample extract. Based on the total volume loaded in the failed extraction attempt, provide a suggested reduction factor for the re-extraction (i.e., reduce volume 5X, 10X, 20X, etc.) The sample should be shaken up before subsampling for the reduced volume re-extraction. However, for samples containing solids that are very fine and easily suspended, the analyst may consider allowing the sample to settle before subsampling an aliquot for reduced volume re-extraction; this may help prevent cartridge clogging in the re-extraction process.

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Appendix H: Aqueous Sample Centrifugation Protocol

Method 1633 states “laboratories may utilize other documented strategies for minimizing the disruptions due to SPE clogging and slow extractions,” and “a trained analyst should be able to distinguish samples with very low TSS and focus…on only those samples that might present a risk of clogging.” Therefore, whether an individual sample will require centrifugation for proper preparation will be determined and documented by the preparation analyst, following the guidance in Appendix G. Additionally, the method states “If centrifugation is used to prevent samples with high TSS from clogging the SPE, the EIS compounds must be spiked into the original sample container prior to centrifugation.” This protocol complies with that dictate.

1) Follow Appendix G to evaluate the sample for the presence of solids. Inspect the sample and consider the necessity of centrifuging.

2) If the sample is determined to require centrifugation/decantation, contemporaneously make a note on the prep batch log indicating this fact.

3) Spike samples requiring centrifugation in the same manner and with the same standard volume as samples which will not be centrifuged.

4) Label a 500mL conical centrifuge bottle with the sample ID for each sample that will be centrifuged. Set them in an appropriate rack with the caps removed.

5) Vigorously shake the spiked sample and then quickly pour it into the appropriately labeled centrifuge bottle. Try to ensure that the original sample bottle is devoid of any solid material after the transfer. Be careful to avoid spilling sample during the transfer process. Tightly cap each centrifuge bottle after transfers are complete.

6) Transfer capped centrifuge bottles to the centrifuge rotor, ensuring that the carousel is symmetrically balanced. Close the top and centrifuge at 3000 RPM (~2000 RCF) for 6 minutes.

7) Remove centrifuge bottles and decant the centrifuged liquid from the condensed solids by transferring it back into the original sample bottle. Try to avoid transferring any of the condensed solids from the centrifuge bottle back to the original sample bottle, while maximizing the amount of liquid collected in the sample bottle.

8) Weigh the full, decanted original sample bottle and document in the prep batch log.

9) Extract the decanted sample as normal alongside un-centrifuged samples, through the cartridge rinsing and drying (step 10 of Section 9.3.4).

10) When the SPE cartridges have been dried, rinse the original sample bottle following the protocol in step 12 of Section 9.3.5. Additionally, add 5mL of 1% methanolic ammonium hydroxide (1%-MeOH) to each centrifuge bottle to rinse the inside of them as well as the solids they contain. If the condensed solids become re-suspended while rinsing the bottles, centrifugation may be required. Using a transfer pipet or mechanical pipet, transfer the 1%-MeOH rinse from the centrifuge bottle into the reservoir/SPE cartridge and elute with the original sample bottle rinse into a 15mL conical centrifuge tube.

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11) Add 5 mL of additional 1%-MeOH directly to the SPE reservoir of all batch QC samples (MB/LCS/LLLCS) and elute with the normal bottle rinse. This is to match the volume used for elution of centrifuged field samples in the prep batch.

12) After elution, all sample extracts (client and QC) with additional elution volume shall be concentrated to ~3.5 mL and brought to a final volume of ~4 mL with 1%-MeOH. Concentrate each extract at approximately 55 ºC with N2 flow of approximately 1.2 L/min. Use a reference elution tube to reconstitute to the appropriate volume, like the protocol in step 8 of Section 9.3.6 of this SOP. This extract concentration and reconstitution must be done BEFORE adding acetic acid and NIS to the extracts, as directed in step 14 of Section 9.3.5.

13) Weigh the empty bottle with the cap on and subtract that from the weight of the bottle with sample, determined in step 8 of this appendix, to determine initial sample volume.

14) Add 25 µL of concentrated acetic acid and 20 µL of NIS mix to each sample extract in its collection tube and vortex to mix. Transfer a portion of each extract into an autosampler vial for LC-MS/MS analysis. Cap the collection tubes containing the remaining extracts and store at 0 - 6 °C.

15) Generate a narrative statement noting which samples in the prep batch included centrifugation in the extraction process. Include any additional observations and/or deficiencies that were noted during the centrifugation or extraction process, particularly if any issues were encountered during the sample loading step of the SPE process.

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Appendix I: Separation & Analysis of Liquid-Solid Biphasic Matrices

Method 1633 states “laboratories may utilize other documented strategies for minimizing the disruptions due to SPE clogging and slow extractions, including centrifuging the sample before adding the EIS and treating the supernatant aqueous phase and the solid phase as separate samples.” This will be done only according to client direction or project requirement; see Appendix G for more information regarding management of solids in aqueous samples.

1) If the client has requested to have the sample separated into aqueous and solid phases for analysis, the sample must be logged into the LIMS system separately for both matrices. The resulting solid phase will be reported on a wet weight basis and will not be analyzed for percent solids (aka percent moisture).

NOTE: The LOQ for the resulting solid analysis will depend on the amount of solid material available after decanting – the lab will use ~5 g of material if available, but any reduction in available solids will result in an increase in the reported LOQ.

2) Label a 500mL conical centrifuge bottle with the sample ID for each sample that will be centrifuged. Set them in an appropriate rack with the caps removed.

3) Vigorously shake the sample and then quickly pour it into the appropriately labeled centrifuge bottle. Try to ensure that the original sample bottle is devoid of any solid material after the transfer. Be careful to avoid spilling sample during the transfer process. Tightly cap each centrifuge bottle after transfers are complete.

4) Transfer capped centrifuge bottles to the centrifuge rotor, ensuring that the carousel is symmetrically balanced. Close the top and centrifuge at 3000 RPM (~2000 RCF) for 6 minutes.

5) Remove centrifuge bottles and decant the centrifuged liquid from the condensed solids by transferring it back into the original sample bottle. Try to avoid transferring any of the condensed solids from the centrifuge bottle back to the original sample bottle, while maximizing the amount of liquid collected in the sample bottle.

6) Weigh the full, decanted original sample bottle and document in the prep batch log.

7) Extract the decanted aqueous sample as normal alongside un-centrifuged samples, starting with EIS addition.

8) Label a 50 mL centrifuge tube with the sample ID for each solid phase sample generated from phase separation. Using a wooden tongue depressor or a pre-cleaned metal scoopula, transfer the solid material from the decanted 500 mL centrifuge bottle to the labeled 50 mL tube, targeting 5 g of total sample mass. Record the sample mass transferred to the 50 mL tube – this will be the extracted sample mass used for calculations and reporting. In many cases, re-extraction will not be possible due to limited solid material.

9) Spike the collected solid material with EIS and extract as normal alongside solid samples which were not generated from phase separation.

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Appendix J: TCLP/SPLP by 1633

Clients may submit samples (solid or aqueous) for PFAS following TCLP or SPLP procedures. For solid samples, the TCLP and SPLP procedures are used to simulate the leaching of environmental contaminants over extended periods of time from a solid material into the environment. A subsample of the client's sample is weighed out and combined with a leaching solution and mechanically tumbled for a set period. Each leachate prep method (TCLP: Method 1311 or SPLP: Method 1312) employs a unique leaching solution dictated by the parent methods. After the sample has been tumbled/leached by the Organic prep department, the leachate is filtered by the Organic Prep department and delivered to the PFAS sample holding area. The PFAS department is notified by email when the leachate solutions are ready for PFAS prep. The filtered leachate solutions are prepared by the PFAS prep analysts using the 1633 aqueous prep method, at a 1:5 dilution (100 mL of leachate solution).

1) Samples requested for PFAS by SPLP/TCLP analysis will be batched and leached by the normal SPLP/TCLP procedures used by the Westborough Alpha Organic Prep department. Organic Prep will be the initial responsible party for samples analyzed for PFAS by SPLP/TCLP.

2) When the leaching process is complete, Organic Prep will collect approximately 500mL (at minimum 100mL) of the leachate solutions in clean HDPE containers provided by the Emerging Contaminants department.

3) After collecting the leachate solution, an Organic Prep analyst will filter approximately 500 mL (at minimum 100mL) of each leachate solution using a Flipmate apparatus, using normal protocols for Flipmate filtration.

4) After filtering the leachates, the Organic Prep analyst will deliver the filtrates to the Sample management department for transport to the Emerging Contaminants Department (EC) at the Alpha Mansfield Facility. Leachates will be transferred to the EC department's designated sample storage refrigerator.

5) Samples to be analyzed for PFAS following TCLP/SPLP will appear on a separate PFAS prep worklist, the title of which will contain "SPLP" or "TCLP." From these worklists, PFAS analysts will select the samples to be extracted.

6) Pour ~100 mL of filtrate solution into a pre-labeled HDPE PFAS sample bottle, using the gradations marked on the bottle as a guide. Record the actual amount of filtrate by weighing the sample bottle. LOQs for samples prepared in this way will be ~5X higher than normal Aqueous matrix LOQs.

7) Following the instructions in step 7, use the leachate blank solution (typically has sample ID L0000000-01) to prepare three bottles for use as batch QC. Volume for the leachate blank, LLLCS, and LCS will be recorded as 100 mL.

8) Label and fill a clean 125 mL HDPE bottle with ~125 mL of pre-tested reagent water for use as a typical 1633 MB sample. Volume for the 1633 MB sample will be recorded as 100 mL.

9) After preparing the diluted filtrate, filtrate batch QC, and 1633 MB bottles, follow the normal extraction steps for aqueous matrices. Each sample will be spiked with EIS as normal. The filtrate

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LLLCS and LCS will be spiked with target analytes according to the routine aqueous protocol for LLLCS and LCS target spiking.

10) Leachate batch QC (MB/LLLCS/MS/MSD) are documented in LIMS as leachate blank (MB), and LLLCS (LCS).

11) Following the SPE process, the instrumental analyst will analyze the extracts by the 1633 method, as normal.

12) After processing, reviewing, generating reports for the data, and importing the data into LIMS, the TCLP/SPLP tumble date must be input into the analytical results from the leachate logs.

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Appendix K: Surface Wipe PFAS Analysis by 1633

Clients may submit wipe samples for PFAS analysis by 1633; wipes can be used as a proxy measurement of surface contamination in production facilities, labs, etc. The lab provides sampling kits for users which consist of a 50 mL centrifuge tube paired with a packaged ghost wipe for each surface to be sampled (ghost wipes: Environmental Express Part# SC5000). The wipe is used to swab a defined area of the surface or item of interest and is placed in the accompanying centrifuge tube, which is then capped, labeled, and shipped back to the lab for preparation and analysis.

Used wipe samples are prepared directly in the container in which they are received, following the protocols for solid matrices described in Sections 9.3.6 through 9.3.8; analysis follows normal 1633 routines. No correction will be made for percent solids, and results are reported as ng/wipe.

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Appendix L: Articles of Commerce Analysis via Cryomill Processing

Clients may submit samples of various consumer product materials and 'articles of commerce' for analysis of PFAS contained in the products. To effectively mobilize any PFAS that may be present within the structure of the material, samples must be milled to a fine powder using a cryogenic mill (or Cryomill).

This appendix provides strategies for processing samples obtained from an article of commerce. Common techniques are covered for mechanical size reduction of articles and their sub-units or portions thereof prior to the determination of PFAS in the article or article components via extraction and quantitative analysis. Polymer powders, nanomaterials, fibers, pastes, fluorinated ionomers etc. may not require size reduction if they are known to be sufficiently homogenous and more than 95% of the material passes a 250 µm sieve. Examples of common articles requiring milling prior to extraction and analysis are compacted cakes, melt extruded pellets and molded articles, elastomers and agglomerates, coated wire, textiles, paper, leather, food, and LDPE and polypropylene.

The user shall elect to apply one or more of the approaches, or compendium of approaches, to create homogenous samples suitable for extraction and analysis. Selection of the appropriate technique(s) depends on the article. Alternative methods of mechanical sample preparation can be used, provided that the required particle size (avg. particle size approx. 100 µm) of the sample is achieved without contaminating or compromising the sample.

Sample Processing Equipment and Materials

The following sample processing equipment and materials are required, subject to the type of material being prepared. Conditions for cryogenic fine milling are provided for the Retsch CryoMill, however, alternative cryomilling equipment like the SPEX ® Freezer/Mill may be used for most products.

1) Scissors, heavy plate shears or RetschTM ZM 200 Grinding Mill (Centrifugal Mill) with 6 or 12 tooth stainless steel (SS) rotor and 1 mm stainless steel bottom sieve.
2) Retsch CryoMill (Ball Mill), with SS grinding cartridge and 25 mm grinding ball (50 mL grinding cartridge, 5 g fill), or equivalent cryogenic mill capable of grinding to approximately 100 µm particles.
3) Cleaning brushes (different sizes) and polishing cloths, or cotton balls/swabs
4) Liquid nitrogen (LN2)
5) High purity methanol and ASTM Type I water for cleaning mill parts
6) Ventilated hood, to minimize exposure to fine particles/dusts/aerosols and chemical vapors
7) Ventilated drying oven capable of > 200°C
8) Precision sieves and accessories, nickel mesh, 50 µm and 150 µm sizes

Manual Cutting

If possible, manual cutting with pre-cleaned shears or scissors is suitable for rough cutting and preparation of samples for further reduction by grinding, etc. Recommended maximum sample size is 10

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x 10 mm but will depend on the specification of the equipment used in the subsequent preparation processes.

Fine Grinding by Cryomill

Fine grinding via cryomill is suitable for further mechanical breakdown of samples, grinding material to pieces ~100 µm in diameter. Be careful not to allow the LN2 to come into direct contact with the sample to prevent spattering and sample loss. Thorough cleaning of the mill components between samples is crucial to avoid cross-contamination; see steps 7-11 below for details.

Cryomilling will be performed using a Retsch CryoMill (ball mill) with automatic LN2 feed, as described below:

Sample Type[1]	Cycles	Preset	Frequency (Hz)	PCT (minutes)	MT (minutes)	ICT (minutes)
Elastomers (FKM, FFKM, FEPM, and agglomerates)	1	1	30	Auto	2	NA
Compacted Cake	5	NA	30	Auto	2	2
Melt Extruded Pellets and Molded Articles	7	2	30	Auto	4	2
Coated Wire	3	3	30	Auto	2	2
Textiles, Paper, Leather	3	4	25	10	2.5	0
Food (meat, cheese)	1	5	25	8	2	NA
LDPE and PP	2	6	25	10	2	2

[1] *In most applications, a feed mass of 5 g is used.*
PCT: Precooling time (automatic set)
MT: Milling time
ICT: In-between cooling time

1) In the case of FFKM compounds and articles, care must be taken to avoid excessive energy input as it may lead to cryo-mechanical degradation of the polymer and the creation of mechanoradicals, which can inflate the amount of target substance detected. Filling levels will impact the energy applied in the grinding process and can inflate test results as well.

2) In the case of cured FFKM elastomeric articles, pulverizing the product in a 2-roll mill as commonly used for compounding of elastomers can be an alternate sample preparation method to avoid or reduce the risk of mechanical degradation. Alternative methods for FFKM compounds and articles that do not require cryo-grinding are being investigated.

3) Cryogenically mill the sample powder and sweep out the milled material to collect all the powder. The collected plastic-based sample material should be precision sieved to obtain a sufficiently homogeneous portion of known particle size range of 50 µm to 150 µm, by first sieving material

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through the 150 µm sieve, then the 50 µm sieve (keep contents captured on 50 µm sieve). Size range is 100 + 50 µm (i.e. ~ 100 µm).

4) The collected FKM-, FFKM- and FEPM-based samples are visually inspected for homogenous size, verification via light-scattering is beneficial. Sieving of the samples is not recommended due to materials' elastomeric nature and the potential for particles to re-agglomerate into larger segments over time.

NOTE: Freshly cryomilled samples should either be extracted ASAP (same day) OR placed under frozen conditions (-10° C) ASAP and held under frozen conditions until ready to extract.

5) Make sure to follow the User Manual for installing and removing the grinding jar. This includes the two lock rings on the left side of the mechanism.

    a. Make sure outer LOCK RINGS are loosened.

    b. Screw in the grinding jar (from the right side of the mechanism). Tighten with black plastic tightening aid.

    c. TIGHTEN TWO LOCK RINGS: Outside ring tightened first (hand-tighten only); inner ring tightened second (snug), using the tool.

    d. Perform grinding cycle.

    e. LOOSEN THOSE TWO LOCK RINGS: Inside ring loosened first, outer ring loosened second. To loosen either ring, the tool will be needed because of icing.

    f. Unscrew grinding jar.

    g. When cryomill is not in use, make sure to replace the cooling jacket seal.

6) For extraction of cryomilled materials, follow the solid matrix extraction protocol listed in Sections 9.3.6-9.3.8, using 2 g as the target sample mass instead of 5 g. Sample results will be reported as ng/g, with no moisture correction.

Cleaning Procedure for Mill Components

Thorough cleaning of the mill components between samples is crucial to avoid cross-contamination. The following cleaning procedure is recommended.

7) Remove residual polymer thoroughly with DI water and brush.

8) If necessary, wipe away last polymer residue with clean polish cloth or cotton ball/swab.

9) Rinse all parts with methanol, use an ultrasonic bath as needed.

10) Rinse all parts with DI Water, use an ultrasonic bath as needed.

11) Repeat steps 7-10 as needed.

Analysis and Holding Time

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Matrix	Routine Container	Minimum Sample Amount	Preservation	Holding Time
Fluoropolymers, molded articles, coated wire, pellets, or other Articles of Commerce[1]	Any container or packaging that does not contain PFAS. Target container is a 125 mL PFAS container; however, clients will often send in Ziploc bags or other packaging.	5 g (target weight for clients to send is 20 g).	Can be shipped at any temperature (being an Article of Commerce). Once received in the lab: <6°C (prior to cryomill) Once cryomilled: Frozen Extract storage: <6°C	Sample receipt (or dated collected)[2] to cryomill: 1 year From cryomilling to extraction: 14 days Once extracted: 30 days

[1] Almost any "solid" material is applicable to this approach, as long as it can be manually coarse cut to approximately 5-10 mm in size (half a pea). If the matrix is soft (e.g., gummy bear), a larger feed size can be used.

[2] Often clients do not include "date collected." If none provided, "date collected" becomes "date received."

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Appendix M: Procedure for Total Oxidizable Precursors (TOP)

The following modifications to the referenced SOP are as follows:

Section 7: Water Bath – Capable of monitoring recording to .1 C maintaining 85 C.

Section 8.1: Sodium Hydroxide (NaOH, CAS#: 1310-73-2) – High purity, demonstrated to be free of analytes and interferences.

Potassium Persulfate ($K_2S_2O_8$, CAS#: 7727-21-1) - High purity, demonstrated to be free of analytes and interferences.

Hydrochloric Acid (HCl, CAS#: 7647-01-0) - High purity, demonstrated to be free of analytes and interferences.

Additional table to be added to Section 8

Table 1

Isotope Labeled Standard	Conc. Top Surr Stock (ng/mL)	Vol. of Top Surr Stock (µl)	Final Vol. of Top Surr PDS (mL)	Final Conc. of Top Surr PDS (ng/mL)
$^{13}C_2$-PFOA	50,000	40	4.0	500
$^{13}C_2D_4$-4:2FTS	50,000	80	4.0	1000

For Aqueous samples, prior to Section 10 of SOP 45852, add to each 125 ml sample with Potassium Persulfate until 60 mM (about 2 grams). Add Sodium Hydroxide until the sample is 125 mM (about .625 grams).

Sample should have a pH >12.

Fortify each sample with 20 µl of TOP pre-assay surrogate containing 1 negative control surrogates and 1 positive control surrogates from table 1.

Place sample in a water bath at 85 C for 6 hours.

Remove sample from water bath and adjust pH 6-8 with Hydrochloric Acid.

Following pre-treatment, follow the aqueous extraction protocol from section 10 of SOP 45852 unaltered.

Section 11, An additional calculation is added for the final reporting of the TOP assay results.

TOP Assay = Result of Post TOP assay extraction – Result of analysis from Pre-Top Assay extraction.

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Determination of Selected Perfluorinated Alkyl Substances by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry Isotope Dilution (LC/MS/MS)

References: EPA Method 537.1, Version 2, March 2020, EPA Document #: EPA/600/R-20/006

EPA Method 533, November 2019, EPA Document #: 815-B-19-020

ISO 25101, First Edition, March 2009, Reference #: ISO 25101:2009(E)

Department of Defense, Quality Systems Manual for Environmental Laboratories, Version 5.4, 2021

1. Scope and Application

Matrices: Drinking water, Non-potable Water, Tissues, Biosolids and Soil Matrices
(Drinking water is applicable for specific state regulatory requirements for this method)
Definitions: Refer to Alpha Analytical Quality Manual.

1.1. This is a liquid chromatography/tandem mass spectrometry (LC/MS/MS) method for the determination of selected perfluorinated alkyl substances (PFAS) in Non-Drinking Water and soil Matrices. Accuracy and precision data have been generated in reagent water, finished ground and surface waters, and soils for the compounds listed in Table 1.

1.2. The data report packages present the documentation of any method modification related to the samples tested. Depending upon the nature of the modification and the extent of intended use, the laboratory may be required to demonstrate that the modifications will produce equivalent results for the matrix. Approval of all method modifications is by one or more of the following laboratory personnel before performing the modification: Area Supervisor, Department Supervisor, Laboratory Director, or Quality Assurance Officer.

1.3. This method is restricted to use by or under the supervision of analysts experienced in the operation of the LC/MS/MS and in the interpretation of LC/MS/MS data. Each analyst must demonstrate the ability to generate acceptable results with this method by performing an initial demonstration of capability.

2. Summary of the Method

2.1. A 250-mL water sample is fortified with extracted internal standards (EIS) and passed through a solid phase extraction (WAX) cartridge containing a mixed mode, Weak Anion Exchange, reversed phase, water-wettable polymer to extract the method analytes and isotopically labeled compounds. The compounds are eluted from the solid phase in two fractions with methanol followed by a small amount of 2% ammonium hydroxide in methanol solution. The extract is concentrated with nitrogen in a heated water bath and then adjusted to a 1-mL volume with 80:20% (vol/vol) methanol:water.

2.2. A 0.5 to 4 gram soil, solid, tissue, or biosolid sample is fortified with extracted internal standards (EIS), diluted in methanol, and agitated rigorously. An aliquot of the methanol is passed across an SPE-based clean-up cartridge and the eluate is collected. The extract is concentrated with

nitrogen in a heated water bath and then adjusted to a 1-mL volume with 80:20% (vol/vol) methanol:water.

2.3. A sample extract is injected into an LC equipped with a C18 column that is interfaced with an MS/MS. The analytes are separated and identified by comparing the acquired mass spectra and retention times to reference spectra and retention times for calibration standards acquired under identical LC/MS/MS conditions. The concentration of each analyte is determined by using the isotope dilution technique. Extracted Internal Standards (EIS) analytes are used to monitor the extraction efficiency of the method analytes.

2.4. Method Modifications from Reference

2.4.1. None.

Table 1

Parameter	Acronym	CAS
PERFLUOROALKYL ETHER CARBOXYLIC ACIDS (PFECAs)		
Tetrafluoro-2-(heptafluoropropoxy)propanoic acid	HFPO-DA	13252-13-6
4,8-dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4
PERFLUOROALKYLCARBOXILIC ACIDS (PFCAs)		
Perfluorobutanoic acid	PFBA	375-22-4
Perfluoropentanoic acid	PFPeA	2706-90-3
Perfluorohexanoic acid	PFHxA	307-24-4
Perfluoroheptanoic acid	PFHpA	375-85-9
Perfluorooctanoic acid	PFOA	335-67-1
Perfluorononanoic acid	PFNA	375-95-1
Perfluorodecanoic acid	PFDA	335-76-2
Perfluoroundecanoic acid	PFUnA	2058-94-8
Perfluorododecanoic acid	PFDoA	307-55-1
Perfluorotridecanoic acid	PFTrDA	72629-94-8
Perfluorotetradecanoic acid	PFTA	376-06-7
Perfluorohexadecanoic acid	PFHxDA	67905-19-5
Perfluorooctadecanoic acid	PFODA	16517-11-6
PERFLUOROALKYL SULFONIC ACIDS (PFASs)		
Perfluoropropanesulfonic acid	PFPrS	423-41-6
Perfluorobutanesulfonic acid	PFBS	375-73-5
Perfluoropentanesulfonic acid	PFPeS	2706-91-4
Perfluorohexanesulfonic acid	PFHxS	355-46-4
Perfluoroheptanesulfonic acid	PFHpS	375-92-8
Perfluorooctanesulfonic acid	PFOS	1763-23-1
Perfluorononanesulfonic acid	PFNS	68259-12-1
Perfluorodecanesulfonic acid	PFDS	335-77-3
Perfluorododecanesulfonic acid	PFDoS	79780-39-5

Table 1 Cont.

Parameter	Acronym	CAS
CHLORO-PERFLUOROALKYLSULFONATE		
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	9Cl-PF3ONS	756426-58-1
PERFLUOROOCTANESULFONAMIDES (FOSAs)		
Perfluorooctanesulfonamide	PFOSA	754-91-6
N-methylperfluoro-1-octanesulfonamide	NMeFOSA	31506-32-8
N-ethylperfluoro-1-octanesulfonamide	NEtFOSA	4151-50-2
TELOMER SULFONIC ACIDS		
1H,1H,2H,2H-perfluorohexanesulfonic acid (4:2)	4:2FTS	757124-72-4
1H,1H,2H,2H-perfluorooctanesulfonic acid (6:2)	6:2FTS	27619-97-2
1H,1H,2H,2H-perfluorodecanesulfonic acid (8:2)	8:2FTS	39108-34-4
1H,1H,2H,2H-perfluorododecanesulfonic acid (10:2)	10:2FTS	120226-60-0
PERFLUOROOCTANESULFONAMIDOACETIC ACIDS		
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9
N-ethyl perfluorooctanesulfonamidoacetic acid	NEtFOSAA	2991-50-6
NATIVE PERFLUOROOCTANESULFONAMIDOETHANOLS (FOSEs)		
2-(N-methylperfluoro-1-octanesulfonamido)-ethanol	NMeFOSE	24448-09-7
2-(N-ethylperfluoro-1-octanesulfonamido)-ethanol	NEtFOSE	1691-99-2
PERFLUOROETHER AND POLYETHER CARBOXYLIC ACIDS		
Perfluoro-3-methoxypropanoic acid	PFMPA	377-73-1
Perfluoro-4-methoxybutanoic acid	PFMBA	863090-89-5
Perfluoro(2-ethoxyethane)sulfonic acid	PFEESA	113507-82-7
Nonafluoro-3,6-dioxaheptanoic acid	NFDHA	151772-58-6

3. Reporting Limits

3.1. The reporting limit for PFAS's is 2 ng/L for aqueous samples (20 ng/L for HFPO-DA) and 0.25 - 1 ng/g (2.5 ng/g for HFPO-DA) for soil samples.

4. Interferences

4.1. PFAS standards, extracts and samples should not come into contact with any glass containers or pipettes as these analytes can potentially adsorb to glass surfaces. PFAS analyte and EIS standards commercially purchased in glass ampoules are acceptable; however, all subsequent transfers or dilutions performed by the analyst must be prepared and stored in polypropylene containers.

4.2. Method interferences may be caused by contaminants in solvents, reagents (including reagent water), sample bottles and caps, and other sample processing hardware that can lead to discrete artifacts and/or elevated baselines in the chromatograms. The method analytes in this method can also be found in many common laboratory supplies and equipment, such as PTFE (polytetrafluoroethylene) products, LC solvent lines, methanol, aluminum foil, SPE sample transfer lines, etc. All items such as these must be demonstrated to be free from interferences (less than 1/3 the RL for each method analyte) under the conditions of the analysis by analyzing laboratory reagent blanks whenever a new vendor or reagent is brought online as described in Section 9.1,

and by continuous evaluation of method blanks and/or instrument blanks. **Subtracting blank values from sample results is not permitted.**

4.3. Matrix interferences may be caused by contaminants that are co-extracted from the sample. The extent of matrix interferences will vary considerably from source to source, depending upon the nature of the water. Humic and/or fulvic material can be co-extracted during SPE and high levels can cause enhancement and/or suppression in the electrospray ionization source or low recoveries on the SPE sorbent. Total organic carbon (TOC) is a good indicator of humic content of the sample.

4.4. SPE cartridges can be a source of interferences. The analysis of field and laboratory reagent blanks can provide important information regarding the presence or absence of such interferences. Brands and lots of SPE devices should be tested to ensure that contamination does not preclude analyte identification and quantitation.

5. Health and Safety

5.1. The toxicity or carcinogenicity of each reagent and standard used in this method is not fully established; however, each chemical compound should be treated as a potential health hazard. From this viewpoint, exposure to these chemicals must be reduced to the lowest possible level by whatever means available. A reference file of material safety data sheets is available to all personnel involved in the chemical analysis. Additional references to laboratory safety are available in the Chemical Hygiene Plan.

5.2. All personnel handling environmental samples known to contain or to have been in contact with municipal waste must follow safety practices for handling known disease causative agents.

5.3. PFOA has been described as “likely to be carcinogenic to humans.” Pure standard materials and stock standard solutions of these method analytes should be handled with suitable protection to skin and eyes, and care should be taken not to breathe the vapors or ingest the materials.

6. Sample Collection, Preservation, Shipping and Handling

6.1. Sample Collection for Aqueous Samples

6.1.1. Samples must be collected in two (2) 250-mL high density polyethylene (HDPE) container with an unlined plastic screw cap.

6.1.2. The sample handler must wash their hands before sampling and wear nitrile gloves while filling and sealing the sample bottles. PFAS contamination during sampling can occur from a number of common sources, such as food packaging and certain foods and beverages. Proper hand washing and wearing nitrile gloves will aid in minimizing this type of accidental contamination of the samples.

6.1.3. Open the tap and allow the system to flush until the water temperature has stabilized (approximately 3 to 5 min). Collect samples from the flowing system.

6.1.4. Fill sample bottles. Samples do not need to be collected headspace free.

6.1.5. After collecting the sample and cap the bottle. Keep the sample sealed from time of collection until extraction.

6.1.6. Field Reagent Blank (FRB)

6.1.6.1. An FRB must be handled along with each sample set. The sample set is composed of samples collected from the same sample site and at the same time. At the laboratory, fill the field blank sample bottle with reagent water and preservatives, seal, and ship to the sampling site along with the sample bottles. For each FRB shipped, an empty sample bottle (no preservatives) must also be shipped. At the sampling site, the sampler must open the shipped FRB and pour the reagent water into the empty shipped sample bottle, seal and label this bottle as the FRB. The FRB is shipped back to the laboratory along with the samples and analyzed to ensure that PFAS's were not introduced into the sample during sample collection/handling.

6.1.6.2. The reagent water used for the FRBs must be initially analyzed for method analytes as a MB and must meet the MB criteria in Section 9.1.1 prior to use. This requirement will ensure samples are not being discarded due to contaminated reagent water rather than contamination during sampling.

6.2. Sample Collection for Soil and Sediment samples

6.2.1. Grab samples are collected in polypropylene containers. Sample containers and contact surfaces containing PTFE shall be avoided.

6.3. Sample Preservation

6.3.1. Not applicable.

6.4. Sample Shipping

6.4.1. Samples must be chilled during shipment and must not exceed 10 °C during the first 48 hours after collection. Sample temperature must be confirmed to be at or below 10 °C when the samples are received at the laboratory. Samples stored in the lab must be held at or below 6 °C until extraction but should not be frozen.

6.4.2. **NOTE:** Samples that are significantly above 10° C, at the time of collection, may need to be iced or refrigerated for a period of time, in order to chill them prior to shipping. This will allow them to be shipped with sufficient ice to meet the above requirements.

6.5. Sample Handling

6.5.1. Holding Times

6.5.1.1. Aqueous samples should be extracted as soon as possible but must be extracted within 28 days and stored at 0° - 6° C in the dark. Solid and tissue matrices should be extracted within 90 days and stored at 0° - 6° C in the dark. Extracts are stored at <10° C and analyzed within 90 days after extraction.

6.5.1.2. The holding time for extraction for all matrices reporting to the State of Maine is 14 days stored at 0-6°C or -20°C; analytical holding time is 28 days for extracts stored at 0-4°C.

7. Equipment and Supplies

7.1. SAMPLE CONTAINERS – 250-mL high density polyethylene (HDPE) bottles fitted with unlined screw caps. Sample bottles must be discarded after use.

7.2. SAMPLE JARS – 8-ounce wide mouth high density polyethylene (HDPE) bottles fitted with unlined screw caps. Sample bottles must be discarded after use.

7.3. POLYPROPYLENE BOTTLES – 4-mL narrow-mouth polypropylene bottles.

7.4. CENTRIFUGE TUBES – 50-mL conical polypropylene tubes with polypropylene screw caps for storing standard solutions and for collection of the extracts.

7.5. AUTOSAMPLER VIALS – Polypropylene 0.7-mL autosampler vials with polypropylene caps.

7.6. NOTE: Polypropylene vials and caps are necessary to prevent contamination of the sample from PTFE coated septa. However, polypropylene caps do not reseal, so evaporation occurs after injection. Thus, multiple injections from the same vial are not possible.

7.7. POLYPROPYLENE GRADUATED CYLINDERS – Suggested sizes include 25, 50, 100 and 1000-mL cylinders.

7.8. Auto Pipets – Suggested sizes include 5, 10, 25, 50, 100, 250, 500, 1000, 5000 and 10,000-µls.

7.9. PLASTIC PIPETS – Polypropylene or polyethylene disposable pipets.

7.10. ANALYTICAL BALANCE – Capable of weighing to the nearest 0.0001 g.

7.11. ANALYTICAL BALANCE – Capable of weighing to the nearest 0.1 g.

7.12. SOLID PHASE EXTRACTION (SPE) APPARATUS FOR USING CARTRIDGES

7.13. SPE CARTRIDGES – 0.5 g SPE cartridges containing a reverse phase copolymer characterized by a weak anion exchanger (WAX) sorbent phase.

7.14. VACUUM EXTRACTION MANIFOLD – A manual vacuum manifold with large volume sampler for cartridge extractions, or an automatic/robotic sample preparation system designed for use with SPE cartridges, may be used if all QC requirements discussed in Section 9 are met. Extraction and/or elution steps may not be changed or omitted to accommodate the use of an automated system. Care must be taken with automated SPE systems to ensure the PTFE commonly used in these systems does not contribute to unacceptable analyte concentrations in the MB (Sect. 9.1.1).

7.15. SAMPLE DELIVERY SYSTEM – Use of a polypropylene transfer tube system, which transfers the sample directly from the sample container to the SPE cartridge, is recommended, but not mandatory. Standard extraction manifolds come equipped with PTFE transfer tube systems. These can be replaced with 1/8" O.D. x 1/16" I.D. polypropylene or polyethylene tubing cut to an appropriate length to ensure no sample contamination from the sample transfer lines. Other types of non-PTFE tubing may be used provided it meets the MB (Sect. 9.1.1) and LCS (Sect. 9.2) QC requirements.

7.16. Extract Clean-up Cartridge – 250 mg 6mL SPE Cartridge containing graphitized polymer carbon.

7.17. EXTRACT CONCENTRATION SYSTEM – Extracts are concentrated by evaporation with nitrogen using a water bath set no higher than 65 °C.

7.18. LABORATORY OR ASPIRATOR VACUUM SYSTEM – Sufficient capacity to maintain a vacuum of approximately 10 to 15 inches of mercury for extraction cartridges.

7.19. LIQUID CHROMATOGRAPHY (LC)/TANDEM MASS SPECTROMETER (MS/MS) WITH DATA SYSTEM

7.20. LC SYSTEM – Instrument capable of reproducibly injecting up to 10-µL aliquots and performing binary linear gradients at a constant flow rate near the flow rate used for development of this method (0.4 mL/min). The LC must be capable of pumping the water/methanol mobile phase

without the use of a degasser which pulls vacuum on the mobile phase bottle (other types of degassers are acceptable). Degassers which pull vacuum on the mobile phase bottle will volatilize the ammonium acetate mobile phase causing the analyte peaks to shift to earlier retention times over the course of the analysis batch. The usage of a column heater is optional.

7.21. LC/TANDEM MASS SPECTROMETER – The LC/MS/MS must be capable of negative ion electrospray ionization (ESI) near the suggested LC flow rate of 0.4 mL/min. The system must be capable of performing MS/MS to produce unique product ions for the method analytes within specified retention time segments. A minimum of 10 scans across the chromatographic peak is required to ensure adequate precision.

7.22. DATA SYSTEM – An interfaced data system is required to acquire, store, reduce, and output mass spectral data. The computer software should have the capability of processing stored LC/MS/MS data by recognizing an LC peak within any given retention time window. The software must allow integration of the ion abundance of any specific ion within specified time or scan number limits. The software must be able to calculate relative response factors, construct linear regressions or quadratic calibration curves, and calculate analyte concentrations.

7.23. ANALYTICAL COLUMN – An LC BEH C18 column (2.1 x 50 mm) packed with 1.7 µm dp C18 solid phase particles was used. Any column that provides adequate resolution, peak shape, capacity, accuracy, and precision (Sect. 9) may be used.

8. Reagents and Standards

8.1. GASES, REAGENTS, AND SOLVENTS – Reagent grade or better chemicals must be used.

8.1.1. REAGENT WATER – Purified water which does not contain any measurable quantities of any method analytes or interfering compounds greater than 1/3 the RL for each method analyte of interest. Prior to daily use, at least 3 L of reagent water should be flushed from the purification system to rinse out any build-up of analytes in the system's tubing.

8.1.2. METHANOL (CH_3OH, CAS#: 67-56-1) – High purity, demonstrated to be free of analytes and interferences.

8.1.3. AMMONIUM ACETATE ($NH4C2H3O2$, CAS#: 631-61-8) – High purity, demonstrated to be free of analytes and interferences.

8.1.4. ACETIC ACID (H_3CCOOH, CAS#: 64-19-7) - High purity, demonstrated to be free of analytes and interferences.

8.1.5. 1M AMMONIUM ACETATE/REAGENT WATER – High purity, demonstrated to be free of analytes and interferences.

8.1.6. 2mM AMMONIUM ACETATE/METHANOL:WATER (5:95) – To prepare, mix 2 mL of 1M AMMONIUM ACETATE,1 mL ACETIC ACID and 50 mL METHANOL into I Liter of REAGENT WATER.

8.1.7. Methanol/Water (80:20) – To prepare a 1 Liter bottle, mix 200 mL of REAGENT WATER with 800 mL of METHANOL.

8.1.8. AMMONIUM HYDROXIDE (NH_3, CAS#: 1336-21-6) – High purity, demonstrated to be free of analytes and interferences.

8.1.9. Sodium Acetate ($NaOOCCH_3$, CAS#: 127-09-3) – High purity, demonstrated to be free of analytes and interferences.

8.1.10. 25 mM Sodium Acetate Buffer – To prepare 250 mLs, dissolve .625 grams of sodium acetate into 100 mLs of reagent water. Add 4 mLs Acetic Acid and adjust the final volume to 250 mLs with reagent water.

8.1.11. NITROGEN – Used for the following purposes: Nitrogen aids in aerosol generation of the ESI liquid spray and is used as collision gas in some MS/MS instruments. The nitrogen used should meet or exceed instrument manufacturer's specifications. In addition, Nitrogen is used to concentrate sample extracts (Ultra High Purity or equivalent).

8.1.12. ARGON – Used as collision gas in MS/MS instruments. Argon should meet or exceed instrument manufacturer's specifications. Nitrogen gas may be used as the collision gas provided sufficient sensitivity (product ion formation) is achieved.

8.2. STANDARD SOLUTIONS – When a compound purity is assayed to be 96% or greater, the weight can be used without correction to calculate the concentration of the stock standard. PFAS analyte and IS standards commercially purchased in glass ampoules are acceptable; however, all subsequent transfers or dilutions performed by the analyst must be prepared and stored in polypropylene containers. Standards for sample fortification generally should be prepared in the smallest volume that can be accurately measured to minimize the addition of excess organic solvent to aqueous samples.

NOTE: Stock standards and diluted stock standards are stored at ≤4 °C.

8.2.1. ISOTOPE DILUTION Extracted Internal Standard (ID EIS) STOCK SOLUTIONS - ID EIS stock standard solutions are stable for at least 6 months when stored at 4 °C. The stock solution is purchased at a concentration of 1000 ng/mL.

8.2.2. ISOTOPE DILUTION Extracted Internal Standard PRIMARY DILUTION STANDARD (ID EIS PDS) – Prepare the ID EIS PDS at a concentration of 500 ng/mL. The ID PDS is prepared in methanol. The ID PDS is stable for 1 year when stored at ≤4 °C (table 2a).

Table 2a

Isotope Labeled Standard	Conc. of EIS Stock (ng/mL)	Vol. of EIS Stock (mL)	Final Vol. of EIS PDS (mL)	Final Conc. of EIS PDS (ng/mL)
M4PFBA	1000	1.0	2.0	500
M5PFPeA	1000	1.0	2.0	500
M5PFHxA	1000	1.0	2.0	500
M4PFHpA	1000	1.0	2.0	500
M8PFOA	1000	1.0	2.0	500
M9PFNA	1000	1.0	2.0	500
M6PFDA	1000	1.0	2.0	500
M7PFUdA	1000	1.0	2.0	500
MPFDoA	1000	1.0	2.0	500
M2PFTeDA	1000	1.0	2.0	500
M2PFHxDA	50,000	.02	2.0	500
M8FOSA	1000	1.0	2.0	500
d3-N-MeFOSAA	1000	1.0	2.0	500
d5-N-EtFOSAA	1000	1.0	2.0	500
M3PFBS	929	1.0	2.0	464.5
M3PFHxS	946	1.0	2.0	473
M8PFOS	957	1.0	2.0	478.5
M2-4:2FTS	935	1.0	2.0	467.5
M2-6:2FTS	949	1.0	2.0	474.5
M2-8:2FTS	958	1.0	2.0	479
M2,D4-10:2FTS	50,000	.04	2.0	1000
M3HFPO-DA	50,000	.4	2.0	10,000

Table 2b

Isotope Labeled Standard	Conc. of EIS Stock (ng/mL)	Vol. of EIS Stock (mL)	Final Vol. of EIS PDS (mL)	Final Conc. of EIS PDS (ng/mL)
d3-N-MeFOSA	50,000	.2	2.0	5000
d5-N-EtFOSA	50,000	.2	2.0	5000
d7-N-MeFOSE	50,000	.2	2.0	5000
d9-N-EtFOSE	50,000	.2	2.0	5000

8.2.3. ANALYTE STOCK STANDARD SOLUTION – Analyte stock standards are stable for 1 year when stored at 4 °C. When using these stock standards to prepare a PDS, care must be taken to ensure that these standards are at room temperature and adequately vortexed.

8.2.4. ANALYTE PRIMARY SPIKING STANDARD – Prepare the spiking standard at a concentration of 500 ng/mL in methanol. The spiking standard is stable for at least two months when stored in polypropylene centrifuge tubes at room temperature.

8.2.5. Analyte Secondary Spiking Stock (SS): Prepare the spiking solution of additional add on components for project specific requirements only.

Table 3: Purchased PFAC-30PAR

Analyte	Conc. of Stock (ng/mL)	Vol. of Stock (mL)	Final Vol. of PDS (mL)	Final Conc. of PDS (ng/mL)
PFBA	1000	1	2	500
PFPeA	1000	1	2	500
PFHxA	1000	1	2	500
PFHpA	1000	1	2	500
PFOA	1000	1	2	500
PFNA	1000	1	2	500
PFDA	1000	1	2	500
PFUnA	1000	1	2	500
PFDoA	1000	1	2	500
PFTrDA	1000	1	2	500
PFTA	1000	1	2	500
FOSA	1000	1	2	500
Br-NMeFOSAA	240	1	2	120
L-NMeFOSAA	760	1	2	380
Br-NEtFOSAA	225	1	2	112.5
L-NEtFOSAA	775	1	2	387.5
L-PFBS	887	1	2	443.5
L-PFPeS	941	1	2	470.5
L-PFHxSK	741	1	2	370.5
Br-PFHxSK	173	1	2	86.5
L-PFHpS	953	1	2	476.5
L-PFOSK	732	1	2	366
Br-PFOSK	196	1	2	98
L-PFNS	962	1	2	481
L-PFDS	965	1	2	482.5
4:2FTS	937	1	2	468.5
6:2FTS	951	1	2	475.5
8:2FTS	960	1	2	480
9ClPF3ONS	933	1	2	466.5
11ClPF3OUdS	943	1	2	471.5
ADONA	945	1	2	472.5
HFPO-DA	1000	1	2	500

Table 4: Secondary Stock (SS)

Analyte	Conc. of Stock (ng/mL)	Vol. of Stock (mL)	Final Vol. of SS (mL)	Final Conc. of SS(ng/mL)
PFHxDA	50,000	0.4	10	2000
PFODA	50,000	0.4	10	2000
HFPO-DA	50,000	3.9	10	19,500
10:2-FTS	48,300	0.4	10	1932
PFDoS	48,400	0.4	10	1936
PFPrS	45,800	0.4	10	1832
PFMPA	50,000	0.4	10	2000
PFMBA	50,000	0.4	10	2000
PFEESA	44,500	0.4	10	1780
NFDHA	50,000	0.4	10	2000
NMeFOSA	50,000	0.4	10	2000
NMeFOSE	50,000	0.4	10	2000
NEtFOSA	50,000	0.4	10	2000
NEtFOSE	50,000	0.4	10	2000

Table 5: Final PDS solution

Stock	Conc of Stock	Vol of Stock (mL)	Final Vol of PDS (mL)	Final conc (ng/mL)
PFAC30PAR	**Varies (see Table 3)**	**2**	**4**	**500 (varies)**
Secondary Stock	**Varies (see Table 4)**	**1**	**4**	**500 (varies)**

8.2.6. LOW, MEDIUM, AND HIGH LEVEL LCS – The LCS's will be prepared at the following concentrations and rotated per batch; 2 ng/L, 40 ng/L, 500 ng/l for drinking water. The analyte PDS contains all the method analytes of interest at various concentrations in methanol. The analyte PDS has been shown to be stable for six months when stored at ≤ 4 °C.

8.2.7. Isotope Dilution Labeled Recovery Stock Solutions (ID REC) – ID REC Stock solutions are stable for at least 1 year when stored at 4 °C. The stock solution is purchased at a concentration of 2000 ng/mL.

8.2.8. Isotope Dilution Labeled Recovery Primary Dilution Standard (ID REC PDS) - Prepare the ID REC PDS at a concentration of 500 ng/mL. The ID REC PDS is prepared in methanol. The ID REC PDS is stable for at least 1 year when stored in polypropylene centrifuge tubes at ≤4 °C.

Table 5

Analyte	Conc. of REC Stock (ng/mL)	Vol. of REC Stock (mL)	Final Vol. of REC PDS (mL)	Final Conc. of REC PDS (ng/mL)
M2PFOA	2000	1	4	500
M2PFDA	2000	1	4	500
M3PFBA	2000	1	4	500
M4PFOS	2000	1	4	500

8.2.9. CALIBRATION STANDARDS (CAL)

Current Concentrations (ng/mL): 0.25 (optional), 0.5, 1.0, 5.0, 10.0, 25, 50.0, 100, 250.

Prepare the CAL standards over the concentration range of interest from dilutions of the analyte PDS in methanol containing 20% reagent water. 20 µl of the EIS PDS and REC PDS are added to the CAL standards to give a constant concentration of 10 ng/mL. The lowest concentration CAL standard must be at or below the RL (2 ng/L), which may depend on system sensitivity. The CAL standards may also be used as CCVs (Sect. 9.8).

Table 6

Calibration Standard Concentration	Final Aqueous Cal STD Concentration	Final Soil Cal STD Concentration	30 Compound Stock Added (uL)	Individual Analyte Stocks Added (uL)	500 ng/mL Dilution Added (uL)	Final Volume in MeOH/H2O (80:20)
.5 ng/mL	2 ng/L	.25 ng/g	6.25		25	25 mLs
1 ng/mL	4 ng/L	.5 ng/g	5		20	10 mLs
5 ng/mL	20 ng/L	1 ng/g	25		100	10 mLs
10 ng/mL	40 ng/L	5 ng/g	125	5		25 mLs
50 ng/mL	200 ng/L	25 ng/g	250	10		10 mLs
125 ng/mL	500 ng/L	62.5 ng/g	625	25		10 mLs
150 ng/mL	600 ng/L	75 ng/g	750	30		10 mLs
250 ng/mL	1000 ng/L	125 ng/g	625			5 mLs
500 ng/mL	2000 ng/L	250 ng/g	1250			5 mLs

9. Quality Control

The laboratory must maintain records to document the quality of data that is generated. Ongoing data quality checks are compared with established performance criteria to determine if the results of analyses meet the performance characteristics of the method.

9.1. Blanks

9.1.1. METHOD BLANK (MB) - A Method Blank (MB) is required with each extraction batch to confirm that potential background contaminants are not interfering with the identification or quantitation of method analytes. Prep and analyze a MB for every 20 samples. If the MB produces a peak within the retention time window of any analyte that would prevent the determination of that analyte, determine the source of contamination, and eliminate the interference before processing samples. Background contamination must be reduced to an acceptable level before proceeding. Background from method analytes or other contaminants that interfere with the measurement of method analytes must be below the RL. If the method analytes are detected in the MB at concentrations equal to or greater than this level, then all data for the problem analyte(s) must be considered invalid for all samples in the extraction batch. Because background contamination is a significant problem for several method analytes, it is highly recommended that the analyst maintains a historical record of MB data.

9.1.1.1. Corrective Action: Samples should not be analyzed until an acceptable method blank analysis is obtained. The results are qualified with a “B” flag for any associated sample concentrations that are less than 10x the blank concentration for the analyte. Sample results are qualified with a “B” flag for analytes observed in the blank > RL. Exceptions may be made if the samples associated with the out-of-control method blank

are non-detect for the compound of interest, or if sample concentrations are greater than 10x the blank levels. In such cases when the sample results are accepted, the client is notified in a project narrative associated with the sample results.

9.1.2. **FIELD REAGENT BLANK (FRB)** - The purpose of the FRB is to ensure that PFAS's measured in the Field Samples were not inadvertently introduced into the sample during sample collection/handling. Analysis of the FRB is performed on a project specific basis. The FRB is processed, extracted, and analyzed in exactly the same manner as a Field Sample.

9.2. Laboratory Control Sample (LCS) and Laboratory Control Sample Duplicates (LCSD)

9.2.1. An LCS is required with each extraction batch. The fortified concentration of the LCS may be rotated between low, medium, and high concentrations from batch to batch. Default limits of 50-150% (60 – 140% for New Jersey programs) of the true value may be used for analytes until sufficient replicates have been analyzed to generate proper control limits. Calculate the percent recovery (%*R*) for each analyte using the equation:

$$\%R = \frac{A \times 100}{B}$$

Where:

A = measured concentration in the fortified sample
B =fortification concentration.

9.2.2. Where applicable, in the absence of additional sample volume required to perform matrix specific QC, LCSD's are to be extracted and analyzed. The concentration and analyte recovery criteria for the LCSD must be the same as the batch LCS. The RSD's must fall within ≤30% of the true value for medium and high-level replicates, and ≤50% for low level replicates. Calculate the relative percent difference (RPD) for duplicate MSs (MS and MSD) using the equation:

$$RPD = \frac{|LCS - LCSD|}{(LCS + LCSD) / 2} \times 100$$

9.2.3. If the LCS and or LCSD results do not meet these criteria for method analytes, then all data for the problem analyte(s) must be considered invalid for all samples in the extraction batch.

9.2.4. Corrective Action: All compounds should be recovered within the specified limits. If the LCS recovery is still out of control, re-extract and/or re-analyze the LCS and all associated samples. Samples cannot be reported until an acceptable LCS is obtained. Exceptions may be made in some cases for documented difficult/poor performing compounds such as PFODA, FOSA, and NFDHA. An explanation of any out-of-control LCS recovery must be included in the project narrative to the client.

9.3. Labeled Recovery Standards (REC)

9.3.1. The analyst must monitor the peak areas of the REC(s) in all injections during each analysis day.

9.4. Extracted Internal Standards (EIS)

9.4.1. The EIS standard is fortified into all samples, CCVs, MBs, LCSs, MSs, MSDs, FD, and FRB prior to extraction. It is also added to the CAL standards. The EIS is a means of assessing method performance from extraction to final chromatographic measurement. Calculate the recovery (%R) for the EIS using the following equation:

$$\%R = (A / B) \times 100$$

Where:

A = calculated EIS concentration for the QC or Field Sample

B = fortified concentration of the EIS.

9.4.2. EIS recoveries are evaluated according to their matrix specific control limits in the LIMS. Any samples with EIS recoveries < 5% (< 10 % for New York) must be re-extracted. Any data associated with EIS recoveries <2% cannot be reported and the project manager needs to be notified. A low or high percent recovery for a sample, blank, or CCV does not require discarding the analytical data, but it may indicate a potential problem with future analytical data. When EIS recovery from a sample, blank, or CCV are outside control limits, check 1) calculations to locate possible errors, 2) standard solutions for degradation, 3) contamination, and 4) instrument performance. For CCVs and QC elements spiked with all target analytes, if the recovery of the corresponding target analytes meet the acceptance criteria but the EIS is outside criteria, the data can be used. If the associated target analytes do not meet the acceptance criteria, the data must be reanalyzed.

9.5. Matrix Spike (MS)

9.5.1. Analysis of an MS is required in each extraction batch and is used to determine that the sample matrix does not adversely affect method accuracy. Assessment of method precision is accomplished by analysis of a Field Duplicate (FD) (Sect. 9.6); however, infrequent occurrence of method analytes would hinder this assessment. If the occurrence of method analytes in the samples is infrequent, or if historical trends are unavailable, a second MS, or MSD, must be prepared, extracted, and analyzed from a duplicate of the Field Sample. Extraction batches that contain MSDs will not require the extraction of a field sample duplicate. If a variety of different sample matrices are analyzed regularly, for example, drinking water from groundwater and surface water sources, method performance should be established for each. Over time, MS data should be documented by the laboratory for all routine sample sources.

9.5.2. Within each extraction batch, a minimum of one Field Sample is fortified as an MS for every 20 Field Samples analyzed. The MS is prepared by spiking a sample with an appropriate amount of the Analyte Stock Standard (Sect. 8.2.3). Use historical data and rotate through the low, mid and high concentrations when selecting a fortifying concentration. Calculate the percent recovery (%*R*) for each analyte using the equation:

$$\%R = \frac{(A - B)}{C} \times 100$$

Where:

A = measured concentration in the fortified sample
B = measured concentration in the unfortified sample
C = fortification concentration.

9.5.3. Analyte recoveries may exhibit matrix bias. For samples fortified at or above their native concentration, recoveries should range between 50-150%. If the accuracy of any analyte falls outside the designated range, and the laboratory performance for that analyte is shown to be in control in the LCS, the recovery is judged to be matrix biased. The result for that analyte in the unfortified sample is labeled suspect/matrix to inform the data user that the results are suspect due to matrix effects.

9.6. Laboratory Duplicate

9.6.1. FIELD DUPLICATE OR LABORATORY FORTIFIED SAMPLE MATRIX DUPLICATE (FD or MSD) – Within each extraction batch (not to exceed 20 Field Samples), a minimum of one FD or MSD must be analyzed. Duplicates check the precision associated with sample collection, preservation, storage, and laboratory procedures. If method analytes are not routinely observed in Field Samples, an MSD should be analyzed rather than an FD.

9.6.1.1. Calculate the relative percent difference (*RPD*) for duplicate measurements (*FD1*

and *FD2*) using the equation:

$$RPD = \frac{|FD1 - FD2|}{(FD1 + FD2) / 2} \times 100$$

9.6.2. RPDs for FDs should be ≤30%. Greater variability may be observed when FDs have analyte concentrations that are within a factor of 2 of the RL. At these concentrations, FDs should have RPDs that are ≤50%. If the RPD of any analyte falls outside the designated range, and the laboratory performance for that analyte is shown to be in control in the CCV, the recovery is judged to be matrix biased. The result for that analyte in the unfortified sample is labeled suspect/matrix to inform the data user that the results are suspect due to matrix effects.

9.6.3. If an MSD is analyzed instead of a FD, calculate the relative percent difference (RPD) for duplicate MSs (MS and MSD) using the equation:

$$RPD = \frac{|MS - MSD|}{(MS + MSD) / 2} \times 100$$

9.6.4. RPDs for duplicate MSs should be ≤30% for samples fortified at or above their native concentration. Greater variability may be observed when MSs are fortified at analyte concentrations that are within a factor of 2 of the RL. MSs fortified at these concentrations should have RPDs that are ≤50% for samples fortified at or above their native concentration. If the RPD of any analyte falls outside the designated range, and the laboratory performance for that analyte is shown to be in control in the LCSD where applicable, the result is judged to be matrix biased.

9.7. Initial Calibration Verification (ICV)

9.7.1. After each ICAL, analyze a QCS sample from a source different from the source of the CAL standards. If a second vendor is not available, then a different lot of the standard should be used. The QCS should be prepared and analyzed just like a CCV. Acceptance criteria for the QCS are identical to the CCVs; the calculated amount for each analyte must be ± 30% of the expected value. If measured analyte concentrations are not of acceptable accuracy, check the entire analytical procedure to locate and correct the problem.

9.8. Continuing Calibration Verification (CCV)

9.9. CCV Standards are analyzed at the beginning of each analysis batch, after every 10 Field Samples, and at the end of the analysis batch. See Section 10.11 for concentration requirements and acceptance criteria.

9.10. Method-specific Quality Control Samples

9.10.1. None

9.11. Method Sequence

- CCV-LOW
- MB
- LCS
- LCSD (where applicable)
- MS
- Duplicate or MSD
- Field Samples (1-10)
- CCV-MID
- Field Samples (11-20)
- CCV-LOW

10. Procedure

10.1. Equipment Set-up

10.1.1. This procedure may be performed manually or in an automated mode using a robotic or automatic sample preparation device. If an automated system is used to prepare samples, follow the manufacturer's operating instructions, but all extraction and elution steps must be the same as in the manual procedure. Extraction and/or elution steps may not be changed or omitted to accommodate the use of an automated system. If an automated system is used, the MBs should be rotated among the ports to ensure that all the valves and tubing meet the MB requirements (Sect. 9.1).

10.1.2. Some of the PFAS's adsorb to surfaces, including polypropylene. Therefore, the aqueous sample bottles must be rinsed with the elution solvent (Sect 10.3.4) whether extractions are performed manually or by automation. The bottle rinse is passed through the cartridge to elute the method analytes and is then collected (Sect. 10.3.4).

10.1.3. NOTE: The SPE cartridges and sample bottles described in this section are designed as single use items and should be discarded after use. They may not be refurbished for reuse in subsequent analyses.

10.2. Sample Preparation and Extraction of Aqueous Samples

10.2.1. Samples are preserved, collected, and stored as presented in Section 6. The entire sample that is received must be sent through the SPE cartridge. In addition, the bottle must be solvent rinsed and this rinse must be sent through the SPE cartridge as well. The method blank (MB) and laboratory control sample (LCS) must be extracted in the same manner (i.e., must include the bottle solvent rinse). It should be noted that a water rinse alone is not sufficient. This does not apply to samples with high concentrations of PFAS that are prepared using serial dilution and not SPE.

10.2.2. Determine sample volume. Weigh all samples to the nearest 1g. If visible sediment is present, centrifuge and decant into a new 250mL HDPE bottle and record the weight of the new container.

NOTE: Some of the PFAS's adsorb to surfaces, thus the sample volume may NOT be transferred to a graduated cylinder for volume measurement.

10.2.3. The MB, LCS and FRB may be prepared by measuring 250 mL of reagent water with a polypropylene graduated cylinder or filling a 250-mL sample bottle to near the top.

10.2.4. Adjust the QC and sample pH to 3 by adding acetic acid in water dropwise.

10.2.5. Add 20 µL of the EIS PDS (Sect. 8.2.2) to each sample and QC, cap and invert to mix.

10.2.6. If the sample is an LCS, LCSD, MS, or MSD, add the necessary amount of analyte PDS (Sect. 8.2.4 and Sect 8.2.5). Cap and invert each sample to mix.

10.3. Cartridge SPE Procedure

10.3.1. CARTRIDGE CLEAN-UP AND CONDITIONING – DO NOT allow cartridge packing material to go dry during any of the conditioning steps. Rinse each cartridge with 3 X 5 mL of 2% ammonium hydroxide in methanol, followed by 5mLs of methanol. Next, rinse each cartridge with 5 mLs of the 25 mM acetate buffer, followed by 15 mL of reagent water, without allowing the water to drop below the top edge of the packing. If the cartridge goes dry during the conditioning phase, the conditioning must be started over. Add 4-5 mL of reagent water to

each cartridge, attach the sample transfer tubes (Sect. 7.11.3), turn on the vacuum, and begin adding sample to the cartridge.

10.3.2. SAMPLE EXTRACTON – Adjust the vacuum so that the approximate flow rate is approximately 4 mL/min. Do not allow the cartridge to go dry before all the sample has passed through.

10.3.3. SAMPLE BOTTLE AND CARTRIDGE RINSE – After the entire sample has passed through the cartridge, rinse the sample bottles with 4 mL reagent water followed by 4 mL 25 mM acetate buffer at pH 4 and draw the aliquot through the sample transfer tubes and the cartridges. Draw air or nitrogen through the cartridge for 5-10 min at high vacuum (10-15 in. Hg). NOTE: If empty plastic reservoirs are used in place of the sample transfer tubes to pass the samples through the cartridges, these reservoirs must be treated like the transfer tubes. After the entire sample has passed through the cartridge, the reservoirs must be rinsed to waste with reagent water.

10.3.4. SAMPLE BOTTLE AND CARTRIDGE ELUTION, Fraction 1 – Turn off and release the vacuum. Lift the extraction manifold top and insert a rack with collection tubes into the extraction tank to collect the extracts as they are eluted from the cartridges. Rinse the sample bottles with 12 mLs of methanol and draw the aliquot through the sample transfer tubes and cartridges. Use a low vacuum such that the solvent exits the cartridge in a dropwise fashion.

10.3.5. NOTE: Due to the possible volatility and suspect degradation of sulfonamides and sulfonamide ethanols when exposed to heat, a portion of the methanol fraction may be retained and analyzed independently with no evaporation for these analytes.

10.3.6. SAMPLE BOTTLE AND CARTRIDGE ELUTION, Fraction 2 In a separate collection vial, rinse the sample bottles with 12 mL of 2% ammonium hydroxide in methanol and elute the analytes from the cartridges by pulling the 4 mL of methanol through the sample transfer tubes and the cartridges. Use a low vacuum such that the solvent exits the cartridge in a dropwise fashion.

10.3.7. NOTE: If empty plastic reservoirs are used in place of the sample transfer tubes to pass the samples through the cartridges, these reservoirs must be treated like the transfer tubes. After the reservoirs have been rinsed in Section 10.3.3, the elution solvent used to rinse the sample bottles must be swirled down the sides of the reservoirs while eluting the cartridge to ensure that any method analytes on the surface of the reservoirs are transferred to the extract.

10.3.8. CLEAN-UP CARTRIDGE ELUTION, Elute the clean-up cartridge with 8 additional mLs of methanol and draw the aliquot through the cartridge. Use a low vacuum such that the solvent exits the cartridge in a dropwise fashion.

10.3.9. Fractions 1 and 2 are to be combined during the concentration stage (section10.8).

10.4. Sample Prep and Extraction Protocol for Soils, Solids and Sediments.

10.4.1. Homogenize and weigh 4 grams of sample (measured to the nearest hundredth of a gram) into a 50 mL polypropylene centrifuge tube. For laboratory control blanks and spikes, 4 grams of clean sand is used.

10.4.2. Add 40 µL of the EIS PDS (Sect. 8.2.2) to each sample and QC.

10.4.3. If the sample is an LCS, LCSD, MS, or MSD, add the necessary amount of analyte PDS (Sect. 8.2.6). Cap and invert each sample to mix.

10.4.4. To all samples, add 10 mLs of methanol, cap, vortex for 25 seconds at 2500 RPM.

10.4.5. Following mixing, sonicate each sample for 30 minutes and let samples sit overnight (at least 2 hours is required for RUSH samples).

10.4.6. Centrifuge each sample at 3500RPM for 10 minutes.

10.4.7. Remove 5mL of supernatant, and reserve for clean-up.

10.5. Sample Prep and Extraction Protocol for Tissues, Oils and Biosolids.

10.5.1. Homogenize and weigh 2-8 grams of sample (measured to the nearest hundredth of a gram) into a 50 mL polypropylene centrifuge tube. For laboratory control blanks and spikes, 4 grams of clean sand is used.

10.5.2. Add 40 µL of the EIS PDS (Sect. 8.2.2) to each sample and QC.

10.5.3. If the sample is an LCS, LCSD, MS, or MSD, add the necessary amount of analyte PDS (Sect. 8.2.6). Cap and invert each sample to mix.

10.5.4. Add 100 ul of Ammonium Hydroxide.

10.5.5. To all samples, add 10 mLs of methanol, cap, vortex for 25-30 seconds at 2500 RPM.

10.5.6. Following mixing, sonicate each sample for 30 minutes and let samples sit for 2 hours.

10.5.7. Centrifuge each sample at 3500RPM for 10 minutes.

10.5.8. Remove 5 mLs of the supernatant, and reserve for clean-up.

10.6. Extract Clean-up: Soils, Solids and Sediment Matrices

10.6.1. CARTRIDGE CLEAN-UP AND CONDITIONING –. Rinse each cartridge with 15 mL of methanol and discard. If the cartridge goes dry during the conditioning phase, the conditioning must be started over. Attach the sample transfer tubes (Sect. 7.11.3), turn on the vacuum, and begin adding sample to the cartridge. For Soils extracts, transfer 5 mLs of the MeOH eluate to the cartridge. Samples should be allowed to pass through the cartridge by gravity feed at a dropwise rate to ensure adequate contact time with the cartridge sorbent. Vacuum is only applied if the flow of solvent through the cartridge stops.

10.6.2. Adjust the vacuum so that the approximate flow rate is 1-2 mL/min. Do not allow the cartridge to go dry before all the sample has passed through.

10.6.3. SAMPLE BOTTLE AND CARTRIDGE RINSE – After the entire sample has passed through the cartridge, rinse the sample collection vial with two 4-mL aliquots of methanol and draw each aliquot through the cartridges. Draw air or nitrogen through the cartridge for 5 min at high vacuum (10-15 in. Hg).

10.6.4. If extracts are not to be immediately evaporated, cover collection tubes and store at ambient temperature till concentration.

NOTE: Due to the possible volatility and suspect degradation of sulfonamides and sulfonamide ethanols when exposed to heat, a portion of the eluate may be retained and analyzed independently with no evaporation for these analytes.

10.7. Extract Clean-up: Tissues, Oils and Biosolids

10.7.1. CARTRIDGE CLEAN-UP AND CONDITIONING –. Stack a 500 mg WAX cartridge onto a 250 mg GCB cartridge. Rinse each cartridge set with 10 mL of 2% NH_4OH and discard. Immediately rinse each cartridge stack with 15 mLs MeOH and discard, If the cartridge goes

dry during the conditioning phase, the conditioning must be started over. Attach the sample transfer tubes (Sect. 7.11.3), turn on the vacuum.

10.7.2. Adjust the vacuum so that the approximate flow rate is 1-2 mL/min. Do not allow the cartridge to go dry before all the sample has passed through.

10.7.3. SAMPLE elution AND CARTRIDGE RINSE – Load 5 mLs of the MeOH sample extract to the cartridge. After the entire sample has passed through the cartridge, rinse the cartridges with 5-mLs of methanol and draw through the cartridges. Immediately add and elute 2 5mL aliquots of 2% NH_4OH to the cartridges, collecting the eluate with the MeOH eluate.

10.7.4. If extracts are not to be immediately evaporated, cover collection tubes and store at ambient temperature till concentration.

10.7.5. NOTE: Due to the possible volatility and suspect degradation of sulfonamides and sulfonamide ethanols when exposed to heat, a portion of the eluate may be retained and analyzed independently with no evaporation for these analytes.

10.8. Extract Concentration

10.8.1. Concentrate the extract to dryness under a gentle stream of nitrogen in a heated water bath (60-65 °C) to remove all the water/methanol mix. Add the appropriate amount of 80:20% (vol/vol) methanol:water solution and 20 µl of the ID REC PDS (Sect. 8.2.8) to the collection vial to bring the volume to 1 mL and vortex. Transfer two aliquots with a plastic pipet (Sect. 7.8) into 2 polypropylene autosampler vials.

10.8.2. NOTE: It is recommended that the entire 1-mL aliquot not be transferred to the autosampler vial because the polypropylene autosampler caps do not reseal after injection. Therefore, do not store the extracts in the autosampler vials as evaporation losses can occur occasionally in these autosampler vials. Extracts can be split between 2 X 700 µl vials (Sect. 7.5).

10.9. Sample Volume Determination

10.9.1. If the level of the sample was marked on the sample bottle, use a graduated cylinder to measure the volume of water required to fill the original sample bottle to the mark made prior to extraction. Determine to the nearest 10 mL.

10.9.2. If using weight to determine volume, weigh the empty bottle to the nearest 10 g and determine the sample weight by subtraction of the empty bottle weight from the original sample weight (Sect. 10.2.2). Assume a sample density of 1.0 g/mL. In either case, the sample volume will be used in the final calculations of the analyte concentration (Sect. 11.2).

10.10. Initial Calibration - Demonstration and documentation of acceptable initial calibration is required before any samples are analyzed. After the initial calibration is successful, a CCV is required at the beginning and end of each period in which analyses are performed, and after every tenth Field Sample.

10.10.1. ESI-MS/MS TUNE

10.10.1.1. Calibrate the mass scale of the MS with the calibration compounds and procedures prescribed by the manufacturer.

10.10.1.2. Optimize the [M-H]- for each method analyte by infusing approximately 0.5-1.0 µg/mL of each analyte (prepared in the initial mobile phase conditions) directly into the MS at the chosen LC mobile phase flow rate (approximately 0.4 mL/min). This tune can be done on a mix of method analytes. The MS parameters (voltages, temperatures, gas flows, etc.) are

varied until optimal analyte responses are determined. The method analytes may have different optima requiring some compromise between the optima.

10.10.1.3. Optimize the product ion for each analyte by infusing approximately 0.5-1.0 µg/mL of each analyte (prepared in the initial mobile phase conditions) directly into the MS at the chosen LC mobile phase flow rate (approximately 0.4 mL/min). This tune can be done on a mix of method analytes. The MS/MS parameters (collision gas pressure, collision energy, etc.) are varied until optimal analyte responses are determined. Typically, carboxylic acids have very similar MS/MS conditions and sulfonic acids have similar MS/MS conditions.

10.10.2. Establish LC operating parameters that optimize resolution and peak shape. Modifying the standard or extract composition to more aqueous content to prevent poor shape is not permitted.

10.10.2.1. Cautions: LC system components, as well as the mobile phase constituents, contain many of the method analytes in this method. Thus, these PFAS's will build up on the head of the LC column during mobile phase equilibration. To minimize the background PFAS peaks and to keep background levels constant, the time the LC column sits at initial conditions must be kept constant and as short as possible (while ensuring reproducible retention times). In addition, prior to daily use, flush the column with 100% methanol for at least 20 min before initiating a sequence. It may be necessary on some systems to flush other LC components such as wash syringes, sample needles or any other system components before daily use.

10.10.3. Inject (2µl for Sciex systems, 3µl for Waters systems, 20µl for MeOH fractions) a mid-level CAL standard under LC/MS conditions to obtain the retention times of each method analyte. If analyzing for PFTA, ensure that the LC conditions are adequate to prevent co-elution of PFTA and the mobile phase interferants. These interferants have the same precursor and products ions as PFTA, and under faster LC conditions may co-elute with PFTA. Divide the chromatogram into retention time windows each of which contains one or more chromatographic peaks. During MS/MS analysis, fragment a small number of selected precursor ions ([M-H]-) for the analytes in each window and choose the most abundant product ion. For maximum sensitivity, small mass windows of ±0.5 daltons around the product ion mass were used for quantitation.

10.10.4. Inject a mid-level CAL standard under optimized LC/MS/MS conditions to ensure that each method analyte is observed in its MS/MS window and that there are at least 10 scans across the peak for optimum precision.

10.10.4.1. NOTE: PFHxS, PFOS, NMeFOSAA, and NEtFOSAA have multiple chromatographic peaks using the LC conditions in Table 7 due to chromatographic resolution of the linear and branched isomers of these compounds. Most PFAS's are produced by two different processes. One process gives rise to linear PFAS's only while the other process produces both linear and branched isomers. Thus, both branched and linear PFAS's can potentially be found in the environment. For the aforementioned compounds that give rise to more than one peak, all the chromatographic peaks observed in the standard must be integrated and the areas totaled. Chromatographic peaks in a sample must be integrated in the same way as the CAL standard.

10.10.5. Prepare a set of CAL standards as described in Section 8.2.9. The lowest concentration CAL standard must be at or below the RL (2 ng/L), which may depend on system sensitivity.

10.10.6. The LC/MS/MS system is calibrated using the isotope dilution technique. Target analytes are quantitated against their isotopically labeled analog (Extracted Internal Standard) where commercially available. If a labeled analog is not commercially available, the extracted internal standard with the closest retention time and /or closest chemical similarity is to be used. Use the LC/MS/MS data system software to generate a linear regression or quadratic calibration curve for each of the analytes. This curve must always be forced through zero and may be concentration weighted, if necessary. Forcing zero allows for a better estimate of the background levels of method analytes. A minimum of 5 levels are required for a linear calibration model and a minimum of 6 levels are required for a quadratic calibration model.

10.10.7. CALIBRATION ACCEPTANCE CRITERIA – A linear or quadratic fit is acceptable if the coefficient of determination (r^2) is greater than 0.990. All curves must force through zero (some of the SCIEX software versions do not allow forcing through zero for quadratic curves, therefore an additional standard at approximately half the RL must be analyzed). Any target analyte calibrated using average response must have a relative standard deviation (RSD) of ≤20%. When quantitated using the initial calibration curve, each calibration point, except the lowest point, for each analyte must calculate to be within 70-130% of its true value. Any CAL point within 2x the RL must calculate to be within 50-150% of its true value. If these criteria cannot be met, the analyst will have difficulty meeting ongoing QC criteria. It is recommended that corrective action is taken to reanalyze the CAL standards, restrict the range of calibration, or select an alternate method of calibration (forcing the curve through zero is still required). EIS compounds must have an RSD of ≤20%; the fluorotelomer EIS compounds must have an RSD ≤30%.

10.10.7.1. **CAUTION:** When acquiring MS/MS data, LC operating conditions must be carefully reproduced for each analysis to provide reproducible retention times. If this is not done, the correct ions will not be monitored at the appropriate times. As a precautionary measure, the chromatographic peaks in each window must not elute too close to the edge of the segment time window.

10.10.8. CONTINUING CALIBRATION CHECK (CCV) – Minimum daily calibration verification is as follows. Verify the initial calibration at the beginning and end of each group of analyses, and after every tenth sample during analyses. In this context, a “sample” is considered to be a Field Sample. MBs, CCVs, LCSs, MSs, FDs FRBs and MSDs are not counted as samples. The beginning CCV of each analysis batch must be at or below the RL in order to verify instrument sensitivity prior to any analyses. If standards have been prepared such that all low CAL points are not in the same CAL solution, it may be necessary to analyze two CAL standards to meet this requirement. Alternatively, the analyte concentrations in the analyte PDS may be customized to meet these criteria.

10.10.8.1. Inject an aliquot of the appropriate concentration CAL standard and analyze with the same conditions used during the initial calibration.

10.10.8.2. Calculate the concentration of each analyte and EIS in the CCV. The calculated amount for each analyte for medium level CCVs must be within 70 – 130% of the true value with an allowance of 10% of the reported analytes to be less than 70% (minimum recovery is 10%) for compounds without their own labelled EIS. For CCVs, if the recovery of the corresponding target analytes meets the acceptance criteria but the EIS is outside criteria, the data can be used. The calculated amount for the lowest calibration point for each analyte must be within 50-150%. If these conditions do not exist, then all data for the problem analyte must be considered invalid, and remedial action should be taken which may require recalibration. Any Field or QC Samples that have been analyzed since the last acceptable calibration verification should be reanalyzed after adequate calibration has been restored, with the following exception. If the CCV fails

because the calculated concentration is greater than 130% (150% for the low-level CCV) for a particular method analyte, and Field Sample extracts show no detection for that method analyte, non-detects may be reported without re-analysis.

10.10.8.3. REMEDIAL ACTION – Failure to meet CCV QC performance criteria may require remedial action. Major maintenance, such as cleaning the electrospray probe, atmospheric pressure ionization source, cleaning the mass analyzer, replacing the LC column, etc., requires recalibration (Sect 10.10) and verification of sensitivity by analyzing a CCV at or below the RL (Sect 10.11).

10.10.9. EXTRACT ANALYSIS

10.10.9.1. Establish operating conditions equivalent to those summarized in Tables 7-9 of Section 16.

10.10.9.2. Establish an appropriate retention time window for each analyte. This should be based on measurements of actual retention time variation for each method analyte in CAL standard solutions analyzed on the LC over the course of time. A value of plus or minus three times the standard deviation of the retention time obtained for each method analyte while establishing the initial calibration can be used to calculate a suggested window size. However, the experience of the analyst should weigh heavily on the determination of the appropriate retention window size.

10.10.9.3. Calibrate the system by either the analysis of a calibration curve (Sect. 10.10) or by confirming the initial calibration is still valid by analyzing a CCV as described in Section 10.11.

10.10.9.4. Begin analyzing Field Samples, including QC samples, at their appropriate frequency by injecting the same size aliquots under the same conditions used to analyze the CAL standards.

10.10.9.5. At the conclusion of data acquisition, use the same software that was used in the calibration procedure to identify peaks of interest in predetermined retention time windows. Use the data system software to examine the ion abundances of the peaks in the chromatogram. Identify an analyte by comparison of its retention time with that of the corresponding method analyte peak in a reference standard.

10.10.9.6. The analyst must not extrapolate beyond the established calibration range. If an analyte peak area exceeds the range of the initial calibration curve, the sample should be re-extracted with a reduced sample volume in order to bring the out of range target analytes into the calibration range. If a smaller sample size would not be representative of the entire sample, the following options are recommended. Re-extract an additional aliquot of sufficient size to insure that it is representative of the entire sample. Spike it with a higher concentration of internal standard. Prior to LC/MS analysis, dilute the sample so that it has a concentration of internal standard equivalent to that present in the calibration standard. Then, analyze the diluted extract.

11. Data Evaluation, Calculations and Reporting.

11.1. Complete chromatographic resolution is not necessary for accurate and precise measurements of analyte concentrations using MS/MS. In validating this method, concentrations were calculated by measuring the product ions listed in Table 9.

11.2. Calculate analyte concentrations using the multipoint calibration established in Section 10.9. Do not use daily calibration verification data to quantitate analytes in samples. Adjust final analyte concentrations to reflect the actual sample volume determined in Section 10.8

Cex = (Area of target analyte * Concentration of Labeled analog) / (area of labeled analog * CF)

C_s = (Cex / sample volume in mL) * 1000

Cex = The concentration of the analyte in the extract
CF = calibration factor from calibration.

11.3. Prior to reporting the data, the chromatogram should be reviewed for any incorrect peak identification or poor integration.

11.4. PFHxS, PFOS, PFOA, NMeFOSAA, and NEtFOSAA have multiple chromatographic peaks using the LC conditions in Table 7 due to the linear and branch isomers of these compounds (Sect. 10.10.4.). The areas of all the linear and branched isomer peaks observed in the CAL standards for each of these analytes must be summed and the concentrations reported as a total for each of these analytes.

11.5. Calculations must utilize all available digits of precision, but final reported concentrations should be rounded to an appropriate number of significant figures (one digit of uncertainty), typically two, and not more than three significant figures.

11.6. Peak responses must be at least 3 times the background noise level (S/N 3:1). If the S/N ratio is not due to high background noise, the sample may be diluted (either by extraction or analytically) to reduce the noise.

11.7. Target analytes, Extracted Internal Standards, and Response Internal Standard RTs must fall within +/-0.4minutes of the predicted retention times of the midpoint of the initial calibration curve or daily calibration verification standard. Additionally, a target analyte with a corresponding isotopically labelled analog must elute within +/- 0.1minutes of the associated EIS.

11.8. The ion ratio between the quantification ion and confirmation ion response must fall within +/-50% of the ratio observed in the mid-point initial calibration standard. When this ratio is not met, the data must be flagged.

12. Contingencies for Handling Out-of-Control Data or Unacceptable Data

12.1. Section 9.0 outlines sample batch QC acceptance criteria. If non-compliant organic compound results are to be reported, the Organic Section Head and/or the Laboratory Director, and the Operations Manager must approve the reporting of these results. The laboratory Project Manager shall be notified and may choose to relay the non-compliance to the client, for approval, or other corrective action, such as re-sampling and re-analysis. The analyst, Data Reviewer, or Department Supervisor performing the secondary review initiates the project narrative, and the narrative must clearly document the non-compliance and provide a reason for acceptance of these results.

12.2. All results for the organic compounds of interest are reportable without qualification if extraction and analytical holding times are met, preservation requirements (including cooler temperatures) are met, all QC criteria are met, and matrix interference is not suspected during extraction or analysis of the samples. If any of the below QC parameters are not met, all associated samples must be evaluated for re-extraction and/or re-analysis.

13. Method Performance

13.1. Detection Limit Study (DL) / Limit of Detection Study (LOD) / Limit of Quantitation (LOQ)

13.1.1. The laboratory follows the procedure to determine the DL, LOD, and/or LOQ as outlined in Alpha SOP ID 1732. These studies performed by the laboratory are maintained on file for review.

13.2. Demonstration of Capability Studies

13.2.1. Refer to Alpha SOP ID 1739 for further information regarding IDC/DOC Generation.

13.2.2. The analyst must make a continuing, annual, demonstration of the ability to generate acceptable accuracy and precision with this method.

14. Pollution Prevention and Waste Management

14.1. Refer to Alpha's Chemical Hygiene Plan and Hazardous Waste Management and Disposal SOP for further pollution prevention and waste management information.

14.2. This method utilizes SPE to extract analytes from water. It requires the use of very small volumes of organic solvent and very small quantities of pure analytes, thereby minimizing the potential hazards to both the analyst and the environment as compared to the use of large volumes of organic solvents in conventional liquid-liquid extractions.

14.3. The analytical procedures described in this method generate relatively small amounts of waste since only small amounts of reagents and solvents are used. The matrices of concern are finished drinking water or source water. However, laboratory waste management practices must be conducted consistent with all applicable rules and regulations, and that laboratories protect the air, water, and land by minimizing and controlling all releases from fume hoods and bench operations. Also, compliance is required with any sewage discharge permits and regulations, particularly the hazardous waste identification rules and land disposal restrictions.

15. Referenced Documents

Chemical Hygiene Plan – ID 2124
Detection Limit (DL), Limit of Detection (LOD) & Limit of Quantitation (LOQ) SOP – ID 1732
Demonstration of Capability (DOC) Generation SOP – ID 1739
Hazardous Waste Management and Disposal SOP – ID 1728

16. REVISION HISTORY

Revisions Made from Prior Version

Section	Description of Change
6.5.1.1	Updated Hold Time for Aqueous, Soils and Tissues.
6.5.1.2	Added specific hold time criteria for Maine
8.2.9	Revised the calibration standard levels
9.1.1.1	Added Corrective Action for Method Blanks
9.1.2	Changed FRB to project-specific basis
9.2.1	Added LCS criteria specific to NJ
9.2.4	Added Corrective Action for LCS
9.4.2	Revisions to EIS criteria
10.10.7	Revisions to Calibration Acceptance Criteria

16. Attachments

Table 7a: LC Method Conditions

Time (min)	2 mM Ammonium Acetate (5:95 MeOH/H_2O)	100% Methanol
Initial	100.0	0.0
1.0	100.0	0.0
2.2	85.0	15.0
11	20.0	80.0
11.4	0.0	100.0
12.4	100.0	00.0
15.5	100.0	0.0
Waters Aquity UPLC ® $BEHC_{18}$ 2.1 x 50 mm packed with 1.7 µm BEH C_{18} stationary phase Flow rate of 0.4 mL/min 3 µL injection		

Table 7b: LC Method Conditions (MeOH Fraction)

Time (min)	2 mM Ammonium Acetate (5:95 MeOH/H_2O)	100% Methanol
Initial	100.0	0.0
1.0	50.0	50.0
4.5	1.0	99.0
4.95	1.0	99.0
5.0	100.0	0.0
5.5	100.0	0.0
Waters Aquity UPLC ® $BEHC_{18}$ 2.1 x 50 mm packed with 1.7 µm BEH C_{18} stationary phase Flow rate of 0.6 mL/min 20 µL injection		

Table 8: ESI-MS Method Conditions

ESI Conditions	
Polarity	Negative ion
Capillary needle voltage	.5 kV
Cone Gas Flow	25 L/hr
Nitrogen Desolvation gas	1000 L/hr
Desolvation gas temp.	500 ºC

Table 9a: Method Analyte Source, Retention Times (RTs), and EIS References

#	Analyte	Transition	Confirmation Mass	RT	IS	Type
1	M3PFBA	216>171		2.65		REC
2	PFBA	213 > 169	N/A	2.65	3: M4PFBA	
3	M4PFBA	217 > 172		2.65	1: M3PBA	EIS
4	PFPeA	263 > 219	N/A	5.67	5: M5PFPEA	
5	M5PFPEA	268 > 223		5.66	1: M3PFBA	EIS
6	PFBS	299 > 80	99	6.35	7: M3PFBS	
7	M3PFBS	302 > 80		6.35	29:M4PFOS	EIS
8	FTS 4:2	327 > 307	81	7.47	9: M2-4:2FTS	
9	M2-4:2FTS	329 > 81		7.47	29:M4PFOS	EIS
10	PFHxA	313 > 269	119	7.57	11: M5PFHxA	
11	M5PFHxA	318 > 273		7.57	19:M2PFOA	EIS
12	PFPeS	349 > 80	99	7.88	18: M3PFHxS	
13	PFHpA	363 > 319	169	8.80	14: M4PFHpA	
14	M4PFHpA	367 > 322		8.80	19:M2PFOA	EIS
15	L-PFHxS	399 > 80	99	8.94	18: M3PFHxS	
16	br-PFHxS	399 > 80	99	8.72	18: M3PFHxS	
17	PFHxS Total	399 > 80		8.94	18: M3PFHxS	
18	M3PFHxS	402 > 80		8.94	29:M4PFOS	EIS
19	M2PFOA	415 > 370		9.7		REC
20	L-PFOA	413 > 369	169	9.7	23: M8PFOA	
21	br-PFOA	413 > 369	169	9.48	23: M8PFOA	
22	PFOA Total	413 > 369		9.7	23: M8PFOA	
23	M8PFOA	421 > 376		9.7	19: M2PFOA	EIS
24	FTS 6:2	427 > 407	81	9.66	25: M2-6:2FTS	
25	M2-6:2FTS	429 > 409		9.66	29:M4PFOS	EIS
26	PFHpS	449 > 80	99	9.78	33: M8PFOS	
27	PFNA	463 > 419	219	10.41	33: M9PFNA	
28	M9PFNA	472 > 427		10.41	19: M2PFOA	EIS
29	M4PFOS	503 > 80		10.45		REC
30	L-PFOS	499 > 80	99	10.45	33: M8PFOS	
31	br-PFOS	499 > 80	99	10.27	33: M8PFOS	
32	PFOS Total	499 > 80		10.45	33: M8PFOS	
33	M8PFOS	507 > 80		10.45	29: M4PFOS	EIS
34	FTS 8:2	527 > 507	81	10.99	35: M2-8:2FTS	
35	M2-8:2FTS	529 > 509		10.99	29:M4PFOS	EIS
36	M2PFDA	515 > 470		11.00		REC
37	PFDA	513 > 469	219	11.00	38: M6PFDA	
38	M6PFDA	519 > 474		11.00	36: M2PFDA	EIS
39	PFNS	549 > 80	99	11.02	33:M8PFOS	
40	br-NMeFOSAA	570 > 419	483	11.41	41: D3-NMeFOSAA	

#	Analyte	Transition	Confirmation Mass	RT	IS	Type
41	L-NMeFOSAA	570 > 419	483	11.41	41: D3-NMeFOSAA	
42	NMeFOSAA total	570 > 419		11.41	41: D3-NMeFOSAA	
43	d3-NMeFOSAA	573 > 419		11.41	36: M2PFOA	EIS
44	PFOSA	498 > 78	478	11.48	29: M8FOSA	
45	M8FOSA	506 > 78		11.48	19: M2PFOA	EIS

#	Analyte	Transition	Confirmation Mass	RT	IS	Type
46	PFUnDA	563 > 519	269	11.51	41: M7-PFUDA	
47	M7-PFUDA	570 > 525		11.51	36: M2PFDA	EIS
48	PFDS	599 > 80	99	11.51	33:M8PFOS	
49	br-NEtFOSAA	584 > 419	526	11.68	48: d5-NEtFOSAA	
50	L-NEtFOSAA	584 > 419	526	11.68	48: d5-NEtFOSAA	
51	NEtFOSAA total	584 > 419		11.68	48: d5-NEtFOSAA	
52	d5-NEtFOSAA	589 > 419		11.68	36: M2PFOA	EIS
53	PFDoA	613 > 569	319	11.96	50: MPFDOA	
54	MPFDOA	615 > 570		11.96	36: M2PFDA	EIS
55	PFTrdA	663 > 619	169	12.34	53: M2PFTEDA and 50:MPFDOA avg	
56	PFTeA	713 > 669	169	12.6	53: M2PFTEDA	
57	M2PFTEDA	715 > 670		12.6	36: M2PFDA	EIS
58	M3HFPO-DA	287>169		7.97	19: M2PFOA	EIS
59	HFPO-DA	285>169	185	7.97	54: M3HFPO-DA	
60	ADONA	377>251	85	8.00	23: M8PFOA	
61	PFHxDA	813>769		13.20	59: M2PFHxDA	
62	PFODA	913>869		13.50	59: M2PFHxDA	
63	M2PFHxDA	815>770		13.20	36:M2PFDA	EIS
64	NEtFOSA	526>169	119	11.00	61: d5-NEtFOSA	
65	NMeFOSA	512>169	219	10.50	63: d3-NMeFOSA	
66	d3-NMeFOSA	515>169		10.50	19: M2PFOA	EIS
67	d5-NEtFOSA	531>169		11.00	19: M2PFOA	EIS
68	NMeFOSE	616>59	N/A	11.25	66: d7-NMeFOSE	
69	NEtFOSE	630>59	N/A	10.75	67: d9-NEtFOSE	
70	d7-NMeFOSE	623>59		11.25	19: M2PFOA	EIS
71	d9-NEtFOSE	639>59		10.75	19: M2PFOA	EIS
72	FTS 10:2	627>607		11.50	25: M2-8:2FTS	
73	PFDoS	699>80	99	12.50	33: M8PFOS	
74	9ClPF3ONS	531>351	353	10.23	33: M8PFOS	
75	11ClPF3OUdS	631>451	453	11.27	33: M8PFOS	
76	PFPrS	249>80		3.40	7: M3PFBS	
77	PFMPA	229>85	N/A	3.39	1: M3PFBA	
78	PFMBA	279 .85	N/A	5.75	1: M5PFPEA	
79	PFEESA	315>135	83	6.45	18: M3PFHxS	
80	NFDHA	295>201	85	6.79	11: M5PFHxA	

Table 9b: Methanol Analyte Source, Retention Times (RTs), and EIS References

#	Analyte	Transition	RT	IS	Type
1	M2PFNA	472 > 427	2.55		IS
2	M2PFUdA	213 > 169	2.87		IS
3	M8FOSA	217 > 172	2.86	1: M2PFNA	EIS
4 5	FOSA	263 > 219	2.86	3: M8FOSA	
6	D3-NMeFOSA	515>169	3.22	1: M2PFNA	EIS
7	NMeFOSA	512>169	3.22	6: d3-NMeFOSA	
8	D5-NEtFOSAA	531>169	3.41	1: M2PFNA	EIS
9	NEtFOSAA	526>169	3.41	8: d5-NEtFOSA	
10	D7-NMeFOSE	563>126	3.23	1: M2PFNA	EIS
11	NMeFOSE	556>122	3.23	10: d7-NMeFOSE	
12	D9-NEtFOSE	579>142	3.40	11: M2PFNA	EIS
13	NEtFOSE	570>136	3.40	67: d9-NEtFOSE	

APPENDIX G

NYSDEC In Situ Solidification QA/QC Guidance Document

NYSDEC In-Situ Solidification QA/QC

1.0 GENERAL

1.1 Introduction

Technology Description

In-situ solidification (ISS) is an established remediation treatment technology which can prevent migration of and exposure to certain contaminants in media including soil, sludge, and sediment. The ISS process is increasingly being used within remedial programs in the New York State Department of Environmental Conservation (Department).

ISS is a process that involves the mixing of reagents with contaminated soil to create a low permeability mass which encapsulates the contamination in the soil in place. Bucket excavators augers, or other technologies are used to mix the contaminated media and one or more reagents, entrapping the contaminated material within a low permeability mass. This reduces or eliminates non-aqueous phase liquid (NAPL) mobility and contaminant migration into exposure pathways, thus eliminating the treated area as a source of future exposure or contamination of groundwater, surface water, or vapor.

Complete mixing of the contaminated soil and the ISS reagents must be achieved for the process to be effective and protective of human health and the environment. Incomplete mixing can result in a non-homogenous mass, untreated areas, or large fractures within the ISS mass, which may allow mobility of NAPL and groundwater within the treated areas.

1.2 Document Purpose

The purpose of this document is to provide a method of Quality Assurance (QA)/Quality Control (QC) to ensure the effectiveness of ISS after field implementation is complete. This includes coring, and testing for hydraulic conductivity and unconfined compressive strength. The use of coring for QA/QC may not be suitable for all ISS projects and other QA/QC methods such as excavation/visual inspection will be considered an option on a case by case basis.

Failure to meet QA/QC goals, particularly incomplete mixing, is of greatest concern when it occurs along the edges of the solidified mass. The Department has noted a tendency for DNAPL to accumulate in permeable soils and sediments immediately above the bedrock surface, creating a potential pathway for DNAPL migration. Such zones can be quite difficult to mix adequately, whether using augers or bucket mixing. Thus, attention is required to ensure that “top of rock” zones are thoroughly solidified, and that this solidification is adequately documented.

To ensure the integrity of the treated material, the Department has identified QA/QC procedures, specifically coring, which are essential to ensure that ISS treatment processes are protective of the environment. This document has been developed to provide guidance on a coring program to be conducted to ensure confidence regarding complete mixing and ISS installation in the remedial area.

2.0 EQUIPMENT

2.1 Coring Drilling Method

To allow early coring information to be used for adjusting ISS operations, it is recommended that coring operations be conducted prior to complete curing of the ISS material. For high-strength material, a rock core is frequently required. Driven split spoons (typically using Direct Push tools but potentially using augers as well) may be used to collect core samples of the ISS material for lower strength materials. Rotosonic and compressed air drilling methods have not been successful in obtaining representative core samples.

Cores must be no longer than five (5) feet. If less than 60% of the core material is recovered from any of the coring runs, one (1) new core hole must be drilled adjacent to the previous location. If the recovery from the adjacent core hole continues to be less than 60%, the contractor may abandon the location. This is not intended to justify an inadequate sampling program. A representative number of successfully completed cores must be provided. Close communication with the Department's project manager (PM) is strongly encouraged to discuss and reach concurrence on the coring program.

2.2 Trenching

While trenching has not been used to date, there could potentially be instances where trenching would be a viable alternative. A trenching plan would have to be submitted to the Department during the remedial design. In the event trenching is proposed after the remedial design phase, but prior to field implementation of the ISS, a minimum of two weeks' notice should be provided to the Department for review of the trenching design.

2.3 Sample Collection for strength and permeability

Samples of the mixed soil will be collected while wet and formed into cylinders in accordance with the approved testing methods (ASTM D5084 for hydraulic conductivity, ASTM D2166 or D1633 for unconfined compressive strength). Samples should be collected every 500 cubic yards. Additional sampling may be appropriate on a site-specific basis in areas of particular concern.

3.0 EXECUTION

3.1.1 Coring Implementation

- One core borehole shall be completed for every 5,000 square feet of ISS treatment area, but not less than two bore holes per treatment area.
- To allow early coring information to be incorporated in adjusting ISS operations, the first coring location shall be completed when the ISS treatment project area is no more than 25 percent complete.
- Core borehole locations shall be biased towards areas with the greatest soil contamination, areas where contamination is in direct contact with the bedrock surface, and/or locations where difficulties in the ISS process were encountered.

- Core boreholes shall be placed in locations where individual treatment columns or cells overlap, to the extent possible.
- Core boreholes should be advanced to at least a foot below the monolith design or bedrock, if encountered. If coring reveals previously undocumented areas of contamination, delineation (and remediation, as necessary) of that contamination may be required outside the QA/QC program.
- Cores shall be archived following coring activities. Cores may be discarded upon final inspection by the Department. Following initial inspection, the Department may require cores to be retained to compare to future cores or to document issues that will need to be resolved.
- To allow any needed corrective actions to commence before the monolith cures to a point making corrective action difficult or impossible, core inspection by the Department will occur as soon as possible but not later than 48 hours of the core's collection.
- In order to identify potential areas of concern for the coring program, documentation on the volume/shrinkage of grout obtained during ISS installation shall be reviewed. Areas where excessive grout was lost during ISS implementation should be targeted for coring.

3.1.2 Trenching Implementation

- If trenching is used, it will be completed at the perimeter of the ISS treatment area and locations within the ISS treatment area. The minimum depth of excavation should be the design depth of the ISS treatment.
- If the bottom of the ISS treatment cannot be visually inspected, the Department may require cores to be collected.
- To allow inspection information to be incorporated in adjusting ISS operations, trenching shall commence when the ISS treatment project area is no more than 25 percent complete.

3.1.3 Sample analysis

- Typically, multiple cylinders are collected at each location for testing unconfined compressive strength. This allows testing after 3-5 days to get an initial indication of the strength of the mix, while reserving cylinders for compliance testing after they have achieved full strength (28 days).
- Cylinders tested for hydraulic conductivity in accordance with the approved plans. The maximum permeability should generally be 1x10-6 cm/sec, as measured using ASTM D 5084-00.

3.2 Performance Evaluations

3.2.1 Visual Inspection

Core samples and related equipment will be visually inspected for the following criteria, and the results recorded:

- Visible NAPL
- Non-mechanical induced cracking within the core
- Percent of core sample recovered

In addition, indirect indications of unmixed NAPL should be recorded, such as:

- NAPL coating on drilling tools
- NAPL in drill wash tub, if water-based drilling methods are employed

3.2.2 Performance Concerns

Performance testing must be completed early enough to identify problems. Substandard results cannot be ignored with the intention to "average-out" the results over the course of project. The purpose of this guidance is to detect installation of an inadequate remedy in time to correct the problems and avoid costly retreatment or repairs to ensure effectiveness of the ISS remedy, the following conditions will warrant further attention and will be documented during ISS implementation:

- A continuous layer or seam of NAPL is noted within the core.
- NAPL coating is visible on drilling tools
- Visible NAPL is noted in the drill wash tub
- Unconfined compressive strength below 50 psi
- Hydraulic conductivity greater than 1.0 x 10-6 cm/sec or project specific goal.
- Large sections (> 1 cf) of unmixed material.

If one or more of the above conditions are noted, the Department must be notified to discuss the severity of the problem, the degree of concern, and whether any corrective action will be necessary.

A notification, by itself, does not necessarily mean a corrective action or additional borings or testing are warranted. For instance, small NAPL blebs may be present within properly mixed areas of the ISS monolith, and coring through such a bleb, especially before the monolith has achieved its maximum strength, could result in NAPL coating on drilling tools and/or NAPL in the drill wash water. The first step to determining whether corrective action is required will be to complete additional borings around the area of concern and determine if identified NAPL within the ISS mass is encapsulated, thus eliminating NAPL mobility and impact to the surrounding environment. The results of all the samples taken within a given treatment area cannot be averaged to show compliance. While each sample must satisfy the definition on its own, a single test showing slightly elevated hydraulic conductivity would not necessarily require corrective action for that cell/column, but evaluation to ensure that it is not a systemic problem is required.

If NAPL is detected in the additional borings, particularly on the edges of the ISS monolith, or at the bottom of the ISS monolith, corrective actions may be necessary in order to fully encapsulate the source area.

3.2.3 Corrective Actions

If the ISS installation is deemed unsatisfactory after a collaborative evaluation of the coring program, measures will be put in-place to address the deficiencies and ensure that the remedy is protective of human health and the environment. Such measures may include:

- Repair, re-mixing, or isolation of the concerned area using jet grouting or other suitable method
- Excavation and disposal of the concerned area, where feasible and practicable.

3.2.4 Core Hole/Trench Abandonment

When a core has been drilled from the top to the bottom elevation of the targeted ISS treatment zone, and samples collected, it will be considered complete. Following completion of each coring location, the borings will be filled with grout using tremie methods.

If trenching is used for QA/QC activities, backfill material should meet the approved ISS specifications.

3.3 Field Documentation and Approvals

3.3.1 Field Documentation

Documentation of the ISS QA/QC activities shall be included with the Final Engineering Report (FER). Documentation will include (but not be limited to):

- Figure depicting boring/trenching locations
- Photographs of each core boring/trench referenced
- Type of drilling method or excavator used
- Field coring/trench logs

3.3.2 Department Approval

The Department should be notified of the ISS QA/QC activities as soon as possible, with a minimum of 72 hours' notice or two business days. Department personnel will attempt to be on-site, unless the remedial party is informed otherwise, to inspect the QA/QC activities and provide informal approval or recommend corrective actions.

Following on-site Department inspection of the ISS QA/QC, email correspondence should be sent to the Department project manager which summarizes observations of the coring results. The Department project manager will provide an email reply within 48 hours confirming that the ISS QA/QC objectives have been met. If the Department project manager does not feel the ISS

QA/QC objectives have been adequately satisfied, the response email will include any additional corrective actions required.

3.3.3. Resolution of Disagreements

In the event there is a disagreement regarding the ISS QA/QC program the remedial party will submit a written request for resolution to the project manager's supervisor. The correspondence shall include the ISS QA/QC activities, relevant documentation, and the nature of the dispute. The project manager's supervisor will meet with the Project Manager, Construction Inspector (if applicable) and the Bureau Director to discuss the request. If necessary, a meeting will be arranged which will include the remedial party, Department project manager, supervisor, and the Bureau Director to discuss the matter.

Following the meeting, the supervisor will send correspondence to the remedial party outlining the Department final decision.

Site Health and Safety Plan (HASP)

SITE-SPECIFIC HEALTH AND SAFETY PLAN

5 Flint Street
Rochester, NY

Original: July 15, 2025
Revised: December 19, 2025
September 11, 2026

Prepared for:

5 Flint Street LLC

Prepared by:

Roux Associates, Inc.
200 Summit Drive, Suite 500
Burlington, Massachusetts 01803

4694.0001BM000.109.RCV.REV2

Environmental Consulting
& Management
+1.800.322.ROUX
rouxinc.com

Table of Contents

SITE-SPECIFIC EMERGENCY INFORMATION iv
Emergency Phone Numbers iv
Directions to Hospital v
Directions to Urgent Care Facility vi

ACRONYM LIST vii

1. INTRODUCTION 1
1.1 Roles and Responsibilities 1

2. BACKGROUND 4
2.1 Site Description 4
2.2 Site History 4
2.3 Known and Potential Releases of Hazardous Substances at the Site 5
2.4 Known Current Environmental Site Conditions 5
2.4.1 Shallow Soil 5
2.4.2 Deep Soil 6
2.4.3 Groundwater 6
2.4.4 Soil Vapor 6

3. SCOPE OF WORK 7

4. SITE CONTROL 8
4.1 Site Map 8
4.2 Site Access 8
4.3 Buddy System 8
4.4 Site Communications 8
4.5 Site Work Zones 9

5. JOB HAZARD EVALUATION 10
5.1 Hazard Communication and Overall Site Information Program 10
5.2 Noise 11
5.3 Slip, Trip, and Fall Hazards 11
5.4 Biological Hazards 11
5.5 Silica and Portland Cement Hazards 11

6. EMERGENCY RESPONSE PLAN 13
6.1 Emergency Response 13
6.2 Emergency Alerting and Evacuation 13
6.3 Emergency Medical Treatment and First Aid 13

7. ENVIRONMENTAL CONDITIONS AND RESPONSE 15
7.1 Adverse Weather Conditions 15
7.2 Electrical Storm Guidelines 15
7.3 Environmental Stressors, Heat Stress, Heat Exhaustion, and Heat Stroke 15
7.3.1 Heat Stress 16
7.3.2 Heat Cramps 16
7.3.3 Heat Exhaustion 17
7.3.4 Heat Stroke 17
7.4 Cold Stress 17

8. SAFETY PROCEDURES 18
8.1 Training 18
8.2 Site-Specific Safety Briefings for Visitors 18
8.3 HASP Information and Site-Specific Briefings for Workers 18
8.4 Medical Surveillance 19
8.4.1 Site Medical Surveillance Program 19
8.4.2 Medical Recordkeeping Procedures 19
8.4.3 Program Review 19
8.5 Personnel Protection 20
8.5.1 Additional Personal Protection 20
8.5.2 Hearing Conservation 23
8.6 Monitoring 23
8.6.1 Action Levels for Air Monitoring 24
8.6.2 Air Monitoring Equipment and Calibration 25
8.7 Tailgate Safety Meetings 26
8.8 Spill Containment 26
8.8.1 Initial Spill Notification and Response 26
8.8.2 Spill Evaluation and Response 26
8.9 Decontamination 26
8.9.1 Decontamination Procedures for Personnel and PPE 27
8.9.2 Decontamination Procedures for Equipment 27
8.9.3 Monitoring the Effectiveness of Decontamination Procedures 28
8.10 Confined Space Entry 28
8.11 Client and Site-Specific 28
8.12 Unusual or Significant Risks 28
8.13 Activity-Specific Hazards 29
8.13.1 Electrical and Other Utility Assessment and Accommodations 29
8.13.2 Subsurface Work 29
8.13.2.1 Excavations and Trenching 29
8.13.3 Heavy Equipment 30
8.14 Traffic Control 31
8.15 Sanitation 31
9. Field Team Review 32
10. Approvals 33

Tables

1. Toxicological Properties of Hazardous Substances Present at the Site

Figures

1. Site Location Map
2. Site Plan with Emergency Muster Area

Appendices

A. Job Safety Analysis (JSA) Forms
B. SDSs for Chemicals Used
C. Silica Exposure Control Management Program
D. Preventing Skin Problems from Working with Portland Cement
E. Heat Illness Prevention Program
F. Personal Protective Equipment (PPE) Management Program
G. Roux Daily Tailgate Health and Safety Meeting Log/Daily Site Safety Checklist
H. Subsurface Utility Clearance Management Program
I. Heavy Equipment Exclusion Zone Policy

SITE-SPECIFIC EMERGENCY INFORMATION

Emergency Phone Numbers

Most emergency services can be obtained by calling **911**. Where 911 service is not available, use the telephone numbers provided in the below table. The following is a master emergency phone list for use by the project management personnel. A more condensed version of the emergency numbers listed below will be posted throughout project work areas. Emergencies encountered on the site will be responded to by a combination of off-site emergency services and on-site personnel.

Emergency Contact Information			
Site Personnel			
Title	**Contact**		**Telephone**
Operations Manager (OM)	Michael Lesakowski		716-818-3954 716-725-6946 (Cell)
Project Principal (PP)	Ian Read		781-569-4030 617-875-9394
Project Manager (PM)	Eric Runstrom		781-569-4031 413-548-6350 (Cell)
Qualified Person / Site Health and Site Safety Officer (SHSO)	Nicholas Suraci		716-713-3937
Office Health and Safety Manager (OHSM)	Paul Werthman		716-725-6977 716-997-9584 (Cell)
Corporate Health and Safety Director (CHSD)	Brian Hobbs, CIH, CSP		631-630-2419 631-807-0193 (Cell)
WorkCare, Inc.	Occupational Health Care Management Provider		888-449-7787
Outside Assistance – Non-Emergency Numbers – DIAL 911 IN CASE OF EMERGENCY			
Agency	**Contact**	**Telephone**	**Address/Location**
Ambulance/emergency medical services (EMS)	Rural Metro	585-777-7777	811 West Ave, Rochester, NY 14611
Police	Rochester Police Department	585-428-6720	185 Exchange Blvd, Rochester, NY 14614
Fire	Rochester Fire Department	585-428-6739	1261 South Ave, Rochester, NY 14620
Site Address	5 Flint Street, Rochester, NY. See Section 2 for all site address information		

Directions to Hospital

The nearest hospital to the Site is the Strong Memorial Hospital located at 601 Elmwood Avenue in Rochester, New York. The telephone number for the hospital is (585) 275-2100. Directions from the Site to the hospital are located below.

Head **Northwest** on Flint **St.**;

Turn **left** at **Plymouth Ave. S/S Plymouth Ave./RT-383**;

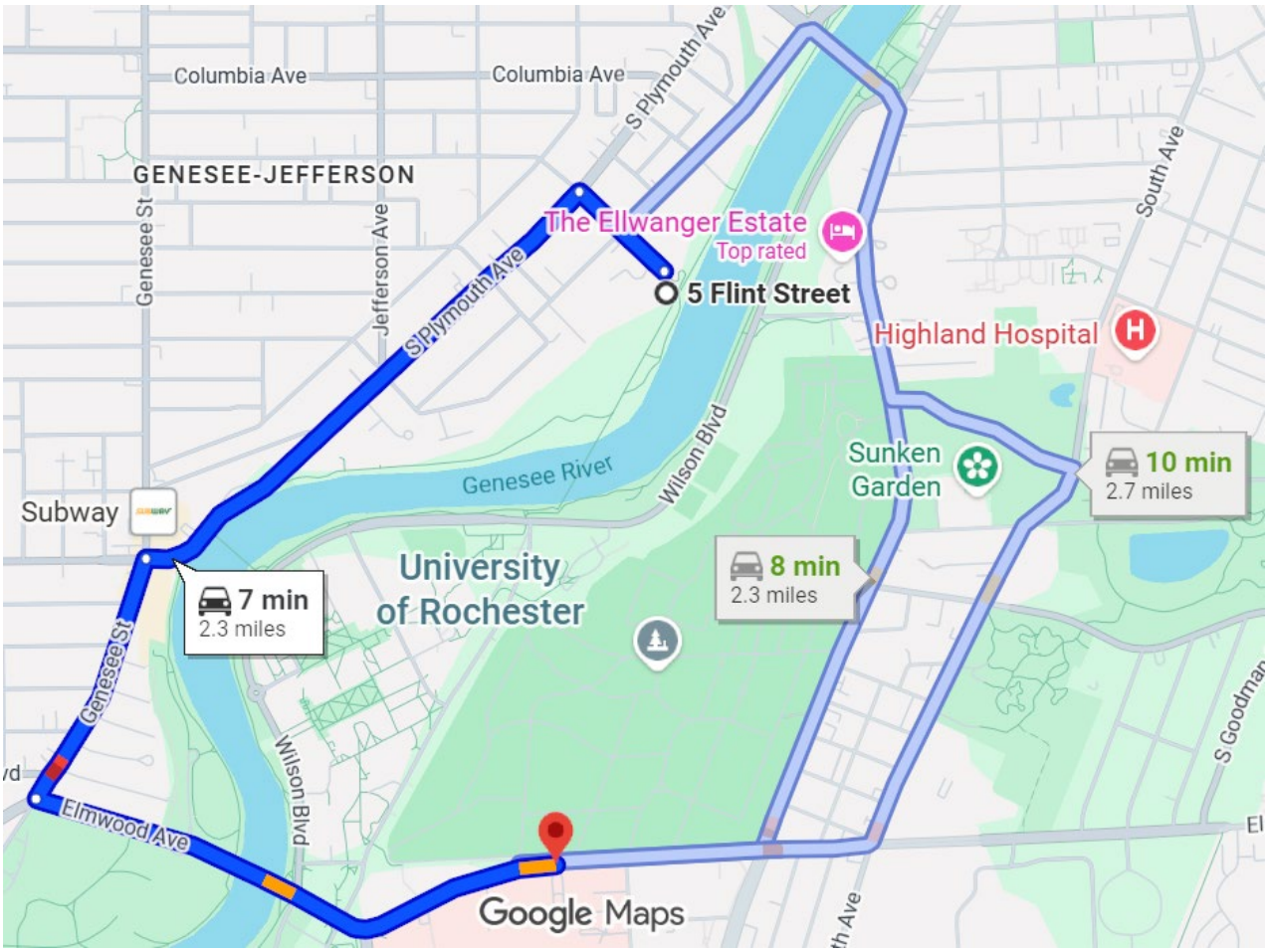
Turn **left** at **Genesee St./RT-383**;

Turn **left** at **Elmwood Ave.**;

Arrive at Strong Memorial Hospital.

The approximate driving time from the Site to the hospital is 7 minutes (2. miles).

A map depicting the above-described route is provided below.



Directions to Urgent Care Facility

The nearest urgent care facility to the Site is Work Fit Medical located at 1160 Chili Ave, Suite 200 in Rochester, New York. The telephone number for the facility is (585) 426-4990. Directions from the Site to the facility are located below.

Head **northwest** on **Flint St** toward **Exchange St**;

Turn **left** onto **S Plymouth Ave**;

Continue **straight** onto **Brooks Ave**;

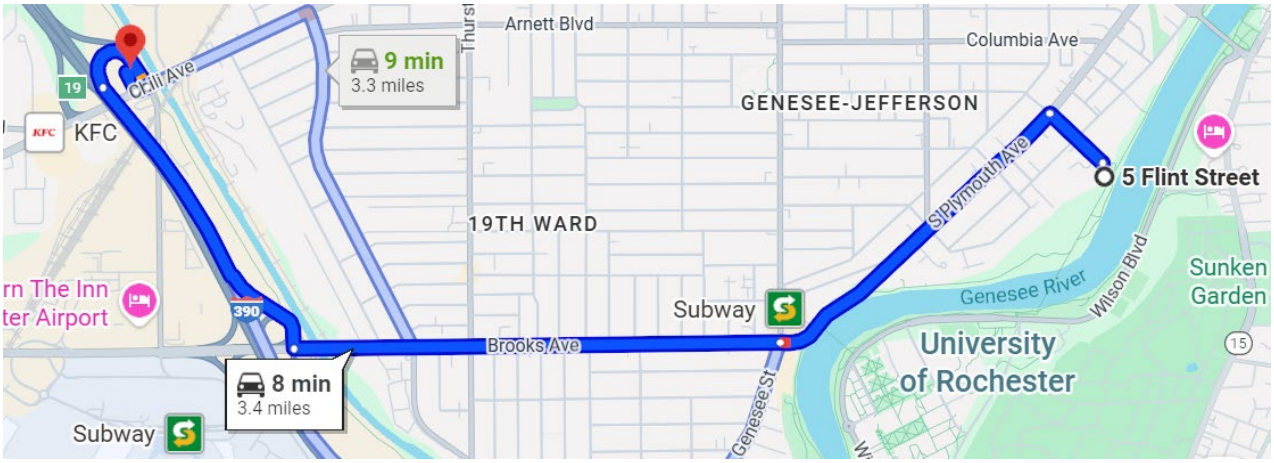
Turn **right** onto **Buell Rd**;

Turn **left** onto **NY-33A W**;

Work Fit Medical will be on the right.

The approximate driving time from the Site to the facility is 9 minutes (3.2 miles).

A map depicting the above-described route is provided below:



ACRONYM LIST

Acronym	Definition
AMEC	AMEC Earth & Environmental, Inc.
AED	Automatic External Defibrillation
ANSI	American National Standards Institute
BBP	Blood-Borne Pathogens
CFR	Code of Federal Regulations
CHSD	Corporate health and Safety Director
CO	Carbon Monoxide
COC	Contaminant of Concern
CPR	Cardio Pulmonary Resuscitation
CRC	Contamination Reduction Corridor
CRZ	Contamination Reduction Zone
dBA	Decibels
DOT	Department of Transportation
EMS	Emergency Medical Services
ERC	Emergency Response Coordinator
EZ	Exclusion Zone
GCM	Grossly Contaminated Media
HASP	Health and Safety Plan
HAZMAT	Hazardous Materials
HAZWOPER	Hazardous Waste Operations and Emergency Response
IP	Injured/Ill Person
ISS	In-Situ Stabilization
JSA	Job Safety Analysis
LEL	Lower Explosive Limit
LI	Loss Investigation
LPS	Loss Prevention System
NRR	Noise Reduction Rating
NYSDEC	New York State Dept. of Environmental Conservation
NYSDOH	New York State Dept. of Health
OHSM	Office Health and Safety Manager
OSHA	Occupational Safety and Health Administration
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PDR	Personal Data Ram

Acronym	Definition
PEL	Permissible Exposure Limits
PGSCO	Protection of Groundwater Site Cleanup Objective
PID	Photoionization Detector
PM	Project Manager
PP	Project Principal
PPE	Personal Protective Equipment
QP	Qualified Person
R&Rs	Roles and Responsibilities
RI	Remedial Investigation
RIR	Remedial Investigation Report
RRSCO	Restricted Residential Site Cleanup Objective
SCO	Site Cleanup Objective
SDS	Safety Data Sheet
SGV	Standards and Guidance Values
SHSO	Site Health and Safety Officer
SLM	Sound Level Meter
SMP	Soils Management Plan
SOPs	Standard Operating Procedures
SPSA	Safety Performance Self Assessment
SVOC	Semi-volatile Organic Compound
SZ	Support Zone
TOGS	Technical and Operation Guidance Series
TWA	Time Weighted Average
VOC	Volatile Organic Compound

1. INTRODUCTION

This Site-specific Health and Safety Plan (HASP) has been prepared by Roux Associates, Inc. and Roux Environmental Engineering and Geology, D.P.C. (collectively referred to as Roux) for use during the remedial investigation and remedial implementation at the former Vacuum Oil Refinery, located at 5 Flint Street, Rochester New York (Site; **Figure 1**). This HASP was prepared in general accordance with the requirements of the Occupational Safety and Health Administration (OSHA) standards promulgated at 29 CFR 1910.120 and 29 CFR 1926.65, both commonly referred to as the Hazardous Waste Operations and Emergency Response (HAZWOPER) Standard. In accordance with the HAZWOPER Standard, this Site-specific HASP was prepared to address the safety and health hazards associated with the remedial investigation, remedial implementation, and building demolition activities being performed at the Site by Roux and/or its subcontractors to provide requirements and procedures for the protection of Roux employees, subcontractor personnel, government oversight personnel, Site personnel, and the general public. It also addresses client- and Site-specific requirements for health and safety. Additionally, subcontractors may be required to submit their own HASP as it relates to their specific work activities and will be kept onsite during such work.

Implementation of this HASP is the joint responsibility of the Project Manager (PM), the Site Health and Safety Officer (SHSO), and all field staff, with assistance from the Project Principal (PP), Office Health and Safety Manager (OHSM), and Corporate Health and Safety Director (CHSD). The PM for this project is Eric Runstrom. The Qualified Person (QP) and Site Health and Safety Officer (SHSO) is Nicholas Suraci.

This HASP will be introduced to, reviewed, and signed off on by all Roux personnel through a formal training session prior to commencing work. A copy of the HASP will be kept at the Site at all times. The Roux SHSO or PM will be responsible for posting any changes, amendments, memos, etc. to the HASP. Any revisions to this HASP will be signed by appropriate personnel, which can include Roux's PP, CHSD, and QP. Any changes will be announced to all workers at the next safety meeting.

1.1 Roles and Responsibilities

Overall Roles and Responsibilities (R&Rs) of Roux personnel are provided in Roux's Policies and Procedures Manual. Only those R&Rs specific to HASP requirements are listed below.

Project Manager (PM)

The PM has responsibility and authority to direct all work operations. The PM coordinates safety and health functions with the Site Health and Safety Officer (SHSO), has the authority to oversee and monitor the performance of the SHSO, and bears ultimate responsibility for the proper implementation of this HASP. The specific duties of the PM are:

- Preparing and coordinating the Site work plan;
- Providing Qualified Person(s) with work assignments and overseeing their performance; Coordinating safety and health efforts with the SSHO;
- Ensuring effective emergency response through coordination with the Emergency Response Coordinator (ERC); and
- Serving as primary Site liaison with public agencies and officials and Site contractors.

Site Health and Safety Officer (SHSO)

The SHSO has the full responsibility and authority to develop and implement this HASP and to verify compliance. The SHSO reports to the Project Manager. The SHSO is on Site or readily accessible to the Site during all work operations and has the authority to halt Site work if unsafe conditions are detected. The specific responsibilities of the SHSO include:

- Managing the safety and health functions on this Site;
- Serving as the Site's point of contact for safety and health matters;
- Ensuring Site monitoring, worker training, and effective selection and use of PPE;
- Assessing Site conditions for unsafe acts and conditions and providing corrective action;
- Assisting the preparation and review of this HASP;
- Maintaining effective safety and health records as described in this HASP; and
- Coordinating with the SS and others as necessary for safety and health efforts.

Qualified Person (QP)

The Qualified Person (QP) is responsible for field operations and reports to the Project Manager (PM). The QP ensures the implementation of the HASP requirements and procedures in the field. The specific responsibilities of the Site Supervisor include:

- Executing the work plan and schedule as detailed by the PM;
- Coordination with the SHSO on safety and health; and
- Ensuring Site work compliance with the requirements of this HASP.

Employees

All Roux employees are responsible for reading and following all provisions of the Corporate Health and Safety Manual, including this HASP. Employees report to the QP at the project Site. Each employee is also responsible for the following:

- Wearing all appropriate PPE as outlined within this HASP;
- Attending all safety meetings;
- Inspecting tools and equipment prior to use, and taking any defective tools or equipment out of service;
- Appropriately documenting field events as they occur within a logbook or equivalent;
- Properly operating machinery and/or equipment only if trained to do so;
- Stopping work operations if unsafe conditions exist;
- Identifying and mitigating hazards when observed;
- Reporting all incidents and near misses to the Roux SHSO and QP immediately; and
- Knowing where emergency equipment is located (e.g., first aid kit, fire extinguisher).

Subcontractors and Visitors

Subcontractors and visitors are responsible for complying with the same health and safety requirements. It is the responsibility of all to make sure subcontractors and visitors comply and uphold the HASP. Subcontractors and visitors have the following additional responsibilities:

- Designating a qualified safety representative for the project that can make the necessary changes in work practices, as necessary;
- Attending all safety meetings while participating in Roux Site work activities;
- Reporting all incidents and near misses to Roux SHSO and QP immediately;
- Conducting initial and periodic equipment inspections in accordance with manufacturer and regulatory guidelines; and
- Providing copies of all Safety Data Sheets (SDS) to Roux SHSO for materials brought to the Site.

2. BACKGROUND

The following Site description and history summarizes information provided in the June 13, 2005 Historic and Current Site Conditions Report, prepared by AMEC on behalf of ExxonMobil, and submitted to the New York State Department of Environmental Conservation (NYSDEC).

Relevant background information is provided below, including a general description of the Site; a brief review of the Site's history with respect to hazardous material use, handling, and/or storage; and a review of known and potential releases of hazardous substances at the Site.

2.1 Site Description

The Site is located on an undeveloped 1.59 acre parcel identified as 5 Flint Street in the southern section of the City of Rochester, Monroe County, New York, just west of the Genesee River (**Figure 1**). The Site falls within the footprint of the former Vacuum Oil Refinery (hereafter referred to as the "facility") which encompasses approximately 27 acres along the south and west of the intersection of Flint and Exchange Streets on the west bank of the Genesee River. The Site is surrounded by City-owned parcels which are primarily undeveloped, apart from an asphalt-paved bike/pedestrian path which runs through 102 Violetta Street to the east/southeast, and the very southwestern end of 13 Cottage Street to the southwest, of the Site. The remaining portions of 13 Cottage Street to the southwest, and 10 Flint Street to the west/northwest are currently undeveloped. The Site and surrounding City-owned properties are located within the former Vacuum Oil Refinery footprint and are part of the Vacuum Oil – South Genesee River Corridor Brownfield Opportunity Area.

2.2 Site History

The Vacuum Oil Company operated an oil refinery at portions of the Site from approximately 1866 to around the early 1890s. From the early 1890s until its closure in 1935, it operated as a blending facility. The facility consisted of several process and storage buildings and structures, tank farms, pipelines and rail lines. The processing and refining operations reportedly included processing crude oil transported to the Site in wooden barrels from the "Bradford Field" located in Pennsylvania in 1869. The crude oil was processed and used in the preparation of kerosene, naphtha and other finished lubricant products. Later, and subsequent to 1890, the facility began processing raw lubricant stocks which were finished, barreled/canned and shipped off Site. Significant products including lubricating oils, paraffin, neutral oils, spindle oils, naphtha, and marine engine oils were blended and distributed for sale. Barrels and tin cans were manufactured at the Site to provide containers for shipping and sale of the finished product. In 1916, the facility (sometimes referred to in the Historic and Current Site Conditions Report as "the Rochester Works") occupied 15 acres and maintained a large number of filters and other equipment for finishing lubricating oil stocks, a large compounding facility, and a barrel and can factory. The facility was demolished in the 1930s. Remnants of the facility exist at the Site including building foundations and slabs.

In addition to the above, two former railroad lines ran through the Site: 1) the Pennsylvania Railroad located approximately 100 feet northwest from the Genesee River and 2) the Erie Railroad located approximately 200 to 400 feet northwest from the Genesee River.

2.3 Known and Potential Releases of Hazardous Substances at the Site

According to the Historic and Current Site Conditions Report prepared by AMEC Earth & Environmental, Inc. (AMEC) field surveys of the Site were conducted by AMEC in November and December 2004. During these field surveys, AMEC identified existing Site structures and features including concrete retaining walls and structure remnants, retaining (former canal) walls, drums, manhole covers and piping (including historic sewer and lines), machinery parts and industrial debris, a piece of molten plastic, slag material mounds, rubble and tire piles, fire hydrants, former railroad structures and structures identified as resembling floor pits. According to information included in the Site Investigation Report – Former Vacuum Oil Company, Site #828089P, dated March 2001 and prepared by NYSDEC, in September 1992, NYSDEC removed approximately 400 to 500 tons of petroleum sludge located in the area of former sludge pits (formerly a "railyard area at the southeastern portion of the Vacuum Oil facility near what is currently the Genesee River bike trail"). The petroleum sludge was discovered during construction of the bike path (trail) and upon testing, the sludge was found to be non-hazardous.

2.4 Known Current Environmental Site Conditions

The Site was investigated in accordance with the scope of work presented in the NYSDEC approved Remedial Investigation Work Plan (RIWP) dated January 2012, prepared by Labella Associates, P.C.[1], and various investigation and data collection efforts conducted in 1999-2000, 2008, 2011, 2014-2015, 2017, and 2020. The Remedial Investigation Report (RI Report) was submitted to NYSDEC in October 2016 and approved by NYSDEC on May 10, 2017. Based upon investigations conducted to date, petroleum-related impacts in shallow soil, deep soil, groundwater and soil vapor are present across portions of the Site. Shallow soil refers to the top two feet of soil, while deep soil refers to soil located greater than two feet below ground surface (ft bgs). The specific source of the petroleum-related impacts is not known but has been inferred to be the result of various historical operations at the Site, as well as other historical operations at neighboring properties.

The following is a summary of the geological and hydrogeological findings, the soil and groundwater data generated during the RI and other Site investigations.

2.4.1 Shallow Soil

SVOCs (primarily PAHs) are present at concentrations exceeding the RRSCOs at 13 shallow locations, and metals (arsenic, lead, and/or mercury) are present at concentrations exceeding the RRSCOs at nine shallow locations. The levels of SVOCs and metals observed are typical of those found in urban/non-native fill. There are no exceedances of the RRSCOs for VOCs in shallow soil samples collected at the Site.

Although GCM (as defined in 6 NYCRR Part 375 and DER-10) was not observed, other contaminant source areas (as defined in Element #2 of the Decision Document) were identified within shallow soil samples collected at the Site. Specifically, shallow soil samples containing total SVOCs exceeding 500 ppm were collected from two soil boring locations, SB-015 and SB-01. In addition, contaminant source areas may also be present in shallow soils in the vicinity of several soil borings including SS-1, SS-2, SB-009, SB-015, SB-016, SB-017, SB-021, SB-046, SB-01, SB-03, SB-05, SB-06, RXSB-08, and RXSB-09, based on soil detections of some COCs exceeding the PGSCOs collocated with groundwater with the same COCs exceeding the AWQSGVs.

[1] As modified and approved by the NYSDEC letter dated February 16, 2012.

2.4.2 Deep Soil

SVOCs (primarily PAHs) are present at concentrations exceeding the RRSCOs at three deep locations, and metals identified as COCs (arsenic, lead, and/or mercury) are present at concentrations exceeding the RRSCOs at two deep locations. The levels of SVOCs and metals observed are typical of those found in urban/non-native fill. Petroleum VOCs (total xylenes and/or 1,2,4-trimethylbenzene) are present at concentrations exceeding the RRSCOs at two deep soil locations.

Contaminant source areas were identified within deep soil samples collected at the Site. A review of boring logs identified that GCM was observed in several deep soil samples collected at the Site. Deep soil samples containing total SVOCs exceeding 500 ppm were collected from one soil boring location, TP-2. In addition, contaminant source areas may also be present in deep soils in the vicinity of several soil borings including TP-1, TP-2, TP-3, SB-015, SB-017, SB-020, SB-046, TP-05 and RXSB-08, based on soil detections of some COCs exceeding the PGSCOs collocated with groundwater contaminated by the same COCs exceeding the AWQSGVs.

2.4.3 Groundwater

Petroleum-related compounds (VOCs and SVOCs), metals and CVOCs have been detected in exceedance of their individual AWQSGVs in groundwater throughout the Site. Petroleum-related compounds and metals are likely associated with source materials both on and off-Site.

GCM in the form of measurable LNAPL has been observed in monitoring well MW-03. In addition, sheens have been observed on groundwater in monitoring wells DEC MW-1, MW-01, MW-02, MW-04, and MW-09.

2.4.4 Soil Vapor

Based on sampling results reported in the March 2001 NYSDEC Site Investigation Report, petroleum VOCs and CVOCs are present in soil vapor at the Site, consistent with contaminants found in soil (petroleum VOCs/SVOCs) and groundwater (petroleum VOCs/SVOCs and CVOCs) at the Site.

3. SCOPE OF WORK

Based on the selected remedy for the Site, the scope of work includes the following components:

- Pre-remediation activities, including site walks, monitoring well gauging and sampling, and vegetation clearing and grubbing, PDI to finalize vertical and lateral extents of GCM/PGSCO-designated source material;
- Soil excavation and off-Site disposal;
- In-situ stabilization (ISS) in targeted areas of the Site. The ISS will be performed by excavator bucket mixing of sub-surface materials with Portland Cement amendment as the primary binder and ground, granulated blast furnace slag (GGBLS or Slag) cement as a secondary binder for the ISS monolith. The cements will first be hydrated and mixed with water to form a grout that is pumped to the targeted area;
- Installation of a Site-wide Cover System (comprised of two feet of on-Site reuse soil or off-Site backfill analytically confirmed to meet RRSCOs for all constituents, buildings, pavement, other impervious hardscape) to prevent direct contact with contaminated soil remaining at the Site;
- Installation of the subsurface components of a passive vapor intrusion mitigation system beneath proposed buildings that can be activated (i.e., connected to an active depressurization unit), if necessary, depending on results from future vapor intrusion sampling;
- Abandonment of select groundwater monitoring wells and replacement if destroyed during Site excavation activities; and
- Implementation of institutional controls including an environmental easement and SMP to restrict the Site to restricted residential use, to manage disturbance of contaminated soil remaining at the Site, to restrict use of groundwater at the Site, to maintain the Site-wide Cover System, and to monitor groundwater.

See section 8.5 and 8.5.1 on PPE requirements and applicable JLA on hazards associated with these proposed activities.

If there are any changes with the scope a revision of the HASP will be required to address any new hazards.

4. SITE CONTROL

This Site control program is designed to reduce the spread of hazardous substances from contaminated areas to clean areas, to identify and isolate contaminated areas of the Site, to facilitate emergency evacuation and medical care, to prevent unauthorized entry to the Site, and to deter vandalism and theft.

4.1 Site Map

A map of this Site, showing Site boundaries, designated work zones, and points of entry and exit is provided in **Figure 2**.

4.2 Site Access

Access to the work areas at the Site is restricted to reduce the potential for exposure to its safety and health hazards. During hours of Site operation, Site entry and exit is authorized only at the points identified in **Figure 2**. Entry and exit at these points is controlled by a perimeter fence and gate with an entrance on Flint Street. When the Site is not operating, access to the Site is controlled by the following: a perimeter fence and a locked gate entrance.

4.3 Buddy System

While working in the Exclusion Zone, Site workers use the buddy system. The buddy system means that personnel work in pairs and stay in close visual contact to be able to observe one another and summon rapid assistance in case of an emergency. The responsibilities of workers using the buddy system include:

- Remaining in close visual contact with partner;
- Providing partner with assistance as needed or requested;
- Observing partner for signs of heat stress, chemical overexposure or other difficulties;
- Periodically checking the integrity of partner's PPE; and
- Notifying the QP or other Site personnel if emergency assistance is needed.

4.4 Site Communications

The following communication equipment is used to support on-site communication: cell phones and visual hand signals.

As applicable, hand signals will be used according to the following:

Hand Signals

SIGNAL	MEANING
Hand gripping throat	Out of air, can't breathe
Grip partner's wrist	Leave area immediately
Hands on top of head	Need assistance
Thumbs up	I'm all right, okay
Thumbs down	No, negative

A current list of emergency contact numbers is included in the Site-Specific Emergency Information at the beginning of this HASP.

4.5 Site Work Zones

This Site is divided into three (3) major zones, described below. These zones are characterized by the likely presence or absence of biological, chemical, or physical hazards and the activities performed within them. Zone boundaries are clearly marked at all times and the flow of personnel among the zones is controlled. The Site is monitored for changing conditions that may warrant adjustment of zone boundaries. Zone boundaries are adjusted as necessary to protect personnel and clean areas. Whenever boundaries are adjusted, zone markings are also changed, and workers are immediately notified of the change.

Exclusion Zone

The area where contamination exists is the Exclusion Zone (EZ). All areas where excavation and handling of contaminated materials take place are considered part of the EZ. This zone will be clearly delineated by chain link fencing, caution tape, cones or other effective barriers, as necessary. Safety tape may be used as a secondary delineation within the EZ. The zone delineation markings may be opened in areas for varying lengths of time to accommodate equipment operation or specific construction activities. The SHSO may establish more than one EZ where different levels of protection may be employed or where different hazards exist. Personnel are not allowed in the EZ without:

- A buddy (co-worker);
- Required minimum level PPE;
- Medical authorization;
- Training certification; and
- Requirement to be in the zone.

Contamination Reduction Zone

A Contamination Reduction Zone (CRZ) is established between the exclusion zone and the support zone. The CRZ contains the Contamination Reduction Corridor (CRC) and provides an area for decontamination of personnel and equipment. The CRZ will be used for general Site entry and egress in addition to access for heavy equipment and emergency support services. Personnel are not allowed in the CRZ without:

- A buddy (co-worker);
- Appropriate PPE;
- Medical authorization;
- Training certification; and
- Requirement to be in the zone.

Support Zone

The Support Zone (SZ) is an uncontaminated area that will be the field support area for the Site operations. The SZ will be available for field team parking, communications and staging for emergency response. Appropriate sanitary facilities and safety equipment will be located in this zone. The support facility will be located up-wind of Site operations, if possible, and may be used as a potential evacuation point. No potentially contaminated personnel or materials are allowed in this zone except appropriately packaged/decontaminated and labeled samples and drummed wastes.

5. JOB HAZARD EVALUATION

Roux's work at the Site is expected to entail a variety of physical, biological, and chemical hazards all of which must be sufficiently managed to allow the work to be performed safely. Some of the hazards are Site-specific (i.e., they are associated with the nature, physical characteristics, and/or routine operation of the Site itself), while others are activity-specific (i.e., they are associated with [or arise from] the particular activity being performed). The various hazards can be grouped into the following categories:

- **Caught/Crushed** – the potential to become caught in, under, between, or by an object or parts of an object, such as equipment with parts that open and close or move up and down ("pinch points") or equipment that rotates, and the accompanying potential to have body parts cut, mangled, or crushed thereby.
- **Contact** – the potential to be struck by or against moving or stationary objects that can cause physical injury, such as heavy machinery, overhead piping, moving vehicles, falling objects, and equipment (including tools and hand-held equipment) or infrastructure with the ability to cut or impale.
- **Energy Sources** – the potential for bodily harm associated with energy sources, most notably electricity, but also including latent energy sources such as compressed air and equipment under tension (which when released could cause injurious contact or a fall).
- **Ergonomics** – the potential for musculoskeletal injury associated with lifting/carrying, pushing/pulling, bending, reaching, and other physical activity attributable to poor body position/mechanics, repetitive motion, and/or vibration.
- **Exposure** – the potential for injury/illness due to physical, chemical, or biological exposures in the work environment, including, but not limited to, temperature extremes, solar radiation, and noise (physical), chemical splashes and hazardous atmospheres (chemical), and animal/insect bites and poisonous plants (biological).
- **Falls** – the potential to slip or trip and thus fall or drop a load, resulting in bodily injury to oneself or others.

The foregoing is intended to provide Roux employees with a general awareness of the hazards involved with Site work. A more detailed review of the potential hazards associated with each specific activity planned for the Site (or on-going activity, as the case may be) is provided in the activity-specific Job Safety Analysis (JSA) forms in **Appendix A**. As can be seen in the JSA forms, the hazards are identified by category per the above, and specific measures designed to mitigate/manage those hazards are also identified. In preparing the JSA forms, all categories of hazards were considered, and all anticipated potential hazards were identified to the extent possible based on the experience of the personnel preparing and reviewing the JSA forms. However, there is always the possibility for an unanticipated hazard to arise, potentially as condition change over the course of the workday. Roux personnel must maintain a continual awareness of potential hazards in the work zone, regardless of whether the hazard is identified in the JSA form. Particular attention should be paid to hazards associated with exposure to hazardous substances (see **Table 1** for a listing of the hazardous substances most likely to be encountered in environmental media at the Site) and to Site personnel being located "in the line of fire" with respect to moving equipment, pinch points, and latent energy (e.g., being located or having body parts located within the swing radius of an excavator, between two sections of pipe being connected, below a piece of suspended equipment, or adjacent to a compressed air line).

5.1 Hazard Communication and Overall Site Information Program

The information in the JSAs and SDSs is made available to all employees and subcontractors who could be affected by it prior to the time they begin their work activities.

Modifications to JSAs are communicated during routine pre-work briefings and periodically updated as needed in the HASP. SDSs will be maintained by the SHSO/QP for new chemicals brought on-site as needed. Copies of SDSs can be found in **Appendix B**.

5.2 Noise

Noise is associated with the operation of heavy equipment, power tools, pumps, and generators. Noise is also a potential hazard when working near operating equipment such as excavators, drill rigs or pole drivers. High noise (i.e., < 85 dBA) operations may be evaluated by the SHSO utilizing a type 2 handheld sound level meter (SLM) operating on the "A"-weighted scale with slow response because this scale most closely resembles human response to noise and complies with OSHA 29 CFR 1910.95. Hearing protection is required in areas with noise exposure greater than 85 dBA. Double hearing protection (ear plugs and earmuffs) should be donned in areas where the noise exposure is more than 95 dBA. Noise exposure will be controlled by hearing protection as described above or by maintaining set-backs from high-noise equipment, as warranted. Personnel handling heavy equipment and using power tools that produce noise levels exceeding those described levels above are required by OSHA 29 CFR 1910.95 to wear the appropriate Noise Reduction Rating (NRR) level of hearing protection. Appropriate hearing protection will be evaluated by the SHSO as necessary in consultation with the OHSM and CHSD.

5.3 Slip, Trip, and Fall Hazards

Slip, trip, and fall hazards may include, but are not limited to, general slip and trip hazards associated with uneven ground, possible debris, wet grass, and equipment. Prior to work, walking paths will be assessed for solid footings, any ground penetrations that may cause a tripping hazard will be appropriately marked, and other areas will be noted and discussed with the field team.

Personnel shall be aware of their surroundings and footings at all time, and all accommodations should be made for proper housekeeping and organized equipment placement at the Site, where possible, to help prevent any slip, trip, and fall-related incidents. All tools and materials should be appropriately stored when not in use and placed in appropriate storage containers.

5.4 Biological Hazards

Biological hazards that may potentially be present at a Site, include poisonous plants, insects (ticks, spiders, bees), animals (snakes, dogs), etc. Information on biological hazards can be found within Roux's Biological Hazard Awareness Management Program located within Roux's Corporate Health and Safety Manual. There is also potential for transmission and/or exposure to SARS-CoV-2, the virus that causes COVID-19. Prior to beginning work, on-Site protocols shall be established by the project team, including subcontractors, in accordance with federal, state, county, city, and/or other guidance, as applicable.

5.5 Silica and Portland Cement Hazards

The primary hazards associated with in-situ stabilization (ISS) are exposure to respirable silica dust and wet Portland cement during batch plant operations. These operations involve mixing Portland cement, ground granulated blast-furnace slag (slag) cement, and water to support ISS activities. Although the batch plant is typically established in a clean area with no anticipated exposure to Site contaminants, dust exposure may occur while handling or mixing Portland cement and during deliveries or pneumatic transfer of slag and Portland cement into silos. A personal data ram (PDR) will be maintained on-site for initial and periodic monitoring of airborne dust concentrations during these activities. Particulate dust monitoring will also be performed whenever dust is visible. If particulate readings exceed 0.05 mg/m3 within the workers' breathing

zone, engineering and administrative dust suppression controls (i.e. spraying water, pausing work activities) will be employed. If engineering and administrative controls, including water-based dust suppression, do not adequately control exposure, appropriately rated respiratory protection shall be used. Personnel required to wear respirators must be medically cleared, fit tested, and fit for duty. Level D personal protective equipment (PPE) may be upgraded before a time-weighted average (TWA) overexposure occurs, in accordance with Roux's Silica Exposure Control Management Program included as **Appendix C**.

Dermal protection is required for personnel who may contact wet Portland cement or cement-containing materials. Appropriate PPE shall be used to control dermal exposure. Prohibiting hand-to-mouth contact, including smoking and eating on-site, and maintaining good personal hygiene practices will help prevent exposure by ingestion, in accordance with OSHA's guidance, Preventing Skin Problems from Working with Portland Cement, included as **Appendix D**.

6. EMERGENCY RESPONSE PLAN

This emergency response plan details actions to be taken in the event of Site emergencies. The PM and SHSO is responsible for the implementation of emergency response procedures onsite. The SHSO/PM provides specific direction for emergency action based upon information available regarding the incident and response capabilities and initiates emergency procedures and notification of appropriate authorities. In the event of an emergency, Site personnel are evacuated and do not participate in emergency response activities, response is facilitated through external emergency services.

6.1 Emergency Response

The SHSO, after investigating the incident and relevant information, shall determine the level of response required for containment, rescue and medical care. Limited on-site emergency response activities could occur therefore the SHSO is responsible for notifying external emergency response agencies. The SHSO provides relevant information to the responding organizations, including, but not limited to, the hazards associated with the emergency incident, potential containment problems, and missing Site personnel.

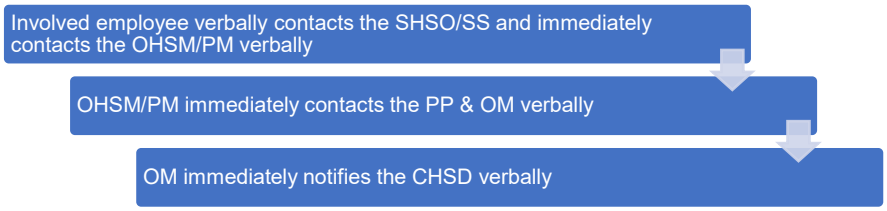
6.2 Emergency Alerting and Evacuation

If evacuation notice is given, Site workers leave the worksite, if possible, by way of the nearest exit. Appropriate primary and alternate evacuation routes and assembly areas have been identified and are shown on the Site Plan with Emergency Muster Area (**Figure 2**). The routes and assembly area will be determined by conditions at the time of the evacuation based on wind direction, the location of the hazard source, and other factors as determined by SHSO/PM.

Personnel exiting the Site gather at a designated assembly point. To determine that everyone has successfully exited the Site, personnel will be accounted for at the assembly point. If any worker cannot be accounted for, notification is given to the SHSO, PM, and any arriving response authorities so that appropriate action can be initiated. Subcontractors on this Site have coordinated their emergency response plans to ensure that these plans are compatible and potential emergencies are recognized, alarm systems are clearly understood, and evacuation routes are accessible to all personnel relying upon them.

6.3 Emergency Medical Treatment and First Aid

In the event of a work-related injury or illness, employees are required to follow the procedures outlined below. All work-place injury and illness situations require Roux's Project and Corporate Management Team to be notified when an injury/illness incident occurs, and communication with the contracted Occupational Health Care Management Provider, WorkCare, Inc., is initiated, as necessary. The Injury/Illness Notification Flowchart is provided below and within Roux's Incident Investigation and Reporting program included within Roux's Corporate Health and Safety Manual.



If on-Site personnel require any medical treatment, the following steps will be taken:

a. If the situation is life-threatening or appears to be potentially life-threatening, call 911 to request immediate medical attention.

b. Notify Roux's Project and Corporate Management Team for any work-related injury and/or illness occurrence and communicate with the contracted Occupational Health Care Management Provider, WorkCare, immediately following the notifications provided above.

c. Based on discussions with the Project Team, Corporate Management and the WorkCare evaluation, if medical attention beyond onsite first aid is warranted, transport the injured / ill person (IP) to the Urgent Care Center, or notify the Fire Department or Ambulance Emergency service and request an ambulance or transport the victim to the hospital, and continue communications with Corporate Management Team. An Urgent Care/Hospital Route map with location to Work Fit Medical/Strong Memorial Hospital is included in the Site-Specific Emergency Information.

d. Decontaminate to the extent possible prior to administration of first aid or movement to medical or emergency facilities.

e. First aid medical support will be provided by onsite personnel trained and certified in First Aid, Cardio Pulmonary Resuscitation (CPR), Automatic External Defibrillation (AED), and Blood-Borne Pathogens (BBP) Awareness, until relieved by emergency medical services (EMS).

f. The SHSO and PM will perform a Loss Investigation (LI), and the Project Team will complete the final Loss Report. If a Roux employee is involved in a vehicular incident, the employee must also complete the Acord Automobile Loss Notice.

7. ENVIRONMENTAL CONDITIONS AND RESPONSE

7.1 Adverse Weather Conditions

In the event of adverse weather conditions, the SHSO or project principal will determine if work can continue without jeopardizing the health and safety of field workers. Some of the items related to adverse weather conditions to be considered prior to determining if work should continue include:

- Potential for heat stress and heat-related injuries;
- Potential for cold stress and cold-related injuries;
- Treacherous weather-related conditions. If wind speed is greater than 15 mph averaged over a 15-minute period or wind gusts over 25 mph, earthmoving operations will be ceased;
- Limited visibility; and
- Electrical storm potential.

Site activities will be limited to daylight hours and acceptable weather conditions. Inclement working conditions may include heavy rain, fog, high winds, and lightning. The SHSO and/or PM shall observe daily weather reports and evacuate, if necessary, in case of inclement weather conditions.

7.2 Electrical Storm Guidelines

In the event that lightning and/or thunder are observed while working onsite, all onsite activities shall stop and personnel shall seek proper shelter (e.g., substantial building, enclosed vehicle, etc.). Work shall not resume until the threat of lighting has subsided and no lightning or thunder has been observed for 30 minutes. If the possibility of lightning is forecast for the day, advise the onsite personnel on the risks and proper procedure at the pre-work safety briefing. Continuously monitor for changing weather conditions and allow enough time to properly stop work if lightning is forecast.

7.3 Environmental Stressors, Heat Stress, Heat Exhaustion, and Heat Stroke

It is the employer's responsibility to monitor weather forecasts and ambient air temperatures, both prior to the work shift and during the shift. The National Oceanic and Atmospheric Administration records average minimum/maximum temperatures of 26.2/72.4 degrees Fahrenheit during the year in Rochester, New York.

To prevent potential heat illness, the following strategies will be implemented:

- Adjusting personnel work/rest intervals;
- Monitoring for symptoms of heat illness;
- Providing shaded rest areas;
- Providing cool potable water so that each employee has access to at least one quart per hour for the entire shift, free of charge;
- Allowing for employees to acclimatize to the weather conditions and work demands;
- Observe workers during a heat wave (i.e., when the temperature is at least 80°F, and 10 degrees hotter than the average temperature of the five preceding days); and
- Implementing high heat procedures when the temperature reaches 95°F.

Roux's Heat Illness Prevention Plan is implemented when the when ambient temperatures exceed 80°F. Roux's Heat Illness Prevention Program can be found within **Appendix E**. Additional information regarding heat illnesses is provided below. This can include, but is not limited to, access to shade that is sufficient in size to fit all workers who are on break; a car with air conditioning is acceptable, too. Preventative cool-down breaks shall be allowed at any time, and anyone taking such a break will be monitored for heat illness symptoms and not required to return to work until all symptoms (if present) of heat illness have disappeared. If necessary, first aid will be offered, but if symptoms are severe, emergency response procedures will be implemented per Section 6.3. Anyone who has shown symptoms of severe heat illness will not be sent home without being offered first aid or medical treatment.

High heat procedures must be implemented when temperatures reach 95°F. These procedures include:

- Ensuring that effective communication by voice, observation, or electronic means is maintained so that employees at the work site can contact a supervisor when necessary. An electronic device, such as a cell phone or text messaging device, may be used for this purpose only if the reception in the area is reliable.
- Observing employees for alertness and signs or symptoms of heat illness. The employer shall ensure effective employee observation/monitoring by implementing one or more of the following:
    - Supervisor or designee observation of 20 or fewer employees;
    - Mandatory buddy system; and
    - Regular communication with sole employee such as by radio or cellular phone, or other effective means of observation.
- Designating one or more employees on each worksite as authorized to call for emergency medical services and allowing other employees to call for emergency services when no designated employee is available.
- Encouraging employees throughout the work shift to drink plenty of water.
- A review of the high heat procedures during the daily tailgate meeting and remind employees of their right to take a cool-down rest when necessary.

7.3.1 Heat Stress

Heat stress is the body's response to excessive heat and can be a significant potential hazard. The risk of heat stress can be increased with heavy physical activity and/or the use of personal protective equipment in hot, humid weather environments. There are also personal risk factors that can contribute to the risk of suffering from heat stress, such as obesity, water intake, alcohol and caffeine consumption, pregnancy, age, medication, etc. Heat illness includes heat cramps, heat exhaustion, heat syncope, and heat stroke.

7.3.2 Heat Cramps

Heat cramps may be brought on by prolonged exposure to heat. As an individual sweats, water and salts are lost by the body resulting in painful muscle cramps, typically in the legs.

First aid treatment includes, but is not limited to, shade, rest, and fluid replacement. Typically, the individual should recover within one-half hour while being monitored constantly. If the individual has not improved substantially within 30 minutes and the body temperature has not decreased, the individual should be transported to a hospital for medical attention.

Per Roux's Heat Illness Prevention Plan, employees shall have access to potable drinking water that is fresh, pure, suitably cool, free of charge and in sufficient quantities. Access to shade shall be present when temperatures exceed 80 degrees Fahrenheit and shall be available when temperatures do not exceed 80 degrees Fahrenheit.

7.3.3 Heat Exhaustion

Heat exhaustion may occur in an individual who has been exposed to excessive heat while working or exercising. The circulatory system of the individual fails as blood collects near the skin to rid the body of excess heat through transference. The signs and symptoms of heat exhaustion are as follows:

- Rapid and shallow breathing;
- Cold and clammy skin with heavy perspiration;
- Fatigue and weakness;
- Weak pulse;
- Skin appears pale;
- Dizziness; and
- Elevated body temperature.

First aid treatment includes, but is not limited to, cooling the victim, elevating the feet, and replacing fluids.

If the individual is not substantially improved within 30 minutes and the body temperature has not decreased, the individual should be transported to the hospital for medical attention.

7.3.4 Heat Stroke

Heat stroke occurs when an individual is exposed to excessive heat and stops sweating. This condition is classified as a MEDICAL EMERGENCY requiring immediate cooling of the victim and transport to a medical facility. The signs and symptoms of heat stroke are as follows:

- Dry, hot, red skin;
- Seizures;
- Large (dilated) pupils;
- Body temperature approaching or above 105^{o}F;
- Confusion, altered mental state, slurred speech; and
- Loss of consciousness – the individual may go into a coma.

First aid treatment requires immediate cooling and transportation to a medical facility. Heat stress is a significant hazard if any type of protective equipment (semi-permeable or impermeable) that prevents evaporative cooling when worn in hot weather environments.

7.4 Cold Stress

Cold stress is a danger at low temperatures and when the wind-chill factor is low. Prevention of cold-related illnesses is a function of whole-body protection. Adequate insulating clothing must be used when the air temperature is below 60°F. A work/rest regimen will be initiated when ambient temperatures and protective clothing cause a stressful situation. In addition, reduced work periods followed by rest in a warm area may be necessary in extreme conditions. The signs and symptoms of cold stress include the following:

- Severe shivering;
- Slowing;
- Stumbling or repeated falling;
- Collapse; and/or
- Abnormal behavior;
- Weakness;
- Inability to walk;
- Unconsciousness.

First aid requires removing the victim from the cold environment and seeking medical attention immediately. Also, prevent further body heat loss by covering the victim lightly with blankets. Do not cover the victim's face. If the victim is still conscious, administer hot drinks and encourage activity such as walking, wrapped in a blanket.

8. SAFETY PROCEDURES

This section of the HASP presents the specific safety procedures to be implemented during Roux's activities at the Site in order to protect the health and safety of various on-site personnel. Minimum OSHA-mandated procedures are presented first, followed by client- and Site-specific procedures. Lastly, activity-specific procedures are discussed. These Site and activity-specific procedures supplement the general safety procedures included in Roux's Corporate Health and Safety Manual, which also must be followed in their entirety.

8.1 Training

At a minimum, Site personnel who will perform work in areas where there exists the potential for toxic exposure will be health and safety-trained prior to performing work onsite per OSHA 29 CFR 1910.120(e) and 29 CFR 1926.65(e). More specifically, all Roux, subcontractor, and other personnel engaged in sampling and remedial activities at the Site and who are exposed or potentially exposed to hazardous substances, health hazards, or safety hazards must have received at a minimum the 40 hour initial HAZWOPER training consistent with the requirements of 29CFR 1910.120(e)(3)(i) training and a minimum of 3 days' actual field experience under the direct supervision of a trained experienced supervisor, plus 8 hours of refresher training on an annual basis. Depending on tasks performed, less training may be permitted. Evidence of such training must be maintained at the Site at all times. Furthermore, all on-Site management and supervisory personnel directly responsible for or who supervise the employees engaged in Site remedial operations, must have received an additional 8 hours of specialized training at the time of job assignment on topics including, but not limited to, the employer's safety and health program and the associated employee training program, personal protective equipment program, spill containment program, and health hazard monitoring procedure and techniques, plus 8 hours of refresher training on an annual basis. Additionally, all workers who will be required to don a respirator will be properly trained on their employer's Respiratory Protection Program, which also includes being medically cleared to wear a respirator and passed a fit test, at least initially prior to use, and then annually thereafter in accordance with 29 CFR 1910.134, Respiratory Protection.

Roux personnel training records are maintained in a corporate database with records available upon request from either the OHSM/SHSO/CHSD or Human Resources Department.

8.2 Site-Specific Safety Briefings for Visitors

A site-specific briefing is provided to all site visitors who enter this site beyond the site entry point. For visitors, the site-specific briefing provides information about site hazards, the site lay-out including work zones and places of refuge, the emergency alarm system and emergency evacuation procedures, and other pertinent safety and health requirements as appropriate.

8.3 HASP Information and Site-Specific Briefings for Workers

Site personnel review this HASP and are provided a Site-specific tailgate briefing prior to the commencement of work to ensure employees are familiar with this HASP and the information and requirements it contains, as well as the relevant JSAs included in **Appendix A**. Additional briefings are provided as necessary to notify employees of any changes to this HASP as a result of information gathered during on-going Site characterization and analysis of changing conditions. Conditions for which we schedule additional briefings include but are not limited to: changes in site conditions, changes in the work schedule/plan, newly discovered hazards, and incidents occurring during Site work.

8.4 Medical Surveillance

The medical surveillance section of the Health and Safety Plan describes how worker health status is monitored at this site. Medical surveillance is used when there is the potential for worker exposure to hazardous substance at levels above OSHA Permissible Exposure Limits (PEL) or other published limits. The purpose of a medical surveillance program is to medically monitor worker health to ensure that personnel are not adversely affected by site hazards. The provisions for medical surveillance at this site are based on the site characterization and job hazard analysis found in Section 4 of this HASP and are consistent with OSHA requirements in 29 CFR 1910.120(f) as applicable.

8.4.1 Site Medical Surveillance Program

Medical surveillance requirements are based on a worker's potential for exposure as determined by the site characterization and job hazard analysis documented in Section 4 and JSAs within **Appendix A** of this HASP and in compliance with the requirements of 29 CFR 1910.120(f)(2). Based on site information and use of direct reading instruments, limited use of respirators (less than 30 days per year), and the absence of an employee-staffed HAZMAT team, a limited medical surveillance program is required and implemented at this site. The medical surveillance program provides that:

1. Workers assigned to tasks requiring the use of respirators receive medical examinations in accordance with 29 CFR 1910.134(e) to ensure they are physically capable to perform the work and use the equipment, and
2. If a worker is injured, becomes ill, or develops signs or symptoms of possible over-exposure to hazardous substance or health hazards, medical examinations are provided to that worker as soon as possible after the occurrence and as required by the attending physician.
3. These medical examinations and procedures are performed by or under the supervision of a licensed physician and are provided to workers free of cost, without loss of pay, and at a reasonable time and place. In addition, the need to implement a more comprehensive medical surveillance program will be re-evaluated after any apparent over-exposure.

8.4.2 Medical Recordkeeping Procedures

Medical recordkeeping procedures are consistent with the requirements of 29 CFR 1910.1020 and are described in the company's overall safety and health program. A copy of that program is available at our Islandia, New York office.

The following items are maintained in worker medical records:

- Respirator fit test and selection;
- Physician's medical opinion of fitness for duty (pre-placement, periodic, termination);
- Physician's medical opinion of fitness for respirator protection (pre-placement, periodic); and
- Exposure monitoring results.

8.4.3 Program Review

The medical program is reviewed to ensure its effectiveness. The Corporate Health and Safety Manager, in coordination with the Human Resources Director, is responsible for this review. At minimum, this review consists of:

- Review of accident and injury records and medical records to determine whether the causes of accidents and illness were promptly investigated and whether corrective measures were taken wherever possible;
- Evaluation of the appropriateness of required medical tests based on site exposures; and
- Review of emergency treatment procedures and emergency contacts list to ensure they were site-specific, effective, and current.

8.5 Personnel Protection

Site safety and health hazards are eliminated or reduced to the greatest extent possible through engineering controls and work practices. Where hazards are still present, a combination of engineering controls, work practices and PPE are used to protect employees. Appropriate personal protective equipment (PPE) shall be worn by Site personnel when there is a potential exposure to chemical, biological or physical hazards (e.g., falling objects, flying particles, sharp edges, electricity, and noise), as determined by the SHSO. The level of personal protection, type and kind of equipment selected will depend on the hazardous conditions and in some cases cost, availability, compatibility with other equipment, and performance. An accurate assessment of all these factors will be made before work can be safely executed.

Roux maintains a comprehensive written PPE program that addresses proper PPE selection, use, maintenance, storage, fit and inspection. Roux's PPE program can be found within **Appendix F**. PPE to be used at the Site will meet the appropriate American National Standards Institute (ANSI) standards and the following OSHA (General/Construction Industry) standards for minimum PPE requirements.

The minimum level of PPE for entry onto the Site is Level D. The following equipment shall be worn:

- Work uniform (long pants, sleeved shirt);
- Hard hat;
- Steel or composite toe work boots (must comply with American Society for Testing and Materials [ASTM]) F 2412-05, Standard Test Methods for Foot Protection and ASTM F 2413-05, Standard Specification for Performance Requirements for Foot Protection);
- Safety Glasses (must comply with one of the following ANSI/ISEA Z87.1-2010, ANSI Z87.1-2003, ANSI Z87.1-2003);
- Boot Covers (as needed);
- Hearing protection (as needed);
- High visibility clothing (shirt/vest); and
- Hand protection (e.g., minimum cut resistance meeting ANSI 105-2000 Level 2).

Note that jewelry shall be removed or appropriately secured to prevent it from becoming caught in rotating equipment or unexpectedly snagged on a fixed object (e.g., wrist watches, bracelets, rings, chains and necklaces, open earrings). Do not wear loose clothing and all shoulder-length hair should be tied back.

Site specific PPE ensembles and materials are identified within task specific JSAs located within **Appendix A**, and any upgrades or downgrades of the level of protection (i.e., not specified in the JSA) must be approved by the PP and immediately communicated to all Roux personnel and subcontractors as applicable. PPE is used in accordance with manufacturer's recommendations.

8.5.1 Additional Personal Protection

As outlined above the minimum PPE for entry onto the Site is modified Level D. Outlined below are the requirements for Level C and B PPE.

EPA Level C Protection

Personal Protective Equipment:

- Full-face, air-purifying, cartridge-equipped respirator* (Mine Safety and Health Administration/ National Institute of Occupational Safety and Health [MSHA/ NIOSH] specifically approved for protection from organic vapors or particulates);
- Chemical-resistant clothing (coverall; hooded, two-piece chemical splash suit; chemical-resistant hood and apron; disposable chemical-resistant coveralls);
- Cotton coveralls;
- Gloves (outer), chemical-resistant, nitriles;
- Gloves (inner), cut resistant (with minimum blade cut-rating of ANSI 105-2000 Level 2);
- Boots (inner), chemical-resistant, steel (or composite) toe and including task-specific boot requirements as consistent with ASTM F2413-11;
- Boots (outer), chemical-resistant (disposable);
- Hard hat;
- Hearing protection (as needed); and
- Escape mask (as needed).

*Cartridges in use will be changed out based on their End of Service Life Indicator. If organic vapor (OV) cartridges are worn for benzene exposures above 1 ppm, the cartridge shall be removed from service at the end of the calculated service life or before the next shift, whichever is sooner. For other contaminants present a cartridge change out schedule will be provided based off 3M Select & Service Life Software or in consultation with the CHSD; worst case assumptions will be made to provide a conservative estimate on cartridge change out. If multiple contaminants are present at varying degrees, the work must cease operation, as cartridges in use may not cover all contaminants present. Screening will be carried out during work activities as specified in Section 8.6 Air Monitoring Plan. Organic vapors adsorbed on an organic vapor cartridge can migrate through the carbon bed without airflow. Desorption of the contaminant after partial use of the chemical cartridge can occur after a short period (hours) without use (e.g., overnight). This is most significant for the most volatile and poorly retained organic vapors (e.g., boiling point < 65 degrees Celsius [°C]). For organic vapors with a boiling point less than 65 degrees C, it is recommended that the organic vapor cartridge never be used longer than one shift, even if the estimated service life is greater than 8 hours, and the cartridge is used for only a short time during the shift.

Criteria for Selection-Level C:

Meeting any of these criteria warrants use of Level C protection.

- Airborne hazards are known to be present but are unlikely to exceed protection factors provided by air purifying respirators.
- Continuous total organic vapor readings in the breathing zone register between 50 ppm and to less than 100 ppm on a PID (such as a MiniRAE 3000 or other comparable instrument), and chemical specific (e.g., benzene/vinyl chloride/formaldehyde) readings utilizing colorimetric indicator tubes (e.g., Dräeger or Sensidyne) are undetectable.
- See the Combustible Gases table for decisions based on LEL within Section 8.5. Air Monitoring Plan.
- Measured air concentrations of known organic vapors will be reduced by the respirator to at or below one half of the PEL, and the individual and combined compound concentrations are within the service limit of the respirator cartridge.
- Atmospheric contaminant concentrations do not exceed Immediately Dangerous to Life and Health (IDLH) concentrations.
- Atmospheric contaminants, liquid splashes, or other direct contact will not adversely affect the small area of skin left unprotected by chemical-resistant clothing.

- Job functions have been determined not to require self-contained breathing apparatus.

Notes: 1. Benzene and or other specific compounds may also be monitored initially and periodically in the breathing zone utilizing activated sampling devices approved for use based on lower occupational exposure limits.

2. Modifications of Level C will be used to increase or decrease the level of skin protection during activities that increase or preclude, respectively, the degree of contact with chemical hazards. Modifications for increased protection may include, but are not limited to, the use of chemical resistant coveralls (e.g., Tyveks) and cut and chemical resistant gloves. Any modifications to Level C will require approval of the SHSO, and PM in consultation with the CHSD.

EPA Level B Protection (Contact the OHSM and/or CHSD)

Personal Protection Equipment:

- Pressure-demand, self-contained breathing apparatus (MSHA/NIOSH approved);
- Chemical-resistant clothing (overall and long-sleeved jacket; coveralls; hooded, one or two-piece chemical-splash suit; disposable chemical-resistant coveralls);
- Cotton coveralls;
- Chemical-resistant gloves (outer) nitriles;
- Gloves (inner), cut-resistant (with minimum blade cut rating of ANSI Level 2);
- Boots (inner), chemical-resistant, steel (or composite) toe, and task-specific boot requirements as consistent with ASTM F2413-11;
- Boots (outer), chemical-resistant, (disposable);
- Hard hat;
- Hearing protection (as needed); and
- 2-way radio communications (intrinsically safe).

Criteria for Selection-Level B:

- Meeting any one of these criteria warrants use of Level B protection.
- PID instrument (such as a MiniRAE 3000 or other comparable instrument) readings in the breathing zone are greater than 50 ppm and less than 100 ppm and benzene is detectable utilizing colorimetric indicator tubes (e.g., Dräeger or Sensidyne).
- Airborne hazards are known to be present but are not identified or quantified.
- The type(s) and atmospheric concentration(s) of toxic substance(s) have been identified and require the highest level of respiratory protection, but a lower level of skin and eye protection. These would-be atmospheres:
    - With IDLH concentrations;
    - Exceeding limits of protection afforded by a full-face, air-purifying respirator; or
    - Containing substances requiring supplied-air PPE, but substances and/or concentrations do not represent a serious skin hazard.
    - The atmosphere contains less than 19.5% oxygen.
- Site operations make it highly unlikely that the small, unprotected area of the head or neck will be contacted by splashes of extremely hazardous substances.
- If work is performed in an enclosed space.

Note that jewelry shall be removed or appropriately secured to prevent it from becoming caught in rotating equipment or unexpectedly snagged on a fixed object. (e.g., wrist watches bracelets, rings, chains and necklaces, open earrings). Do not wear loose clothing and all shoulder length hair should be tied back.

Site-specific PPE ensembles and materials are identified within task specific JSAs located within **Appendix A**, and any upgrades or downgrades of the level of protection (i.e., not specified in the JSA) must be immediately communicated to all Roux personnel and subcontractors, as applicable. PPE is used in accordance with manufacturer's recommendations.

8.5.2 Hearing Conservation

Hearing protection is made available when noise exposures equal or exceed an 8-hour time-weighted average sound level of 85 dBA. Hearing protection is required when the 8-hour time weighted average sound level $\geq$ 85 dBA, or when noise levels exceed 140 dBA at any point or exceeds 115 dBA for at least 15 minutes. Where noise exposure meets or exceeds this level, noise is listed as a physical hazard in the JSA for the tasks/operation, and hearing protection is included as one of the control measures (PPE).

8.6 Monitoring

An air monitoring program is important to the safety of on- and off-Site personnel, and the surrounding area. A preliminary survey, to establish background conditions in the immediate sampling area, may be made prior to the initiation of Site work including, but not limited to, monitoring wind direction (e.g., wind socks) and approximate temperature during all invasive Site activities. This survey will be conducted with the appropriate pre-calibrated air monitoring instrument(s), as warranted by the field activity. Once this survey has been complete, any changes in the type of PPE will be determined and relayed to those working on-Site.

A Site-specific Community Air Monitoring Plan (CAMP) is included as an appendix to the ISMP and RAWP.

Work zone air monitoring will be performed to verify that the proper level of PPE is used, and to determine if increased protection or work stoppage is required. The following equipment shall be used to monitor conditions:

- A Photoionization Detector (PID) with a lamp energy of 10.6 eV will be used to provide direct readings of organic vapor concentrations during intrusive activities to determine that personnel protection is adequate. Concentrations shall be recorded during intrusive activities with the potential to encounter contaminant vapors.
- Colorimetric detection tubes shall be used based on PID action levels to qualitatively identify possible contaminants as applicable.
- A pre-calibrated multi-gas meter with combustible Lower Explosive Limit (LEL), oxygen (O2), carbon monoxide (CO), and hydrogen sulfide (H2S) sensors shall be used to monitor the potential for oxygen-deficient atmospheres, explosive concentrations of organic vapors, and toxic gases during intrusive operations. The calibration for this device will be performed using a known gas composition calibration mixture.
- A real-time aerosol monitor, Personal Data Ram (PDR), may be used to identify the level of total dust on a real-time basis. Calibration of the RAM will be in accordance with the manufacturer's instructions. Monitoring will be performed as discussed in **Section 5.5**. Readings above 0.05 mg/m3 will require additional dust suppression.

Personal exposure monitoring utilizing activated charcoal tubes may be considered based on whether or not the area sample results are at or above half of the PEL. The decision to perform the monitoring will be made by, and under the control of, the CHSD.

Below are monitoring action levels for Site-specific chemicals of concern. In the event PID readings above the thresholds identified below are sustained for 5 minutes in the breathing zone, worker protection will require upgrading following notification to the OHSM and applicable parties.

8.6.1 Action Levels for Air Monitoring

PPE can remain at Level D if breathing zone VOC concentrations are less than 5 ppm and benzene is non-detect. Personnel are required to evacuate the Site when breathing zone VOC readings exceed 25 ppm.

The following tables include summaries of the air monitoring, work practices, and action levels for the expected contaminants. The action levels to initiate testing with colorimetric tubes for airborne volatiles is 1 ppm (PID reading) and is based on the Permissible Exposure Limit (PEL) for benzene (1 ppm). The colorimetric tubes are used to confirm the presence or absence of specific constituents, and they do not provide a measured concentration.

PPE does not need to be upgraded if breathing zone VOC concentrations are less than 5 ppm. Personnel are required to evacuate the Site when breathing zone VOC readings exceed 25 ppm.

The following tables include summaries of the air monitoring, work practices, and action levels for the expected contaminants.

Air Monitoring Summary and Action Levels Organic Vapors	
PID Reading in Breathing Zone (ppm)	**Action**
<5 ppm	Continue Monitoring, ventilate space
≥ 5 ppm - ≤ 25 ppm	Ventilate space until PID reads < 5 ppm. If < 5 ppm cannot be achieved, upgrade to Level C[1].
≥ 25 ppm	Ventilate space and evacuate area. Consult with CHSD.

Background concentrations should be established at the beginning of each work day. It may be necessary to re-establish background concentrations and ambient conditions vary through the day.

1 Measured air concentrations of known organic vapors will be reduced by the respirator to one half of the PEL or lower, and the individual and combined compound concentrations shall be within the service limit of the respirator cartridge.

Air Monitoring Summary and Action Levels Oxygen	
O_2 Reading in Breathing Zone (%)[1]	**Action**
20.9% O_2	Oxygen level normal
< 19.5% O_2	Oxygen deficient Interrupt task/Evacuate area
>23.5% O_2	Oxygen enriched Interrupt task/Evacuate area

1. Action levels based on USEPA Standard Operating Safety Guides; Table 5-1

Air Monitoring Summary and Action Levels Carbon Monoxide	
CO Reading in Breathing Zone (ppm)[1]	**Action**
<12.5 ppm	Inspect exhaust system for leaks or other sources of CO. Monitor initially and every 15 minutes during use of CO-generating equipment.
12.5-25 ppm	Ventilate area. Monitor continuously and record measurements. Contact PM.
>25 ppm	Cease Field Operations. Ventilate area.

1. Based upon the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) of 25 ppm as an 8-hour time weighted average (TWA) and OSHA's Permissible Exposure Limit (PEL) of 50 ppm as an 8-hour TWA concentration.

Air Monitoring Summary and Action Levels Combustible Gases	
Lower Explosive Limit (LEL) Reading	**Action**
< 4% LEL	Site activities will continue with normal monitoring
4% – 20% LEL	Stop work until levels dissipate to <4% LEL
> 20% LEL	Potential explosion hazard. Halt all site activities, research source of release, aerate work area, suppress source.
Air Monitoring Summary and Action Levels Hydrogen Sulfide	
Hydrogen Sulfide (H_2S) Reading	**Action**
<10 ppm	Site activities will continue with normal monitoring
≥10 ppm	Stop work until levels dissipate to <10 ppm; use mechanical ventilation if possible. Consult with CHSD if unable to reduce concentrations below 10 ppm.

Air Monitoring Summary and Action Levels Nuisance Dust	
PDR	**Action**
≥0.05 mg/m^3	Increase application of water. Stop work and contact CHSD if unable to reduce concentrations.

8.6.2 Air Monitoring Equipment and Calibration

A PID calibrated to an appropriate calibration mixture will be used to detect organic vapors in and around the work areas. Monitoring will be conducted in and around all work areas and at the workers breathing zone before activities commence to establish a background level, then at 15-minute intervals throughout the day. A calibrated PDR will be used to detect silica exposure around the workers' breathing zone. All equipment will be calibrated according to the manufacturer's recommendation. Calibration logs will be maintained and will include the name of the person who performed the calibration, the date and time calibrated, and the

instrument reading at the time of calibration. A manual bellows pump or equivalent with colorimetric tubes for specific compounds will be utilized to determine the course of action related to upgrading or downgrading the level of respiratory protection, as applicable.

If air monitoring data indicate safe levels of potentially harmful constituents at consistent intervals (5-minute intervals), then monitoring can be conducted less frequently (every 30 minutes). This determination will be made by the onsite SHSO. Monitoring data, including background readings and calibration records, will be documented. Work to be performed on-Site will conform to Roux's Standard Operating Procedures (SOPs). Conformance with these guidelines as well as the guidelines described in this HASP will aid in mitigating the physical and chemical hazards mentioned throughout this HASP.

8.7 Tailgate Safety Meetings

The Site Safety Officer will provide daily safety briefings (e.g., tailgate meetings) including, but not limited to, the following scenarios:

- When new operations are to be conducted;
- Whenever changes in work practices must be implemented; and
- When new conditions are identified and/or information becomes available.

Daily safety briefings shall be recorded on the Roux Daily Tailgate Health and Safety Meeting Log/Daily Site Safety Checklist, and all completed forms will become a part of the project file. A blank copy of the Roux Daily Tailgate Health and Safety Meeting Log/Daily Site Safety Checklist is included as **Appendix G**.

8.8 Spill Containment

Spill containment equipment and procedures should, at a minimum, meet the requirements of the facility's Spill Prevention, Control and Countermeasure Plan, if applicable. Otherwise, spill containment equipment and procedures must be considered depending on the task, including, but not limited to, chemical/product transfer points and handling.

8.8.1 Initial Spill Notification and Response

Any worker who discovers a hazardous substance spill will immediately notify the SHSO. The worker will, to his/her best ability, report the hazardous substance involved, the location of the spill, the estimated quantity of material spilled, the direction/flow of the spill material, related fire/explosion incidents, and any associated injuries without compromising their own safety.

8.8.2 Spill Evaluation and Response

The SHSO is responsible for evaluating spills and determining the appropriate response. When this evaluation is being made, the spill area will be isolated and demarcated to the extent possible. If necessary to protect nearby community members, notification of the appropriate authorities is made by the PM as appropriate. On-Site response is limited to small spills (e.g., <10 gallons); large spills require external emergency responders who will be contacted by the SHSO.

8.9 Decontamination

The decontamination section of the HASP describes how personnel and equipment are decontaminated when they leave the Exclusion Zone. This section also describes how residual waste from decontamination processes is disposed. The site decontamination procedures are designed to achieve an orderly, controlled

removal or neutralization of contaminants that may accumulate on personnel or equipment. These procedures minimize worker contact with contaminants and protect against the transfer of contaminants to clean areas of the site and off-site. They also extend the useful life of PPE by reducing the amount of time that contaminants contact and can permeate PPE surfaces. Decontamination is facilitated within the CRZ at this site, if applicable.

8.9.1 Decontamination Procedures for Personnel and PPE

The following are general decontamination procedures established and implemented at this site.

1. Decontamination is required for all workers exiting a contaminated area. Personnel may re-enter the SZ only after undergoing the decontamination procedures described below in the next section.
2. Protective clothing is decontaminated, cleaned, laundered, maintained and/or replaced as needed to ensure its effectiveness.
3. PPE used at this site that requires maintenance or parts replacement is decontaminated prior to repairs, or
4. PPE used at this site is decontaminated or prepared for disposal on the premises. Personnel who handle contaminated equipment have been trained in the proper means to do so to avoid hazardous exposure.
5. This site uses an off-site laundry for decontamination of PPE. The site has informed that facility of the hazards associated with contaminated PPE from this site.
6. The site requires and trains workers that if their permeable clothing is splashed or becomes wetted with a hazardous substance, they will immediately exit the work zone, perform applicable decontamination procedures, shower, and change into uncontaminated clothing.
7. Procedures for disposal of decontamination waste at a permitted facility and meets applicable local, State, and Federal regulations.

8.9.2 Decontamination Procedures for Equipment

All tools, equipment, and machinery from the EZ or CRZ are decontaminated in the CRZ prior to removal to the SZ. Equipment decontamination procedures are designed to minimize the potential for hazardous skin or inhalation exposure and to avoid cross-contamination and chemical incompatibilities.

General Equipment Decontamination Procedures:

1. Decontamination is required for all equipment exiting a contaminated area. Equipment may re-enter the SZ only after undergoing the equipment decontamination procedures.
2. Vehicles that travel regularly between the contaminated and clean areas of the site are carefully decontaminated each time they exit the EZ, and the effectiveness of that decontamination is monitored to reduce the likelihood that contamination will be spread to other parts of the site.
3. Particular attention is given to decontaminating tires, scoops, and other parts of heavy equipment that are directly exposed to contaminants and contaminated soil.
4. Procedures for disposal of decontamination waste at a permitted facility and shall meet applicable local, State, and Federal regulations.

The following items may be used to decontaminate equipment:

- Fresh water rinse;
- Acetone rinse;
- Non-phosphorus detergent wash;
- Distilled water rinse; and
- A steam cleaner or pressure washer (heavy equipment only).

8.9.3 Monitoring the Effectiveness of Decontamination Procedures

Visual examination and sampling are used to evaluate the effectiveness of decontamination procedures. Visual examination is used to ensure that procedures are implemented as described and that they appear to control the spread of contaminants under changing site conditions. Visual examination is also used to inspect for signs of residual contamination or for contaminant permeation of PPE.

Personnel who work in contaminated areas of the site, either the Contamination Reduction Zone (CRZ) or the Exclusion Zone, are trained in the principles and practices of decontamination described in this section of the HASP and in related SOPs. If site procedures are changed as a result of inspection and monitoring, all affected employees are notified of these changes.

8.10 Confined Space Entry

The projected scope of work does not anticipate the need for Confined Space Entry at this time. As such, **ROUX PERSONNEL ARE NOT AUTHORIZED TO ENTER AN OSHA PERMIT REQUIRED CONFINED SPACE.** Any changes to the field activities that may necessitate confined space entry will be reported to the Project Principal and OHSM.

Confined space is defined as any space, depression, or enclosure that:

- Has limited opening for entry and egress;
- Is large enough for an employee to enter and perform assigned work; and
- Is not intended for continuous occupancy.

A permit required confined space is one that meets the definition of a confined space and has one or more of the following characteristics:

- May contain or produce life-threatening atmospheres due to oxygen deficiency the presence of toxic, flammable, or corrosive contaminants;
- Contains a material that has the potential for engulfment;
- Has an internal configuration that may cause an entrant to be trapped or asphyxiated by inwardly converging walls or by a floor that slopes downward and tapers to a smaller cross-section; and
- Contains any other serious safety or health hazards.

Although not anticipated at this time, if subcontractors performing cleaning and mitigation and/or remedial measures activities are required to enter structures that are considered to be a permit required confined space, permitting of the confined space as well as hazard mitigation for entry will be completed by the subcontractor in accordance with 29 CFR 1910.146 or 1926.1201-1213 and/or applicable local/client requirements.

8.11 Client and Site-Specific

In addition to the OSHA-specific procedures discussed above, there may be client and site-specific safety procedures that must be adhered to during the performance of remedial activities at the Site.

8.12 Unusual or Significant Risks

Field activities that appear to have unusual or significant risks that cannot be adequately managed with existing risk tools such as LPS, HASPs, traffic safety plans, work permits, design and O&M practices, equipment HAZOPS or other safety tools must be referred to the CHSD to help with the assessment and management of the associated potential safety risks. Examples include the use of explosives for demolition, use of firearms to control wildlife, rappelling, demolition over water, diving, etc.

8.13 Activity-Specific Hazards

In addition to the general hazards discussed above, there are activity-specific hazards associated with each work activity planned for the Site. An activity-specific JSA has been completed for each of the activities planned for the Site. JSAs are provided in **Appendix A**. In the event that new work activities or tasks are planned, JSAs will be developed and implemented prior to performing the new activities. In the absence of a JSA, the personnel performing work must prepare a field JSA and receive clearance from a designated competent safety official prior to performing any task with significant risk. In emergency situations where time is critical SPSAs will be utilized to identify the task, associated hazards and mitigative actions to take. For lower risk activities (as deemed by the discretion of a Competent Person) where a JSA is determined to not be needed, the individual(s) conducting the activities must perform SPSAs prior to and during the work.

8.13.1 Electrical and Other Utility Assessment and Accommodations

Roux shall perform a site walk to identify any potential overhead electrical or utility lines. All applicable guidelines will be followed in the vicinity of overhead power and utility lines (see Section 8.13.3 below).

Roux has also reviewed all available Site maps showing buried utility lines to identify potential hazards, which revealed that no underground hazards are known to exist in the vicinity of the areas of the Site pertinent to this HASP.

8.13.2 Subsurface Work

Subsurface work activities will require adherence to Roux's Corporate Subsurface Utility Clearance Management program found within **Appendix H**.

8.13.2.1 Excavations and Trenching

Trenching and excavation work activities carried out by Roux and their subcontractors shall comply with applicable OSHA standards (i.e., 29 CFR 1926.650-652). Regional Notification Centers (i.e., Underground Services Alert) shall be notified at least two working days prior to the start of any digging or excavation work per state requirements (i.e., 811-One Call). Personnel responsible for excavation activities will be trained in their job responsibilities. Additionally, for trenches 4 feet or deeper, where employees will enter, the trench needs to have a stairway, ladder or other safe means of egress, and located so that employees don't have to travel farther than 25 feet horizontally. Where employees will enter trenches greater than 5 feet deep, the trench must have some type of protective system or sloped sidewalls appropriately to prevent cave-ins.

The SHSO or other responsible Roux personnel will be present on-Site during all Roux contracted excavation and backfill operations and will supplement health and safety monitoring conducted by Subcontractor air quality screening to ensure that appropriate levels of protection and safety procedures are utilized. The proximity of chemical, water, sewer, and electrical lines will be identified by Roux and/or their subcontractor before any subsurface activity or sampling is attempted. Prior to any excavation activities, trees, shrubbery, and other objects that can potentially pose as a hazard during excavation should be supported or removed from the excavation area. The following safe work practices will be implemented during this task.

- The proximity of chemical, water, sewer, and electrical lines will be identified by a facility representative prior to beginning any subsurface activity;
- At the start of every day, a competent person will inspect excavations to evaluate if the area is stable and safe to enter. Inspections will be conducted as needed throughout the excavation operations. If deemed necessary, a competent person may also conduct inspections after rainfall or any other event that can potentially affect the integrity of the excavation. Employees will not enter excavations where water has accumulated until protective measures have been implemented.

- Prior to entering excavations greater than 4 feet in depth, air monitoring for oxygen and hazardous atmospheres must be conducted to assure atmospheric conditions are within normal levels described in Section 8.6. Continuous air monitoring with a standard multi-gas detector (O^2, LEL%, CO, H^2S) shall be used during the course of work within an excavation; if action limits are reached workers shall safely exit the excavation. Upgrades to worker protection should be evaluated with the SHSO and PP in consultation with the CHSD. Emergency rescue equipment, such as breathing apparatuses and safety harnesses connected to an extraction device, will be readily available in the event of hazardous atmospheric conditions;
- While earthmoving, stay out of the excavator's delineated heavy equipment exclusion zone and away from the excavation sides where there is potential for cave in (within excavations that are 6 feet or more in depth, a delineated perimeter 6 feet away from the excavated edge is required);
- During loading and unloading operations, stand away from haul trucks and other vehicles to avoid contact with any falling loads; and
- Traffic cones, caution tape, or other barriers will be set up around the perimeter of the excavation when employees are working along the excavation edge and for any excavation that will be left open overnight or unattended for more than two days.

Maximum Allowable Slopes

Soil or Rock Type	Maximum Allowable Slopes (H:V)[1] for Excavations Less Than 20 Feet Deep[3]
Stable Rock	Vertical (90°)
Type A[2]	3/4 : 1 (53°)
Type B	1 : 1 (45°)
Type C	1 1/2 : 1 (34°)

29 CFR 1926 Subpart P Appendix B Sloping and Benching Table B-1

Notes:

[1] Numbers shown in parentheses next to maximum allowable slopes are angles expressed in degrees from the horizontal. Angles have been rounded off.

[2] A short-term maximum allowable slope of 1/2H : 1V (63°) is allowed in excavations in Type A soil that are 12 feet (3.67 meters) or less in depth. Short-term maximum allowable slopes for excavations greater than 12 feet (3.67 meters) in depth shall be 3/4H : 1V (53°).

[3] Sloping or benching for excavations greater than 20 feet deep shall be designed and stamped by a registered professional engineer.

Proper stockpiling (i.e., 2 feet minimum distance from the excavation edge), containment, transport, storage, and disposal practices will be utilized and is dependent upon the potential type and amount of waste generated during operations. The location of safety equipment and evacuation procedures will be established prior to initiation of operations according to this HASP.

8.13.3 Heavy Equipment

Use of heavy equipment at the Site will require adherence to Roux's Corporate Heavy Equipment Exclusion Zone Management Program found within **Appendix I**. Exclusion zone layouts specific to the building demolition activities will be provided to Roux by the subcontractor performing the work and must be reviewed and approved by Roux prior to mobilization for the work. Additionally, operation of the drill rig/other heavy equipment will maintain clearances from overhead power lines in accordance with 29 CFR 1926.1408 Table A Minimum Clearance Distances provided below.

Minimum Required Clearances for Energized Overhead Power Lines

Nominal System Voltage of Power Line (K V)	Minimum Required Clearance (feet)
0-50	10
51-100	12
101-200	15
201-300	20
301-500	25
501-750	35
751-1000	45

1 kilovolt (KV) = 1,000 volts

8.14 Traffic Control

If Site operations encroach upon public streets or highways and a hazard exists to Site personnel because of traffic conditions, a traffic control plan will be implemented in accordance with the United States Department of Transportation's (DOT's) "Manual on Uniform Traffic Control Devices."

8.15 Sanitation

Sanitation facilities will be provided in accordance with the sanitation standards (29 CFR 1910.141, 29 CFR 1926.51 and 29 CFR 1928.110). Sanitation facilities will be maintained and kept in good conditions at all times.

9. Field Team Review

Each person performing work at or visiting this site shall sign this section after site-specific training is completed and before being permitted to access the CRZ or Exclusion Zone.

I have read and understand this Site-Specific Health and Safety Plan. I will comply with the provision contained therein.

Site/Project: 5 Flint Street, Rochester, New York

Name & Company	Signature	Date

10. Approvals

By their signature, the undersigned certify that this HASP is approved and will be utilized at the 5 Flint Street Site.

Nick Suraci	9/11/2026
Nicholas Suraci – Site Health and Safety Officer	Date
Paul W Werthmann	9/11/2026
Paul Werthmann - Office Health and Safety Manager	Date
	9/11/2026
Eric Runstrom – Project Manager	Date
	9/11/2026
Ian Reed – Project Principal	Date

TABLES

1. Toxicological Properties of Hazardous Substances Present at the Site

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at the Site.

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
ORGANOCHLORINE PESTICIDES (OCP)									
DDT	50-29-3	TWA 1 mg/m3	TWA 0.5 mg/m3	TWA 1 mg/m3	500 mg/m3	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin; paresthesia tongue, lips, face; tremor; anxiety, dizziness, confusion, malaise (vague feeling of discomfort), headache, lassitude (weakness, exhaustion); convulsions; paresis hands; vomiting; [potential occupational carcinogen]	Eyes, skin, central nervous system, kidneys, liver, peripheral nervous system	White, odorless and tasteless, very stable, water-insoluble, synthetic BP: 260°F Fl.Pt. = 162-171°F LEL: NA UEL: NA
Aldrin	309-00-2	TWA 0.1 mg/m3	TWA 0.25 mg/m3	TWA 0.25 mg/m3	25 mg/m3	Inhalation, ingestion, skin and/or eye contact	headache, dizziness; nausea, vomiting, malaise (vague feeling of discomfort); myoclonic jerks of limbs; clonic, tonic convulsions; coma; hematuria (blood in the urine), azotemia; [potential occupational carcinogen]	Developmemntal, Endocrine, Liver, Immune System, Nervous System,	Colorless to dark-brown crystalline solid with a mild chemical odor. BP: 293°F Fl.Pt. = 150°F LEL: NA UEL: NA
Lindane (gamma-BHC)	58-89-9	TWA 0.5 mg/m3	TWA 0.5 mg/m3	TWA 0.5 mg/m3	50 mg/m3	Inhalation, ingestion, skin and/or eye contact	irritation eyes, skin, nose, throat; headache; nausea; clonic convulsions; resp difficulty; cyanosis; aplastic anemia; muscle spasm; In Animals: liver, kidney damage	Eyes, skin, respiratory system, central nervous system, blood, liver, kidneys	White to yellow, crystalline powder with a slight, musty odor. BP: 614°F Fl.Pt. = 150°F LEL: NA UEL: NA
Dieldrin	860-57-1	TWA 0.1 mg/m3	TWA 0.25 mg/m3	TWA 0.25 mg/m3	25 mg/m3	Inhalation, ingestion, skin and/or eye contact	headache, dizziness; nausea, vomiting, malaise (vague feeling of discomfort), sweating; myoclonic limb jerks; clonic, tonic convulsions; coma; ; In Animals: liver, kidney damage [potential occupational carcinogen]	Developmemntal, Endocrine, Liver, Immune System, Nervous System,	Colorless to light-tan crystals with a mild, chemical odor. BP: NA (Decomposes) Fl.Pt. = NA LEL: NA UEL: NA
VOLATILE ORGANIC COMPOUNDS (VOCs)									
1,1,1-Trichloroethane	71-55-6	TWA 350 ppm STEL 450 ppm	C 350 ppm (1900 mg/m^3) [15-minute]	TWA 350 ppm (1900 mg/m^3)	700 ppm	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin; headache, lassitude (weakness, exhaustion), central nervous system depression, poor equilibrium; dermatitis; cardiac arrhythmias; liver damage	Eyes, skin, central nervous system, cardiovascular system, liver	Colorless liquid with a mild, chloroform-like odor. BP: 165°F Fl.Pt. = NA LEL: 7.5% UEL: 12.5% Combustible Liquid, but burns with difficulty
1,1,2,2-Tetrachloroethane	79-34-5	TWA 1 ppm [skin]	Ca TWA 1 ppm (7 mg/m^3) [skin]	TWA 5 ppm (35 mg/m^3) [skin]	Ca [100 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Nausea, vomiting, abdominal pain; tremor fingers; jaundice, hepatitis, liver tenderness; dermatitis; leukocytosis (increased blood leukocytes); kidney damage; [potential occupational carcinogen]	Skin, liver, kidneys, central nervous system, gastrointestinal tract	Colorless to pale-yellow liquid with a pungent, chloroform-like odor BP: 296°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Liquid
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	TWA 1000 ppm STEL 1250 ppm	TWA 1000 ppm (7600 mg/m3) ST 1250 ppm (9500 mg/m3)	TWA 1000 ppm (7600 mg/m3)	2000 ppm	Inhalation, ingestion, skin and/or eye contact	Irritation skin, throat, drowsiness, dermatitis; central nervous system depression; In Animals: cardiac arrhythmias, narcosis	Skin, heart, central nervous system, cardiovascular system	Colorless to water-white liquid with an odor like carbon tetrachloride at high concentrations. [Note: A gas above 118°F.] BP: 118°F Fl.Pt. = NA LEL: NA UEL: NA
1,1,2-Trichloroethane	79-00-5	TWA 10 ppm [skin]	Ca TWA 10 ppm (45 mg/m3) [skin]	TWA 10 ppm (45 mg/m3) [skin]	Ca [100 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, nose; central nervous system depression; liver, kidney damage; dermatitis; [potential occupational carcinogen]	Eyes, respiratory system, central nervous system, liver, kidneys	Colorless liquid with a sweet, chloroform-like odor BP: 237°F Fl.Pt. = NA LEL: 6% UEL: 15.5% Combustible Liquid, forms dense soot
1,1-Dichloroethane	75-34-3	TWA 100 ppm	TWA 100 ppm (400 mg/m^3)	TWA 100 ppm (400 mg/m^3)	3,000 ppm	Inhalation, ingestion, skin and/or eye contact	Irritation skin; central nervous system depression; liver, kidney, lung damage	Skin, liver, kidneys, lungs, central nervous system	Colorless, oily liquid with a chloroform-like odor. BP: 135°F Fl.Pt. = 2°F LEL: 5.4% UEL: 11.4% Class IB Flammable Liquid Fl.P. below 73°F and BP at or above 100°F.
1,1-Dichloroethene	75-35-4	TWA 5 ppm	Ca	None	Ca	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, throat; dizziness, headache, nausea, dyspnea (breathing difficulty); liver, kidney disturbance; pneumonitis; [potential occupational carcinogen]	Eyes, skin, respiratory system, central nervous system, liver, kidneys	Colorless liquid or gas (above 89°F) with a mild, sweet, chloroform-like odor BP: 89°F Fl.Pt. = -2°F LEL: 6.5% UEL: 15.5% Class IA Flammable Liquid: Fl.P. below 73°F and BP below 100°F

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at the Site.

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
1,2,3-Trichlorobenzene	87-61-6	Cameo Chemicals Source https://cameochemicals.noaa.gov/chemical/10051	NA	NA	NA	Inhalation, skin absorption, ingestion, skin and/or eye contact	Inhalation may cause irritation of respiratory tract. Irritating to the eyes. May redden skin on contact. Ingestion may cause liver damage.	Skin, eyes, respiratory tract, liver	A white solid with a sharp chlorobenzene odor. Insoluble in water and denser than water. Hence sinks in water Fl.Pt. = 234.9°F
1,2,4-Trichlorobenzene	120-82-1	C 5 ppm	C 5 ppm (40 mg/m3)	None	N.D.	inhalation, skin absorption, ingestion, skin and/or eye contact	irritation eyes, skin, mucous membrane; In Animals: liver, kidney damage; possible teratogenic effects	Eyes, skin, respiratory system, liver, reproductive system	Colorless liquid or crystalline solid (below 63°F) with an aromatic odor BP: 416°F Fl.Pt. = 222°F LEL (302°F): 2.5% UEL (302°F): 6.6% Class IIIB Combustible Liquid: Fl.P. at or above 200°F. Combustible Solid
1,2-Dibromo-3-chloropropane	96-12-8	NA	Ca	TWA 0.001 ppm	Ca	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat; drowsiness; nausea, vomiting; pulmonary edema; liver, kidney injury; sterility; [potential occupational carcinogen]	Eyes, skin, respiratory system, central nervous system, liver, kidneys, spleen, reproductive system, digestive system	Dense yellow or amber liquid with a pungent odor at high concentrations. [pesticide] [Note: A solid below 43°F.] BP: 384°F Fl.Pt. = (oc) 170°F LEL: NA UEL: NA Class IIIA Combustible Liquid: Fl.P. at or above 140°F and below 200°F.
1,2-Dibromoethane	106-93-4	None listed Skin	Ca TWA 0.045 ppm C 0.13 ppm [15-minute]	TWA 20 ppm C 30 ppm 50 ppm [5-minute maximum peak]	Ca [100 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, respiratory system; dermatitis with vesiculation; liver, heart, spleen, kidney damage; reproductive effects; [potential occupational carcinogen]	Eyes, skin, respiratory system, liver, kidneys, reproductive system	Colorless liquid or solid (below 50°F) with a sweet odor. [fumigant] BP: 268°F Fl.Pt. = 50°F LEL: NA UEL: NA Noncombustible Liquid
1,2-Dichlorobenzene	95-50-1	TWA 25 ppm STEL 50 ppm	C 50 ppm (300 mg/m3)	C 50 ppm (300 mg/m3)	200 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, nose; liver, kidney damage; skin blisters	Eyes, skin, respiratory system, liver, kidneys	Colorless to pale-yellow liquid with a pleasant, aromatic odor. [herbicide] BP: 357°F Fl.Pt. = 1°F LEL: 2.2% UEL: 9.2% Class IIIA Combustible Liquid: Fl.P. at or above 140°F and below 200°F.
1,2-Dichloroethane	107-06-2	TWA 10 ppm	Ca TWA 1 ppm (4 mg/m3) ST 2 ppm (8 mg/m3)	TWA 50 ppm C 100 ppm 200 ppm [5-minute maximum peak in any 3 hours]	Ca [50 ppm]	Inhalation, ingestion, skin absorption, skin and/or eye contact	Irritation eyes, corneal opacity; central nervous system depression; nausea, vomiting; dermatitis; liver, kidney, cardiovascular system damage; [potential occupational carcinogen]	Eyes, skin, kidneys, liver, central nervous system, cardiovascular system	Colorless liquid with a pleasant, chloroform-like odor. [Note: Decomposes slowly, becomes acidic & darkens in color.] BP: 182°F Fl.Pt. = 56°F LEL: 6.2% UEL: 16% Class IB Flammable Liquid Fl.P. below 73°F and BP at or above 100°F.
1,2-Dichloropropane	78-87-5	TWA 10 ppm Dermal Sensitizer (DSEN)	Ca	TWA 75 ppm (350 mg/m3)	Ca [400 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, respiratory system; drowsiness, dizziness; liver, kidney damage; In Animals: central nervous system depression; [potential occupational carcinogen]	Eyes, skin, respiratory system, liver, kidneys, central nervous system	Colorless liquid with a chloroform-like odor. [pesticide] BP: 206°F Fl.Pt. = 60°F LEL: 3.4% UEL: 14.5% Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.
1,3-Dichlorobenzene	541-73-1	https://cameochemicals.noaa.gov/chemical/8514				Inhalation, skin absorption, ingestion, skin and/or eye contact	INHALATION: Causes headache, drousiness, unsteadiness. Irritating to mucous membranes. EYES: Severe irritation. SKIN: Severe irritation. INGESTION: Irritation of gastric mucosa, nausea, vomiting, diarrhea, abdominal cramps and cyanosis.		Colorless liquid. Sinks in water. BP: 343°F Fl.Pt. = 146°F LEL: 2.02% UEL: 9.2%
1,4-Dichlorobenzene	106-46-7	TWA 10 ppm	Ca	TWA 75 ppm (450 mg/m3)	Ca [150 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Eye irritation, swelling periorbital (situated around the eye); profuse rhinitis; headache, anorexia, nausea, vomiting; weight loss, jaundice, cirrhosis; In Animals: liver, kidney injury; [potential occupational carcinogen]	Liver, respiratory system, eyes, kidneys, skin	Colorless or white crystalline solid with a mothball-like odor. [insecticide] BP: 345°F Fl.Pt. = 150°F LEL: 2.5% UEL: NA Combustible Solid, but may take some effort to ignite.
1,4-Dioxane	123-91-1	TWA 20 ppm [skin]	Ca C 1 ppm (3.6 mg/m3) [30-minute]	TWA 100 ppm (360 mg/m3) [skin]	Ca [500 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	irritation eyes, skin, nose, throat; drowsiness, headache; nausea, vomiting; liver damage; kidney failure; [potential occupational carcinogen]	Eyes, skin, respiratory system, liver, kidneys	Colorless liquid or solid (below 53°F) with a mild, ether-like odor. BP: 214°F Fl.Pt. = 55°F LEL: 2.0% UEL: 22% Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F
2-Butanone	78-93-3	TWA 200 ppm STEL 300 ppm	TWA 200 ppm (590 mg/m3) ST 300 ppm (885 mg/m3)	TWA 200 ppm (590 mg/m3)	3000 ppm	inhalation, ingestion, skin and/or eye contact	irritation eyes, skin, nose; headache; dizziness; vomiting; dermatitis	Eyes, skin, respiratory system, central nervous system	Colorless liquid with a moderately sharp, fragrant, mint- or acetone-like odor BP: 175°F Fl.Pt. = 16°F LEL (200°F): 1.4% UEL (200°F): 11.4% Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at the Site.

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
2-Hexanone	591-78-6	TWA 5 ppm STEL 10 ppm [skin]	TWA 1 ppm (4 mg/m3)	TWA 100 ppm (410 mg/m3)	1600 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, nose; peripheral neuropathy: lassitude (weakness, exhaustion), paresthesia; dermatitis; headache, drowsiness	Eyes, skin, respiratory system, central nervous system, peripheral nervous system	Colorless liquid with an acetone-like odor BP: 262°F Fl.Pt. = 77°F LEL: NA UEL: 8.0% Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F
4-Methyl-2-pentanone	108-10-1	TWA 20 ppm STEL 75 ppm	TWA 50 ppm (205 mg/m3) ST 75 ppm (300 mg/m3)	TWA 100 ppm (410 mg/m3)	500 ppm	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, mucous membrane; headache, narcosis, coma; dermatitis; In Animals: liver, kidney damage	Eyes, skin, respiratory system, central nervous system, liver, kidneys	Colorless liquid with a pleasant odor BP: 242°F Fl.Pt. = 64°F LEL (200°F): 1.2% UEL (200°F): 8.0% Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F
Acetone	67-64-1	TWA 250 ppm STEL 500 ppm	TWA 250 ppm (590 mg/m^3)	TWA 1000 ppm (2400 mg/m^3)	2500 ppm [10% LEL]	Inhalation, ingestion, skin and/or eye contact	irritation eyes, nose, throat; headache, dizziness, central nervous system depression; dermatitis	Eyes, skin, respiratory system, central nervous system	Colorless liquid with a fragrant, mint-like odor BP: 133°F Fl.Pt. = 0°F LEL: 12.8% UEL: 2.5% Class IB Flammable liquid: Fl.P. below 73°F and BP at or above 100°F.
Benzene	71-43-2	TWA 0.5 ppm STEL 2.5 ppm	Ca TWA 0.1 ppm ST 1 ppm	TWA 1 ppm ST 5 ppm	Ca [500 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, respiratory system; dizziness; headache, nausea, staggered gait; anorexia, lassitude (weakness, exhaustion); dermatitis; bone marrow depression; [potential occupational carcinogen]	Eyes, skin, respiratory system, blood, central nervous system, bone marrow	Colorless to light yellow liquid with an aromatic odor [Note: Solid below 42 °F] BP: 176°F Fl.Pt. = 12°F LEL: 1.2% UEL: 7.8% Class IB Flammable liquid. Fl.P. below 73°F and BP at or above 100°F.
Bromochloromethane	74-97-5	TWA 200 ppm	TWA 200 ppm (1050 mg/m3)	TWA 200 ppm (1050 mg/m3)	2000 ppm	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, throat; confusion, dizziness, central nervous system depression; pulmonary edema	Eyes, skin, respiratory system, liver, kidneys, central nervous system	Colorless to pale-yellow liquid with a chloroform-like odor. [Note: May be used as a fire extinguishing agent.] BP: 155°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Liquid
Bromodichloromethane	75-27-4	https://cameochemicals.noaa.gov/chemical/16064				Inhalation, ingestion, skin and/or eye contact	Symptoms of exposure to this compound may include irritation of the skin, eyes, mucous membranes and respiratory tract. It may also cause narcosis. Other symptoms may include nausea, dizziness and headache.	Liver and kidney damage. Central nervous system effects may also occur.	Clear colorless liquid BP: 189°F Fl.Pt. = NA LEL: NA UEL: NA
Bromoform	75-25-2	TWA 0.5 ppm	TWA 0.5 ppm (5 mg/m3) [skin]	TWA 0.5 ppm (5 mg/m3) [skin]	850 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, respiratory system; central nervous system depression; liver, kidney damage	Eyes, skin, respiratory system, central nervous system, liver, kidneys	Colorless to yellow liquid with a chloroform-like odor. [Note: A solid below 47°F.] BP: 301°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Liquid
Bromomethane	74-83-9	TWA 1 ppm [skin]	Ca	C 20 ppm (80 mg/m3) [skin]	Ca [250 ppm]	Inhalation, skin absorption (liquid), skin and/or eye contact (liquid)	Irritation eyes, skin, respiratory system; muscle weak, incoordination, visual disturbance, dizziness; nausea, vomiting, headache; malaise (vague feeling of discomfort); hand tremor; convulsions; dyspnea (breathing difficulty); skin vesiculation; liquid: frostbite; [potential occupational carcinogen]	Eyes, skin, respiratory system, central nervous system	Colorless gas with a chloroform-like odor at high concentrations. [Note: A liquid below 38°F. Shipped as a liquefied compressed gas.] BP: 38°F Fl.Pt. = NA (Gas) LEL: 10% UEL: 16.0% Flammable Gas, but only in presence of a high energy ignition source.
Carbon disulfide	75-15-0	TWA 1 ppm [skin]	TWA 1 ppm (3 mg/m3) ST 10 ppm (30 mg/m3) [skin]	TWA 20 ppm C 30 ppm 100 ppm (30-minute maximum peak)	500 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact	Dizziness, headache, poor sleep, lassitude (weakness, exhaustion), anxiety, anorexia, weight loss; psychosis; polyneuropathy; Parkinson-like syndrome; ocular changes; coronary heart disease; gastritis; kidney, liver injury; eye, skin burns; dermatitis; reproductive effects	Central nervous system, peripheral nervous system, cardiovascular system, eyes, kidneys, liver, skin, reproductive system	Colorless to faint-yellow liquid with a sweet ether-like odor. [Note: Reagent grades are foul smelling.] BP: 116°F Fl.Pt. = -22°F LEL: 1.3% UEL: 50.0% Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.
Carbon tetrachloride	56-23-5	TWA 5 ppm STEL 10 ppm [skin]	Ca ST 2 ppm (12.6 mg/m3) [60-minute]	TWA 10 ppm C 25 ppm 200 ppm (5-minute maximum peak in any 4 hours)	Ca [200 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; central nervous system depression; nausea, vomiting; liver, kidney injury; drowsiness, dizziness, incoordination; [potential occupational carcinogen]	Central nervous system, eyes, lungs, liver, kidneys, skin	Colorless liquid with a characteristic ether-like odor BP: 170°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Liquid
Chlorobenzene	108-90-7	TWA 10 ppm	NA	TWA 75 ppm (350 mg/m3)	1000 ppm	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, nose; drowsiness, incoordination; central nervous system depression; In Animals: liver, lung, kidney injury	Eyes, skin, respiratory system, central nervous system, liver	Colorless liquid with an almond-like odor BP: 270°F Fl.Pt. = 82°F LEL: 1.3% UEL: 9.6% Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F.

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at the Site.

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Chloroethane	75-00-3	TWA 100 ppm [skin]	Handle with caution in the workplace	TWA 1000 ppm (2600 mg/m3)	3800 ppm [10%LEL]	Inhalation, skin absorption (liquid), ingestion (liquid), skin and/or eye contact	Incoordination, inebriation; abdominal cramps; cardiac arrhythmias, cardiac arrest; liver, kidney damage	Liver, kidneys, respiratory system, cardiovascular system, central nervous system	Colorless gas or liquid (below 54°F) with a pungent, ether-like odor. [Note: Shipped as a liquefied compressed gas.] BP: 54°F Fl.Pt. = NA (gas), -58°F (liquid) LEL: 3.8% UEL: 15.4% Flammable Gas
Chloroform	67-66-3	TWA 10 ppm	Ca ST 2 ppm (9.78 mg/m3) [60-minute]	C 50 ppm (240 mg/m3)	Ca [500 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; dizziness, mental dullness, nausea, confusion; headache, lassitude (weakness, exhaustion); anesthesia; enlarged liver; [potential occupational carcinogen]	Liver, kidneys, heart, eyes, skin, central nervous system	Colorless liquid with a pleasant odor BP: 143°F Fl.Pt. = -82°F LEL: NA UEL: NA Noncombustible Liquid
Chloromethane	74-87-3	TWA 50 ppm STEL 100 ppm	Ca	TWA 100 ppm C 200 ppm 300 ppm (5-minute maximum peak in any 3 hours)	Ca [2000 ppm]	Inhalation, skin and/or eye contact (liquid)	Dizziness, nausea, vomiting; visual disturbance, stagger, slurred speech, convulsions, coma; liver, kidney damage; liquid: frostbite; reproductive, teratogenic effects; [potential occupational carcinogen]	Central nervous system, liver, kidneys, reproductive system	Colorless gas with a faint, sweet odor which is not noticeable at dangerous concentrations. [Note: Shipped as a liquefied compressed gas.] BP: -12°F Fl.Pt. = NA (Gas) LEL: 8.1% UEL: 17.4% Flammable Gas
cis-1,2-Dichloroethene	156-59-2	TWA 200 ppm (All isomers)	TWA 200 ppm (790 mg/m3)	TWA 200 ppm (790 mg/m3)	1000 ppm	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, respiratory system; central nervous system depression	Eyes, respiratory system, central nervous system	Colorless liquid (usually a mixture of the cis & trans isomers) with a slightly acrid, chloroform-like odor. BP: 118-140°F Fl.Pt. = 36-39°F LEL: 5.6% UEL: 12.8% Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F
cis-1,3-Dichloropropene	10061-01-5	https://cameochemicals.noaa.gov/chemical/20168				Inhalation, ingestion, skin and/or eye contact	Symptoms of exposure to this compound may include local irritation of the eyes skin and respiratory tract; dermatitis, gasping, coughing, substernal pain, extreme respiratory distress, lacrimation, central nervous system depression, skin irritation, acute gastrointestinal distress with pulmonary congestion and edema. It also may cause injury to the liver, kidneys and heart.	Skin, eyes, mucous membranes, liver, kidney, heart	Colorless to amber liquid with a sweetish odor. BP: 219.7°F Fl.Pt. = NA LEL: NA UEL: NA
Cyclohexane	110-82-7	TWA 100 ppm	TWA 300 ppm (1050 mg/m3)	TWA 300 ppm (1050 mg/m3)	1300 ppm [10%LEL]	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, respiratory system; drowsiness; dermatitis; narcosis, coma	Eyes, skin, respiratory system, central nervous system	Colorless liquid with a sweet, chloroform-like odor. [Note: A solid below 44°F.] BP: 177°F Fl.Pt. = 0°F LEL: 1.3% UEL: 8.0% Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.
Dibromochloromethane	124-48-1	https://cameochemicals.noaa.gov/chemical/16183				Inhalation, ingestion, skin and/or eye contact	Symptoms of exposure to this compound may include irritation of the skin, eyes, mucous membranes and upper respiratory tract. It may also cause fatigue. Other symptoms may include central nervous system effects, lung and cornea irritation and liver and kidney damage. Prolonged exposure can cause nausea, dizziness, headache and narcosis.	Skin, eyes, mucous membranes, upper respiratory tract	Clear colorless to yellow-orange liquid BP: 246-248°F Fl.Pt. = Greater than 200°F LEL: NA UEL: NA
Dichlorodifluoromethane	75-71-8	TWA 1000 ppm	TWA 1000 ppm (4950 mg/m3)	TWA 1000 ppm (4950 mg/m3)	15,000 ppm	Inhalation, skin and/or eye contact (liquid)	Dizziness, tremor, asphyxia, unconsciousness, cardiac arrhythmias, cardiac arrest; liquid: frostbite	Cardiovascular system, peripheral nervous system	Colorless gas with an ether-like odor at extremely high concentrations. [Note: Shipped as a liquefied compressed gas.] BP: -22°F Fl.Pt. = NA LEL: NA UEL: NA Nonflammable Gas
Ethyl benzene	100-41-4	TWA 20 ppm	TWA 100 ppm (435 mg/m^3) ST 125 ppm (545 mg/m^3)	TWA 100 ppm (435 mg/m^3)	800 ppm [10%LEL]	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, mucous membrane; headache; dermatitis; narcosis, coma	Eyes, skin, respiratory system, central nervous system	Colorless liquid with an aromatic odor. BP: 277°F Fl.Pt. = 55°F LEL: 0.8% UEL: 6.7% Class IB Flammable Liquid below 73°F and BP at or above 100°F
Isopropyl benzene	98-82-8	TWA 5 ppm	TWA 50 ppm (245 mg/m3) [skin]	TWA 50 ppm (245 mg/m3) [skin]	900 ppm [10%LEL]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, mucous membrane; dermatitis; headache, narcosis, coma	Eyes, skin, respiratory system, central nervous system	Colorless liquid with a sharp, penetrating, aromatic odor BP: 306°F Fl.Pt. = 96°F LEL: 0.9% UEL: 6.5% Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F
Methyl Acetate	79-20-9	TWA 200 ppm STEL 250 ppm	TWA 200 ppm (610 mg/m3) ST 250 ppm (760 mg/m3)	TWA 200 ppm (610 mg/m3)	3100 ppm [10%LEL]	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat; headache, drowsiness; optic nerve atrophy; chest tightness; In Animals: narcosis	Eyes, skin, respiratory system, central nervous system	Colorless liquid with a fragrant, fruity odor BP: 135°F Fl.Pt. = 14°F LEL: 3.1% UEL: 16% Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at the Site.

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Methylcyclohexane	108-87-2	TWA 400 ppm	TWA 400 ppm (1600 mg/m3)	TWA 500 ppm (2000 mg/m3)	1200 ppm [LEL]	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat; dizziness, drowsiness; In Animals: narcosis	Eyes, skin, respiratory system, central nervous system	Colorless liquid with a faint, benzene-like odor BP: 214°F Fl.Pt. = 25°F LEL: 1.2% UEL: 6.7% Class IB Flammable Liquid: Fl.P. below 73°F and BP at or above 100°F.
Methylene chloride	75-09-2	TWA 50 ppm [skin] STEL 100 ppm	Ca	[1910.1052] TWA 25 ppm ST 125 ppm	Ca [2300 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; lassitude (weakness, exhaustion), drowsiness, dizziness; numb, tingle limbs; nausea; [potential occupational carcinogen]	Eyes, skin, cardiovascular system, central nervous system	Colorless liquid with a chloroform-like odor. [Note: A gas above 104°F.] BP: 104°F Fl.Pt. = NA LEL: 13% UEL: 23% Combustible Liquid
Methyl-t-butyl ether	1634-04-4	TWA 50 ppm	NA	NA	NA	Inhalation, skin absorption, ingestion, skin and/or eye contact	May cause dizziness or suffocation. Contact may irritate or burn eyes or skin. May be harmful if swallowed.	Eyes, skin	A colorless liquid with a distinctive anesthetic-like odor. BP: 131°F Fl.Pt. = -14°F LEL: NA UEL: NA
o-Xylene	95-47-6	TWA 20 ppm (All isomers)	TWA 100 ppm (435 mg/m3) ST 150 ppm (655 mg/m3)	TWA 100 ppm (435 mg/m3)	900 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis	Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys	Colorless liquid with an aromatic odor BP: 292°F Fl.Pt. = 90°F LEL: 0.9% UEL: 6.7% Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F
Styrene	100-42-5	TWA 10 ppm STEL 20 ppm OTO (ototoxicant)	TWA 50 ppm (215 mg/m3) ST 100 ppm (425 mg/m3)	TWA 100 ppm C 200 ppm 600 ppm (5-minute maximum peak in any 3 hours)	700 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, nose, respiratory system; headache, lassitude (weakness, exhaustion), dizziness, confusion, malaise (vague feeling of discomfort), drowsiness, unsteady gait; narcosis; defatting dermatitis; possible liver injury; reproductive effects	Eyes, skin, respiratory system, central nervous system, liver, reproductive system	Colorless to yellow, oily liquid with a sweet, floral odor BP: 293°F Fl.Pt. = 88°F LEL: 0.9% UEL: 6.8% Class IC Flammable Liquid: Fl.P. at or above 73°F and below 100°F
Tetrachloroethene	127-18-4	TWA 25 ppm STEL 100 ppm	Ca Minimize workplace exposure concentrations	TWA 100 ppm C 200 ppm (for 5 minutes in any 3-hour period), with a maximum peak of 300 ppm	Ca [150 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat, respiratory system; nausea; flush face, neck; dizziness, incoordination; headache, drowsiness; skin erythema (skin redness); liver damage; [potential occupational carcinogen]	Eyes, skin, respiratory system, liver, kidneys, central nervous system	Colorless liquid with a mild, chloroform-like odor BP: 250°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Liquid, but decomposes in a fire to hydrogen chloride and phosgene
Sodium Hydroxide	1310-73-2	Ceiling 2 mg/m^3	C 2 mg/m^3	TWA 2 mg/m^3	10 mg/m^3	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, mucous membrane; pneumonitis; eye, skin burns; temporary loss of hair	Eyes, skin, respiratory system	Colorless to white, odorless solid (flakes, beads, granular form). BP: 2534°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Solid, but when in contact with water may generate sufficient heat to ignite combustible materials.
Sulfuric Acid	7664-93-9	TWA 0.2 mg/m^3 (as thoracic particulate mass)	TWA 1 mg/m^3	TWA 1 mg/m^3	15 mg/m^3	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat; pulmonary edema, bronchitis; emphysema; conjunctivitis; stomatis; dental erosion; eye, skin burns; dermatitis	Eyes, skin, respiratory system, teeth	Colorless to dark-brown, oily, odorless liquid.[Note: Pure compound is a solid below 51°F. Often used in an aqueous solution.] BP = 554°F Fl.Pt. = NA LEL = NA UEL = NA Noncombustible Liquid, but capable of igniting finely divided combustible materials.
trans-1,2-Dichloroethene	156-60-5	200 ppm (All isomers)	TWA 200 ppm (790 mg/m3)	TWA 200 ppm (790 mg/m3)	1000 ppm	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, respiratory system; central nervous system depression	Eyes, respiratory system, central nervous system	Colorless liquid (usually a mixture of the cis & trans isomers) with a slightly acrid, chloroform-like odor. BP: 118-140°F Fl.P: 36-39°F LEL: 5.6% UEL: 12.8% Class IB Flammable Liquid Fl.P. below 73°F and BP at or above 100°F.
trans-1,3-Dichloropropene	10061-02-6	https://cameochemicals.noaa.gov/chemical/18110				Inhalation, ingestion, skin and/or eye contact	Symptoms of exposure to this compound may include local irritation of the eyes skin and respiratory tract, dermatitis, gasping, coughing, substernal pain, extreme respiratory distress, lacrimation, central nervous system depression, acute gastrointestinal distress with pulmonary congestion and edema. It may also cause injury to the liver, kidneys and heart	Skin, eyes, mucous membranes, liver, kidney, heart	A clear colorless liquid with chloroform odor BP: 234°F Fl.P: NA LEL: NA UEL: NA

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at the Site.

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Toluene	108-88-3	TWA 20 ppm (ototoxicant)	TWA 100 ppm (375 mg/m^3) ST 150 ppm (560 mg/m^3)	TWA 200 ppm C 300 ppm 500 ppm (10-minute maximum peak)	500 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact	irritation eyes, nose; lassitude (weakness, exhaustion), confusion, euphoria, dizziness, headache; dilated pupils, lacrimation (discharge of tears); anxiety, muscle fatigue, insomnia; paresthesia; dermatitis; liver, kidney damage	Eyes, skin, respiratory system, central nervous system, liver, kidneys	Colorless liquid with a sweet, pungent, benzene-like odor. BP: 232°F Fl.P: 40°F LEL: 1.1% UEL: 7.1% Class IB Flammable Liquid Fl.P. below 73°F and BP at or above 100°F.
Trichloroethene (TCE)	79-01-6	TWA 10 ppm STEL 25 ppm	Ca	TWA 100 ppm C 200 ppm 300 ppm (5-minute maximum peak in any 2 hours)	Ca [1000 ppm]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; headache, visual disturbance, lassitude (weakness, exhaustion), dizziness, tremor, drowsiness, nausea, vomiting; dermatitis; cardiac arrhythmias, paresthesia; liver injury; [potential occupational carcinogen]	Eyes, skin, respiratory system, heart, liver, kidneys, central nervous system	Colorless liquid (unless dyed blue) with a chloroform-like odor. BP: 189°F Fl.Pt. = NA LEL(77°F): 8.0% UEL(77°F): 10.5% Combustible Liquid, but burns with difficulty.
Trichlorofluoromethane	75-69-4	STEL C 1000 ppm	C 1000 ppm (5600 mg/m3)	TWA 1000 ppm (5600 mg/m3)	2000 ppm	Inhalation, ingestion, skin and/or eye contact	Incoordination, tremor; dermatitis; cardiac arrhythmias, cardiac arrest; asphyxia; liquid: frostbite	Skin, respiratory system, cardiovascular system	Colorless to water-white, nearly odorless liquid or gas (above 75°F) BP: 75°F Fl.P: NA LEL: NA UEL: NA Noncombustible Liquid Nonflammable Gas
Vinyl Chloride (chloroethylene)	75-01-4	TWA 1 ppm	Ca	TWA 1 ppm C 5 ppm [15-minute]	Ca (ND)	Inhalation, skin and/or eye contact (liquid)	Lassitude (weakness, exhaustion); abdominal pain, gastrointestinal bleeding; enlarged liver; pallor or cyanosis of extremities; liquid: frostbite; [potential occupational carcinogen]	Liver, central nervous system, blood, respiratory system, lymphatic system	Colorless gas or liquid (below 7°F) with a pleasant odor at high concentrations.[Note: Shipped as a liquefied compressed gas.] BP: 7°F Fl.Pt. = NA (Gas) LEL: 3.6% UEL: 33.0% Flammable Gas
Xylene (m, o & p isomers)	108-38-3, 95-47-6, 106-42-3	TWA 20 ppm	NA	NA	NA	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat; dizziness, excitement, drowsiness, incoordination, staggering gait; corneal vacuolization; anorexia, nausea, vomiting, abdominal pain; dermatitis	Eyes, skin, respiratory system, central nervous system, gastrointestinal tract, blood, liver, kidneys	Colorless liquid with an aromatic odor BP: 282°F, 292°F, 281°F Fl. Pt. 82°F, 90°F, 81°F LEL: 1.1%, 0.9%, 1.1% UEL: 7.0%, 6.7%, 7.0% Class IC Flammable Liquid at or above 73°F and below 100°F.
Zinc Oxide (dust)	7440-66-6	TWA 2 mg/m3 (repsirable) STEL 10 mg/m^3 (respirable)	TWA 5 mg/m^3 C 15 mg/m^3	TWA 15 mg/m^3 (total dust) TWA 5 mg/m^3 (resp dust) TWA 5 mg/m^3 (fume)	500 mg/m^3	Inhalation	Metal fume fever: chills, muscle ache, nausea, fever, dry throat, cough; lassitude (weakness, exhaustion); metallic taste; headache; blurred vision; low back pain; vomiting; malaise (vague feeling of discomfort); chest tightness; dyspnea (breathing difficulty), rales, decreased pulmonary function	Respiratory system	White, odorless solid. BP: NA Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Solid
SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs)									
2-Chloronaphthalene	91-58-7	https://cameochemicals.noaa.gov/chemical/16185				Inhalation, ingestion, skin and/or eye contact	Chloracne, cysts, headache, fatigue, vertigo, anorexia and jaundice		Monoclinic plates or off-white crystalline powder BP: NA Fl.Pt. = NA LEL: NA UEL: NA
2-Methylnaphthalene	91-57-6	TWA 0.5 ppm TLV-SL 3 mg/100 cm2 [skin]	https://cameochemicals.noaa.gov/chemical/20668			Inhalation, ingestion, skin and/or eye contact	Headaches, nausea, vomiting, diarrhea, anemia, jaundice, euphoria, dermatitis, visual disturbances, convulsions and comatose	Skin, eyes, mucous membranes and upper respiratory tract	White crystalline solid Combustible solid BP: 466-468 ° F Fl.Pt. = 208 ° F LEL: NA UEL: NA
Acenaphthene	83-32-9	https://cameochemicals.noaa.gov/chemical/10358				Inhalation, ingestion, skin and/or eye contact	Irritation of the skin, eyes, mucous membranes and upper respiratory tract, vomiting	Skin, eyes, mucous membranes and upper respiratory tract	White needles BP: 534 ° F Fl.Pt. = NA LEL: 0.6% UEL: NA
Acenaphthylene	208-96-8	https://cameochemicals.noaa.gov/chemical/16157				Inhalation, ingestion, skin and/or eye contact			Colorless crystalline solid BP: 509 to 527 ° F at 760 mm Hg Fl.Pt. = NA LEL: NA UEL: NA
Anthracene (as coal tar pitch volatiles)	120-12-7	TWA 0.2 mg/m3 (as Benzene solubles)	Ca TWA 0.1 mg/m3 (cyclohexane-extractable fraction)	TWA 0.2 mg/m3 (benzene-soluble fraction) [1910.1002]	Ca [80 mg/m3]	Inhalation, skin and/or eye contact	Dermatitis, bronchitis, [potential occupational carcinogen]	Respiratory system, skin, bladder, kidneys	Black or dark-brown amorphous residue BP: NA Fl.Pt. = NA LEL: NA UEL: NA Combustible Solids
Benzo[a]anthracene	56-55-3	https://cameochemicals.noaa.gov/chemical/16171				Inhalation, injestion, skin and/or eye contact			Colorless leaflets or plates or coarse gold powder with a greenish-yellow fluorescence. May reasonably be expected to be a carcinogen. BP: 815° F at 760 mm Hg Fl.Pt. = NA LEL: NA UEL: NA

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at the Site.

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Benzo[a]pyrene (as coal tar pitch volatiles)	50-32-8	TWA 0.2 mg/m3 (as Benzene solubles)	Ca TWA 0.1 mg/m3 (cyclohexane-extractable fraction)	TWA 0.2 mg/m3 (benzene-soluble fraction) [1910.1002]	Ca [80 mg/m3]	Inhalation, skin and/or eye contact	Dermatitis, bronchitis, [potential occupational carcinogen]	Respiratory system, skin, bladder, kidneys	Black or dark-brown amorphous residue BP: NA Fl.Pt. = NA LEL: NA UEL: NA Combustible Solids
Benzo[b]fluoranthene	205-99-2	None listed	https://cameochemicals.noaa.gov/chemical/16172			Inhalation, injestion, skin and/or eye contact			Needles or yellow fluffy powder BP: NA Fl.Pt. = NA LEL: NA UEL: NA
Benzo[g,h,i]perylene	191-24-2	https://cameochemicals.noaa.gov/chemical/16174				Inhalation, injestion, skin and/or eye contact	Inhalation of material may be harmful. Contact may cause burns to skin and eyes. Inhalation of Asbestos dust may have a damaging effect on the lungs. Fire may produce irritating, corrosive and/or toxic gases. Some liquids produce vapors that may cause dizziness or suffocation. Runoff from fire control may cause pollution.	Lungs, skin, eyes	Colorless to white crystalline solid. Water insoluble. BP: NA Fl.Pt. = NA LEL: NA UEL: NA
Benzo[k]fluoranthene	207-08-9	https://cameochemicals.noaa.gov/chemical/16173				Inhalation, injestion, skin and/or eye contact	When heated to decomposition this compound emits acrid smoke and irritating fumes.		Pale yellow needles or yellow crystalline solid BP: 896° F Fl.Pt. = NA LEL: NA UEL: NA
Chrysene (as coal tar pitch volatiles)	218-01-9	TWA 0.2 mg/m3 (as Benzene solubles)	Ca TWA 0.1 mg/m3 (cyclohexane-extractable fraction)	TWA 0.2 mg/m3 (benzene-soluble fraction) [1910.1002]	Ca [80 mg/m3]	Inhalation, skin and/or eye contact	Dermatitis, bronchitis, [potential occupational carcinogen]	Respiratory system, skin, bladder, kidneys	Black or dark-brown amorphous residue BP: NA Fl.Pt. = NA LEL: NA UEL: NA Combustible Solids
Dibenzo(a,h)anthracene	53-70-3	https://cameochemicals.noaa.gov/chemical/16192				Inhalation, injestion, skin and/or eye contact	Symptoms of exposure to this compound may include irritation. This compound is harmful if swallowed or inhaled. It may cause irritation. When heated to decomposition it emits acrid smoke, irritating fumes and toxic fumes of carbon monoxide and carbon dioxide.	Lungs	White crystals or pale yellow solid. Sublimes BP: 975° F Fl.Pt. = NA LEL: NA UEL: NA
Fluoranthene	206-44-0	https://cameochemicals.noaa.gov/chemical/16213				Inhalation, injestion, skin and/or eye contact	When heated to decomposition this compound emits acrid smoke and fumes.		Light yellow fine crystals BP: 482° F Fl.Pt. = NA LEL: NA UEL: NA
Fluorene	86-73-7	https://cameochemicals.noaa.gov/chemical/16214				Inhalation, injestion, skin and/or eye contact			White leaflets. Sublimes easily under a vacuum. Fluorescent when impure. BP: 563° F Fl.Pt. = NA LEL: NA UEL: NA
Indeno[1,2,3-cd]pyrene	193-39-5	https://cameochemicals.noaa.gov/chemical/16218				Inhalation, injestion, skin and/or eye contact			Yellow crystals BP: 997° F Fl.Pt. = NA LEL: NA UEL: NA
Naphthalene	91-20-3	TWA 10 ppm [skin]	TWA 10 ppm (50 mg/m3) ST 15 ppm (75 mg/m3)	TWA 10 ppm (50 mg/m3)	250 ppm	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes; headache, confusion, excitement, malaise (vague feeling of discomfort); nausea, vomiting, abdominal pain; irritation bladder; profuse sweating; jaundice; hematuria (blood in the urine), renal shutdown; dermatitis, optical neuritis, corneal damage	Eyes, skin, blood, liver, kidneys, central nervous system	Colorless to brown solid with an odor of mothballs. [Note: Shipped as a molten solid.] BP: 424°F Fl.P: 174°F LEL: 0.9% UEL: 5.9% Combustible Solid, but will take some effort to ignite
Phenanthrene	85-01-8	https://cameochemicals.noaa.gov/chemical/16236				Inhalation, injestion, skin and/or eye contact	Symptoms following exposure to this compound may include skin sensitization, dermatitis, bronchitis, cough, dyspnea, respiratory neoplasm, kidney neoplasm, skin irritation, and respiratory irritation.	Skin, respiratory tract	Colorless monoclinic crystals with a faint aromatic odor. Solutions exhibit a blue fluorescence. BP: 642° F Fl.Pt. = 340° F LEL: NA UEL: NA
Pyrene (see coal tar pitch volatiles)	129-00-0	TWA 0.2 mg/m3 (as Benzene solubles)	Ca TWA 0.1 mg/m3 (cyclohexane-extractable fraction)	TWA 0.2 mg/m3 (benzene-soluble fraction) [1910.1002]	Ca [80 mg/m3]	Inhalation, skin and/or eye contact	Dermatitis, bronchitis, [potential occupational carcinogen]	Respiratory system, skin, bladder, kidneys	Black or dark-brown amorphous residue BP: NA Fl.Pt. = NA LEL: NA UEL: NA Combustible Solids
METALS									
Aluminum	7429-90-5	TWA 1 mg/m3	TWA 10 mg/m^3 (total) TWA 5 mg/m^3 (resp)	TWA 15 mg/m^3 (total) TWA 5 mg/m^3 (resp)	N.D.	Inhalation, skin and/or eye contact	Irritation eyes, skin, respiratory system	Eyes, skin, respiratory system	Silvery-white, malleable, ductile, odorless metal BP: 4221°F Fl.Pt. = NA LEL: NA UEL: NA Combustible Solid, finely divided dust is easily ignited; may cause explosions.

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at the Site.

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Antimony	7440-36-0	TWA 0.5 mg/m3 (as Sb)	TWA 0.5 mg/m3 [*Note: The REL also applies to other antimony compounds (as Sb).]	TWA 0.5 mg/m3 [*Note: The PEL also applies to other antimony compounds (as Sb).]	50 mg/m3 (as Sb)	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat, mouth; cough; dizziness; headache; nausea, vomiting, diarrhea; stomach cramps; insomnia; anorexia; unable to smell properly	Eyes, skin, respiratory system, cardiovascular system	Silver-white, lustrous, hard, brittle solid; scale-like crystals; or a dark-gray, lustrous powder BP: 2975°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Solid in bulk form, but a moderate explosion hazard in the form of dust when exposed to flame.
Arsenic	7440-38-2	TWA 0.01 mg/m3	Ca C 0.002 mg/m3 [15-minute]	[1910.1018] TWA 0.010 mg/m3	Ca [5 mg/m3 (as As)]	Inhalation, skin absorption, skin and/or eye contact, ingestion	Ulceration of nasal septum, dermatitis, gastrointestinal disturbances, peripheral neuropathy, resp irritation, hyperpigmentation of skin, [potential occupational carcinogen]	Liver, kidneys, skin, lungs, lymphatic system	Metal: Silver-gray or tin-white, brittle, odorless solid BP: Sublimes Fl.Pt. = NA LEL: NA UEL: NA Metal: Noncombustible Solid in bulk form, but a slight explosion hazard in the form of dust when exposed to flame
Barium	7440-39-3	TWA 0.5 mg/m3	0.5 mg Ba/m3 TWA	0.5 mg Ba/m3 TWA	50 mg Ba/m3	Inhalation, ingestion, skin and/or eye contact	Inhalation or contact with vapors, substance or decomposition products may cause severe injury or death. Contact may cause burns to skin, eyes, and mucous membranes. May be toxic by ingestion, inhalation and skin absorption. Used to make other chemicals.	Lungs, skin, eyes, and mucous membrane	A silver to white metallic solid BP: 1337°F Fl.Pt. = NA LEL: NA UEL: NA
Beryllium	7440-41-7	TWA 0.00005 mg/m^3	Ca C 0.0005 mg/m^3	TWA 0.002 mg/m^3 C 0.005 mg/m^3 0.025 mg/m3 [30-minute maximum peak]	Ca [4 mg/m^3 (as Be)]	Inhalation, skin and/or eye contact	Berylliosis (chronic exposure): anorexia, weight loss, lassitude (weakness, exhaustion), chest pain, cough, clubbing of fingers, cyanosis, pulmonary insufficiency; irritation eyes; dermatitis; [potential occupational carcinogen]	Eyes, skin, respiratory system	Hard, brittle, gray-white solid BP: 4532°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Solid in bulk form, but a slight explosion hazard in the form of a powder or dust.
Cadmium	7440-43-9	TWA 0.01 mg/m^3 total dust TWA 0.002 mg/m^3 (as Cd) respirable fraction	Ca	TWA 0.005 mg/m^3	Ca [9 mg/m3 (as Cd)]	Inhalation, ingestion	Pulmonary edema, dyspnea (breathing difficulty), cough, chest tightness, substernal (occurring beneath the sternum) pain; headache; chills, muscle aches; nausea, vomiting, diarrhea; anosmia (loss of the sense of smell), emphysema, proteinuria, mild anemia; [potential occupational carcinogen]	Respiratory system, kidneys, prostate, blood	Silver-white/blue tinged lustrous, odorless solid. BP: 1409°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible - will burn in powder form
Calcium	7440-70-2	https://cameochemicals.noaa.gov/chemical/309				Inhalation, ingestion, skin and/or eye contact	Contact with eyes or skin produces caustic burns.	Eyes, skin	A silvery, soft metal that turns grayish white on exposure to air. BP: 2714°F Fl.Pt. = NA LEL: NA UEL: NA
Chromium	7440-47-3	TWA 0.5 mg/m^3 (metal) TWA 0.003 mg/m^3 (water-soluble Cr III compounds) TWA 0.0002 mg/m^3 (water-soluble Cr VI compounds) STEL 0.0005 mg/m3 (water-soluble Cr VI compounds)	TWA 0.5 mg/m^3	TWA 1 mg/m^3	250 mg/m^3 (as Cr)	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin; lung fibrosis (histologic)	Eyes, skin, respiratory system	Blue-white to steel-gray, lustrous, brittle, hard, odorless solid. BP: 4788°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible - will burn in dust form if heated in a flame
Cobalt	7440-48-4	TWA 0.02 mg/m3 [DSEN] [RSEN]	TWA 0.05 mg/m3	TWA 0.1 mg/m3	20 mg/m3 (as Co)	Inhalation, ingestion, skin and/or eye contact	Cough, dyspnea (breathing difficulty), wheezing, decreased pulmonary function; weight loss; dermatitis; diffuse nodular fibrosis; resp hypersensitivity, asthma	Skin, respiratory system	Odorless, silver-gray to black solid BP: 5612°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Solid in bulk form, but finely divided dust will burn at high temperatures.
Copper	7440-50-8	TWA 0.2 mg/m^3 (fume) TWA 1 mg/m3 (dusts and mists)	TWA 1 mg/m^3	TWA 1 mg/m^3	100 mg/m^3 (as Cu)	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, nose, pharynx; nasal septum perforation; metallic taste; dermatitis; In Animals: lung, liver, kidney damage; anemia	Eyes, skin, respiratory system, liver, kidneys (increased risk with Wilson's disease)	Reddish, lustrous, malleable, odorless solid. BP: 4703°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible - powdered form may ignite
Iron (as iron oxide)	7439-89-6	TWA 5 mg/m3 (respirable particulate mass)	TWA 1 mg/m^3	NA	NA	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, mucous membrane; abdominal pain, diarrhea, vomiting; possible liver damage	Eyes, skin, respiratory system, liver, gastrointestinal tract	Appearance and odor vary depending upon the specific soluble iron salt. BP: NA Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Solids
Lead	7439-92-1	TWA 0.05 mg/m3	TWA (8-hour) 0.050 mg/m3	[1910.1025] TWA 0.050 mg/m3	100 mg/m3 (as Pb)	Inhalation, ingestion, skin and/or eye contact	Lassitude (weakness, exhaustion), insomnia; facial pallor; anorexia, weight loss, malnutrition; constipation, abdominal pain, colic; anemia; gingival lead line; tremor; paralysis wrist, ankles; encephalopathy; kidney disease; irritation eyes; hypertension	Eyes, gastrointestinal tract, central nervous system, kidneys, blood, gingival tissue	A heavy, ductile, soft, gray solid BP: 3164°F Fl.Pt. = NA LEL: NA UEL: NA Noncombustible Solid in bulk form

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at the Site.

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Magnesium	7439-95-4	https://cameochemicals.noaa.gov/chemical/6949				Eye and/or skin contact	Dust irritates eyes in same way as any foreign material. Penetration of skin by fragments of metal is likely to produce local irritation, blisters, and ulcers which may become infected.	Eyes	A light silvery metal BP: 1202°F Fl.Pt. = NA LEL: NA UEL: NA
Manganese	7439-96-5	TWA 0.02 mg/m3 [R] TWA 0.1 mg/m3 [I]	TWA 1 mg/m3 ST 3 mg/m3	C 5 mg/m3	500 mg/m3 (as Mn)	inhalation, ingestion	Manganism; asthenia, insomnia, mental confusion; metal fume fever: dry throat, cough, chest tightness, dyspnea (breathing difficulty), rales, flu-like fever; low-back pain; vomiting; malaise (vague feeling of discomfort); lassitude (weakness, exhaustion); kidney damage	respiratory system, central nervous system, blood, kidneys	A lustrous, brittle, silvery solid BP: 3564°F Fl.Pt. = NA LEL: NA UEL: NA Metal: Combustible Solid
Mercury	7439-97-6	TWA 0.1 mg/m3, as Hg Aryl compounds TWA 0.025 mg/m3 as Hg, inorganic forms including metallic mercury	Hg Vapor: TWA 0.05 mg/m3 [skin] Other: C 0.1 mg/m3 [skin]	TWA 0.1 mg/m3	10 mg/m3 (as Hg)	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin; cough, chest pain, dyspnea (breathing difficulty), bronchitis, pneumonitis; tremor, insomnia, irritability, indecision, headache, lassitude (weakness, exhaustion); stomatitis, salivation; gastrointestinal disturbance, anorexia, weight loss; proteinuria	Eyes, skin, respiratory system, central nervous system, kidneys	Metal: Silver-white, heavy, odorless liquid. [Note: "Other" Hg compounds include all inorganic & aryl Hg compounds except (organo) alkyls.] BP: 674°F Fl.Pt. = NA LEL: NA UEL: NA Metal: Noncombustible Liquid
Nickel	7440-02-0	TWA 1.5 mg/m^3 [elemental] TWA 0.1 mg/m^3 [soluble inorganic compound] TWA 0.2 mg/m^3 [insoluble inorganic compound] TWA 0.1 mg/m^3 [Nickel subsulfide]	Ca TWA 0.015 mg/m^3	TWA 1 mg/m^3	Ca [10 mg/m3 (as Ni)]	Inhalation, ingestion, skin and/or eye contact	Sensitization dermatitis, allergic asthma, pneumonitis; [potential occupational carcinogen]	Nasal cavities, lungs, skin	Lustrous, silvery, odorless solid. BP: 5139°F Fl.Pt. = NA LEL: NA UEL: NA Combustible Solid; nickel sponge catalyst may ignite spontaneously in air.
Potassium	9/7/7440	https://cameochemicals.noaa.gov/chemical/4289				Eye and/or skin contact	Will burn skin and eyes	Skin, eyes	Potassium is a soft silvery metal though normally grayish white due to oxidation BP: 1425°F Fl.Pt. = NA LEL: NA UEL: NA
Selenium	7782-49-2	TWA 0.2 mg/m3	TWA 0.2 mg/m3	TWA 0.2 mg/m3	1 mg/m3 (as Se)	Inhalation, ingestion, skin and/or eye contact	Irritation eyes, skin, nose, throat; visual disturbance; headache; chills, fever; dyspnea (breathing difficulty), bronchitis; metallic taste, garlic breath, gastrointestinal disturbance; dermatitis; eye, skin burns; In Animals: anemia; liver necrosis, cirrhosis; kidney, spleen damage	Eyes, skin, respiratory system, liver, kidneys, blood, spleen	Amorphous or crystalline, red to gray solid. [Note: Occurs as an impurity in most sulfide ores.] BP: 1265°F Fl.Pt. = NA LEL: NA UEL: NA Combustible Solid

Table 1. Toxicological, Physical, and Chemical Properties of Compounds Potentially Present at the Site.

Compound	CAS #	ACGIH TLV	NIOSH REL	OSHA PEL	IDLH	Routes of Exposure	Toxic Properties	Target Organs	Physical/Chemical Properties
Silver	7440-22-4	TWA 0.1 mg/m3 [Metal, dust, and fume] TWA 0.01 mg/m3 [Soluble compounds, as Ag]	TWA 0.01 mg/m3	TWA 0.01 mg/m3	10 mg/m3 (as Ag)	Inhalation, ingestion, skin and/or eye contact	Blue-gray eyes, nasal septum, throat, skin; irritation, ulceration skin; gastrointestinal disturbance	Nasal septum, skin, eyes	Metal: White, lustrous solid BP: 3632°F Fl.Pt. = NA LEL: NA UEL: NA Metal: Noncombustible Solid, but flammable in form of dust or powder
Sodium	7440-23-5	https://cameochemicals.noaa.gov/chemical/7794				Skin contact	Severe burns caused by burning metal or by caustic soda formed by reaction with moisture on skin	Skin	A silvery soft metal that becomes grayish white upon exposure to air BP: 1621°F Fl.Pt. = NA LEL: NA UEL: NA
Thallium	7440-28-0	0.02 mg/m3 inhallable particulate matter	TWA 0.1 mg/m3 [skin]	TWA 0.1 mg/m3 [skin]	15 mg/m3 (as Tl)	Inhalation, skin absorption, ingestion, skin and/or eye contact	Nausea, diarrhea, abdominal pain, vomiting; ptosis, strabismus; peri neuritis, tremor; retrosternal (occurring behind the sternum) tightness, chest pain, pulmonary edema; convulsions, chorea, psychosis; liver, kidney damage; alopecia; paresthesia legs	Eyes, respiratory system, central nervous system, liver, kidneys, gastrointestinal tract, body hair	Appearance and odor vary depending upon the specific soluble thallium compound BP: NA Fl.Pt. = NA LEL: NA UEL: NA
Vanadium	7440-62-2	https://cameochemicals.noaa.gov/chemical/16147				Inhalation, skin absorption, ingestion, skin and/or eye contact	Highly toxic, may be fatal if inhaled, swallowed or absorbed through skin. Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution	Skin	Silvery-whitish powder BP: NA Fl.Pt. = NA LEL: NA UEL: NA
Zinc	7440-66-6	https://cameochemicals.noaa.gov/chemical/4814				Inhalation, skin absorption, ingestion, skin and/or eye contact	Inhalation or contact with vapors, substance or decomposition products may cause severe injury or death. May produce corrosive solutions on contact with water. Fire will produce irritating, corrosive and/or toxic gases. Runoff from fire control may cause pollution	Lungs	A grayish powder BP: NA Fl.Pt. = NA LEL: NA UEL: NA
PCBs									
PCBs (total)	11097-69-1, 53469-21-9	TWA 0.5 mg/m3 [skin] TWA 1 mg/m3 [skin]	Ca TWA 0.001 mg/m3 Ca TWA 0.001 mg/m3	TWA 0.5 mg/m3 [skin] TWA 1 mg/m3 [skin]	Ca [5 mg/m3] Ca [5 mg/m3]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, chloracne; liver damage; reproductive effects; [potential occupational carcinogen]	Skin, eyes, liver, reproductive system	Colorless to pale-yellow, viscous liquid or solid (below 50°F) with a mild, hydrocarbon odor BP: 689-734°F, 617-691°F Fl.Pt. = NA, NA LEL: NA UEL: NA Nonflammable Liquid, but exposure in a fire results in the formation of a black soot containing PCBs, polychlorinated dibenzofurans, and chlorinated dibenzo-p-dioxins.
Petroleum Hydrocarbons									
Gasoline	86290-81-5	TWA 300 ppm STEL 500 ppm	Ca	None	Ca [N.D.]	Inhalation, skin absorption, ingestion, skin and/or eye contact	Irritation eyes, skin, mucous membrane; dermatitis; headache, lassitude (weakness, exhaustion), blurred vision, dizziness, slurred speech, confusion, convulsions; chemical pneumonitis (aspiration liquid); possible liver, kidney damage; [potential occupational carcinogen]	Eyes, skin, respiratory system, central nervous system, liver, kidneys	Clear liquid with a characteristic odor BP: 102°F Fl.Pt. = -45°F LEL: 1.4% UEL: 7.6%

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Abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists.
BP – boiling point at 1 atmosphere, °F
C – Ceiling, is a concentration that should not be exceeded during and part of the working exposure.
Ca – Carcinogenic.
CAS# - Chemical Abstracts Service registry number which is unique for each chemical.
DSEN - Dermal Sensitization
Ft Pt. – Flash point
IDLH - Immediately Dangerous to Life and Health concentrations represent the maximum concentration from which, in the event of respirator failure, one could escape within 30 minutes without a respirator and without experiencing any escape-impairing or irreversible health effects.
LEL – Lower explosive (flammable) limit in air, % by volume (at room temperature)
mg/m^3 – Milligrams of substance per cubic meter of air
NIOSH - National Institute for Occupational Safety and Health.
OSHA – Occupational Safety and Health Administration
OTO - Ototoxicant
PEL - OSHA Permissible Exposure Limit (usually) a time weighted average concentration that must not be exceeded during any 8 hour work shift of a 40 hr work week.
ppm – parts per million
REL – NIOSH Recommended Limit indicated a time weighted average concentration that must not be exceeded during any 10 hour work shift of a 40 hr work week
RSEN - Respiratory Sensitization
SG - Specific Gravity
STEL – ACGIH Short-term exposure limit (ST)
TLV - ACGIH Threshold Limit Values (usually 8 hour time weighted average concentrations).
TWA – 8-hour, time-weighted average
UEL – Upper explosive (flammable) limit in air, % by volume (at room temperature)
VP - Vapor Pressure

FIGURES

1. Site Location Map
2. Site Plan with Emergency Muster Area



QUADRANGLE LOCATION



N

1,000 0 1,000'

Title:

SITE LOCATION MAP

5 FLINT STREET
ROCHESTER NEW YORK

Prepared for:

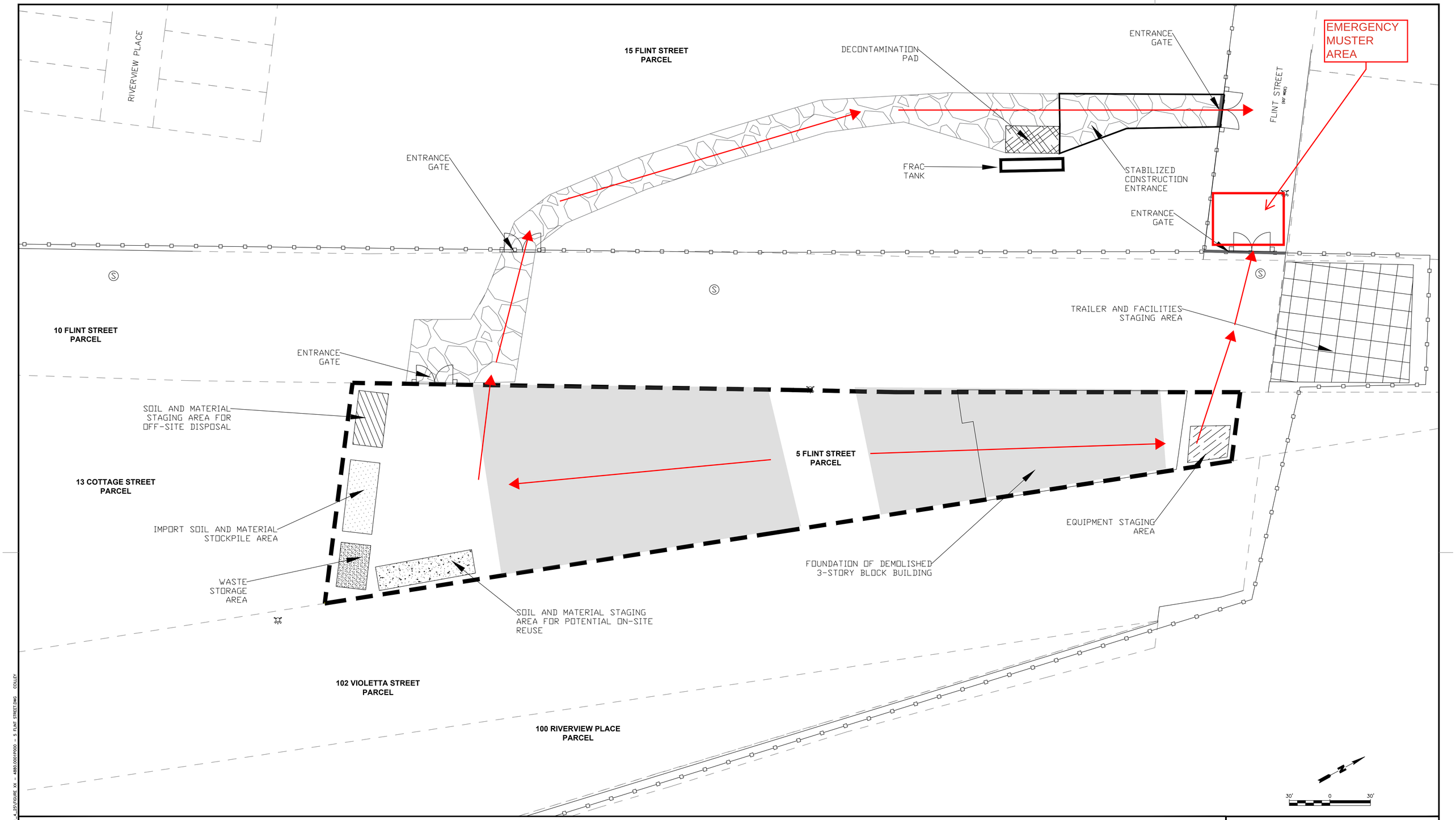
5 FLINT STREET LLC

ROUX

Compiled by: SB	Date: 05/10/24
Prepared by: SB	Scale: AS SHOWN
Project Mgr: IR	Project:0172.0180M015
File: 0172.0180M017.104.001 - Site Location Map.mxd	

FIGURE 1

T:\GIS_PROJECTS\0172\0180M\015\100\0172.0180M017.104.001 - SITE LOCATION MAP.MXD



NOTES

1. LOCATIONS OF FENCING ARE APPROXIMATE AND SUBJECT TO CHANGE BASED ON ACTIVE WORK AREAS.
2. PROPOSED EXCAVATION AND ISS AREAS AS SHOWN ON FIGURE 6 OF THE REVISED REMEDIAL ALTERNATIVES ANALYSIS REPORT, DATED JULY 2024, AND PRESENTED IN THE NOVEMBER 2025 DECISION DOCUMENT FOR THE SITE.
3. PROPOSED EXCAVATION AND ISS AREAS AS SHOWN ON FIGURE 1A IN THE NOVEMBER 2025 DECISION DOCUMENT FOR THE SITE.
4. BASEMAP FEATURES OBTAINED FROM NUSSBAUMER & CLARKE, INC., OCTOBER 2025.
5. PROPERTY BOUNDARIES OBTAINED FROM THE CITY OF ROCHESTER, SEPTEMBER 2024.

LEGEND

- SANITARY MANHOLE
- HYDRANT
- SECURITY GATE ENTRANCE
- SITE BOUNDARY
- APPROXIMATE LOCATION OF PARAMETER FENCING
- PROPERTY BOUNDARIES FROM OPEN DATA PORTAL
- EXCAVATION AND/OR ISS AREAS
- SITE ACCESS ROAD
- DECONTAMINATION PAD
- FRAC TANK
- EVACUATION ROUTES
- EMERGENCY MUSTER AREA

LOCATIONS ARE APPROXIMATE AND SUBJECT TO CHANGE BASED ON FIELD CONDITIONS:

- SOIL AND MATERIAL STAGING AREA FOR OFF-SITE DISPOSAL
- SOIL AND MATERIAL STAGING AREA FOR POTENTIAL ON-SITE REUSE
- IMPORT SOIL AND MATERIAL STOCKPILE AREA
- SOIL AND MATERIAL STAGING AREA FOR POTENTIAL ON-SITE REUSE
- EQUIPMENT STAGING AREA

TITLE:

SITE PLAN WITH EMERGENCY MUSTER AREA
BCP SITE # C828162B

5 FLINT STREET SITE ROCHESTER, NEW YORK

5 FLINT STREET LLC

ROUX

COMPILED BY: CC	DATE: 11/3/25
PREPARED BY: CC	SCALE: AS SHOWN
PROJECT MGR: SB	PROJECT: 4880.0001P00
FILE: FIGURE XX - 4880.0001P000 - 5 FLINT STREET.DWG	

FIGURE 2

S:\CLIENTS\10 FLINT STREET LLC\CAD\REPORT FIGURES 11_4_25\FIGURE XX - 4880.0001P000 - 5 FLINT STREET.DWG COLLEY

APPENDICES

A. Job Safety Analysis (JSA) Forms

B. SDSs for Chemicals Used

C. Silica Exposure Control Management Program

D. Preventing Skin Problems from Working with Portland Cement

E. Heat Illness Prevention Program

F. Personal Protective Equipment (PPE) Management Program

G. Roux Daily Tailgate Health and Safety Meeting Log/Daily Site Safety Checklist

H. Subsurface Utility Clearance Management Program

I. Heavy Equipment Exclusion Zone Policy

APPENDIX A

Job Safety Analysis (JSA) Forms

JOB SAFETY ANALYSIS (JSA) MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY MANAGER	:	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	:	**01/19**
REVISION NUMBER	:	**2**

TABLE OF CONTENTS

1. PURPOSE 1

2. SCOPE AND APPLICABILITY 1

3. PROCEDURE 2
   - 3.1 JSA Process 2
   - 3.2 Review Process 3
   - 3.3 JSA Library 4
   - 3.4 JSA Updates 4
   - 3.5 Emergency Situations 4
   - 3.6 Subcontractors 5

4. TRAINING 5

5. RECORDS 5

6. PROGRAM EVALUATION 6

Appendix A – Job Safety Analysis Process Flowchart 7

Appendix B - Job Safety Analysis Form 8

Appendix C - Job Safety Analysis Quality Review 10

APPENDICES

Appendix A – Job Safety Analysis Process Flow Chart

Appendix B – Standard Job Safety Analysis Form

Appendix C – Job Safety Analysis Quality Review

1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux") has established this Job Safety Analysis (JSA) Program to provide practices and procedures to evaluate potential hazards associated with work tasks and develop preventive measures to eliminate and/or reduce the risk of injury/illness to personnel, property damage and/or environmental releases. A hazard is defined as a condition or activity that, if left uncontrolled, can result in an undesired consequence. This program utilizes a proactive and versatile tool, the JSA, which identifies hazards associated with a specific work task and applies mitigative actions to eliminate and/or reduce the hazards to an acceptable risk level. Moreover, the practices and procedures, herein, employ a stewardship approach to ensure that JSA updates are communicated throughout the company and represent best management practices.

2. SCOPE AND APPLICABILITY

The JSA Program applies to all Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux") employees and their subcontractors. At a minimum, tasks for which a JSA is required include:

- Field work and processes;
- Non-routine activities;
- Activities that present higher potential for injury or illness;
- Where there has been a history of prior incidents; and/or
- New or modified activities, equipment usage or procedures.

The program is intended, in part, to meet Occupational Safety and Health Administration OSHA's Voluntary Protection Programs Policies and Procedures and their Job Hazard Analysis manual (Publication 3071, Revised 2002).

3. PROCEDURE

For many tasks, a generic or site-specific JSA may already exist. Generic JSAs can be found in the JSA Library (Clarity→Health and Safety→JSA Library). Site-specific JSAs can be found in the project files. However, prior to use of a generic JSA the following must be verified by the project Manager (PM):

1. The JSA includes all the site-specific (if applicable) job steps for the task;
2. The JSA cannot be combined with job steps from other JSA tasks to be considered as one working document; and
3. There are no equipment/tools changes since the last revision/review.

If the above conditions are met the generic JSA may be used. If the above conditions cannot be satisfied, then a new or revised JSA must be developed for the work task. The development process of a JSA is outlined below and is included as a flow chart as **Appendix A**.

3.1 JSA Process

Development Team

JSAs are developed by an individual or team of people who have conducted the task, are familiar with the JSA process, and have experience in general safety practices. Typically, one of these personnel includes a member of the project management team (e.g., PM, Site H&S Manager (SHSM) and/or the Project Principal). Based on the complexity of the operation, additional team members may be utilized in the development process.

JSA Form

To assist in the development process, a standard JSA form is provided as **Appendix B** of this program. Generic JSAs (available in the JSA Library) may be used as a starting point for similar tasks. In addition to documenting the job steps, potential hazards and mitigative actions (discussed below), the form documents the individuals who developed it, the reviewers and the date of the JSA. JSAs are to be limited to one or two pages. For complex operations where more than two pages may be needed, the job should be broken down into multiple tasks, each task having its own JSA. The steps are described below:

Step 1 – List Job Steps

The first step in developing a JSA is to identify each job step in order of occurrence. Job steps should be concise and clearly describe the individual safety critical tasks for the collective operation. *For example, a monitoring well gauging and sampling task may include the following job steps: 1) access well with hand tools, 2) gauge well using interface* probe*, 3) purge well with bailer, etc. Whereas, an example of a job step that is too generalized is "gauge and sample well."*

Step 2 – Identify Potential Hazards

Next, for each job step, determine potential hazards that may exist or occur while performing the associated job step. In helping determine safety critical job steps, the following questions should be assessed:

- "What could go wrong?"
- "What's the Worst that Can Happen?"
- "What are the consequences?"

Potential hazards should be identified by the following categories:

- Contact – struck by or against an object.
- Caught – caught on, in or between objects.
- Falls – slips, trips or falls to the ground or a lower level.
- Exertion – repetitive motion, excessive strain/stress, ergonomics, lifting/bending.
- Exposure – inhalation/ingestion/injection, cold/heat stress, noise/vibration.
- Energy Sources – electric lines or mechanical energy, including stored energy.

For each hazard category, the potential hazard should be further described. Refer to the JSA Quality Review Guidance Document provided as **Appendix C** for examples of potential hazards. *For instance, with the example described in Step 1 above, a potential hazard associated with the monitoring well gauging and sampling task – specifically, the job step to "access well with hand tools" – may include CAUGHT – pinch points when handling well cover.*

Step 3 – Determine Mitigative Actions

After the potential hazard(s) have been identified, evaluate if the job step can be performed in a manner where the hazard is eliminated, reduced or controlled. Common methods to eliminate, reduce or control potential hazards which follow the hierarchy of controls may include, but are not limited to, one or a combination of the following:

- Eliminating or substituting a job step with a less hazardous operation.
- Combining job steps or changing the sequence.
- Instituting engineering controls.
- Obtaining other tools or redesigning equipment.
- Performing ambient monitoring or screening.
- Obtaining additional safety equipment including personal protective equipment (PPE).
- Adding warning devices.

Mitigative actions should be specific and avoid using generalizations such as, "be careful" or "use caution." There must be at least one mitigative action for each potential hazard. PPE should never be the only mitigative action. It is the last line of defense. *Taking the example illustrated in Steps 1 & 2 above, mitigative actions for the potential hazard "CAUGHT – pinch points when handling well cover" may include 1) wear leather gloves, 2) use pry bar when accessing well cover, 3) keep hands/fingers clear between cover and collar, … etc.*

3.2 Review Process

Once a site-specific JSA has been developed, it is then submitted to the PM for review and approval prior to the start of a task. If the PM was involved in the development of the JSA then it will be provided to the OHSM for review and approval. When a quality review of JSAs are conducted by a member of management (e.g., Project Principals, CHSM) the review ensures that, at a minimum, the below "five rules" have been met:

1) JSA never more than 2 pages.

2) JSA authors listed should be people / titles who perform that type of work. Management should be reviewers / approvers.
3) Critical actions are always specific, observable actions – never "proper" or "appropriate" or "careful."
4) PPE is considered a last line of defense and should be included in the critical actions. However, it cannot be the only critical action listed to mitigate a hazard; you must always identify other actions in addition to the applicable PPE (e.g., keep fingers clear of pinch points while closing cover; and wear cut resistant gloves).

In addition, at least annually, the PM and JSA Steward(s) are responsible for reviewing and updating (if necessary) the site-specific and generic JSAs, respectively, for which they are responsible. The review is carried out utilizing the JSA Quality Review Checklist which is provided in **Appendix C**. The JSA Stewards are assigned by the OM/CHSM for specific generic JSAs and are identified within the JSA Steward list posted within the JSA Library. These Stewards are appointed based on their knowledge and experience with specific work tasks. The JSA Library is updated routinely (min quarterly) by the CHSM to ensure that it contains only the most current version of each generic JSA.

3.3 JSA Library

JSA Stewards submit updated generic JSAs to the CHSM for filing in the JSA Library. As part of the annual review process, JSA Stewards must audit the JSA Library to ensure that it contains only the most current version of the JSA for which they are responsible. Approved site-specific JSAs are filed in the project files.

3.4 JSA Updates

JSAs can be updated based on a variety of factors or reasons, such as the examples provided below:

- Identification of inadequate procedures during a safety tailgate meeting.
- A Safe Performance Self-Assessment (SPSA) determining that the task should have a JSA or that procedures within the existing JSA are not adequate to address identified hazards.
- Change in site or environmental conditions.
- New or modified equipment or procedures.
- Observations or incident investigations that identify tasks requiring new or updated JSAs.

Changes to a generic JSA requires submittal and review by the JSA Steward appointed for that task to determine if the genetic JSA change is necessary. If changes are warranted, the JSA Steward forwards the updated generic JSA to the CHSM for review and uploading into the JSA Library.

Changes to Site-specific revisions need only approval from the PM.

3.5 Emergency Situations

In the absence of an existing JSA during an emergency situations, personnel should discuss with both the PM and SHSM the job steps, potential hazards and associated mitigative actions for tasks anticipated to be performed. As conditions, may change during the task(s), the personnel must reassess the job step(s) and potential hazards, and discuss any additional changes with the PM and SHSM prior to resuming the

activity. For unplanned activities, it is critical that personnel do not proceed with performing task(s) without prior health and safety consideration and planning.

3.6 Subcontractors

Roux subcontractors are required to submit their JSAs for review in advance of the work. This allows time for Roux's PM to provide comments and suggestions to the subcontractors JSA's. Roux subcontractors should understand that no work may occur unless the JSAs for the work being performed have been reviewed by Roux. JSAs provided by subcontractors are maintained in the project files. For common tasks and to maintain consistency, the project management team may provide a similar or generic approved JSA to a subcontractor for use as a starting point for development of the subcontractors JSA.

Subcontractor JSAs are reviewed in the field daily prior to performing work. Roux oversight personnel and the project management team will assist subcontractors with updating JSAs as described in Section 3.4.

4. TRAINING

Every employee who may perform field work will be trained in this program and the proper use of the JSA. The training includes:

- A review of this Program.
- Development of a JSA.

This training is repeated as necessary to ensure that employees receive reinforcement of the value of the JSA Program as well as feedback on the health of the JSA Program. Office workers may receive training if an anticipated task will be performed that requires development of and training in a JSA.

5. RECORDS

The following records are maintained by the CHSM:

- A library of generic JSAs.
- Copies of all site field audits performed that assist with the evaluation of the effectiveness of the JSA program will be uploaded Quarterly and are located and stored at Clarity→Health & Safety→[Office Specific]→Field Audit Checklist (FAC). Key findings from these field audits will be communicated by the CHSM to OHSM for further communication to the office staff (typically during monthly lunch and learns).

The following record is to be maintained by each PM:

- Each site-specific JSA developed for their project. All JSAs are expected to be included in Appendix A in the project HASP.

The following record is to be maintained by each JSA Steward:

- The latest version of each generic JSA for which they have been assigned and stored in the JSA Library.

6. PROGRAM EVALUATION

The CHSM will evaluate the program's effectiveness during field audit(s). The CHSM should, at a minimum assess the overall effectiveness of the JSA Program quarterly. Records shall be maintained within the JSA Library. The assessment will include the adequacy of applicable JSAs and consistency in their use. Program adjustments will be made as necessary to reflect the evaluation results.

Appendix A – Job Safety Analysis Process Flowchart

Selection of Job for Analysis

- For all major jobs in the workplace
- Priority where jobs have had more frequent or severe losses (from loss experience)
- Priority of higher risk activities
- Where a procedure is not available or inadequate to do the work safely from SPSA process
- Roux Peer Observation (RPO) or Accident Report Form (ARF) tool identifies lack of operational procedure or work standard
- New equipment or procedure

Selection of Development Team Members

- Persons conducting the JSA must be familiar with the process and understand basic hazard analysis techniques
- Include employees who perform the operation
- Target a minimum of two team members
- For higher risk work CHSM should be included

Conduct the Job Safety Analysis (JSA)

- Visit the workplace to observe the actual performance of the job
- Break down the job into distinct steps/tasks (Column 1)
- Identify Hazards for each step separately by asking questions similar to SPSA process. Be specific listing the Hazard and the Consequence (Column 2)
- Review Hazards, then consider options:
  - Engineer to eliminate the hazard
  - Provide guards, safety devices, etc.
  - Provide training
  - Provide PPE and ensure good ergonomics
  - Maintain good housekeeping
- Develop critical actions to control hazards (Column 3)
- Organize the information into one or two pages

Review and Approve

- By Project Manager
- OHSM to review if PM is a part of design team for JSA

Referencing and Customizing JSA's

- Refer to JSA Generic Library located, Clarity→Health and Safety→JSA Library
- Each field location uses these generic JSAs and customizes them to meet site specific needs

Continuous Improvement

- Reviewed and updated at least once a year and
  - Following any significant Lessons Learned or incident
  - Introduction of new equipment or equipment modifications
  - Changes to job procedure- from RPO or SPSA
- Use JSA Quality review checklist (Appendix C)

Appendix B - Job Safety Analysis Form

JOB SAFETY ANALYSIS	Cntrl. No.	DATE:	☒ NEW ☐ REVISED	PAGE 8 of 2
JSA TYPE CATEGORY **GENERIC**		WORK TYPE	WORK ACTIVITY (Description)	
DEVELOPMENT TEAM		**POSITION / TITLE**	**REVIEWED BY:**	**POSITION / TITLE**

	REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT			
☐ LIFE VEST ☐ HARD HAT ☐ LIFELINE / BODY HARNESS ☐ SAFETY GLASSES		☐ GOGGLES ☐ FACE SHIELD ☐ HEARING PROTECTION ☐ SAFETY SHOES	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☐ PPE CLOTHING:	☐ GLOVES: ☐ OTHER

	REQUIRED AND / OR RECOMMENDED EQUIPMENT
	Required Equipment:
	Commitment to LPS – All personnel onsite will actively participate in SPSA performance by verbalizing SPSAs throughout the day.
	EXCLUSION ZONE: A _ foot exclusion zone will be maintained around (indicate equipment).

Assess **[1]JOB STEPS**		**Analyze** **[2]POTENTIAL HAZARDS**	**Act** **[3]CRITICAL ACTIONS**
1. [INSERT JOB STEP]		**1a. CONTACT:** [INSERT HAZARD]	1a.
		1b. CAUGHT: [INSERT HAZARD]	1b.
		1c. FALL: [INSERT HAZARD]	1c.
		1d. EXPOSURE: [INSERT HAZARD]	1d.

		1e. EXERTION: [INSERT HAZARD]	1e.
		1f. ENERGY SOURCE: [INSERT HAZARD]	1f.
2. [INSERT JOB STEP]		**2a. CONTACT:** [INSERT HAZARD]	2a.
		2b. CAUGHT: [INSERT HAZARD]	2b.
		2c. FALL: [INSERT HAZARD]	2c.
		2d. EXPOSURE: [INSERT HAZARD]	2d.
		2e. EXERTION: [INSERT HAZARD]	2e.
		2f. ENERGY SOURCE: [INSERT HAZARD]	2f.

Appendix C - Job Safety Analysis Quality Review

GUIDANCE DOCUMENT

JOB SAFETY ANALYSIS (JSA) QUALITY REVIEW

A Job Safety Analysis (JSA) is both a technique and a tool used to carefully study and record each step of a job or task, identify existing or potential hazards associated with each step and determine the best actions to follow in order to avoid those hazards. The JSA provides a standard for conducting work and Roux Peer Observations (RPOs) and also serves as an excellent safety training and daily site safety meeting reference tool. A JSA is applicable for routine and higher risk activities.

The following guidance provides items a Quality Reviewer should ask about or look for when reviewing and commenting on a JSA. Quality Review feedback should be specific and may be in writing or verbal. Written feedback ensures clear communication and better tracking. Verbal feedback allows discussion and can be conducted at group safety meetings, by telephone, etc. for sharing of learnings as well. Safety stewardship focuses on quality use of the tools and other activities that personnel can control. This guidance applies to all Quality Reviewers from the front-line supervisor to senior management. Feedback on the quality of a JSA should include several items that are done well in addition to areas to improve.

Administrative and Header Information

- Are all sections completed?
- Does header include appropriate information such as name of company who developed JSA, location and work activity JSA applies to, names/titles of development team and quality reviewer(s), and date?
- Does development team include job experts (field personnel who perform the task) along with personnel familiar with hazard analysis techniques, specifically the worker actually completing the task?
- Does PPE section include minimum required specific PPE for task and is it consistent with PPE requirements listed in Column 3?
- Was the JSA reviewed by Roux personnel?
- Is the JSA limited to two pages?
- Is the JSA written in terms that field personnel can follow rather than as a "reference document" written by office staff?

Column 1 Job Steps

- Does the JSA cover one main task and not multiple tasks that should be divided into separate JSAs? Designate job task steps not overall work flow process to complete job.
- Are the job steps clearly defined and in a logical sequence that aligns with how the work is performed in the field?
- Do the job steps only include those with associated SH&E hazards?

Column 2 Potential Hazards

- Are hazards listed to correspond with each job step in Column 1?

- Do the hazards listed consider all potential hazards (e.g. environmental conditions, injurious contact, overexertion, slips/trips/falls, exposure to hazardous materials, traffic, property/environmental impacts, etc.)?
- Are the hazards specifically stated (e.g. instead of stating hazard as "chemical exposure", state "exposure to sulfuric acid from leaking battery")?
- Are there "extra" hazards that do not apply indicating that the JSA may have been developed for another site and not revised to address site-specific hazards?

Column 3 Critical Actions to Mitigate Hazards

- Do the critical actions align horizontally with the job steps and hazards from Columns 1 and 2?
- Are the actions clear and specific? (e.g. "wear a reflective vest and place traffic cones around work area" rather than "watch out for traffic").
- Are the actions quantifiable when possible? (e.g. "use two people to lift objects over 40 pounds" rather than "get help with heavy objects").
- Are the actions observable and objective so that an RPO Observer who is unfamiliar with task can determine if it is being done correctly? (e.g. "maintain three points of contact when climbing ladder" rather than "use safe climbing techniques").
- Do the actions avoid ambiguous phrases such as "use caution", "be careful", "stay alert", "and watch out"?
- Do the actions avoid subjective phrases such as "use proper", "as needed", "as required", "as necessary" that leave it open to individual worker's interpretation of what is required to perform work safely?
- Do not list minimum required PPE without including in the mitigation for this task, think why the PPE is required.
- PPE cannot be the only line of defense, PPE always the last line of defense, so think through what other actions could mitigate hazards.

JSA QUALITY REVIEW CHECKLIST

Reviewer Name / Company / Title:		Desktop Review?		Field Review?		Date:	
Administrative and Header Information		**Yes**	**No**	**Comments**			
Is the JSA limited to two pages?							
Are all sections completed?							
Does development team include job experts and personnel familiar with JSA development process?							
Was the JSA reviewed by a supervisor/manager?							
Does PPE section include PPE required for entire task with additional PPE listed in Column 3?							
Is the JSA written in terms that field personnel can follow?							
Column 1 - Job Steps		**Yes**	**No**	**Comments**			
Does JSA cover one main job task and not overall work flow process or multiple tasks that should be in standalone JSAs?							
Are job steps clearly defined and in sequence that aligns with how the work is performed?							
Column 2 - Potential Hazards		**Yes**	**No**	**Comments**			
Do hazards listed clearly correspond with each job step in Column 1?							
Are the hazards specifically stated (e.g. exposure from (what?), cut from (what?), slip from (what?)?)							
Do the hazards listed include all potential hazards?							
Does JSA avoid "extra" hazards that do not apply (may indicate generic JSA use without site revision)?							
Column 3 - Actions to Mitigate Hazards		**Yes**	**No**	**Comments**			
Do the critical actions clearly match each listed hazard and job step from Columns 1 and 2?							
Are the actions clear and specific?							
Are the actions quantifiable when possible (e.g. include number, limit, amount or distance)?							
Are the actions observable and objective (e.g. explain "how to")?							
Do the actions avoid ambiguous phrases (e.g. "be careful", "watch out")?							
Do the actions avoid subjective phrases (e.g. "proper", "appropriate")?							
Additional Comments:							

Quality Review Feedback provided to (name/company):			
Quality Review Feedback Action Item(s)	**Responsible Person**	**Target Completion Date**	**Actual Completion Date**

JOB SAFETY ANALYSIS	Ctrl. No. CVD-19	DATE: 04/16/2020	☒ NEW ☐ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
Generic	**Fieldwork**	**Working in Areas Affected by Coronavirus**

DEVELOPMENT TEAM	POSITION / TITLE	REVIEWED BY:	POSITION / TITLE
Kristina DeLuca	Health and Safety Specialist	Brian Hobbs	CHSM

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT – In field ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES – In field	☐ GOGGLES ☐ FACE SHIELD ☐ HEARING PROTECTION ☒ SAFETY SHOES – Steel/composite toe in fie	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING – High visibility vest in field	☒ GLOVES – Leather/cut-resistant in field and nitrile as needed ☐ OTHER

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Cloth face covering, nitrile gloves, hand soap, water source, hand sanitizer, disinfectant spray and disinfectant wipes.

Commitment to Safety – All personnel onsite will actively participate in SPSA performance by verbalizing SPSAs throughout the day.

SOCIAL DISTANCING: Maintain 6' of distance between yourself and all other people at all times. If you do not believe the scope of work can be conducted while maintaining this distance, contact your Project Manager immediately.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Project Preplanning	N/A	• Review and follow COVID-19 CDC, Roux, Client and local orders/protocols. • Ensure all workers are fit for duty - anyone feeling sick should remain at home even if symptoms do not align with COVID-19. If a worker has been in contact with someone potentially positive or positive for COVID-19, contact your Office Manager. • Determine PPE needs and ensure adequate supply of disinfectant wipes/spray, soap and water or hand sanitizer at Site. Due to high demands and limited supply, plan ahead. • Use the minimum number of employees necessary to safely complete the work.
2. Mobilization	**Exposure:** Becoming infected or infecting co-workers	**Personal/Rental/Roux Owned Vehicle** • Do not carpool. • Use the same vehicle every day and do not share with co-workers. • Verify workers/other people are not approaching vehicle prior to exiting the vehicle. Maintain 6' of distance from others. • DO not valet your car or allow others to use your car. If necessary, don nitrile gloves and safety glasses and clean/disinfect all high touch surfaces (steering wheel, knobs, door handles, turn signals, radio, etc.) by wiping thoroughly with approved disinfectants (follow manufacturer's instructions). This cleaning and disinfection shall occur before and after each use of the vehicle. Aseptically remove gloves and dispose of them along with rags/wipes, appropriately. Wash hands or use hand sanitizer immediately after each episode of cleaning. **Public Transportation** • Public transit should not be used unless absolutely necessary. Consider renting a car rather than taking public transit. If public transit is required, wear appropriate PPE and apply social distancing (6 ft). Use proper donning and doffing procedures for nitrile gloves. Wash hands or use hand sanitizer immediately after. **Hotel Stay (Refer to COVID-19 H&S Guidance for more info)** • If a hotel stay is deemed necessary for the given field work, ensure that you disinfect your room upon initial arrival and returning each day. Disinfect all surfaces of your room with an appropriate disinfectant using nitrile gloves. Use proper donning and doffing procedures for nitrile gloves. • Place the "Do Not Disturb" placard on the room while away and limit housekeeping services to the extent feasible during your stay to minimize the reintroduction and spread of the virus from others. Minimize, or avoid entirely, time spent in hotel common areas (i.e., the lobby, dining areas, gyms, etc.). Wash hands or use hand sanitizer often.

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[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

3. Tailgate Meeting	**Exposure:** Becoming infected or infecting co-workers	• Must occur outside or remotely (i.e. video or conference call). • Maintain at least a 6+ ft distance between you and others. • Discuss primary infection prevention measures listed below. • Do not require employees or subcontractors to sign in, the Site Supervisor shall record names on the attendance form. • If the Site has more than 10 workers, separate tailgate meetings should be performed. • Discuss COVID-19 symptoms with coworkers and subcontractors to ensure fitness for duty. Anyone exhibiting signs or symptoms should be instructed to leave the Site, contact your Project Manager.
4. Site Activities	**Exposure:** Becoming infected or infecting co-workers	• Coordinate field activities at the beginning of the day (i.e. Tailgate meeting) to minimize time spent in crowded spaces or overlap while completing job tasks. • Don cloth face coverings as appropriate. • Apply social distancing (6+ ft) when interacting with others. If anyone comes within 6 ft of you while conducting work and your work prevents you from moving away, politely ask them to move back. If others are unable to move from your space, stop work and leave area. • Do not shake hands or touch others. • Do not share equipment or other items with co-workers and subcontractors unless wearing appropriate PPE (e.g. nitrile gloves). Assume equipment and other surfaces are potentially contaminated and remove gloves aseptically (See Appendix A of Roux Interim H&S Guidance for proper glove removal). • If anyone is coughing or sneezing in your vicinity, stop work and leave the area. • Do not work in areas with limited ventilation with others. • Cover your mouth and nose with tissue or paper towel or with your elbow when coughing or sneezing and wash hands or use hand sanitizer immediately after. If sick contact SHSO/PM and leave Site immediately. • Disinfect work surfaces/areas with approved disinfectant you're responsible for (ex: desk, office doorknob, computer, etc.) at least once at the beginning of your shift and at least once at the end of your shift with either sanitizing wipes or disinfectant spray. • Phones should be operated hands free to extent feasible. Sanitize your phone on a regular basis. Disinfection should also take place whenever suspected contaminated material comes in contact with any work surfaces/areas. Wash hands or use hand sanitizer immediately after. • Avoid public spaces and going out to eat by bringing your own lunch to the Site. If performing work in high density urban areas, it is recommended all food must be consumed at or in your vehicle. Wash hands or use hand sanitizer before eating and immediately after.

Primary Infection Prevention Measures

- Wash your hands often with soap and water for at least 20 seconds.
  - If soap and water are not available, use an alcohol-based sanitizer that contains at least 60% ethanol or 70% isopropanol. Key times to wash hands include after blowing your nose, coughing or sneezing, after using the restroom, and before eating or preparing food.
- Do not touch your eyes, face, nose and mouth with unwashed hands.
- Cover your mouth and nose with a tissue when you cough or sneeze or use the inside of your elbow. Throw potentially contaminated items (e.g. used tissues) in the trash.
- Avoid close contact/secondary contact with people and potentially contaminated surfaces.
  - Apply appropriate social distance (6+ feet).
  - Stop handshaking/touching others and use caution when accessing public spaces.
- Clean and disinfect frequently touched surfaces daily. Commonly touched items can include but are not limited to tables, doorknobs, light switches, countertops, handles, desks, phones, keyboard, toilets, sinks and field equipment. If surfaces are dirty, they should be cleaned with soap and water prior to disinfection. If surface cannot be cleaned/disinfected, then wash hands or use sanitizer as soon as possible.

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[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

JOB SAFETY ANALYSIS	Ctrl. No. GEN-006	DATE 05/22/2025	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY:	WORK TYPE:	WORK ACTIVITY (Description):
Generic	**Drilling**	**Direct Push Soil Borings / Well Installation**

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD HEARING PROTECTION: (as needed) SAFETY SHOES: Composite-toe or steel-toe boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing, long-sleeved shirt	☒ GLOVES: Nitrile and cut-resistant ☒ OTHER: Insect Repellant, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Geoprobe or Truck-Mounted Direct Push Drill Rig, Hand Tools, Photoionization Detector, Multi-Gas Meter (or equivalent), Macrocore liners, Liner Opening Tool, 20 lb. Type ABC Fire Extinguisher, 42" Cones & traffic control paddles, "Work Area" Signs, Water.

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LMRAs

EXCLUSION ZONE (EZ): Maintain a Minimum Heavy Equipment Exclusion Zone around equipment and loads while in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, the tip zone of the equipment, the fall zone of the equipment, and the contents.

"SHOW ME YOUR HANDS"
The driller and helper should show that their hands are clear of controls and moving parts.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilization of drilling rig (ensure the Subsurface Clearance Protocol and Drill Rig Checklist are completed)	**1a. CONTACT:** Equipment/property damage.	1a. The drill rig's tower/derrick will be lowered and secured before mobilization. 1a. A spotter should be utilized while moving the drill rig. If personnel move into the path of the drill rig, the drill rig will be stopped until the path is again clear. Use a spotter for all required backing operations. 1a. Set up the work area and position equipment to eliminate or reduce the need for backing support trucks and trailers. 1a. When backing up the truck rig with an attached trailer, use a second spotter if there is tight clearance simultaneously on multiple sides of the equipment or if turning angles limit driver visibility.
Secure Work Zone		1a. Inspect the driving path for uneven terrain. Level or avoid if needed. 1a. Ensure the work area is secure and inform others of work activity. Establish a HEEZ using traffic cones, barrels & snow fencing or telescoping poles. Use flag persons to maintain clear traffic and minimize motorist confusion during set-up. HEEZ is to include the tip/swing radius of the equipment.
	1b. FALL: Slip/trip/fall hazards.	1b. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions before mobilizing equipment. 1b. Do not climb over stored materials/equipment; walk around. Practice good housekeeping. 1b. Use established pathways and walk on stable, secure ground.
	1c. CONTACT: Crushing from a rollover.	1c Geoprobe should cross all hills/obstructions head-on with the mast down to reduce the risk of rollover.
2. Raising the tower/derrick of the drill rig	**2a. CONTACT:** Overhead hazards.	2a. Before raising the tower/derrick, the area above the drilling rig will be inspected for wires, tree limbs, piping, or other structures that could come in contact with the rig's tower and/or drilling rods or tools. 2a. Maintain a minimum safe distance of 10' from overhead lines, material, or structures.
	2b. CONTACT: Pinch Points/Amputation Points when raising the rig, and the instability of the rig	2b. Inspect the equipment before use and avoid pinch/amputation points. 2b. Lower outriggers to ensure stability before raising the rig tower/derrick. 2b. If the rig needs to be mounted, use three points of contact.
3. Advancement of drilling equipment and sound installation	**3a. CONTACT:** Flying debris	3a. Be aware of and avoid potential line-of-fire hazards and wear required PPE such as eye, ear, and hand protection.
	3b. EXPOSURE: Noise and dust.	3b. Wet borehole area with sprayer to minimize dust. 3b. Stand upwind and keep your body away from the rig. 3b. If conditions warrant, a disposable dust mask (e.g., N95/P100) should be worn. 3b. Wear hearing protection when the drill rig is in operation.

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3. Advancement of drilling equipment and well installation (Continued)	**3c. FALL:** Slip/trip/fall hazards.	3c. Contain drill cuttings and drilling water to prevent fall hazards from developing in the work area. 3c. See 1b.
	3d. CAUGHT: Limb/extremity pinching; abrasion/crushing.	3d. Ensure all Emergency Safety Stop buttons function properly. 3d. Always wear leather gloves when making connections and using hand tools; wear cut-resistant (i.e., Kevlar) gloves when handling cutting tools. 3d. Inspect the equipment prior to use for potential pinch/amputation points. Keep hands away from pinch/amputation points, and the use of tools is preferable compared to fingers and hands. 3d. Inspect the drill head for worn surface or missing teeth; replace it if damaged or blunt. 3d. Ensure all jewelry is removed, loose clothing is secured, and PPE is correctly fitted and secured close to the body. 3d. All non-essential personnel should stay away from the immediate work area; position the body out of the line-of-fire of equipment. 3d. Drillers and helpers will understand and use the "Show Me Your Hands" Policy. 3d. Spinning rods/casing have an **exclusion zone of 24 inches** while in operation.
	3e. CONTACT: Equipment imbalance during the advancement of drill equipment.	3e. Drillers will advance the borehole with caution to avoid causing the rig to become imbalanced and/or tip. 3e. The blocking and leveling devices used to secure the rig will be inspected by drillers and Roux personnel regularly to see if shifting has occurred. 3e. In addition, personnel and equipment that are non-essential to the advancement of the borehole will be positioned away from the rig at a distance that is at least as far as the boom is high (**minimum exclusion zone**).
	3f. EXPOSURE: Inhalation of contamination/vapors.	3f. Monitor ambient air for dangerous conditions using a calibrated photoionization detector (PID) to monitor the breathing zone of the work area. 3f. If a reading of >5ppm is recorded, the Roux field personnel must temporarily cease work, instruct all Site personnel to step away from the area of elevated readings, and inform the Roux PM of the condition. The Roux PM will then recommend additional precautions in accordance with the site-specific health and safety plan. 3f. Use a multi-gas meter to monitor ambient air for dangerous conditions (i.e., unsafe levels of carbon monoxide when drilling indoors or the presence of explosive vapors).
	3g. EXERTION: Potential for muscle strain/injury while lifting and installing well casings, lifting sand bags, and/or lifting rods.	3g. Keep your back straight and bend at the knees. 3g. Utilize team lifting or mechanical means for objects over 40 lbs. 3g. Use a mechanical lifting device for odd-shaped objects.
4. Remove the sample liner.	**4a. EXERTION:** Potential for muscle strain/injury while removing the liner from the probe rod.	4a Utilize team lifting or mechanical means for objects over 40 lbs. 4a. Use the hydraulic liner extruder if available.
	4b. CONTACT: Pinch points and cuts	4b. Place the liner on the sturdy surface when opening. 4b. Don cut-resistant gloves and use an appropriate liner cutter when opening liners. 4b. Always cut away from the body.
	4c. EXPOSURE: Inhalation and/or dermal contact with contaminants.	4c. Wear chemical-resistant disposable gloves when handling liners. 4c. See 3f.
5. Decontaminate equipment.	**5a. EXPOSURE/CONTACT**: To contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated groundwater, vapors).	5a. Wear chemical-resistant disposable gloves and safety glasses. 5a. Contain decontamination water so that it does not spill. 5a. Use an absorbent pad to clean spills, if necessary. 5a. Spray equipment from a side angle, not straight on, to avoid backsplash. 5a. See 3b and 3f.
	5b. EXPOSURE: The chemicals in the cleaning solution.	5b. See 4a. Review the SDS to ensure appropriate precautions are taken and understood.

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JOB SAFETY ANALYSIS	Ctrl. No. GEN-007	DATE 05/22/2025	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
GENERIC	**General Site Activity**	**Driving**

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☐ HARD HAT: when outside vehicle ☐ LIFELINE / BODY HARNESS ☐ SAFETY GLASSES: when outside vehicle	☐ GOGGLES ☐ FACE SHIELD ☐ HEARING PROTECTION ☐ SAFETY TOE BOOTS: when outside vehicle	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☐ PPE CLOTHING: high visibility vest when outside vehicle	☐ GLOVES: Leather/ cut-resistant level 2 ☐ OTHER _____

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Motor Vehicle (i.e., car, truck, SUV)

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LMRAs

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Driving to/leaving the Site	**1a. CONTACT:** Severe injury/disability, property damage, monetary loss (insurance premiums, deductibles, loss of license/job) caused by collision with or struck by other vehicles, obstructions, pedestrians, animals, etc. *Common factors that may lead to a CONTACT incident, but not limited to: • distracted driving (cell phone, GPS, radio, billboards, "rubbernecking") • lack of situational awareness • unfamiliarity with traffic patterns/road layout • weather conditions (wet/icy roads, hydroplaning, black ice) • weariness • high speeds • obstructed vision (solar glare, debris on windshield, blind spots, large vehicle at the front) • changes in travel pathway (construction, snow banks, non-operational signals, potholes, detours, special events) • improper vehicle maintenance (non-operational signal light, worn tires, cracked windshield, ineffective wipers) • loose or unsecure objects	1a. PLAN AHEAD – review/make yourself familiar with maps and driving directions before beginning the drive to the Site. Do not attempt to drive and review maps/directions at the same time. Pull over and stop your vehicle before looking at maps/directions. 1a. If a Roux vehicle or a Roux-rented vehicle, complete a vehicle inspection form. If a personal vehicle, complete a basic 360 vehicle inspection before driving. Verify Inspection and Registration are current, tires and wipers are in good condition, all lights are functional, all glass/mirrors are undamaged, the horn is functional, roof/hood/trunk are free from accumulated snow, and visibility is not impaired due to snow/ice/frost/fog on windows. 1a. Do not hang items in the car that can obstruct your view or become projectiles in a collision. 1a. Do not get distracted using touch screen radios or GPS units built into newer models. Keep your eyes on the road and stay alert. 1a. Follow posted speed limits and obey traffic signals and roadway signs. 1a. Always wear your seat belt and shoulder harness when driving. 1a. When driving around large vehicles and trucks, maintain extra space as these vehicles may not be able to see a smaller car too close. 1a. Follow the "Rules of the Road," including: using your turn signals, coming to a complete stop, and allowing vehicles the right of way (yield) when required by traffic laws. 1a. Apply the Smith Five Keys® of safe driving • Aim High in Steering® - Expand eye lead time to a minimum of 15 seconds • Get the Big Picture® - Maintain a proper 4-second minimum following distance at all times - Scan mirrors every 5-8 seconds to achieve a circle of awareness - Position your vehicle so you can see relevant/non-relevant objects • Keep Your Eyes Moving® - Try to maintain about 180 degrees of visibility - Avoid blank and fixed stares. Avoid focusing on one object for more than 2 seconds • Leave Yourself an Out® - Avoid traveling in traffic clusters - Surround yourself with space - Anticipate the actions of others

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Driving to/leaving Site (cont'd)	**1a. CONTACT:** Severe injury/disability, property damage, monetary loss (insurance premiums, deductibles, loss of license/job) caused by collision with or struck by other vehicles, obstructions, pedestrians, animals, etc.	• Make Sure They See You® - Maintain eye contact with oncoming vehicles/pedestrians - Use warning devices (e.g., hand signals, high-lights, horns, etc.) - Proper timing is essential 1a. Do not perform reconnaissance or inspections while driving. Your vehicle should be parked in a safe location when viewing or surveying the Site and vicinity 1a. Avoid sudden turns and stops. Do not drive recklessly – be in control of the vehicle at all times. 1a. In inclement weather, first determine if work can be POSTPONED. Otherwise, plan according to weather conditions, including checking the forecast along the entirety of the travel route (especially for long distances). Reduce speed as road conditions warrant. Travelling with winter car equipment in the winter is strongly recommended (i.e., shovel, scraper, brush, blanket, extra clothing, flashlight, bag of sand). If your vehicle has 4-wheel drive, review the operator's manual and understand the operating procedure prior to engaging 4-wheel drive. If at any point on your drive, the weather becomes too severe to proceed safely, pull over if safe to do so or seek nearest cover (e.g., overpass) 1a. If feeling drowsy or sleepy, do not drive. Pull over in a safe place to rest if you experience any signs of drowsiness. Make sure to get adequate sleep the night before an early drive. 1a. Never operate a vehicle under the influence of alcohol, illegal substances, or medications affecting your performance. 1a. Keep your eyes on the road. Do not call, text, or talk on cellular phones. Pull over to a safe location if you must answer or make a call. 1a. When parking, pull through when possible. If backing is required, visually inspect the area to ensure it is free from obstructions prior to backing in and relying solely on mirrors; use spotters when available.
2. Entering/Exiting Vehicle.	**2a. CAUGHT:** Personal injury (broken fingers/hand) while entering or exiting vehicles **2b. FALL:** Personal injury (twisted ankle, deep contusion, concussion, broken wrist/arm, etc.) from a slip/fall on an uneven, unstable, or slippery surface while exiting/entering the vehicle **2c. CONTACT:** Severe injury/disability, property damage, monetary loss (insurance premiums, deductibles, loss of license/job) caused by collision with or struck by other vehicles, obstructions, pedestrians, animals, etc.	2a. Open and close doors slowly. Never put hands or feet in between the door and the vehicle to avoid pinch points. 2b. When exiting the vehicle, make sure your feet are on firm footing and weight is evenly distributed before exiting/standing. In inclement weather, use your hands to support yourself by holding the car door and/or steering wheel when exiting the vehicle. 2c. Check both directions for traffic before opening the door. Do not exit the vehicle if traffic does not permit you to exit safely 2c. Check the anticipated path of the door prior to opening. Do not open the door into any obstructions (e.g., bollards, high curbs)

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JOB SAFETY ANALYSIS	Ctrl. No. GEN-010	DATE 05/28/2025	☐ NEW ☒ X REVISED	PAGE 1 of 2
JSA TYPE CATEGORY **Generic**	WORK TYPE **Surveying**	WORK ACTIVITY (Description) **Elevation Surveying**		

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ AIR PURIFYING RESPIRATOR	☒ GLOVES: Cut-resistant or leather
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☒ OTHER:
☐ LIFELINE / BODY HARNESS	☐ HEARING PROTECTION	☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing	
☒ SAFETY GLASSES	☒ SAFETY SHOES: Steel-toe boots		

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Surveying equipment (i.e., leveling rod/measuring ruler, tripod and auto level).

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LMRAs.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Check in with Site manager/ property owner.	**1a. CONTACT/EXPOSURE/FALL:** Lack of communication could result in H&S incident.	1a. Inform Site personnel of work scope, timeline and location(s). 1a. Inquire about other activities taking place at the Site. 1a. If applicable, obtain General Work permit for the day.
2. Locate surveying position for instrument and rod and set-up work area	**2a. FALL:** Slip/trip hazards	2a. Inspect area for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.) and obstructions prior to setting up at the survey location. Keep eyes engaged with walking surface while in movement. Remember "Walking is Working." 2a. Conduct housekeeping and maintain clear paths to walk in and remove debris as required.
	2b. CONTACT: Traffic (surveying locations could potentially be in parking areas and sidewalks)	2b. Be aware of oncoming traffic. Utilize a flagman / spotter for locations in streets or high-traffic areas. 2b. Place Traffic cones around the work area and delineate work zone with caution tape, snow fencing or safety bars, if necessary. 2b. Wear appropriate PPE including high visibility clothing and reflective safety vest when exposed to traffic and vehicles. 2b. Face traffic, maintain eye contact with oncoming vehicles and establish a safe exit route.
	2c. OVEREXERTION: Hazard due to carrying, lifting, and bending while transporting equipment	2c. Use proper body positioning and lifting techniques; keep back straight, lift with legs, keep load close to body, and never reach with a load. 2c. Avoid carrying too much equipment at one time and team-lift equipment that is heavier than 50 lb.
	2d. CAUGHT/CONTACT: Pinch Points / sharp edges associated with setting up the tripod	2d. Wear cut resistant gloves when handling the tripod and keep fingers away from pinch points located near moving parts of the tripod. Do not carry tripod by the pointed ends.
	2e. OVEREXERTION: Hazard due to bending awkwardly to look through the autolevel	2e. When practical, set the height of the auto level optic so as to minimize bending at the waist.
3. Open / close manhole cover to well that is being surveyed (if necessary).	**3a. OVEREXERTION:** Muscle strain	3a. See 2c. Bend knees when reaching to open well. Use manhole lifting hook or pry bar to avoid bending.
	3b. CAUGHT: Pinch points associated with removing / replacing manholes and working with hand tools	3b. Wear leather gloves or cut resistant gloves when working with well cover and hand tools. 3b. Use proper tools (ratchet and crowbar, pry bar or magnet for well cover) and inspect before use. 3b. Do not put fingers under well cover.
	3c. EXPOSURE: To potentially hazardous vapors To biological hazards	3c. No open flames/heat sources. 3c. To minimize exposure to vapors, allow well to vent after opening it and before survey activities begin. 3c. Work on the upwind side of manhole/well. 3.c Use caution while opening lids to inspect work area for bees and insects inside of covers. 3c. Use insect/tick repellent, as necessary.
	3d. CONTACT: With traffic	3d. See 2b.

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
4. Perform survey.	**4a. FALL:** Slip/trip hazards	4a. See 2a.
	4b. CONTACT: Traffic (surveying locations could be potentially located in parking areas and sidewalks)	4b. See 2b. 4b. Personnel using the scope will be devoting most of their attention to the surveying activity and shall be aware of vehicular and pedestrian traffic. Personnel holding the measuring stick should be extra vigilant of survey personnel and communicate any potential hazards to the instrument person via handheld radio or similar means. Ensure reflective safety vest is worn.
	4c. ENERGY SOURCES: Electrical shock from survey rod striking overhead electric lines or lights	4c. Prior to raising and extending the survey rod, personnel should thoroughly inspect the area above the measuring point. If overhead electrical lines are encountered within 10 feet of the measuring rod tip ; stop work and consult with the Office Health and Safety Officer.
5. Break down work area.	**5a. CONTACT:** Traffic (surveying locations can potentially be in parking areas and sidewalks)	5a. See 2b.
	5b. EXERTION: Hazard due to carrying, lifting, and bending while transporting equipment	5b. See 2c.
	5c. CONTACT: Personal injury or equipment damage by striking surroundings with an extended rod or unsecured tripod leg	5c. Ensure rod is entirely collapsed prior to mobilization / demobilization between survey points. 5c. Ensure tripod legs are fully collapsed and secured with strap prior to mobilization / demobilization between set-ups.

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JOB SAFETY ANALYSIS Ctrl. No. GEN-013	DATE 05/28/2025	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE:	WORK ACTIVITY (Description):
Generic	**Gauging and Sampling**	**Gauging and Sampling**

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☒ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD ☐ HEARING PROTECTION ☒ SAFETY SHOES: Composite-toed or steel-toed boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing	☒ GLOVES: , Nitrile and cut-resistant level II ☒ OTHER: Knee pads, Insect Repellant, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Traffic Safety Cones, Caution Tape, Interface Probe with Ground Clamp, and/or Water Level Meter, 20-lb. type ABC Fire Extinguisher, Buckets. Tools as needed: Socket Wrench, Screw Driver, Crow Bar, Mallet, and Wire Brush.

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LMRAs

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilization to monitoring well(s).	**1a. FALL:** Personal injury from slip/trip/fall due to uneven terrain and/or obstructions.	1a. Inspect the pathway and plan for the most suitable designated pathway prior to mobilization. 1a. Use established pathways, walk and/or drive on stable, secure ground, and avoid steep hills or uneven terrain. 1a. If working near open water with an unguarded edge, wear a personal flotation device (PFD).
	1b. CONTACT: With traffic/third parties.	1b. Identify potential traffic sources and delineate the work area with traffic safety cones. Position the vehicle to protect against oncoming traffic. Use caution tape to provide a more visible delineation of the work area if necessary. 1b. Wear appropriate PPE, including high visibility clothing and reflective vest, when exposed to traffic 1b. Face traffic, maintain eye contact with oncoming vehicles, and establish a safe exit route.
	1c. EXERTION: Muscle strain from lifting equipment	1c. Use proper lifting techniques when handling/moving equipment; bend knees and keep back straight. 1c. Use mechanical assistance or team lifting techniques when equipment is 40 lbs. or heavier. 1c. Make multiple trips to carry equipment.
	1d. EXPOSURE: To biological hazards.	1d. Inspect work area for bees and insects. 1d. Use insect/tick repellent, as necessary. 1d. Treat clothing with permethrin prior to mobilization. 1d. Don Tyvek/mosquito nets, as applicable.
2. Open/close well.	**2a. EXERTION:** Muscle strain.	2a. Use proper lifting techniques; keep back straight, lift with legs, and bend knees when reaching to open/close the well.
	2b. CAUGHT: Pinch/crush points associated with removing/replacing manholes and working with hand tools.	2b. Wear cut-resistant level II gloves when working with well cover and hand tools. 2b. Use proper tools (ratchet and pry bar or magnet for well cover) and inspect before use. 2b. Do not put fingers under the well cover.
	2c. CAUGHT: Pinch points associated with placing the J-plug back onto the PVC pipe.	2c. See 2b. 2c. Keep fingers out of line-of-fire when securing cap.
	2d. EXPOSURE: To potential hazardous vapors.	2d. No open flames/heat sources. 2d. To minimize exposure to vapors, allow the well to vent after opening it and before sampling activities begin. 2d. Stand upwind if possible, to avoid inhaling vapors. 2d. Monitor atmosphere with multi-gas meter/PID.
3. Gauge well.	**3a. CONTACT:** With contamination (e.g., contaminated groundwater).	3a. Wear chemical-resistant disposable gloves (over cut-resistant gloves) and safety glasses when gauging well. 3a. Insert and remove the probe slowly to avoid splashing. 3a. Use an absorbent pad to clean probe.
	3b. CONTACT: With traffic.	3b. See 1b.
	3c. Exposure: To static electricity, fire, or explosion.	3c. Ground interface probe to a designated grounding point/rod, well casing, or electrically conductive surface to dissipate static electricity.

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
4. Purge and sample well	**4a. EXPOSURE/CONTACT:** To contamination (e.g., SPH, contaminated groundwater, vapors) and/or sample preservatives.	4a. Open and fill sample jars slowly to avoid splashing and contact with preservatives. 4a. Wear cut-resistant gloves and chemical-resistant disposable gloves when sampling. 4a. Fill sample containers over the purge container to avoid spilling water onto the ground. 4a. Use an absorbent pad to clean spills. 4a. When using a bailer to purge a well, pull the bailer slowly from the well to avoid splash hazards. 4a. When sampling or purging the water using a bailer, pour water slowly to reduce the potential for splash hazards with groundwater. 4a. When using a tubing valve, always remove the valve slowly after sample collection to release any pressure and avoid pressurized splash hazards. 4a. When collecting a groundwater sample, always point the sampling apparatus (tubing, bailer, etc.) away from the face and body.
	4b. CONTACT: Personal injury from cuts, abrasions, or punctures by glassware or sharp objects.	4b. To avoid spills or breakage, place sampleware on an even surface. 4b. Do not over-tighten caps on glass sampleware. 4b. Wear chemical-resistant nitrile disposable gloves over cut-resistant (i.e., Kevlar) gloves when sampling and handling glassware (i.e., VOA vials) or when using approved cutting tools.
	4c. EXERTION: Muscle strain while carrying equipment.	4c. Use proper lifting techniques when handling/moving equipment, bend knees, and keep back straight. 4c. Use mechanical assistance or team lifting techniques when equipment is 40 lbs. or heavier. 4c. Make multiple trips to carry equipment.
	4d. CONTACT: With traffic.	4d. See 1b.
	4e. CONTACT: Pinch points with groundwater pump components (i.e., wheel, line, clamps).	4e. Wear cut-resistant gloves when working with groundwater pumps. 4e. Never place hands on or near pinch points such as the wheel, clamps, or other moving parts during pump operations. 4e. Use the correct mechanisms, such as a pump reel, to lower the pump into the well. 4e. Never attempt to manually stop any moving part of equipment, including hose reels and/or tubing.
	4f. EXERTION: Muscle strain from repetitive motion of bailing and sampling a well.	4f. See 4c. 4f. Include a stretch break when repetitive motions are part of the task.
5. Management of purge water.	**5a. EXPOSURE/CONTACT:** To contamination (e.g., SPH, contaminated groundwater, vapors).	5a. Do not overfill the container, and pour liquids slowly so that they do not splash. 5a. Properly dispose of used materials/PPE in an appropriate container in the designated storage area.
	5b. EXERTION: Muscle strain from lifting/carrying, and moving containers.	5b. Use proper lifting techniques when lifting/carrying or moving container(s) (see 4c.). 5b. Do not overfill container(s).
6. Decontaminate equipment.	**6a. EXPOSURE/CONTACT:** To contamination (e.g., SPH, contaminated groundwater, vapors).	6a. Work on the upwind side, where possible, of the decon area. 6a. Wear chemical-resistant disposable gloves and safety glasses. 6a. Use an absorbent pad to clean spills.
	6b. CAUGHT: Pinch points associated with handling hand tools	6b. See 2b. 6b. Inspect hand tools for sharp edges before decontaminating.

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JOB SAFETY ANALYSIS	Ctrl. No. GEN-014	DATE: 05/28/2025	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY:	WORK TYPE:	WORK ACTIVITY (Description):
Generic	**Drilling**	**Hollow Stem Auger Soil Borings / Well Installation**

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☒ GOGGLES: Spoggles required if winds exceed 15 mph. ☐ FACE SHIELD HEARING PROTECTION: (as needed). ☐ SAFETY SHOES: Steel or Composite Toe.	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent long-sleeve shirt or long-sleeve shirt and reflective safety vest.	☒ GLOVES: Cut-Resistant, and Nitrile. ☒ OTHER: Insect Repellant, Sunscreen (as needed).

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Truck-Mounted Drilling Rig or Track Rig, Saw, Hand Tools, Photoionization Detector, Multi-Gas Meter (or equivalent), Interface Probe, 20 lb. Type ABC Fire Extinguisher, Traffic Cones/barrels, Caution Tape & Flags, "Work Area" Signs.

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LMRAs

EXCLUSION ZONE (EZ): Maintain a Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, the tip zone of the equipment, the fall zone of the equipment, and the contents.

"SHOW ME YOUR HANDS"
Driller and helper should show that hands are clear from controls and moving parts

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilization/demobilization and establish a work area.	**1a. See Mobilization/ Demobilization JSA GEN-015.**	1a. See Mobilization / Demobilization JSA GEN-015.
2. Raising the tower/derrick of the drilling rig.	**2a. CONTACT:** Overhead hazards.	2a. Prior to raising the tower/derrick, the area above the drilling rig will be inspected for overhead hazards (wires, tree limbs, piping, or other structures) that may be contacted by the rig's tower or drilling rods. 2a. The tower/derrick must not be raised beneath overhead power lines unless approved by the Roux PM. 2a. Maintain a minimum of 10' from all overhead structures. 2a. Do not move the rig while the tower/derrick is raised.
	2b. CONTACT: Amputation/crush points when raising the rig and the instability of the rig.	2b. Inspect the equipment prior to use and avoid any potential amputation points. 2b. Lower outriggers to ensure stability prior to raising the rig tower derrick. Keep feet and body out of the line of fire when lowering outriggers. 2b. Inspect the set-up location for uneven terrain. Level or avoid the area if needed. 2b. If the rig needs to be mounted, be sure to use three points of contact.
3. Advancement of augers for soil boring installation.	**3a. CONTACT:** Equipment imbalance during advancement of drill equipment.	3a. Drillers will advance the borehole with caution to avoid causing the rig to become imbalanced and/or tip. 3a. The blocking and leveling devices used to secure the rig will be inspected by drillers and Roux personnel regularly to see if shifting has occurred. **3a. Drillers will maintain the "Purple Zone" policy surrounding augers to ensure no personnel come into contact with augers while in use. Workers can spray paint a 3' semi-circle surrounding the augers to visually show that no personnel should enter the "Purple Zone" while drilling activities are being conducted.** 3a. In addition, personnel and equipment that are non-essential to the advancement of the borehole will be positioned away from the rig at a distance that is at least as far as the boom is high (minimum exclusion zone of 20 feet).
	3b. CONTACT: Flying/spraying debris.	3b. Wear all required PPE (especially hand, eye, and ear protection). 3b. Maintain minimum EZ distance (i.e., swing/tip radius of rig) when rig is in operation to avoid potential line of fire hazards from flying materials or debris.
	3c. CAUGHT: Limb/extremity amputation, abrasion, and crushing.	3c. Inspect the equipment prior to use for potential pinch points. 3c. Test all emergency shutdown devices prior to drilling. 3c. Inspect the drill head for worn surface or missing teeth; replace it if damaged or blunt. 3c. Inspect augers; do not use if the auger flight is damaged or bent.

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
3. Advancement of augers for soil boring installation (Continued).	**3c. CAUGHT:** Limb/extremity amputation, abrasion, and crushing.	3c. Ensure all jewelry is removed, loose clothing is secured, and PPE is secured close to the body. 3c. All non-essential personnel should stay away from the immediate work area; position the body out of the line-of-fire of equipment, particularly when installing auger flights and steel override casings. 3c. Drillers and helpers will understand and use the "Show Me Your Hands" Policy. 3c. Spinning augers should have an exclusion zone of 20 feet when in operation.
	3d. FALL: Slip/trip/fall hazards.	3d. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 3d. Do not climb over stored materials/equipment; walk around. Practice good housekeeping. 3d. Use established pathways and walk on stable, secure ground. 3d. Use three points of contact when mounting or dismounting the rig. 3d. Remove soil cuttings to avoid a tripping hazard from developing near augers.
	3e. EXPOSURE: Inhalation of contamination/vapors.	3e. Air monitoring using a calibrated photoionization detector (PID) and multi-gas meter to monitor the breathing zone of the work area. 3e. The Action Level for breathing zone air is five (5) parts per million (sustained) as detected by the PID. 3e. If a reading of >5ppm is recorded, the Roux field personnel must temporarily cease work, instruct all Site personnel to step away from the area of elevated readings, and inform the Roux PM of the condition. The Roux PM will then recommend additional appropriate precautions in accordance with the site-specific health and safety plan.
	3f. EXPOSURE: Noise and dust.	3f. Wet borehole area with sprayer to minimize dust. Stand upwind and keep your body positioned away from the rig. 3f. Wear hearing protection while the drill rig is operating or the noise levels exceed 85 dBA.
	3g. EXERTION: Installing well casings and lifting augers.	3g. Keep back straight and bend at the knees. 3g. Utilize team lifting for objects heavier than 40 lbs. 3g. Use a mechanical lifting device for odd-shaped objects.
4. Installation of well materials.	**4a. CONTACT:** Installing well materials while also pulling up augers.	4a. Potential contact with augers during the installation of well materials. 4a. Keep distance from augers and do not place any materials while augers are in motion.
	4b. CAUGHT: Possible pinch or crush hazard assembling PVC and sending down the borehole.	4b. Keep all body parts out of potential pinch points while placing PVC together and sending down borehole.
	4c. FALL: Slip/trip/fall hazards with hand tools and materials.	4c. See 3d.
	4d. EXPOSURE: Potential contamination, harmful vapors, dust, and/or noise.	4d. See 3e and 3f. 4d. Stand upwind to avoid exposure to dust generated from packing materials.
	4e. EXERTION: Lifting heavy bags of materials to backfill the borehole.	4e. See 3g.
5. Cleaning the auger flights	**5a. CONTACT:** Cuts/scrapes or puncture wounds from contacting the auger.	5a. Follow the "Show Me Your Hands" Procedure and make sure the auger is out of gear before contacting the auger with the tool or hand. 5a. Pull the cleaning tool across your body with the handle away from your body; do not push toward the auger. 5a. Do not clean more than ¾ turn around the auger at a time. 5a. Wear cut-resistant and nitrile gloves. 5a. Always use two hands to operate the cleaning tool. 5a. Inspect the tool before use and remove from service if the handle or metal is cracked/fatigued. 5a. Stand out of the line of fire.

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
6. Decontaminate equipment.	**6a. EXPOSURE / CONTACT:** To contamination (e.g., contaminated groundwater, vapors).	6a. Wear chemical-resistant disposable gloves and safety glasses. 6a. Contain decontamination water so that it does not spill. 6a. Use an absorbent pad to clean spills, if necessary.
	6b. EXPOSURE: To chemicals in cleaning solution (including ammonia).	6b. See 3e. Wear all appropriate PPE and stand upwind of any exposed cleaning solutions.

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JOB SAFETY ANALYSIS	Ctrl. No. GEN-015	DATE: 05/28/2025	☐NEW ☒REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
GENERIC	**Site Recon**	**Mobilization/Demobilization**

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD ☒ HEARING PROTECTION (as needed) ☒ SAFETY SHOES: Steel Toe or composite toe	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest of high-visibility clothing; long-sleeved shirt; long pants	☒ GLOVES: Cut-resistant Level II, nitrile ☐ OTHER

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Required Equipment: Varies

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LRAs

EXCLUSION ZONE (EZ): Maintain a Minimum Heavy Equipment Exclusion Zone around equipment and loads while in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, the tip zone of the equipment, the fall zone of the equipment, and the contents.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Mobilize/demobilize and establish a work area	**1a. FALL:** Slip/trips/falls from obstructions, uneven terrain, weather conditions, heavy loads, and/or poor housekeeping.	1a. Use 3 points-of-contact/ensure secure footing when entering and exiting the vehicle. 1a. Inspect walking path for uneven terrain, steep hills, obstructions, and/or weather-related hazards (i.e., ice, snow, and puddles) prior to mobilizing equipment. Use established pathways. Walk on stable/secure ground. 1a. Do not climb over stored materials/equipment; walk around. Practice good housekeeping; organize and store equipment neatly in one area at its lowest potential energy. 1a. Wear boots with adequate treads. 1a. Delineate unsafe areas with traffic safety cones, caution tape, and/or flagging.
	1b. CONTACT: Personal injury and/or property damage caused by being struck by Site traffic or equipment used in Site activities.	1b. Observe and maintain the posted speed limits. 1b. When first arriving onsite, park vehicles in designated parking spaces and/or out of the way locations. Use parking brake on all vehicles and tire chocks on work trucks and trailers. 1b. Check in with Site Manager/Supervisor to ensure coordination with other Site activities and to discuss any special hazards. Ensure that short-service employees (SSE) are identified. 1b. Identify potential traffic sources. 1b. Wear PPE, including high visibility clothing or reflective vest, when around vehicles or operating equipment 1b. Use a spotter while moving work vehicles; plan to avoid backing whenever possible. 1b. Maintain a minimum exclusion zone when vehicles are in motion (i.e., greater than the swing/tip radius of the equipment). When backing up the truck rig with an attached trailer, use a second spotter if there is tight clearance simultaneously on multiple sides of the equipment or if turning angles limit driver-to-spotter visibility. 1b. Delineate work area with traffic cones, flags, caution tape, and/or other barriers. 1b. Position “Work Area” signs at Site entrances, if possible, or at either side of the work area. 1b. Position the largest vehicle to protect against oncoming traffic. 1b. Face traffic, maintain eye contact with oncoming vehicles, use a spotter, and establish a safe exit route.

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
		1b. Observe potential overhead and ground surface features that may interfere with moving equipment. Clear the path of physical hazards prior to initiating mobilization.
	1c. CAUGHT: Personal injury from pinch points and being in the line of fire of the vehicle and/or equipment.	1c. Make sure the driver has engaged the parking brake and placed wheel chocks in a position to prevent movement. Be sure that the vehicle is parked in front/down gradient (positioned to block oncoming traffic) of the work area. 1c. Wear cut-resistant gloves (Kevlar or similar) when handling objects/tools or equipment, 1c. Keep body parts away from line-of-fire of equipment. 1c. Always carry tools by the handles and/or designated carrier. Ensure sharp-edged tools are sheathed/secure. 1c. Remove any loose jewelry. Avoid wearing loose clothing and/or ensure loose clothing is secure. 1c. Secure all items on the equipment, tighten up any items or features that have the potential to shift or break during mobilization.
	1d. OVEREXERTION: Muscle strains while lifting/carrying equipment.	1d. Use body positioning and lifting techniques that avoid muscle strain; keep back straight, lift with legs, turn with whole body, keep load close to body, and never reach with a load. 1d. Ensure that loads are balanced. Use assistance (mechanical or additional person) to carry equipment that is either unwieldy or over 50 lbs.
	1e. EXPOSURE: Personal injury from exposure to biological and environmental hazards.	1e. Inspect the area to avoid contact with biological hazards (i.e., poisonous plants, stinging insects, ticks, etc.). 1e. Wear long-sleeved clothes that can be treated with Permethrin, apply insect repellent (may contain DEET) to exposed skin, and inspect clothes and skin for ticks during and after work. 1e. Apply sunscreen (SPF 15+) if exposure to the sun for 30 minutes or more is expected.
	1f. EXPOSURE: Weather-related injuries.	1f. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, nausea, rapid and shallow breathing). Take breaks in cool places and hydrate as needed. 1f. Watch for cold stress symptoms (severe shivering, slowing body movement, weakness, stumbling or inability to walk, collapse). Take breaks in warm areas as needed. 1f. Wear clothing appropriate for weather and temperature conditions (e.g., rain jackets, snow pants, multiple layers). 1f. If lightning is observed, wait 30 minutes in a sheltered location (car is acceptable) before resuming work.
	1g. EXPOSURE: Personal injury from noise hazards.	1g. Wear hearing protection if sound levels exceed 85 dBA (if you must raise your voice for normal conversation).

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JOB SAFETY ANALYSIS	Ctrl. No. GEN-019	DATE: 05/28/2025	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
GENERIC	**Site Reconnaissance**	**Site Walk and Inspection**

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD ☒ HEARING PROTECTION: earplugs/muffs as necessary ☒ SAFETY SHOES: Steel or composite toed	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: High-visibility vest or high-vis outerwear	☒ GLOVES: /cut-resistant (level II)/chemical resistant ☒ OTHER: Tyvek and rubber boots as necessary, dust mask as necessary

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Required Equipment: Site map, emergency contact list, documentation of urgent care/hospital routes, and/or guide familiar with Site, operating cell phone or walkie-talkie if Site allows, and bug spray.

Commitment to Safety – All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LMRAs

EXCLUSION ZONE (EZ): Maintain a Minimum Heavy Equipment Exclusion Zone around equipment and loads while in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, the tip zone of the equipment, the fall zone of the equipment, and the contents.

SITE SECURITY: Before site inspection, verify the appropriate method to address Site Security concerns related to potential criminal activity, homeless population, and/or isolation concerns. Work with the Project Principal and/or Project Manager to address appropriately.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Check in with the Site contact.	**1a. CONTACT/EXPOSURE/FALL:** Personal injury caused by a lack of awareness of site-specific hazards.	1a. Inquire about hazards and other activities taking place at the Site. 1a. Inform Site contact of work scope, timeline, and location(s). 1a. Discuss emergency evacuation procedures and muster points with the Site contact.
2. Traversing the Site	**2a. CONTACT:** Property damage and personal injury caused by obstructions/vehicles or unauthorized personnel at remote Sites.	2a. All equipment must be stowed and secured prior to moving. 2a. Maintain speed limit as posted on-site. 2a. When possible, drive on established roadways. 2a. Yield to all pedestrians. 2a. Use pull-through spots or back into parking spots. 2a. Don high-visibility clothing/safety vest. If working at a remote Site, add orange accessories during hunting season.
	2b. FALL: Uneven terrain and weather conditions. Overgrown shrubs and vines. Equipment in the work zone.	2b. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 2b. Use established pathways and walk on stable, secure ground when possible. 2b. Communicate traversing hazards with others.
	2c. OVEREXERTION: Muscle strain while carrying equipment.	2c. When carrying equipment to/from the work area, use proper lifting techniques; keep back straight, lift with legs, keep the load close to the body, never reach with a load. Ensure that loads are balanced to reduce the potential for muscle strain. Use the buddy system or mechanical means to maneuver items heavier than 40 lbs. If necessary, make multiple trips to carry equipment.
	2d. EXPOSURE: Biological hazards – ticks, bees/wasps, poison ivy, insects; (Ticks are most active whenever the temperature is above freezing, typically from March to November.)	2d. Inspect the area to avoid contact with biological hazards. 2d. Ticks: • Treat outer clothing, including pants, shirts, socks, boots, and hats, the evening before with Permethrin (allowing at least two hours before use). • Apply DEET or equivalent to exposed skin before travelling to the Site and reapply after two hours. • Wear light colored clothing and visually check for ticks during and after work. 2d. Bees: • Use bee spray as appropriate to deter/eliminate bees. • Protect exposed skin with insect repellent. 2d. Poison Ivy: • Identify areas of poison ivy and spray with weed killer. Don

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
		• Identify areas of poison ivy and spray with weed killer. Don Tyvek and rubber boots while traversing poison ivy areas. • If skin comes into contact with poison ivy, wash the skin thoroughly with soap and water.
	2e. EXPOSURE: Heat Stress & Cold Stress. Personal injury from working in inclement weather conditions.	2e. Wear sunscreen with SPF 15 or greater on exposed skin whenever 30 minutes or more of sun exposure is expected. 2e. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, rapid and shallow breathing). Take breaks as needed. 2e. Watch for cold stress symptoms (severe shivering, slowing body movement, weakness, stumbling or inability to walk, collapse). Take breaks as needed. 2e. Wear appropriate rain gear as needed. 2e. Take frequent breaks if tired, wet, or cold/hot. Drink water. 2e. If lightning is observed, wait 30 minutes after the last thunder boom/lightning bolt in a sheltered location (car acceptable) before starting work again.
3. Walking near heavy equipment and machinery.	**3a. CONTACT:** Personal injury from Site and roadway traffic. Personal injury from flying debris	3a. See 2a. 3a. Maintain an exclusion zone of at least 10 feet from all engaged equipment. Increase distance to include swing tip radius. 3a. Keep body parts out of the line-of-fire of pinch points. 3a. Wear appropriate PPE always.
	3b. OVEREXERTION: Personal injury from lifting/moving/rotating equipment.	3b. See 2c.
	3c. EXPOSURE: Hearing damage from noise-generating equipment/processes. Inhalation/exposure to hazardous vapors and or dust.	3c. Wear hearing protection if >85 dBA. (i.e., noise levels which require you to raise your voice to communicate) 3c. Always wear cut-resistant gloves when handling any tools or equipment. 3c. Always wear appropriate PPE based on the chemicals present.
	3d. EXPOSURE: Working in a remote area.	3d. Use the "buddy system" whenever possible. If working alone, contact PM upon arrival/departure and during work activities prior to commencing work if applicable. 3d. Always carry a communication device (i.e., cell phone, walkie-talkie) or directional (i.e., map, compass, etc.) when traversing remote areas. 3d. If available, follow Lone Worker Protocol/Procedure.
4. Working in adverse weather conditions.	**4a. EXPOSURE:** Heat Stress & Cold Stress. Personal injury from working in inclement weather conditions.	4a. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, rapid and shallow breathing). Take breaks as needed. 4a. Watch for cold stress symptoms (severe shivering, slowing body movement, weakness, stumbling or inability to walk, collapse). Take breaks as needed. 4a. Wear appropriate rain gear as needed. 4a. Take frequent breaks if tired, wet, or cold/hot. Drink water. 4a. If lightning is observed, wait 30 minutes after the last thunder boom/lightning bolt in a sheltered location (car acceptable) before starting work again.
5. Departing Site.	**5a. EXPOSURE:** Exposure to unnecessary hazards should prompt personnel to believe Roux is on-site during an emergency and conduct a search.	5a. Sign out or notify the Site contact and Roux Project Manager of your departure.

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JOB SAFETY ANALYSIS	Ctrl. No. GEN-020	DATE: 05/29/2025	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY:	WORK TYPE:	WORK ACTIVITY (Description):
GENERIC	**Gauging & Sampling**	**Soil Sampling**

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS ☒ SAFETY GLASSES ☒ FLAME RESISTANT CLOTHING (as needed)	☐ GOGGLES ☐ FACE SHIELD: ☒ HEARING PROTECTION: (as needed) ☒ SAFETY SHOES: Composite-toe or steel-toe boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Fluorescent reflective vest or high visibility clothing	☒ GLOVES: , Nitrile and cut resistant level II ☒ OTHER: Insect repellent, sunscreen (as needed)

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Recommended Equipment: traffic safety cones, caution tape, trowel

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LMRAs.

EXCLUSION ZONE (EZ): Maintain a Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, the tip zone of the equipment, the fall zone of the equipment, and the contents.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Secure location	**1a. CONTACT:** Personnel and vehicular traffic may enter the work area.	1a. If in an area with foot or vehicle traffic, delineate the work area with traffic cones and/or caution tape to prevent exposure to traffic and inform others of work activity. 1a. Wear a reflective vest and/or high visibility clothing. 1a. Face the direction of any vehicular traffic. Position the vehicle to protect the worker from traffic. 1a. Communicate work activity with adjacent work areas.
	1b. FALL: Tripping/falling due to uneven terrain or entry/exit from excavations.	1b. Inspect pathways and work area for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions. 1b. Use established pathways and walk on stable, secure ground. 1b. Stage equipment and tools in a convenient, stable, and orderly manner. Store equipment at the lowest potential energy. 1b. Roux employees should stay 6 feet from in-progress excavations and trenches. Should entry to an excavation be required (when stabilization is complete), ladders must be employed for steep embankments, excavations, pits, and trenches.
	1c. EXPOSURE: Exposure to sun and excessive heat, possibly causing sunburn, heat exhaustion, or heat stroke. Exposure to cold temperatures may cause cold stress. Skin burn as a result of fire, if applicable. Exposure to explosive vapors due to tank farm operations. Exposure to airborne dust due to high wind speeds. Biological hazards - ticks, bees/wasps, poison ivy, thorns, insects, etc.	1c. Wear sunscreen with an SPF 15 or greater whenever 30 minutes or more of exposure is expected. 1c. Use a tent to shade the work area from direct sunlight, particularly when warm temperatures are expected. 1c. Be aware of the location of all Site personnel. 1c. Watch for heat stress symptoms (muscle cramping, exhaustion, dizziness, rapid and shallow breathing). 1c. Watch for cold stress symptoms (severe shivering, slowing of body movement, weakness, stumbling or inability to walk, collapse). 1c. Take breaks for rest and water as necessary. Move to an area that is well shaded or a climate-controlled area (i.e., car, site trailer, etc.). 1c. No open flames/heat sources. 1c. Conduct air monitoring and ensure that harmful vapor concentrations are within the levels detailed in the Site Specific HASP. Follow the procedures detailed in HASP for exceedances. 1c. Flame retardant clothing must be worn when specified by Site policy. 1c. Cell phones should be disabled when specified by Site policy. 1c. Pre-treat field clothing with Permethrin prior to site visit to kill ticks and insects. 1c. Wear long-sleeved shirts and tuck in (or tape) pant legs into socks or boots to prevent ticks from reaching skin. 1c. Spray insect repellent containing DEET or equivalent on exposed skin when working in overgrown areas of the Site. 1c. Inspect the area to avoid contact with biological hazards. 1c. Wear cut-resistant gloves when handling material, equipment, or branches, shrubs, etc. that may lie within the walking path. 1c. Wear spoggles if the average wind speeds are above 15 mph. 1c. Personnel shall examine themselves and their co-workers' outer clothing for ticks periodically when on-site. 1c. If skin comes in contact with poison ivy, wash skin thoroughly with soap and water. If rash persists after washing, immediately notify your supervisor, the OM, and OHSM for possible consultation with a physician at an approved Occupational Health Clinic.

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
2. Collect Soil Sample	**2a. CONTACT:** Personal injury from pinch points, cuts, and abrasions from sampling equipment, tools, and material within the soil sample. Personal injury from contact with moving equipment while sampling. Personal injury from contact with glass sample jars.	2a. Wear cut-resistant (i.e., Kevlar) gloves under chemical-resistant (nitrile) disposable gloves when handling soil samples and sampling jars. 2a. Where possible, use a trowel or equivalent tool to avoid contact with soil. 2a. If sampling from a bucket of heavy equipment, ensure all equipment is off and the operator utilizes the “show me your hands” policy. 2a. See 1a.
	2b. EXPOSURE: Exposure to contamination (impacted soil) and/or lab preservatives.	2b. Wear chemical-resistant (nitrile) disposable gloves over cut-resistant gloves to protect hands when handling samples; use containment material or plastic sheeting to protect surrounding areas. 2b. Wear safety glasses to protect eyes from dust or air-borne contaminants that may result from disturbing the soil. 2b. Where possible, remain upgradient from the sample location if collecting soil samples from stockpile, drill rig, etc., to avoid breathing contaminant vapors, if they are present. 2b. When collecting a soil sample from a hand auger, put a large zip lock bag over the entire auger to prevent soil from spilling onto the ground. 2b. Open sample jars slowly and fill carefully to avoid contact with preservatives.
	2c. EXERTION: Exertion due to repetitive motion and ergonomics.	2c. Utilize a table or raised surface for soil sampling if multiple soil samples are going to be taken to minimize repetitive bending motion.
3. Decontaminate equipment	**3a. EXPOSURE/CONTACT:** Contamination (e.g., Separate Phase Hydrocarbons (SPH), contaminated vapors, and/or soil). **3b. EXPOSURE:** Chemicals in the cleaning solution include ammonia.	3a. Wear chemical-resistant (nitrile) disposable gloves and safety glasses. 3a. Use an absorbent pad to clean spills. 3a. Properly dispose of used materials/PPE in the provided drums in the designated drum storage area. 3a. Remain upwind of the sample and avoid breathing contaminant vapors, if they are present. 3b. Wear chemical-resistant (nitrile) disposable gloves and safety glasses. 3b. Work on the upwind side of the decontamination area. 3b. Use an absorbent pad to clean spills. 3b. Properly dispose of used materials/PPE in the provided drums in the designated drum storage area. Ensure that all drums are properly labeled and secured.

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JOB SAFETY ANALYSIS	Ctrl. No. GEN-023	DATE: 05/29/2025	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
Generic	**Construction**	**Spotting Heavy Machinery**

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST	☐ GOGGLES	☐ Particulate Respirator	☒ GLOVES: Cut resistant Level II
☒ HARD HAT	☐ FACE SHIELD	☐ SUPPLIED RESPIRATOR	☐ OTHER:
☒ LONG SLEEVED SHIRT	☒ HEARING PROTECTION	☒ PPE CLOTHING: Fluorescent reflective clothing/safety vest	
☐ LIFELINE / BODY HARNESS	☒ SAFETY SHOES: Steel-/Composite-toe boots		
☒ SAFETY GLASSES			

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Heavy Machinery (i.e., excavator, payloader, truck, forklift, etc.), two-way radios.

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LMRAs

EXCLUSION ZONE (EZ): Maintain a Minimum Heavy Equipment Exclusion Zone around equipment and loads while it is in motion. The HEEZ must be greater than the swing zone of any moving part of the equipment, tip zone of the equipment, fall zone of the equipment and contents, distance that debris may travel during demolition activities, and/or footprint of a structure to be demolished.

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
1. Prepare for machine activity.	**1a. CONTACT:** Obstructions in the work area may create contact hazards from machinery. **1b. Fall :** Slip/Trip/Fall	1a. Cordon off the work area with safety barrels/cones and a rigid barrier (snow fence, traffic bar, etc.). Ensure that only necessary personnel are in the work area. Spotter and equipment operator shall enforce the Exclusion Zone (**EZ**). The operator will not operate but shall remain in the hands-off mode while personnel are within the exclusion zone. 1b. Ensure that the work area is flat, level, and clear of any obstructions or debris before setting up the work zone.
2. Spotting.	**2a. CONTACT:** Machine or load contact with personnel, property, or machinery.	2a. Discuss the specifics of the work with the operator and be clear about any hand signals that will be used. Clearly discuss the limits of the assigned work area and the machine's **EZ**. Maintain **EZ**. The **EZ** shall be delineated by using traffic cones/barrels and a fixed rigid barrier. 2a. The Minimum Heavy Equipment **EZ** is greater than the swing/tip radius of the equipment. 2a. Both the spotter and equipment operators shall have verbal/ visual contact and/or 2-way radios/cellular devices on their persons to ensure audible communication in the event any changes or new hazards may arise. 2a. All workers should stay outside of the **EZ** of all equipment unless the operator is stopped and in "Hands Off" mode. **(This includes the spotter unless an exception has been established in the Site-specific JSA.)** If the **EZ** must be reduced due to work area restrictions, then the spotter and operator shall enforce the reduced **EZ**. 2a. Spotters must make eye contact with the machine operator, or all movement ceases until visual contact can be reestablished. 2a. Spotter shall keep an eye out for any issues with the machine that the operator may not see and communicate with other work crews and spotters on behalf of the operator. 2a. If the spotter needs to take a break, he must find a replacement before leaving or have the machine stop operations. **No heavy equipment shall operate without a spotter under any circumstances.** 2a. Wear fluorescent clothing/safety vest. 2a. **Do not multitask. Only perform Spotting**

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Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
	2b. FALL: Slip/Trip/Fall	2b. Look where you are walking to identify and avoid slip/trip/fall hazards. Avoid icy and/or wet surfaces. Remove obstacles if possible. 2b. Use designated walkways during spotting whenever possible. 2b. **Do not walk backwards. Always face the direction towards which you are walking.**
	2c. CAUGHT: Caught between machinery and nearby objects.	2c. **Maintain EZ.** Do not stand between large, loose, or fixed objects or structures and the machinery while it is in motion. Keep the operator in sight at all times while being aware of surrounding structures.
	2d. EXPOSURE: Inhalation of exhaust from machinery.	2d. The spotter will position him/herself upwind of the working machinery, when possible. Spotter will also inform others working within the vicinity of the **EZ** of proper positioning, if applicable.

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JOB SAFETY ANALYSIS	Ctrl. No. GEN-029	DATE: 05/29/2025	☐ NEW ☒ REVISED	PAGE 1 of 2

JSA TYPE CATEGORY	WORK TYPE	WORK ACTIVITY (Description)
GENERIC	**Preclearing/Sampling**	**Hand Augering**

REQUIRED AND / OR RECOMMENDED PERSONAL PROTECTIVE EQUIPMENT

☐ LIFE VEST ☒ HARD HAT ☐ LIFELINE / BODY HARNESS SAFETY GLASSES	☐ GOGGLES ☐ FACE SHIELD ☐ HEARING PROTECTION ☒ SAFETY SHOES: Steel or composite-toed boots	☐ AIR PURIFYING RESPIRATOR ☐ SUPPLIED RESPIRATOR ☒ PPE CLOTHING: Long-sleeved high-visibility clothing	☒ GLOVES: Cut Resistant level II / Nitrile / Chemical resistant ☐ OTHER

REQUIRED AND / OR RECOMMENDED EQUIPMENT

Hand Auger Tools (buckets, rods), 5-gallon buckets, hand tools (hammer, etc.)

COMMITMENT TO SAFETY- All personnel onsite will actively participate in hazard recognition and mitigation throughout the day by verbalizing LMRAs.

Assess [1] JOB STEPS	Analyze [2] POTENTIAL HAZARDS	Act [3] CRITICAL ACTIONS
1. Drive/walk to hand clearing/hand augering location	**1a. CONTACT:** Property damage and personal injury caused by obstructions/vehicles	1a. Maintain speed limit on-site. 1a. All equipment must be stowed and secured prior to moving. 1a. Drive on established roadways. 1a. Do not back up the vehicle without a spotter where visibility is limited; use pull-through spots or back into parking spots; use an audible signal (horn/back-up alarm) when backing up vehicles.
	1b. FALL: Personal injury from tripping/falling due to uneven terrain, weather conditions, and materials/equipment stored at portions of the Site	1b. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment. 1b. Do not climb over stored materials/equipment; walk around. Use established pathways and walk on stable, secure ground. 1b. Use the established ramp when descending into/ascending from impoundment areas. 1b. Keep tools and equipment in a designated area. When not in use, tools and equipment must be returned to their proper storage location. Keep the work area clear of obstructions.
	1c. EXERTION: Muscle strain/exhaustion while carrying equipment (i.e., hand auger, post-hole digger, shovel, pry bar)	1c. When carrying equipment to/from the work area, use proper lifting techniques; keep back straight, lift with legs, keep the load close to the body, never reach with a load. Ensure that loads are balanced to reduce the potential for muscle strain. Use mechanical assistance or make multiple trips to carry equipment.
	1d. EXPOSURE: Exposure to the sun, possibly causing sunburn. Biological hazards - bees/wasps, poison oak, thorns, insects, etc.	1d. Wear sunscreen with an SPF of at least 15 whenever 30 minutes or more of exposure is expected. 1d. Inspect the area to avoid contact with biological hazards. 1d. Wear cut-resistant gloves when handling material, debris, branches, shrubs, etc. that may lie within the walking path. 1d. Avoid any areas on-site that have poison oak.

Assess [1] JOB STEPS	Analyze [2] POTENTIAL HAZARDS	Act [3] CRITICAL ACTIONS
2. Secure location	**2a. CONTACT:** Personnel and vehicular traffic may enter the work area.	2a. Delineate the work area with traffic cones and/or caution tape to prevent exposure to traffic and inform others of work activity. 2a. Wear a reflective vest and/or fluorescent clothing. 2a. Face the direction of vehicular traffic. Position the vehicle to protect the worker from traffic. 2a. Communicate work activity with adjacent work areas.
	2b. FALL: Tripping/falling due to uneven terrain, and materials /equipment stored within the work area	2b. Inspect walking path for uneven terrain, weather-related hazards (i.e., ice, puddles, snow, etc.), and obstructions prior to mobilizing equipment to the impoundments. 2b. Equipment and tools will be staged in a convenient, stable, and orderly manner. 2b. Equipment and tools will be stored at the lowest point of potential energy and out of the walkway and immediate work area (i.e., tools should not be propped against walls or nearby equipment or vehicles). 2b. Equipment and tools that are not anticipated to be used will be returned to an appropriate storage area that is out of the immediate work area.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift." Avoid general statements such as, "be careful."

Assess [1]JOB STEPS	Analyze [2]POTENTIAL HAZARDS	Act [3]CRITICAL ACTIONS
3. Verify pre-clearance protocol; review completed Subsurface Utility Checklist and utility verification site walkthrough.	**3a. ENERGY SOURCE:** Underground utility damage; property damage; personal injury	3a. Confirm that "Call Before You Dig"/811 and local utility companies were contacted prior to hand augering. 3a. Walk the Site to evaluate utility markings and review maps.
4. Augering/advancing borehole	**4a. EXPOSURE:** Contaminated soil/water/vapor	4a. Monitor the breathing zone with a PID when VOCs are a concern. If vapors exceed site-specific action levels, upgrade PPE as per the HASP. 4a. Wear chemical-resistant disposable gloves and safety glasses when handling impacted materials. 4a. Place excavated soil on plastic sheeting and store soil waste in a designated area. 4a. Work on the upwind side of the boring.
	4b. EXERTION: Muscle strain from lifting, bending, repetitive motion.	4b. Body positioning and rotating with the auger to reduce strain. Do not twist back.
	4c. CAUGHT: Personal injury as a result of jewelry/loose clothing caught on equipment, well covers, machinery, hand auger, pry bar, etc.	4c. No form of jewelry should be worn while on-site. 4c. Clothing must be appropriately sized so that it is not loose-fitting.
	4d. CONTACT/CAUGHT: Pinch points, abrasions	4d. Keep head and upper body clear when lifting hand auger, pry bar/post-hole digger. Ensure not to be overly aggressive when using the pry bar. 4d. Ensure all jewelry is removed, loose clothing is secured, and PPE is secured close to the body.
5. Lithologic observation and soil sampling	**5a. EXPOSURE:** Contact with contamination (impacted soil and/or lab preservatives)	5a. Wear chemical-resistant disposable gloves to protect hands when handling samples; wear safety glasses when on site and/or goggles when handling any preservatives; use containment material or plastic sheeting to protect surrounding areas. 5a. When collecting a soil sample from a hand auger, put a large zip lock bag over the entire auger to prevent the spillage of soil onto the ground. 5a. Open sample jars slowly and fill them carefully to avoid contact with preservatives.
6. Decontaminate equipment	**6a. EXPOSURE:** Contact with contamination (impacted soil and/or lab preservatives, decontamination solution)	6a. Wear chemical-resistant disposable gloves and safety glasses. 6a. Use an absorbent pad to clean spills. 6a. Properly dispose of used materials/PPE trash bags. 6a. Refer to the SDS for the decontamination solution for proper handling.
	6b. CONTACT/CAUGHT: pinch points and cuts/abrasions	6b. Keep fingers/hands out of pinch points when disassembling the hand auger during decontamination.

[1] Each Job or Operation consists of a set of tasks / steps. Be sure to list all the steps needed to perform job.
[2] A hazard is a potential danger. Break hazards into six types: Contact - victim is struck by or strikes an object; Caught - victim is caught on, caught in or caught between objects; Fall - victim falls to ground or lower level (includes slips and trips); Exertion - excessive strain or stress / ergonomics / lifting techniques; Exposure - inhalation/skin hazards; Energy Source – electricity, pressure, compression/tension.
[3] Using the first two columns as a guide, decide what actions or procedures are necessary to eliminate or minimize the risk. List the recommended safe operating procedures. Say exactly what needs to be done - such as "use two persons to lift". Avoid general statements such as, "be careful".

Job Safety Analysis - Excavator Operation

Client Job #:	**4694.0001P000**
Sessler Job #:	**25-1700**
Date Created	**7/7/2025**
Date Last Modified:	

SUBCONTRACTOR: L.M. Sessler Excavating & Wrecking, Inc.

SUBCONTRACTOR SCOPE OF WORK: 5 Flint Street Demolition Project

Principle Step	Potential Hazards	Recommended Controls
Excavator Operation	1) Faulty equipment machine failure 2) Falling from ladder boarding the machine 3) Injury to people, damage to product or equipment from running into or over. 4) Thrown out of cab or against cab interior. 5) Personal Injury 6) Noise 7) Tipping over 8) Ground collapse 9) Reversing/ Running over people and equipment and not very good visual 10) Electrocution 11) Ground collapse 12) Environmental – Dust	Check for dents, cracks and faulty welds. Check all hydraulic rams and lines, controls for leaks. Check all safety devices. Check tracks for tightness and rollers, idlers, and sprockets for damage. Ensure 3 point of contact. Only trained & experienced operators should operate the equipment and Competent Banks Worker should be present during mechanical excavation or backfilling activity. Always wear seatbelt. Allow no one to ride outside of the cab. Never use the basket or other attachments as a staging platform for workers. All workers must wear Hi-Viz vest or shirt when on site. Workers exposed to noise provide earplugs/ear muffs. Be alert for trenches, open cuts, sump holes and pits. Keep the machine as level as possible when operating. Provided warning signboard, barricades around the excavation area. If excavations exceed 5 feet, no person(s) should work in the trench without support. If excavations exceed 5 feet undertake benching, battering, or shoring. Make sure that your back up alarm is working. Always check for overhead power lines. Keep Safe distance and wear proper PPE while working near the electrical live line. All stockpiled materials must be “put out of the zone of influence”. If excavations exceed 5 feet no persons should work in the trench without support. If excavations exceed 5 feet undertake benching , battering or shoring. Wet down area in dry dusty conditions.

Recommended PPE:	To be on site PPE is Hard Hat, Safety Toe Shoes, Hi-Viz Shirt or Vest, Safety Glasses, Work Gloves, and Hearing Protection (where applicable). All other required PPE has been outlined in their designated controls.

Sessler Representatives

Developed/Reviewed By: Gustabo Rivera (Director of Health & Safety)	**Signature:**	**Date:**
Reviewed By: Matt Felice (Project Manager)	**Signature:**	**Date:**
Reviewed By: Dan Skinner (Site Superintendent)	**Signature:**	**Date:**

Client Representative

Approved By:	**Signature:**	**Date:**

Job Safety Analysis - Operating Equipment

Client Job #:	**4694.0001P000**
Sessler Job #:	**25-1700**
Date Created	**7/7/2025**
Date Last Modified:	

SUBCONTRACTOR: L.M. Sessler Excavating & Wrecking, Inc.

SUBCONTRACTOR SCOPE OF WORK: 5 Flint Street Demolition Project

Principle Step	Potential Hazards	Recommended Controls
Operating Equipment	1) Unqualified operator or defective equipment. 2) Backing or striking person(s) or property. 3) Dust or flying particles. 4) Material being dropped on personnel.	Only designated qualified personnel will operate machinery and mechanized equipment.
		Equipment deficiencies observed at any time will be corrected before continuing operation.
		Machinery or equipment will not be operated in a manner that will endanger people or property. Operating speeds or loads will not be exceeded.
		All self-propelled construction equipment will be equipped with a reverse signal alarm.
		All personnel required to enter the work area of the equipment will wait until eye contact with the operator is made and acknowledgement from the operator is received before entering the work area of the equipment. Employees will wear long sturdy pants, steel toe boots, working gloves, long-sleeve shirts or arm sleeve protectant, safety googles and face shields where applicable.
		All people exposed to operations that subject the eyes or face to dust or flying particles will use the eye and/or face protection as required.
		Shielding will be provided over all activities where applicable.
		Hoisting/Lifting equipment will not be allowed to raise, lower, or swing loads over personnel in or around the work area.

Recommended PPE:	To be on site PPE is Hard Hat, Safety Toe Shoes, Hi-Viz Shirt or Vest, Safety Glasses, Work Gloves, and Hearing Protection (where applicable). All other required PPE has been outlined in their designated controls.

Sessler Representatives

Developed/Reviewed By: Gustabo Rivera (Director of Health & Safety)	**Signature:**	**Date:**
Reviewed By: Matt Felice (Project Manager)	**Signature:**	**Date:**
Reviewed By: Dan Skinner (Site Superintendent)	**Signature:**	**Date:**

Client Representative

Approved By:	**Signature:**	**Date:**

Job Safety Analysis - Skid Steer Operations

Client Job #:	**4694.0001P000**
Sessler Job #:	**25-1700**
Date Created	**7/7/2025**
Date Last Modified:	

SUBCONTRACTOR: L.M. Sessler Excavating & Wrecking, Inc.

SUBCONTRACTOR SCOPE OF WORK: 5 Flint Street Demolition Project

Principle Step	Potential Hazards	Recommended Controls
1. Perform Pre-Trip Inspection	Damaged or faulty equipment may result in property damage, or injury.	Inspect machine for damage or faulty equipment. 1) Check under machine for signs of fluid leaks. 2) Check chassis for faults such as broken welds, missing bolts, broken or missing lights. 3) Check all accessible hydraulic hoses for dry rot, cuts or slashes. Check all accessible hydraulic pipes for dents, cracks or loose fittings. 4) Check tires for loose or missing lug nuts, cuts, or excessive wear on the tires. Note: A audit of the pre-trip inspection form should be conducted at least once per week.
2. Check engine compartment.	Damaged or faulty equipment may result in property damage, or injury.	1) Inspect engine compartment door, check for loose hinges and that the lock mechanism is working. Check engine oil level. 2) Inspect all belts and check coolant level. 3) Check hydraulic oil level. 4) Look for any leaks or fluid buildup that could cause fires.
3. Check safety devices.	Missing or improperly working safety devices may result in property damage, or injury.	Check to see that all warning lights are working. To do this safely turn power to machine on but do not start it.
4. Enter skid-steer loader.	Potential for property damage, or injury.	Apply seat belt and adjust. It is recommended to not have any loose fitting clothing on that could catch controls.
5. Check inside cab and controls.	Broken or faulty gauges, controls or other items may lead to property damage, or injury.	1) Inspect cab door make sure that it is working properly. 2) Look around the interior of the cab check for hazards or visibly broken items. 3) Sit in operator seat and prepare to check all controls. First make sure emergency brake is on. 4) Next start machine, starting may vary depending on make and model, refer to owner's manual. 5) With machine running test all controls in order to cycle hydraulics. 6) Check for sloppy or loose control arms or foot pedals. 7) Check lights (if applicable), horn and back up alarm.

6. Engine Startup procedures.	Potential for property damage, or injury.	1) Insert key. 2) Turn key to on position and check lights (where applicable), gauges, fuel and hydraulic levels and horn again. 3) Ensure no personnel are close enough to be injured and start engine
7. Operate Skid-steer loader.	Potential for property damage, or injury.	1) DO NOT ALLOW ANY RIDERS. 2) Look in all directions while driving, especially backing, to watch out for other personnel. 3) Do not jerk controls. Use slow and deliberate movements to ensure a smooth ride. 4) Always drive with the load close to the ground. 5) Use the horn at all low-visibility locations and intersections.
8. Talking to co-workers/site-visitors.	Potential for property damage, or injury.	Where other personnel may need to speak to the operator, the following steps shall be taken. 1) Bring the machine to a complete stop. 2) Lower all attachments to the ground and apply parking brake. 3) Shut off the engine. 4) Do not allow other personnel to lean on or into the cab of the skid steer loader. If necessary, get out of the loader to talk to personnel.
9. Working on ramps or near embankments.	Potential for property damage, or injury.	1) Slow down to a minimum normal operating speed. Recommended at half throttle. 2) Avoid sudden movements (jerking controls) near the edge. 3) Avoid sharp turns near the edge. Back away first, then turn. 4) When traveling on severe slopes or grades, always travel with the heavy end uphill.
10. Use of attachments.	Potential for property damage, or injury.	1) Only used manufacturer approved attachments. 2) Always get help loading attachments if the attachment cannot be connected while operating the loader. 3) Once attachments are loaded, follow machine shutdown procedures, exit the loader and secure all locking pins and hydraulic hoses, as necessary. 4) Prior to conducting work with the attachments, cycle all hydraulics and test controls to ensure adequate response levels. 5) Remove attachments in the reverse order they were loaded.
11. Engine Shutdown Procedures.	Potential for property damage, or injury.	1) Drive the loader the storage or parking area. 2) Bring the machine to a complete stop. 3) Lower all attachments to the ground and apply parking brake. 4) Shut off the engine. 5) Remove key.

Recommended PPE:	To be on site PPE is Hard Hat, Safety Toe Shoes, Hi-Viz Shirt or Vest, Safety Glasses, Work Gloves, and Hearing Protection (where applicable). All other required PPE has been outlined in their designated controls.	
Sessler Representatives		
Developed/Reviewed By: Gustabo Rivera (Director of Health & Safety)	**Signature:**	**Date:**
Reviewed By: Matt Felice (Project Manager)	**Signature:**	**Date:**
Reviewed By: Dan Skinner (Site Superintendent)	**Signature:**	**Date:**
Client Representative		
Approved By:	**Signature:**	**Date:**

APPENDIX B

SDSs for Chemicals Used

Table of Contents...

CLEANING SUPPLIES

1. SDS - Alconox
2. SDS - CaviCide Liquid
3. SDS - CaviWipes
4. SDS - Clorox Disinfecting Bathroom Cleaner
5. SDS - Clorox®-Regular-Bleach
6. SDS - Dawn Dishwashing Liquid
7. SDS - EN-US Simple Green All Purpose Cleaner
8. SDS - Hydrogen Peroxide 3% Solution
9. SDS - Isopropyl Alcohol Wipes
10. SDS - Lysol Disinfectant Spray All Scents
11. SDS - Windex Original Formula

FIELD EQUIPMENT

1. SDS - Banana Boat® Sport Performance CoolZone SPF 30
2. SDS - CO2_Fire Extinguisher
3. SDS - Dust-Off compressed gas duster
4. SDS - Gel Ice Pack
5. SDS - Generic ALCOHOL HAND SANITIZER
6. SDS - Hand Warmer Air Activated Packet
7. SDS - Kidde Multipurpose ABC Fire Extinguisher
8. SDS - OFF! - Deep Woods Bug Spray
9. SDS - PB Blaster-Penetrating-Catalyst
10. SDS - Permethrin Insect Repellent (Clothing and Gear)
11. SDS - Rust-Oleum Inverted Marking Paint - Fluorescent Orange
12. SDS - Salinaxx Eye Wash
13. SDS - Sharpie Permanant Marker
14. SDS - Spray Adhesive Glue
15. SDS - Sunblock Lotion
16. SDS – Portland Cement
17. SDS – Biosolve Pinkwater

Table of Contents...

FUELS AND LUBRICANTS

1. SDS - Base Oil and Additives Mobil 2 Stroke Oil
2. SDS - Diesel Fuel
3. SDS - Four-Stroke Small Engine Oil
4. SDS - Gasoline with Ethanol
5. SDS - Liquid Propane Canister
6. SDS - Universal Bar Chain Oil
7. SDS - Vaseline Petroleum Jelly
8. SDS - WD-40-multi-use-product-aerosol

LAB PRESERVATIVES

1. Ammonium Chloride MSDS
2. Ammonium Phosphate Dibasic MSDS
3. Ascorbic Acid MSDS
4. Hydrochloric Acid MSDS (1)
5. Methanol MSDS
6. Nitric Acid MSDS
7. Sodium Bisulfate MSDS
8. Sodium Hydroxide MSDS
9. Sodium Thiosulfate 1.0M MSDS
10. Sulfuric Acid MSDS
11. Trizma MSDS
12. Zinc Acetate MSDS

Table of Contents...

RENTAL EQUIPMENT

1. Air SDS
2. Carbon Dioxide SDS
3. Carbon Monoxide in Air SDS
4. Conductivity Solution MSDS
5. Helium SDS
6. Hydrogen SDS
7. Hydrogen Sulfide Mix with Pentane SDS
8. Hydrogen Sulfide in Nitrogen SDS
9. Hydrogen Sulfide Mix with Methane SDS
10. Isobutylene Air SDS
11. Methane in Air SDS
12. Nitrogen SDS
13. Pentane in Air SDS
14. SDS Buffer Solution pH 4.00
15. SDS Buffer Solution pH 7.00
16. SDS Buffer Solution pH 10.00
17. SDS Dissolved-Oxygen-Solution
18. SDS Helium Compressed Gas
19. SDS peracetic-acid 35 with-h2so4
20. SDS Zorbell's Solution and ORP Standard 200mV

Safety Data Sheet

Section 1 – Chemical Products and Company Identification

Product Names: BioSolve® Pinkwater®

Product Uses: Remediation of hydrocarbon (oil, fuel, petrochemical) contamination, including: impacted soils, suppression of VOCs, surface cleaning of equipment and protective clothing.

Manufacturer:
The BioSolve Company
329 Massachusetts Avenue
Lexington, MA 02420 USA

Contact Information:

+1 (800) 225-3909	US, Canada, Mexico and Puerto Rico
+1 (781) 482-7900	All other locations

Section 2 – Hazards Identification

Health Hazards:

Eye Contact:	Causes transient eye irritation
Skin Contact:	May cause mild, transient irritation
Ingestion:	May be harmful if swallowed; can cause gastrointestinal irritation, nausea, vomiting and/or diarrhea

Hazard Mitigation: Wear protective gloves and eye/face protection
Avoid prolonged breathing of spray

Environmental Hazards: Moderately toxic to aquatic life. Avoid discharge to storm drains and waterways

GHS Classification: Toxic to aquatic life, Acute Category 2

Section 3 – Composition/Information on Ingredients

Proprietary formulation with nonionic surfactants (32% active ingredients in water)

BioSolve products contain no caustic, d-limonene or hydrocarbon solvents.

BioSolve products do not contain any hazardous ingredients as defined by CERCLA, Massachusetts Right to Know Law and California Prop 65. All ingredients are TSCA compliant.

Section 4 – First Aid Measures

Eyes: Immediately flush eyes with water for at least 15 minutes. Hold eyelids apart while flushing to rinse entire surface of eye and lids with water. Seek medical attention for lasting irritation.

Skin: Rinse exposed area and wash with mild soap and water for several minutes. Seek medical attention if irritation develops.

Ingestion: Seek medical attention in the event of serious or persistent abdominal discomfort, nausea or diarrhea.

Inhalation: Inhalation of concentrated vapors resulting from spraying or heating in confined or poorly ventilated areas may cause irritation of nose and throat. Remove person to fresh air and seek medical attention if irritation persists.

Section 5 – Fire Fighting Measures

Suitable Extinguishing Media: None required; BioSolve products are non-flammable

Special Protective Equipment for Firefighters: None necessary

Unusual Fire or Explosive Hazards: None

Section 6 – Accidental Release Measures

In case of accidental release, breakage or leakage: Eliminate or contain source with inert material, such as sand, earth, absorbent pads, etc. Transfer liquid to suitable containers for recovery, re-use or disposal. Wipe up or mop up using water. Hard surfaces (e.g., floors, driveways) may be slippery; use care to avoid falling.

Rinse area with water. Avoid flow of run-off to surface waters. Always check with local regulations before discharging effluent to storm drains or sewers.

Section 7 – Handling and Storage

Handling: Minimize periods of exposure to extreme temperatures. Keep from freezing. If frozen, separation may occur; thaw and stir thoroughly prior to use. Freezing will not affect product performance.

Precautions: Chemical resistant gloves and eye protection are recommended while mixing and using.

Incompatibilities: Avoid contact with strong acids or strong oxidants.

Storage: Recommended storage temperature: 35^{o} – 120^{o} F (1^{o} – 48^{o} C).

Shelf Life: If unopened, more than 10 years.

Section 8 – Exposure Controls / Personal Protection

Eyes Protection: Safety glasses; chemical goggles or face shield recommended when spraying to protect against backsplash and drift.

Skin Protection: Rubber or latex gloves recommended.

Respiratory Protection: None required, except if application results in significant misting of product. If so, use of an approved air purifying respirator is recommended.

Engineering Controls: For indoor use or for use in a confined space, normal ventilation is generally satisfactory.

Section 9 – Physical and Chemical Properties

Appearance: Deep red

Odor: Mild, pleasant sassafras fragrance

Concentration: ~32% active ingredients as sold

Boiling Point	265°F/129°C	**Vapor Pressure mm/Hg**	Not available
Melting/Freezing Point	28°F/-2°C	**Vapor Density (Air=1)**	Not available
Flash Point	Non-flammable	**Surface Tension***	29 Dyne/cm @25°C
Flammability Limits	Not applicable	**Viscosity (concentrate)**	490 centipoise
Reactivity with Water	None	**Viscosity (6% solution)**	1.5 centipoise
Evaporation Rate	Not determined	**Solubility in Water**	100%
Specific Gravity	1.01 gms/cc	**VOC Content**	Not determined
	8.43 lbs/U.S. gal	**pH**	9.1 +/- 0.3

*6% solution

Section 10 – Stability and Reactivity

Chemical Stability: Stable; will not decompose if used according to manufacturer's directions.

Conditions to Avoid: Prolonged exposure to heat may cause product degradation. Freezing should also be avoided as discussed in Section 7.

Incompatible Materials: Normally unreactive. Avoid strong alkalis, strong acids, strong oxidizing agents and materials with reactive hydroxyl compounds. These materials could damage the product and reduce its effectiveness during application.

Hazardous Decomposition Products: None are known.

Hazardous Polymerization: Will not occur.

Section 11 – Toxicological Information

Overview: No adverse acute or chronic health effects expected if product used in accordance with manufacturer's directions.

Carcinogenicity: No ingredient has been shown to cause cancer in laboratory animals.

Specific Organ Toxicity: None are known.

Section 12 – Ecological Considerations

Persistence and Degradability: The total of the organic components contained in this product is not classified as readily biodegradable (OECD-301 A-F). However, this product is inherently biodegradable with 60% degradation in 28 days (OECD-301B) and estimated >95% degradation in 120 days.

Bioaccumulation Potential: The bioaccumulation factor in fish has been estimated to be low, ranging from 87 to 344.

Mobility: No data available

Aquatic Toxicity:

LC_{50} of Concentrate (As shipped)		
Mysidopsis bahia	48-hours	3.6 mg/L
Menidia beryllina	96-hours	6.4 mg/L
LC50 of 3% Dilute Solution (As Used)		
Mysidopsis bahia	48-hours	185 mg/L
Menidia beryllina	96-hours	247 mg/L
LC50 of 6% Dilute Solution (As Used)		
Daphnia magna	48-hours	287 mg/L
Pimephales promelas	96-hours	124 mg/L
Onchorhynchus mykiss	96-hours	177 mg/L

Section 13 - Disposal

DO NOT DUMP INTO STORM DRAINS OR INTO ANY BODY OF WATER. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. As manufactured, BioSolve products do not meet the definition of a hazardous waste. Small quantities of unused and uncontaminated product may be discharged to a qualified wastewater treatment facility. Always obtain approval from local and Federal regulatory agencies prior to discarding this product into public sewers.

As your supplier, we have no control over your handling and use of this product. However, the intended use of this product as a remediation and/or surface washing agent may produce wastewater containing emulsified or dispersed hydrocarbons that may be classified as a hazardous waste and should be treated and disposed of accordingly.

Section 14 – Transportation Information

USDOT Freight Class 55 (Liquid Cleaning Compound, Non-Hazardous)
This product is not regulated by USDOT or Canadian TDG when shipped domestically by land.

North American Industry Classification System (NAICS) # 325613

U.S. ITC, Harmonized Tariff Schedule B Classification: 3402.90.30.00

Section 15 – Regulatory Information

This product is considered non-hazardous as defined by CERCLA, according to OSHA, Massachusetts Right to Know Law and California Prop 65.

Toxic Substances Control Act:	All components of this product are on the TSCA inventory or are exempt from TSCA Inventory requirements under 40 CFR 720.30.
CEPA – Domestic Substances List:	All substances contained in this product are listed on the Canadian Domestic Substances List (DSL) or not required to be listed.
Canadian CPR Compliance:	This product has been classified in accordance with the hazard criteria of the Canadian Controlled Products Regulations (CPR) and the SDS contains all the information required by the CPR
WHMIS Classification:	D2B Eye or skin irritant

Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with Federal, state or provincial and local laws.

Section 16 – Other Information

HMIS Rating	Health Hazard:	1 (Eye/Skin Irritant)
	Fire Hazard:	0
	Reactivity:	0
	Personal Protective Equipment:	Rubber gloves, safety glasses or face shield
NFPA Rating	Health:	1 (Eye/Skin Irritant)
	Flammability:	0
	Reactivity:	0
	Other Hazard:	None

BioSolve Pinkwater is on the US Environmental Protection Agency's NCP Product Schedule. This listing does NOT mean that EPA approves, recommends, licenses, certifies or authorizes the use of BioSolve Pinkwater on an oil discharge. This listing means only that data have been submitted to EPA as required by Subpart J of the National Contingency Plan, 40 CFR Section 300.915.

SDS Effective Date: May 12, 2016

The information contained herein is accurate to the best of our knowledge. The BioSolve Company makes no warranty of any kind, express or implied, concerning the safe use of this material in your process or application or in combination with other substances.

For more information, visit: www.biosolve.com

Safety Data Sheet Portland Cement

Section 1. Identification

GHS product identifier: Portland Cement

Chemical name: Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.

Other means of identification: Cement, ASTM Type I, II, III, V, Portland Limestone Cement, Plastic Cement, Hydraulic Cement, Oilwell Cement, Well Cement, Class G Cement, InterCem, EcoCemPLC, Type IL, CSA Type GU, GUb, GUL, MS, MH, MHL, HE, HEL, LH, LHL, HS

Relevant identified uses of the substance or mixture and uses advised against: Building materials, construction, a basic ingredient in concrete.

Supplier's details:
300 E. John Carpenter Freeway, Suite 1645
Irving, TX 75062
(972) 653-5500

Emergency telephone number (24 hours): **CHEMTREC: (800) 424-9300**

Section 2. Hazards Identification

Overexposure to portland cement can cause serious, potentially irreversible skin or eye damage in the form of chemical (caustic) burns, including third degree burns. The same serious injury can occur if wet or moist skin has prolonged contact exposure to dry portland cement.

OSHA/HCS status: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture:
SKIN SENSITIZATION – Category 1; H314
CARCINOGENICITY – Category 1A; H350
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) – Category 2; H335
SKIN CORROSION/IRRITATION – Category 1C; H314
SERIOUS EYE DAMAGE/EYE IRRITATION – Category 1; H318

GHS label elements

Hazard pictograms:



Signal word: Danger

Hazard statements:
Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause cancer.

Precautionary statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Use outdoors in a well ventilated area. Wash any exposed body parts thouroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection.Contaminated clothing must not be allowed out of the workplace.

Response: If exposed or concerned: Immediately get medical advice/attention if you feel unwell or irritation or rash occurs.If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.If inhaled: Remove person to fresh air and keep comfortable for breathing. If swallowed: Rinse mouth. Do not induce vomiting.

Storage: Restrict or control access to stockpile areas (store locked up). Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains cement without an effective procedure for assuring safety. Store in a well ventilated area. Keep container tightly closed.

Disposal: Dispose of contents/container in accordance with local/regional/national/international

regulations.

Hazards not otherwise classified (HNOC): None known

Supplemental Information: Respirable Crystalline Silica (RCS) may cause cancer. Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC and NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

Section 3. Composition/information on ingredients

Substance/mixture: Mixture
Chemical Name: Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.

CAS number/other identifiers

Ingredient name	%	CAS number
Portland Cement	100%	65997-15-1
The structure of Portland cement may contain the following in some concentration ranges:		
Calcium oxide	0-5	1305-78-8
Quartz	0-0.1	14808-60-7
Gypsum	4-9	13397-24-5
Limestone	0-5	1317-65-3
Magnesium oxide	0-4	1309-48-4
Gypsum, limestone and magnesium oxide are not classifiable as a hazard under Title 29 Code of Federal Regulations 1910.1200.		
Hexavalent chromium*	Trace	18450-29-9
***Hexavalent chromium is included due to dermal sensitivity associated with the component.**		

Any concentration shown as a range is to protect confidentiality or is due to process variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye Contact: Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician.

Inhalation: Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of portland cement requires immediate medical attention. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in a recovery position and get medical attention immediately. Maintain an open airway.

Skin Contact: Get medical attention immediately. Heavy exposure to portland cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes, and leather goods such as watchbands and belts. Quickly and gently blot or brush away excess portland cement. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH natural soap. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposure to wet cement, cement mixtures or liquids from wet cement. Burns should be treated as caustic burns. Portland cement causes skin burns with little warning. Discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure.

Ingestion: Get medical attention immediately. Call a poison center or physician. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING unless directed to do so by medical personnel. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small

quantities of water to drink. Have victim drink 60 to 240 mL (2 to 8 oz.) of water. Stop giving water if the exposed person feels sick as vomiting may be dangerous. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed potential acute health effects

Eye contact: Causes serious eye damage.
Inhalation: May cause respiratory irritation.
Skin contact: Causes severe burns. May cause an allergic skin reaction.
Ingestion: May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact: Adverse symptoms may include the following: pain, watering and redness.
Inhalation: Adverse symptoms may include the following: respiratory tract irritation and coughing.
Skin contact: Adverse symptoms may include the following: pain or irritation, redness and blistering may occur, skin burns, ulceration and necrosis may occur.
Ingestion: Adverse symptoms may include the following: stomach pains.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments: Not applicable.
Protection of first-aiders: No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media: Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media: Do not use water jet or water-based fire extinguishers.
Specific hazards arising from the chemical: No specific fire or explosion hazard.
Hazardous thermal decomposition Products: Decomposition products may include the following materials: carbon dioxide, carbon monoxide, sulfur oxides and metal oxide/oxides.
Special protective actions for fire-fighters: Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters: Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel: No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders: For personal protective clothing requirements, please see Section 8.
Environmental precautions: Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has entered the environment, including waterways, soil or air. Materials can enter waterways through drainage systems.

Methods and materials for containment and cleaning up

Small spill: Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of waste material by using a licensed waste disposal contractor.

Large spill: Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place dust in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Large spills to waterways may be hazardous due to alkalinity of the product. Dispose of waste material using a licensed waste disposal contractor. Note: see section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures: Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure by obtaining and following special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material and keep the container tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

Advice on general occupational hygiene: Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities: A key to using the product safely requires the user to recognize that portland cement reacts chemically with water to produce calcium hydroxide which can cause severe chemical burns. Every attempt should be made to avoid skin and eye contact with cement. Do not get portland cement inside boots, shoes or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are dusty or wet with cement mixtures. Launder/clean clothing and shoes before reuse. Do not enter a confined space that stores or contains portland cement unless appropriate procedures and protection are available. Portland cement can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

Section 8. Exposure controls/personal protection

Ingredient name	Exposure limits
Particulates not otherwise classified (CAS SEQ250)	**ACGIH TLV (United States, Canada)** TWA: 3 mg/m³. Form: Respirable particles TWA: 10 mg/m³. Form: Inhalable particles **OSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust **MSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 10 mg/m³. Form: Total dust
Portland Cement	**ACGIH TLV (United States and Canada)** TWA: 1 mg/m³. Form: Respirable dust **OSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust **MSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 10 mg/m³. Form: Total dust
Calcium oxide	**ACGIH TLV (United States and Canada)** TWA: 2 mg/m³ 8 hours **OSHA/MSHA PEL (United States)** TWA: 5 mg/m³ 8 hours.
Limestone	**ACGIH TLV (United States, Canada)** TWA: 3 mg/m³. Form: Respirable particles TWA: 10 mg/m³. Form: Inhalable particles **OSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 15 mg/m³. Form: Total dust **MSHA PEL (United States)** PEL: 5 mg/m³. Form: Respirable fraction PEL: 10 mg/m³. Form: Total dust
Magnesium oxide	**ACGIH TLV (United States and Canada)** TWA: 10 mg/m³ 8 hours. Form: Inhalable fraction **OSHA PEL (United States)** TWA: 15 mg/m³ 8 hours. Form: Total particulates
Calcium sulfate (gypsum)	**ACGIH TLV (United States, Canada)** TWA: 10 mg/m³ 8 hours. Form: Respirable fraction **OSHA PEL Z-1 (United States)** TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust
Crystalline Silica (Quartz) (CAS 14808-60-7)	**ACGIH TLV (United States)** TWA: 0.025 mg/m³. Form: Respirable fraction **OSHA PEL (United States)** TWA: 0.05 mg/m³. Form: Respirable **MSHA PEL (United States)** TWA: 10/(%SiO2 + 2) in mg/m3 **Provincial Exposure Limits (Canada, various)** ▪ **Alberta (OHS Code)** 0.025 mg/m³ 8 hour TWA ▪ **British Columbia (WorkSafeBC OHS Regulation)** 0.025 mg/m³ 8 hour TWA ▪ **British Columbia (Health, Safety & Reclamation Code, Mines Act)** 0.1 mg/m³ 8 hour TWA ▪ **Manitoba (Workplace Safety and Health Regulation)** 0.025 mg/m³ 8 hour TWA ▪ **New Brunswick** 0.025 mg/m³ 8 hour TWA ▪ **Newfoundland** 0.025 mg/m³ 8 hour TWA ▪ **Nova Scotia** 0.025 mg/m³ 8 hour TWA ▪ **Ontario (O. Reg 490/09; and O. Reg. 833)** 0.1 mg/m³ 8 hour TWA ▪ **Prince Edward Island**

	0.025 mg/m³ 8 hour TWA ▪ **Quebec (Regulation Respecting OHS, Chapter S-2.1, r. 13)** 0.1 mg/m³ 8 hour TWA ▪ **Saskatchewan (OHS Regulations)** 0.05 mg/m³ 8 hour TWA

Appropriate engineering controls: Use only with adequate ventilation. If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Exposure guidelines: OSHA PELs, MSHA PELs, Canadian Provincial OELs, and ACGIH TLVs are 8-hr TWA values. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Terms including “Particulates Not Otherwise Classified,” “Particulates Not Otherwise Regulated,” Particulates Not Otherwise Specified,” and “Inert or Nuisance Due” are often used interchangeably; however, the user should review each agency’s terminology for differences in meanings.

Individual protection measures

Hygiene measures: Clean water should always be readily available for skin and (emergency) eye washing. Periodically wash areas contacted by portland cement with a pH neutral soap and clean, uncontaminated water. If clothing becomes saturated with portland cement, garments should be removed and replaced with clean, dry clothing.

Eye/face protection: To prevent eye contact, wear safety glasses with side shields, safety goggles or face shields when handling dust or wet cement. Wearing contact lenses when working with cement is not recommended.

Skin protection

Hand protection: Use impervious, waterproof, abrasion and alkali-resistant gloves. Do not rely on barrier creams in place of impervious gloves. Do not get portland cement inside gloves.

Body protection: Use impervious, waterproof, abrasion and alkali-resistant boots and protective long-sleeved and long-legged clothing to protect the skin from contact with wet portland cement. To reduce foot and ankle exposure, wear impervious boots that are high enough to prevent portland cement from getting inside them. Do not get portland cement inside boots, shoes, or gloves. Remove clothing and protective equipment that becomes saturated with cement and immediately wash exposed areas of the body.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved. .

Respiratory protection: Use properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and assigned protection factor of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical State:	Solid. [Powder]	**Lower and Upper explosive flammable limits**	Not applicable
Color:	Gray or white	**Vapor pressure:**	Not applicable
Odor:	Odorless	**Vapor density:**	Not applicable
Odor threshold:	Not available	**Relative density:**	2.3 to 3.1
pH:	>11.5 [Conc. (% w/w): 1%]	**Solubility:**	Slightly soluble in water
Melting point:	Not available	**Solubility in water:**	0.1 to 1%
Boiling point:	>1000°C (>1832°F)	**Partition coefficient: n-octanol/water:**	Not applicable
Flash point:	Not flammable. Not combustible	**Auto-ignition temperature:**	Not applicable
Burning time:	Not available	**Decomposition temperature:**	Not available
Burning rate:	Not available	**SADT:**	Not available
Evaporation Rate:	Not applicable	**Viscosity:**	Not applicable
Flammability (solid, gas):	Not applicable		

Section 10. Stability and reactivity

Reactivity: Reacts slowly with water forming hydrated compounds, releasing heat and producing a strong alkaline solution until reaction is substantially complete.

Chemical Stability: The product is stable.

Possibility of hazardous reactions: Under normal circumstances of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials, acids, aluminum and ammonium salt. Portland cement is highly alkaline and will react with acids to produce a violent, heat-generating reaction. Toxic gases or vapors may be given off depending on the acid involved. Reacts with acids, aluminum metals and ammonium salts. Aluminum powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas. Limestone ignites on contact with fluorine and is incompatible with acids, alum, ammonium salts, and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silicates dissolve readily in hydrofluoric acid producing a corrosive gas-silicon tetrafluoride.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity: Portland Cement LD50/LC50 = Not available

Irritation/Corrosion: **Skin:** May cause skin irritation. May cause serious burns in the presence of moisture.
Eyes: Causes serious eye damage. May cause burns in the presence of moisture.
Respiratory: May cause respiratory tract irritation.

Sensitization: May cause sensitization due to the potential presence of trace amounts of hexavalent chromium.

Mutagenicity: There are no data available.

Carcinogenicity:
Classification below:

Product/ingredient name	OSHA	IARC	ACGIH	NTP
Cement, portland, chemicals	-	-	A4	-
Crystalline Silica (Quartz) (CAS 14808-60-7)	Listed	1	A2	Known to be a human carcinogen.

Reproductive toxicity: There are no data available.

Teratogenicity: There are no data available.

Specific target organ toxicity (single exposure)

Name	Category	Route of Exposure	Target Organs
Calcium oxide	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation
Cement, portland, chemicals	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) (CAS 14808-60-7)	Category 1	Inhalation	Respiratory tract and kidneys

Aspiration hazard: There are no data available.

Information on the likely routes of exposure

Potential acute health effects:
Eye contact: Causes serious eye damage.
Inhalation: May cause respiratory irritation.
Skin contact: Causes severe burns. May cause an allergic skin reaction.
Ingestion: May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics:
Eye contact: Adverse symptoms may include the following: pain, watering, redness.
Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing
Skin contact: Adverse symptoms may include the following: pain or irritation, redness, blistering may occur, skin burns, ulcerations and necrosis may occur
Ingestion: Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure:
Short term exposure
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Long term exposure
Potential immediate effects: No known significant effects or critical hazards.
Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects:
General: Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. If sensitized to hexavalent chromium, a severe allergic dermal reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: Portland cement is not classifiable as a human carcinogen. Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity. Excessive exposure to crystalline silica can cause silicosis, a non-cancerous lung disease.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity:
Acute toxicity estimates: There are no data available.

Section 12. Ecological Information

Toxicity

Product/ingredient name	Result	Species	Exposure
Calcium oxide	Chronic NOEC 100 mg/L Fresh water	Fish-Oreochromis niloticus-Juvenile (Fledgling, Hatchling, Weanling)	46 days

Persistence and degradability: There are not data available.
Bioaccumulative potential: There are not data available.
Mobility in soil: Soil/water partition coefficient (Koc): Not available.
Other adverse effects: No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods:
The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Untreated waste should not be released to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe manner. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners

may retain some product residues. Avoid dispersal of spilled material and runoff, and contact with soil, waterways, drains and sewers.

Section 14. Transportation information

	DOT Classification	IMDG	IATA
UN number	Not regulated	Not regulated	Not regulated
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	None	None	None
Canada TDG	-	-	-
Additional information	-	-	-

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory Information

TSCA 6 final risk management: Chromium, ion (Cr6+)
United States inventory (TSCA 8b): Cements are considered to be statutory mixtures under TSCA. CAS 65997-15-1 is included on the TSCA inventory.
CERCLA: This product is not listed as a CERCLA substance
Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs) – Not listed
Clean Air Act Section 602: Class I Substances - Not listed
Clean Air Act Section 602: Class II Substances - Not listed
DEA List I Chemicals: (Precursor Chemicals) – Not listed
DEA List II Chemicals: (Essential Chemicals) – Not listed
Canada NSNR Status – Listed on DSL or exempt

SARA 311/312

Classification: Immediate (acute) health hazard
Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Calcium oxide	0-5	No	No	No	Yes	No
Quartz	>0.1	No	No	No	No	Yes
Chromium, ion (Cr6+)	<0.1	No	No	No	Yes	Yes

SARA 313

	Product name	CAS number	%
Form R-Report requirements	Chromium, ion (Cr6+)	8540-29-9	<0.1

State regulations

Massachusetts: The following components are listed: cement, portland, chemicals, limestone

New York:	None of the components are listed.
New Jersey:	The following components are listed: cement, portland, chemicals, gypsum, limestone
Pennsylvania:	The following components are listed: cement, portland, chemicals, gypsum, limestone

California Prop. 65

WARNING: This product contains crystalline silica and chemicals (trace metals) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the above warning in the absence of definitive testing to prove the defined risks do not exist.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Quartz	Yes	No	No	No
Chromium, ion (Cr6+)	Yes	Yes	0.001µg/day (inhalation)	8.2 micrograms/day (ingestion)

International regulations

International lists: **Canadian Domestic Substances List (DSL):** Portland cement is included on the DSL.
Mexico Inventory (INSQ): All components are listed or exempted.

WHMIS Classification: D2A “Materials Causing Other Toxic Effects”



Section 16. Other Information

Date of issue: 01/01/2022
Replaces: 07/01/2018
Revised Section(s): Section 8, 11, 14, 15

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of portland cement as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with portland cement to produce portland cement products. Users should review other relevant material safety data sheets before working with this portland cement or working on portland cement products, for example, portland cement concrete.

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STONEY CREEK SLAG CEMENT PLANT

ENVIRONMENTAL PRODUCT DECLARATION



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BUILD YOUR AMBITION

ABOUT THIS EPD

This is a cradle-to-gate environmental product declaration for slag cement as produced at Amrize Canada's Stoney Creek, ON plant. The Life Cycle Assessment (LCA) was prepared according to ISO 14025:2006, ISO 21930:2017 (the core PCR) and the NSF product category rules for slag cement (subcategory PCR) and ASTM International's EPD program operator rules. This EPD is intended for business-to-business (B-to-B) audiences.

GENERAL SUMMARY

EPD Commissioner and Owner	**Amrize Canada Inc.** 6509 Airport Road Mississauga, Ontario L4V 1S7 www.amrize.com Amrize provided both LCI and meta-data for slag granulation and slag cement manufacturing for the reference year 2020. The owner of the declaration is liable for the underlying information and evidence. *For any explanatory material, regarding this EPD, please contact Marie-Andree Guindon (marie-andree.guindon@amrize.com).*
Product Group and Name	Slag Cement, UN CPC 3744, UNSPSC Code 30111601
Product Definition	**Slag Cement**: Slag cement, UNSD CPC 3744 and UNSPSC Code 30111601, is defined as granulated blast-furnace slag that has been ground to cement fineness, with or without additions, and is a hydraulic cement [2].
Product Category Rules (PCR)	NSF International, Product Category Rules for Preparing an Environmental Product Declaration for Slag Cement, v2.0, December 2020 [2].
Date of Issue & Validity Period	26/04/2023 – 5 years
Declared Unit	1 metric tonne of slag cement

EPD AND PROJECT REPORT INFORMATION

Program Operator	ASTM International
Declaration Number	EPD 455
Declaration Type	Cradle-to-gate (modules A1 to A3). Facility and product-specific.
Applicable Countries	Canada and United States
Product Applicability	Slag cement is a supplementary cementitious material (SCM) typically used in concretes and mortars to replace a portion of the portland cement in, and augment the performance of, concrete and mortars.
Content of the Declaration	This declaration follows Section 9; Content of an EPD, NSF International, Product Category Rules for Preparing an Environmental Product Declaration for Slag Cement, v2.0, December 2020 [2].
This EPD was independently verified by ASTM in accordance with ISO 14025 and the reference PCR: Internal External X	Tim Brooke ASTM International 100 Barr Harbor Drive PO Box C700 West Conshohocken PA 19428-2959, USA cert@astm.org
LCA report and EPD Prepared by: Athena Sustainable Materials Institute	James Salazar and Hannah Renaud Athena Sustainable Materials Institute 280 Albert Street, Suite 404 Ottawa, Ontario, Canada K1P 5G8 info@athenasmi.org www.athenasmi.org
This EPD project report is independently verified by in accordance with ISO 14025, ISO 14040/44, and the reference PCR:	Thomas P. Gloria, Ph. D. Industrial Ecology Consultants 35 Bracebridge Rd. Newton, MA

PCR INFORMATION

Program Operator	NSF International
Reference PCR	Product Category Rules for Preparing an Environmental Product Declaration for Slag Cement, v2.0, December 2020 [2].
PCR review was conducted by:	Thomas P. Gloria, PhD (Chair), Industrial Ecology Consultants, t.gloria@industrial-ecology.com Mr. Jack Geibig, EcoForm Mr. Bill Stough, Sustainable Research Group

AMRIZE & PRODUCTION FACILITY

Facility Name:	Amrize Canada, Stoney Creek Slag Cement Plant 360 Jones Rd, Stoney Creek, ON L8E 5N2

PRODUCT DESCRIPTION

Slag cement, UN CPC 3744, is defined in ASTM C125 as granulated blast-furnace slag that has been ground to cement fineness, with or without additions, and that is a hydraulic cement [2]. Slag cement is a supplementary cementitious material (SCM). Iron blast furnace slag (BFS) is a waste material of pig iron production and as such is categorized as a "recovered material" [2]. To transform iron BFS, so it can be used as a SCM in concrete and mortars, it is first rapidly quenched with water to form granules known as Granulated Blast Furnace Slag (GBFS). It then undergoes dewatering, crushing of oversized material only (if applicable), and storage at the granulating facilities. GBFS is then shipped to the grinding facilities where it undergoes dewatering/drying (if applicable), iron removal from slag granules (if applicable), crushing (if applicable), grinding, and packaging (if applicable). The slag cement is then stored onsite.

PRODUCTS AND STANDARDS

Inputs	Quantity (%)
Slag Granules	99.9%
Grinding Aids	<0.1%%
Total	100%

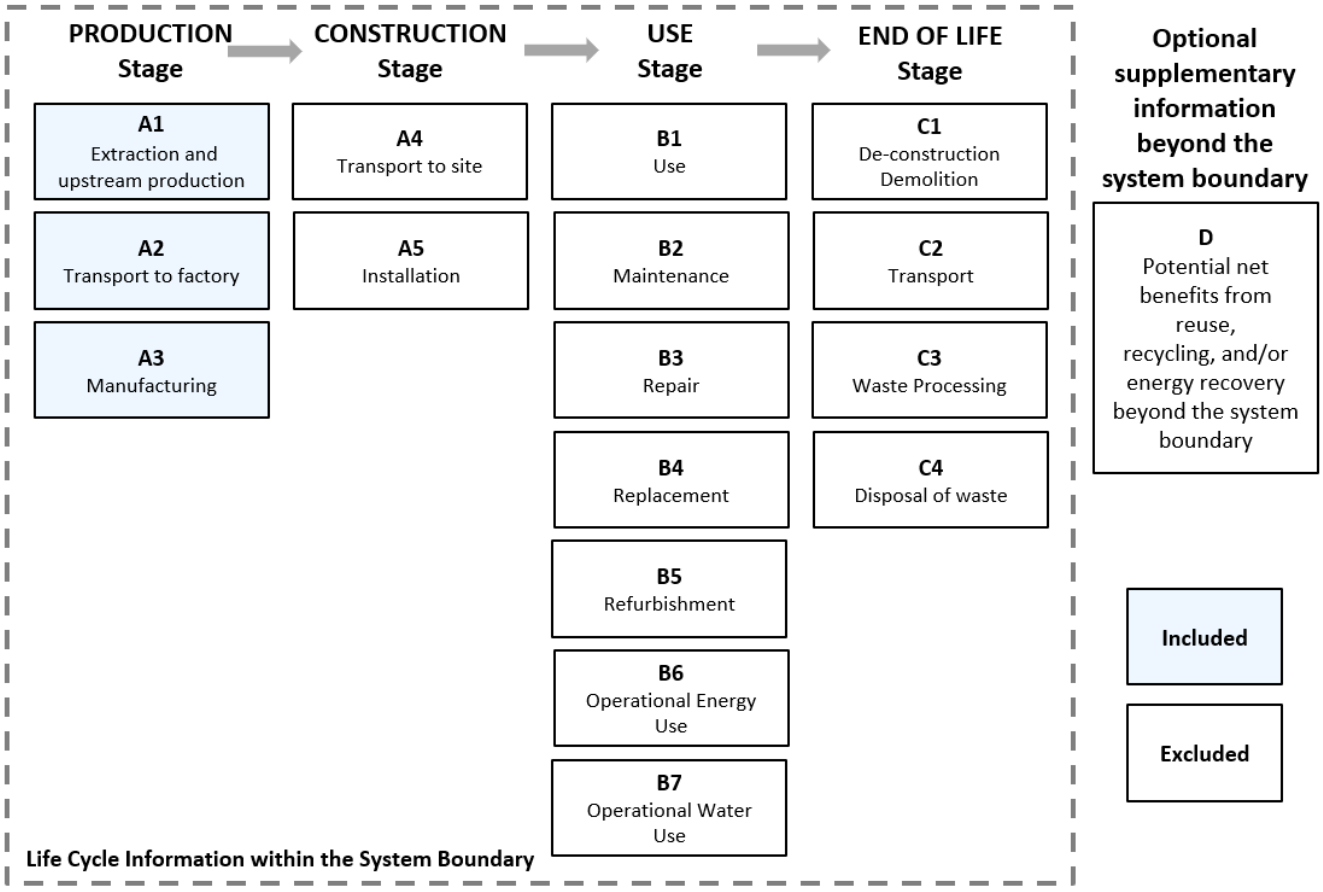
Applicable Standards:
ASTM C989/C989M, Standard Specification for Slag Cement for Use in Concrete and Mortars AASHTO M 302, Standard Specification for Slag Cement for Use in Concrete and Mortars CSA A3001, Cementitious Materials for Use in Concrete
ASTM C125 Standard Terminology Relating to Concrete and Concrete Aggregates

DECLARED UNIT

The declared unit is one metric tonne (1,000kg) of slag cement.

SYSTEM BOUNDARY

This EPD is a cradle-to-gate EPD covering the production stage (A1-A3) as depicted in the figure below. The production stage includes extraction and recovery of raw materials (cradle) through the manufacture of slag cement ready for shipment (gate). Downstream activity stages - Construction, Use, End-of-life, and Optional supplementary information beyond the system boundary - are excluded from the system boundary.



Items *excluded* from the system boundary include:

- Production, manufacture, and construction of manufacturing capital goods and infrastructure
- Production and manufacture of production equipment, delivery vehicles, and laboratory equipment
- Personnel-related activities (travel, furniture, and office supplies)
- Energy and water use related to company management and sales activities that may be located either within the factory site or at another location

Cut-off Criteria

The cut-off criteria as per NSF PCR, Section 7.1.8 [2] and ISO 21930, 7.1.8 [3] were followed. Per ISO 21930, 7.1.8 [3], all input/output data required were collected and included in the LCI modelling. No substances with hazardous and toxic properties that pose a concern for human health and/or the environment were identified in the framework of this EPD. Any plant specific data gaps for the reference year 2020 e.g. amount of lubricants and refractory were filled in with industry data (secondary data).

Data Collection

Gate-to-gate input/output flow data were collected for the following processes for the reference year 2020:

- Stoney Creek Slag Cement Manufacture.

ALLOCATION RULES

Allocation follows the requirements and guidance of ISO 14044 Clause 4.3.4 [5], NSF PCR [2], and ISO 21930 section 7.2 [3]. The sub-category PCR recognizes iron blast furnace slag as a recovered material and thus the environmental impacts allocated to raw slag are limited to the treatment and transportation required to use as a material input. “Mass” was used as the physical parameter for allocating flows between slag cement and other co-products to calculate the input energy flows (e.g., electricity, natural gas, diesel), packaging materials, freshwater consumption, process emissions to air, water and land and waste flows (if applicable). LCI modeling did consider the plant specific manufacturing yield.

DATA QUALITY REQUIREMENTS AND ASSESSMENT

Data Quality Requirements	Description
Technology Coverage	Data represents the prevailing technology in use at the Stoney Creek facility. Whenever available, for all upstream and core material and processes, North American typical or average industry LCI datasets were utilized. Technological representativeness is characterized as “high”.
Geographic Coverage	The geographic region considered is Canada. The electricity was modeled based on the Ontario provincial grid mix. Geographical representativeness is characterized as "high".
Time Coverage	Activity (primary) data are representative of 2020 calendar year (12 months). -Stoney Creek slag granulation and manufacturing - In-bound/out-bound transportation data - primary data collected for granulation and slag cement manufacturing plant. - Generic data: the most appropriate LCI datasets were used as found in the ecoinvent v.3.6 database for US and global, December 2020 and US LCI Database. Temporal representativeness is characterized as “high”.
Completeness	All relevant, specific processes, including inputs (raw materials, energy and ancillary materials) and outputs (emissions and production volume) were considered and modeled to complete production profile for Stoney Creek slag cement.
Consistency	All relevant, specific processes, including inputs (raw materials, energy, and ancillary materials) and outputs (emissions and production volume) were considered and modeled to complete production profile for Stoney Creek slag cement. The relevant background materials and processes were taken from the US LCI Database, ecoinvent v 3.5 LCI database for US, and modeled in Athena LCA Software (2022). The completeness of the cradle-to-gate process chain in terms of process steps is rigorously assessed across product system.
Reproducibility	Internal reproducibility is possible since the data and the models are stored and available in Stoney Creek LCI database developed in Athena LCA Software, 2022. A high level of transparency is provided throughout the report as the LCI profile is presented for each of the declared products as well as major upstream inputs. Key primary (manufacturer specific) and secondary (generic) LCI data sources are also summarized in the background report. External reproducibility is not possible as the background report is confidential.
Transparency	Activity and LCI datasets are disclosed in the project report, including all data sources.

LIFE CYCLE IMPACT ASSESSMENT RESULTS: STONEY CREEK, ON SLAG CEMENT

This section summarizes the product stage life cycle impact assessment (LCIA) results including resource use and waste generated metrics based on the cradle-to-gate life cycle inventory inputs and outputs analysis. The results are calculated based on 1 metric tonne of slag cement as produced at the Stoney creek, ON plant. It should be noted that LCIA results are relative expressions and do not predict impacts on category endpoints, the exceeding of thresholds, safety margins or risks [4], [5]. Further, a number of LCA impact categories and inventory items are still emerging or under development and can have high levels of uncertainty that preclude international acceptance pending further development. Use caution when interpreting results for these categories – identified with an "*" [2].

EPDs based on cradle-to-gate and cradle-to-gate with options information modules shall not be compared. Further, EPDs based on a declared unit shall not be used for comparisons [2]. Environmental declarations from different programs may not be comparable [7]. EPDs are comparable only if they comply with ISO 21930, use the same, subcategory PCR where applicable, include all relevant information modules and are based on equivalent scenarios with respect to the context of construction works [3].

Production stage EPD Results: Stoney Creek, ON – per Metric Tonne

Impact category and inventory indicators	Unit	A1 Extraction and Upstream Production	A2 Transportation to Factory	A3 Manufacturing	A1-A3 Total
Global warming potential, GWP 100, AR5	kg CO_2 eq	**1.80**	**8.98**	**38.74**	**49.52**
Ozone depletion potential, ODP	kg CFC-11 eq	**2.91E-07**	**3.53E-10**	**1.29E-06**	**1.58E-06**
Smog formation potential, SFP	kg O_3 eq	**0.19**	**4.41**	**1.00**	**5.60**
Acidification potential, AP	kg SO_2 eq	**0.01**	**0.16**	**0.27**	**0.44**
Eutrophication potential, EP	kg N eq	**2.91E-03**	**0.01**	**0.03**	**0.04**
Abiotic depletion potential for non-fossil mineral resources, ADP elements*	kg Sb eq	**1.70E-06**	**0**	**5.78E-05**	**5.95E-05**
Abiotic depletion potential for fossil resources, ADP fossil	MJ LHV	**3.11**	**119.45**	**578.80**	**701.36**
Renewable primary resources used as an energy carrier (fuel), RPR_E*	MJ LHV	**3.01**	**119.45**	**578.80**	**701.36**
Renewable primary resources with energy content used as material, RPR_M*	MJ LHV	**0**	**0**	**0**	**0**
Non-renewable primary resources used as an energy carrier (fuel), $NRPR_E$*	MJ LHV	**28.06**	**126.64**	**1652.72**	**1807.42**
Non-renewable primary resources with energy content used as material, $NRPR_M$*	MJ LHV	**0**	**0**	**0**	**0**
Secondary materials, SM*	kg	**0**	**0**	**0**	**0**
Renewable secondary fuels, RSF*	MJ LHV	**0**	**0**	**0**	**0**
Non-renewable secondary fuels, NRSF*	MJ LHV	**15.73**	**0**	**0**	**15.73**
Recovered energy, RE*	MJ LHV	**0**	**0**	**0**	**0**
Consumption of freshwater, FW	m^3	**0**	**0**	**0**	**0**
Hazardous waste disposed, HWD*	kg	**2.91E-03**	**0**	**0**	**2.91E-03**
Non-hazardous waste disposed, NHWD*	kg	**3.01E-05**	**0**	**0**	**3.01E-05**
High-level radioactive waste, conditioned, to final repository, HLRW*	m^3	**6.91E-09**	**0**	**4.01E-06**	**4.01E-06**
Intermediate- and low-level radioactive waste, conditioned, to final repository, ILLRW*	m^3	**1.10E-07**	**0**	**2.85E-06**	**2.96E-06**
Components for re-use, CRU *	kg	**0**	**0**	**0**	**0**
Materials for recycling, MR*	kg	**0**	**0**	**0**	**0**
Materials for energy recovery, MER*	kg	**0**	**0**	**0**	**0**
Recovered energy exported from the product system, EE*	MJ LHV	**0**	**0**	**0**	**0**

Table Notes:
1) (x) Not all LCA datasets for upstream materials include these impact incomplete.
2) (*) Use caution when interpreting results for these categories.

LCA INTERPRETATION

The Manufacturing module (A3) drives most of the potential environmental impacts. Manufacturing impacts are primarily driven by energy use (electricity and thermal fuels) used during the drying and grinding of slag granules. Raw material extraction (A1) is a minor contributor to the overall EPD results. Transportation (A2) contributes significantly to overall smog formation and acidification impacts (>10%) but otherwise is a minor contributor to the overall environmental footprint.

LIMITATIONS AND DISCLAIMER

Environmental declarations from different programs (ISO 14025) may not be comparable. Comparison of the environmental performance of products using EPD or ED information shall be based on the product's use and impacts at the building or construction works level, and therefore EPDs and EDs may not be used for comparability purposes when not considering the whole building life cycle. EPD and ED comparability is only possible when all stages of a life cycle have been considered. However, variations and deviations are possible. Example of variations: Different LCA software and background LCI datasets may lead to differences in results upstream or downstream of the life cycle stages declared.

The environmental impact results of products in this document are based on a declared unit and therefore do not provide sufficient information to establish comparisons. The results shall not be used for comparisons without knowledge of how the physical properties of the product impact the precise function at the construction level. The environmental impact results shall be converted to a functional unit basis before any comparison is attempted.

Amrize Canada Inc. believes the information contained in, and used in the creation of, this EPD is accurate, however Amrize Canada Inc. makes no guarantees with respect to such accuracy and assumes no liability in connection with the use of the information contained herein, which is not intended to be and should not be construed as legal advice or ensuring compliance with any federal, provincial, state or local laws or regulations. Further and for certainty, Amrize Canada Inc. assumes no liability whatsoever in respect of the calculations presented herein or in connection with the tools, software or processes used to produce such calculations. Any party using this EPD or the product for which it is prepared should review all laws, rules or regulations applicable to such party and/or product, and each such party is solely responsible for its reliance on, decisions made based on, or actions taken as a result of the use of the information in this EPD.

NO REPRESENTATIONS OR WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE MADE, AND ALL SUCH WARRANTIES ARE HEREBY EXPRESSLY DISCLAIMED.

REFERENCES

1. ASTM C989/ C989M, Standard Specification for Slag Cement for Use in Concrete and Mortars.
2. NSF International, Product Category Rules for Preparing an Environmental Product Declaration for Slag Cement, v2.0, December 2020.
3. ISO 21930:2017 Sustainability in buildings and civil engineering works - Core rules for environmental product declarations of construction products and services.
4. ISO 14040:2006/Amd 1:2020 Environmental management - Life cycle assessment - Principles and framework.
5. ISO 14044:2006/Amd1:2017/Amd2:2020 Environmental management - Life cycle assessment - Requirements and guidelines.
6. NSF International, Product Category Rule Environmental Product Declarations, PCR for Concrete, February 2020.
7. ISO 14025:2006 Environmental labeling and declarations - Type III environmental declarations - Principles and procedures.
8. ISO 14021:2016 Environmental labels and declarations -- Self-declared environmental claims (Type II environmental labelling).
9. ASTM. (2020). General Program Instructions, Version: 8.0. ASTM Program Operator for Product Category Rules (PCR) and Environmental Product Declarations (EPDs).
10. PRé 2019.SimaPro LCA Software v9.2.0.2, 2022. https://simapro.com/, accessed 08-2020.
11. ACLCA 2019, Guidance to Calculating Non-LCIA Inventory Metrics in Accordance with ISO 21930:2017. The American Centre for Life Cycle Assessment. May, 2019. https://aclca.org/aclca-iso-21930-guidance/, accessed 02-2022.

APPENDIX C

Silica Exposure Control Management Program

SILICA EXPOSURE CONTROL
MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY DIRECTOR	:	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	:	**01/2022**
REVIEW DATE	:	**04/2026**
REVISION NUMBER	:	**4**

TABLE OF CONTENTS

1. PURPOSE 1

2. DEFINITIONS 1

3. SCOPE AND APPLICABILITY 2

4. SITE-SPECIFIC HAZARDS 2

5. TRAINING REQUIREMENTS 3

6. COMPETENT PERSON REQUIREMENTS & RESPONSIBILITIES 3

7. SAFE WORK PRACTICES 3
   7.1. EXPOSURE ASSESSMENT 3
   7.2. COMMUNICATION OF HAZARDS 4
   7.3. CONTROL METHODS 4
   7.4. PERSONAL PROTECTIVE EQUIPMENT & RESPIRATORY PROTECTION 5

8. MEDICAL SURVEILLANCE REQUIREMENTS 6

APPENDIX

Appendix A — 29 CFR 1926.1153 Table 1—Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica

1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux"), have implemented this Program to establish controls for occupational respirable crystalline silica exposure. The Written Silica Exposure Control Program (Program) applies to Roux personnel who are potentially exposed to airborne concentrations of respirable crystalline silica at or above regulatory and industry action levels and exposure limits. Potential for respirable crystalline silica exposure may result from field operations, work activities, or proximity to work locations where airborne silica is being emitted. This program also applies to subcontractors, superintendents, foremen, or safety personnel who may be responsible for overseeing Roux's subcontractor operations and have the potential to expose Roux personnel to airborne concentrations of silica.

Occupational Safety and Health Administration (OSHA) 29 CFR 1926.1153: *Respirable Crystalline Silica* (Construction Industry), 29 CFR 1910.1053: *Respirable Crystalline Silica* (General Industry) and Cal/OSHA Title 8 §1532.3 Occupational Exposures to Respirable Crystalline Silica, contain regulatory requirements specific to occupational respirable crystalline silica exposure. This Written Silica Exposure Control Program is developed in accordance with the requirements in 29 CFR 1926.1153(g).

2. DEFINITIONS

Crystalline silica is a common mineral found in the earth's crust. Materials like sand, stone, concrete, and mortar contain crystalline silica. The following definitions provide additional information regarding respirable crystalline silica exposure and were adapted from OSHA 29 CFR 1926.1153:

- *Respirable Crystalline Silica*: Quartz, cristobalite, and/or tridymite silica contained in airborne particles are determined to be respirable by a sampling device designed to meet the characteristics for respirable-particle-size-selective samplers specified in the International Organization for Standardization (ISO) 7708:1995: Air Quality—Particle Size Fraction Definitions for Health-Related Sampling.
- *Employee Exposure*: The exposure to airborne respirable crystalline silica that would occur if an employee were not using respiratory protection or engineering controls. Activities such as abrasive blasting with sand; sawing brick or concrete; sanding or drilling into concrete walls; grinding mortar; manufacturing brick, concrete blocks, stone countertops, or ceramic products; and cutting or crushing stone result in worker exposure to respirable crystalline silica dust. Industrial sand used in certain operations, such as foundry work and hydraulic fracturing (fracking), is also a source of respirable crystalline silica exposure. Workers who inhale these very small crystalline silica particles are at increased risk of developing serious silica-related diseases, including:
    - Silicosis, an incurable lung disease that can lead to disability and death;
    - Lung cancer;
    - Chronic obstructive pulmonary disease (COPD); and
    - Kidney disease.
- *Action Level*: A concentration of airborne respirable crystalline silica of 25 micrograms per cubic meter (µg/m^3), calculated as an 8-hour Time-Weighted Average (TWA). The employer shall assess the exposure of workers who have the potential for respirable crystalline silica exposure at or above the action level.
- *Permissible Exposure Limit (PEL)*: A concentration of airborne respirable crystalline silica of 50 µg/m^3, calculated as an 8-hour Time-Weighted Average (TWA).

3. SCOPE AND APPLICABILITY

The practices and procedures described in this Program include:

- Job tasks in the workplace involving potential exposure to respirable crystalline silica;
- Engineering controls, work practices, and respiratory protection are used to limit employee exposure to respirable crystalline silica;
- Housekeeping measures used to limit employee exposure to respirable crystalline silica;
- Administrative controls used to restrict access to work areas, when necessary, to minimize the number of employees exposed to respirable crystalline silica; and
- Employee training and awareness.

4. SITE-SPECIFIC HAZARDS

This Program describes the site-specific hazards associated with projects involving potential exposure to airborne concentrations of respirable crystalline silica. These work tasks include, but are not limited to:

- Use of stationary masonry saws used to cut concrete, tile, concrete masonry block, sheetrock, gypsum fiber roof board, or any other product containing quartz.
- Handheld power saws used to cut concrete, asphalt, concrete masonry block, sheetrock, gypsum fiber roof board, or any other product containing quartz.
- Walk-behind saws used to cut concrete or asphalt.
- Rig-mounted or free-standing core saws or drills (including impact and rotary hammer drills) used to penetrate the concrete, concrete masonry block, sheetrock, gypsum fiber roof board, or any other structural component or product containing quartz.
- Jackhammers and handheld powered chipping tools used to demolish or modify concrete, concrete masonry block, or any other structural component or product containing quartz.
- Vehicle-mounted hammers or chipping tools are used to demolish concrete, concrete masonry block, or any other structural component or product containing quartz.
- Handheld grinders or cut-off wheels used for mortar removal or cutting/grinding of concrete, concrete masonry block, sheetrock, gypsum fiber roof board, or any other structural component or product containing quartz.
- Walk-behind milling machines or bead blasters used for surfacing activities on concrete, concrete masonry block, asphalt, or any other product containing quartz.
- Installation or demolition of sheetrock, including mudding, taping, and texturizing activities with quartz-containing materials.
- Hand or power tool sanding of painted surfaces. Current latex paint products contain quartz, and the painted substrate (sheetrock, concrete masonry block, concrete) contains quartz.
- Drivable asphalt milling machines used to mill asphalt roadways or walkways.
- Ball mills or crushing equipment used to size products containing quartz.
- All housekeeping operations associated with the activities described above.

Roux employees who work in proximity to operations with the potential for generating airborne respirable crystalline silica must be aware of safe work practices and take all necessary precautions to avoid and minimize exposure.

5. TRAINING REQUIREMENTS

Per OSHA 29 CFR 1926.1153(i)(2), Roux employees who are potentially exposed to airborne concentrations of respirable crystalline silica will be provided training to demonstrate knowledge and understanding of the following:

- Health hazards associated with exposure to respirable crystalline silica;
- Specific tasks in the field or workplace that could result in exposure to respirable crystalline silica;
- Specific engineering controls, work practices, and respiratory protection requirements to mitigate potential respirable crystalline silica exposure;
- The contents of 29 CFR 1926.1153; and
- The identity of the competent person.

Each employee will have access to safety data sheets (as applicable) and will be provided information on the health hazards associated with respirable crystalline silica exposure, including cancer, lung, immune system, and kidney effects. In addition, Roux employees will be provided training and information regarding specific work activities identified in this Program that may result in respirable crystalline silica exposure. Employee training will provide a discussion of respirable crystalline silica hazards and exposure assessment of anticipated job tasks. The implementation of air monitoring, specific engineering and/or work practice control measures, personal protective equipment (PPE) including respiratory protection, and medical surveillance will be performed per *29 CFR 1926.1153 Table 1—Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica* requirements. Please refer to Appendix A for OSHA Table 1 control measures. Employee training will also include the identification of a competent person for respirable crystalline silica exposure assessment and the determination of control methods.

6. COMPETENT PERSON REQUIREMENTS & RESPONSIBILITIES

Roux shall identify a Competent Person to inspect and oversee all activities with potential airborne respirable crystalline silica exposure. Subcontractors working on projects within the scope of this Program shall appoint a Competent Person capable of executing the duties described herein. The Competent Person must have training in the inspection of work areas and equipment and in the determination of safe working conditions. This person shall have a working knowledge of the 1926.1153 standards, shall be capable of identifying airborne silica hazards, shall determine the need for initial and additional exposure monitoring, shall recommend and implement engineering and work practice controls, shall establish levels of PPE, and shall have the authority to take action to eliminate hazards and correct incidences of noncompliance.

7. SAFE WORK PRACTICES

The requirements of this section are to be followed by Roux employees and other on-site personnel who may be exposed to airborne concentrations of respirable crystalline silica at or above the regulatory limits.

7.1. EXPOSURE ASSESSMENT

Roux will either comply with and implement all controls required by *29 CFR 1926.1153 Table 1—Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica* **or** conduct an initial exposure assessment in accordance with 29 CFR 1926.1153(d)(2). An exposure assessment is not necessary where it can

be demonstrated that engineering controls used in Table 1 are effective at maintaining potential respirable crystalline silica exposure well below regulatory limits:

- An exposure assessment is required when employees may be exposed to airborne silica at or above the action level in order to determine the extent to which employees are exposed and the appropriate exposure controls required.
- An initial determination of exposure shall be made at the beginning of operations. The determination shall consist of the collection of personal air samples representative of a typical full shift, including at least one sample for each similar exposure group in each work area, either for each shift or for the shift with the highest potential exposure level.
- During the initial exposure assessment, personnel shall be protected by respiratory protection as specified in *29 CFR 1926.1153 Table 1—Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica* until workplace airborne concentrations are determined.
- During the initial exposure assessment and all phases of work, personnel shall be provided with protective clothing and equipment, hygiene facilities, and training as applicable.
- Whenever a change in equipment, process, controls, or personnel occurs or a new task has been initiated, an additional exposure assessment is required.
- When an assessment determines that exposure has occurred above the action level, but below the PEL, additional monitoring shall be required at least every 6 months, additional monitoring shall continue until such time that the monitoring results fall below the action level on two separate occasions at least 7 days apart.
- When monitoring yields results above the PEL, quarterly monitoring is required. Quarterly monitoring may be suspended when additional monitoring results fall below the action level on two separate occasions at least 7 days apart.
- Air monitoring may be unwarranted where the Competent Person can clearly demonstrate, in the absence of air monitoring data, that a work activity will not create airborne silica concentrations in excess of the action level. Where a negative exposure determination is reached without air monitoring, the Competent Person must develop a written program as to why exposures are not expected to exceed the action level.

7.2. COMMUNICATION OF HAZARDS

This written compliance Program shall be made available to all Roux employees. In addition, owners, subcontractors, and other personnel in proximity to work locations where airborne respirable crystalline silica is being emitted shall also be provided the Program.

7.3. SILICA EXPOSURE CONTROLS

A site-specific written Silica Exposure Control Plan (ECP) shall be established and implemented in accordance with 29 CFR 1926.1153 *Table 1—Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica,* applicable OSHA standards requiring exposure control, and PEL compliance. The ECP shall be developed during the pre-mobilization planning phase as part of completing the digital job planning form (JPF) and conducting the site-specific hazard assessment. The ECP shall describe equipment and task-specific engineering, administrative, and work practice controls necessary to maintain employee exposures below the applicable PELs.

Engineering and work practice controls, including administrative controls, shall be implemented to reduce and maintain employee exposure to silica at or below the PEL to the extent that such controls are feasible. Engineering controls and dust mitigation measures are listed below:

- Equipment with integrated water delivery systems that continuously feed water to the point of contact or working surface.

- Commercially available shroud or cowling (e.g., Hammer Drill Dust Shroud for Chiseling, Dust Trap Drilling Shroud, etc.) with a dust collection system.
- Dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector.
- Operate equipment from within an enclosed cab (as applicable) and use water for dust suppression on drill bit or point of contact.

Where all feasible engineering and work practice controls that can be instituted are not sufficient to reduce employee exposure to or below the PEL, such controls shall be used to reduce employee exposure to the lowest feasible level in conjunction with respiratory protection.

Respiratory protection shall be selected based on guidance in 1926.1153 *Table 1—Specified Exposure Control Methods When Working With Materials Containing Crystalline Silica* or based on a Certified Industrial Hygienist's or Competent Person's assessment of the potential airborne silica exposure that may be created by the means and methods of work (high energy operations with high airborne dust generation or low energy operations with low dust generation).

In addition to exposure control methods provided in Table 1, all affected Roux and subcontractor personnel shall comply with the following work practices to properly mitigate respirable crystalline silica exposure:

- When using mechanical ventilation to control exposure, regularly evaluate the system's ability to effectively control exposure, including particulate filters, ducting, and mechanical components.
- If administrative controls are used to limit exposure, establish and implement a job rotation schedule that includes employee identification, exposure duration, and anticipated exposure levels where each affected employee is located.
- If vacuuming is the method selected, specialized vacuums with High-efficiency Particulate Air (HEPA) filtration are required. Methods to use and empty vacuums in a manner that minimizes the reentry of silica into the workplace shall be described and used. Use of household vacuums with HEPA filters are not allowed at any time for the collection of dust or debris that contains silica.
- Never use compressed air to remove silica from any surface unless it is used in conjunction with a ventilation system designed to capture the airborne dust created while using the compressed air.
- Maintain all surfaces as free as possible from accumulations of silica. Select methods for cleaning surfaces and floors that minimize the likelihood of silica becoming airborne (such as using a HEPA vacuum).
- Employees shall not eat, drink, smoke, chew tobacco or gum, or apply cosmetics in any areas where exposure to silica is above the PEL and/or Action Level (in other words, regulated areas).
- Do not allow employees to leave the workplace wearing any protective clothing or equipment that is required to be worn during their work shift without HEPA vacuum removal of dust.

7.4. PERSONAL PROTECTIVE EQUIPMENT & RESPIRATORY PROTECTION

Roux employees shall be provided, at no cost, protective work clothing and equipment, including cotton coveralls or similar full-body clothing, gloves, hats, shoes or disposable shoe coverlets, face shields, vented goggles, or other appropriate PPE. Half-mask and/or full-facepiece air-purifying respirators (APR) with an assigned protection factor (APF) of at least ten (10) will be used as the appropriate respiratory protection for work operations with the potential for respirable crystalline silica exposure at or above the action level. Full-facepiece APRs with an APF of 25 are required for mortar removal using handheld grinders equipped with a shroud and dust collection system. Respiratory protection must be used for the following conditions:

- During periods when employee exposure to airborne respirable crystalline silica exceeds the Action Level.
- For work operations where engineering and work-practice controls are not sufficient to reduce employee exposure to or below the Action Level.
- During periods when an employee requests a respirator.
- During periods when respirators are required to provide interim protection while conducting initial exposure assessments.
- Powered air-purifying respirators (PAPR) shall be provided to employees who request such a respirator to use where it will provide adequate protection.

8. MEDICAL SURVEILLANCE REQUIREMENTS

Roux shall institute medical surveillance for any employees required by this Program to wear respiratory protection for 30 or more days per year. Initial medical surveillance consists of medical and work history with emphasis on: past, present, and anticipated exposure to crystalline silica exposure , dust and other agents affecting the respiratory system; any history of respiratory system dysfunction, including signs and symptoms of respiratory disease (e.g., shortness of breath, cough, wheezing); history of tuberculosis; and smoking status and history; a physical examination with emphasis on the respiratory system; chest X-ray (a single posterior-anterior radiographic projection or radiograph of the chest at full inspiration recorded on either film (no less than 14 x 17 inches and no more than 16 x 17 inches) or digital radiography systems), interpreted and classified according to the International Labor Office (ILO) International Classification of Radiographs of Pneumoconiosis by a NIOSH-certified B Reader; a pulmonary function test to include forced vital capacity (FVC) and forced expiratory volume in one second (FEV1) and FEV1/FVC ratio, administered by a spirometry technician with a current certificate from a NIOSH approved spirometry course; testing for latent tuberculosis infection; and any other tests deemed appropriate by the Occupational Medicine Provider. Subcontractors are responsible for implementing a medical surveillance program for their employees.

Appendix A
29 CFR 1926.1153 OSHA Table 1
Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica

29 CFR 1926.1153 OSHA Table 1—Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica

Table 1: Specified Exposure Control Methods When Working with Materials Containing Crystalline Silica

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
(i) Stationary masonry saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
(ii) Handheld power saws (any blade diameter)	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:		
	• When used outdoors	None	APF 10
	• When used indoors or in an enclosed area	APF 10	APF 10
(iii) Handheld power saws for cutting fiber-cement board (with blade diameter of 8 inches or less)	For tasks performed outdoors only: • Use saw equipped with commercially available dust collection system • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions • Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency	None	None
(iv) Walk-behind saws	Use saw equipped with integrated water delivery system that continuously feeds water to the blade. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions:		
	• When used outdoors	None	None
	• When used indoors or in an enclosed area	APF 10	APF 10

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
(v) Drivable saws	For tasks performed outdoors only:		
	• Use saw equipped with integrated water delivery system that continuously feeds water to the blade. • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions	None	None
(vi) Rig-mounted core saws or drills	Use tool equipped with integrated water delivery system that supplies water to cutting surface. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.	None	None
(vii) Handheld and stand-mounted drills (including impact and rotary hammer drills)	Use drill equipped with commercially available shroud or cowling with dust collection system. Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions. Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism. Use a HEPA-filtered vacuum when cleaning holes.	None	None
(viii) Dowel drilling rigs for concrete	For tasks performed outdoors only:		
	• Use shroud around drill bit with a dust collection system. Dust collector must have a filter with 99% or greater efficiency and a filter-cleaning mechanism	APF 10	APF 10
(ix) Vehicle-mounted drilling rigs for rock and concrete	Use dust collection system with close capture hood or shroud around drill bit with a low-flow water spray to wet the dust at the discharge point from the dust collector.	None	None
	OR		

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
	Operate from within an enclosed cab and use water for dust suppression on drill bit.	None	None
(x) Jackhammers and handheld powered chipping tools	Use tool with water delivery system that supplies a continuous stream or spray of water at the point of impact:		
	• When used outdoors	None	APF 10
	• When used indoors or in an enclosed area	APF 10	APF 10
	OR		
	Use tool equipped with commercially available shroud and dust collection system.		
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.		
	Dust collector must provide the air flow recommended by the tool manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism:		
	• When used outdoors	None	APF 10
	• When used indoors or in an enclosed area	APF 10	APF 10
(xi) Handheld grinders for mortar removal (*i.e.*, tuckpointing)	Use grinder equipped with commercially available shroud and dust collection system.	APF 10	APF 25
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.		
	Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism.		
(xii) Handheld grinders for uses other than mortar removal	For tasks performed outdoors only: • Use grinder equipped with integrated water delivery system that continuously feeds water to the grinding surface	None	None

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
	• Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions		
	OR		
	• Use grinder equipped with commercially available shroud and dust collection system • Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions		
	Dust collector must provide 25 cubic feet per minute (cfm) or greater of airflow per inch of wheel diameter and have a filter with 99% or greater efficiency and a cyclonic pre-separator or filter-cleaning mechanism:		
	• When used outdoors	None	None
	• When used indoors or in an enclosed area	None	APF 10
(xiii) Walk-behind milling machines and floor grinders	Use machine equipped with integrated water delivery system that continuously feeds water to the cutting surface.	None	None
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.		
	OR		
	Use machine equipped with dust collection system recommended by the manufacturer.	None	None
	Operate and maintain tool in accordance with manufacturer's instructions to minimize dust emissions.		
	Dust collector must provide the air flow recommended by the manufacturer, or greater, and have a filter with 99% or greater efficiency and a filter-cleaning mechanism.		

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
	When used indoors or in an enclosed area, use a HEPA-filtered vacuum to remove loose dust in between passes.		
(xiv) Small drivable milling machines (less than half-lane)	Use a machine equipped with supplemental water sprays designed to suppress dust. Water must be combined with a surfactant.	None	None
	Operate and maintain machine to minimize dust emissions.		
(xv) Large drivable milling machines (half-lane and larger)	For cuts of any depth on asphalt only: • Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.	None	None
	• Operate and maintain machine to minimize dust emissions.		
	For cuts of four inches in depth or less on any substrate:		
	• Use machine equipped with exhaust ventilation on drum enclosure and supplemental water sprays designed to suppress dust.	None	None
	• Operate and maintain machine to minimize dust emissions.		
	OR		
	Use a machine equipped with supplemental water spray designed to suppress dust. Water must be combined with a surfactant.	None	None
	Operate and maintain machine to minimize dust emissions.		
(xvi) Crushing machines	Use equipment designed to deliver water spray or mist for dust suppression at crusher and other points where dust is generated (e.g., hoppers, conveyers, sieves/sizing or vibrating components, and discharge points).	None	None
	Operate and maintain machine in accordance with manufacturer's instructions to minimize dust emissions		

Equipment/Task	Engineering and Work Practice Control Methods	Required Respiratory Protection and Minimum Assigned Protection Factor (APF)	
		≤ 4 hours/shift	>4 hours/shift
	Use a ventilated booth that provides fresh, climate-controlled air to the operator, or a remote control station.		
(xvii) Heavy equipment and utility vehicles used to abrade or fracture silica-containing materials (*e.g.*, hoe-ramming, rock ripping) or used during demolition activities involving silica-containing materials	Operate equipment from within an enclosed cab.	None	None
	When employees outside of the cab are engaged in the task, apply water and/or dust suppressants as necessary to minimize dust emissions.	None	None
(xviii) Heavy equipment and utility vehicles for tasks such as grading and excavating but not including: Demolishing, abrading, or fracturing silica-containing materials	Apply water and/or dust suppressants as necessary to minimize dust emissions.	None	None
	OR		
	When the equipment operator is the only employee engaged in the task, operate equipment from within an enclosed cab.	None	None

APPENDIX D

Preventing Skin Problems from Working with Portland Cement

OSHA® Occupational Safety and Health Administration

www.osha.gov

Preventing Skin Problems from Working with Portland Cement

OSHA 3351-07 2008

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Employers are responsible for providing a safe and healthy workplace for their employees. OSHA's role is to promote the safety and health of America's working men and women by setting and enforcing standards; providing training, outreach and education; establishing partnerships; and encouraging continual improvement in workplace safety and health.

This informational booklet provides a general overview of a particular topic related to OSHA standards. It does not alter or determine compliance responsibilities in OSHA standards or the *Occupational Safety and Health Act of 1970*. Because interpretations and enforcement policy may change over time, you should consult current OSHA administrative interpretations and decisions by the Occupational Safety and Health Review Commission and the courts for additional guidance on OSHA compliance requirements.

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This information is available to sensory impaired individuals upon request. Voice phone: (202) 693-1999; teletypewriter (TTY) number: (877) 889-5627.

Edwin G. Foulke, Jr.
Assistant Secretary of Labor for
Occupational Safety and Health

Preventing Skin Problems from Working with Portland Cement

U.S. Department of Labor

Occupational Safety and Health Administration

OSHA 3351-07
2008

Contents

Introduction...3

Who is at Risk...3

Skin Problems Caused by Exposure to Portland Cement...4

OSHA Standards Applicable to Working with Portland Cement...5

- Personal Protective Equipment...5
- Sanitation...6
- Hazard Communication...6
- Recordkeeping...7
- Permissible Exposure Limit (PEL)...7

Preventing Cement-Related Skin Problems...7

- Good Practices for Glove Selection and Use...8
- Good Practices for Use of Boots and Other Protective Clothing and Equipment...9
- Good Practices for Skin Care...10

Making Portland Cement Products Less Hazardous...10

Bibliography...12

Technical Notes...16

OSHA Assistance...17

- Safety and Health Program Management Guidelines...17
- State Programs...18
- Consultation Services...18
- Voluntary Protection Programs (VPP)...19
- Strategic Partnership Program...19
- Alliance Program...20
- OSHA Training and Education...20
- Information Available Electronically...21
- OSHA Publications...22
- Contacting OSHA...22

OSHA Regional Offices...23

Introduction

Portland cement is a generic term used to describe a variety of building materials valued for their strong adhesive properties when mixed with water. Employees who work with portland cement are at risk of developing skin problems, ranging from mild and brief to severe and chronic.

Wet portland cement can damage the skin because it is caustic, abrasive, and absorbs moisture. Portland cement also contains trace amounts of hexavalent chromium [Cr(VI)], a toxin harmful to the skin. Dry portland cement is less hazardous to the skin because it is not as caustic as wet cement.

The purpose of this document is to make employers and employees aware of the skin problems associated with exposure to portland cement; to note the OSHA standards that apply to work with portland cement; and to provide guidance on how to prevent cement-related skin problems. Measures to protect employees from inhalation and eye hazards associated with exposure to portland cement are also noted.

Who is at Risk

Any employee who has skin contact with wet portland cement has the potential to develop cement-related skin problems. Portland cement is an ingredient in the following materials:

- concrete
- mortar
- plaster
- grout
- stucco
- terrazzo

There are many different tasks that involve the use of portland cement. Examples of employees who may be exposed to the dangers of wet portland cement products include bricklayers, carpenters, cement masons, concrete finishers, hod carriers,[1] laborers, plasterers, tile setters, terrazzo

workers, ready-mixed concrete truck drivers, bucket and buggy operators, and those involved in pouring and finishing work.

Skin Problems Caused by Exposure to Portland Cement

Wet portland cement can cause caustic burns, sometimes referred to as cement burns. Cement burns may result in blisters, dead or hardened skin, or black or green skin. In severe cases, these burns may extend to the bone and cause disfiguring scars or disability.

Employees cannot rely on pain or discomfort to alert them to cement burns because cement burns may not cause immediate pain or discomfort. By the time an employee becomes aware of a cement burn, much damage has already been done. Cement burns can get worse even after skin contact with cement has ended. Any employee experiencing a cement burn is advised to see a health care professional immediately.

Skin contact with wet portland cement can also cause inflammation of the skin, referred to as dermatitis. Signs and symptoms of dermatitis can include itching, redness, swelling, blisters, scaling, and other changes in the normal condition of the skin.

Contact with wet portland cement can cause a non-allergic form of dermatitis (called irritant contact dermatitis) which is related to the caustic, abrasive, and drying properties of portland cement.

In addition, Cr(VI) can cause an allergic form of dermatitis (allergic contact dermatitis, or ACD) in sensitized employees who work with wet portland cement. When an employee is sensitized, that person's immune system overreacts to small amounts of Cr(VI), which can lead to severe inflammatory reactions upon subsequent exposures. Sensitization may result from a single Cr(VI) exposure, from repeated exposures over the

course of months or years, or it may not occur at all. After an employee becomes sensitized, brief skin contact with very small amounts of Cr(VI) can trigger ACD.

ACD is long-lasting and employees can remain sensitized to Cr(VI) years after their exposure to portland cement has ended. Medical tests (e.g., skin patch tests) are available that can confirm whether an employee has become dermally sensitized to Cr(VI).

Employees who work with wet portland cement and experience skin problems, including seemingly minor ones, are advised to see a health care professional for evaluation and treatment. In cement-related dermatitis, early diagnosis and treatment can help prevent chronic skin problems.

SEE A HEALTH CARE PROFESSIONAL IF YOU WORK WITH WET PORTLAND CEMENT AND HAVE SKIN PROBLEMS!!

OSHA Standards Applicable to Working with Portland Cement

Several OSHA standards require employers to take steps to protect employees from hazards associated with exposure to portland cement. These standards include requirements for:

Personal Protective Equipment (29 CFR 1926 Subpart E for construction; 29 CFR 1910 Subpart I for general industry; 29 CFR 1915 Subpart I for shipyards)

OSHA's personal protective equipment (PPE) standards require that PPE be provided, used, and maintained in a sanitary and reliable condition whenever it is necessary to protect employees from injury or impairment. The employer must provide PPE such as boots and gloves as necessary and appropriate for jobs involving exposure to portland cement and ensure these items are maintained in a sanitary and reliable condition

when not in use. Employees must be able to clean or exchange PPE if it becomes ineffective or contaminated on the inside with portland cement while in use. In addition, employers are required to provide PPE at no cost to their employees with limited exceptions (1910.132(h)).

Sanitation (29 CFR 1926.51 for construction; 29 CFR 1910.141 for general industry; 29 CFR 1915.97 for shipyards)

Construction employers must make washing facilities available for employees exposed to portland cement. Washing facilities must provide clean water, non-alkaline soap, and clean towels. Such facilities must be readily accessible to exposed employees and adequate for the number of employees exposed. The sanitation requirements for general industry and shipyards are similar to those for construction.

Hazard Communication (29 CFR 1926.59 for construction; 29 CFR 1910.1200 for general industry; 29 CFR 1915.1200 for shipyards) and Safety Training (29 CFR 1926.21 for construction)

The Hazard Communication standard requires that manufacturers and importers provide information on material safety data sheets (MSDSs) and labels about the hazards of portland cement. Employers must make these MSDSs and labels available to employees. The Hazard Communication and Safety Training standards also require employers to provide training to communicate the hazards of exposure to portland cement to their employees. This training must address:

- the hazards associated with exposure to portland cement, including hazards associated with the cement's Cr(VI) content;
- preventive measures, including proper use and care of PPE and the importance of proper hygiene practices; and

- employee access to hygiene facilities, PPE, and information (including MSDSs).

Recordkeeping (29 CFR 1904)

Employers subject to OSHA recordkeeping requirements must inform employees of how to report work-related injuries and illnesses and record all new cases of work-related injury and illness (including cement burns and cases of dermatitis) that result in days away from work, restricted work or transfer to another job, medical treatment beyond first aid, or are otherwise determined to be a significant injury or illness by a physician or other licensed health care professional.

Permissible Exposure Limit (PEL) (29 CFR 1926.55 for construction; 29 CFR 1910.1000 for general industry; 29 CFR 1915.1000 for shipyards)

OSHA has established a permissible exposure limit to address the inhalation hazards of working with dry portland cement. Employers must limit airborne exposure to portland cement to 15 milligrams per cubic meter (mg/m^3) of air for total dust and 5 mg/m^3 for respirable dust. Because the Cr(VI) content in portland cement is so low, it is anticipated that by meeting the permissible exposure limit (PEL) of 15 mg/m^3 for portland cement, employers will also meet the Cr(VI) PEL and the action level of 5 and 2.5 micrograms per cubic meter ($\mu g/m^3$), respectively (see 1926.1126).

Preventing Cement-Related Skin Problems

The best way to prevent cement-related skin problems is to minimize skin contact with wet portland cement. Compliance with OSHA's requirements for provision of PPE, washing facilities, hazard communication and safety training, along with the good skin hygiene and work practices listed below, will protect against hazardous contact with wet cement.

Good Practices for Glove Selection and Use

- Provide the proper gloves for employees who may come into contact with wet portland cement. Consult the glove supplier or the cement manufacturer's MSDS for help in choosing the proper gloves. Butyl or nitrile gloves (rather than cotton or leather gloves) are frequently recommended for caustic materials such as portland cement.
- Use only well-fitting gloves. Loose-fitting gloves let cement in. Often the use of gloves and clothing makes exposure worse when cement gets inside or soaks through the garment. Use glove liners for added comfort.
- Wash hands before putting on gloves. Wash hands every time gloves are removed.
- Dry hands with a clean cloth or paper towel before putting on gloves.
- Protect arms and hands by wearing a long-sleeved shirt with the sleeves duct-taped to gloves to prevent wet cement from getting inside the gloves.
- Follow proper procedures for removing gloves, whether reusing or disposing them. See Table 1 at page 9 for proper procedures for removing gloves.
- Clean reusable gloves after use. Before removing gloves, clean the outside by rinsing or wiping off any wet cement. Follow the manufacturer's instructions for glove cleaning. Place clean and dry gloves in a plastic storage bag and store them in a cool, dry place away from tools.
- Throw out grossly contaminated or worn-out gloves.
- Keep the inside of gloves clean and dry.
- Do not use barrier creams or "invisible gloves." These products are not effective in protecting the skin from portland cement hazards.

Table 1. Steps for safe glove removal:

1. Wash off the outside of your gloves while you are still wearing them.
2. Loosen gloves on both hands, holding your arms down to prevent water from dripping onto the skin.
3. Holding your arms downward, pull the first glove down to remove only the glove fingers. The cuff should still be covering the palm of your hand.
4. Remove the second glove by grabbing it with the first glove.
5. Slip off the first glove.
6. Handle used gloves by the inside only.

Source: "Save Your Skin," CPWR, 2000b.

Good Practices for Use of Boots and Other Protective Clothing and Equipment

- Wear waterproof boots when necessary to prevent wet cement from coming into contact with skin. It is as important to protect legs, ankles, and feet from skin contact with wet cement as it is to protect hands.
- Boots need to be high enough to prevent wet cement from getting inside. Tuck pants inside and wrap duct tape around the top of the boots to prevent wet cement from entering.
- Select boots that are sturdy, strong enough to resist punctures and tears, and slip-resistant.
- Change protective boots if they become ineffective or contaminated on the inside with wet cement while in use.
- Change out of any work clothes that become contaminated with wet cement and keep contaminated work clothes separate from street clothes.

- When kneeling on wet cement use waterproof kneepads or dry kneeboards to prevent the knees from coming into contact with the cement.
- Wear proper eye protection when working with portland cement.

Good Practices for Skin Care

- Wash areas of the skin that come into contact with wet cement in clean, cool water. Use a pH-neutral or slightly acidic soap. Check with the soap supplier or manufacturer for information on the acidity and alkalinity of the soap.[2]
- Consider using a mildly acidic solution such as diluted vinegar or a buffering solution to neutralize caustic residues of cement on the skin.[3]
- Do not wash with abrasives or waterless hand cleaners, such as alcohol-based gels or citrus cleaners.
- Avoid wearing watches and rings at work since wet cement can collect under such items.
- Do not use lanolin, petroleum jelly, or other skin softening products. These substances can seal cement residue to the skin, increase the skin's ability to absorb contaminants, and irritate the skin. Skin softening products also should not be used to treat cement burns.

Making Portland Cement Products Less Hazardous

In recent decades there have been efforts to reduce the risk of developing cement-related skin problems by lowering the Cr(VI) content of portland cement. Cr(VI) is not intentionally added to portland cement and it does not serve any functional purpose. There are a variety of ways to minimize the amount of Cr(VI) in portland cement, including:

- Using slag, which is free of Cr(VI), in place of or blended with clinker, the primary source of Cr(VI) in portland cement. Slag is a by-product of the iron ore extraction process and has been used in concrete projects in the United States for over a century.
- Adding ferrous sulfate to portland cement may lower the Cr(VI) content of the cement. Use of ferrous sulfate has reportedly led to a decline in cases of allergic contact dermatitis in several countries (Goh et al., 1996; Avnstorp, 1989; Roto et al., 1996).[4]

Lowering the Cr(VI) content of portland cement can lessen, but not entirely eliminate, the risk of acquiring allergic contact dermatitis. It will not eliminate the other skin hazards posed by wet portland cement. Employers and employees need to take all necessary precautions to prevent skin contact with wet portland cement whether or not the cement contains measurable amounts of Cr(VI). Wearing proper gloves and other protective equipment, and following good skin care and work practices, provide the best protection against the skin hazards posed by wet portland cement.

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Technical Notes

[1] Hod carriers transport mortar, bricks, and concrete in a vee shaped trough (called a hod) to other employees.

[2] "An Employer's Guide to Skin Protection" (see CPWR, 2000c in the bibliography) contains a partial list of pH-neutral or moderately acidic liquid and bar soaps.

[3] "An Employer's Guide to Skin Protection" (see CPWR, 2000c in the bibliography) contains some information on neutralizing and buffering products.

[4] After Denmark required the addition of ferrous sulfate to reduce the Cr(VI) content of cement to less than 2 parts per million, studies showed a reduction in the prevalence of Cr(VI) allergy (Irvine et al., 1994). However, some U.S. cement manufacturers who have experimented with the use of ferrous sulfate have not been able to achieve significant Cr(VI) reduction. The reasons for this inability may be due to variations in the Cr(VI) content of cement and the amount of time that passes between cement manufacture and use. Time delays are an important consideration because ferrous sulfate may lose its effectiveness over time, depending on how cement is packaged and on humidity and temperature conditions during storage.

OSHA Assistance

OSHA can provide extensive help through a variety of programs, including technical assistance about effective safety and health programs, state plans, workplace consultations, voluntary protection programs, strategic partnerships, training and education, and more. An overall commitment to workplace safety and health can add value to your business, to your workplace, and to your life.

Safety and Health Program Management Guidelines

Effective management of employee safety and health protection is a decisive factor in reducing the extent and severity of work-related injuries and illnesses and their related costs. In fact, an effective safety and health program forms the basis of good employee protection, can save time and money, increase productivity and reduce employee injuries, illnesses, and related workers' compensation costs.

To assist employers and employees in developing effective safety and health programs, OSHA published recommended Safety and Health Program Management Guidelines (54 *Federal Register* (16): 3904-3916, January 26, 1989). These voluntary guidelines can be applied to all places of employment covered by OSHA.

The guidelines identify four general elements critical to the development of a successful safety and health management system:

- Management leadership and employee involvement,
- Worksite analysis,
- Hazard prevention and control, and
- Safety and health training.

The guidelines recommend specific actions, under each of these general elements, to achieve an effective safety and health program. The *Federal Register* notice is available online at www.osha.gov.

State Programs

The Occupational Safety and Health Act of 1970 (OSH Act) encourages states to develop and operate their own job safety and health plans. OSHA approves and monitors these plans. Twenty-four states, Puerto Rico, and the Virgin Islands currently operate approved state plans: 22 cover both private and public (state and local government) employment; Connecticut, New Jersey, New York, and the Virgin Islands cover the public sector only. States and territories with their own OSHA-approved occupational safety and health plans must adopt standards identical to, or at least as effective as, the Federal OSHA standards.

Consultation Services

Consultation assistance is available on request to employers who want help in establishing and maintaining a safe and healthful workplace. Largely funded by OSHA, the service is provided at no cost to the employer. Primarily developed for smaller employers with more hazardous operations, the consultation service is delivered by state governments employing professional safety and health consultants. Comprehensive assistance includes an appraisal of all mechanical systems, work practices, and occupational safety and health hazards of the workplace and all aspects of the employer's present job safety and health program. In addition, the service offers assistance to employers in developing and implementing an effective safety and health program. No penalties are proposed or citations issued for hazards identified by the consultant. OSHA provides consultation assistance to the employer with the assurance that his or her name and firm and any information about the workplace will not be routinely reported to OSHA enforcement staff.

Under the consultation program, certain exemplary employers may request participation in OSHA's Safety and Health Achievement Recognition Program (SHARP). Eligibility for participation in SHARP includes receiving a compre-

hensive consultation visit, demonstrating exemplary achievements in workplace safety and health by abating all identified hazards, and developing an excellent safety and health program.

Employers accepted into SHARP may receive an exemption from programmed inspections (not complaint or accident investigation inspections) for a period of 1 year. For more information concerning consultation assistance, see OSHA's website at www.osha.gov.

Voluntary Protection Programs (VPP)

Voluntary Protection Programs and on-site consultation services, when coupled with an effective enforcement program, expand employee protection to help meet the goals of the OSH Act. The VPPs motivate others to achieve excellent safety and health results in the same outstanding way as they establish a cooperative relationship between employers, employees, and OSHA.

For additional information on VPP and how to apply, contact the OSHA regional offices listed at the end of this publication.

Strategic Partnership Program

OSHA's Strategic Partnership Program, the newest member of OSHA's cooperative programs, helps encourage, assist, and recognize the efforts of partners to eliminate serious workplace hazards and achieve a high level of employee safety and health. Whereas OSHA's Consultation Program and VPP entail one-on-one relationships between OSHA and individual worksites, most strategic partnerships seek to have a broader impact by building cooperative relationships with groups of employers and employees. These partnerships are voluntary, cooperative relationships between OSHA, employers, employee representatives, and others (e.g., trade unions, trade and professional associations, universities, and other government agencies).

For more information on this and other cooperative programs, contact your nearest OSHA office, or visit OSHA's website at www.osha.gov.

Alliance Program

Through the Alliance Program, OSHA works with groups committed to safety and health, including businesses, trade or professional organizations, unions and educational institutions, to leverage resources and expertise to develop compliance assistance tools and resources and share information with employers and employees to help prevent injuries, illnesses and fatalities in the workplace.

Alliance program agreements have been established with a wide variety of industries including meat, apparel, poultry, steel, plastics, maritime, printing, chemical, construction, paper and telecommunications. These agreements are addressing many safety and health hazards and at-risk audiences, including silica, fall protection, amputations, immigrant workers, youth and small businesses. By meeting the goals of the Alliance Program agreements (training and education, outreach and communication, and promoting the national dialogue on workplace safety and health), OSHA and the Alliance Program participants are developing and disseminating compliance assistance information and resources for employers and employees such as electronic assistance tools, fact sheets, toolbox talks, and training programs.

OSHA Training and Education

OSHA area offices offer a variety of information services, such as compliance assistance, technical advice, publications, audiovisual aids, and speakers for special engagements. OSHA's Training Institute in Arlington Heights, IL, provides basic and advanced courses in safety and health for Federal and state compliance officers, state consultants, Federal agency personnel, and private sector employers, employees, and their representatives.

The OSHA Training Institute also has established OSHA Training Institute Education Centers to address the increased demand for its courses from the private sector and from other federal agencies. These centers include colleges, universities, and nonprofit training organizations that have been selected after a competition for participation in the program.

OSHA also provides funds to nonprofit organizations, through grants, to conduct workplace training and education in subjects where OSHA believes there is a lack of workplace training. Grants are awarded annually. Grant recipients are expected to contribute 20 percent of the total grant cost.

For more information on training and education, contact the OSHA Training Institute, Directorate of Training and Education, 2020 South Arlington Heights Road, Arlington Heights, IL, 60005, (847) 297-4810, or see Training on OSHA's website at www.osha.gov. For further information on any OSHA program, contact your nearest OSHA regional office listed at the end of this publication.

Information Available Electronically

OSHA has a variety of materials and tools available on its website at www.osha.gov. These include electronic compliance assistance tools, such as *Safety and Health Topics Pages, eTools, Expert Advisors;* regulations, directives, publications and videos; and other information for employers and employees. OSHA's software programs and compliance assistance tools walk you through challenging safety and health issues and common problems to find the best solutions for your workplace.

A wide variety of OSHA materials, including standards, interpretations, directives, and more can be purchased on CD-ROM from the U.S. Government Printing Office, Superintendent of Documents, toll-free phone (866) 512-1800.

OSHA Publications

OSHA has an extensive publications program. For a listing of free items, visit OSHA's website at www.osha.gov or contact the OSHA Publications Office, U.S. Department of Labor, 200 Constitution Avenue, NW, N-3101, Washington, DC 20210; telephone (202) 693-1888 or fax to (202) 693-2498.

Contacting OSHA

To report an emergency, file a complaint, or seek OSHA advice, assistance, or products, call (800) 321-OSHA or contact your nearest OSHA Regional office listed at the end of this publication. The teletypewriter (TTY) number is (877) 889-5627.

Written correspondence can be mailed to the nearest OSHA Regional or Area Office listed at the end of this publication or to OSHA's national office at: U.S. Department of Labor, Occupational Safety and Health Administration, 200 Constitution Avenue, N.W., Washington, DC 20210.

By visiting OSHA's website at www.osha.gov, you can also:

- File a complaint online,
- Submit general inquiries about workplace safety and health electronically, and
- Find more information about OSHA and occupational safety and health.

OSHA Regional Offices

Region I
(CT,* ME, MA, NH, RI, VT*)
JFK Federal Building, Room E340
Boston, MA 02203
(617) 565-9860

Region II
(NJ,* NY,* PR,* VI*)
201 Varick Street, Room 670
New York, NY 10014
(212) 337-2378

Region III
(DE, DC, MD,* PA, VA,* WV)
The Curtis Center
170 S. Independence Mall West
Suite 740 West
Philadelphia, PA 19106-3309
(215) 861-4900

Region IV
(AL, FL, GA, KY,* MS, NC,* SC,* TN*)
61 Forsyth Street, SW, Room 6T50
Atlanta, GA 30303
(404) 562-2300

Region V
(IL, IN,* MI,* MN,* OH, WI)
230 South Dearborn Street
Room 3244
Chicago, IL 60604
(312) 353-2220

Region VI
(AR, LA, NM,* OK, TX)
525 Griffin Street, Room 602
Dallas, TX 75202
(972) 850-4145

Region VII
(IA,* KS, MO, NE)
Two Pershing Square
2300 Main Street, Suite 1010
Kansas City, MO 64108-2416
(816) 283-8745

Region VIII
(CO, MT, NO, SO, UT,* WY*)
1999 Broadway, Suite 1690
PO Box 46550
Denver, CO 80202-5716
(720) 264-6550

Region IX
(AZ,* CA,* HI,* NV,* and American Samoa,
Guam and the Northern Mariana Islands)
90 7th Street, Suite 18-100
San Francisco, CA 94103
(415) 625-2547

Region X
(AK,* ID, OR,* WA*)
1111 Third Avenue, Suite 715
Seattle, WA 98101-3212
(206) 553-5930

* These states and territories operate their own OSHA-approved job safety and health programs and cover state and local government employees as well as private sector employees. The Connecticut, New Jersey, New York and Virgin Islands plans cover public employees only. States with approved programs must have standards that are identical to, or at least as effective as, the Federal standards.

Note: To get contact information for OSHA Area Offices, OSHA-approved State Plans and OSHA Consultation Projects, please visit us online at www.osha.gov or call us at 1-800-321-0SHA.


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APPENDIX E

Heat Illness Prevention Program

HEAT ILLNESS
PREVENTION PROGRAM

CORPORATE HEALTH AND SAFETY DIRECTOR	:	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	:	**10/2019**
REVISION DATE	:	**03/2025**
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TABLE OF CONTENTS

1. PURPOSE 1

2. SCOPE AND APPLICABILITY 1

3. ROLES AND RESPONSIBILITIES 1

4. HAZARD IDENTIFICATION AND ASSESSMENT 2

5. TRAINING 2

6. DRINKING WATER 3

7. ACCESS TO SHADE 4

8. MONITORING AND SCHEDULING 5

9. ACCLIMATIZATION AND NEW EMPLOYEE PROCEDURES 5

10. HEAT WAVE AND EXTREME HEAT PROCEDURES 5

11. EMERGENCY RESPONSE PROCEDURES 6

12. HEAT-RELATED ILLNESSES 6

13. OTHER HEAT CONTROLS 8

1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C, and Remedial Engineering (collectively, "Roux"), have established this heat illness prevention program to assist in preventing workplace accidents, injuries, and illnesses associated with temperature extremes. Roux is committed to taking every precaution to protect employees who might be exposed to heat stress, including establishing safe work practices, heat illness prevention controls, and emergency preparedness, which will be detailed in this plan.

2. SCOPE AND APPLICABILITY

Roux's Heat Illness Prevention Program applies to all employees and subcontractors who may be exposed to heat stress in the field.

3. ROLES AND RESPONSIBILITIES

The Heat Illness Prevention Program Administrator for Roux is the Corporate Health and Safety Director (CHSD), Brian Hobbs, CIH, CSP. The daily administration of the program is delegated to the Operations Manager (OM) , Office Health and Safety Manager (OHSM), and Site Health and Safety Officer (SHSO). The CHSD has the authority, responsibility, and overall accountability for the comprehensive implementation of this program.

All managers and supervisors shall implement and maintain the heat illness prevention program in work areas where there is a potential for heat stress.

Management Responsibilities

Management (i.e., Project Managers, Project Principals, OM) must provide the following to promote compliance and foster a good safety culture:

- Comply with applicable standards.
- Inform employees of the provisions of the heat illness prevention program and ensure understanding.
- Provide sufficient water, shade, rest areas, and other heat illness controls for employees.
- Assist with establishing work practices to minimize heat stress risks, such as acclimatization, required rest periods, employee monitoring, and strategic scheduling.
- Encourage employees to report hazardous conditions or heat illness symptoms.
- Provide training to any employee who could possibly be exposed to the risk of heat illness.

Employee Responsibilities

Employees are expected to actively participate in the organization's heat illness prevention program, which includes the following responsibilities:

- Receive appropriate training with regard to heat stress.
- Understand core concepts of heat illness prevention and follow guidelines to mitigate risks.
- Recognize the signs and symptoms of heat illness and immediately report them.
- Cooperate with workplace inspections and incident investigations.

Effective Communication

All Roux employees shall be accountable for ensuring there is effective communication with both the field team and their subcontractors. Communication between Roux employees, project leads (e.g., Project Principal, Project

Managers), and subcontractors (if applicable) will be established and maintained so that employees can quickly contact should there be a change in condition or someone at the Site exhibits signs/symptoms of heat stress. These types of incidents would follow Roux's Incident Investigation and Reporting Management Program 2.12 and Roux's Injury Illness Prevention Program 2.22.

4. HAZARD IDENTIFICATION AND ASSESSMENT

Prior to scheduled fieldwork, the project team shall ensure a hazard assessment is conducted as it relates to heat stress. This will include a determination of how much heat and exertion employees are likely to be exposed to based on the work activity.

Factors that can increase heat stress include the following:

- Temperatures at the work site;
- Humidity;
- A lack of air movement or exchange;
- The amount of time employees spend working in the heat;
- The time of day work takes place;
- Sources of radiant heat (e.g., sunlight, fire, or hot furnace);
- Work activities that produce heat (e.g., welding);
- Physical contact with warm or hot objects or liquids;
- The clothing and PPE employees are required to wear; and/or
- Physically strenuous work.

Results of the hazard analysis should be used to determine appropriate controls for mitigating heat stress, whenever possible, for planning acclimatization, and for developing work schedules that rotate workers to limit employee exposure. Typically, the Site Supervisor (SS) or Site Health and Safety Officer (SHSO) shall conduct worksite observations to ensure all employees follow heat illness prevention procedures and that hazards are sufficiently controlled. However, all employees should be continuously evaluating work site conditions and be able to recognize heat stressors in order to prevent heat illnesses.

5. TRAINING

All Roux employees shall be trained on the topics listed below prior to beginning work, which may potentially expose workers to heat stress.

Training Topics

- The environmental, behavioral, and personal risk factors for heat illness, such as radiant heat sources, exertion, clothing and PPE, and use of alcohol or drugs.
- Types of heat illnesses, common symptoms, and appropriate emergency response for each.
- The knowledge that mild symptoms may quickly become more severe or life-threatening.
- The importance of immediately reporting any signs or symptoms of heat illness to the supervisor.
- The employer's responsibility to provide shade, water, access to first aid, and cool-down rests during work and the employee's freedom to exercise their rights under this standard without fear of retaliation.

- The employer's heat stress plan and its procedures:
  - Procedures for employees who are newly assigned to work in high-heat areas.
  - The organization's acclimatization methods, as applicable.
  - Heatwave procedures.
  - Heat illness and emergency response, including contact information.
- The importance of frequent consumption of water and the taking of rest breaks.
- How heat illness prevention applies to employees' specific tasks.

Increasing Training Effectiveness:

- The SS/SHSO will hold daily tailgates with the field team to go over daily work tasks and basic safety information, including Job Safety Analysis (JSA) review, as well as incorporate elements such as current weather and effects on the work activities for the day.
- If a heat wave or high heat is anticipated, OHSMs and/or OMs will provide communications to Roux employees prior to their shifts and remind them of any special high heat procedures.

6. DRINKING WATER

Employees shall be given access to potable drinking water. Access to water will be provided as near as possible to where employees are working, and there shall be enough locations so employees will have sufficient water. Water should be fresh and pure, free of taste or smell that would discourage employees from drinking, comfortably cool, and obtained from an approved source.

The recommendation is that during warm or hot weather, employees drink four 8-ounce glasses of water, or a total of one quart per hour, throughout the entire work shift. Easy access to sufficient potable drinking water throughout the work shift encourages employees to drink.

During a heat wave, water shall be replenished more often to keep it available and cool. Water containers (and all spouts and levers) must be kept clean. If able, provide single-use drinking cups with appropriate waste receptacles. Accessible sanitation facilities shall also be maintained at work Sites as appropriate.

SS/SHSO is responsible for the following:

- Drink sufficient water before, during, and after work shifts to maintain hydration.
- Encourage frequent drinking of small amounts of water throughout the shift. In high-heat environments, remind field staff and subcontractors that drinking extra water may be necessary.
- Discourage the choice of drinks with caffeine or sugar that may possibly dehydrate employees instead of water. Also, discourage the drinking of alcohol.
- Monitor the water supply.
- If employees become dehydrated and are unable to alleviate symptoms with the steps below, get them immediate medical attention.

Field Staff/Subcontractors are responsible for the following:

- Drink sufficient water before, during, and after work shifts to maintain hydration. Drink up to 4 cups of water per hour, especially during hot weather.
- Be aware that in high-heat situations, you may need to drink more water.

- Monitor yourself and others for signs of dehydration. If you feel dehydrated:
  - Follow Roux's Incident Notification Flowchart;
  - Rest in the shaded resting area; and
  - Drink water in small amounts, but frequently.

7. ACCESS TO SHADE

Access to shaded areas will be provided to Roux staff, as needed. Employees are encouraged to use these areas when they feel overheated. Roux's SS/SHSO shall oversee the proper implementation of shaded areas and will communicate these locations on a daily basis with the Field Team.

Depending on the Site, shaded areas can include the following:

- Pop-up Tents
- Canopies
- Umbrellas
- Structures mechanically ventilated or open to air movement
  - Garage
- Conex-mounted RV canopies
- Full and thick tree canopies that block direct sunlight
- Buildings
- Enclosed areas only if they provide cooling comparable to shade in open-air
  - Vehicles with air conditioning

Shaded Area Requirements

The shade shall be strong enough to cool employees down and other shadows should not be visible in the shade. The shade will be provided by Roux when the air temperature exceeds 80°F. If the temperature is less than 80°F, shade will be available and provided upon request. The SS/SHSO will monitor conditions to determine when the air will exceed (and is exceeding) 80°F. For most Sites, air will be monitored hourly and shade will be set up immediately if 80°F is exceeded.

Shade shall be located as close as practical to areas where employees are working and is easily accessible. These areas will be considered safe and free from other hazards. Shaded areas should be large enough to accommodate all employees who are on a break, resting, or recovering without crowding. Should natural vegetation be used for shade, the SS/SHSO will evaluate shade for effectiveness.

Field Staff Responsibilities

Field Staff should take ordinary rest breaks in the shaded areas and monitor themselves for signs of heat stress, and go to the shaded area when they need to cool down. Any issues or problems with shaded areas should be reported to the SS/SHSO for the Site.

If shaded areas are used for a preventative cool-down, the SS/SHSO will ensure the affected employees will remain in the shade until they begin to feel better. The SS/SHSO will continue to monitor the employees and ask them if

they are experiencing symptoms of a heat illness. Employees shall not be sent back to work before symptoms have ended and at a minimum at least 10 minutes of rest.

8. MONITORING AND SCHEDULING

Monitoring

The SS/SHSO and Field Team will continue to monitor themselves and others for signs of heat illness. The SS/SHSO will monitor when the air temperature exceeds 80°F. Throughout the summer, weather and temperature will be monitored at least two weeks ahead, and the work schedule will be planned to accommodate the expected weather.

Scheduling

Scheduling accommodations may include:

- Working during cooler hours of the day
- Working at night
- Stopping work early
- Rescheduling work activities
- Increasing frequency of breaks

In general, strenuous work activities shall be rescheduled to the coolest parts of the day.

Special precautions are required for temperatures above 80°F, 95°F, and heat waves. These precautions are provided in the sections below.

9. ACCLIMATIZATION AND NEW EMPLOYEE PROCEDURES

Roux requires employees to be acclimatized in order for them to better tolerate heat in the workplace. Acclimatization is the physical process of adapting to a different thermal environment, allowing a better toleration of heat. Acclimatization procedures require gradual exposure that gives the employee time to adjust to each level of exposure. Acclimatization is essential for new employees but is necessary for all employees when the temperature significantly changes. Heat stress is much more likely if these procedures are not followed.

The SS/SHSO is responsible for observing new employees during their first 14 days of employment in high-heat areas.

Re-acclimatization is necessary if employees are absent from high-heat environments for a week or more or the temperature increases significantly.

10. HEATWAVE AND EXTREME HEAT PROCEDURES

Heat Wave Procedures

A heat wave is defined as consistent temperatures over 80°F or if the temperature is 10° higher than the average daily temperatures in the preceding 5 days.

SS/SHSO and Project Management (e.g., PP, PM) shall closely observe and monitor employees during a heat wave. The Field Teams should institute a ratio of one SS to 20 or fewer employees, a mandatory buddy system, or

a consistent practice for supervisors to check on employees. Pre-shift meetings to review high-heat procedures with employees will be carried out to emphasize work-rest schedules, drinking water, shade, etc.

Extreme Heat Procedures

When work-site temperatures equal or exceed 95°F, the employer will enact extreme heat procedures:

- Employees will be closely observed by the SS/SHSO for signs of heat illness. New employees will be supervised for acclimatization.
- Effective communication and monitoring will be ensured through the use of periodic check-ins via phone with the SS/SHSO. Communications between employees and Project Management (e.g., PP/PM) will be established and maintained. Mandatory 10-minute break periods are required for every two hours worked. SS/SHSO must enforce this rule.
- Pre-shift safety tailgate meetings will occur to review procedures and to remind employees to drink water and take cool-down rests if needed. SS/SHSO shall remind employees to rest and drink water. Employees should drink more water than usual.

11. EMERGENCY RESPONSE PROCEDURES

Roux is dedicated to providing prompt appropriate care for all employees who report or show symptoms of heat illness. If an employee shows signs of heat illness, they will be monitored and shall not be left alone or sent home without being offered first aid or emergency medical services. If on-site personnel require any medical treatment, the following steps will be taken:

1. Notify Roux's Project and Corporate Management Team for any work-related injury and/or illness occurrence, and communicate with the contracted Occupational Health Care Management Provider, AllOne Health (AOH), immediately following the notifications provided above.
2. Based on discussions with the Project Team, Corporate Management, and the AOH evaluation, if medical attention beyond onsite First Aid is warranted, transport the injured/ill person (IP) to the Urgent Care Center, or notify the Fire Department or Ambulance Emergency service and request an ambulance or transport the victim to the hospital, and continue communications with Corporate Management Team. An Urgent Care/Hospital Route map with locations and directions is provided within Site Specific Health and Safety Plans.
3. First aid medical support will be provided by onsite personnel trained and certified in First Aid, Cardio Pulmonary Resuscitation (CPR), Automatic External Defibrillation (AED), and Blood-Borne Pathogens (BBP) Awareness, until relieved by emergency medical services (EMS).
4. The SHSO and Project Manager will perform a Loss Investigation (LI), and the Project Team will complete the final Loss Report.

12. HEAT-RELATED ILLNESSES

Heat Stress

Heat stress is a significant potential hazard and can be associated with heavy physical activity and/or the use of personal protective equipment (PPE) in hot-weather environments. For these reasons, the company will provide potable drinking water and access to shade or other areas of relief (i.e., air-conditioned vehicles and work trailers). Supervisors, prior to supervising personnel in the field as well as all personnel involved with the fieldwork of a project, are trained in this HASP that includes preventing heat-related illnesses and the below procedures in response to heat-related symptoms and illness. Since much of our work is dependent upon environmental factors beyond our control, we must closely monitor air temperature and humidity and be aware of avoiding radiant heat sources and providing as much air circulation as possible wherever we work. Physical factors that need to be evaluated as part of our Job Safety Analysis (JSA) reviews include the level of physical activity and duration of work

and the type (i.e., color, weight breathability) of the clothing we select. In addition, personal factors such as age, weight, fitness, drug/alcohol use, and prior history of heat-related illness need to be considered.

Heat cramps are brought on by prolonged exposure to heat. As an individual sweats, water and salts are lost by the body, resulting in painful muscle cramps. The signs and symptoms of heat stress are as follows:

- Severe muscle cramps, usually in the legs and abdomen;
- Exhaustion, often to the point of collapse; and
- Dizziness or periods of faintness.

First aid treatment includes, but is not limited to, shade, rest, and fluid replacement. Typically, the individual should recover within one-half hour while being monitored constantly. If the individual has not improved substantially within 30 minutes and the body temperature has not decreased, the individual should be transported to a hospital for medical attention.

Heat Exhaustion

Heat exhaustion may occur in a healthy individual who has been exposed to excessive heat while working or exercising. The circulatory system of the individual fails as blood collects near the skin to rid the body of excess heat through transference. The signs and symptoms of heat exhaustion are as follows:

- Rapid and shallow breathing;
- Weak pulse;
- Cold and clammy skin with heavy perspiration;
- Skin appears pale;
- Fatigue and weakness;
- Dizziness; and
- Elevated body temperature.

First aid treatment includes, but is not limited to, cooling the victim, elevating the feet, and replacing fluids. If the individual is not substantially improved within 30 minutes and the body temperature has not decreased, the individual should be transported to the hospital for medical attention.

Heat Stroke

Heat stroke occurs when an individual is exposed to excessive heat and stops sweating. This condition is classified as a MEDICAL EMERGENCY requiring immediate cooling of the victim and transport to a medical facility. The signs and symptoms of heat stroke are as follows:

- Dry, hot red skin;
- Body temperature approaching or above 105 degrees F;
- Confusion, altered mental state, slurred speech;
- Seizures;
- Large (dilated) pupils; and
- Loss of consciousness – the individual may go into a coma.

First aid treatment requires immediate cooling and transportation to a medical facility. Heat stress is a significant hazard if any type of protective equipment (semi-permeable or impermeable) that prevents evaporative cooling is worn in hot-weather environments.

13. OTHER HEAT CONTROLS

Clothing and PPE

Employees should choose clothing that is reflective, light-colored, lightweight, loose-fitting, and breathable. Clothing should cover the exposed parts of the body. In direct sun, hard hats with a brim or bill may be helpful. Should specialized cooling garments be applicable, please consult with your OM/OHSM/CHSD.

Managing Employee Risk Factors

It is recommended that employees are aware of how their health can affect their risk of heat stress. The following increases personnel's risk for a heat-related illness:

- A poor level of physical fitness
- Obesity
- Chronic or acute illnesses
- Conditions such as diabetes, heart disease, or high blood pressure
- Certain medications, such as diuretics
- Age (60+)

Employees should:

- Maintain their health outside of work
- Be aware of the effects of medications
- Drink adequate amounts of water
- Eat light, cool meals during work shifts and save heavy meals until after the shift is over
- Do not skip meals: food helps replace electrolytes when sweating
- Take breaks as needed
- Do not consume alcohol prior to working in a hot environment

APPENDIX F

Personal Protective Equipment (PPE) Management Program

PERSONAL PROTECTIVE EQUIPMENT
MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY DIRECTOR	:	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	:	**01/2019**
REVIEW DATE	:	**03/2025**
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TABLE OF CONTENTS

1. PURPOSE 1

2. SCOPE AND APPLICABILITY 1

3. PROCEDURES 1
- 3.1 Introduction 1
  - 3.1.1 Training 1
- 3.2 Types of PPE 2
  - 3.2.1 PPE Inspection, Cleaning Maintenance, and Storage 2
    - 3.2.1.1 PPE Inspection 2
    - 3.2.1.2 PPE Cleaning and Maintenance 2
    - 3.2.1.3 PPE Storage 3
- 3.3 Fitting, Donning and Doffing PPE 3
- 3.4 Controlling Hazards Associated with PPE Use 4
- 3.5 PPE Selection 5
- 3.6 Protective Clothing Selection Criteria 5
  - 3.6.1 Chemicals Present 5
  - 3.6.2 Concentration of the Chemical(s) 5
  - 3.6.3 Physical State 6
  - 3.6.4 Length of Exposure 6
  - 3.6.5 Abrasion 6
  - 3.6.6 Dexterity 6
  - 3.6.7 Ability to Decontaminate 6
  - 3.6.8 Climactic Conditions 7
  - 3.6.9 Work Load 7
  - 3.6.10 Types of Protective Materials 7
- 3.7 Protection Levels 7
  - 3.7.1 Level A Protection 7
  - 3.7.2 Level B Protection 9
  - 3.7.3 Level C Protection 10
  - 3.7.4 Level D Protection 12
  - 3.7.5 Level E Protection 12
  - 3.7.6 Additional Considerations 13
- 3.8 Decontamination of PPE 13
  - 3.8.1 Site-Specific Decontamination Plans 14
  - 3.8.2 Emergency Decontamination of PPE 14
  - 3.8.3 Protection of Decontamination Line Assistants 15
  - 3.8.4 Procedures to Minimize PPE Contamination 15
  - 3.8.5 PPE Disposal 16

1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C., and Remedial Engineering (collectively, “Roux”), have instituted the following program to establish guidelines for the selection of personal protective equipment (PPE) for use by Roux personnel performing field activities in hazardous environments. PPE is not meant to be a substitute for engineering, work practice, and/or administrative controls, but PPE should be used in conjunction with these controls to protect employees in the workplace. Clothing, body coverings, and other accessories designed to prevent worker exposure to workplace hazards are all types of PPE. To ensure adequate PPE,, employee-owned PPE is assessed on a case-by-case basis to ensure its adequacy, maintenance, and sanitation.

2. SCOPE AND APPLICABILITY

These guidelines apply to all PPE selection decisions to implement the Roux program. The foundations for this program are the numerous Occupational Health and Safety Administration (OSHA) standards related to PPE cited in 29 CFR 1910 Subpart I, 29 CFR 1926 Subpart E, and the hazardous environment work employee protection requirements under the OSHA Hazardous Waste Operations and Emergency Response (HAZWOPER) standard at 29 CFR 1910.120 and 1926.65 as well as California OSHA (Cal/OSHA) Title 8 5192 HAZWOPER. To ensure hazard assessments are documented, the levels of protection, types of protection, and tasks requiring protection are covered in site-specific Health and Safety Plans (HASPs) and Job Safety Analyses (JSAs).

3. PROCEDURES

Due to the varied nature of site activities and the different potential hazards associated with different sites, several aspects must be considered when selecting PPE. The following text describes PPE selection logic and provides guidelines and requirements for the appropriate selection and use of PPE.

3.1 Introduction

To harm the body, chemicals must first gain entrance. The intact skin and respiratory tract are usually the first body tissues that are exposed to chemical contaminants. These tissues provide barriers to some chemicals but, in many cases, are damaged themselves or are highly permeable by certain chemical compounds. PPE, therefore, is used to minimize or eliminate chemical compounds from coming into contact with these first barrier tissues.

Proper PPE selection is essential in preventing exposure. The Project Manager (PM) or health and safety personnel making the selection will have to consider several factors. The level of protection, type, and kind of equipment selected depends on the hazardous conditions. In some cases, additional selection factors include cost, availability, compatibility with other equipment, and performance. All these factors must be accurately assessed before work can be safely carried out.

3.1.1 Training

Training shall be provided to all field-based employees on how to properly use and care for PPE. Training shall include, but not be limited to, the initial 40-hour HAZWOPER training, annual 8-hour HAZWOPER refresher training, and site-specific PPE training. The training program includes when PPE is necessary, what types of PPE are required; how to don, doff, adjust, and wear PPE; the limitations of PPE; the proper care, maintenance, useful life, signs of PPE failure and emergency procedures to follow in the event of PPE failure and disposal of PPE. In addition, retraining shall be conducted when workplace changes require a change in PPE when an employee demonstrates a lack of knowledge or improper use of PPE is identified.

3.2 Types of PPE

The type and selection of PPE must meet certain general criteria and requirements as required under OSHA 29 CFR 1910.132 (General Industry) and 1926.95 (Construction). In addition to these general requirements, specific requirements and specifications exist for some types of PPE that form the basis of the protective clothing scheme. All manufacturer's recommendations for PPE care and use shall be followed. All PPE shall be maintained in a sanitary and reliable condition. Additionally, proper fit and size shall be evaluated to ensure adequate employee protection. Should PPE become defective, it shall be immediately removed from service and discarded.

The following is a list of the common types of specific PPE and the specific requirements for the PPE type, where applicable:

1. Hard Hats - Regulated by 29 CFR 1910.135 and 1926.100; and specified in ANSI Z89.1.
2. Face Shields and Safety Glasses - Regulated by 29 CFR 1910.133 and 1926.102; and specified in ANSI Z87.1.
3. Respiratory Protection - Regulated by 29 CFR 1910.134 and 1926.103.
4. Hand Protection - Regulated by 29 CFR 1910.138
5. Foot Protection - Regulated by 29 CFR 1910.136 and 1926.96; and specified in ANSI Z41.1.
6. Protective Clothing (e.g., fully encapsulated suits, aprons) - Specified in NFPA 1991/1992/1994.

3.2.1 PPE Inspection, Cleaning Maintenance, and Storage

The Office Health and Safety Manager (OHSM) or their designee is responsible for procuring PPE, in accordance with this management program. Single-use/disposable PPE should be purchased and used whenever practicable.

3.2.1.1 PPE Inspection

Roux employees must inspect PPE regularly, before and after each use, to check for defects and damage. Garments and other PPE in central storage must be inspected at least annually or as recommended by the manufacturer by the OHSM, Equipment Manager, and/or their designee. Defective or damaged equipment must be tagged as out-of-service, immediately removed from the work site, and discarded.

3.2.1.2 PPE Cleaning and Maintenance

All Roux employees are responsible for routine cleaning of their assigned PPE. Decontamination of PPE is addressed within Roux's Site Control and Decontamination Program as specified within site-specific health and safety plans. As appropriate, Roux employees should be issued single-use PPE when practicable to minimize the requirement for decontamination. When performing routine cleaning of reusable PPE:

- Always follow the manufacturer's recommendations to avoid damaging the PPE. For example, some cleaning solutions compromise the integrity of protective helmets shell.
- Clean and maintain PPE according to the manufacturer's recommendations. Before being re-issued, PPE should be thoroughly sanitized.
- Disassemble, wash and sanitize reusable respirators after each use. For more information, refer to Roux's Respiratory Protection Management Program.

Employees are not authorized to repair PPE without prior approval from the Health and Safety Department. Reusable PPE may require maintenance by the manufacturer to maintain integrity and certification. Many

manufacturers specify which repairs, if performed by the end-user, will void the product warranty. Therefore, Roux employees are not authorized to perform such maintenance or repairs.

3.2.1.3 PPE Storage

Certain equipment failures can be directly attributed to improper storage. The OHSM or Equipment Manager (or another designated person) is responsible for implementing procedures for appropriate PPE storage, for equipment that is centrally stored. Both central storage and dedicated PPE provided to employees should be stored using the following:

- Store goggles and safety glasses in protective cases.
- Store PPE (such as helmets, boots, etc.) in clean, dust-proof containers or bags out of direct sunlight.
- PPE should ideally be stored under climate-controlled conditions. PPE, stocked gear bags, and/or go-kits should not be stored in hot, cold, or other extreme environmental conditions, and they should not be stored in vehicles (government-owned or rentals) for even short periods of time. Do not store helmets on the rear window shelf of a vehicle.
- Store different kinds of clothing and gloves separately to prevent errors in selection.
- Hang or fold protective clothing in accordance with manufacturers' recommendations.
- Never store contaminated PPE near new protective clothing or street clothing. Potentially contaminated, reusable clothing must be stored (usually bagged) away from new PPE in a well-ventilated area with good airflow around each item until the garment is decontaminated or disposed.
- See Roux's Respiratory Protection Management Program for detailed respirator storage procedures.

3.3 Fitting, Donning, and Doffing PPE

Roux shall provide appropriately sized PPE for Roux employees. Improper fitting such as tight-fitting garments, can tear, especially at the knees, crotch, shoulders, back, and elbows due to movement. Protective clothing that is too large can easily snag and/or limit a user's dexterity. The Roux PM shall ensure site/project-specific PPE is kept in a sufficient stock of appropriately sized PPE (e.g., Level C ensembles). The OHSM, Equipment Manager, and/or their designee shall maintain a sufficient stock of appropriately sized PPE in central storage locations.

The Site Supervisor (SS)/Site Health and Safety Officer (SHSO) is responsible for ensuring that site-specific procedures for donning and doffing PPE are incorporated into site-specific HASPs. Donning and doffing procedures may differ depending on the type of PPE and clothing (e.g., Level D, Modified Level D, Level C) utilized. Figures 1-4, provide examples of procedures that can be used to don and doff Levels A through D and are provided as a reference. Site-specific conditions may warrant adjustments to such procedures. Consult the CHSD for additional information.

Site-specific donning and doffing procedures should include using an assistant where necessary. Donning and doffing certain types of PPE without assistance could risk failure or damage. Care must be taken to prevent the spread of contaminants on the PPE. Decontamination procedures should limit the potential for cross-contamination and may include gross decontamination of outer boots, gloves, and suits as necessary to prevent contaminants from tracking into the contamination reduction zone (CRZ) and clean zone(s).

3.4 Controlling Hazards Associated with PPE Use

PPE use can pose potential health and safety hazards, which range from minor discomfort to life-threatening height stroke. The magnitude of the potential hazard can vary and will depend on various factors, including an individual's fitness level, the type of PPE worn, the work demands, individual work practices, duration of work, and environmental conditions. The use of PPE can also lead to reduced efficiency and work performance.

Among hazards associated with PPE use, heat stress emerges as a prevalent and significant hazard. Particularly, the use of substantial and/or impermeable attire, such as heavy coveralls, Tyvek suits, splash suits, or Level A or B suits, alongside strenuous work, amplifies the risk of heat stress. Regular monitoring for indications of heat stress is imperative for workers operating in such conditions. Roux's Heat Illness Prevention Program lays out requirements for signs and symptoms as well as preventative measures to mitigate the potential for heat illness. In addition, cold environments can pose adverse risk, such examples include use of non-insulated steel-toe safety shoes in frigid conditions which has the potential to increase the risk of frostbite, while safety gloves worn for chemical protection may inadequately insulate hands from the cold.

It is the responsibility of Project Teams to integrate site-specific protocols to manage PPE hazards into such site-specific HASPs. These protocols can encompass considerations like work/rest ratios, crew rotations, and other accommodations for exceptionally demanding conditions.

The following measures are recommended for controlling hazards posed by PPE use:

- Prioritize through the hierarchy of controls with a focus on elimination, substitution, engineering, work practice and administrative control implementation rather than sole reliance on PPE. PPE shall be considered the last line of worker protection.
- Workers should maintain physical fitness to be able to withstand the potential physical strain of PPE use. A physically fit individual will endure less physiological strain, manifesting in a lower heart rate, reduced body temperature (indicating diminished retained body heat), more effective sweating, slightly lower oxygen consumption, and carbon dioxide production. Furthermore, acclimatization to extreme environmental conditions, such as high temperatures, can influence work performance and physical capacity.
- Understand the symptoms of PPE failure. Workers encountering any of these symptoms while donning PPE should promptly notify their onsite SHSO and/or SS:
    - Perception of odors when wearing a respirator
    - Skin irritation
    - Acute discomfort
    - Difficulty breathing
    - Unusual fatigue
    - Dizziness
    - Inability to see, hear, or speak clearly
    - Uncomfortable restriction of movement
    - Rapid pulse, nausea, or chest pain
- Implement a buddy system. Especially in situations where there is a need for increased level of protection (e.g., Level A-C) workers should work in pairs or teams, and are instructed to monitor the integrity of their team/partners gear and remain alert for symptoms of PPE failure.

3.5 PPE Selection

For site-specific work, the Project Manager, in consultation with the Health and Safety Department, has overall responsibility for coordinating the selection and distribution of PPE to field staff and for ensuring that the selected PPE is appropriate for the site-specific hazards. Generally speaking, Roux employees are not engaged in emergency response or perform work at uncontrolled hazardous waste sites; if this is the case, the CHSD shall be made aware of the work and consult with the Project Team on appropriate PPE selection. Most work falls under environmental sampling of low-concentration contaminants in water/soil/perimeter air. Therefore work is carried out in Level D PPE. Upgrades would be based on more information as it becomes available. The United States Environmental Protection Agency (EPA) has created Guidelines for PPE Ensemble Selection to assist workers in selecting PPE ensembles for specific activities and tasks and determining which ensembles and air monitoring equipment should be used to address specific chemicals. Guidelines to Ensembles for Specific Activities/Tasks Where Chemical Exposure is Possible is provided as a reference in Appendix A.

3.6 Protective Clothing Selection Criteria

3.6.1 Chemicals Present

The most important factor in selecting PPE is the determination of what chemicals the employee may be exposed to. The number of chemicals on field investigations may range from a few to several hundred. The exact chemicals or group of chemicals present at the site (certain groups tend to require similar protection) can be determined by collecting and analyzing air, soil, water, or other site media samples. When data are lacking, research into the hazardous materials used or stored at the site can be used to infer potential chemical exposures on the site.

The most appropriate clothing shall be selected once the known or suspected chemicals have been identified and considered based on the type of work to be performed.

Protective garments are made of several different substances for protection against specific chemicals. There is no universal protective material. All will decompose, permeate, or otherwise fail to protect under given circumstances. Fortunately, most manufacturers make guides to using their products (i.e., Dupont's Tyvek™ Permeation Guide). These guides are usually for gloves and coveralls and typically provide information regarding chemical degradation rates (failure of the material to maintain structural integrity when in contact with the chemical) and may provide information on the permeation rate (whether or not the material allows the chemical to pass through). When permeation tables are available, they shall be used with degradation tables to determine the most appropriate protective material for the specific chemical hazard(s).

During most site work, chemicals are usually in mixed combinations, and the protective materials are not in continuous contact with pure chemicals for long periods; therefore, the selected material may be adequate for the particular chemical of most concern and the type of work being performed, yet not the "best" protecting material for all site chemicals and activities. Selection shall depend upon the most hazardous chemicals based on their hazards and concentrations. Sometimes, layering (i.e., using several layers of protective materials) affords the best protection.

3.6.2 Concentration of the Chemical(s)

One of the major criteria for selecting protective material is the concentration of the chemical(s) in air, liquid, and solid state. Airborne and liquid chemical concentrations should be compared to the OSHA standards, American Conference of Governmental Industrial Hygienists (ACGIH) and National Institute for Occupational Safety and Health (NIOSH) guidelines to determine the level of skin or other absorptive

surface (e.g., eyes) protection needed. While these standards are not designed specifically for skin exposed directly to the liquid, they may provide skin designations indicative of chemicals known to have significant skin or dermal absorption effects. For example, airborne levels of PCBs on-site may be low because they are not very volatile, so the inhalation hazard may be minimal; however, PCB-containing liquid coming in direct contact with the skin may cause overexposure. Thus, PCBs have been assigned a skin designation in the OSHA and ACGIH exposure limit tables.

3.6.3 Physical State

The characteristics of a chemical may range from nontoxic to highly toxic, depending on its physical state. Inorganic lead in soil would not be considered toxic to site personnel unless it became airborne since it is generally not absorbed through the intact skin. However, organic lead in a liquid could be readily absorbed through the skin. Soil is frequently contaminated with hazardous materials. Concentrations will vary from a few parts per million to nearly one hundred percent by volume. The degree of hazard depends on the type of soil and concentration of the chemical. Generally speaking, “dry” soils that have not become airborne do not pose a hazard to site personnel if they take minimal precautions, such as wearing lightweight gloves.

3.6.4 Length of Exposure

The length of time a material is exposed to a chemical increases the probability of a breakthrough. Determinations of actual breakthrough times for short-term exposures indicate that several materials that would be considered inadequate under long-term exposures can be used. Different materials that would be considered inadequate under long-term exposures can be used. It should be kept in mind that during the manufacturer’s permeation testing, a pure (100% composition) liquid is usually placed in direct contact with the material, producing a worst-case situation.

3.6.5 Abrasion

When selecting protective clothing, the job the employee is engaged in must be taken into consideration. Persons moving drums or performing other manual tasks may require added protection for their hands, lower chest, and thighs. Using leather gloves and a heavy apron over other normal protective clothing will help prevent damage to the normal PPE and thus reduce worker exposures.

3.6.6 Dexterity

Although protection from skin and inhalation hazards is the primary concern when selecting PPE, the ability to perform the assigned task must be maintained. For example, personnel cannot be expected to perform work that requires fine dexterity if they must wear thick gloves. Therefore, the PPE selection process must consider the task being performed and provide PPE alternatives or techniques that maintain dexterity while still protecting the worker (e.g., wearing tight latex gloves over more bulky hand protection to increase dexterity).

3.6.7 Ability to Decontaminate

If disposable clothing cannot be used, the ability to decontaminate the materials selected must be taken into consideration. Once a chemical makes contact with the material, the PPE must be cleaned before reusing it. If the chemical has completely permeated the material, the clothing cannot be adequately decontaminated, and the material should be discarded.

3.6.8 Climactic Conditions

The human body works best with few restraints from clothing. Protective clothing adds a body burden by increasing weight, restricting movement, and preventing the body's natural cooling process. In severe situations, a modified work program must be used.

Some materials act differently when they are very hot and very cold. For example, PVC becomes almost brittle in frigid temperatures. If there are any questions about the stability of the protective materials under different conditions, the manufacturer should be contacted before using PPE in the field.

3.6.9 Work Load

Like climactic conditions, the type of work activity may affect work duration and personnel's ability to perform certain tasks. Similarly, the amount of protective materials a person wears will affect their ability to perform certain tasks. For example, a person in a total encapsulating suit, even at 72˚F, cannot work for more than a short period of time without requiring a break.

The work schedule should be adjusted to maintain the health of the employees. Modified work practices may include allowing more time for individual job tasks and implementing work/rest cycles per NIOSH and ACGIH thermal stress recommendations. Special consideration should be given to the selection of clothing that protects the worker and adds the least burden when personnel are required to perform strenuous tasks. Excessive bodily stress frequently represents the most significant hazard encountered during fieldwork.

3.6.10 Types of Protective Materials

1. Cellulose or Paper: suitable for nuisance dust and coarse fibers.
2. Natural and Synthetic Fibers
    a. Tyvek™: suitable small-sized hazardous particles, including lead, asbestos, and mold.
    b. Tychem™: is suitable for a variety of hazards, from light liquid splashes to heavy exposures to industrial chemicals and agents.
    c. Nomex™: is suitable for flame-resistance, radiation resistance, acids, alkalis, fluorocarbon refrigerants (CFCs), and non-polar solvents.
3. Elastomers
    a. Polyethylene: suitable for polar substances and solvents.
    b. Saran™ : suitable for flame-resistance, acids, alkalis, oils, and organic solvents.
    c. Polyvinyl Chloride (PVC): suitable for alcohols, oils, inorganic acids, alkalis, and salts.
    d. Neoprene: suitable for polar/non-polar substances, petroleum mixtures, and ≤ 200 F heat resistance.
    e. Butyl Rubber: suitable for polar substances and solvents.
    f. Viton: suitable for non-polar substances, petroleum mixtures, and ≤ 200 F heat resistance.
    g. Nitrile: suitable for polar/non-polar substances and petroleum mixtures.

3.7 Protection Levels

3.7.1 Level A Protection

Level A protection (a fully encapsulated suit) is used when skin hazards exist or when no known data positively rule out skin and other absorption hazards. Per the Roux Respiratory Protection Management Program, Roux employees are not authorized to enter an IDLH atmosphere; therefore, the program does

not allow supplied air respirators (SARs) or self-contained breathing apparatus (SCBA). At no time will Level A work be performed without the consent of the CHSD and OM.

The following conditions warrant the use of Level A protection:

- Hazardous substances have been identified and require the highest level of protection for skin, eyes, and the respiratory system;
- The atmosphere contains less than 19.5% oxygen or an atmosphere immediately dangerous to life and health (IDLH) that have not been ruled out;
- Site operations involve a high potential for splash, skin immersion, or exposure to suspected skin hazards;
- Direct-reading instruments indicate high levels of unidentified but potentially hazardous vapors or gases in the air (e.g., Total atmospheric readings on the Photoionization Detector (PID), Flame Ionization Detector (FID), and similar instruments indicate 500 to 1,000 ppm of unidentified substances); and
- Direct-reading instruments are not available to test the air and suspected highly toxic substances may be present.

It may be necessary to base the decision to use Level A protection on indirect evidence. Other conditions that may indicate the need for Level A protection include:

- Confined spaces;
- Sites containing known skin hazards;
- Sites with no established history to rule out skin and other absorption hazards;
- Site exhibiting signs of acute mammalian toxicity (e.g., dead animals, illnesses associated with past entry into the site by humans);
- Sites at which sealed drums of unknown materials must be opened;
- Visible indicators such as leaking containers or smoking chemical fires; and
- Extremely hazardous substances (e.g., cyanide compounds, concentrated pesticides, Department of Transportation Poison "A" materials, suspected carcinogens, and infectious substances) are known or suspected to be present, and skin contact is possible.

Table 1: Recommended Level A Ensemble Components

Component	Type	Manufacturer / Recommended Material	Notes
Respirator	Positive-pressure full-facepiece SCBA or positive-pressure supplied-air respirator with escape SCBA[1]	NIOSH approved respirator	See Roux's Respiratory Protection Program. Roux employees are not approved to utilize Supplied Air (SAR) and/or Self-contained breathing apparatus (SCBA).
Suit	Totally encapsulated chemical- and vapor-protective suit	DuPont® Tychem™ or Responder CSM™	Other material types may be substituted based on known contaminants.
Inner Gloves	Lightweight	Nitrile, Neoprene, PVC, or Viton®	Other material types may be substituted based on known contaminants.
Outer Gloves	An integral part of the suit	See Appendix A for additional information	Confirm chemical performance rating for suspected contaminants. Glove material may have different performance ratings than suit material. All fully-encapsulating suit materials must be compatible with substances involved.
Inner Boot	Integral Part of Suit	-	-
Outer Boot	HazMat boot[2]	–	Confirm chemical performance rating of outer boot for suspected contaminants. Provides slip/abrasion resistance.
Hard Hat	Standard[3]	-	-

[1] Must be NIOSH approved.
[2] Must meet NFPA 1991/NFPA 1994 requirements depending on the site hazard assessment.
[3] Must comply with the applicable ANSI standard.

3.7.2 Level B Protection

Level B protection is utilized when the highest level of respiratory protection is needed, but hazardous material exposure to the few unprotected areas of the body is unlikely. At no time will Level B work be performed by Roux personnel without the consent of the CHSD and OM.

The following conditions suggest a need for Level B protection:

- The type and atmospheric concentration of toxic substances have been identified, and they require the highest level of respiratory protection;

- IDLH atmospheres where the substance or concentration in the air does not present a severe skin hazard;
- The type and concentrations of toxic substances do not meet the selection criteria permitting the use of air-purifying respirators and
- It is highly unlikely that the work being done will generate high concentrations of vapors, gases, particulates, or splashes of materials that will affect personnel's skin.

Table 2: Recommended Level B Ensemble Components

Component	Type	Manufacturer / Recommended Material	Notes
Respirator	Positive-pressure full- facepiece SCBA or positive-pressure supplied-air respirator with escape SCBA[1]	NIOSH approved respirator	See Roux's Respiratory Protection Program. Roux employees are not approved to utilize Supplied Air (SAR) and/or Self-contained breathing apparatus (SCBA).
Suit	Chemical-resistant clothing (liquid-splash protective suit with integral boot and hood)[2]	DuPont® Tychem® CPF 3	Other material types may be substituted based on known contaminants.
Inner Gloves	Light/medium weight	Nitrile, Neoprene, PVC, Viton®, or PE/EVAL	Other material types may be substituted based on known contaminants.
Outer Gloves	Medium/heavy weight	Butyl MIL-G12223, Nitrile, Neoprene, PVC, Viton®, PE/EVAL, or heavy weight Nitrile or Neoprene	Confirm chemical performance rating. Other material types may be substituted based on known contaminants.
Inner Boot	Safety work boot	–	Other boot types may be substituted based on known contaminants and physical hazards. Puncture resistant shanks may be required.
Outer Boot	Heavy weight Latex booties or outer boots[2]	Latex booties are used to protect suit for light duty applications. NFPA-rated outer boots may be required based on anticipated site conditions and tasks.	Other outer boot coverings may be substituted based on known contaminants/anticipated tasks.
Hard Hat	Standard[3]	-	-

[1] Must be NIOSH approved.
[2] Must meet NFPA 1991/NFPA 1994 requirements depending on the site hazard assessment.
[3] Must comply with the applicable ANSI standard.

3.7.3 Level C Protection

Level C protection is utilized when skin and respiratory hazards are well defined, and the criteria for using negative pressure respirators have been fulfilled (i.e., known contaminants and contaminant concentrations, acceptable oxygen levels, approved filter/cartridge available, known cartridge service

life, etc.). Level C protection may require an emergency escape respirator during specific initial entry and site reconnaissance situations or when applicable after that.

Table 3: Recommended Level C Ensemble Components

Component	Type	Manufacturer / Recommended Material	Notes
Respirator	Full-face air-purifying respirator with appropriate cartridge[1]	NIOSH approved respirator	See Roux's Respiratory Protection Program for information about the brand, model, acceptable configurations, and specific care instructions for the standard issue respirator. Half-faced respirators may be donned if hazard assessment warrants.
Suit	Puncture/tear resistant suit material with boot and hood[2]	DuPont® Tychem® CPF 2/CPF 3 or Saranex	Other material types may be substituted based on known contaminants, if considered more appropriate.
Inner Gloves	Light weight	Nitrile, Neoprene	Other material types like Neoprene, PVC, Viton®, or PE/EVAL may be substituted based on known contaminants, if considered more appropriate.
Outer Gloves	Medium/heavy weight	Butyl, Nitrile, or other work glove	Confirm chemical performance rating. Other material types may be substituted based on known contaminants, if considered more appropriate.
Inner Boot	Safety work boot	–	Other boot types may be substituted based on known contaminants and physical hazards. Puncture resistant shanks may be required.
Outer Boot	Heavy weight Latex booties or outer boots[2]	Latex booties are used to protect suit for light duty applications. NFPA rated outer boots may be required based on anticipated site conditions and tasks.	Other outer boot coverings may be substituted based on known contaminants.
Hard Hat	Standard[3]	-	-
Eye Protection	Safety glasses/goggles[3,4]	-	-

1 Must be NIOSH approved.
2 Must meet NFPA 1991/NFPA 1994 requirements depending on the site hazard assessment.
3 Must comply with the applicable ANSI standard.
4 In the case a ½ face respirator is worn eye protection is required.

3.7.4 Level D Protection

Level D is the basic work uniform. Level D is worn when the atmosphere contains no known hazard. Work functions preclude splashes, immersion, potential for inhalation, or direct contact with hazard chemicals. For most Roux field jobs Level D is the standard minimum level of protection worn.

Table 4: Recommended Level D Ensemble Components

Component	Type	Manufacturer / Recommended Material	Notes
Respirator	None	-	-
Suit	Coveralls, street clothes, or disposable Tyvek suit	–	Other types may be substituted as appropriate.
Inner Gloves	N/A		
Outer Gloves	As appropriate for physical hazards and for comfort	–	-
Boot	Safety work boot	–	Roux's standard safety boot is 6", steel/composite safety toe, and electrical hazard (EH) rated.
Outer Boot Covering	As appropriate	–	–
Hard Hat	Standard[3]	-	-
Eye Protection	Safety glasses/goggles[3]	-	-
High Visibility Clothing	High Visibility Vest /Jacket[3]	-	ANSI Class 2 Safety Vests/Jackets are the standard. Class 3 Safety vests/jackets shall be worn in worksites with 50+ MPH traffic.
Hearing Protection	Ear muffs/plugs	-	Workers exposed to excessive noise shall don hearing protection. Refer to Roux's Hearing Conservation Program for more information.

[1] Must be NIOSH approved.
[2] Must meet NFPA 1991/NFPA 1994 requirements depending on the site hazard assessment.
[3] Must comply with the applicable ANSI standard.

3.7.5 Level E Protection

Level E protection is used when radioactivity above 10 millirems per hour (mrems/hr) is detected at the site. Personal protective equipment for Level E includes:

- Coveralls;
- Air purifying respirator (i.e., P100 or equivalent);
- Time limits on exposure;
- Appropriate dermal protection for the type of radiation present, and

- Radiation dosimetry and ambient monitoring.

3.7.6 Additional Considerations

Fieldwork will contain a variety of situations due to chemicals in various concentrations and combinations. These situations may be partially ameliorated by following the work practices listed below:

1. Foot protection is needed on every site. If the ground to be worked on is contaminated with liquid, and it is necessary to walk in the chemicals, some sort of protective shoe coverings or "booties" can be worn over the boots. Shoe coverings should be designed with soles to help prevent slips. Using disposable shoe coverings when contacting liquid contamination can on and reduce overall decontamination requirements. If non-liquids are to be encountered, a Tyvek™ bootie could be used. The advantage of booties is questionable if the ground contains any sharp objects. Boots should be worn with either cotton or wool socks to help absorb perspiration.
2. If the site requires hard hats, chin straps should be used if a person is stooping over where his/her hat may fall off. Respirator straps should not be placed over the hard hats, as this will affect the respirator's fit.

   Some types of protective materials conduct heat and cold readily. In cold conditions, natural material clothing should be worn under protective clothing. Protective clothing should be removed before allowing a person "to get warm." Applying heat, such as with a space heater, to the outside of the protective clothing may drive contaminant permeation. In hot weather, under clothing will absorb sweat. It is recommended that workers use all cotton undergarments.
3. Body protection should be worn and taped to prevent anything from running into the top of the boot. Gloves should be worn and taped to prevent substances from entering the top of the glove. Duct tape is preferred, but masking tape can be used. When aprons are used, they should be taped across the back for added protection. However, this should be done so that the person has mobility.
4. Atmospheric conditions such as precipitation, temperature, wind direction, humidity, wind velocity, and pressure determine the behavior of contaminants in air or the potential for volatile materials to become airborne. These parameters should be considered in determining the need for and the level of protection.
5. A program must be established for periodic air monitoring during site operations. Without an air monitoring program, any changes to air quality would go undetected and might jeopardize on-site personnel. Monitoring can be done with various types of air pumps and filtering devices, followed by laboratory analysis of the filtration media, personnel dosimeters, and periodic walk-throughs by personnel carrying real-time direct-reading survey instruments.
6. For operations in the exclusion zone, different levels of protection may be selected, and various types of chemical-resistant clothing may be worn. This selection should be based on the job function, reason for being in the area, and the potential for skin contact with, or inhalation of, the chemicals present.
7. Escape masks must be readily available when levels of respiratory protection do not include an SCBA and the possibility of an IDLH atmosphere exists. The use and placement of escape masks should be made on a case-by-case basis. Escape masks should be strategically located at the site in areas with a higher potential for vapors, gases, or particulates.

3.8 Decontamination of PPE

Roux prefers the use of single-use PPE to minimize the requirement for significant decontamination. The following procedures shall be considered should a field project require the need for decontamination of PPE. Roux has also developed a Site Control and Decontamination Management Program.

3.8.1 Site-Specific Decontamination Plans

The Project Manager (or another authorized individual) is responsible for formulating the site-specific PPE decontamination plan as an integral part of the Health and Safety Plan (HASP). The SHSO/SS' responsibilities include ensuring the plan's implementation and adapting it as site conditions evolve. Refer to Roux's Site Control and Decontamination Management program for additional requirements.

The decontamination plan, often created in conjunction with PPE selection, must be established prior to workers entering potentially contaminated areas. The plan should address the following key aspects:

- Decontamination Hazard Evaluation and Risk Assessment: Assessing risks associated with decontamination processes.
- PPE for Decontamination Line Assistants: Specifying appropriate PPE for personnel involved in decontamination.
- Roles and Responsibilities During Decontamination: Defining tasks and duties during the decontamination process.
- Layout and Quantity of Decontamination Stations: Determining the number and arrangement of decontamination stations, along with the designated PPE decontamination procedures at each station.
- Decontamination Equipment: Identifying the necessary equipment for effective decontamination.
- Decontamination Methods: Describing the methods and protocols for decontaminating personnel and equipment.
- Preventing Contamination of Clean Areas: Outlining procedures to prevent contamination of uncontaminated zones.
- Minimizing Contact with Contaminants During CPC Removal: Providing guidelines to reduce wearer exposure during the removal of Chemical Protective Clothing (CPC).
- Disposal Procedures for Inadequately Decontaminated Clothing and Equipment: Ensuring proper disposal practices for items that have not been adequately decontaminated.

The initial decontamination plan, which is developed in conjunction with the initial site hazard assessment, should be based on worst-case assumptions about the extent and type of contamination.

3.8.2 Emergency Decontamination of PPE

The designated SHSO/SS (or another authorized individual) assumes responsibility for addressing emergency decontamination within the site-specific Health and Safety Plan (HASP). Emergency decontamination may become necessary due to events such as fires, explosions, sudden violent storms, or medical emergencies. The emergency decontamination plan must clearly delineate emergency egress routes, as well as procedures for both decontamination and egress.

Some key points to consider regarding emergency decontamination.

- Immediate Notification: The SHSO/SS (or their designated counterpart) must be promptly informed of any circumstances requiring emergency decontamination. Additionally, they are accountable for tracking all personnel during the process.
- Urgent Medical Treatment: If urgent medical attention is necessary, decontamination of PPE may be delayed until the victim's condition stabilizes.
- Balancing Priorities: When feasible, decontamination should occur without hindering essential first aid. However, if a worker is exposed to an extremely toxic or corrosive substance, immediate decontamination is crucial to prevent severe injury or fatality.

- Heat-Related Illness: In cases of heat-related illness, protective clothing must be promptly removed (refer to Roux's Heat Illness Prevention Program).

Emergency Facilities:

- For workers potentially exposed to corrosive materials, quick drenching or flushing facilities must be provided in accordance with 29 CFR 1910.151(c) and 1926.50(g).
- Similarly, if workers face other hazards (such as splash or dust) that could harm the eyes or body, readily accessible wash stations are essential. These stations should be properly located and maintained, including regular water changes, as per the manufacturer's instructions.

3.8.3 Protection of Decontamination Line Assistants

Should work require a decontamination corridor the following shall be used as guidance. The SHSO/SS (or other designated person) must for ensuring that decontamination line assistants receive appropriate PPE and addressing their protection within the site-specific HASP. Key zones—namely, the Exclusion Zone (EZ), Contamination Reduction Zone (CRZ), and Clean Support Zone—must be clearly marked both in the field and within the site-specific HASP. The following should be considered when preparing for protection of decontamination line assistants.

1. Task Hazard Analysis: A thorough analysis must be conducted for line assistants to determine the optimal PPE level required. Factors influencing this decision include:
    - Expected or Visible Contamination on Responders
    - Type of Contaminant and associated respiratory and skin hazards
    - Total Vapor/Gas Concentrations in the CRZ
    - Presence of Particulates and specific inorganic or organic vapors in the CRZ
    - Results of Wipe Tests (refer to Section 5.4)
    - Slope and Configuration of the CRZ
2. PPE Levels: Depending on the situation:
    - Line assistants may need to wear the same PPE level as workers in the EZ.
    - Alternatively, line assistants may be adequately protected by using PPE one level lower (e.g., wearing Level C protection while decontaminating workers who are wearing Level B)."

3.8.4 Procedures to Minimize PPE Contamination

Proper work practices and procedures should be implemented at sites to minimize the potential for contact with chemicals of concern while onsite. The following guidance should be considered when developing site-specific procedures:

- Opt for single-use Personal Protective Equipment (PPE) when feasible to minimize decontamination needs.
- Ensure complete sealing of PPE closures and interfaces, including pockets, zippers, and other potential openings.
- Position gloves and boots underneath the sleeves and pant legs of outerwear to reduce exposure.
- Place hoods outside the collar if they are not already attached.
- Utilize disposable outerwear and equipment when suitable to facilitate easy disposal and reduce decontamination efforts.
- Secure all junctions with tape to block contaminants from entering gloves, boots, jackets, and suits.

- Adopt work practices that limit contact with hazardous substances, such as avoiding unnecessary exposure.
- Employ remote techniques for sampling, handling, and opening containers, like using drum grapples and pneumatic impact wrenches.
- Store monitoring and sampling devices in bags designed with openings for sample ports and sensors.
- Cover contaminant sources with plastic sheeting or overpacks to shield PPE from contamination.

3.8.5 PPE Disposal

The PM, in coordination with the field team, shall ensure the safe disposal of all wastes generated from PPE use. PPE must be placed in appropriate containers, labeled, and prepared for disposal separately from other forms of waste. Refer to Roux's General Waste Corporate Management Program for further guidance.

APPENDIX A
EPA's Emergency Responder Health and Safety Manual

APPENDIX G

Roux Daily Tailgate Health and Safety Meeting Log/Daily Site Safety Checklist

ROUX

DAILY TAILGATE HEALTH & SAFETY MEETING LOG

Job Name _____ **Date(s)** _____

Job # _____ **Client Site #** _____

Activities Planned _____

_____

_____

JSAs Utilized	Roux PM Reviewer

Potential Hazards	Mitigative Measures
LPO Scheduled for:	

Meeting Attended by:		Date	Date	Date	Date	Date
Name	Company					

Initials

NOTE: THIS IS A TWO-SIDED FORM; PLEASE COMPLETE BOTH SIDES

DAILY SITE SAFETY CHECKLIST

Job Name _____ **Date(s)** _____

Job # _____ **Client Site #** _____

Weather _____

•"On the Job" interactive meeting held before work starts	•Provide details of work planned for the day
•Conducted at least once per day	•Review the Job Safety Analysis (JSA) and work hazards
•Involves everyone working at the Site	•Required PPE for the planned work
•Should familiarize everyone with work area & vicinity	•SPSAs are discussed
•Work permit procedures	•HASP is reviewed
•Emergency access/exits & "rally" point	•Ensure safety equipment is on Site
•Emergency contacts/phone #s, hospital route	•Test required safety equipment (such as emergency stop controls)
•Should be interactive	•Can also include inspection of tools and equipment to be used

Instructions: Please use form for up to five consecutive days. Write in date, place checkmark to indicate item has been completed, then initial at bottom of column to verify.

#	CHECKLIST ITEM	DATE				
1	The HASP (including emergency phone #s) has been reviewed & signed by Roux staff & subcontractors.					
2	Personnel are LPS and OSHA-40 (as applicable) trained and SSE are identified and have an on-site mentor.					
3	Emergency meeting point known, First Care facility and ER identified.					
4	Applicable JSAs have been identified and approved by Roux management.					
5	Roux personnel & subcontractors have discussed hazards associated with Site-specific work.					
6	Any potential slips, trips or fall hazards have been identified.					
7	All workers have appropriate PPE, including long sleeves and have signed in for the day (2nd Page).					
8	No person on-Site has the appearance of being under the influence of motor skill altering substances and are familiar with D&A policy.					
9	Critical equipment on-Site is noted and is in safe working order.					
10	Site control has been established and exclusion zone is identified (using safety cones or barricades to mark out work area).					
11	Appropriate permits has been obtained and potential ignition sources were identified if applicable for Hot Permits					
12	If applicable, all third party permits to construct are on hand and access is permissible.					
13	Lock Out / Tag Out procedures have been followed where applicable, for electric and water.					
14	Electrical power operated tools shall be properly grounded and used with a GFCI.					
15	Traffic Safety Control measures have been put in place where applicable.					
16	All vessels containing flammable/corrosive material are labeled and MSDSs are available for all chemicals.					
17	Subsurface work : Drilling, trenching, etc. conducted according to required Protocol, including pre-field preparations, utility mark-out and "hand" clearing					
18	Excavated soils are properly stored; excavations are properly shored/sloped and barricaded.					
19	Good housekeeping procedures are meet; food and beverages are consumed outside of the work area.					
20	A first aid kit, eye wash bottle/station, and fire extinguishers are available for use.					
21	No smoking signs are visibly posted in areas of potential flammable vapors.					
Initial at right to verify that these actions have taken place						

Comments and Exceptions _____

_____

NOTE: THIS IS A TWO-SIDED FORM; PLEASE COMPLETE BOTH SIDES

APPENDIX H

Subsurface Utility Clearance Management Program

SUBSURFACE UTILITY CLEARANCE MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY DIRECTOR	**:**	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	**:**	**01/2019**
REVIEW DATE	**:**	**03/2025**
REVISION NUMBER	**:**	**5**

TABLE OF CONTENTS

1. PURPOSE 1
2. SCOPE AND APPLICABILITY 1
3. PROCEDURES 1
3.1 Before Intrusive Activities/Job Planning Process 1
3.1.1 Project Kick-Off Meeting 2
3.2 Utility Mark Out 2
3.3 Site Visit/Utility Walkthrough 3
3.3.1 Project Management - Field Personnel 4
3.3.2 Utility Markings 4
3.4 Preferred Methods of Clearing the Subsurface (Pre-Clearing) 6
3.4.1 Guidance for Tools and Equipment 6
3.5 During Intrusive Activities 7
3.5.1 Concrete/Paving Surface Removal 7
3.5.2 Pre-Clearance Procedures 7
3.6 Stop Work Authority 8
3.7 Reporting Utility Incidents 8

APPENDICES

Appendix A – Roux Subsurface Utility Clearance Checklist/ Utility Verification/Site Walkthrough Record

Appendix B – Private Utility Technology Applications and Considerations

1. PURPOSE

Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C., and Remedial Engineering (collectively, "Roux"), have instituted the following program for completing proper utility mark-outs and for conducting subsurface clearance activities. This establishes a method to ensure, to the greatest extent possible, that utilities have been identified and contact and/or damage to underground utilities and other subsurface structures will be avoided. For the purpose of this program, a structure is defined as any underground feature that may present a potential source(s) of energy, such as, but not limited to, utility vaults, bunkers, piping, electrical boxes, wires, conduits, culverts, utility lines, underground tanks, and ducts.

2. SCOPE AND APPLICABILITY

The Subsurface Utility Clearance Management Program applies to all Roux employees, as well as their contractors and subcontractors. Employees are expected to follow this program for all intrusive work involving Roux or other personnel (e.g., contractors, subcontractors) working for Roux, unless the client's requirements are more stringent. Intrusive work activities can include, but are not limited to, digging or scraping the ground surface, including, but not limited to, excavation; test pitting or trenching; soil vapor sampling or the installation of soil borings, soil vapor monitoring points and wells, or monitoring wells; and drilling within concrete slabs on grade.

Deviation from the program, regardless of the specific work activity or location, must be pre-approved based on the client's site knowledge, experience, site conditions, and additional documentation on the site. Any exceptions shall be documented through the Roux Subsurface Utility Clearance Variance Form, located within the Roux Health & Safety Online Application or via OKTA. Approval is required from the Project Principal (PP) and the Operations Manager (OM), in consultation with the Office Health and Safety Manager (OHSM) or Corporate Health and Safety Director (CHSD), prior to mobilization. Depending on the work location, more stringent federal, state, local, or client requirements may apply. It is the responsibility of the Project Team to identify such requirements prior to mobilization.

3. PROCEDURES

3.1 Before Intrusive Activities/Job Planning Process

Prior to intrusive work at a site, the Project Manager (PM) shall ensure that the notification of the State One Call or equivalent service (Nationwide-811) is completed a minimum of 48-72 hours (One-Call State Law Directory) before intrusive work activities (this timeline excludes Saturdays, Sundays, Legal Holidays and 811 observed holidays). This notification is required by law for all states. State-specific or local laws related to utility location may vary. The project team is responsible for understanding requirements that may affect their work site.

Obtain, review, and field verify relevant historical site data that may include: as-builts/site plans; easement/right-of-way information; historical aerial photos/development plans; local/state permitting records; previous site investigation/boring logs; and/or interviews with site representative/client. Interviews with site or client personnel should ask the following:

- Employee(s) Name and Relationship with the site;
- Types of utilities, including structure and location of utilities on-site;
- Depth of known utilities; and
- Any other relevant information as it pertains to the site.

Prior to intrusive work activities, information pertaining to the site should be included in Roux's Subsurface Utility Clearance Checklist and Utility Verification/Site Walkthrough forms. This form is located within the Roux Health & Safety Online Application or through OKTA.

If there is the potential for unexploded ordnances or munitions, consultation with your OM and CHSD is required prior to site operations.

3.1.1 Project Kick-Off Meeting

During the project kick-off meeting for intrusive activities, the PM will review the Roux Subsurface Utility Clearance Checklist, Utility Verification / Site Walkthrough Record (Appendix A) and the below bullet points with the project field team:

- Confirm that the State One Call or equivalent is received and that the ticket number is confirmed, reviewed, and valid for the time of work. If intrusive work activities are not conducted during this valid time period, the One Call ticket must be renewed, and the site must be remarked;
- Review the work scope to be performed with the site owner/tenant to determine if it may impact any utilities;
- Determine the need for utility owner companies to be contacted or to have their representatives on site;
- Where mark-outs terminate at the property boundary, consider the use of private utility locating / (e.g., Radio Frequency Detection, Electromagnetic Induction), Ground Penetrating Radar (GPR) , and other applicable geophysical inspection services. The use of private utility locating firms, however, does not eliminate the legal requirement for the subcontractor (e.g., driller, excavation firm) to submit a request for Public Utility Mark-outs. Also, the information provided by the service may be inaccurate and unable to locate subsurface utilities and structures in urban areas, landfills, urban fill areas, below-reinforced slabs, etc. They should not be relied upon as the only means of performing utility clearance;
    - A mark-out is defined as the process of contracting with a competent and qualified company to confirm the presence or absence of underground utilities and structures. This process will clearly mark out and delineate identified utilities so that intrusive work activities can be performed without causing disturbance or damage to the subsurface utilities and structures. After utility mark-outs are completed, soft Digging must completed prior to intrusive work. Section 3.4 Preferred Methods of Clearing the Subsurface (Pre-Clearing) outlines requirements for pre-clearing techniques in order of preference.
- Documented description of the dig site, which is included in the project's Health and Safety Plan (HASP), and one call report will be maintained in the field and distributed amongst Roux personnel, its contractors, and subcontractors; and
- Documentation of the actual placement of mark outs in the field shall be collected using dated pictures, videos, and/or sketches with distance from markings to fixed objects. All documentation shall be maintained within the project file.

3.2 Utility Mark Out

- Ensure the Mark-out / Stake-out Request Information Sheet (or one-call report) is complete and accurate for the site, including address and cross streets, and review for missing utilities. Ensure ticket life is still valid for work.
    - Note: Utility mark-out organizations do not have contracts with all utilities, and it is often necessary to contact certain utilities separately, such as the local water and sewer authorities, local transportation departments, and railroad operators. In the event the Project Teams

anticipate subsurface work will impact public utilities, railroad operations, or public roadways, coordination with the utility owners/operators is required.

- Have written confirmation prior to mobilizing to the site that the Project Team or Roux personnel performing the intrusive activity has correctly completed the mark-out notification process, including requesting mark-outs, waiting for mark-outs to be applied to ground surfaces at the site, and receiving written confirmation of findings (via fax or email) from utility operators for all known or suspected utilities in the proposed area of intrusive activity, and provided utility owner written confirmation to Roux personnel for review and project files documentation.
- Do not begin any intrusive activity until all utility mark-outs have been completed (i.e., Did all utilities mark-out the site?) and any unresolved mark-out issues are finalized. Perform a site walk to review the existing utilities and determine if the utility locators have located said utilities.

  (Note: The Tolerance Zone is defined as three feet from the outside edge of any subsurface structure.)
- For non-subscribing utility owners or if public one-call service is not available, perform due diligence and request further information regarding utility type, construction details, location, and burial depth directly from public service providers/utility owners. Request utility mark-out by each public service provider/utility owner as applicable. Confirm contact and response by each public utility owner on the Subsurface Utility Clearance Checklist.
- If utilizing a Private Mark out, ensure the contractor has a plan regarding what types of technology will be used based on Table 1 in Appendix B: Private Utility Technology Applications and Considerations. If possible, it is recommended that multiple technologies be used to sweep each location/work area. Use a tracer wire to locate the utility (when tracer wires are present). Record the results of the private utility mark-out on the Utility Verification/Site Walkthrough Record form.

3.3 Site Visit/Utility Walkthrough

Before mobilization with the subcontractor or during the pre-work safety tailgate with the subcontractor, perform a site walkthrough after utility mark-outs have been completed to determine whether additional potential hazards are present and look for visible signs of utilities that may be present. Outlined below are considerations regarding a site walk before intrusive activities. Before initiating any intrusive work, verify that the utilities marked on-site align with the information provided in the One Call response notification/ticket and with site plans and documents. If any discrepancies arise, address them promptly to ensure accuracy and do not start intrusive work until they are rectified.

- Identify overhead utilities that may impede equipment mobilization or work zones to ensure adequate Occupational Safety and Health Administration (OSHA) clearance distance(s), as specified within the site-specific Health and Safety Plan (HASP) and 29 CFR 1926.1408 Table A.

The presence of any of the following may indicate potential subsurface structures:

- Locations of buildings, equipment, and features like area lights, signs, sprinkler systems, phones, drains, natural gas meters, manholes, etc.;
- Warning tape, which is often a sign of underground services;
- Material like pea gravel, sand, or other non-native materials can indicate the presence of tanks or lines or any deviations from the established native soil or backfill conditions;
- Red concrete that is often used for electrical duct banks;
- Evidence of damaged utilities, such as piping materials, insulation, or odors present in the work area; and

- Other utilities, including fire hydrants, electrical transformers, pipeline markers, valve covers, steam lines, valve box covers, clean-outs, etc.

By observing the path between the main service line and the connection point (e.g., a utility meter at the exterior of the site building), it may be possible to determine the likely routing of on-site utilities. However, this method should not be relied upon solely, and proper risk mitigation strategies should be in place before proceeding with any ground disturbance activities. Look outside your work zone for other potential utilities that may cross through it.

For sites with potential underground storage tanks present (UST), the following guidance applies:

- Identify if the product piping is either rigid or flexible.
- Conduct a visual examination of the tank field, observation wells, dispensers, vent stacks, and UST fill points to determine their location.
- Locate and become familiar with the emergency shutoff button/switch, if present.
- Determine the orientation, arrangement, and location of the tanks, as well as their size and capacity, through the examination of visible features at grade, such as fill ports and extractor covers, and by consulting any available as-built drawings.

Before commencing any subsurface intrusive work, field staff should thoroughly address any discrepancies in utility company mark-outs or the absence of mark-outs.

3.3.1 Project Management - Field Personnel

Whenever possible, it is advisable to assign the same project personnel to both utility location and clearance tasks as well as intrusive activities. This continuity ensures that site knowledge and utility information gathered during the clearance phase remain up-to-date. Having this historical perspective helps minimize the risk potential of utility strikes.

In cases where maintaining the same personnel throughout the project is not feasible, a thorough knowledge transfer regarding site utilities, locations, clearance results, and proposed intrusive activities becomes essential. The PM must ensure that there is a successful handoff of information when there is a change in field personnel.

3.3.2 Utility Markings

The utility marking color code includes various uniform colors. The following APWA uniform color code (ANSI Z535.1) is provided below. While certain government agencies or large industrial facilities may use additional colors, Roux's policy is to consider any unlisted paint marking or pin flag color as a subsurface utility marking unless proven otherwise.

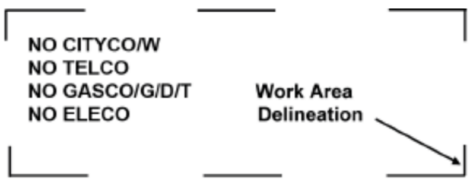
If utilities or subsurface anomalies are identified but their type or classification remains uncertain, it is advised to employ pink paint or pin flag (Temporary Survey Marking) for marking. Once the utility type is definitively established, the pink marks should be updated to represent the correct type of utility accurately.

White	Proposed Excavation
Pink	Temporary Survey Markings
Red	Electric Power Lines, Cables, Conduit, and Lighting Cables
Yellow	Gas, Oil, Steam, Petroleum, or Gaseous Materials
Orange	Communication, Alarm or Signal Lines, Cables, or Conduit
Blue	Potable Water
Purple	Reclaimed Water, Irrigation, and Slurry Lines
Green	Sewers and Drain Lines

Understanding the markings left by locators during the 811 process is crucial for avoiding utility-related issues. Typically, these markings are done when Roux staff members are not physically present on-site. To enhance understanding/accuracy, it is advisable for staff to be present during the 811 process or engage in conversations with locators, both public and private, while on-site. Additionally, utility marks must adhere to the proper standards outlined in the Uniform Color Code.

Common Abbreviations *(Source: Common Ground Alliance)*

Facility Identifier		Underground Construction Descriptions		Infrastructure Materials	
CH	Chemical	C	Conduit	ABS	Acrylonitrile - Butadiene - Styrene
E	Electric	CDR	Corridor	ACP	Asbestos Cement Pipe
FO	Fiber Optic	D	Distribution Facility	CL	Cast Iron
G	Gas	DB	Direct Buried	CMC	Cement Mortar Coated
LPG	Liquefied Petroleum	DE	Dead End	CML	Cement Mortar Lined
PP	Petroleum Products	JT	Joint Trench	CPP	Corrugated Plastic Pipe
RR	Railroad Signal	HP	High Pressure	CMP	Corrugated Metal Pipe
S	Sewer	HH	Hand Hole	CU	Copper
SD	Storm Drain	MH	Manhole	CWD	Creosote Wood Duct
SS	Storm Sewer	PB	Pull Box	HDPE	High Density Polyethylene
SL	Street Lighting	R	Radius	MTD	Multiple Tile Duct
STM	Steam	STR	Structure (vaults, junction inlets, lift station)	PLA	Plastic (conduit or pipe)
SP	Slurry System	T	Transmission Facility	RCB	Reinforced Concrete Box
TEL	Telephone			RCP	Reinforced Concrete Pipe
TS	Traffic Signal			RF	Reinforced Fiberglass
TV	Television			SCCP	Steel Cylinder Concrete Pipe
W	Water			STL	Steel
W	Reclaimed Water "Purple"			VCP	Vitrified Clay Pipe



3.4 Preferred Methods of Clearing the Subsurface (Pre-Clearing)

At least one of the methods listed below shall be carried out during pre-clearing activities. The Project Team is responsible for evaluating risks associated with the Scope of Work to determine which method is selected.

If none of the following pre-clearing activities are performed, a Subsurface Utility Clearance Variance must be submitted to the OM. This Subsurface Utility Clearance Variance must provide clear lines of evidence that there are no utilities present within the intrusive work zone. Examples include demolition permits of the site, utility closure documents indicating no live utilities on-site, as-builts, site history, etc.

The following approaches shall be considered and implemented based on the Scope of Work.

- ***Soft Digging***
  - This is the preferred method of utility clearance when clearing higher-risk utilities. Soil should be cleared through the use of a vacuum truck/equivalent, an accompanying air knife (preferred), or a water lance to break up and loosen the soil for removal with the vacuum.
- ***Hand Digging***
  - Soil should be broken up and removed using a shovel or other appropriate hand tools without excessive force. Limit the use of dig bars or other tools that, if used incorrectly, can significantly damage utilities.
- ***Hand Augering***
  - The hand auger must be turned slowly using even hand pressure without excessive force. Rounded-edge augers are preferred. Hand augers should not be used in pea stone/pea gravel where utilities may be present and could potentially be damaged by the hand auger. The abrupt absence of soil recovery in a hand auger could indicate utilities as pea gravel or sand may have spilled out of the auger (exception: native soil conditions that typically result in poor hand auger recoveries). If any resistance is encountered while operating the hand auger for pre-clearance, the equipment will be removed, and the exploratory test hole will be visually inspected by onsite personnel for any obstructions or indications of subsurface structures.

3.4.1 Guidance for Tools and Equipment

Personnel performing pre-clearance activities shall keep tools and equipment in safe working order and be properly inspected before use. If tools or equipment are broken, they will be tagged and removed from service. The following specify additional guidelines regarding tools and equipment:

- Hand-digging tools must have a non-conductive handle, such as fiberglass, wood, or composite, or fully insulated handles and potential contact surfaces.
- Blades on shovels and post-hole diggers should have rounded or blunt edges.
- Pick axes or pointed spades should not be used for physical clearance.
- Crowbars, pinch-bars, or pry bars should not be used to break hardened soil or backfill except when authorized by the Site Supervisor (SS). This should only be used to loosen materials like bricks or larger stones.
- Electric-powered equipment must have ground-fault protection.
- Should there be refusal or difficulty with advancing hand tools, the contractor shall stop work and notify the Roux SS or Site Health and Safety Officer (SHSO) immediately.

3.5 During Intrusive Activities

3.5.1 Concrete/Paving Surface Removal

Remove any surface coverings (i.e., pavement, brush, debris, etc.) to ensure workers have clear visibility of the work area and subsurface conditions. Avoid mechanical jackhammering over known lines unless they are de-energized, locked-out/tagged-out, and potential repairs are planned or if the utility has been completely disconnected prior. When cutting or coring, go only as far as needed to penetrate the surface cover. When removing a large surface area, begin at the perimeter of the removal zone. This initial step helps identify any utilities passing through the work zone. For extensive areas, using a concrete saw might not be practical. Instead, heavy equipment is often employed. During this process, a designated spotter should guide the heavy equipment. Their role is to watch for warning signs of utilities. It is crucial that the heavy equipment does not have “teeth” that could potentially pass through the surface and damage utilities.

3.5.2 Pre-Clearance Procedures

Install pre-clearance exploratory test holes using one of the techniques, as outlined in Section 3.4, for the first 5-ft below land surface (BLS) at each location before conducting intrusive mechanized activities. Should utilities be located at a greater depth than 5-ft BLS consult with the OM, OHSM and CHSD regarding adjustments to the pre-clearance requirements to go greater than 5-ft BLS. Some Clients may require greater than 5-ft BLS for pre-clearance test holes; Project teams should be aware of such Client requirements prior to work.

Pre-clearance exploratory test holes should be defined in the SOW/proposal provided to the client to prevent project delays and to allow adequate time for the PM and PP to evaluate alternative approaches for the project. Alternative approaches will need to be pre-approved by the OM through a Subsurface Utility Clearance Variance.

Both single-point and three-point clearance are acceptable as long as the following criteria are met below. For single-point clearance, the exploratory test hole is advanced at the exact location of the proposed borehole. If three-point clearance is performed, it must be done in a triangular pattern around the proposed borehole and in a configuration that would not allow utilities to enter the borehole.

- The size of the pre-clearance exploratory test hole should be, at a minimum, twice the diameter of any downhole tool or boring device.
- For direct push applications (CPT, Geoprobe®, etc.), the borehole clearance diameter shall be at least 125% of the diameter of the largest tool being pushed through the subsurface (e.g., tip, rod, sampler, etc.), to the minimum required depth.
- For excavations, all utilities need to be marked and then exposed by soft-digging or by hand, following the protocols in this program. Pre-clearing for excavations may be performed by the “moat” technique (i.e., soft Digging around the perimeter). In these cases, dig in small lifts (<12” for first 5 feet using a dedicated spotter.
- For Tolerance Zone work, unless otherwise agreed upon with the Utility Operator, work within the tolerance zone requires verification by means of pre-clearance test holes specified in Section 3.4 to expose the utility. Once structures have been verified, a minimum clearance of three feet must be maintained between the utility and any powered equipment. If considered a high-risk utility, additional requirements may be necessary and required by the Operator of the utility. Consultation with the OM and CHSD may be appropriate.

The PM, field team lead, or personnel performing oversight is to:

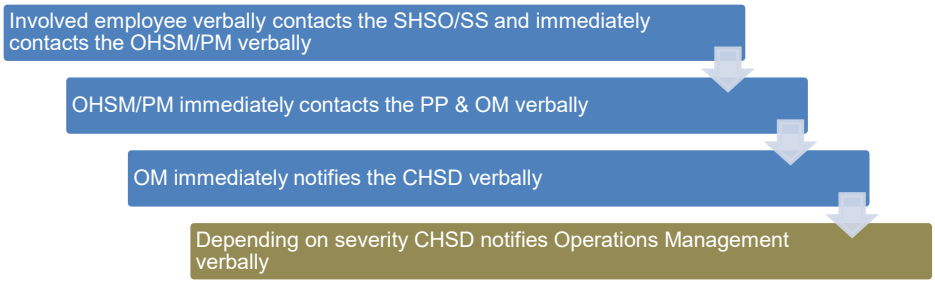
- Ensure the mark-out remains valid. (In certain states, there are limits regarding the duration of time after the mark-out was applied to the ground surface work can be started or interrupted.) Additionally, the mark-outs must be maintained, documented, and in many cases, refreshed periodically to be considered valid. This will be accomplished through calls to the one call center.
- Ensure intrusive activities are only performed within the safe boundaries of the mark-out as detailed in the One-Call Report.
- Halt all work if intrusive activities have resulted in the discovery of an unmarked utility. Roux personnel shall notify the facility owner/operator and the one call center. All incidents such as this will be reported as per Roux Incident Investigation and Reporting Management Program.
- Halt all work if intrusive activities must take place outside of the safe boundaries of a mark-out and only proceed after new mark-outs and subsurface utility clearance are performed.
- Halt the intrusive activities and immediately consult with the PP if an unmarked utility is encountered.
- Complete any loss reports associated with subsurface utility strikes, as necessary.
- If a utility cannot be found as marked, Roux personnel shall notify the facility owner/operator directly or through the one-call center. If the facility operator is not responsive, then the one-call center must be notified. Following notification, the excavation/mechanical intrusive work may continue unless otherwise specified in state law.
- Contractors/subcontractors must contact the one-call center to refresh the ticket when the excavation continues past the life of the ticket. State law dictates ticket life. Project teams must be aware of their state-specific requirements.

3.6 Stop Work Authority

Each Roux employee has Stop Work Authority that he or she will execute upon determination of any imminent safety hazard, emergency situation, or other potentially dangerous situation, such as hazardous weather conditions. This Stop Work Authority includes subsurface clearance issues such as the adequacy of a mark-out or identification during intrusive operations of an unexpected underground utility. Authorization to proceed with work will be issued by the PM/PP in consultation with the OHSM after such action is reviewed and resolved. The PM will initiate and execute all management notifications and contact emergency facilities and personnel when this action is appropriate.

3.7 Reporting Utility Incidents

Roux field personnel engaged in any utility strike (e.g., subsurface/aboveground) must promptly stop work, shutdown any equipment and get to a safe location at the Site. Then notify the PM to discuss the incident. In case of injuries, field personnel must call 911 or the local emergency services number and then inform the PM. Additional notifications shall follow Roux's Incident Notification Process. Depending on the utility strike additional notifications shall be made to utility operators and/or clients/site contacts.



Appendix A
Roux Subsurface Utility Clearance Checklist

Appendix A

Roux Subsurface Utility Clearance Checklist/Utility Verification/Site Walkthrough Record

Roux Subsurface Utility Clearance Checklist ***Date of Revision: 3/2024***

Work site set-up and work execution

ACTIVITY	Yes	No	N/A	COMMENTS INCLUDING JUSTIFICATION IF RESPONSE IS NO OR NOT APPLICABLE
Daily site safety meeting conducted, SPSAs performed, JSAs reviewed, appropriate work permits obtained (if applicable).				
HASP is available and reviewed by site workers / visitors.				
Subsurface Utility Clearance Procedure has been reviewed with all site workers.				
Mechanical intrusive work activities may not be performed at any location without authorization from the Roux Site Supervisor (SS). Clearance activities may not be performed at any location unless the SS is physically present.				
Work area secured; traffic control established as needed. Emergency shut-off switch located. Fire extinguishers / other safety equipment available as needed.				
Utility mark-outs (public / private) clear and visible. Provide Excavator's Stake-Out Reference Number / Request Date / Time.				
Tolerance zone work identified. Intrusive work activities cannot be performed in areas that are in direct conflict with any markings made by public or private locators.				
Unless the PP & OM authorizes it, all boreholes and test pit locations must be physically cleared before using mechanized equipment. Required minimum physical clearance depths and diameters are as follows: • Physically clear to a depth of 5 feet bls. • The size of the pre-clearance exploratory test hole must be, at a minimum, twice the diameter of any downhole tool or boring device. • For direct push applications (CPT, Geoprobe®, etc.) the borehole clearance diameter shall be at least 125% to the diameter of the largest tool being pushed through the subsurface (e.g., tip, rod, sampler, etc.).				
Work execution plan reviewed and adhered to (ground disturbance methods, clearance depths, any special utility protection requirements, or any other execution requirements; especially for Tolerance Zone work).				

Mechanical intrusive work is prohibited within 3-feet distance in all directions from subsurface structures that will be intentionally exposed during pre-clearance. Any removal of material within 3-feet of the subsurface structure may only proceed by hand using non-conductive tools/compressed air if authorized by state law and the owner/operator of the utility.				
All equipment onsite must maintain the appropriate horizontal distance from any point on the equipment to the nearest overhead electrical power line. Refer to site-specific HASP and local/utility company requirements.				
Verbal endorsement received from Roux PM and OM for any required field deviations to work execution plan.				

Key Reminders for Execution

The Subsurface Utility Clearance Protocol should be referenced to determine all requirements while executing subsurface work. The bullet points below are intended as general reminders only and should not be relied upon solely.

- The size of the pre-clearance exploratory test hole must be at a minimum twice the diameter of any downhole tool or boring device to minimum required depth of 5 feet bls.
- For direct push applications (CPT, Geoprobe®, etc.) the borehole clearance diameter shall be at least 125% of the diameter of the largest tool being pushed through the subsurface (e.g., tip, rod, sampler, etc.), to the minimum required depth of 5 feet bls.
- The tolerance zone is defined as three feet plus half of the diameter or half of the greatest dimension (for elliptical sewers, duct banks, and other non-cylindrical utilities) of a utility and three feet from the outside of any subsurface structure.
- For excavations, all utilities need to be marked and then exposed by hand, following the protocols in this program. Pre-clearing for excavations may be performed by the “moat” technique (i.e., soft digging around the perimeter). In these cases, dig in small lifts (<12” for first five feet) using a dedicated spotter.) For Tolerance Zone work, unless otherwise agreed upon with the Utility Operator, work within the tolerance zone requires verification by means of hand-dug test holes to expose the utility. Once structures have been verified, a minimum clearance of three feet must be maintained between the utility and any powered equipment.

Utility Verification/Site Walkthrough Record

Employee Name:_____

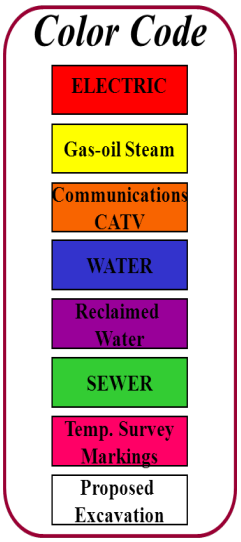
Date: _____

Instructions: For each utility suspected at the job site, indicate the location on the job site, approximate burial depth, and means of detecting the utility. Leave blank if that utility is not believed to be present.

Utility	Description of Utility Location Identified Onsite	Approx. Depth (bls)	Method / Instrumentation used to determine Utility Location	Utility Owner Response (Date/Time)	Mark Out Indicates (Clear / Conflict)
Electrical Lines					
Gas Lines					
Pipelines					
Steam Lines					
Water Lines					
Sanitary and Stormwater Sewer lines					
Pressured Air-Lines					
Tank Vent Lines					
Fiber Optic Lines					
Underground Storage Tanks					
Phone Lines/ Other					

* bls - below land surface

Site Sketch Showing Utilities:



Other Comments / Findings:

Completed by: _____

Signature: _____ Date: _____

Appendix B
Private Utility Technology Applications and Considerations

Appendix B – Private Utility Technology Applications and Considerations

Technology ⇒ Utility/Object ⇓	Radio Frequency Electro-Magnetic Detector (connection to utility, or induction without connection)	Radio Frequency Electro-Magnetic Detector (passive sweep)	Ground Penetrating Radar (GPR)⊙	Acoustic Plastic Pipe Locator	Beacon, Sonde or Conductive Rodder Insertion	EM-61 (time domain electromagnetics) Ξ	
Power/Instrument Line (Energized/Signaled) □	❋ G	G	G	R	R	G	
Power Line (Non-energized) □	❋ G	R	G	R	R	G	
Sewer/Water Line (Metallic) □	❋ G	Y	G	Y	G	G	
Sewer/Water Line (Non-metallic)	R	R	G	G	❋ G	R	
Instrument / Telecomm Lines (Non-energized)	❋ G	R	G	R	R	Y Only if metallic	
Hydrocarbon Transmission Line (Pipeline)◆ □	❋ G	R	G	R	R	G	
Metallic/Non-Metallic Line (with Tracer Wire)	❋ G	Y	G	Y	Y	G metallic	Y non-metallic
Metallic/Non-Metallic Line (without Tracer Wire)	G metallic	R non-metallic	R	❋ G	Y	Y	G metallic	R non-metallic
Metal or Fiberglass UST	R	R	❋ G	R	R	G metallic	R non-metallic

Additional Considerations

Technology ⇒ Variable ⇓	Radio Frequency Electro-Magnetic Detector	Ground Penetrating Radar (GPR)⊙	Acoustic Pipe Locator	Beacon, Sonde, or Conductive Rodder Insertion	EM-61 Ξ
Moist Soil	G	Y	G	G	G
Dry Soil	Y	G	Y	G	G
Clay	Y	R	G	G	G
Concrete w/Rebar	R	Y	G	G	R
Long Horizontal Profile	G	G	G	G	G
Short Horizontal but Deep Vertical Profile	Y	G	R	R	G
Access to Line✚	G	N/A	G	G	G
No Access to Line✚	G (induction or passive)	G	R	R	G
	R (direct connect)				G
Ferrous Metal	G	G	G	G	G
Non-ferrous Metal	Y	G	G	G	G
Adjacent or crossing conductive utility(ies)	Y	N/A	N/A	N/A	Y

Each site will be unique. Do not use this table as the sole criteria for technology selection. Use it as a starting point to assess available, applicable technology(s).

❋ Indicates best technology for given object. Site structures, rebar in concrete, shallow groundwater tables, perched storm water, etc. can significantly affect performance and reliability of any electro/magnetic method. Other utilities which cross or are adjacent to the target line can cause the EM signal to bleed or jump to the other utility line.

□ Metallic lines that have power running through them or can be connected to a tracer signal generator.

◆ Natural gas pipeline locating technicians must be trained/certified (in the U.S. requires DOT and Office of Pipeline Safety standards, other regions may have similar certification or requirements).

⊙ Most sensitive to interpretation. The skill, training and experience of operator are critical.

Ξ Emerging technology with limited availability.

✚ Access: induce unique electronic signature, apply acoustical impulse or insert conductive rodder/beacon/sonde.

Green Generally, an applicable technology **Yellow** May or may not be applicable **Red** Not generally applicable

APPENDIX I

Heavy Equipment Exclusion Zone Policy

HEAVY EQUIPMENT EXCLUSION ZONE MANAGEMENT PROGRAM

CORPORATE HEALTH AND SAFETY DIRECTOR	:	**Brian Hobbs, CIH, CSP**
EFFECTIVE DATE	:	**01/2019**
REVIEWED DATE	:	**03/2025**
REVISION NUMBER	:	**4**

TABLE OF CONTENTS

1. PURPOSE 1
2. SCOPE AND APPLICABILITY 1
3. PROCEDURES 1
   3.1 Exceptions 2
4. TRAINING 2
5. STOP WORK AUTHORITY 2

1. PURPOSE

The Exclusion Zone Management Program aims to establish the minimum clearance distance that must be maintained between workers and heavy equipment while the equipment is in operation (i.e., engaged or in motion). The intent is to have no personnel or equipment entering the Exclusion Zone while the equipment is in operation or moving to ensure that Roux and Subcontractor employees are unnecessarily exposed to the hazards of the equipment.

2. SCOPE AND APPLICABILITY

This Management Program applies to all Roux Associates, Inc. and its affiliated companies, Roux Environmental Engineering and Geology, D.P.C., and Remedial Engineering (collectively, "Roux") employees and their subcontractors performing fieldwork and are potentially exposed to heavy equipment. Heavy equipment includes, but is not necessarily limited to, excavation equipment, drill rigs, vacuum trucks, forklifts, lull telehandlers, man lifts, bobcats, delivery trucks, etc.

3. PROCEDURES

As specified in the following sections of this program, Exclusion Zones must be established and maintained during activities involving the movement/operation of heavy equipment. The Exclusion Zone requirements apply to all personnel on the site but are primarily focused on personnel required to work near the equipment. The exclusion zone is in effect when heavy equipment is moving or engaged (e.g., movement of an arm or bucket of an excavator, rotation of an auger, lifting of a load with a forklift, raising/lowering of a man lift, etc.).

1. The Exclusion Zone must meet the following minimum requirements:
   - A minimum distance of 10 feet from all heavy equipment and loads being moved by the equipment;
   - Greater than the swing/reach radius of any moving part on the heavy equipment (i.e., for large equipment, this may mean an exclusion zone distance larger than 20 feet);
   - Greater than the fall zone of equipment and their contents; and
   - Greater than the tip-over distance of the heavy equipment.

   The size of the Exclusion Zone will need to be determined on a task-specific basis considering the size of the heavy equipment in use and the task being performed. Prior to all heavy equipment operations, the Exclusion Zone(s) distance must be specifically identified in the Job Planning Process and incorporated in the pre-job tailgate meeting with the subcontractor(s), including any updates to our Job Safety Analysis (JSA).
2. The spotter (or another authorized individual) is responsible for enforcing the Exclusion Zone and not conducting any other task. The spotter should be positioned immediately outside of the Exclusion Zone within a clear line of sight of the equipment operator. The spotter must signal the operator to stop work if anyone or anything has the potential to enter or compromise the Exclusion Zone. The operator should stop work if the spotter is not within their line of sight. If a spotter must be within the Exclusion Zone, they must be in a designated area outside the swing/tip radius, fall zone, line of fire of lifted loads, etc. If multiple pieces of equipment are being used, one spotter may be adequate so long as there is a clear line of sight and the spotter can control the zone(s). Radios would be required since hand signals would not be adequate if two pieces of equipment are in operation at the same time in the Exclusion Zone.

3. If an individual must enter the Exclusion Zone, the designated Spotter must signal the Equipment Operator to stop the equipment. Once the equipment is no longer moving (e.g., movement of an arm of an excavator is STOPPED, lifting of a load with a forklift STOPPED, raising/lowering of a man lift is STOPPED, etc.), the operator must bring the boom/arm to the ground ensuring a “Zero Energy State” and DISENGAGE THE CONTROLS and STOP and SIGNAL BY “SHOWING HIS HANDS.” This signal will indicate that it is safe for the person to enter the limits of the Exclusion Zone to perform the required activity. The equipment must remain completely stopped/disengaged until all personnel exited the Exclusion Zone's boundaries and the designated Spotter has signaled by “SHOWING HIS HANDS” to the Equipment Operator that it is safe to resume operations.
4. When entering the limits of the Exclusion Zone, personnel must, at a minimum:
    - Establish eye contact with the operator and approach the heavy equipment in a manner that is in direct line of sight to the Equipment Operator;
    - Never walk under any suspended loads or raised booms/arms of the heavy equipment; and
    - Identify a travel path free of Slip/Trip/Fall hazards.
5. The Exclusion Zone should be delineated using cones with orange snow fences or solid poles between the cones, barrels, tape, or other measures. For work in rights-of-way, rigid barriers, such as Jersey barriers or temporary chain link fences, should be used. For certain types of widespread or moving/mobile equipment operations, such delineation may not be practicable around equipment or individual work areas. In such instances, it is expected that the entire operation will be within a larger secure work area or that additional means will be utilized to ensure the security of the work zone.

All subcontractors who provide heavy equipment operations to field projects must implement a program that meets or exceeds the expectations described above, as well as any additional requirements that may be required on a client or site-specific basis. Logistics involving heavy equipment should be understood and discussed prior to the field event during the job planning phase.

3.1 Exceptions

It is recognized that certain heavy equipment activities may require personnel to work within the limits of the Exclusion Zone as specified in this program. Such activities may include certain excavation clearance tasks, drill crew activities, or construction tasks. However, any such activity must be pre-planned, emphasizing limiting the amount and potential exposure of any activity required within the zone. The critical safety steps to mitigate the hazards associated with working within the Exclusion Zone must be defined in the JSA and potentially other project-specific plans (i.e., critical lift plans, etc.), and approved by the Roux Project Principal (PP), Office Health and Safety Manager (OHSM) and client representative, if required, prior to implementation.

4. TRAINING

Many Roux projects have different requirements that are client-specific or site-specific in nature. However, all Roux employees are provided initial training, as well as annually thereafter, on our Heavy Equipment Exclusion Zone policy.

5. STOP WORK AUTHORITY

All Roux employees and their subcontractors have stop-work authority. Upon initial hire, all Roux employees are provided initial safety orientation, including stop work authority. All Roux employees and subcontractors are encouraged to stop work whenever any task or operation presents an unreasonable risk or employees

are unsure how to carry out work safely. This includes upon observing any questionable safety-related behavior or condition, they are to stop work immediately and discuss the behavior or condition with the individual(s) involved. Upon stopping work, the following actions will be taken:

- Notify the affected parties to include the Project Manager (PM) and Site Health and Safety Officer (SHSO);
- Work to correct the situation or not proceed until the situation is corrected by the PM or SHSO;
- Resume work only when told to proceed by either the PM or SHSO;
- The SHSO will document the Stop-Work intervention in the field logbook;
- Stop-Work interventions will be reported to the PP for review to ensure the interventions are closed; and
- The PP will share learnings from the interventions, as appropriate, throughout the firm, to demonstrate the importance of the Stop-Work interventions.

Please note: Any form of retribution or intimidation directed at any individual or company for exercising their right to issue a stop work authority will not be tolerated.

Request to Import/Reuse Fill Material Form

NEW YORK STATE
DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Request to Import/Reuse Fill or Soil

This form is based on the information required by DER-10, Section 5.4(e) and 6NYCRR Part 360.13. Use of this form is not a substitute for reading the applicable regulations and Technical Guidance document.

SECTION 1 – SITE BACKGROUND

The allowable site use is: Choose an item

Have Ecological Resources been identified? Choose an item

Is this soil originating from the site? Choose an item

How many cubic yards of soil will be imported/reused? Choose an item

If greater than 1000 cubic yards will be imported, enter volume to be imported:

SECTION 2 – MATERIAL OTHER THAN SOIL

Is the material to be imported gravel, rock or stone? Choose an item

Does it contain less than 10%, by weight, material that passes a size 100 sieve? Choose an item

Is this virgin material from a permitted mine or quarry? Choose an item

Is this material recycled concrete or brick from a DEC registered processing facility? Choose an item

SECTION 3 - SAMPLING

Provide a brief description of the number and type of samples collected in the space below:

Example Text: 5 discrete samples were collected and analyzed for VOCs. 2 composite samples were collected and analyzed for SVOCs, Inorganics & PCBs/Pesticides.

If the material meets requirements of DER-10 section 5.4(e)5 (other material), no chemical testing needed.

SECTION 3 CONT'D - SAMPLING

Provide a brief written summary of the sampling results or attach evaluation tables (compare to DER-10, Appendix 5):

Example Text: Arsenic was detected up to 17 ppm in 1 (of 5) samples; the allowable level is 16 ppm.

If Ecological Resources have been identified use the "If Ecological Resources are Present" column in Appendix 5.

SECTION 4 – SOURCE OF FILL

Name of person providing fill and relationship to the source:

Location where fill was obtained:

Identification of any state or local approvals as a fill source:

If no approvals are available, provide a brief history of the use of the property that is the fill source:

Provide a list of supporting documentation included with this request:

The information provided on this form is accurate and complete.

_____ _____

Signature Date

_____

Print Name

_____

Firm

Revised April 2023

Approved Permits

CITY OF ROCHESTER, NEW YORK
DEPARTMENT OF NEIGHBORHOOD AND BUSINESS DEVELOPMENT

BUILDING PERMIT

WORK LOCATION:	5 Flint St Rochester NY 14608
OWNER NAME:	Exxon Mobil Corporation
CONTRACTOR NAME:	Roux Associates Inc
ARCHITECT NAME:	
ENGINEER NAME:	
APPLICANT NAME:	Roux Associates Inc

DATE: 2/14/2025

PERMIT NUMBER: B-25-0989

CERTIFICATE OF OCCUPANCY:

PERMIT DESCRIPTION:
SITE PREPARATION - FOR A NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) BROWNFIELD CLEANUP PROGRAM(BCP) APPLICATION (BCP SITE NO. C828162B) -PURSUING CLEANUP & REDEVELOPMENT OF THE SITE INVOLVING LAND DISTURBANCE & SITE PREPARATION WITHIN A FLOODPLAIN, INCLUDING STRIPPING THAT AFFECTS MORE THAN 10,000 SQUARE FEET OF GROUND SURFACE WITHIN PARCEL. PLANNED BCP ACTIVITIES INCLUDE DEMOLISHING EXISTING 3 STORY CONCRETE BUILDING, STRIPPING THE SITE OF VEGETATIVE COVER, EXCAVATING AND IN-SITU SOLIDIFICATION (ISS) OF CONTAMINATED SOILS, BACKFILLING EXCAVATION AREAS, AND PLACING AN ADDITIONAL TWO-FOOT COVER AT THE SITE (AKA 5 FLINT ST)

APPROVALS:

Spc Pmt:	
CZC:	
C of A:	
Var:	
Site pl:	
Zon Dist:	R-3 High Density Residential
Pres:	
Landmark:	
LWRP:	False
Property Flags:	NYSDEC,

Construction Type:
Truss Type:
# of Stories: 0

Tenant Space Desc	Occupancy Type	Occupancy Desc	Posting Occupancy

COST ESTIMATE:
EXCLUDE electrical & plumbing work INCLUDE heating, air conditioning, etc.

$ 0.0

PERMIT FEES:

Permit Fee	$50.00
Permit Fee	$200.00
TOTAL	$250.00

REQUIRED INSPECTIONS (48 HOUR NOTICE REQUIRED)
Please call your inspector below to schedule an inspection.
Do not proceed beyond these points until all required inspections have been performed.
Preliminary Inspections: Site Work
Construction Inspections: None
Final Inspections: Site Final

Inspector: Crystal Gizzi
Authorized By:
To schedule an inspection, please call 428-6520.

The permit issued will expire if the authorized work has not commenced within 90 days after issuance, or if work is not completed by 2/14/2026.

CITY OF ROCHESTER, NEW YORK
DEPARTMENT OF NEIGHBORHOOD AND BUSINESS DEVELOPMENT

BUILDING PERMIT

WORK LOCATION:	5 Flint St Rochester NY 14608
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APPROVALS:

Spc Pmt:	
CZC:	
C of A:	
Var:	
Site pl:	
Zon Dist:	R-3 High Density Residential
Pres:	
Landmark:	
LWRP:	False
Property Flags:	NYSDEC,

Construction Type:
Truss Type:
# of Stories: 0

Tenant Space Desc	Occupancy Type	Occupancy Desc	Posting Occupancy

COST ESTIMATE:
EXCLUDE electrical & plumbing work
INCLUDE heating, air conditioning, etc.

$ 0.0

PERMIT FEES:

Permit Fee	$50.00
Permit Fee	$200.00
TOTAL	$250.00

REQUIRED INSPECTIONS (48 HOUR NOTICE REQUIRED)
Please call your inspector below to schedule an inspection.
Do not proceed beyond these points until all required inspections have been performed.

Preliminary Inspections: Site Work
Construction Inspections: None
Final Inspections: Site Final

Inspector: Crystal Gizzi
Authorized By:
To schedule an inspection, please call 428-6520.

The permit issued will expire if the authorized work has not commenced within 90 days after issuance, or if work is not completed by 2/14/2026.

A permit issued does not relieve the owner, contractor, architect, engineer, or owner's agent from complying with any of the provisions of the Code of the City of Rochester and the New York State Uniform Fire Prevention and Building Codes whether stated, implied, or omitted in the permit documents. Failure to comply with the conditions of the permit approval will subject the owner and/or agent to penalties as prescribed by Law.

This placard must be displayed at the work site and remain visible for the duration of the project.
Pursuant to section 39-209 of the Code of the City of Rochester, approved plans must be available on site for inspection during the course of construction.

PERMIT CONDITIONS

Permit Number: B-25-0989 **Issued Date:** 2/14/2025
Address: 5 Flint St Rochester NY 14608

Standard Condition Text	Additional Condition Text
	SITE PREPARATION - FOR A NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION (NYSDEC) BROWNFIELD CLEANUP PROGRAM(BCP) APPLICATION (BCP SITE NO. C828162B) -PURSUING CLEANUP & REDEVELOPMENT OF THE SITE INVOLVING LAND DISTURBANCE & SITE PREPARATION WITHIN A FLOODPLAIN, INCLUDING STRIPPING THAT AFFECTS MORE THAN 10,000 SQUARE FEET OF GROUND SURFACE WITHIN PARCEL. PLANNED BCP ACTIVITIES INCLUDE DEMOLISHING EXISTING 3 STORY CONCRETE BUILDING, STRIPPING THE SITE OF VEGETATIVE COVER, EXCAVATING AND IN-SITU SOLIDIFICATION (ISS) OF CONTAMINATED SOILS, BACKFILLING EXCAVATION AREAS, AND PLACING AN ADDITIONAL TWO-FOOT COVER AT THE SITE (AKA 5 FLINT ST)
A permit issued does not relieve the owner nor any others responsible for the permit from compliance with the city of Rochester building code (chapter 39 of the code of the city of Rochester), the New York state uniform fire prevention and building code & its referenced standards, nor any other applicable laws, whether stated, implied or omitted in all documents approved with the issued permit. Code sections referenced in these conditions may be seen at ....http://codes.iccsafe.org/new%20york%20state.html#all.... which provides access to all NYS and icc codes.	
All work shall be in accordance with the documents approved by this permit. Any changes to the approved permit documents shall be submitted to this office for approval before execution in the field. This permit & all approved documents shall be available to the inspector on site at all times until the permit has been officially closed.	
Permitted work shall remain accessible & exposed until inspected & accepted by the assigned inspector or agency enforcing the code. The permit holder shall notify the inspector or agency when work is ready for inspection. Permit holder shall place permit placard in a conspicuous location and shall call for inspections where noted on placard.	
If a permit is issued in error because of incorrect, inaccurate or incomplete information, or if the work for which the permit was issued violates the code, the permit shall be revoked or suspended until the permit holder demonstrates that all work completed & all work proposed complies with the applicable provisions of the code.	
SEPARATE PERMITS ARE REQUIRED FOR THE FOLLOWING:	
A separate permit is required for demolition.	SHALL SUBMIT FOR SEPARATE DEMOLITION PERMIT APPLICATION FOR THE PROPOSED REMOVAL OF THE EXISTING 3 STORY CONCRETE

PERMIT CONDITIONS

	WAREHOUSE BUILDING (~40,000SF) AT NORTH END OF SITE
All work shall be in accordance with approved plans. Submit all design revisions after the issuance of this permit to this office for approval.	
All construction debris shall be removed from site and disposed of in an appropriate manner.	
The permittee acknowledges that recognized environmental concerns have been identified on site and that it will remedy or mitigate all recognized environmental concerns, and any new environmental concerns identified during the course of the project, in a manner consistent with the planned future use and manner of construction.	
The permittee is responsible for obtaining any approvals from the New York state department of environmental conservation and Monroe County department of health, as necessary to address environmental conditions on the project site in order to ensure safe occupancy and use of the planned facility.	
The permittee shall comply with all local, state and federal environmental requirements.	
All erosion control measures shall be installed prior to starting work and must be maintained until work is complete.	

2/14/2025 04:16 PM

City of Rochester, NY

Register ID: Reg 4 (Ck/Cr/Db)
Cashier: JuanLiff24
Tran Date: 2/14/2025 4:15:26 PM
Tran # 26165
Payer:

DESCRIPTION	AMT DUE	AMT PAID
Building Permits - #B-25-0989 / 5 FLINT ST	$250.00	$250.00
CHECK #62565		$250.00

Subtotal:	$250.00
Tax:	$0.00
Total:	$250.00
Payment:	$250.00
Change:	$0.00

Department of Neighborhood and Business Development

CK# 62844
WC Exp. 9/21/26

SPECIALTY SHORT TERM DISCHARGE PERMIT

County of Monroe Pure Waters District No. 8575 ST- Permit No: ST-473

Fee: $130.00 Effective Date: _____ Expiration Date: April 30, 2026

Firm Name Roux Environmental Engineering & Geology, D.P.C

Address 2850 Clover Street

Pittsford, New York 14534

Type of Business or Service Environmental Consulting

I. The above-named applicant is permitted to discharge wastes into the Monroe County Pure Waters Sewer system or Tributary thereto as applied for by an application dated _____ and verified by the applicant except the Director of Pure Waters requires the following terms and conditions to govern the permitted discharge:

A. _____

B. _____

C. _____

II. The applicant further agrees to:

1. Accept and abide by all provisions of the Sewer Use Law of Monroe County and of all pertinent rules or regulations now in force or shall be adopted in the future.
2. Notify the Director of Pure Waters in writing of any revision to the plant sewer system or any change in industrial wastes discharge to the public sewers as listed in the application. The latter encompasses either (1) an increase or decrease in average daily volume or strength of wastes listed in the application or (2) new wastes that were not listed in the application.
3. Furnish the Director of Pure Waters upon request any additional information related to the installation or use of sewer or drain for which this permit is sought.
4. Operate and maintain any waste pretreatment facilities, as may be required as a condition of the acceptance into the public sewer of the industrial wastes involved, in an efficient manner at all times, and at no expense to the County.
5. Cooperate with the Director of Pure Waters or his representatives in their inspecting, sampling, and study of wastes, or the facilities provided for pretreatment.
6. Notify the Director of Pure Waters immediately of any accident, negligence, breakdown of pretreatment equipment, or other occurrence that occasions discharge to the public sewers of any wastes or process waters not covered by this permit.

Applicant's Name (please print) Michael Lesakowski Phone 716-856-0599

Applicant's Signature _____ Date 10/6/25

Applicant's Title Vice President

Emergency Contact John Deth Phone 716-863-0333

Approved by: _____ Issued this 16 day of OCT 20 25

Michael J. Garland, P.E.
Director of Environmental Services-Pure Waters

COUNTY OF MONROE
SEWER USE PERMIT ENCLOSURE

Roux Environmental Engineering and Geology, D.P.C
2850 Clover Street
Pittsford, NY 14534

PERMIT NUMBER: ST-473
DISTRICT NUMBER: 8575

SITE LOCATION: 5 Flint Street
Rochester, NY 14608

TYPE OF BUSINESS: Site Soil and Groundwater Remediation
SAMPLE POINT: Treatment System Discharge

REQUIRED MONITORING

SELF MONITORING FREQUENCY:

1. **Analytical Performance testing** of treatment system with Monroe County approval prior to discharge.
2. **Analytical testing once per day** for two consecutive days after start up and discharge commences (24 hour turnaround).
3. **Analytical testing one week after initial three-day commissioning.**
4. **Sample Monthly after these initial samples for the duration of the permitted discharge.**

SAMPLING PROTOCOL: Sampling and analysis shall be performed in accordance with the techniques prescribed in 40 CFR Part 136 and amendments thereto. In the absence of 40 CFR Part 136 testing methodology, a New York State Department of Health approved method is acceptable. A representative grab sample collected from the above noted sample point shall be analyzed for the following:

1. **Volatile Organic Compounds** *
2. **Semivolatile Organic Compounds** *
3. **Metals**

	Sewer Use Limit
Arsenic	0.5 mg/L
Barium	2.0 mg/L
Lead	1.0 mg/L
Mercury	0.05 mg/L

* ACTION LEVEL: The summation of all analytes within these groups with laboratory detections at or above 10 ug/L shall not exceed 2.13 mg/L.

SPECIAL CONDITIONS:

1. **Sample results must be reviewed and approved by Monroe County prior to discharge.**
2. **Treatment system is to be inspected and approved by Monroe County prior to discharge.**
3. **Treatment equipment must be maintained to ensure proper filtration of the wastewater.**
4. **Discharge rate not exceed 25 gpm unless approved by Monroe County.**
5. **Discharge point to be inspected and approved by Monroe County prior to discharge.**
6. **Total volume of water discharged shall be reported to Monroe County for billing purposes.**

CK#62963

INITIAL INDUSTRIAL SEWER USE PERMIT

County of Monroe Pure Waters District No. 8575

Permit No: IWC-1104

Effective Date: 5/1/2026

Expiration Date: 4/30/2029

Fee: $130.00

Firm Name: Roux Environmental Engineering and Geology, D.P.C.

Address: 2850 Clover Street
Pittsford, New York 14534

Type of Business or Service: Environmental Consulting

I. The above-named applicant is permitted to discharge wastes into the Monroe County Pure Waters Sewer system or Tributary thereto as applied for by an application dated 4/13/26 and verified by the applicant except the Director of Environmental Services requires the following terms and conditions to govern the permitted discharge:

A. See Enclosure
B.
C.

II. The applicant further agrees to:

1. Accept and abide by all provisions of the Sewer Use Law of Monroe County and of all pertinent rules or regulations now in force or shall be adopted in the future.
2. Notify the Director of Environmental Services in writing of any revision to the plant sewer system or any change in industrial wastes discharge to the public sewers listed in Exhibit "B". The latter encompasses either (1) an increase or decrease in average daily volume or strength of wastes listed in Exhibit "B" or (2) new wastes that were not listed in Exhibit "B".
3. Furnish the Director of Environmental Services upon request any additional information related to the installation or use of sewer or drain for which this permit is sought.
4. Operate and maintain any waste pretreatment facilities, as may be required as a condition of the acceptance into the public sewer of the industrial wastes involved, in an efficient manner at all times, and at no expense to the County.
5. Cooperate with the Director of Environmental Services or his representatives in their inspecting, sampling, and study of wastes, or the facilities provided for pretreatment.
6. Notify the Director of Environmental Services immediately of any accident, negligence, breakdown of pretreatment equipment, or other occurrence that occasions discharge to the public sewers of any wastes or process waters not covered by this permit.

Applicant's Name (please print) Mike Lesakowski Phone 716-856-0599

Applicant's Signature [signature] Date 4/13/26

Applicant's Title Vice President

Emergency Contact John Deth Phone 716-863-0333

Approved by: [signature] Issued this 21 day of 04 20 26

Michael J. Garland, P.E.
Director of Environmental Services-Pure Waters

APPLICATION FOR LICENSE OR PERMIT FOR DISCHARGE INTO PURE WATERS SEWER SYSTEM OR TRIBUTARY

1. Name of Applicant. Roux Environmental Engineering and Geology, D.P.C.
Company or Individual

2. Mailing Address of Applicant. 2558 Hamburg Turnpike, Suite 300
Buffalo, NY 14218

3. Location of Property. 10 Flint Street, Rochester, NY 14608

4. Ownership of Property. Name/Address if different than above. City of Rochester, New York

5. Number of sewer connections requiring license/permit. Two

6. Type of activity producing wastes requiring license or permit pursuant to Sewer Use Law of Monroe County. Environmental Clean up and Site Redevelopment
Brownfield Sites # C828190, #C828162B, and #C828162C

7. Department of Health or New York State Permit #. (if any)

8. Number of Attachments. 4
(See page 1b)
Exhibit "A"
Exhibit "B"
Exhibit "C"
Exhibit "D"

Note: Fill in all applicable spaces. If not applicable, mark N.A. in appropriate space.

Office of Industrial Waste Control
Monroe County Department of Environmental Services
145 Paul Road, Bldg. 1 • Rochester, New York 14624 • Ph. 585-753-7600 (Option #4), Fax 585-324-1213
www2.monroecounty.gov/des-industrialwaste.php • printed on recycled paper

ATTACHMENTS TO ACCOMPANY APPLICATION

1. A summary of the total waste water characteristics to be received from the applicant shall be submitted in proper form as Exhibit "A".

2. A complete schedule of all process waters and industrial wastes produced or expected to be produced at said property, including a description of the character of each waste, the daily volume and whether the flow is continuous or intermittent. The schedule shall be attached as Exhibit "B".

3. A plot or tape location map of the property showing accurately the size and location of all sewer and drainage connections to the sewerage system, all pretreatment devices and all manholes or other accessible sampling points. Each sewer or drain connection shown on drawing shall be designated by an identification number. The plot or tape location map shall be attached as Exhibit "C".

4. Additional information requested by the Director of Environmental Services shall be prepared as Exhibit "D" and be attached to the application as required.

Name of person who is designated as the signatory for the permit (This will be the responsible official or the duly authorized representative).

Name Mike Lesakowski

Title Vice President

Phone # 716-856-0599

Person to be contacted for inspection or emergency purposes and phone number.

Name John Deth

Title Senior Scientist II

Phone # 716-863-0333

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3. A plot or tape location map of the property showing accurately the size and location of all sewer and drainage connections to the sewerage system, all pretreatment devices and all manholes or other accessible sampling points. Each sewer or drain connection shown on drawing shall be designated by an identification number. The plot or tape location map shall be attached as Exhibit "C".

4. Additional information requested by the Director of Environmental Services shall be prepared as Exhibit "D" and be attached to the application as required.

Name of person who is designated as the signatory for the permit (This will be the responsible official or the duly authorized representative).

Name Mike Lesakowski

Title Vice President

Phone # 716-856-0599

Person to be contacted for inspection or emergency purposes and phone number.

Name John Deth

Title Senior Scientist II

Phone # 716-863-0333

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www2.monroecounty.gov/des-industrialwaste.php • printed on recycled paper

SUMMARY OF INDUSTRIAL WASTE CHARACTERISTICS
(Exhibit A)

Firm: Roux Environmental Engineering and Geology, D.P.C.

Address: 2558 Hamburg Turnpike, Suite 300, Buffalo, NY

Industrial Waste Characteristics and Quantity

Characteristics	Unit	Average	Minimum	Maximum
Volume	GPD	18,000	0	36,000
Temperature	°C	TBD if required		
pH	S.U.	TBD if required		
Biochemical Oxygen Demand	mg/L	TBD if required		
Total Phosphorus	mg/L	TBD if required		
Total Suspended Solids	mg/L	TBD if required		

SUBSTANCES UNDER ARTICLES III, IV and V OF THE SEWER USE LAW

(List item and concentration (or volume) under appropriate heading. If none, so state).

1. Unpolluted waters (Sect. 4.1) — None

2. Prohibited Materials (Sect. 3.3(b)) — None

3. Certain materials and/ or characteristics (Sect. 3.3(c)) — Stormwater / groundwater may come into contact with metals, polycyclic aromatic hydrocarbons (PAHs), semivolatile organic compounds (SVOCs), and volatile organic compounds (VOCs). Analytical data for these compounds collected during the month of April, 2026 are attached to this permit. All water will be treated prior to discharge utilizing a treatment system with influent settling tanks, bag filters, and carbon filters.

4. Toxic Substances (Sect. 3.3(a)) — None

5. Pathogenic Bacteria (Sect. 3.3(a)) — None

6. Radioactive Wastes (Sect. 3.3(c)(5), (5.2(f)) — None

7. Scavenger Wastes (Sect. 5.3) — None

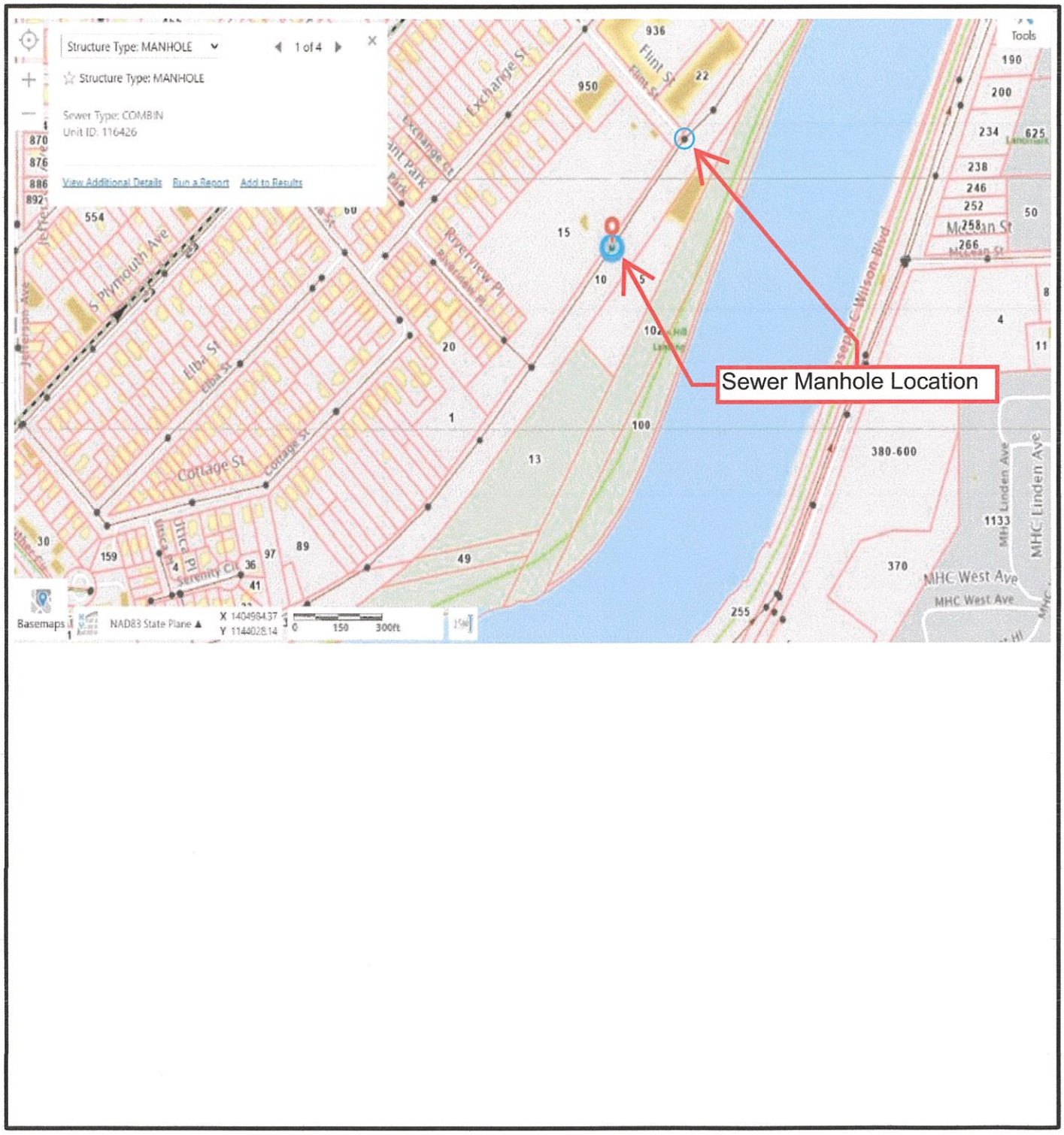
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SCHEDULE OF PROCESS WATERS AND INDUSTRIAL WASTES
(Exhibit B)

	Waste Stream	Description	Volume (gpd)	Continuous / Intermittent	Comments
1	Groundwater/ stormwater	Groundwater/ stormwater may come into contact with impacted materials such as : Soil: Metals (arsenic, cadmium, chromium, copper, lead, mercury, and silver), semivolatile organic compounds (SVOCs; primarily polycyclic aromatic hydrocarbons (PAHs)), and petroleum volatile organic compounds (VOCs).	Maximum daily discharge 36,000 gpd	Intermittent	Discharge is expected to begin on or around April 2026 and continue intermittently until Winter 2026.
2		Water will be treated prior to discharge utilizing a water treatment system that includes influent settling tanks, bag filters, and carbon filters. All system components will be closed top to reduce the potential for unwanted odors			
3					
4					
5					
6					
7					
8					

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Monroe County Department of Environmental Services
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PLOT OR TAPE MAP
(Exhibit C)



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Monroe County Department of Environmental Services
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COUNTY OF MONROE
SEWER USE PERMIT ENCLOSURE

Roux - Flint Street
Roux Environmental Engineering and Geology, DPC
2558 Hamburg Turnpike, Suite 300
Buffalo, NY 14218

PERMIT NUMBER: 1104
DISTRICT NUMBER: 8575

TYPE OF BUSINESS: Groundwater Remediation at Brownfield Sites #C828190, #C828162B, and #C828162C
SAMPLE POINT: IWC-1104.1 – Treatment System Discharge
PRETREATMENT CATEGORY: Non-significant Industrial User

REQUIRED MONITORING & EFFLUENT LIMITS

SAMPLE POINT: IWC-1104.1 – Treatment System Discharge

SELF-MONITORING FREQUENCY: **Monthly**

SAMPLING PROTOCOL: Sampling and analysis shall be performed in accordance with the techniques prescribed in 40CFR part 136 and amendments thereto. A grab sample, collected from the above noted sample point shall be analyzed for the following:

Volatile Organic Compounds	*
Semi-Volatile Organic Compounds	*

Parameter	Sewer Use Limit
Arsenic (T)	0.5 mg/L
Barium (T)	2.0 mg/L
Cadmium (T)	1.0 mg/L
Chromium (T)	3.0 mg/L
Lead (T)	1.0 mg/L
Selenium (T)	2.0 mg/L
Silver (T)	2.0 mg/L
Mercury (T)	0.05 mg/L

* Action Level: The summation of the volatile and semi-volatile organic compounds detected greater than 10 µg/L shall not exceed 2.13 mg/L.

SPECIAL CONDITIONS:

1. Monthly flow summaries shall be submitted for billing purposes. It is imperative these summaries are submitted in a timely manner. The discharge will be billed at the rate listed in Monroe County's Scale of Charges.
2. If there is no discharge for a given month, then a letter must be submitted stating so.
3. Discharge rate not to exceed 25 gpm unless approved by Monroe County
4. Treatment system equipment must be maintained to ensure proper filtration of wastewater

TERMS AND CONDITIONS

GENERAL REQUIREMENTS:

A. The permittee agrees to accept and abide by all provisions of the Sewer Use Law of Monroe County (MCSUL) and of all pertinent rules or regulations now in force or shall be adopted in the future.

B. In addition to the parameters/limits outlined, the total facility discharge shall meet all other concentration values listed within the MCSUL and as described in Article III, Section 3.3(d) of the Law.

C. Included in Article II, Section 2.1 of the MCSUL, is the definition of "Normal Sewage". "Normal Sewage" may be discharged to the sewer system in excess of the concentrations outlined in the definition, however, the facility will be subject to the imposition of a sewer surcharge and possible self-monitoring requirements as a result. Surcharging procedures are outlined in Article X of the MCSUL.

D. Regulatory sampling for analytes not specified under "required monitoring" shall be conducted by Monroe County at a minimum frequency of once every three (3) years.

E. This permit is not assignable or transferable. The permit is issued to a specific user and location.

F. Per Article IX, section 9.9 of the MCSUL, a violation by the permittee of the permit conditions may be cause for revocation or suspension of the permit after a Hearing by the Administrative Board, or if the violation is found to be within the emergency powers of the Director under Section 9.6. The revocation is immediate upon receipt of notice to the Industrial User. If the revocation or suspension is issued under Section 9.6, a Hearing shall be held as soon as possible.

G. As provided under Article VI, Section 6.1 of the MCSUL, the Director and/or his duly authorized representatives shall gain entry on to private lands by permission or duly issued warrant for the purpose of inspection, observation, measurement sampling and testing in accordance with the provisions of this law and its implementing Rules and Regulations. The Director or his representatives shall not have authority to inquire into any processes used in any industrial operation beyond that information having a direct bearing on the kind and source of discharge to the sewers or the on-site facilities for waste treatment. While performing the necessary work on private lands, referred to above, the Director or his duly authorized representative shall observe all safety rules applicable to the premises as established by the owner and/or occupant.

H. All required monitoring shall be analyzed by a New York State Department of Health certified laboratory. All sampling and analysis must be performed in accordance with Title 40 Code of Federal Regulations Part 136.

I. The pH range for this permit is 5.0 – 12.0 S.U. This range is specifically permitted by the Director as allowed under Article III, Section 3.3(b) of the MCSUL. pH must be analyzed within 15 minutes of the time of collection as specified in 40 CFR, part 136.

J. Discharges of wax, fats, oil or grease shall not exceed 100 mg/L as imposed by the Director under Article III, Section 3.3 of the MCSUL.

SURCHARGE CONCENTRATIONS:

Concentration and/or characteristics of normal sewage:
"Normal Sewage" shall mean sewage, industrial wastes or other wastes, which when analyzed, show concentration values with the following characteristics based on daily maximum limits:

a. B. O. D.	300 mg/L
b. Total Suspended Solids	300 mg/L
c. Total Phosphorus, as P	10 mg/L

Annual average concentrations above normal sewage are subject to surcharge as defined in Article X, section 10.7 of the MCSUL.

DISCHARGE LIMITATIONS (SEWER USE LIMITS)

Permissible concentrations of toxic substances and/or substances the Department wishes to control:
The concentration in sewage of any of the following toxic substances and/or substances the Department wishes to control shall not exceed the concentration limits specified when discharged into the County Sewer System; metal pollutants are expressed as <u>total</u> metals in mg/L (ppm): the following pollutant limits are based on daily maximum values:

a. Antimony (Sb)	1.0 mg/L
b. Arsenic (As)	0.5 mg/L
c. Barium (Ba)	2.0 mg/L
d. Beryllium (Be)	5.0 mg/L
e. Cadmium (Cd)	1.0 mg/L
f. Chromium (Cr)	3.0 mg/L
g. Copper (Cu)	3.0 mg/L
h. Cyanide (CN)	1.0 mg/L
i. Iron (Fe)	5.0 mg/L
j. Lead (Pb)	1.0 mg/L
k. Manganese (Mn)	5.0 mg/L
l. Mercury (Hg)	0.05 mg/L
m. Nickel (Ni)	3.0 mg/L
n. Selenium (Se)	2.0 mg/L
o. Silver (Ag)	2.0 mg/L
p. Thallium (Tl)	1.0 mg/L
q. Zinc (Zn)	5.0 mg/L

REPORTING REQUIREMENTS:

A. Per the requirements of 40 CFR, Part 403.12(e), Significant Industrial Users must submit Periodic Reports on Continued Compliance to the Control Authority on a biannual (2/yr) basis. Deadline dates of submission for these reports will be August 15 and February 15, respectively.

B. Discharge monitoring reports shall be submitted to the Control Authority upon receipt from the permittee's testing laboratory. Reports submitted from industrial users identified as Significant Industrial Users (SIU) must be accompanied by a certification statement as required by 40 CFR part 403 and the MCSUL, Article VI, section 6.12.

C. Any Industrial User subject to the reporting requirements of the General Pretreatment Regulations shall maintain records of all information resulting from any monitoring activities required by 40 CFR, part 403.12 for a minimum of three (3) years. These records shall be available for inspection and copying by the Control Authority. This period of retention shall be extended during the course

of any unresolved litigation regarding the discharge of pollutants by the Industrial User or the operation of the POTW Pretreatment Program or when requested by the Director or the Regional Administrator.

D. Pursuant to Article VI, Section 6.10 (4) of the MCSUL and the reporting requirements of the Code of Federal Regulations 40 CFR part 403.12, if a permitted user elects to perform monitoring at compliance monitoring locations more often than required and uses approved laboratory procedures, the results of all such additional monitoring and any additional flow measurements shall be reported to the Director on a timely basis and shall be included in reports as outlined in the MCSUL section 6.10(1)-(4).

NOTIFICATION REQUIREMENTS:

A. Pursuant to Article VI, Section 6.10(5), the permittee shall notify the Department within 24 hours of becoming aware that discharge monitoring is in violation of any permit limit. This notification shall be directed to the Industrial Waste Section at 585-753-7600 Option 4. The User shall also repeat sampling and analysis for the analyte in non-compliance and submit the results of the repeat analysis to Monroe County within 30 days after becoming aware of the violation.

B. Notify the Director in writing when considering a revision to the plant sewer system or any change in industrial waste discharges to the public sewers. The later encompasses either an increase or decrease in average daily volume or strength of waste or new wastes.

C. Notify the Director immediately of any accident, negligence, breakdown of pretreatment equipment or other occurrence that occasions discharge to the public sewer of any waste or process waters not covered by this permit.

SLUG CONTROL

An Industrial User shall be required to report any/all slug discharges to the Monroe County sewer system by calling 585-753-7600 option 4. For the purpose of this permit enclosure, a slug discharge shall be identified as any discharge of a non-routine, episodic nature, including but not limited to an accidental spill or a non-customary batch discharge. Following a review process, the Control Authority (Monroe County) shall determine the applicability of a facility slug control plan. If the Control Authority decides that a Slug Discharge Control Plan (SDCP) is needed, the plan shall contain, at a minimum, the following elements:

1. Description of discharge practices, including non-routine batch discharges.
2. Description of stored chemicals.
3. Procedures for immediately notifying the Control Authority of slug discharges, including any discharge that would violate a prohibition under 40 CFR 403.5 (b), with procedures for follow up written notification within five (5) days.
4. If necessary, procedures to prevent adverse impact from accidental spills, including, but not limited to, inspection and maintenance of storage areas, handling and transfer of materials, loading and unloading operations, control of plant site run-off, worker training, building of containment structures or equipment, measures for containing toxic organic pollutants (including solvents) and/or measures and equipment for emergency purposes.

SNC DEFINITION:

In accordance with 40 CFR 403.8 (f) (vii), an Industrial User is in significant noncompliance (SNC) if its violations meet one or more of the following criteria:

A. Chronic violations of wastewater discharge limits – defined as those which 66% or more of all the measurements taken during a six-month period exceed (by any magnitude) the daily maximum limit or the average limit for the same pollutant parameter (ref. Article IX, section 9.19 – MCSUL). This criteria does NOT apply to the following Monroe County surchargeable parameters: Biochemical Oxygen Demand, Total Suspended Solids, Chlorine Demand and Total Phosphorus.

B. Technical review criteria (TRC) violations – defined as those in which 33% or more of all the measurements for each pollutant parameter taken during a six month period equal or exceed the product of the daily maximum limit or the average limit times the applicable TRC (ref. Article IX, section 9.19 – MCSUL). This criteria does NOT apply to the following Monroe County surchargeable parameters: Biochemical Oxygen Demand, Total Suspended Solids, Chlorine Demand and Total Phosphorus.

C. Any other violation of a pretreatment effluent limit (daily maximum or longer-term average) that the Control Authority determines has caused, alone or in combination with other discharges, interference or pass-through (including endangering the health or POTW personnel or the general public).

D. Any discharge of a pollutant that has caused imminent endangerment to human health, welfare or the environment or has resulted in the POTW's exercise of its emergency authority under paragraph (t)(1)(vi)(8) of 40 CFR part 403 to prevent such a discharge.

E. Failure to meet, within 90 days after the scheduled date, a compliance schedule milestone contained in a local control mechanism or enforcement order, for starting construction, completing construction or attaining final compliance.

F. Failure to provide, within 30 days after the due date, required reports such as BMRs, 90 day compliance reports, periodic reports on continued compliance.

G. Failure to accurately report noncompliance.

H. Any other violation or group of violations that the Control Authority determines will adversely affect the operation and implementation of the local Pretreatment Program.

PENALTIES

Should the facility be considered in Significant Non-Compliance (SNC), based on the above mentioned criteria, the minimum enforcement response by Monroe County will be the publication of the company name in the Gannett Rochester newspaper. The company will be published as an Industrial User in Significant Non-Compliance (SNC). Fines and criminal penalties may follow this publication (ref. Article IX – MCSUL).

Nothing in this permit shall be construed to relieve the permittees from civil/criminal penalties for noncompliance under Article IX, Section 9.7(a)(5) MCSUL. Article IX provides that any person who violates a permit condition is subject to a civil penalty not to exceed $25,000 for any one case and an additional penalty not to exceed $25,000 for each day of continued violation.

APPENDIX K

Erosion and Sediment Control Plan (ESCP)

EROSION AND SEDIMENT CONTROL PLAN

5 Flint Street
Rochester, New York

January 9, 2026

Prepared for:

5 Flint Street LLC

Prepared by:

Roux Environmental Engineering and Geology, D.P.C.
209 Shafter Street
Islandia, New York 11749

Roux Associates, Inc.
200 Summit Drive, Suite 500
Burlington, Massachusetts 01803

4694.0001BM000.100.RCV

Environmental Consulting
& Management
+1.800.322.ROUX
rouxinc.com

Table of Contents

1.0 INTRODUCTION 1
1.1 Background 1
1.2 Purpose and Scope 2
2.0 POTENTIAL EROSION AND SEDIMENT CONTROL CONCERNS 3
3.0 EROSION AND SEDIMENT CONTROL PLAN 4
3.1 Temporary Measures 4
3.1.1 Stabilized Construction Entrance and Decontamination Area 4
3.1.2 Perimeter Sediment Controls 5
3.1.3 Stormwater Bypass 5
3.2 Stabilization 5
3.3 Dust Control 6
3.4 Stockpile Management 6
3.5 Monitoring, Inspection and Maintenance 6
3.5.1 Implementation 7
3.5.2 Site Inspections and Maintenance Practices 7
3.5.3 Recordkeeping 8
3.6 Modifications to the ESCP 8

Attachments

1 Erosion Control Details
2 Inspection and Maintenance Report Form

1.0 INTRODUCTION

Roux Associates, Inc. and Roux Environmental Engineering and Geology D.P.C. (collectively referred to as "Roux"), on behalf of 5 Flint Street LLC (referred to herein as 5 Flint) has prepared this Erosion and Sediment Control Plan (ESCP) for remedial actions conducted under New York State Brownfield Cleanup Program (BCP or Program) Site No. C828162B ("the Work") for the 5 Flint Street Site (the "Site").

1.1 Background

The Site is located at 5 Flint Street, Rochester, New York, which consists of approximately 1.59 acres located along the western bank of the Genesee River. The Site falls within the footprint of the former Vacuum Oil Refinery (hereafter referred to as the "facility") which encompasses approximately 27 acres along the south and west of the intersection of Flint and Exchange Streets on the west bank of the Genesee River. The Site is currently undeveloped, with the exception of an abandoned three-story block and brick building on the northeast end of the Site. The building was reportedly built between 1918 and 1930 and has been vacant without utilities for an unknown amount of time.

The Site is located in an urban setting and is not a significant habitat for terrestrial wildlife. Most of the fauna found on the Site are avian and small mammal species, except, possibly, for some deer. Due to the surrounding residential, commercial, and industrial land uses, the Site is not part of a larger corridor that is linked to other significant wildlife habitats.

The Site was historically operated as a petroleum refining, blending, and bulk oil storage facility from approximately 1866 to approximately 1930 that encompassed approximately 40-acres with a footprint spanning both north and south of Flint Street. The Vacuum Oil Company Refinery operated the petroleum refinery, blending operations, and bulk storage at portions of the Site (including several other contiguous and neighboring properties) from approximately 1866 to around the 1890s. From the early 1890s until its closure in 1935, the Site operated as a blending facility. While most of the above-grade structures have been demolished and removed, some remnants of former structures remain. Since the time of refinery closure, the Site has remained vacant.

The Site is generally flat with surface water runoff generally draining to low-lying areas on the adjacent properties to the northwest and north of the Site. These off-site low-lying areas are generally isolated; however, portions are connected to each other and to the Genesee River via an unnamed Tributary. The presence of the berm that delineates the southeast boundary of the Site from the Genesee River Trail prohibits surface runoff from flowing directly from the Site to the river.

No wetlands were identified on the Site. Three isolated Federal jurisdictional wetlands are within the footprint of the facility, three of which are located on properties adjacent to the Site. However, the US Army Corps of Engineers (USACE) required the City of Rochester (City) to purchase wetland credits as compensatory mitigation for the permanent and unavoidable loss of these three federal jurisdictional wetlands, due to their locations within the remediation areas of City's BCP site (No. C828190). The City obtained these wetland mitigation credits through the Ducks Unlimited In-Lieu Fee Mitigation Program, as documented in the April 16, 2024 Credit Sale Letter verifying acceptance of full payment for the appropriate credits. Additionally, the Site is located within the Federal Emergency Management Agency (FEMA) 100- and 500-year floodplains. Remedial activities for the Site will be conducted in a manner consistent with applicable state and Federal wetland and floodplain requirements.

1.2 Purpose and Scope

The purpose of this ESCP Plan is to control and minimize soil erosion and uncontrolled sediment migration until final completion of the Work and the work areas are restored or installation of the Site-wide cover system. Soil erosion and sedimentation control measures will be employed by the Remediation Contractor to control stormwater runoff from entering or exiting the excavations or other work areas (e.g., in situ solidification [ISS] areas, stockpile and staging areas) and to minimize any impact to surface water quality. The Remediation Contractor will install these measures in stages as the Work progresses, but prior to the commencement of intrusive activities including soil/fill material handling activities. These measures include but are not limited to the installation of stabilized construction entrances, silt fencing, etc. All construction and maintenance of soil erosion and sedimentation control practices employed will be performed by the Remediation Contractor as directed by the Roux Remedial Engineer.

2.0 POTENTIAL EROSION AND SEDIMENT CONTROL CONCERNS

Potential areas and items of concern during Work activities include the following:

- Cleared Site areas with exposed soils.
- Excavated and ISS areas.
- Backfilled and graded areas.
- Soil and material stockpiles.
- Staging areas.
- Construction Site entrance.
- Dust control measures.

3.0 EROSION AND SEDIMENT CONTROL PLAN

Standard soil conservation practices need to be incorporated into Work activities at the Site to control dust, mitigate soil erosion damage, and prevent off-site soil/fill material and sediment migration and mitigation of water pollution from erosion. These practices combine vegetative and structural measures, many of which will be permanent in nature and become part of the completed project (i.e., grading). Other measures will be temporary and serve only during the construction stage. Selected soil/fill material erosion and sediment control measures will meet the following criteria:

- Incorporate temporary and permanent erosion control measures.
- Remove sediment from sediment-laden storm water before it leaves the Site.

3.1 Temporary Measures

Temporary erosion and sedimentation control measures and facilities will be used during Work activities. These temporary measures will be installed and maintained until they are either no longer needed or until such time as permanent measures are installed and become effective. Erosion and sediment controls shall be installed in accordance with the standards and specifications presented in Attachment 1 of this ESCP. At a minimum, the following temporary measures will be used:

- Stabilized Construction Entrance and Decontamination Area
- Perimeter Sediment Controls
- Stormwater Bypass

3.1.1 Stabilized Construction Entrance and Decontamination Area

In order to minimize the impacts to surroundings areas, stabilized construction entrances will be installed at all points of vehicle ingress and egress to the Site or, with DEC approval, adjacent sites which provide Site access to public roads. As needed, temporary access roads will also be constructed to limit the dust generation and prevent the tracking and moving of soils from and around the Site. Due to limitations to direct Site access to public roads, the currently planned locations of the stabilized construction entrance and truck wash/decontamination pad are on adjacent BCP Site No. C828162C located at 15 Flint Street, as shown on **Figure 7** of the RAWP**.**

The stabilized entrances will be installed at all points of vehicle ingress and egress to the Site (or adjacent BCP Site) from public roads to capture mud and debris from vehicles before entering public roads and minimize dust. Temporary access roads and stabilized entrances will be constructed of dense graded aggregate ("DGA") or crushed stone. All imported stone material will be approved by the NYSDEC project manager prior to import. A request to import will be submitted to the NYSDEC project manager. All temporary crushed stone fill will be underlain with 12 oz non-woven geotextile, or approved equal, to facilitate the removal of stone fill upon completion of the work. New layers of stone will be placed on the temporary roads and the stabilized entrances as needed as work progresses.

A temporary decontamination pad/truck wash will be constructed to decontaminate all trucks and other vehicles/equipment which made contact with Site soil prior to leaving the Site (or adjacent BCP Site). The decontamination pad will be sized to accommodate the largest construction vehicle used and located prior to the stabilized construction egress. The decontamination pad will be integrated with the stabilized

construction entrance so that trucks do not get re-contaminated following decontamination and prior to departure from the Site (or adjacent BCP Site). Dry decontamination will be employed to the extent practical, within the decontamination pad of the Site. All liquid decontamination material will be collected and properly disposed of off-Site at a permitted facility or treated using an on-Site treatment system prior to discharge to the municipal sewer system under an approved Monroe County Department of Environmental Services (DES) discharge permit. The truck decontamination area/construction entrance will be adequately sloped toward the interior of the Site to prevent off-Site tracking of soils. Any washed Site material tracked to public rights-of-way will be removed immediately. The public right-of-way will be inspected at the beginning of the work, throughout the workday, and at the end of the workday. The Site material will be containerized, characterized, and disposed off-site at a permitted landfill facility.

3.1.2 Perimeter Sediment Controls

Remedial activities may result in surface water flow to drainage ditches and adjacent properties. To minimize impacts resulting from remediation activities, erosion and sediment control measures (e.g., silt sock, straw bales, silt fence) will be put in place to ensure no stormwater is discharged from the Site in conformance with requirements presented in the New York State Standards and Specifications for Erosion and Sediment Control. See Attachment 1 of this ESCP.

Erosion and sediment control measures will be installed before the start of earth disturbing activities. Erosion and sediment control measures will surround the limit of disturbance in each work area to control erosion associated with stormwater runoff and protect the adjacent areas from potential impacts. Erosion and sediment control measures will also be installed on the perimeter of all excavations and soil stockpiles. The orientation of the controls will be adjusted as necessary as the work proceeds to accommodate changing site conditions. In addition, a 10-foot buffer will be maintained between stockpile areas and the areas of excavation.

Inspection and maintenance requirements for erosion and sediment control measures are discussed in **Section 3.5**.

3.1.3 Stormwater Bypass

A temporary stormwater bypass, if required, will be installed to convey surface water and stormwater runoff around the excavation areas. The stormwater bypass will be installed before the start of excavation work in each excavation area and will be maintained over the course of work in each area. The temporary stormwater bypass will be constructed with soil berms/earth dike, and/or diversion swales to physically guide water away from the excavation area. Silt fence and/or straw bales/waddles will be used, as needed in addition to perimeter sediment controls, to trap and control migration of sediments. Construction details are presented in **Attachment 1** of this ESCP.

3.2 Stabilization

Erosion and sediment controls and Site perimeter fencing will remain in place until remedial activities (e.g., excavation/ISS, Site-wide cover system) have been completed and vegetative cover established (or other Department approved cover materials have been installed) in the work area.

Impervious areas of the Site will be relatively the same before and after the remedial construction; therefore, the impervious area will not be affected by the remediation. Because there is no major modification of the quantity of runoff from the Site and this ESCP is not required to include a plan for post-construction water quantity or

water quality controls. However, post construction controls will likely be required for the future redevelopment, which will be addressed under a separate plan and within the 60-day Change of Use notification.

3.3 Dust Control

Dust (particulate matter) control measures will be employed throughout remediation activities. The following measures will be implemented to control particulates in driving areas including:

- Limiting on-Site speed to 15 miles per hour and posting signage of the limit at all Site entrances and along routes within the Site.
- Loading of any dry material that may release dust from trucks will be accompanied by manual water spraying of the material.
- All trucks exiting the Site will be secured with either tight-fitting opaque covers that are secured on the sides and/or back, or opaque covers that are locked on all sides. Outgoing trucks will be inspected verifying that covers on all such trucks have been properly covered/sealed and will not be allowed to exit the Site if covers are not properly sealed.

The Remediation Contractor will appropriately cover all inactive soil/fill material/sediment stockpiles to control dust migration. Active stockpiles can remain uncovered while the Remediation Contractor is onsite and during active work hours. All stockpiles and staged soil/fill material area will be properly covered during the non-working hours. The Remediation Contractor and/or the Remedial Engineer will be responsible for ensuring all stockpiles and staged material areas are covered at the end of the workday. All stockpiles and staged material areas will be covered with at a minimum of 12 mil poly sheeting and the cover will be properly anchored to ensure it remains in place. Stockpiles and staged material areas will be inspected routinely, and all damaged covers will be replaced.

3.4 Stockpile Management

Excavation activities may produce stockpiles of soil and subgrade soil/fill materials. Careful placement and construction of stockpiles will be required to control erosion. Stockpiles will be placed no closer than 50 feet from storm water inlets and parcel boundaries. Control measures such as silt socks, straw bales will be used near catch basins, surface waters, and other discharge points. Additionally, stockpiles will be graded and compacted as necessary for positive surface water runoff and dust control. Stockpiles will be secured with proper covers and anchors at all times, unless material is being added, to prevent runoff and dust generation.

As discussed, soil stockpiles generated during the performance of the Work and stockpiles of clean backfill material brought to the Site, will be covered to control dust and precipitation erosion. The stockpiles will be continuously encircled with erosion controls (i.e., a berm and/or silt fence). Stockpiles will be kept covered with polyethylene sheeting with a minimum thickness of 12 mil and will be anchored. Stockpiles will be routinely inspected and damaged tarp covers will be promptly replaced. Stockpiles will be inspected at a minimum once each week and after every storm event. Results of inspections will be recorded in a logbook and maintained at the site and available for inspection by the NYSDEC.

3.5 Monitoring, Inspection and Maintenance

All erosion (i.e., dust or precipitation) and sedimentation controls described in this ESCP will be inspected by the Remedial Engineer/P.E. of Record for the Site or a qualified individual who is under the direct supervision of the Remedial Engineer/P.E of Record for the Site. The inspection frequency will be at a minimum of once a week and within 24 hours of a storm/precipitation event and will be repaired and/or

modified as necessary to effectively control erosion (i.e., dust or precipitation) or turbidity problems. Inspections will include all areas under construction, stockpile areas, erosion control devices (e.g.,. silt sock, straw bales, silt fence) and all locations where vehicles enter and leave the site. Routine inspections of the entire Site will also be made on a weekly basis during construction.

If inspections indicate problems, corrective measures will be implemented immediately and will be resolved no later than 24 hours of the inspection. A report summarizing the scope of the inspection, name of the inspector, date, observations made, and a description of the corrective actions taken will be completed. **Attachment 2** of this ESCP includes the Inspection and Maintenance Report Form.

3.5.1 Implementation

Erosion controls and features shall, at all times, be properly constructed, operated, and maintained in accordance with regulatory requirements and good engineering and construction practices. Erosion control measures and activities will be conducted in accordance with currently accepted Best Management Practices (BMPs).

Erosion control monitoring, inspection, and maintenance are an integral part of Site storm water and erosion control. The key elements of the monitoring effort include the following:

- Site inspections and maintenance
- BMPs monitoring
- Recordkeeping
- Review and modifications
- Certification of compliance

3.5.2 Site Inspections and Maintenance Practices

The temporary erosion control features will be maintained until no longer needed or permanent erosion control methods are installed. Site inspections are required every seven days or within 24 hours of a rainfall of 0.5 inches or greater. All disturbed areas, areas for material storage, locations where vehicles enter or exit the site, and all erosion and sediment controls identified as part of this ESCP must be inspected. Controls must be in good operating condition until the affected area they protect has been completely stabilized and the construction activity is complete. If a repair is necessary, it must be completed within 24-hours of receipt of a report or notice, if practical. Inspection for specific erosion and sediment controls will include the following:

- Silt fence/silt socks will be inspected to determine the following:
    1) Depth
    2) Condition of fabric
    3) That the fabric is attached to the posts
    4) That the fence posts are firmly in the ground
- The silt fences/silt socks will be inspected weekly and within 24 hours of a 0.5 inch or greater storm event.
- Temporary and permanent seeding and planting will be inspected for bare spots, washouts, and other potential erosion control problems.

- Roux shall designate individual(s) that will be responsible for erosion control, maintenance, and repair activities. The designated individual will also be responsible for inspecting the site and filling out the inspection and maintenance report.
- Personnel selected for inspection and maintenance responsibilities will receive training as directed by the Engineer. They will be trained in all the inspection and maintenance practices necessary for keeping the erosion and sediment controls used on-site in good working order.

The individual inspecting the Site must record any damages or deficiencies on the Inspection and Maintenance Report Form in Attachment 2. This form can be used to request maintenance and repair and to document inspection and maintenance activities. Damages or deficiencies must be corrected as soon as possible after the inspection. Any changes that may be required to correct deficiencies in this ESCP should also be made as soon as possible, but in no case later than seven days after the inspection.

3.5.3 Recordkeeping

A copy of the ESCP and inspection and maintenance records will be included in the weekly reports to NYSDEC and must be kept at the Site from the time construction activities begins until the Site is stabilized. These documents will be made available upon request to regulatory agency representatives or members of the public.

3.6 Modifications to the ESCP

During the course of construction, unanticipated changes may occur that affect this ESCP such as schedule changes, phasing changes, staging area modifications, off-site drainage impacts, and repeated failures of designed controls. Modifications and updates to the erosion and sedimentation control requirements will be described and recorded. The ESCP will be amended when any of the following conditions occur:

- when there is a significant change in design, remediation, operation, or maintenance that may have a substantive effect on the potential for the discharge of pollutants to the waters of the United States and that has not otherwise been addressed in this ESCP;
- when this ESCP proves to be ineffective in eliminating or significantly minimizing pollutants from sources identified in this plan;
- when this ESCP proves to be ineffective in achieving the general objectives of controlling pollutants in stormwater discharges; or
- to identify any new contractor or subcontractor that will implement any measure of this ESCP.

ATTACHMENTS

1. Erosion Control Details
2. Inspection and Maintenance Report Form

Erosion Control Details

FINAL

New York State Standards and Specifications for Erosion and Sediment Control



November 2016

NEW YORK STATE OF OPPORTUNITY
Department of Environmental Conservation

STANDARD AND SPECIFICATIONS FOR SILT FENCE



Definition & Scope

A **temporary** barrier of geotextile fabric installed on the contours across a slope used to intercept sediment laden runoff from small drainage areas of disturbed soil by temporarily ponding the sediment laden runoff allowing settling to occur. The maximum period of use is limited by the ultraviolet stability of the fabric (approximately one year).

Conditions Where Practice Applies

A silt fence may be used subject to the following conditions:

1. Maximum allowable slope length and fence length will not exceed the limits shown in the Design Criteria for the specific type of silt fence used ; and
2. Maximum ponding depth of 1.5 feet behind the fence; and
3. Erosion would occur in the form of sheet erosion; and
4. There is no concentration of water flowing to the barrier; and
5. Soil conditions allow for proper keying of fabric, or other anchorage, to prevent blowouts.

Design Criteria

1. Design computations are not required for installations of 1 month or less. Longer installation periods should be designed for expected runoff.
2. All silt fences shall be placed as close to the disturbed area as possible, but at least 10 feet from the toe of a slope steeper than 3H:1V, to allow for maintenance and roll down. The area beyond the fence must be undisturbed or stabilized.
3. The type of silt fence specified for each location on the plan shall not exceed the maximum slope length and maximum fence length requirements shown in the following table:

		Slope Length/Fence Length (ft.)		
Slope	Steepness	Standard	Reinforced	Super
<2%	< 50:1	300/1500	N/A	N/A
2-10%	50:1 to 10:1	125/1000	250/2000	300/2500
10-20%	10:1 to 5:1	100/750	150/1000	200/1000
20-33%	5:1 to 3:1	60/500	80/750	100/1000
33-50%	3:1 to 2:1	40/250	70/350	100/500
>50%	> 2:1	20/125	30/175	50/250

Standard Silt Fence (SF) is fabric rolls stapled to wooden stakes driven 16 inches in the ground.
Reinforced Silt Fence (RSF) is fabric placed against welded wire fabric with anchored steel posts driven 16 inches in the ground.
Super Silt Fence (SSF) is fabric placed against chain link fence as support backing with posts driven 3 feet in the ground.

4. Silt fence shall be removed as soon as the disturbed area has achieved final stabilization.

The silt fence shall be installed in accordance with the appropriate details. Where ends of filter cloth come together, they shall be overlapped, folded and stapled to prevent sediment bypass. Butt joints are not acceptable. A detail of the silt fence shall be shown on the plan. See Figure 5.30 on page 5.56 for Reinforced Silt Fence as an example of details to be provided.

Criteria for Silt Fence Materials

1. Silt Fence Fabric: The fabric shall meet the following specifications unless otherwise approved by the appropriate erosion and sediment control plan approval authority. Such approval shall not constitute statewide acceptance.

Fabric Properties	Minimum Acceptable Value	Test Method
Grab Tensile Strength (lbs)	110	ASTM D 4632
Elongation at Failure (%)	20	ASTM D 4632
Mullen Burst Strength (PSI)	300	ASTM D 3786
Puncture Strength (lbs)	60	ASTM D 4833
Minimum Trapezoidal Tear Strength (lbs)	50	ASTM D 4533
Flow Through Rate (gal/ min/sf)	25	ASTM D 4491
Equivalent Opening Size	40-80	US Std Sieve ASTM D 4751
Minimum UV Residual (%)	70	ASTM D 4355

2. Fence Posts (for fabricated units): The length shall be a minimum of 36 inches long. Wood posts will be of sound quality hardwood with a minimum cross sectional area of 3.5 square inches. Steel posts will be standard T and U section weighing not less than 1.00 pound per linear foot. Posts for super silt fence shall be standard chain link fence posts.

3. Wire Fence for reinforced silt fence: Wire fencing shall be a minimum 14 gage with a maximum 6 in. mesh opening, or as approved.

4. Prefabricated silt fence is acceptable as long as all material specifications are met.

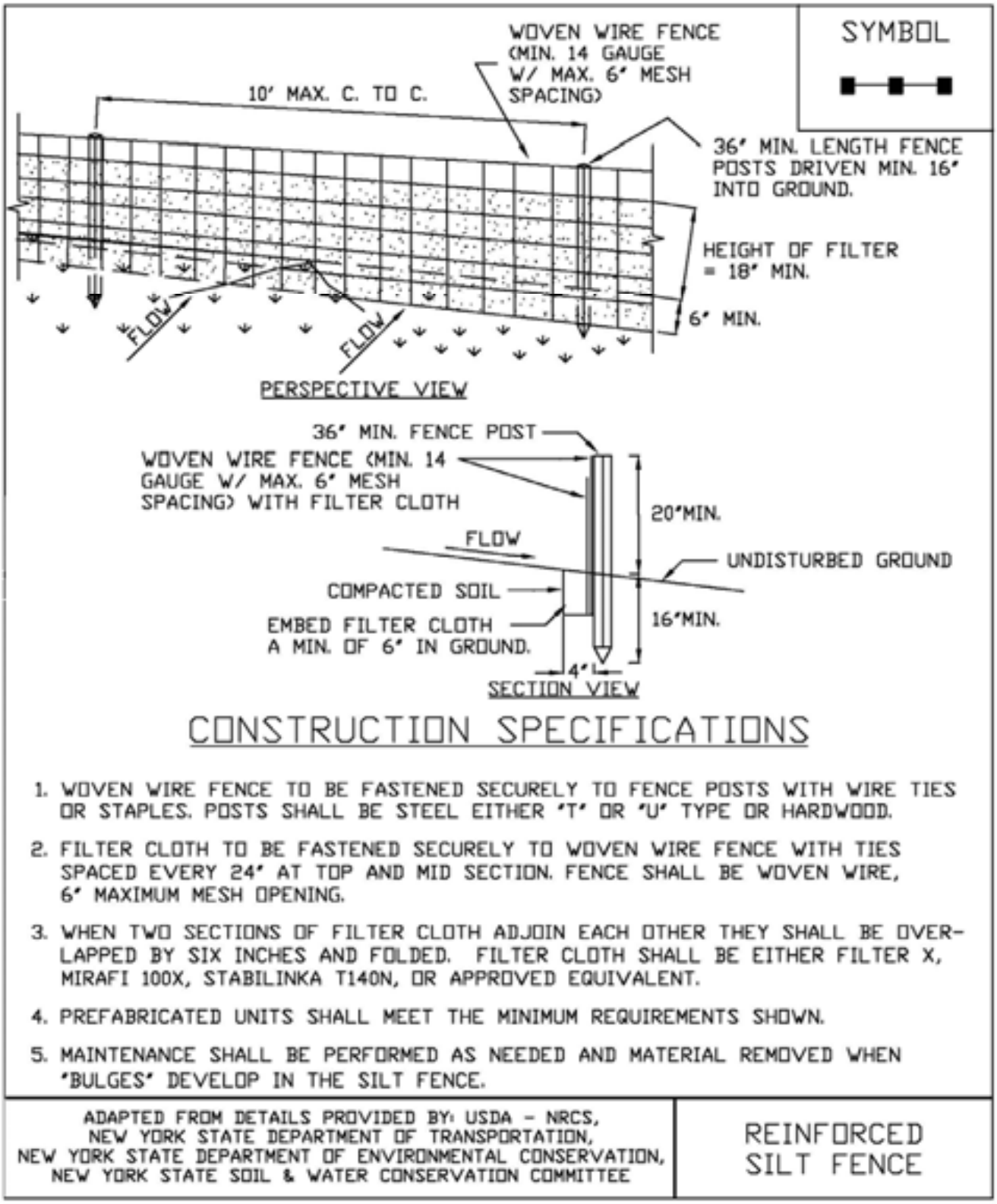
Super Silt Fence



Reinforced Silt Fence



Figure 5.30
Reinforced Silt Fence



STANDARD AND SPECIFICATIONS FOR COMPOST FILTER SOCK



Definition & Scope

A **temporary** sediment control practice composed of a degradable geotextile mesh tube filled with compost filter media to filter sediment and other pollutants associated with construction activity to prevent their migration offsite.

Condition Where Practice Applies

Compost filter socks can be used in many construction site applications where erosion will occur in the form of sheet erosion and there is no concentration of water flowing to the sock. In areas with steep slopes and/or rocky terrain, soil conditions must be such that good continuous contact between the sock and the soil is maintained throughout its length. For use on impervious surfaces such as road pavement or parking areas, proper anchorage must be provided to prevent shifting of the sock or separation of the contact between the sock and the pavement. Compost filter socks are utilized both at the site perimeter as well as within the construction areas. These socks may be filled after placement by blowing compost into the tube pneumatically, or filled at a staging location and moved into its designed location.

Design Criteria

1. Compost filter socks will be placed on the contour with both terminal ends of the sock extended 8 feet upslope at a 45 degree angle to prevent bypass flow.

2. Diameters designed for use shall be 12" – 32" except that 8" diameter socks may be used for residential lots to control areas less than 0.25 acres.

3. The flat dimension of the sock shall be at least 1.5 times the nominal diameter.

4. The **Maximum Slope Length** (in feet) above a compost filter sock shall not exceed the following limits:

Dia. (in.)	Slope %						
	2	**5**	**10**	**20**	**25**	**33**	**50**
8	225*	200	100	50	20	—	—
12	250	225	125	65	50	40	25
18	275	250	150	70	55	45	30
24	350	275	200	130	100	60	35
32	450	325	275	150	120	75	50
* Length in feet							



5. The compost infill shall be well decomposed (matured at least 3 months), weed-free, organic matter. It shall be aerobically composted, possess no objectionable odors, and contain less than 1%, by dry weight, of man-made foreign matter. The physical parameters of the compost shall meet the standards listed in Table 5.2 - Compost Standards Table. **Note: All biosolids compost produced in New York State (or approved for importation) must meet NYS DEC's 6 NYCRR Part 360 (Solid Waste Management Facilities) requirements. The Part 360 requirements are equal to or more stringent than 40 CFR Part 503 which ensure safe standards for pathogen reduction and heavy metals content. When using compost filter socks adjacent to surface water, the compost should have a low nutrient value.**

6. The compost filter sock fabric material shall meet the

7. Compost filter socks shall be anchored in earth with 2" x 2" wooden stakes driven 12" into the soil on 10 foot centers on the centerline of the sock. On uneven terrain, effective ground contact can be enhanced by the placement of a fillet of filter media on the disturbed area side of the compost sock.

8. All specific construction details and material specifications shall appear on the erosion and sediment control constructions drawings when compost filter socks are included in the plan.

Maintenance

1. Traffic shall not be permitted to cross filter socks.

2. Accumulated sediment shall be removed when it reaches half the above ground height of the sock and disposed of in accordance with the plan.

3. Socks shall be inspected weekly and after each runoff event. Damaged socks shall be repaired in the manner required by the manufacturer or replaced within 24 hours of inspection notification.

4. Biodegradable filter socks shall be replaced after 6 months; photodegradable filter socks after 1 year. Polypropylene socks shall be replaced according to the manufacturer's recommendations.

5. Upon stabilization of the area contributory to the sock, stakes shall be removed. The sock may be left in place and vegetated or removed in accordance with the stabilization plan. For removal the mesh can be cut and the compost spread as an additional mulch to act as a soil supplement.

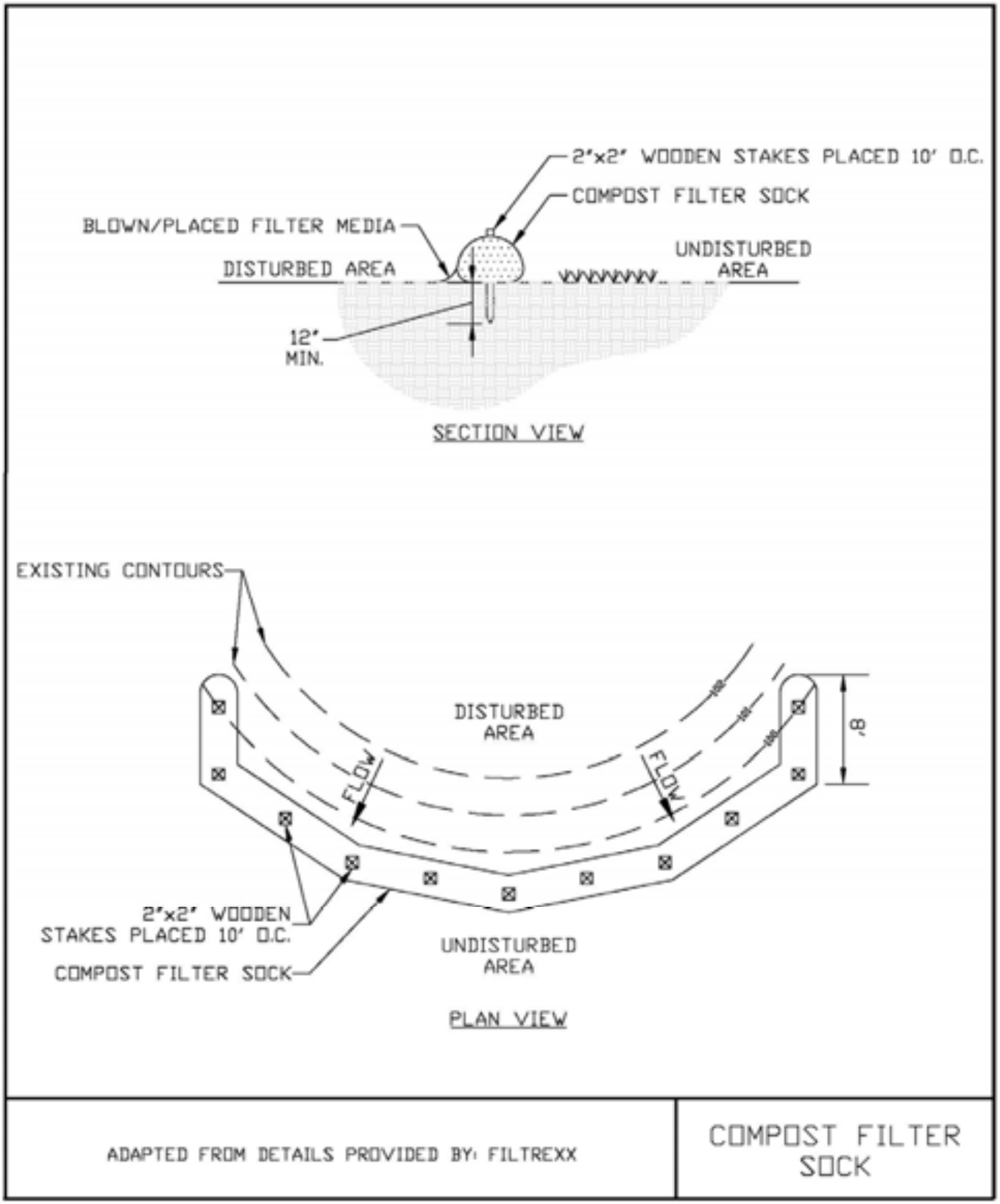
Table 5.1 - Compost Sock Fabric Minimum Specifications Table

Material Type	3 mil HDPE	5 mil HDPE	5 mil HDPE	Multi-Filament Polypropylene (MFPP)	Heavy Duty Multi-Filament Polypropylene (HDMFPP)
Material Characteristics	Photodegradable	Photodegradable	Biodegradable	Photodegradable	Photodegradable
Sock Diameters	12" 18"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"	12" 18" 24" 32"
Mesh Opening	3/8"	3/8"	3/8"	3/8"	1/8"
Tensile Strength		26 psi	26 psi	44 psi	202 psi
Ultraviolet Stability % Original Strength (ASTM G-155)	23% at 1000 hr.	23% at 1000 hr.		100% at 1000 hr.	100% at 1000 hr.
Minimum Functional Longevity	6 months	9 months	6 months	1 year	2 years

Table 5.2 - Compost Standards Table

Organic matter content	25% - 100% (dry weight)
Organic portion	Fibrous and elongated
pH	6.0 – 8.0
Moisture content	30% - 60%
Particle size	100% passing a 1" screen and 10 - 50% passing a 3/8" screen
Soluble salt concentration	5.0 dS/m (mmhos/cm) maximum

Figure 5.2
Compost Filter Sock



STANDARD AND SPECIFICATIONS FOR EARTH DIKE



Definition & Scope

A **temporary** berm or ridge of compacted soil, located in such a manner as to channel water to a desired location. Its purpose is to direct runoff to a sediment trapping device, thereby reducing the potential for erosion and off site sedimentation. Earth dikes can also be used for diverting clean water away from disturbed areas.

Conditions Where Practice Applies

Earth dikes are often constructed across disturbed areas and around construction sites such as graded parking lots and subdivisions. The dikes shall remain in place until the disturbed areas are permanently stabilized.

Design Criteria

See Figure 3.5 on page 3.15 for details.

General

	Dike A	Dike B
Drainage Area	<5 Ac	5-10 Ac
Dike Height	18 in.	36 in.
Dike Width	24 in.	36 in.
Flow Width	4 ft.	6 ft.
Flow Depth in Channel	8 in.	15 in.
Side Slopes	2:1 or flatter	2:1 or flatter
Grade	0.5% Min. 10% Max.	0.5% Min. 10% Max.

For drainage areas larger than 10 acres, refer to the Standard and Specifications for Diversion on page 3.9.

Stabilization

Stabilization of the dike shall be completed within 2 days of installation in accordance with the standard and specifications for seed and straw mulch or straw mulch only if not in seeding season. The flow channel shall be stabilized as per the following criteria:

Type of Treatment	Channel Grade[1]	Flow Channel	
		A (<5 Ac.)	B (5-10 Ac.)
1	0.5-3.0%	Seed & Straw Mulch	Seed & Straw Mulch
2	3.1-5.0%	Seed & Straw Mulch	Seed and cover with RECP, sod, or lined with plastic or 2” stone
3	5.1-8.0%	Seed and cover with RECP, Sod, or line with plastic or 2 in. stone	Line with 4-8 in. rip-rap or, geotextile
4	8.1-10%	Line with 4-8 in. rip-rap or geotextile	Site Specific Design

[1] In highly erodible soils, as defined by the local approving agency, refer to the next higher slope grade for type of stabilization.

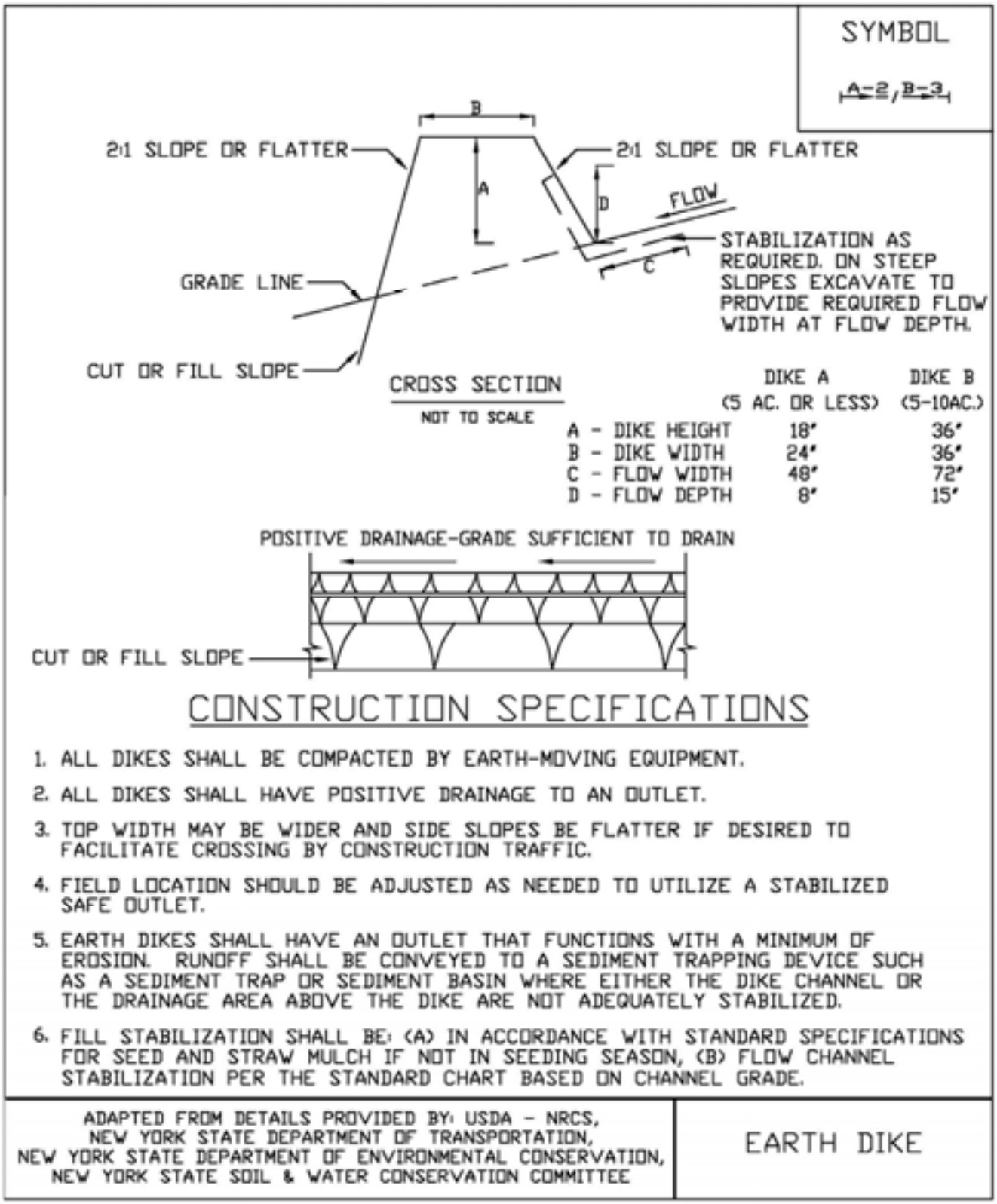
Outlet

Earth dikes shall have an outlet that functions with a minimum of erosion.

Runoff shall be conveyed to a sediment trapping device until the drainage area above the dike is adequately stabilized.

The on-site location may need to be adjusted to meet field conditions in order to utilize the most suitable outlet.

Figure 3.5
Earth Dike Detail



Inspection and Maintenance Report Form

Inspection and Maintenance Report Form

To be completed every 7 days and within 24 hours of a rainfall event of 0.5 inches or more

Regular Inspector:_____Rainfall Event Inspector:_____Rainfall (inches):_____

Contractor Activities	OK	NO	N/A	Notes
Are construction onsite traffic routes, parking, and storage of equipment and supplies restricted to areas specifically designated for those uses?				
Are locations of temporary soil stock piles of construction materials in approved areas?				
Is there any evidence of spills and resulting cleanup procedures?				
General Erosion & Sediment Controls				
Are sediment and erosion BMPs installed in the proper location and according to the specifications set out in the SWM & ECP?				
Are all operational storm drain inlets protected from sediment inflow?				
Do any seeded or landscaped areas require maintenance, irrigation, fertilization, seeding or mulching?				
Is there any evidence that sediment is leaving the site?				
Is there any evidence of erosion or cut fill slopes?				
Perimeter Road Use				
Does much sediment get tracked on to the perimeter road?				
Is the gravel clean or is it filled with sediment?				
Does all traffic use the perimeter road to leave the site?				
Is maintenance or repair required for the perimeter road?				

_____ _____

Inspected by (Signature) Date

Inspection and Maintenance Report Form

To be completed every 7 days and within 24 hours of a rainfall event of 0.5 inches or more

Inspector:_____

STABILIZATION MEASURES					
Area	Date Since Last Disturbed	Date of Next Disturbance	Stabilized? Yes/No	Stabilized with	Condition

Stabilization Required: _____

_____

_____

_____

_____

_____

To be performed by: _____ On or before: _____

Community Air Monitoring Plan (CAMP)

COMMUNITY AIR MONITORING PLAN

Portion of the Former Vacuum Oil Refinery Site (5 Flint Street)
Rochester, New York

December 18, 2025

Prepared for:

5 Flint Street LLC

Prepared by:

Roux Environmental Engineering and Geology, D.P.C.
209 Shafter Street
Islandia, New York 11749

Roux Associates, Inc.
200 Summit Drive, Suite 500
Burlington, Massachusetts 01803

4694.0001BM000.110.RCV

Environmental Consulting
& Management
+1.800.322.ROUX
rouxinc.com

Table of Contents

1.0 INTRODUCTION 1

2.0 AIR MONITORING PROCEDURES DURING INTRUSIVE AND BUILDING DEMOLITION ACTIVITIES 2

2.1 Wind Direction 2

2.2 Volatile Organic Compound Monitoring 2

2.2.1 Potential Corrective Measures and VOC Suppression Techniques 3

2.3 Particulate Monitoring 3

2.3.1 Potential Particulate Suppression Techniques 4

3.0 REFERENCES 5

Appendices

A. Action Limit Report

1.0 INTRODUCTION

Roux Associates, Inc. and Roux Environmental Engineering and Geology, D.P.C. (collectively referred to as Roux) on behalf of 5 Flint Street LLC, has prepared the following Community Air Monitoring Plan (CAMP) to be employed during subsurface investigation and remediation (i.e., excavation and in-situ stabilization) activities (collectively, hereafter referred to as "intrusive activities") as well as building demolition activities at 5 Flint Street, Rochester, NY (hereafter referred to as the "Site").

The purpose of this CAMP is to mitigate the potential for intrusive activities and building demolition activities to adversely affect the downwind community and to preclude or minimize airborne migration of Site contaminants. The proposed intrusive activities include excavation, soil transport, pre-design investigation (PDI) sampling, soil waste characterization sampling, groundwater and soil sampling, and in-situ soil stabilization (ISS). Compliance with this CAMP is required during all intrusive activities and building demolition activities that have the potential to generate airborne particulate matter and volatile organic compounds (VOCs).

This CAMP is consistent with the New York State Department of Health (NYSDOH) Generic Community Air Monitoring Plan, which is included as Appendix 1A of the New York State Department of Environmental Conservation (NYSDEC) "DER-10 Technical Guidance of Site Investigation and Remediation" (DER-10), dated May 3, 2010.

2.0 AIR MONITORING PROCEDURES DURING INTRUSIVE AND BUILDING DEMOLITION ACTIVITIES

Semi-volatile organic compounds (SVOCs), metals, and VOCs all may be constituents of concern at the Site. The appropriate method to monitor air for these constituents during intrusive activities and building demolition activities is through real-time VOC and air particulate (dust) monitoring.

2.1 Wind Direction

Wind direction will be evaluated, at a minimum, at the start of each workday, noon of each workday, and the end of each workday. These readings will be utilized to determine the positioning of the monitoring equipment in appropriate upwind and downwind locations. A Site figure will be marked daily to record the wind direction and monitoring equipment locations.

2.2 Volatile Organic Compound Monitoring

During all ground intrusive activities and building demolition activities, VOCs will be monitored continuously at the upwind perimeter and at the downwind perimeter of the designated work areas at monitoring stations. Locations of both upwind and downwind monitoring stations will be determined based upon the meteorological data collected throughout the workday and are subject to change in response to changes in wind direction and speed.

Monitoring equipment capable of measuring total VOC concentrations (photoionization detector [PID]) and capable of integrating (averaging) over periods of 15 minutes or less will be set up at the upwind and downwind locations, at a height of approximately 4 to 5 feet above land surface (i.e., the breathing zone).

Monitoring equipment will be a MiniRAE 2000 portable VOC monitor or similar equipment. The audible alarm on the PID will be set at 5 parts per million (ppm).

The following summarizes VOC action levels and the appropriate responses:

- If the ambient air concentration of total organic vapors at the downwind perimeter of the work area exceeds 5 ppm above background for the 15-minute average, work activities must be temporarily halted and monitoring continued. If the total organic vapor level readily decreases (per instantaneous readings) below 5 ppm over background, work activities can resume with continued monitoring.
- If total organic vapor levels at the downwind perimeter of the work area persist at levels in excess of 5 ppm above background but less than 25 ppm, work activities must be halted. While continuing to monitor, the source of vapors must be identified, and corrective actions must be taken to abate vapor emissions. After these steps are performed, work activities can resume, provided the total organic vapor level 200 feet downwind of the work area or half the distance to the nearest potential receptor or residential/commercial structure – whichever is less but in no case less than 20 feet – is below 5 ppm over background for the 15-minute average.
- If the organic vapor level is above 25 ppm at the perimeter of the work area, activities must be shut down, the source of vapors identified, and corrective measures taken to abate emissions, as described below in **Section 2.2.1**.

All readings will be recorded and made available for NYSDEC and NYSDOH personnel to review upon request. If an exceedance of the Action Limits occurs, an Action Limit Report, as shown in **Appendix A**, will be generated, and NYSDEC, NYSDOH, and the City will be notified within 24 hours of the exceedance .

2.2.1 Potential Corrective Measures and VOC Suppression Techniques

If the 15-minute integrated VOC level at the downwind location persists at a concentration that exceeds the upwind level by more than 5 ppm but less than 25 ppm during ground intrusive activities or building demolition activities, then vapor suppression techniques will be employed. The following techniques, or others, may be employed to mitigate the generation and migration of fugitive organic vapors:

- Limiting the excavation size;
- Backfilling portions of the excavation;
- Covering soil stockpiles (if any) with 6-mil polyethylene sheeting;
- Hauling waste materials off-Site in properly covered container;
- Odor masking; and/or
- Pausing operations until the wind conditions change such that VOCs and/or odors due to the work are not migrating toward downwind receptors.

All air monitoring readings will be recorded in the field logbook and will be available for the NYSDEC and NYSDOH personnel to review upon request.

2.3 Particulate Monitoring

Air monitoring for particulates (i.e., dust) will be performed continuously during intrusive activities and building demolition activities using both air monitoring equipment and visual observation at upwind and downwind locations. Monitoring equipment capable of measuring particulate matter smaller than 10 microns (PM_{10}) and capable of integrating (averaging) over periods of 15 minutes or less will be set up at upwind (i.e., background) and downwind locations, at heights approximately 4-5 feet above land surface (i.e., the breathing zone). Monitoring equipment will be MEI Data Ram monitors, or equivalent. The audible alarm on the particulate monitoring device will be set at 90 micrograms per cubic meter ($\mu g/m^3$). This setting will allow proactive evaluation of worksite conditions prior to reaching the action level of 100 $\mu g/m^3$ above background. The monitors will be calibrated at least once per day prior to work activities and recalibrated as needed thereafter. In addition, fugitive dust migration will be visually assessed during all intrusive activities and building demolition activities.

The following summarizes particulate action levels and the appropriate responses:

- If the downwind PM_{10} particulate level is 100 $\mu g/m^3$ above background (upwind perimeter) for the 15-minute period, or if airborne dust is observed leaving the work area, then dust suppression techniques must be employed. Work may continue with dust suppression techniques provided that downwind PM_{10} particulate levels do not exceed 150 $\mu g/m^3$ above the upwind level and provided that no visible dust is migrating from the work area.
- If, after implementation of dust suppression techniques, downwind PM_{10} particulate levels are greater than 150 $\mu g/m^3$ above the upwind level, work must be stopped, and an evaluation of activities initiated. Work can resume provided that dust suppression measures (as described in **Section 2.3.1** below) and other controls are successful in reducing the downwind PM_{10} particulate concentrations to within 150 $\mu g/m^3$ of the upwind level and in preventing visible dust migration.

All readings will be recorded and available for NYSDEC and NYSDOH personnel to review upon request. If an exceedance of the Action Limits occurs, an Action Limit Report (**Appendix A**) will be completed.

2.3.1 Potential Particulate Suppression Techniques

If the integrated particulate level at the downwind location exceeds the upwind level by more than 100 µg/m^3 at any time during intrusive activities or building demolition activities, then dust suppression techniques will be employed. The following techniques, or others, may be employed to mitigate the generation and migration of fugitive dusts:

- Spraying water on the equipment or directly on building materials being worked;
- Placing/hauling materials in properly tarped containers or vehicles;
- Limiting vehicle/equipment activity and speeds on Site; and/or
- Hydro-seeding of disturbed areas (as needed).

Work may continue with dust suppression techniques provided that downwind PM_{10} levels are not more than 150 µg/m^3 greater than the upwind levels.

There may also be situations where the dust generated by intrusive activities or building demolition activities migrates to downwind locations and is not detected by the monitoring equipment at or above the action level. Therefore, if dust is observed leaving the work area, dust suppression techniques such as those listed above will be employed.

If dust suppression techniques do not lower particulates to below 150 µg/m^3, or visible dust persists, work will be suspended until appropriate corrective measures are identified and implemented to remedy the situation.

All air monitoring readings will be recorded in the field logbook and will be available for the NYSDEC and NYSDOH personnel to review upon request.

3.0 REFERENCES

NYSDOH, 2010. New York State Department of Health Generic Community Air Monitoring Protocol, May 3, 2010 (also included as Appendix 1A to the Draft Technical Guidance for Site Investigation and Remediation, NYSDEC, May 2010).

APPENDICES

A. Action Limit Report

APPENDIX A

Action Limit Report

ACTION LIMIT REPORT

Project Location: _____

Date: _____ Time: _____

Name: _____

Contaminant: PM-10: _____ VOC: _____

Wind Speed: _____ Wind Direction: _____

Temperature: _____ Barometric Pressure: _____

DOWNWIND DATA

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

UPWIND DATA

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

BACKGROUND CORRECTED LEVELS

Monitor ID #: _____ Location: _____ Level Reported: _____

Monitor ID#: _____ Location: _____ Level Reported: _____

SITE ACTIVITIES

CORRECTIVE ACTIONS TAKEN

APPENDIX M

Professional Profiles

PROFESSIONAL PROFILE



CONTACT INFORMATION

Main: (631) 232-2600
Direct: (631) 630-2341
Email: nclarke@rouxinc.com
Website: www.rouxinc.com

209 Shafter Street
Islandia, NY 11749

EDUCATION

BS, Civil Engineering,
Manhattan College, 1991
ME, Environmental Engineering,
Manhattan College, 1994

PROFESSIONAL LICENSES

Professional Engineer in New York

Noelle M. Clarke, PE

Principal Engineer

EXPERIENCE SUMMARY

Thirty-two years' experience: Principal Engineer/Senior Engineer at Remedial Engineering, P.C./Roux; Project Engineer at Camp Dresser & McKee.

TECHNICAL SPECIALTIES

Feasibility studies, pilot testing, remedial design, implementation, construction management, and startup evaluations for remediation of soil, groundwater, soil vapor and sediment. Phase I/Phase II Environmental Site Assessments (ESA). Extensive experience at brownfields redevelopment sites, former industrial facilities, and public works facilities. Evaluation and design of storm water drainage systems. Evaluation, design, and construction management for new and existing wastewater treatment processes.

REPRESENTATIVE PROJECTS

- Principal Engineer providing due diligence support for real estate transactions on multiple projects in the New York metropolitan area. Projects have included multi-family housing (both affordable and market rate), retail/ commercial, community services and industrial properties. Services have included Phase I and Phase II ESAs.
- Principal Engineer for a Brownfield redevelopment of a property adjacent to a dry cleaning solvent distribution facility in Brooklyn, New York under the NYSDEC BCP. The site was previously a warehouse built on a former freight railyard that serviced the dry cleaning solvent facility. Offloading spillage on site and migration from the offsite facility resulted in significant soil, groundwater, and vapor contamination with chlorinated VOCs. The site was developed into multifamily housing with first floor retail use. Pre-remediation and posts-remediation Phase I ESAs were prepared by Roux. The remedy, as summarized in the Remedial Action Work Plan, consisted of soil hot spot removal, a physical barrier to limit on site groundwater migration, a permeable reactive wall to treat groundwater and mitigate offsite migration, and a sub slab depressurization system. Roux, under the direction of Ms. Clarke, provided full-time oversight of the remediation and prepared the Final Engineering Report and Site management Plan. The Certificate of Completion for the Site was obtained in October 2015 and Roux is currently providing post-remediation monitoring services.
- Principal Engineer for a Brownfield redevelopment in Brooklyn, New York at a mixed-use multifamily housing/neighborhood retail complex with a former onsite dry cleaner under the NYSDEC BCP. There is soil, groundwater, and vapor contamination from chlorinated VOCs from the former onsite dry cleaner, as well as groundwater contamination from offsite dry cleaners. The remedy, described in the Remedial Action Work Plan prepared by Roux, consisted of hot spot soil removal, *in situ* groundwater treatment and a sub slab depressurization system for vapor mitigation in the existing buildings. The NYSDEC accepted the Final Engineering Report prepared by Roux and the Site received a Certificate of Completion from NYSDEC in 2016 and Roux is currently providing post-remediation monitoring services.
- Principal Engineer for a complex dredging project for a major petroleum company on the Allegheny River in New York. The goal of the project was to remove 1,000 tons of petroleum impacted sediments from the river. Work included Site investigation, remedial investigation, alternatives evaluation, remedial design, planning and extensive regulatory permitting with multiple federal, state, and local agencies. The remediation work was completed in 2021.

- Principal engineer for the investigation and remediation of a former petroleum refinery located in Olean, New York under the NYSDEC BCP. The work included site investigation and preparation of an Alternatives Analysis Report (to document analysis of engineering options and remedy recommendation), Remedial Action Work Plan and remedial design documents to address the environmental impacts associated with the historical operations. The selected remedy includes excavation of shallow soil, in-situ stabilization of 25,000 cubic yards of deep petroleum impacted soil and capping. The work is being completed in phases beginning in 2022, with an anticipated completion date of 2024.
- Principal Engineer for the alternatives evaluation, remedy selection, regulatory negotiation, preparation of design documents (drawings, specifications, and permit applications) and permitting for all remedial components in support of redevelopment at a former metals manufacturing site in Staten Island, New York under the NYSDEC Voluntary Cleanup Program (VCP). The remedy included dredging and onsite disposal of stream sediments; consolidation and capping of fill material across the site; in-place abandonment of the Site's former sewer system; installation of drainage swales for storm water management; and wetland bank stabilization and mitigation/restoration. Required permits and regulatory approvals for the project included a Joint Permit from the USACE and NYSDEC; a NYSDEC SPDES equivalency permit for discharge of treated water to the Arthur Kill, a New York State Department of State Coastal Management Program (CMP) Federal Consistency Assessment; a New York City Waterfront Revitalization Program Consistency Assessment, a modification of topography authorization from New York City Department of City Planning; and a New York City Department of Environmental Protection permit for temporary discharge to a combined sewer. Also required by the USACE and National Marine Fisheries, was preparation of an Essential Fish Habitat Study, in support of the Joint Permit application. Permitting activities included preparation of the various permit applications, forms and supporting documentation, as well as follow up meetings and correspondence to finalize the authorizations.
- Principal Engineer for the design, bidding, contractor selection, and remedial construction phase at a former metals manufacturing facility in Staten Island under the NYSDEC VCP. Responsibilities included finalizing biddable construction documents, issuing to bidders, preparing addenda, and evaluating bids for presentation to the client. Following contractor selection Roux was heavily involved in coordinating with the client, regulators, and contractor for mobilization to the site in late 2006. During the construction Ms. Clarke provided support to the onsite construction manager regarding field changes, design revisions to account for unexpected conditions and contractor questions. The Final Engineering Report summarizing the construction activities was accepted by NYSDEC.
- Principal-in-Charge of an investigation and remediation project at a former petroleum refinery and current distribution facility located in Buffalo, New York. The site entered the NYSDEC BCP in 2006. Roux completed the BCP application and supported the application process. The work included assessing and remediating the potential environmental impacts associated with historical Site operations. These activities have included preparing multiple work plans and directing the activities of another consultant performing the fieldwork and preparing reports of results for field investigations including soil boring and sampling, well installation and groundwater sampling, aquifer pump testing, and groundwater/separate phase modeling. An in situ chemical oxidation system was designed, installed, and was operated as an IRM to remediate an area of free product and impacted groundwater discharging to the Buffalo River in OU-4.
- For the same petroleum Site in Buffalo, New York, multiple Alternatives Analysis Reports (to document analysis of engineering options and remedy recommendation), Remedial Action Work Plans and remedial design documents have been prepared to address the environmental impacts associated with the five Operable Units (OU) on the Site. Remedial construction for OU-1 was completed in 2007 and included excavation and disposal of impacted soil. The Final Construction Certification Report for OU-1 was accepted by the NYSDEC. The Alternatives Analysis Report and Remedial Design for OU-4 were submitted and approved by NYSDEC. The remedy for OU-4 included excavation and onsite consolidation of river sediments and site soil, stabilization of 1,400 linear feet of river embankment using tiered slopes, rip rap, and reinforced bioengineering, slurry wall groundwater containment, low permeability capping, a stormwater collection system and constructed wetland treatment for stormwater. Various vegetative measures were incorporated into the design in order to promote vegetative growth and enhance wildlife habitats. The remedial construction was completed in 2013 and 2014 and preparation of the Final Construction Completion Report was completed in 2015. The Alternatives Analysis Reports for OU-2 and OU-3 were submitted to NYSDEC. For OU-2, bench scale studies of stabilization/solidification agents were completed and evaluated for treatment of lead and petroleum impacted soil. In addition, field pilot studies of multiple options to treat petroleum impacted soils were completed and evaluated. Design of a stormwater collection system for portions of OU-2 and OU-3 was completed in 2010 and construction was completed in 2014 under the direction of Ms. Clarke.

- For the same petroleum terminal in Buffalo, New York, the work also included performing activities related to the operation of the remediation systems at the Site. These activities have included preparing a feasibility study work plan for improving water management systems at the site; preparing a work plan, directing the field work, and preparing an evaluation summary report for startup and testing of a portion of the groundwater extraction system at the Site; and assisting in preparation of plans to upgrade the existing treatment facilities at the Site.
- For the same petroleum terminal in Buffalo, New York, the work also included preparation of design documents and a completion report for in-place closure of the site's former in-ground oil water separator. In addition, a vapor enhanced extraction pilot study work plan was prepared and implemented at the site for recovery of separate-phase product in one portion of the site located adjacent to the Buffalo River. The results of the VER pilot testing, along with the results of chemical oxidation pilot testing conducted at the site, have been summarized in a Remedial Action Selection report, which recommended implementation of chemical oxidation in this portion of the site. A conceptual plan for implementation of chemical oxidation was submitted with the selection document. The work also included maintaining contact with regulatory agencies regarding the status of activities at the Terminal; preparing compliance monitoring reports for submittal to the regulatory agencies; overall project coordination; and budget management and tracking.
- Principal Engineer for the investigation, design, and implementation of a soil remediation project at a 4-acre former oil terminal in Cold Spring Harbor, New York under the NYSDEC spills program. The remedy completed included excavation and offsite disposal of approximately 20,000 tons of petroleum contaminated and/or hazardous lead contaminated soil in accordance with the future use of the site under an Environmental Easement. Additional activities completed by Roux at the site included asbestos remediation followed by building demolition, UST removal, and cesspool remediation. Roux prepared a Final Engineering Report, which was accepted by NYSDEC and resulted in the closure of the spill number for the Site.
- Principal Engineer for the investigation, design, and implementation of a soil remediation project at a portion of a former oil terminal in Sag Harbor, New York. The remedy completed included excavation and offsite disposal of approximately 2,000 tons of petroleum contaminated soil from beneath an active public roadway under the NYSDEC spills program. The remedy included extensive traffic control and coordination with Village of Sag Harbor officials, dewatering, water treatment, temporary water discharge of treated water to Sag Harbor and restoration of the public roadway in accordance with the Village of Sag Harbor Department of Public Works requirements. Roux prepared a Final Engineering Report, which was accepted by NYSDEC and resulted in the closure of the spill number for the Site.
- Project Manager for preparation of a work plan, direction the field activities and preparation of a summary report for investigation of the storm-water collection system at a petroleum terminal in Buffalo, New York. The objectives of the storm sewer investigation were to: prepare a detailed map of the Site's sewer system; re-establish connections that may have become blocked by debris; investigate the structural integrity of the storm sewers; locate areas of groundwater infiltration and assess infiltration rate and quality; assess wet and dry-weather flow and quality; and identify areas contributing surface water to the collection system, including hydrologic modeling using TR-55. Based on the results of the investigation, several improvements to the sewer system were recommended, including eliminating inlets to the system in areas of the site where no active operations currently take place and rehabilitation and/or installation of new sewers to restore flow by gravity to the treatment system.
- Principal Engineer for the investigation, remedial design, construction oversight and operation and maintenance of a bioventing and soil vapor extraction system at the Site of a diesel UST failure in Brooklyn. A free product recovery system was also designed, installed, and operated by Roux. Investigation activities included the use of the sonic drilling technique to advance twelve wells to 85 feet below grade through cobbles and boulders for delineation of separate phase product, soil, and groundwater impacts. Eight wells were converted to combination biovent/SVE wells. Design included specification of SVE and biovent blowers, piping, valves, and an automatic control system. Product only pumps were also designed and installed in three wells. Approximately 2,000 gallons of product were recovered by the two systems and the spill was closed by NYSDEC in 2011.
- Principal Engineer for a Brownfield redevelopment in Staten Island, New York of a former retail service station site under the NYSDEC BCP. There is soil, groundwater, and vapor contamination from petroleum-related constituents in the vicinity of the former gasoline piping and pump island (the petroleum source area), as well as historic fill across the entire site. The remedy, described in the Remedial Action Work Plan prepared by Roux, consisted of a sealed sheet pile containment wall around the petroleum source area, a Site Cover System across the entire site, comprised of concrete building slab/walkways, asphalt parking areas and limited landscaped areas and a sub-slab depressurization system to prevent vapor intrusion into the proposed retail building. A certificate of completion from NYSDEC was obtained in 2020.

- Project Manager for the remedial design at a Superfund Site in Nanuet, New York for the New York State Department of Environmental Conservation. The work included preparation of a preliminary design report, which evaluated two alternatives for handling hazardous soils and sediments at the site contaminated with volatile organic compounds. Each alternative was evaluated on the basis of technical feasibility, cost, and schedule for implementation. Based upon this evaluation, off-site disposal was recommended over on-site treatment. The report presented a site-wide conceptual plan for remediation, including soil/sediment excavation, staging and sampling; stream diversion; excavation dewatering; temporary on-site groundwater treatment; and long term monitoring. Duties also included managing and tracking all project budgets and serving as the main client contact.
- Principal Engineer for the design and specification of a large-scale (750 scfm) soil vapor extraction (SVE) pilot system with thermal oxidation off-gas treatment for a client in Brazil. Responsibilities included equipment sizing and specification, selection of materials of construction, SVE well and equipment layout, description of general startup procedures and preparation of a pilot test work plan. The pilot test work plan included a description of the pilot test operating procedures to be followed, operating parameters to be monitored and data to be collected and analyzed. The work also included conducting the pilot test activities and generating a report that included plans for expanding the SVE system across the Site. The work also included technical support for evaluating and optimizing system performance.
- Project Manager for a storm sewer study at the former metals manufacturing facility in Staten Island, New York as part of the Voluntary Cleanup Program for the Site to identify contaminated infiltration sources, provide an accurate site drainage map, and verify contributing areas to each outfall. The investigation included field inspections, surveying, dye testing, and sampling during varying tidal conditions. The storm sewer map prepared was used for future sewer closure and site redevelopment planning.
- Principal engineer for the design of a new storm water collection system for a metals manufacturing site in Staten Island, New York under the NYSDEC VCP. The design included evaluation and hydrologic modeling of the system using the USG Soil Conservation Service TR-55 hydrologic analysis model, inlet structure and pipe sizing and layout, outfall design and specification of materials and methods of construction for all system components.
- Principal-in-Charge of the operation, maintenance, monitoring and reporting activities at multiple active and former petroleum storage and distribution terminals located in New York for a large petroleum company. The work includes operation, maintenance, and performance/compliance monitoring services at the sites that currently have active remediation systems installed and monitoring, sampling, and reporting services at sites without systems. The remediation systems include groundwater extraction and treatment, free product recovery, bio-sparging, and soil vapor extraction/air sparging. At these sites, Roux is responsible for: maintaining and troubleshooting the various system components to reduce downtime to the extent possible; repairing and/or replacing equipment as needed; coordinating the upgrading of the electrical systems, as needed, to meet current building code requirements; expanding systems to meet regulatory requirements, as needed; optimizing system performance; collecting performance monitoring samples and data to track the efficiency of the treatment systems; and collecting compliance monitoring data.
- Principal Engineer for at multiple petroleum terminals in New York State for groundwater quality and surface water quality sampling and monitoring well gauging as required by the New York State Department of Environmental Conservation, as well as quarterly reporting for all sites. The work has also included collection of soil quality data at several sites and performance of an electromagnetic survey to support the divestiture and redevelopment of one of these sites. Based on these results, soil removal activities were performed at one of the former terminals in order to obtain regulatory closure of the site. Roux successfully completed the remedial activities to the satisfaction of the regulator and received closure for the client of the open spill number. Regulatory closure of another of these former terminals was obtained based upon the results of ongoing groundwater monitoring and reporting.
- Project Engineer for design of a 2.6-mgd groundwater treatment system at the Fireman's Training Center for Nassau County Department of Public Works on Long Island. The work included design of air strippers, exhaust stacks, liquid-phase GAC treatment units, and all chemical feed and storage facilities, including unit sizing, selection of materials of construction, equipment layout, and coordination with other disciplines. The work also included development of the "mass balance" for the facility.
- Task leader in charge of overseeing a bioventing pilot study conducted by a subconsultant, to treat contaminated vadose zone soils at the Fireman’s Training Center site in Nassau County, New York. The work included development of a preliminary design report for the full-scale implementation of bioventing at the site based upon the results of the pilot study.
- Project Engineer for the design, specification, construction, and operation of an air sparging and soil vapor extraction pilot at

the Long Island terminal of a large petrochemical distributor. The pilot was designed to treat contaminated ground water and vadose zone soils resulting from a one-million-gallon gasoline spill at the site. The work included development of the field sampling program and sampling and evaluation of various parameters to determine the pilot's radius of influence and effectiveness. The work also included performing data analysis and preparation of the pilot study report, which recommended full scale implementation of air sparging at the site. The site-wide implementation of air sparging and expansion of the site's existing vapor extraction system at the same Long Island petrochemical terminal was also part of the work. Responsibilities included design, specification, and layout of all mechanical equipment, vapor extraction, and air sparging wells and new vapor extraction/air sparging piping.

- Task leader responsible for investigating alternatives for the treatment of gasoline contaminated off-gas from air stripping operations a Long Island petrochemical terminal. Based on this evaluation, biofiltration was selected for piloting. Responsibilities included design of a pilot unit; development of sampling and data collection procedures; construction oversight and "troubleshooting" for the unit; coordination of data collection activities; and compilation and analysis of the pilot data.
- Project Engineer for the design of a 0.50-mgd groundwater treatment facility at a Long Island petrochemical terminal. Responsibilities included the design, specification, and layout of mechanical equipment, including the air stripping tower, vapor phase granular activated carbon off-gas treatment, centrifugal blowers, ductwork, influent pump, and concrete wet well. Responsible for shop drawing review during the construction phase.
- Project Manager for an investigation at a gasoline service station with soil and groundwater contamination. Responsible for reviewing and evaluating the work of another consultant that performed the soil and groundwater sampling and conducted remedial activities at the site including investigation summary reports; remedial designs; remediation progress reports; correspondence with regulators; and plans for future work at the Site. The work also included mapping the groundwater flow patterns in the area of the service station and mapping the areal and vertical extent of the groundwater contamination. Responsible for project coordination and budget management and tracking.
- Project Manager for the field investigation, feasibility evaluation, and remedial design at Superfund Site in Spring Valley, New York for the New York State Department of Environmental Conservation. The work included development of a work plan and site operations plan. The field investigations included Geoprobe soil borings; groundwater monitoring well installation; groundwater sampling; aquifer pump testing; and vapor extraction pilot testing. Work also included conducting the field operations for the vapor extraction pilot and producing a summary report of the field investigation results. The report presented an evaluation of the cost and feasibility of several alternatives for remediation of the site. It recommended reducing the level of effort of the remediation presented in the Record of Decision, based on lower levels of contamination encountered during the investigation. Duties also included project coordination, budget management and tracking, and development of subcontract agreements.
- Project Engineer for upgrades to the Spring Creek Auxiliary Water Pollution Control Plant for the City of New York. The work included the evaluation, design, and specification of a two-stage odor control system, chemical storage and feed facilities and new effluent disinfection system.
- Project Engineer responsible for preparation of design documents for the replacement of the sodium hypochlorite pumps and piping at the Mamaroneck Wastewater Treatment Plant for Westchester County Department of Environmental Facilities in New York.
- Project Engineer for design of upgrades to the New Rochelle Wastewater Treatment Facility for Westchester County Department of Environmental Facilities in New York. Designed upgrades to the main influent pump station, including rehabilitation of the existing influent pumps and replacement of the magnetic drives with new variable frequency drives. Responsibilities also included design of a submersible automatic duplex sump pump system, new primary sludge pumps and piping and new primary and secondary settling tank equipment. The work also included assisting the County during the bidding and contractor selection phase and preparing addenda to the contract documents.
- Project Manager for the construction of upgrades to the New Rochelle Wastewater Treatment Facility. Responsibilities included overseeing the shop drawing logging and distribution process; reviewing mechanical equipment shop drawings; addressing contractor questions regarding the contract documents; and coordinating with the resident engineer in the field and the electrical and general contractors.
- Project Engineer for the performance evaluation of the Harriman Wastewater Treatment Plant for the Orange County Department of Environmental Facilities and Services. Responsibilities included documentation of the existing conditions at the plant and evaluation of the historical and current performance of the plant with respect to its potential for expansion. A summary report was prepared, which included evaluations of the existing plant processes with respect to

standard design criteria, typical design practices and receiving water considerations. This summary report served as the basis for the facilities plan prepared as the next phase of the project.

- Project Engineer for the facilities plan for the upgrade of the Harriman Wastewater Treatment Plant. Responsibilities included evaluation of alternatives for expanding the plant's treatment capacity. A report was prepared, which recommended the conversion of the existing oxidation ditches to sequencing batch reactors (SBR) in order to increase the plant's treatment capacity to 6.0 mgd within the limited space available on the site.
- Project Engineer for the Gates-Chili-Ogden Pump Station and Force main design for Monroe County, New York. The design consisted of a new 36 mgd wet pit/dry pit pump station, influent sewer, and force main. Responsibilities included evaluating influent pumping conditions, and design of the influent sewer, manual influent bar racks and a duplex automatic submersible sump pump system for the station.
- Project Manager for the Flow Augmentation Needs Study (FANS) for Suffolk County Department of Public Works, New York. Responsibilities included coordinating and implementing the annual wetland monitoring effort for collection of data to characterize the vegetation communities and surface water and groundwater conditions at four freshwater wetland sites in Suffolk County. Duties also included maintaining a database of all vegetation data collected; developing and refining equations to characterize the groundwater table and wetlands vegetation in all monitoring areas; evaluating potential impacts of sewering on sensitive wetlands; and evaluating the need for any mitigation of these sites as triggered by vegetation changes correlated to groundwater drawdown. Responsibilities also included coordinating the production of a draft and final annual monitoring report summarizing the findings of the program.

PRESENTATIONS

Sparging Targets Submerged Residual Saturation Contamination, written with D. Bennett and L. Buchanan. Presented at the 66th New York Water Environment Federation Association Annual Meeting, New York, New York, February 1994.

Suffolk County Wetlands – Flow Augmentation Needs Study, written with M. A. Taylor and R. Southard. In Proceedings of the Annual Meeting, Hydrology and Hydrogeology of Urban and Urbanizing Areas. American Institute of Hydrology, April 1996.

PROFESSIONAL PROFILE



CONTACT INFORMATION
Main: (781) 569-4000
Direct: (781) 569-4030
Email: ireed@rouxinc.com
Website: www.rouxinc.com

200 Summit Drive, Suite 500
Burlington, MA 01803

EDUCATION
BS, Environmental Science,
Springfield College, 1997

Ian T. Reed

Vice President | Principal Hydrogeologist

EXPERIENCE SUMMARY
Over 20 years of experience: Vice President – Roux, New England Office (current); Principal/Office Manager – Roux Associates, New England Office (2012-2017); Senior Hydrogeologist/Project Manager, Roux (2005-2012); Project Hydrogeologist, Roux (2001-2005); Associate Hydrogeologist, Aqua Science Engineer, Inc. – San Francisco, CA (1998-2001); Associate Geologist, Parsons ES – Boston, MA (1997-1998); Emerald Excavating – Plymouth, MA (1993-1997).

TECHNICAL SPECIALTIES
Development, implementation, and management of comprehensive site investigations, implement remedial work plans, environmental investigations, and construction management.

Development and implementation of project/regulatory closure strategies for challenging sites in New England and New York.

Management and support for construction/redevelopment projects including Brownfields regulatory stewardship. Regulatory liaison and customer support with extensive experience in New England and New York.

Investigation and remedial implementations of impacted sediments including development and implementation of investigations in navigable waterways in New England. Scopes have included conventional sediment sample collections as well as innovative qualitative analysis (Sediment Profile Imagining). Sediment remediation scopes have included dredging, sheet pile installations, and engineered natural systems.

Management of environment and construction projects for oil and gas industry including pipeline maintenance and repairs, facility compliance, engineering support and construction management in MA, CT, RI, NY, and NJ.

Management and support of litigation projects for both petroleum and industrial clients. Currently technical expert for major oil company on challenging petroleum site investigation and remediation strategies.

Management and strategic support for challenging insurance claim cases in Massachusetts and New Hampshire. General duties performed have included both federal, state and local reporting, project and construction management, litigation support, soil/sediment excavation/dredge/removal management, emergency response management, soil and groundwater sampling, soil gas surveys, stream gauging, sediment investigations, soil immunoassay/XRF testing and hazardous materials surveys/ demo management, GIS data evaluations and mapping, UXO geophysical surveys, treatment system installations, Cone Penetration Testing, phytoremediation implementation, data tabulation and report preparation.

REPRESENTATIVE PROJECTS

- **Project Principal, Major Oil Company**. Manager of a complex dredging project on the Allegheny River to remove petroleum impacted sediments. Included the Site Investigation, Remedial Investigation, Alternative Feasibility Study, regulatory permitting and planning for upcoming dredge of 1,000 tons of sediment. Project requires the relocation of the largest documented population of a federally listed endangered mussel species.
- **Project Principal, Major Oil Company, Active Bulk Storage and Pipeline Facilities.** Manager of environment and construction projects at both active terminals and pipeline facilities on the east coast (Florida to Maine). Work scopes have included various types of

permitting, pipeline corrosion/dent inspections and repairs, OWS design and installation, Method 21/LDAR inspections, AST annual inspections, building upgrades including demo surveys and general construction management, containment dike surveys and secondary containment evaluations and designs. Safety awards received by Major Oil Company multiple times over the last several years.

- **Project Principal, Major Oil Company, Pipeline Facilities.** Provided engineering and technical support for securing > 100 wetland and various construction permits (state, local, federal). Developed risk reduction plans, engineering design for stream & RR crossings. Work scopes included assisting with foreign lines, dent anomalies (>1,000). Permits include CWA Order of Conditions, DOT access, road opening/construction, NHESP VMP & OMP, Water Quality Cert., and US Army Corp.
- **Project Principal, Major Petroleum Co., Former Petroleum Refinery, Upstate New York.** This Site is one of the 1st refineries in the US, at one time encompassing 700+ acres of land now in various stages of investigation, cleanup, and redevelopment. Roux currently has several roles and manages many aspects of the overall project. Serving as technical consultant for this client reviewing all regulatory submittals and overall strategy to achieve site closure through both the NY State Brownfields and Spills Programs. Serves as liaison to regulators, local stake holders and construction/redevelopment firms. Additional value added has included significant identified cost efficiencies during both remediation and redevelopment.
- **Expert/Technical Witness and Project Principal, Major Oil Company, Rochester, New York.** Oversaw large-sale investigation of several 100+ acre former refinery. Assisted with 3rd party negotiations and regulatory liaison.
- **Project Manager, Oil Company, Albany, New York**. Project Manager in-charge for large scale dredging project on the Hudson River to remove petroleum impacted sediments and soil. Included the removal of 3,000 tons of sediment, installation of sheet pile wall, carbon trench and phyto-remediation plot. Work performed in accordance with Stip. Agreement with NYSDEC. Included various stages of client advocacy. Project was completed on-time and under budget resulting in significant cost savings to the client.
- **Project Manager, Oil Company, Newington, New Hampshire.** Project Manager in-charge for large scale remediation and regulatory closure of former petroleum terminal on navigational waterway.
- **Project Principal, Multiple Spill Sites for Insurance Co., New Hampshire and Massachusetts.** Assist local insurance company with complex emergency response spills including development of closure strategy and oversight/management of response actions.
- **Project Manager, Demolition of Former Bulk Storage Facilities, New England, and New York.** Oversaw and managed team during the demolition of several facilities including completing the hazardous materials surveys, ACM removal, building demo and soil excavations.
- **Litigation Project Manager, Several Projects.** Managed litigation teams for several large-scale litigation, allocation, and facility assessment projects. Included the development and design of significant GIS and database systems to assist in the review of large quantities of both analytical and geographic information.
- **Project Manager for Several Secondary Containment System Evaluation Projects on Petroleum Bulk Storage Facilities in Several States.** Included both aerial and conventional surveys/mapping, use of 3D AutoCAD/GIS for evaluating secondary containment requirements in accordance with local, state, and federal programs. Project work also included the development of complex containment system designs and engineering oversight.
- **Project Manager, Major Oil Company, Everett, Massachusetts.** Project Manager-in-Charge for massive exploration, investigation, and rehabilitation of storm water collection system for former refinery and active petroleum bulk storage facility. Included the mapping of 5 miles of piping, extensive reconstruction, and abandonment of large-scale and deep structures in an active loading rack and terminal. Included the oversight of numerous subcontractors performing permit required CSEs with Marine Chemist certs.
- **Field Manager, USARMY, Seneca, New York and Falmouth, Massachusetts.** Oversaw numerous geophysical surveys, locating unexploded ordinance (UXO) and radioactive materials at a former US Army Depot (storing tactical nuclear weapons) and at on a former anti-tank weapons range. Responsible for performing extensive and thorough geophysical surveys using GPS and GIS mapping. Required compliance of strict UXO and radiation safety programs.
- **Project Manager, Oil Company, Upstate New York.** Project Manager in-charge and point of contact with NYSDEC project managers for emergency response following release of 30,000 gallons of Jet Fuel from a bulk storage facility in New York. Oversaw initial cleanup, following by rapid subsurface investigation to identify leak location and product plume.
- **Task/Field Manager, Major Oil Company, Several Locations.** Manager for multiple bulk petroleum storage and distribution facilities/terminals located in New England and New York.

Schedule, coordination, and oversight of all field operations including remediation system O&M, subsurface investigations, product recovery, surface water sampling, groundwater sampling events, waste management including soil excavation/removal.

- **Hydrogeologist/Field Manager, Stratford, Connecticut.** Site Assessments for Major Design Plant including Phase II Site Assessments of various industrial properties. Assessments included property inspection and review of state and federal documents, aerial photographs, and environmental databases. Historical land use research and interviews with property occupants and municipal personnel were conducted as part of these assessments.
- **Field Manager, Retail Service Station, Manteca, California.** Oversaw down-gradient groundwater investigation, domestic well sampling, cone penetration testing.

PROFESSIONAL TRAININGS

Operator Qualification (OQ) Training (several tasks)

OSHA 29 CFR 1910.120 40-Hour Safety Training

OSHA 29 CFR 1910.120 8-Hour Annual Refresher

Confined Space Safety Training

DOT HM-181/126F Certificate

Red Cross Certified, First Aid and CPR

ExxonMobil Loss Prevention System Training

Radiation Safety and Monitoring/Measurement

PROFESSIONAL PROFILE



CONTACT INFORMATION
Main: (781) 569-4000
Direct: (781) 569-4031
Email: erunstrom@rouxinc.com
Website: www.rouxinc.com

200 Summit Drive, Suite 500
Burlington, MA 01803

EDUCATION
BS, Geology University of Massachusetts, Amherst, 2006

PROFESSIONAL LICENSES
Licensed Site Professional Association (Associate)

Eric Runstrom

Senior Geologist I | Project Manager

EXPERIENCE SUMMARY
Mr. Runstrom has eighteen years of experience, including Senior Geologist I and Project Manager (2019-Present), Project Geologist (2013-2019), Staff Geologist (2011-2013) at Roux; and Geologist at Sovereign Consulting Inc. (2006-2010).

TECHNICAL SPECIALTIES
Mr. Runstrom's technical specialties include designing and implementing environmental remediation projects, conducting environmental site assessments and environmental due diligence. Focus on management of comprehensive site investigations including environmental assessment and risk characterization; evaluation of remedial alternatives; development and implementation of remedial work plans; regulatory reporting and permitting; quality control; and health and safety compliance. Mr. Runstrom has extensive experience managing site assessment, remedial construction and soil excavation projects including management of subcontractors, data collection and waste characterization and management. Mr. Runstrom also has experience with wetland regulations & sensitive resource area permitting for oil and gas industry rights-of-ways in MA, CT, RI, and NJ.

REPRESENTATIVE PROJECTS

- **Senior Project Manager, Major Oil Company.** Managed and oversaw remedial action and monitoring work scopes at a former refinery and active petroleum bulk storage facility in accordance with a Remedy Implementation Plan (RIP). The RIP addressed 8 Areas of Concern (AOCs) across the terminal and included soil excavation, use of engineered barriers and site controls, and passive and active LNAPL recovery. Short term response actions were conducted concurrently with ongoing comprehensive remedial actions in response to spills and/or release typically as either Release Abatement Measures (RAM) or Immediate Response Actions (IRA). Responsibilities involved the scheduling and coordination of RIP, RAM, and/or IRA activities with the client, terminal personnel, and subcontractors. Also prepared associated work scopes and budgets and assisted with the overall regulatory strategy for the site.
- **Senior Project Manager, Major Oil Company, Everett, Massachusetts.** Developed and implemented environmental assessment work plans for the assessment and delineation of petroleum hydrocarbons and metals (primarily lead and organic lead) impacted areas for a former refinery and active petroleum bulk storage facility. Managed development of updated site risk characterization and selection of remedial action alternatives to advance site towards permanent solution.
- **Project Manager, Major Oil Company.** Developed and managed a LNAPL investigation at a former refinery and active petroleum bulk storage facility. Work included delineation of 8 different plumes, advancement of over 50 soil borings, installation of over 40 monitoring wells, collection of over 100 soil samples and gauging and sampling of monitoring wells. Evaluated collected data and historical data to develop remedial action plans to address each LNAPL plume and advance site towards permanent solution.
- **Project Manager, Major Oil Company.** Developed and oversaw investigation and rehabilitation of storm water system structures and piping (SWS) for a former refinery and active petroleum bulk storage facility. Included remote video survey of approximately 2,500 feet of SWS to evaluate structural integrity of the stormwater system, identifying where petroleum seeps were infiltrating into the network, and implementing appropriate remedial response measures. Major activities included use of line jetting equipment to clean SWS and excavation activities to facilitate repair and abandonment of SWS, and associated

management and disposal of impacted soils and sediments. Included the oversight of subcontractors performing permit required CSEs with Marine Chemist certs.

- **Project Manager, Major Oil Company, Upstate New York.** Managed and oversaw soil excavation and abandoned subsurface pipeline cleaning and removal activities at 9-acre NYSDEC Brownfields Cleanup Program Site, located on one of the first oil storage and refining centers in the Northeast. Project included the removal and disposal of over 5,000 cubic yards of impacted soil and over 1,500 linear feet of piping. Work included planning and implementation of engineering and trenching protective system designs, development of soil excavation and pipe removal plans, confirmatory endpoint sampling plan, and waste management plan including steps to minimize and control dust, vapors, and odors.
- **Project Manager, Major Oil Company.** Developed and oversaw large scale survey and confirmatory testing of over 8,500 linear feet of suspected asbestos insulated pipelines. Project included planning and implementation of work plans to abate and dispose of approximately 3,000 linear feet of asbestos insulation. Work including several elevated work areas requiring the use of scaffolding and aerial lifts to safely access work areas in accordance with OSHA requirements. Included the management and oversight of subcontractors performing asbestos abatement and confirmatory testing activities, and proper management and disposal of asbestos containing waste.
- **Senior, Project & Staff Geologist, Phase I Environmental Site Assessments.** Conducted, oversaw, and managed multiple Phase I Environmental Site Assessments in accordance with ASTM E1527-13 throughout New England for due diligence of commercial and industrial facilities, and residential buildings. Associated activities included agency contact, database management and interpretation, site inspections, identification of recognized environmental conditions (RECs), and report preparation. Based on Phase I findings, provide recommendations to clients, legal counsel, and lenders on potential liabilities and, and recommendations for additional due diligence.
- **Staff Geologist-Project Manager, Major Oil Company, Pipeline Facilities.** Provided technical support for securing over 100 wetland and various construction and access permits (state, local, federal). Developed risk reduction plans, engineering design for stream & RR crossings. Work scopes included assisting with foreign lines, dent, and corrosion anomalies. Conducted site walks and oversaw wetland delineation activities, corresponded with state, local and federal agencies, and presented at local Conservation Committees to obtain required permits. Permits include CWA Order of Conditions, DOT access, road opening, NHESP VMP & OMP, Water Quality Cert., and US Army Corp.
- **Staff Geologist, Petroleum Product Bulk Storage and Distribution Facility, East Providence, Rhode Island.** Conduct field tasks such as groundwater monitoring and sampling, contractor oversite and management, product recovery system operation & maintenance. Responsible for remedial system sampling and maintenance, surface/groundwater treatment system sampling and repairs, and groundwater monitoring and sampling. Conducted groundwater product recovery & pump maintenance as well as hazardous waste inspections of waste recovery systems/ containers and the storm sewer & remedial system inspections.
- **Staff Geologist, Petroleum Bulk Storage and Distribution Facility, East Providence, Rhode Island.** Oversaw the installation of an Engineered Natural System (ENS) to treat shallow groundwater and surface water in East Providence, Rhode Island. Provided oversight of installation of permeable reactive barrier, subsurface flow constructed treatment wetland, and contingency treatment system. Work was completed to fulfil the requirements of the Rhode Island Department of Environmental Management.
- **Staff Geologist, Shipping Freight Facility Inspections, multiple locations, Massachusetts/Rhode Island/New Hampshire.** Provided stormwater permitting to multiple facilities throughout New England. Coordinated and conducted inspections of facilities. Prepared stormwater pollution prevention plans (SWPPPs) and Stormwater Management Plans (SWMPs) in accordance with Federal and state industrial discharge permits.

PROFESSIONAL TRAININGS

OSHA 29 CFR 1910.120 40-Hour Safety Training

OSHA 29 CFR 1910.120 8-Hour Annual Refresher

OSHA Excavation and Trenching Safety Regulations

Confined Space Safety Training

DOT HM-181/126F Certificate

Red Cross Certified, First Aid and CPR

Loss Prevention System Training

PROFESSIONAL PROFILE



CONTACT INFORMATION
Main: (716) 856-0599
Direct: (716) 713-3937
Email: Nsuraci@rouxinc.com
Website: www.rouxinc.com

2558 Hamburg Turnpike
Suite 300
Buffalo, NY 14218

EDUCATION
Bachelor of Science,
Environmental Geoscience,
State University of New York
at Buffalo, 2015

Nicholas Suraci

Project Scientist

EXPERIENCE SUMMARY
Mr. Suraci has Over 9 years professional experience in environmental engineering, science and consulting at numerous contaminated sites throughout the northeast United States as a Project Scientist (Roux Environmental Engineering and Geology, DPC July 2023 to Present) and as an Environmental Scientist (TurnKey Environmental Restoration, LLC January 2016 to July 2023).

TECHNICAL SPECIALTIES
Mr. Suraci is an expert in brownfield and hazardous waste site investigation and remediation; petroleum-impacted site remediation; due diligence for environmentally impaired properties; solid waste facility construction management, water treatment and management, and construction quality assurance monitoring and testing. He holds a BS in Environmental Geoscience from the University at Buffalo. Mr. Suraci has completed assessments, investigations and remediation projects on properties with a multitude of historic uses (e.g., petroleum storage refineries and terminals, gas stations, automobile dealerships, rail yards, foundries, dry cleaners, steel manufacturing, metal plating operations, junk yards), media types (surface and subsurface soil, groundwater, waste water, sediments, soil vapor, indoor air, building materials) and contaminants (e.g., volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), heavy metals, per- and polyfluoroalkyl substances (PFAS)). Mr. Suraci has completed a variety of remediation projects, ranging from simple underground storage tank (UST) removals to large-scale soil excavations, in-situ soil stabilization, water treatment system maintenance, and complex groundwater remediation programs, such as biological and/or chemical in-situ groundwater treatment and permeable reactive barriers for VOCs.

REPRESENTATIVE PROJECTS
6804-6812 Main Street, Cherry Creek, New York
Managed and oversaw underground gasoline storage tank system closure activities completed as part of fuel station upgrades for an existing gasoline station facility with significant soil and groundwater impacted with volatile organic compounds. The remediation approach included:

- Removal of four underground storage tanks, including all associated dispensing units and underground product piping.
- Soil excavation and disposal of approximately 2,060 tons of petroleum-impacted soil.
- Operation and management of a groundwater treatment system including filtration, multiple settling tanks, granular carbon treatment, and municipal sanitary sewer discharge of a total of 210,000 gallons of treated water. The groundwater treatment system was maintained in accordance with NYSDEC as well as local municipality regulations.

Former Westin Truck Stop 4925 West Henrietta Road, Rochester, New York
Managed and oversaw underground gasoline storage tank system closure activities completed as part of fuel station upgrades for an existing gasoline station and truck stop facility with significant soil and groundwater impacted with volatile organic compounds. The remediation approach included:

- Removal of five underground storage tanks, including all associated dispensing units and underground product piping.
- Soil excavation and disposal of approximately 3,235 tons of petroleum-impacted soil.
- Operation and management of a groundwater treatment system including filtration, multiple settling tanks, granular carbon treatment, and municipal sanitary sewer discharge of a total of 9,500 gallons of treated water. The groundwater treatment system was maintained in accordance with NYSDEC as well as local municipality regulations.

2970 West Henrietta Road, Rochester, New York
Managed and oversaw underground gasoline storage tank system closure activities completed as part of fuel station upgrades for an existing gasoline station and car wash facility with significant soil and groundwater impacted with volatile organic compounds. The remediation approach included:

- Removal of eight underground storage tanks, including all associated dispensing units and underground piping.
- Soil excavation and disposal of approximately 1,143 tons of petroleum-impacted soil.
- Operation and management of a groundwater treatment system including filtration, multiple settling tanks, granular carbon treatment, and municipal sanitary sewer discharge of a total of 25,081 gallons of treated water. The groundwater treatment system was maintained in accordance with NYSDEC as well as local municipality regulations.

1841 Empire Boulevard, Webster, NY
Managed, installed, and operated a temporary car wash wastewater pit bypass and treatment system during wastewater pit upgrade activities. The System consisted of a pump and multiple filtration socks. The treated water was discharged directly to the municipal sanitary system.

500 South Union Street Site
Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former dry cleaning facility in Spencerport, New York. The investigation included a hydrogeologic assessment, including exterior and interior soil borings, test pits and monitoring well installation, development and sampling, soil vapor testing and hydrogeologic assessment to design the in-situ groundwater treatment program. Remedial Action included:

- Installation of an active subslab depressurization system within the existing building to prevent migration of vapors into the building air.
- In-situ injection of treatment agent at 71 injection points located across the Site to enhance natural biodegradation of cVOCs in groundwater.
- Limited excavation and off-Site disposal of surface soil/fill exceeding commercial use soil cleanup objectives.
- Construction and maintenance of a soil cover system consisting of the existing building, pavement (asphalt), sidewalks, and soil cover in all other areas at a minimum of one foot thick over the demarcation layer, to prevent human exposure to remaining contaminated soil/fill remaining at the Site; The site is currently used as a multi-tenant commercial facility.

229 Homer Street Site
Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former petroleum refining and major petroleum storage facility in Olean, New York. The investigation included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling, as well as a soil vapor intrusion assessment. Remedial Action included:

- Approximately 5,815 tons of grossly contaminated soil GCS-impacted soil/fill was excavated and transported off-site for disposal at a commercial landfill.
- Approximately 1,946 linear feet of subsurface metallic product piping was exposed, tapped, evacuated of contents, removed, cleaned and recycled. Piping which extended beyond the property boundary was capped and/or grouted at the property line.
- Approximately 19 tons of piping was recycled as scrap metal. Cleaning of the pipes generated 4 drums of pipe scale, oil and water, which was transported off-site for incineration.
- Design, installation and operation of an air sparge/soil vapor extraction (AS/SVE) system to address GCS in the deeper soil/fill from approximately 5 to 15 fbgs and in the upper 5 ft of the water table (i.e., smear zone). The air sparge portion of the system includes 53 injection wells connected to an air compressor in a climate-controlled trailer via individual 1" polyethylene lines. The SVE system includes 14 extraction wells connected by 2" polyethylene lines to one of two blowers in a separate climate-controlled trailer. Emissions from the SVE system are controlled using a biofilter, which allows naturally occurring microbes to bioremediate the air stream and control the nuisance odors from the AS/SVE system.
- Construction and maintenance of a site cover system.

PROFESSIONAL PROFILE



CONTACT INFORMATION

Main: (585) 895-6800
Direct: (585) 698-6842
Email: awirth@rouxinc.com
Website: www.rouxinc.com

2850 Clover Street, Suite 3
Pittsford, NY 14534

EDUCATION

BS, Earth Science, Geology/Environmental Science, State University of New York College at Buffalo

PROFESSIONAL TRAININGS

OSHA 40-hour certified
OSHA 8-hour current
NYSDEC SWPPP Qualified Inspector
DOT Operator Qualification certified
Loss Prevention System certified

Alex Wirth

Technical Director

EXPERIENCE SUMMARY

Mr. Wirth is an experienced, proficient, and analytical engineering professional focused on providing progressive technical and management solutions. He encompasses over twenty-two years of project management experience; excellent knowledge in conceptual engineering, construction, planning, litigation support, settlement negotiations, design and cost estimating; proven interpersonal skills; and a superior record of financial management. He holds a BS in Earth Science and Geology from the State University of New York College at Buffalo. He is currently a Technical Director for Roux (2025-present). His past experience includes Principal/Senior Geologist at Rocterra, LLC (2011-2025), Contract Project Manager/Senior Geologist at Greenstar Environmental Solutions (2011-2025), Project Manager/Senior Geologist at Kleinfelder (2003-2015; 2018-2025 Part Time/Flex).

TECHNICAL SPECIALTIES

Mr. Wirth has conducted, managed or overseen investigations and remediations at many sites located across the Northeast and has experience within the Industrial, Pharmaceutical, Oil & Gas, and Brownfields/Real Estate markets. Mr. Wirth's areas of expertise include contaminant investigation and remediation, brownfield redevelopment, litigation technical support, and settlement negotiations.

REPRESENTATIVE PROJECTS

- Provided project management, investigation, remedial design, operation and optimization, litigation support, third-party oversight, and monitoring at a pharmaceutical manufacturing facility with a chlorinated solvent plume.
- Provided on-site management for the decommissioning of a landfill facility in New York. Activities included ongoing maintenance and long-term monitoring for PFAS, heavy metals, and PCB litigation support.
- Provided brownfield investigation, remediation, monitoring and responsible party settlement negotiations at multiple sites in New York.
- Provided third-party oversight and litigation support for a major petroleum release site including residential indoor air emergency response measures.
- Provided review and optimization of existing process engineering systems via mechanical and/or technology-based improvements, providing value-added services and engineering design solutions across sites in New York, New Jersey, and Pennsylvania.
- Provided litigation support for critical Environmental Impact Statement (EIS) and State Environmental Quality Review Act (SEQR) evaluations at an environmentally sensitive development site in New York.

PROFESSIONAL PROFILE



CONTACT INFORMATION
Main: (716) 856-0599
Direct: (716) 818-3954
Email: mlesakowski@rouxinc.com
Website: www.rouxinc.com

2558 Hamburg Turnpike
Suite 300
Buffalo, NY 14218

EDUCATION

MS, Environmental Engineering Science, University at Buffalo, 2008

BS, Biology, State University of New York at Fredonia, 1994

Michael Lesakowski

Vice President | Principal Scientist | Co-Operations Manager

EXPERIENCE SUMMARY

Over twenty-five years professional experience in environmental engineering, science, and consulting at numerous contaminated sites throughout the northeast United States as Vice President (Roux Environmental Engineering and Geology, DPC), President, Principal Scientist, Sr. Project Manager and Project Manager (TurnKey Environmental Restoration, LLC), Executive Vice President, Project Manager and Environmental Scientist (LCS, Inc.) and Environmental Scientist (GZA GeoEnvironmental of NY).

TECHNICAL SPECIALTIES

Expert in all aspects of the New York Brownfield Cleanup Program, including technical assessment and analysis of the site investigation/remedy selection process, and site remediation. Expert in the business of the NY BCP sites, including cost/credit analysis and structured liability transfers of contaminated properties. Mr. Lesakowski has investigated and remediated over 100 NY brownfield projects, including ten renewable energy redevelopment projects on remediated brownfield sites. He has managed assessments, investigations and remediation projects on properties with a multitude of historic uses (e.g., petroleum storage refineries and terminals, gas stations, automobile dealerships, rail yards, foundries, dry cleaners, steel manufacturing, metallurgical plants, metal plating operations, junk yards), media types (surface and subsurface soil, groundwater, sediments, soil vapor, indoor air, building materials) and contaminants (e.g., volatile organic compounds [VOCs], semi-volatile organic compounds [SVOCs], polychlorinated biphenyls [PCBs], heavy metals, per- and polyfluoroalkyl substances [PFAS]). Mr. Lesakowski has managed remediation projects, ranging from simple underground storage tank (UST) removals to large-scale soil excavations, in situ soil stabilization, and complex groundwater remediation programs, such as biological and/or chemical in situ groundwater treatment and permeable reactive barriers for VOCs and PFAS.

REPRESENTATIVE PROJECTS

GLR Holdings Site, Niagara Falls, New York

Manager and Principal Investigator/Remediator for Remedial Investigation (RI), Interim Remedial Measure (IRM) and Remedial Alternatives Analysis under the NYSDEC guidance for a former automotive repair facility with significant soil, groundwater and soil vapor chlorinated volatile organic compounds impact. The RI included a hydrogeologic assessment, including soil borings using a hollow stem auger drill rig, installation, development and sampling of groundwater monitoring wells, an on-site and off-site soil vapor assessment and dye test to trace drains and sewers to evaluate potential preferential pathways. The remediation approach included:

- Soil excavation and disposal.
- In situ enhanced biodegradation of groundwater.
- The newly constructed building included an active subslab depressurization system to protect the occupants from potential soil vapor intrusion.

The site was redeveloped as a restaurant.

Seneca Market I, LLC Site, Watkins Glen, New York

Manager of Site Investigation and Remediation at a former drycleaner, bus garage and asphalt plant under NYSDEC guidance with significant chlorinated volatile organic compounds impact. The investigation included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling. The remediation approach involved:

- Underground storage tank removal;
- In-ground hydraulic lift removal;

- Hazardous soil excavation and disposal proximate a commercial building;
- Enhanced biodegradation of groundwater;
- Groundwater extracted during excavation was treated with granular activated carbon and discharged to the municipal sewer system
- An active sub-slab depressurization system to protect the occupants from potential soil vapor intrusion; and
- Portions of the site included an engineered soil cover system.

The Property was redeveloped with an up-scale hotel.

330 Maple Road Site, Amherst, New York

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance for a small arms shooting range with hazardous lead and semi-volatile organic compounds (SVOCs) in soil. The RI involved collecting over 1,000 soil samples on 26-acre parcel slated for future mixed-use commercial and residential development. Bench-scale testing was completed to select a substrate to treat the characteristic hazardous soil to below toxicity characteristic leaching procedure (TCLP) thresholds. Remedial Action included:

- Physical removal of lead shot from the soil matrix;
- In-situ stabilization of characteristically hazardous lead-impacted soil; and
- Excavation and off-site disposal of lead and SVOC-impacted soil.

The site was remediated to allow for residential re-use.

275 Franklin Street Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site formerly used as drycleaner in western New York with significant soil and groundwater chlorinated VOC impacts. The investigation included a hydrogeologic assessment, including soil borings and overburden and bedrock monitoring well installation, development, and sampling. Soil was successfully remediated using a combination of soil vapor extraction and excavation and off-site disposal. Groundwater remediation involved in-situ treatment of impacted groundwater at the downgradient property boundary whereby groundwater migrated through a permeable reactive barrier. An active sub-slab depressurization system design and installation is planned in the new building during construction.

Niagara Street and Pennsylvania Avenue Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site formerly used as gasoline and service station in Buffalo, New York with significant petroleum impacts. The investigation included a hydrogeologic assessment, including soil borings and overburden monitoring well installation, development, and sampling. Remedial Action included:

- Demolition of the former service station building and product dispenser canopy and disposal of construction and demolition debris;
- Removal and recycling of approximately 80 tons of concrete at Iron City in Lackawanna, New York;
- Removal of five underground storage tanks, including all associated dispensing units and underground product piping;
- Excavation of petroleum-impacted soil/fill followed by off-site transportation and disposal a commercial landfill;
- Extraction and treatment of approximately 6,000-gallons of groundwater from the excavation during remediation activities using bag filtration and granular activated carbon and discharge to the municipal sewer; and
- Placement and compaction of approximately crusher run stone backfill to the approximate pre-existing grade.

1501 College Avenue Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former heavy industrial and manufacturing facility in Niagara Falls, New York. The investigation included a hydrogeologic assessment, including soil borings, test pits and overburden monitoring well installation, development, and sampling. Remedial Action included:

- Disposal of galbestos roofing and building materials;
- Collection and removal of seven (7) roll-off containers of abandoned drums and containers of off-spec former carbon electrode manufacturing materials;
- Waste petroleum oil was vacuumed out of two abandoned tanker trucks;
- Cleaning and collection of steel ASTs, empty drums and two (2) abandoned tanker trucks and transported off-site with other on-Site scrap metals (i.e., building demolition metals);
- Excavation and disposal of non-hazardous petroleum-impacted soil/fill;
- Excavation of PCB-impacted soil/fill;
- Extraction and storage of approximately 20,000 gallons of impacted water removed from the excavation for solidification and final disposal at a commercial landfill; and
- A soil cover system across the site.

500 South Union Street Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former dry cleaning facility in Spencerport, New York. The investigation included a hydrogeologic assessment, including exterior and interior soil borings, test pits and monitoring well installation, development and sampling, soil vapor testing and hydrogeologic assessment to design the in-situ groundwater treatment program. Remedial Action included:

- Installation of an active subslab depressurization system within the existing building to prevent migration of vapors into the building air;
- In-situ injection of treatment agent at 71 injection points located across the Site to enhance natural biodegradation of cVOCs in groundwater;
- Limited excavation and off-Site disposal of surface soil/fill exceeding commercial use soil cleanup objectives; and
- Construction and maintenance of a soil cover system consisting of the existing building, pavement (asphalt), sidewalks, and soil cover in all other areas at a minimum of one foot thick over the demarcation layer, to prevent human exposure to remaining contaminated soil/fill remaining at the Site;

The site is currently used as a multi-tenant commercial facility.

Scott Rotary Seals Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former petroleum refining facility in Olean, New York. The investigation included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling, as well as subslab vapor/indoor air testing. Remedial Action included:

- Limited excavation and off-Site disposal of shallow grossly contaminated soil to a depth of approximately 6-feet below final grade within the northwest area of the Site, including the building footprint and utility corridors;
- Installation of a soil vapor extraction system to treat grossly contaminated soil in the deeper vadose zone soil/fill from approximately 6-fbgs to the top of the groundwater surface;
- Construction and maintenance of a soil cover system consisting of buildings, pavement (asphalt and concrete), sidewalks, and soil cover in all other areas at a minimum of one foot thick over the demarcation layer, to prevent human exposure to remaining contaminated soil/fill remaining at the Site;
- Installation of an active sub-slab depressurization system within the newly constructed on-Site building to prevent migration of vapors into the buildings; and
- Installation of a LNAPL removal system within certain on-Site wells, utilizing absorbent socks.
- The site was redeveloped as a light industrial and commercial facility.

Olean Redevelopment Parcel 2 Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former petroleum refining and major storage facility in Olean, New York. The comprehensive investigation, which was completed over three separate sites (Olean Redevelopment Parcels 1,2 and 3) totaling approximate 60-acres, included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling.

As part of the investigation, bench-scale studies were completed to assess treatment of grossly contaminated petroleum soil (GCPS) impacted soil and lead-impacted soil. Soil/fill batches were treated by mixing to simulate landfarming; stabilized with lime, Portland cement, and fly ash (all amendments added at 2% and 5% by weight); and chemically oxidized with hydrogen peroxide (1% and 3% by weight).

Based on the results of the bench-scale treatability studies, four pilot-scale treatability studies were performed: in-situ SVE; ex-situ landfarming; force vented biopiles (FVBP); and solidification/stabilization. As part of these pilot-scale treatability studies, biofiltration was assessed as component of treatment of the extracted air from the in-situ SVE pilot study and for the FVBP pilot study.

Remedial Action included:

- Approximately 2,715-tons of arsenic contaminated soil/fill, 143-tons of mercury contaminated soil/fill and 638-tons of grossly contaminated petroleum soil (GCPS) was excavated, loaded, and transported off-Site to a commercial landfill;
- Approximately 34,313 linear feet of subsurface metallic product piping (steel, cast iron, lead and copper) was exposed, tapped, evacuated of contents, removed, cleaned and recycled or disposed. An additional 156 linear feet of wood pipe was also exposed, tapped, evacuated of contents, removed, cleaned and disposed off-site. Piping which extended beyond the property boundary was capped and/or grouted at the apparent property line. Approximately 240 cubic yards of GCPS was excavated during piping removal activities and treated on the on-site force-vented biopiles FVBPs and reused as backfill below the cover system;
- Approximately 24, 55-gallon drums were generated from the removal of the abandoned subsurface piping. The contents of the piping included LNAPL, residual pipe scale, and product sludge. The 24 drums (15 non-hazardous and 9 hazardous) were disposed at a commercial landfill. In addition to the drums, approximately 3.5 tons of tank contents that were placed into roll-off containers and solidified with Portland cement due to liquid content were disposed at a commercial landfill. Water extracted from excavations during piping removal was pumped into holding tanks, treated with bag filters and granular activated carbon (GAC) on-site, pumped into a secondary on-Site temporary holding tank, sampled, and discharged to the municipal sanitary sewer with approval under an Industrial Pretreatment Program permit. Approximately 4 drums of wash water generated during holding tank cleaning were disposed at a commercial landfill;
- Design, installation, and operation of a SVE system to address GCPS in the deeper soil/fill from approximately 2 to 15 fbgs. The SVE system included the installation of 13 SVE wells, associated conveyance piping, and placement of three trailer-mounted SVE blowers. Emissions from the SVE system were controlled using biofilters, which allowed the naturally occurring microbes

to bioremediate the air stream and control the nuisance odors from the SVE systems.

- Light non-aqueous phase liquid (NAPL) recovery was completed utilizing hydrocarbon absorbent socks at one well and a product pump at one well. LNAPL thicknesses at these locations have been measured to vary from 0 to 6.5 ft. Recovered product was transferred to properly labeled and sealed 55-gallon drums at the Site for future off-Site disposal.
- A site cover system was constructed to allow for commercial use of the Site. The cover system consists of a minimum of one foot of soil. A portion of the Site is covered with an asphalt road that serves as part of the cover system The soil cover was placed over a demarcation layer, consisting of orange plastic mesh, and was hydroseeded and fertilized. On-Site drainage ditches were lined with rip-rap.

Olean Redevelopment Parcel 3 Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former petroleum refining and major storage facility in Olean, New York. The comprehensive investigation, which was completed over three separate sites (Olean Redevelopment Parcels 1,2 and 3) totaling approximate 60-acres, included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling.

As part of the investigation, bench-scale studies were completed to assess treatment of grossly contaminated petroleum soil (GCPS) impacted soil and lead-impacted soil. Soil/fill batches were treated by mixing to simulate landfarming; stabilized with lime, Portland cement, and fly ash (all amendments added at 2% and 5% by weight); and chemically oxidized with hydrogen peroxide (1% and 3% by weight).

Based on the results of the bench-scale treatability studies, four pilot-scale treatability studies were performed: in-situ SVE; ex-situ landfarming; force vented biopiles (FVBP); and solidification/stabilization. As part of these pilot-scale treatability studies, biofiltration was assessed as component of treatment of the extracted air from the in-situ SVE pilot study and for the FVBP pilot study.

Remedial Action included:

- Approximately 425-tons of arsenic contaminated soil/fill, 235-tons of GCPS was excavated, loaded, and transported off-Site to a commercial landfill;
- Approximately 7,592-tons of lead contaminated soil/fill was stabilized in-place utilizing Portland cement to treat the soil and render it non-hazardous;
- Approximately 50,667 linear feet of subsurface metallic product piping (steel, cast iron, lead and copper) was exposed, tapped, evacuated of contents, removed, cleaned, and recycled or disposed. An additional 232 linear feet of wood pipe was also exposed, tapped, evacuated of contents, removed, cleaned, and disposed off-site. Piping which extended beyond the property boundary was capped and/or grouted at the apparent property line. Approximately 2,552 cubic yards of GCPS was excavated during piping removal activities and treated on the on-site FVBPs and reused as backfill below the cover system;
- Approximately 33, 55-gallon drums were generated from the removal of the abandoned subsurface piping. The contents of the piping included LNAPL, residual pipe scale, and product sludge. The 33 drums (21 non-hazardous and 12 hazardous) were disposed at a commercial landfill. In addition to the drums, approximately 4.9 tons of tank contents that were placed into roll-off containers and solidified with Portland cement due to liquid content were disposed at a commercial landfill. Water extracted from excavations during piping removal was pumped into holding tanks, treated with bag filters and granular activated carbon (GAC) on-site, pumped into a secondary on-Site temporary holding tank, sampled, and discharged to the municipal sanitary sewer with approval under an Industrial Pretreatment Program permit. Approximately 6 drums of wash water generated during holding tank cleaning were disposed at a commercial landfill;
- Installation and operation of a SVE system to address GCPS in the deeper soil/fill from approximately 2 to 15 fbgs. The SVE system included the installation of 58 SVE wells, associated conveyance piping, and placement of three trailer-mounted SVE blowers. Emissions from the SVE system were controlled using biofilters, which allowed the naturally occurring microbes to bioremediate the air stream and control the nuisance odors from the SVE systems.
- LNAPL recovery was completed utilizing hydrocarbon absorbent socks;
- A site cover system was constructed to allow for commercial use of the Site. The soil cover was placed over a demarcation layer, consisting of orange plastic mesh, and was hydroseeded and fertilized. On-Site drainage ditches were lined with rip-rap.

The site was redeveloped as a commercial solar power generating facility.

Olean Redevelopment Parcel 1 Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former petroleum refining and major storage facility in Olean, New York. The comprehensive investigation, which was completed over three separate sites (Olean Redevelopment Parcels 1,2 and 3) totaling approximate 60-acres, included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling.

As part of the investigation, bench-scale studies were completed to assess treatment of grossly contaminated petroleum soil (GCPS) impacted soil and lead-impacted soil. Soil/fill batches were treated by mixing to simulate landfarming; stabilized with lime, Portland cement,

and fly ash (all amendments added at 2% and 5% by weight); and chemically oxidized with hydrogen peroxide (1% and 3% by weight).

Based on the results of the bench-scale treatability studies, four pilot-scale treatability studies were performed: in-situ SVE; ex-situ landfarming; force vented biopiles (FVBP); and solidification/stabilization. As part of these pilot-scale treatability studies, biofiltration was assessed as component of treatment of the extracted air from the in-situ SVE pilot study and for the FVBP pilot study.

- Approximately 1,652 tons of arsenic contaminated soil/fill, 110 tons of mercury contaminated soil/fill, approximately 357 tons of PCB contaminated soil/fill, and approximately 5,722 tons of PAH (SVOC)-contaminated was excavated, loaded, and transported off-site to a commercial landfill;
- Removal of an ammonia tank, approximately 500-gallon stainless steel vertical UST with no piping, and associated PCB- and ammonia-impacted soil;
- Approximately 49,976 linear feet of subsurface metallic product piping was exposed, tapped, evacuated of contents, removed, cleaned, and recycled. An additional approximate 578 tons of GCPS contaminated soil/fill was excavated, loaded, and transported off-site to a commercial landfill;
- Approximately 48, 55-gallon drums were generated during the remedial work, 42 of which were generated from the removal of the abandoned subsurface piping. The contents of the piping included LNAPL, residual pipe scale, and product sludge. Water extracted from excavations during piping removal was pumped into holding tanks, treated with bag filters and granular activated carbon (GAC) on-site, pumped into a secondary on-site temporary holding tank, sampled, and discharged to the municipal sanitary sewer;
- Installation and operation of a SVE system to address GCPS in the soil/fill from approximately 2 to 15 fbgs. The SVE system included the installation of seven SVE wells, associated conveyance piping, and placement of an SVE blower. Emissions from the SVE system were controlled using a biofilter to bioremediate the air stream and control the nuisance odors from the SVE system;
- LNAPL recovery was completed using hydrocarbon absorbent socks and/or manual bailing at six wells and a product skimmer at one well. LNAPL thicknesses at these locations has been measured to vary from 0.3 to 5.05 ft. Recovered product was transferred to properly labeled and sealed 55-gallon drums at the Site for off-site disposal; and
- Construction and maintenance of a site cover system.

A portion of the site was redeveloped as a hotel.

251 Homer Street Redevelopment Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former petroleum refining and major petroleum storage facility in Olean, New York. The investigation included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling. Remedial Action included:

- Removal and recycling of approximately 10,644 linear feet of piping (approx. 97 tons) ranging in diameter from 2-inch to 12-inch. Removal and disposal of 51, 55-gallon drums containing oil, sludge, and scale from within the piping. Extraction, treatment, and discharge of approximately 21,000 gallons of water from within the pipes and perched water encountered during trench excavation under a temporary discharge permit issued by the municipal Wastewater Treatment Plant (WWTP);
- Excavation and off-site disposal of 49,670 tons of grossly contaminated soil (GCS) followed by backfill with clean imported soil. The on-site drainage ditch was converted to a closed 30-inch subsurface drainage pipe as discussed with NYSDEC;
- Excavation and off-site disposal of approximately 2,106 tons of arsenic-impacted soil/fill followed by backfill with clean imported soil;
- Extraction, treatment using granular activated carbon (GAC), and discharge of approximately 250,000 gallons of water encountered during excavation activities under a temporary discharge permit issued by the municipal WWTP;
- Temporary re-routing of Two Mile Creek, followed by excavation of approximately 4,000 tons on-site and 973 tons off-site of Two Mile Creek bed and bank material followed by off-site disposal, and backfilling. The creek bed and banks were restored with stone (creek bottom), and clay and clean soil (creek banks), including biodegradable erosion control blanket, riparian shrubs and hydro-seeding of creek banks;
- Construction and maintenance of a cover system consisting of a minimum 12 inches of clean soil or gravel to prevent human exposure to remaining contaminated soil/fill remaining at the site.

The site was redeveloped as a commercial solar power generating facility.

300 Ohio Street Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former petroleum storage and sales facility in Buffalo, New York. The investigation included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling, as well as sub-slab vapor/indoor air testing. Remedial Action included:

- Excavation and off-site disposal of the underground storage tank (UST) system. A total of sixteen (16) USTs and related piping and appurtenances were uncovered and removed, cleaned of residual contents and transported off-site for recycling as scrap;

- Excavation and off-site disposal of approximately 18,650 tons of grossly contaminated petroleum soil, approximately 220 tons of soil/fill exceeding 500 ppm total PAHs, and approximately 425 tons of soil/fill exceeding Commercial Use SCOs for arsenic and lead;
- Approximately 500 cubic yards (cy) of recyclable concrete and stone generated from the removal of buildings and sign footers/foundations, was crushed on-Site and used for backfill and subsurface grading beneath the cover system; and
- Construction and maintenance of a cover system consisting a minimum of 12 inches of approved soil/stone material above a demarcation fabric to prevent human exposure to contaminated soil/fill remaining at the site.

A portion of the site was redeveloped as a brewery and restaurant.

229 Homer Street Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former petroleum refining and major petroleum storage facility in Olean, New York. The investigation included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling, as well as a soil vapor intrusion assessment. Remedial Action included:

- Approximately 5,815 tons of grossly contaminated soil GCS-impacted soil/fill was excavated and transported off-site for disposal at a commercial landfill;
- Approximately 1,946 linear feet of subsurface metallic product piping was exposed, tapped, evacuated of contents, removed, cleaned and recycled. Piping which extended beyond the property boundary was capped and/or grouted at the property line.
- Approximately 19 tons of piping was recycled as scrap metal. Cleaning of the pipes generated 4 drums of pipe scale, oil, and water, which was transported off-site for incineration.
- Design, installation, and operation of an air sparge/soil vapor extraction (AS/SVE) system to address GCS in the deeper soil/fill from approximately 5 to 15 fbgs and in the upper 5 ft of the water table (i.e., smear zone). The air sparge portion of the system includes 53 injection wells connected to an air compressor in a climate-controlled trailer via individual 1" polyethylene lines. The SVE system includes 14 extraction wells connected by 2" polyethylene lines to one of two blowers in a separate climate-controlled trailer. Emissions from the SVE system are controlled using a biofilter, which allows naturally occurring microbes to bioremediate the air stream and control the nuisance odors from the AS/SVE system;
- Construction and maintenance of a site cover system.

Former Trico Plant Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former manufacturing facility in Buffalo, New York. The investigation included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling, as well as subslab vapor/indoor air testing. Remedial Action included:

- Construction and maintenance of a site cover system.
- In-situ on-site treatment of groundwater contaminated with chlorinated volatile organic compounds (cVOCs);
- Removal of six (6) hydraulic lifts and associated infrastructure and impacted soil/fill;
- Pumping and on-site treatment of water present in the building sub-basement prior to sanitary sewer discharge under a temporary discharge permit;
- Cleaning accessible sump and sewer structures with evidence of potential impacts;
- Removing and properly disposing off-site miscellaneous abandoned regulated waste materials; and abating building components for lead, asbestos, oil staining, PCBs, etc. as required during redevelopment. Building surfaces and features planned to remain with evidence of impacts from historic operations will be encapsulated or sealed;
- Installing an active sub-slab depressurization (ASD) system within the existing buildings; and
- Maintaining existing cover system in accordance with 6NYCRR Part 375 and NYSDEC DER-10 guidelines. The cover system includes building foundations and asphalt on former Burton Street.

The site is being redeveloped as a mixed-use commercial and residential complex.

Jamison Road Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at an active industrial facility in Elma, New York. The Remedial Investigation was completed across the BCP Site and off-site on adjacent parcels to supplement previous environmental data and delineate or identify areas requiring remediation. Field activities included soil boring advancement; test pit excavations; surface and near-surface soil/fill sampling; overburden and bedrock monitoring well installation; groundwater and storm water quality sample collection; soil vapor sample collection; and sub-slab vapor, indoor air, and outdoor air sample collection in six on-site buildings and one off-site building. Hydraulic conductivity testing was also completed in the overburden groundwater zone as well as the bedrock groundwater to assess groundwater transmissivity. Remedial Action included:

- Excavation of 2,430 tons of contaminated soil/fill, which was disposed off-site at a commercial landfill;
- 314 tons of flowable fill proximate to a sewer line was excavated as it was deemed unsuitable due to structural considerations, which was also disposed off-site at commercial landfill;
- Two steel former pipes that ran along the eastern boundary of an on-site building were removed and disposed at a

commercial landfill. Approximately 10-gallons of residual hydraulic oil removed from the pipes was transported and recycled off-site;
- Approximately 13,415 cubic yards (CY) of non-impacted soil was excavated for the construction of new buildings. With NYSDEC approval, 12,250 CY of soil was exported for reuse at another site and the remaining soil was reused on-site;
- During overburden soil removal, approximately 1,100,000 gallons of Chlorinated VOC-impacted groundwater was extracted, treated using granular activated carbon, tested, and discharged;
- A former 15" concrete storm sewer was encountered during foundation excavation for new buildings. Approximately 150 gallons of emulsified oil and water were removed using a vacuum truck, transported to an on-site frac tank and later disposed. A portion of the former sewer was removed, and the remaining portion of the sewer was filled in with concrete;
- Installing an active sub-slab depressurization (ASD) system within two new building and two existing buildings;
- As part of the remedial design, a bench-scale treatability study evaluation of media was conducted. The study included four column reactors filled with four different material combinations to determine which most effectively removed CVOCs from the Site groundwater. A proprietary product comprised of granular carbon and zero-valent iron was selected as the treatment medium;
- Implementation of in-Situ Chemical Reduction (ISCR) in the form of a permeable reactive barrier (PRB) with two approximate 250-feet long slurry wall legs to direct the groundwater toward the PRB. The slurry walls consist of a homogeneous mixture of soil, bentonite, and water, with a maximum hydraulic conductivity of 1x10-6 cm/s. The PRB and slurry wall legs were installed in the northwestern corner of the site to treat groundwater impacted by chlorinated volatile organic compounds;
- Implementation of in-situ phytoremediation using hybrid poplar trees to treat groundwater impacted by 1,4-dioxane. The hybrid poplar trees were planted in two rows in the northwestern corner of the site, upgradient of the PRB; and
- Installation of an in-line air stripper to remove CVOCs from storm water prior to discharge.

The site has been redeveloped with a mixed-use industrial manufacturing facility and related research and development offices.

1827 Fillmore Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former gravel pit filled in with miscellaneous soil/fill and construction and demolition debris in Buffalo, New York located adjacent to two public schools. The Remedial Investigation included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling. As part of the Remedial Investigation, bench-scale studies were completed to assess treatment characteristically hazardous lead-impacted soil. Soil/fill batches were treated by mixing different amendments, including Portland cement and phosphoric acid, at varying percentages by weight. 5% Portland cement was selected as the soil amendment.

Remedial action included:

- In-situ stabilization of approximately 3,091 cubic yards of characteristic hazardous lead soil/fill using Portland cement in two remedial areas of concern;
- Excavation and off-site disposal of contaminant source areas, including soil exceeding the site-specific action levels (SSALs) of 3,900 ppm of lead and soil containing total semi-volatile organic compounds (SVOCs) exceeding 500 ppm. Approximately 2,200 tons of soil was removed and disposed off-Site, including 160 tons of soil exceeding the hazardous criteria for lead, which was treated in-situ and rendered non-hazardous prior to disposal; and
- Construction and maintenance of a soil cover system consisting of a minimum of one foot of soil placed over a demarcation layer, with the upper six inches of soil of sufficient quality to maintain a vegetative layer to prevent human exposure to remaining contaminated soil/fill.

The site is planned to be redeveloped with mixed-use commercial and residential buildings.

3100 Clinton Street Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former railyard filled in with miscellaneous soil/fill in West Seneca, New York and located adjacent to a regulated wetland. The Remedial Investigation included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling. Remedial Action included:

- Clearing and grubbing of vegetation, shrubs, and trees to allow remedial excavation activities. Approval to complete work activities within designated wetland areas was received from the United States Army Corps of Engineers and NYSDEC prior to starting work in those areas;
- Excavation and off-site disposal of approximately 45,850 tons (approximately 30,600 cubic yards) of PAH- and metals-impacted soil/fill;
- Excavation and off-site transport to an approved location of a total of 761 loads of surplus native soils which were determined to be structurally unsuitable for redevelopment purposes;
- Excavation and off-site disposal of 5.9 tons of treated/weathered wood (former railroad ties);
- Collection, storage, volume measurement, and discharge of 1,005,000 gallons of groundwater and/or rainwater encountered during remedial activities;

- Backfilling of the excavation area with approximately 172,724 tons of backfill including screened backfill and surge stone. Surge stone was required in areas of the site where natural soils were not suitable for geotechnical requirements of the planned building. In those areas, certain native soils were removed and/or bridged with filter fabric and surge stone was installed beneath compacted gravel.

The site was redeveloped with state-of-the-art food processing protein plant.

351 Franklin Street Site

Manager and Principal Investigator/Remediator for a Remedial Investigation/Alternatives Analysis and Remedial Action under NYSDEC guidance at a NYSDEC Brownfield Cleanup Program site at a former petroleum refining and major storage facility in Olean, New York. The Remedial Investigation included a hydrogeologic assessment, including soil borings, test pits and monitoring well installation, development, and sampling. Exterior soil vapor sampling and an interior soil vapor intrusion (SVI) assessment was completed within one on-site building. A pre-design investigation included additional groundwater monitoring wells and gauging/monitoring levels of light non-aqueous phase liquid (LNAPL). As part of the remedial design, bench-scale studies will be completed to assess potential treatment options for grossly contaminated material (GCM), including assessment of Portland cement and other potential amendments (e.g., lime-kiln dust), at varying percentages by weight.

Remedial actions to be completed include:

- Excavation and reuse of the top one foot of SVOC- and arsenic-impacted soil under the cover system, and disposal of excess material;
- Excavation of non-GCM-impacted soil/fill that resides over the GCM and staging of the material on-site for reuse as backfill under the cover system;
- Excavation and disposal of approximately 16,000 tons of GCM-impacted soil/fill and completion of in-situ solidification (ISS) as needed to address GCM-impacted soil/fill at the water table, followed by backfill and site grading. After the completion of ISS mixing activities, the solidified soil will be allowed to cure for 28 days. After the mixture has cured, core samples will be collected from the solidified soil and post-treatment tests, including unconfined compressive strength (UCS), permeability testing and free liquid testing, will be completed to ensure that the solidified soil meets ISS performance requirements;
- Solidification of excavated soil, as needed, prior to disposal, based on landfill requirements;
- Removal and transferal of abandoned petroleum piping encountered during GCM excavation activities to a recycling facility and extraction and disposal of piping contents;
- Management of impacted groundwater and stormwater during remedial activities;
- Placement of a cover system across the entire Site;
- Installation of an active sub-slab depressurization (ASD) system in the newly constructed building during construction and completion of SVI sampling;
- Monitoring of groundwater level and LNAPL; and
- Removal of LNAPL via bailing or in-well pumps as needed from monitoring wells over time.

The site is planned for a redevelopment as a mixed use commercial and light industrial building.

PROFESSIONAL PROFILE



CONTACT INFORMATION
Main: (781) 569-4000
Direct: (781) 569-4054
Email: jhauri@rouxinc.com
Website: www.rouxinc.com

200 Summit Drive, Suite 500
Burlington, MA 01803

EDUCATION

PhD, Environmental Engineering, University of California, 2001
MS, Environmental Science (concentration in environmental chemistry), Indiana University, 1993
BA, Biochemistry, University of Texas, 1991

James Hauri, PhD

Senior Scientist I

EXPERIENCE SUMMARY

Dr. Hauri is a broad-based environmental scientist with more than twenty years of experience in environmental science, engineering, and chemistry. His professional experience includes Roux, Senior Scientist I (2022 – present); Assumption University, Associate Professor (tenured), (2007-2012, 2014-2022) and Assistant Professor (2001-2007); Exponent, Senior Scientist (part-time: 2014-2015) (full-time: 2012-2014); Harvard University, School of Public Health, Visiting Scientist (part time: 2008-2012); CH2M-Hill, Environmental Consultant (2001); San Francisco Estuary Institute, Intern, (1997-1998); and Southwest Research Institute, Scientist (1993-1994).

TECHNICAL SPECIALTIES

Dr. Hauri's multidisciplinary background has included field sampling, environmental analytical chemistry, toxicity testing and data analysis. Much of his work has explored the nexus between the chemistry and ecotoxicity of environmental contaminants.

Dr. Hauri's areas of expertise include:

- Heavy metal speciation and toxicology;
- Environmental data analysis and validation;
- Analysis of ecotoxicology data; and
- Aquatic chemistry and contamination.

REPRESENTATIVE PROJECTS

Chemistry and Toxicology

- **Deep Water Horizon Oil Spill.** Evaluated the appropriateness of new methods to solubilize oil used with toxicity tests during the DWH spill. Compared the composition and concentration changes in polycyclic aromatic hydrocarbons (PAHs) associated with the new preparatory methods with field collected samples in order to determine if the toxicity tests performed were relevant to the actual toxicity expected to be seen in the field.
- **Alameda Corridor Transportation Authority (ACTA).** Provided technical expertise to gain a unique temporary discharge waiver for a multi-billion-dollar construction project in California. ACTA gained a waiver to discharge dewatering effluent during construction into the LA-Long Beach Harbor. The waiver regulated the effluent based on bioavailable (labile) metal concentration rather than total or dissolved concentrations, and then the project ensured non-detect labile metal concentration via the addition of EDTA.

REPRESENTATIVE EXPERT RETENTIONS/APPEARANCES

Analytical Environmental Chemistry

- Knurr, B. and J. Hauri (2021) Connecting Bomb Calorimetry to Environmental Issues: Two Bomb Calorimetry Experiments. Presented at the Fall ACS National Meeting, August 22-26. Atlanta, GA.
- Hauri, J. and B. Niece. (2018) Fingerprinting White Wines with Excitation-Emission Matrix Fluorescence. Poster presented at the Fall ACS National Meeting, August 19-23. Boston, MA.
- Hauri, J. (2017) Variation to the Excitation-Emission Matrix Fluorescence Characterization of Allochthonous Dissolved Organic Carbon due to pH changes. Poster presented 38th Annual Society of Environmental Toxicology and Chemistry National Meeting, 12 - 16 November, Minneapolis, MN.

- J. Hauri and K. Wirzbicki. (2011) Excitation-Emission Matrix Fluorescence Characterization of Dissolved Organic Carbon Leached from Leaves from Various Tree Species. Poster presented at the Society of Environmental Toxicology and Chemistry National Meeting, 13 - 17 November, Boston, MA.
- Miller, M. and J.F. Hauri. (2005) Development of an HPLC/UV Method for the Detection of Ibuprofen in River Water. Poster presented at the National Conference on Undergraduate Research, April 21-23, Lexington, VA.
- Parnass, K. and J.F. Hauri. (2004) Development of an HPLC/UV Method for the Measurement of Environmentally Relevant Concentrations of Ibuprofen. Poster presented at the North Atlantic Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, June 9-11, Portsmouth, RI.

Chemistry and Toxicology

- S. Kane Driscoll, J. Hauri, K. Kulacki, A. M. Morrison, M. McArdle, A. Schierz, K. Yozzo, and M. Edwards. (2016) The Influence of Mixing Energy on the Concentration and Composition of Oil in Laboratory Toxicity Tests. Poster presented 37th Annual Society of Environmental Toxicology and Chemistry National Meeting, 6 - 10 November, Orlando, FL.
- Yozzo, K. S. Kane Driscoll, J. Hauri, M. McArdle, and A.M. Morrison. (2016) Review of Current Literature of Cardiotoxicity of Oil to Early Life Stages of Fish and the Use in Injury Assessments. Presentation at 37th Annual Society of Environmental Toxicology and Chemistry National Meeting, 6 - 10 November, Orlando, FL.
- Kane Driscoll, S., R. Wells Whittlesey, J. Hauri, K. Kulacki, A. Schierz, T.L. Morse, A.M. Morrison, and K. Yozzo. (2016) The Influence of Mixing energy on the Concentration, Composition, Toxicity, and Relevance of the Laboratory Toxicity Tests. Poster presented at the Gulf of Mexico Oil Spill and Ecosystem Science Conference. 1-4 February, Tampa Bay, Fl.
- Frazier, K., K. Cushing, and J. Hauri (2010) A visual documentation of acute toxicity in zooplankton. Poster presented at the North Atlantic Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, June 2-4, Narragansett, RI.
- Hauri, J.F. and A.J. Horne. (2002) Copper toxicity reduction via EDTA addition: a real-world application. Presentation at the Society of Environmental Toxicology and Chemistry National Meeting, 16 - 20 November, Salt Lake City, UT.
- Hauri, J.F. and A.J. Horne. (2002) Copper toxicity reduction via EDTA addition: a real-world application. Poster presented at the American Chemical Society National Meeting, 18-22 August, Boston, MA.
- Hauri, J.F., K.D. Zoh, A. Steding, and A.J. Horne. (1999) Trinitrotoluene toxicity reduction to Ceriodaphnia dubia by humic acid complexation. Poster presented at the 19th NALMS Annual Meeting, 1-4 December, Reno, Nevada.
- Hauri, J.F., and A.J. Horne. (1997) Toxicity and chemistry of copper in urban runoff from San Francisco Bay creeks. Presented before the CALMS Annual Meeting, November, California.
- Hauri, J.F., and A.J. Horne. (1997) Influence of food on bioavailability of copper in the 7-day Ceriodaphnia dubia bioassay. Poster presented at the 18th SETAC Annual Meeting, 16-27 November, San Francisco, California.
- Hauri, J.F., and A.J. Horne. (1997) Toxicity and chemistry of copper in urban runoff from San Francisco Bay creeks. Presented before the 17th NALMS Annual Meeting, 2-6 December, Houston, Texas

Misc. Environmental Chemistry

- Drumm, E., and J. Hauri (2020) Analysis of Existing Water Quality Datasets of Lake Quinsigamond, Massachusetts. Poster accepted at North Atlantic Regional Chapter of the Society of Environmental Toxicology and Chemistry Meeting, April 13-14, Avery Point, CT. Accepted, but conference was cancelled.
- Hauri, J. (2007) Adapting research for laboratory experiments in undergraduate environmental chemistry courses. Presented at the 234th ACS National Meeting, August 19-23, Boston, MA.
- Kulevich, S. J. Van Doren, and J. Hauri. (2006) Green arsenic remediation. Presented at the 231st ACS National Meeting, March 26-30, Atlanta, GA.
- Hauri, J. and B. Niece. (2005) Removal of Ibuprofen through a Wastewater Treatment Plant. Poster presented Society of Environmental Toxicology and Chemistry National Meeting, 14 - 17 November, Baltimore, MD.
- Hauri, J.F., P. Frank, and A.J. Horne. (1999) Acid mine drainage in rural and urban environments. Presented before the 19th NALMS Annual Meeting, 1-4 December, Reno, Nevada.

PROFESSIONAL AFFILIATIONS

American Chemistry Society (ACS)

Society of Environmental Toxicology and Chemistry (SETAC)

NAC SETAC – board of directors 2005-2008, VP 2008-2009, Pres 2009-2010

PUBLICATIONS

Analytical Environmental Chemistry

Knurr, B. and J.F. Hauri. (2020) An Alternative to Recycling: Measurement of Combustion Enthalpies of Plastics via Bomb Calorimetry. Journal of Chemical Education. V.97, pp 1465-1469.

Niece, B. and J.F. Hauri. (2013) Determination of Mercury in Fish: A Low-Cost Implementation of Cold-Vapor Atomic Absorbance for the Undergraduate Environmental Chemistry Laboratory. Journal of Chemical Education. V.90 (14), pp 487–489.

Hauri, J. and B. Niece. (2011) Leaching of silver from silver-impregnated food containers. Journal of Chemical Education. V.88 (10), pp 1407–1409.

Chemistry and Toxicology

Hauri, J.F. and A.J. Horne. (2006) Copper toxicity reduction via EDTA addition: a real-world application. Water Environment Research. v. 78, pp. 2508-2513.

Hauri, J.F. and A.J. Horne. (2004) Reduction in Labile Copper in the 7 Day Ceriodaphnia dubia Toxicity Test due to the interaction with zooplankton food. Chemosphere. v. 56, pp. 717-723.

Misc. Environmental Chemistry

Hauri, J.F., C. Daughton, and R. Klaper. (2016) The Challenge: Establishing Policy in an Uncertain World: What can be done to address emerging environmental contaminants having indeterminate or subtle ecological or human impacts? Environmental Toxicology and Chemistry. V.35(2), pp. 266-270.

Hauri, J.F. and L.A. Schaider. (2009) Remediation of Acid Mine Drainage with Sulfate Reducing Bacteria. Journal of Chemical Education. v. 86 (2), pp. 216-218. Other Publications

Lincoln, R., C. Amarasiriwardena, J. Shine, A. Ettinger, C. Paciorek, J. Hauri, R. Wright, J. Spengler (2011) Meconium as a biomarker for prenatal metals exposure: Methodological considerations and variations in serial samples over time (Diss. Chapter). Biomarkers of Metals Exposure in Two High-Risk Communities. School of Public Health, Harvard University.

Hauri, J.F. (1998) Scoping study of air deposition monitoring information relevant to water quality of San Francisco Bay, Final Report. Bay Area Stormwater Management Agencies Association.

Hauri, J.F., and Alex J. Horne. (1997) Bioavailability and toxicity of heavy metals in urban runoff in simulated natural conditions. University of California Water Resources Center.

Citizen Participation Plan

Brownfield Cleanup Program - Citizen Participation Plan Template Instructions

Note: This template is to be used to prepare the site Citizen Participation (CP) Plan. The CP Plan template was designed for the typical scenario of a site that would be investigated and remediated under the BCP.

The draft site CP Plan must be reviewed and approved by NYSDEC. The NYSDEC project manager determines when a draft site CP Plan is final, regardless of who prepares draft versions of the document. The site CP Plan may be revised during the implementation of the brownfield site's remedial program. This determination will be made by the NYSDEC project manager, in consultation with the assigned NYSDEC Citizen Participation Specialist and other NYSDEC staff as appropriate.

Preparation:

- Unless directed otherwise, the Applicant will submit to NYSDEC for review and approval the site CP Plan within 20 days after the effective date of the site's Brownfield Cleanup Agreement.
- Insert or delete information within brackets as appropriate, then delete the brackets and any accompanying instructions, including each "Instruction to preparer:". Unless instructed otherwise, remove **bolding** from text that is inserted or contained within brackets.
- Assume the reader does not have specialized technical and environmental knowledge. **Insert plain, understandable language into the template.** Avoid jargon and acronyms. Don't "cut and paste" from technical reports -- they are not written for a general audience. Explain/define any technical terms that must be used. For example, don't assume the reader knows what a "non-aqueous phase liquid (NAPL)" is, or what "air sparging" means. An NYSDEC Citizen Participation Specialist, in consultation with the NYSDEC project manager, may revise or identify portions of the draft that require revision before it can be approved.
- Do not delete or alter "boilerplate" language unless the activity referenced (e.g. investigation, cleanup) does not apply to the BCP site and project.
- When the site CP Plan has been drafted, address page breaks, heading locations and other formatting issues as needed.
- When final edits have been made to the draft site CP Plan, insert or edit page numbers in the Contents page. Recheck page breaks, heading locations and other formatting issues. Be sure to format and print the site CP Plan double-sided.

Distribution:

- The NYSDEC project manager will notify the Applicant when to distribute the approved site CP Plan to the site's document repository(ies). Alternately, NYSDEC may distribute the site CP Plan to the repository(ies).
- **External distribution:** The site CP Plan can be distributed to the site's document repository(ies) in paper form and/or electronic form (such as on disc). Be sure the repository(ies) have the means to provide the public with electronic access to the site CP Plan if this format is selected.

  Additional distribution may be considered if the BCP site or its remedial program is comprehensive and/or there is significant public interest. One option is to post the site CP Plan electronically on the DER public web site. Another option is to distribute the site CP Plan to a subset of the site contact list that includes community leaders and others as appropriate. Such distribution should be done electronically through email, if possible.

  The method(s) and extent of external distribution is determined by the NYSDEC project manager, following consultation with others as appropriate.
- **Internal distribution:** NYSDEC and NYSDOH staff always should receive electronic copies of the site CP Plan, whether NYSDEC staff are managing the distribution or the distribution is being managed by the Applicant or a contractor. Hard copies should not be distributed internally. NYSDEC staff should provide the Applicant or contractor with appropriate NYSDEC and NYSDOH email addresses when the Applicant or contractor is managing the distribution.
- Place electronic copy of the site CP Plan in the appropriate folder of DecDocs.

An Applicant preparing a draft BCP CP Plan should direct related questions and requests for additional information to the NYSDEC project manager.

NEW YORK STATE | Department of Environmental Conservation

Brownfield Cleanup Program

Citizen Participation Plan for 5 Flint Street

October 2025

C828162B
5 Flint Street
City of Rochester
Monroe County, New York

Contents

Section	Page Number
1. What is New York's Brownfield Cleanup Program?	3
2. Citizen Participation Activities	3
3. Major Issues of Public Concern	7
4. Site Information	7
5. Investigation and Cleanup Process	8
Appendix A - Project Contacts and Locations of Reports and Information	13
Appendix B - Site Contact List	14
Appendix C - Site Location Map	15
Appendix D - Brownfield Cleanup Program Process	16

* * * * *

Note: The information presented in this Citizen Participation Plan was current as of the date of its approval by the New York State Department of Environmental Conservation. Portions of this Citizen Participation Plan may be revised during the site's investigation and cleanup process.

Applicant: **5 Flint Street LLC ("Applicant")**
Site Name: **5 Flint Street ("Site")**
Site Address:**5 Flint Street, Rochester, NY**
Site County: **Monroe County**
Site Number: **C828162B**

1. What is New York's Brownfield Cleanup Program?

New York's Brownfield Cleanup Program (BCP) works with private developers to encourage the voluntary cleanup of contaminated properties known as "brownfields" so that they can be reused and developed. These uses include recreation, housing, and business.

A *brownfield* is any real property that is difficult to reuse or redevelop because of the presence or potential presence of contamination. A brownfield typically is a former industrial or commercial property where operations may have resulted in environmental contamination. A brownfield can pose environmental, legal, and financial burdens on a community. If a brownfield is not addressed, it can reduce property values in the area and affect economic development of nearby properties.

The BCP is administered by the New York State Department of Environmental Conservation (NYSDEC) which oversees Applicants who conduct brownfield site investigation and cleanup activities. An Applicant is a person who has requested to participate in the BCP and has been accepted by NYSDEC. The BCP contains investigation and cleanup requirements, ensuring that cleanups protect public health and the environment. When NYSDEC certifies that these requirements have been met, the property can be reused or redeveloped for the intended use.

For more information about the BCP, go online at: https://dec.ny.gov/environmental-protection/site-cleanup/brownfield-and-state-superfund-programs/brownfield.

2. Citizen Participation Activities

Why NYSDEC Involves the Public and Why It Is Important

NYSDEC involves the public to improve the process of investigating and cleaning up contaminated sites, and to enable citizens to participate more fully in decisions that affect their health, environment, and social well-being. NYSDEC provides opportunities for citizen involvement and encourages early two-way communication with citizens before decision makers form or adopt final positions.

Involving citizens affected and interested in site investigation and cleanup programs is important for many reasons. These include:

- Promoting the development of timely, effective site investigation and cleanup programs that protect public health and the environment.
- Improving public access to, and understanding of, issues and information related to a particular site and that site's investigation and cleanup process.
- Providing citizens with early and continuing opportunities to participate in NYSDEC's site investigation and cleanup process.
- Ensuring that NYSDEC makes site investigation and cleanup decisions that benefit from input that reflects the interests and perspectives found within the affected community.
- Encouraging dialogue to promote the exchange of information among the affected/interested public, State agencies, and other interested parties that strengthens trust among the parties, increases understanding of site and community issues and concerns, and improves decision making.

This Citizen Participation (CP) Plan provides information about how NYSDEC will inform and involve the public during the investigation and cleanup of the site identified above. The public information and involvement program will be carried out with assistance, as appropriate, from the Applicant.

Project Contacts

Appendix A identifies NYSDEC project contact(s) to whom the public should address questions or request information about the site's investigation and cleanup program. The public's suggestions about this CP Plan and the CP program for the site are always welcome. Interested people are encouraged to share their ideas and suggestions with the project contacts at any time.

Locations of Reports and Information

The locations of the reports and information related to the site's investigation and cleanup program also are identified in Appendix A. These locations provide convenient access to important project documents for public review and comment. Some documents may be placed on the NYSDEC web site. If this occurs, NYSDEC will inform the public in fact sheets distributed about the site and by other means, as appropriate.

Site Contact List

Appendix B contains the site contact list. This list has been developed to keep the community informed about, and involved in, the site's investigation and cleanup process. The site contact list will be used periodically to distribute fact sheets that provide updates about the status of the project. These will include notifications of upcoming activities at the site (such as fieldwork), as well as availability of project documents and announcements about public comment periods.
The site contact list includes, at a minimum:

- chief executive officer and planning board chairperson of each county, city, town and village in which the site is located;
- residents, owners, and occupants of the site and properties adjacent to the site;
- the public water supplier which services the area in which the site is located;
- any person who has requested to be placed on the site contact list;
- the administrator of any school or day care facility located on or near the site for purposes of posting and/or dissemination of information at the facility;
- location(s) of reports and information.

The site contact list will be reviewed periodically and updated as appropriate. Individuals and organizations will be added to the site contact list upon request. Such requests should be submitted to the NYSDEC project contact(s) identified in Appendix A. Other additions to the site contact list may be made at the discretion of the NYSDEC project manager, in consultation with other NYSDEC staff as appropriate.

Note: The first site fact sheet (usually related to the draft Remedial Investigation Work Plan) is distributed both by paper mailing through the postal service and through DEC Delivers, its email listserv service. The fact sheet includes instructions for signing up with the appropriate county listserv to receive future notifications about the site. See https://dec.ny.gov/environmental-protection/site-cleanup/regional-remediation-project-information/environmental-cleanup-email-newsletters.

Subsequent fact sheets about the site will be distributed exclusively through the listserv, except for households without internet access that have indicated the need to continue to receive site information in paper form. Please advise the NYSDEC site project manager identified in Appendix A if that is the case. Paper mailings may continue during the investigation and cleanup process for some sites, based on public interest and need.

CP Activities

The table at the end of this section identifies the CP activities, at a minimum, that have been and will be conducted during the site's investigation and cleanup program. The flowchart in Appendix D shows how these CP activities integrate with the site investigation and cleanup process. The public is informed about these CP activities through fact sheets and notices distributed at significant points during the program. Elements of the investigation and cleanup process that match up with the CP activities are explained briefly in Section 5.

- **Notices and fact sheets** help the interested and affected public to understand contamination issues related to a site, and the nature and progress of efforts to investigate and clean up a site.

- **Public forums, comment periods and contact with project managers** provide opportunities for the public to contribute information, opinions and perspectives that have potential to influence decisions about a site's investigation and cleanup.

The public is encouraged to contact project staff at any time during the site's investigation and cleanup process with questions, comments, or requests for information.

This CP Plan may be revised due to changes in major issues of public concern identified in Section 3 or in the nature and scope of investigation and cleanup activities. Modifications may include additions to the site contact list and changes in planned citizen participation activities.

Technical Assistance Grant

NYSDEC must determine if the site poses a significant threat to public health or the environment. This determination generally is made using information developed during the investigation of the site, as described in Section 5.

If the site is determined to be a significant threat, a qualifying community group may apply for a Technical Assistance Grant (TAG). The purpose of a TAG is to provide funds to the qualifying group to obtain independent technical assistance. This assistance helps the TAG recipient to interpret and understand existing environmental information about the nature and extent of contamination related to the site and the development/implementation of a remedy.

An eligible community group must certify that its membership represents the interests of the community affected by the site, and that its members' health, economic well-being or enjoyment of the environment may be affected by a release or threatened release of contamination at the site.

As of the date the declaration (page 2) was signed by the NYSDEC project manager, the significant threat determination for the site had not yet been made.

To verify the significant threat status of the site, the interested public may contact the NYSDEC project manager identified in Appendix A.

For more information about TAGs, go online at https://dec.ny.gov/regulatory/regulations/technical-assistance-grant-tag-guidance-handbook-der-14

Note: The table identifying the citizen participation activities related to the site's investigation and cleanup program follows on the next page:

Citizen Participation Activities	Timing of CP Activity(ies)
Application Process:	
• Prepare site contact list • Establish document repository(ies)	At time of preparation of application to participate in the BCP.
• Publish notice in Environmental Notice Bulletin (ENB) announcing receipt of application and 30-day public comment period • Publish above ENB content in local newspaper • Mail above ENB content to site contact list • Conduct 30-day public comment period	When NYSDEC determines that BCP application is complete. The 30-day public comment period begins on date of publication of notice in ENB. End date of public comment period is as stated in ENB notice. Therefore, ENB notice, newspaper notice, and notice to the site contact list should be provided to the public at the same time.
After Execution of Brownfield Site Cleanup Agreement (BCA):	
• Prepare Citizen Participation (CP) Plan	Before start of Remedial Investigation **Note:** Applicant must submit CP Plan to NYSDEC for review and approval within 20 days of the effective date of the BCA.
Before NYSDEC Approves Remedial Investigation (RI) Work Plan:	
• Distribute fact sheet to site contact list about proposed RI activities and announcing 30-day public comment period about draft RI Work Plan • Conduct 30-day public comment period	Before NYSDEC approves RI Work Plan. If RI Work Plan is submitted with application, public comment periods will be combined, and public notice will include fact sheet. Thirty-day public comment period begins/ends as per dates identified in fact sheet.
After Applicant Completes Remedial Investigation:	
• Distribute fact sheet to site contact list that describes RI results	Before NYSDEC approves RI Report
Before NYSDEC Approves Remedial Work Plan (RWP):	
• Distribute fact sheet to site contact list about draft RWP and announcing 45-day public comment period • Public meeting by NYSDEC about proposed RWP (if requested by affected community or at discretion of NYSDEC project manager) • Conduct 45-day public comment period	Before NYSDEC approves RWP. Forty-five day public comment period begins/ends as per dates identified in fact sheet. Public meeting would be held within the 45-day public comment period.
Before Applicant Starts Cleanup Action:	
• Distribute fact sheet to site contact list that describes upcoming cleanup action	Before the start of cleanup action.
After Applicant Completes Cleanup Action:	
• Distribute fact sheet to site contact list that announces that cleanup action has been completed and that NYSDEC is reviewing the Final Engineering Report • Distribute fact sheet to site contact list announcing NYSDEC approval of Final Engineering Report and issuance of Certificate of Completion (COC)	At the time the cleanup action has been completed. **Note:** The two fact sheets are combined when possible if there is not a delay in issuing the COC.

3. Major Issues of Public Concern

This section of the CP Plan identifies major issues of public concern that relate to the site. Additional major issues of public concern may be identified during the course of the site's investigation and cleanup process.

5 Fint Street LLC intends to perform the required BCP Site remediation to create a property suitable for future redevelopment and reuse. The project will result in the redevelopment and reuse of an environmentally impaired property as described in the City of Rochester master development plan for the Vacuum Oil Brownfield Opportunity Area.

A portion of the Genesee Riverway Trail will be closed during phases of the remedial work, including demolition of the on-site building. Temporary fencing and rerouting signs will be deployed in the morning prior to the start of work and will be removed at the end of the workday allowing public access to the bike path.

Contaminants can become airborne during investigation and cleanup activities. Testing will be performed during these activities to measure the level of contaminants in the air. Action will be taken if the levels get too high.

4. Site Information

Appendix C contains a map identifying the location of the site.

Site Description

- **location -** 5 Flint Street in Rochester, New York (the "Site");
- **setting -** Urban Land
- **site size -** R-3 High Density Residential
- **adjacent properties -** Mix of residential, commercial, and light industrial properties. Portions of adjacent properties are vacant. The Genesee River is present to the east of the site. The Flint Street Right-of-Way is also present along the northern boundary of the site.

History of Site Use, Investigation, and Cleanup

The Site, along with several nearby pieces of land, were part of the former Vacuum Oil Company refinery. This area was vacant until around 1875 when the Vacuum Oil Company bought the land and built various buildings for their refinery. The Site was originally a shipping yard for moving raw materials in and finished products out by train. It specifically helped with making and storing barrels and staves (flat wooden pieces that form the sides of a barrel) for barrels. The refinery operated until about 1935 and, by then, most of the Site was filled with buildings like a barrel factory, a drum washing and storage building, a paint shop, and other storage structures.

Over time, the Vacuum Oil Company became part of Exxon Mobil Corporation. After the Vacuum Oil Company stopped operations, the Site was sold several times. There were different owners, including Rochester Distilling Co., Rochester Scrap Baling Corp., and George M. Clancy Carting Co. From 1980 until a date that isn't clear, the Site was used for storing hazardous materials by R&K Services and/or Kneppar Resource Recovery. Other uses of the Site included food warehousing and distribution, an electrical equipment business, and a photographic studio. Right now, the land is mostly undeveloped, just having a three-story brick building on one end that has been vacant for an unknown period.

In 2001, the New York State Department of Environmental Conservation (NYSDEC) looked into a 24-acre part of the former Vacuum Oil facility near Flint St. Starting in 2008, NYSDEC worked with Exxon Mobil Corporation to investigate environmental conditions at the Site and nearby areas. The Site, along with nearby 15 Flint Street, was entered into the Brownfield Cleanup Program in June 2010, by One Flint Street, LLC (the owners at that time).Investigations took place between 2014 and 2020, and in March 2021, a report was submitted for cleanup, but it was not approved by NYSDEC. The cleanup agreement with One Flint Street, LLC, was later ended. On August 31, 2023, Exxon Mobil Corporation bought the Site. Environmental investigations showed various substances in the soil and groundwater, including volatile

organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and metals like arsenic, barium, lead, and mercury. These contaminants were found in the soil at levels higher than what is acceptable for multi-family residential use. In groundwater, VOCs, SVOCs, and metals were found at levels above groundwater standards, and some areas had limited liquid petroleum.

The Site is part of a larger area called the City Vacuum Oil - South Genesee River Corridor Brownfield Opportunity Area (BOA), which is managed by the New York State Department of State. The BOA program helps plan and implement projects to revitalize the area. This project involves the community, gathering ideas from local residents and business owners to shape the development plans. Public involvement is key to making sure the planning works well and meets the community's needs. So far, the BOA Master Plans include ideas for mixed-use development, waterfront improvements, and redeveloping commercial and housing areas. In 2015, the City of Rochester received funding to continue working on these plans and improve them based on new studies.

5. Investigation and Cleanup Process

Application

The Applicant has applied for and been accepted into New York's Brownfield Cleanup Program as a **Volunteer**. This means that the Applicant was not responsible for the disposal or discharge of the contaminants or whose ownership or operation of the site took place after the discharge or disposal of contaminants. The Volunteer must fully characterize the nature and extent of contamination onsite, and must conduct a "qualitative exposure assessment," a process that characterizes the actual or potential exposures of people, fish and wildlife to contaminants on the site and to contamination that has migrated from the site.

The Applicant in its Application proposes that the site will be used for **restricted** purposes.

To achieve this goal, the Applicant will conduct cleanup activities at the site with oversight provided by NYSDEC. The Brownfield Cleanup Agreement executed by NYSDEC and the Applicant sets forth the responsibilities of each party in conducting these activities at the site.

The Applicant has completed a **full** site investigation before it entered into the BCP. The Applicant has submitted an investigation report for the full site investigation. NYSDEC will determine if the investigation goals and requirements of the BCP have been met or if additional work is needed before a remedy can be selected.

NYSDEC will use the information in the investigation report to determine if the site poses a significant threat to public health or the environment. If the site is a "significant threat," it must be cleaned up using a remedy selected by NYSDEC from an analysis of alternatives prepared by the Applicant and approved by NYSDEC. If the site does not pose a significant threat, the Applicant may select the remedy from the approved analysis of alternatives.

Interim Remedial Measures

An Interim Remedial Measure (IRM) is an action that can be undertaken at a site when a source of contamination or exposure pathway can be effectively addressed before the site investigation and analysis of alternatives are completed. If an IRM is likely to represent all or a significant part of the final remedy, NYSDEC will require a 30-day public comment period.

Remedy Selection

The investigation of the site has determined that action needs to be taken to address site contamination. After NYSDEC approves the investigation report, the Applicant may then develop a cleanup plan, officially called a "Remedial Work Plan". The Remedial Work Plan describes the Applicant's proposed remedy for addressing contamination related to the site.

When the Applicant submits a draft Remedial Work Plan for approval, NYSDEC would announce the availability of the draft plan for public review during a 45-day public comment period. The Remedial Work Plan, identified as the Remedial Alternatives Analysis Report was dated February 24, 2025, and underwent the 45-day public comment period from August 21, 2024, through October 5, 2024.

NYSDEC will consider public comments, and revise the draft cleanup plan if necessary, before approving the proposed remedy. The New York State Department of Health (NYSDOH) must concur with the proposed remedy. After approval, the proposed remedy becomes the selected remedy. The selected remedy is formalized in the site Decision Document.

The Applicant may then design and perform the cleanup action to address the site contamination. NYSDEC and NYSDOH oversee the activities. When the Applicant completes cleanup activities, it will prepare a final engineering report that certifies that cleanup requirements have been achieved or will be achieved within a specific time frame. NYSDEC will review the report to be certain that the cleanup is protective of public health and the environment for the intended use of the site.

Certificate of Completion

When NYSDEC is satisfied that cleanup requirements have been achieved or will be achieved for the site, it will approve the final engineering report. NYSDEC then will issue a Certificate of Completion (COC) to the Applicant. The COC states that cleanup goals have been achieved and relieves the Applicant from future liability for site-related contamination, subject to certain conditions. The Applicant would be eligible to redevelop the site after it receives a COC.

Site Management

The purpose of site management is to ensure the safe reuse of the property if contamination will remain in place. Site management is the last phase of the site cleanup program. This phase begins when the COC is issued. Site management incorporates any institutional and engineering controls required to ensure that the remedy implemented for the site remains protective of public health and the environment. All significant activities are detailed in a Site Management Plan.

An *institutional control* is a non-physical restriction on use of the site, such as a deed restriction that would prevent or restrict certain uses of the property. An institutional control may be used when the cleanup action leaves some contamination that makes the site suitable for some, but not all uses.

An *engineering control* is a physical barrier or method to manage contamination. Examples include: caps, covers, barriers, fences, and treatment of water supplies.

Site management also may include the operation and maintenance of a component of the remedy, such as a system that pumps and treats groundwater. Site management continues until NYSDEC determines that it is no longer needed.

Appendix A -

Project Contacts and Locations of Reports and Information

Project Contacts

For information about the site's investigation and cleanup program, the public may contact any of the following project staff:

New York State Department of Environmental Conservation (NYSDEC):

Ms. Charlotte Theobald
Project Manager
NYSDEC Region 8
Division of Environmental Remediation
6274 East Avon-Lima Rd.,
Avon, NY 14414-9519
(585) 226-5354
charlotte.theobald@dec.ny.gov

Ms. Linda Vera
Regional Citizen Participation Specialist
NYSDEC Region 8
6274 East Avon-Lima Rd.,
Avon, NY 14414-9519
(585) 226-5324
Linda.vera@dec.ny.gov

New York State Department of Health (NYSDOH):

Ms. Bridgette K. Boyd
Public Health Specialist III
Bureau of Env. Exposure Investigation
NYSDOH
Empire State Plaza,
Corning Tower, Room 1787
Albany, New York 12237
BEEI@health.ny.gov
(518) 402-7859

Locations of Reports and Information

The facilities identified below are being used to provide the public with convenient access to important project documents:

Phillis Wheatley Library
33 Dr. Samuel McCree Way
Rochester, NY
Attn: Lori Frankunas
Branch Manager/Teen Services/Media Librarian
Phone: 585-428-8213
Hours: Mon. and Wed., 11:00 AM – 7:00 PM
Tue. and Thur., 11:00 AM – 6:00 PM
Fri., 11:00 AM – 5:00 PM Sat., 11:00 AM – 2:00 PM Sun., Closed.

NYSDEC Region 8
6274 East Avon-Lima Rd.,
Avon, NY 14414-9519
Attn: Charlotte Theobald
Phone: (585) 226-5353
Hours: unknown hour of operations (call for appointment)

Appendix B - Site Contact List

Monroe County, City of Rochester Contacts

Adam J. Bello (Monroe County: County Executive) 110 County Office Building 39 W. Main St. Rochester, NY 14614	William Santos (Monroe County: Planning Board Chairman City Place 50 West Main Street Suite 1150 Rochester, New York 14614
Mayor Malik D. Evans (CEO City of Rochester) City Hall, Room 307A 30 Church St. Rochester NY 14614	David Watson (Rochester, NY: Planning Board Chairman) P.O. Box 65 15 Tobacco Road Accord, NY 12404

Residents, owners, and occupants of the property and adjacent properties.

Property Owner/Property Occupant	**Postal Address**	**Property Address**
City of Rochester	30 Church St Rm 125B Rochester, NY 14614	13 Cottage St Rochester, NY 14608
City of Rochester	30 Church St Rm 125B Rochester, NY 14614	10 Flint St Rochester, NY 14608
City of Rochester	30 Church St Rm 125B Rochester, NY 14614	102 Violetta St Rochester, NY 14608
City of Rochester	30 Church St Rm 125B Rochester, NY 14614	940 Exchange St Rochester, NY 14608

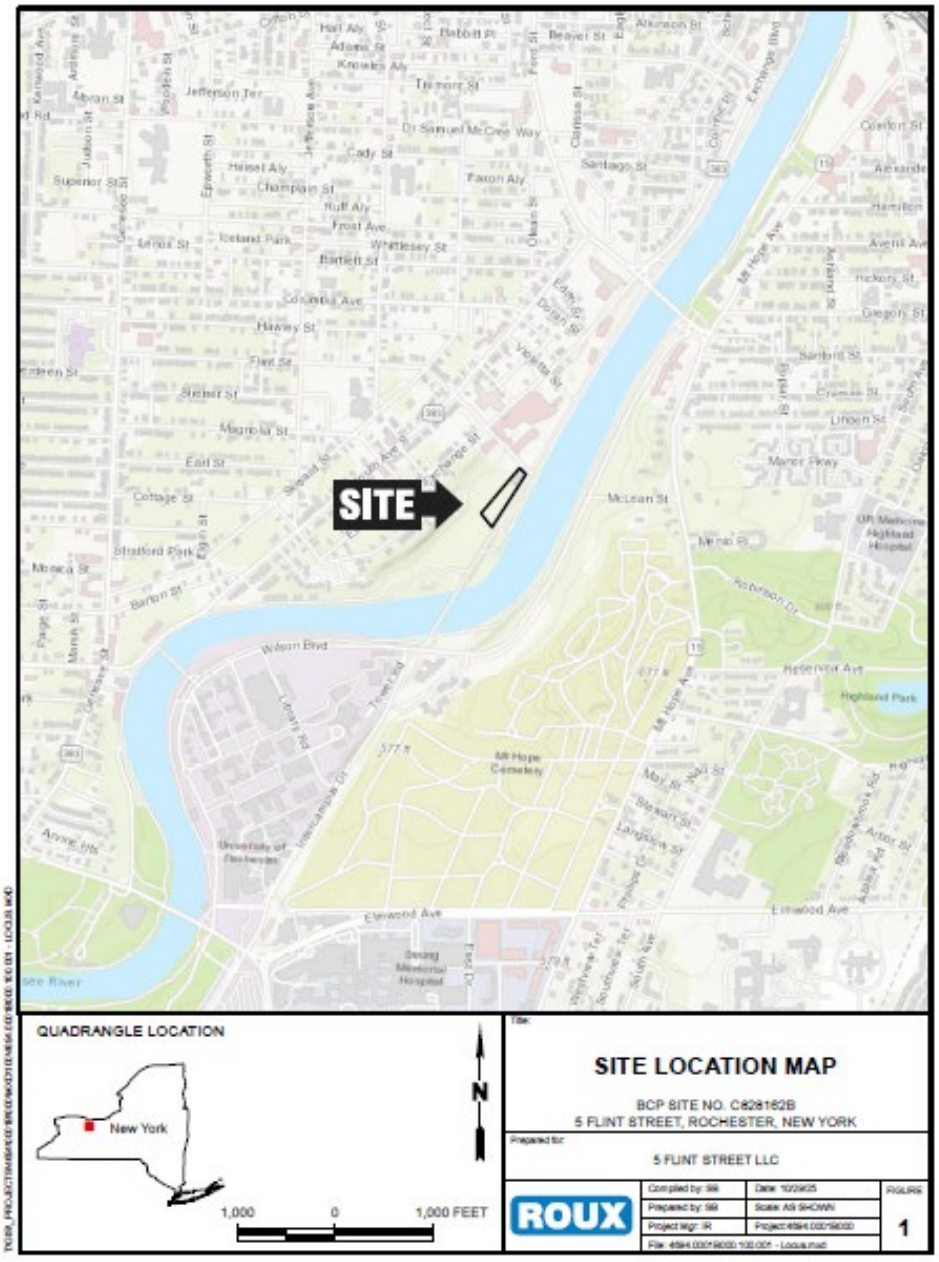
Local news media from which the community typically obtains information.

Rochester Democrat and Chronicle 245 East Main Street; Midtown Plaza, Rochester, New York 14604	

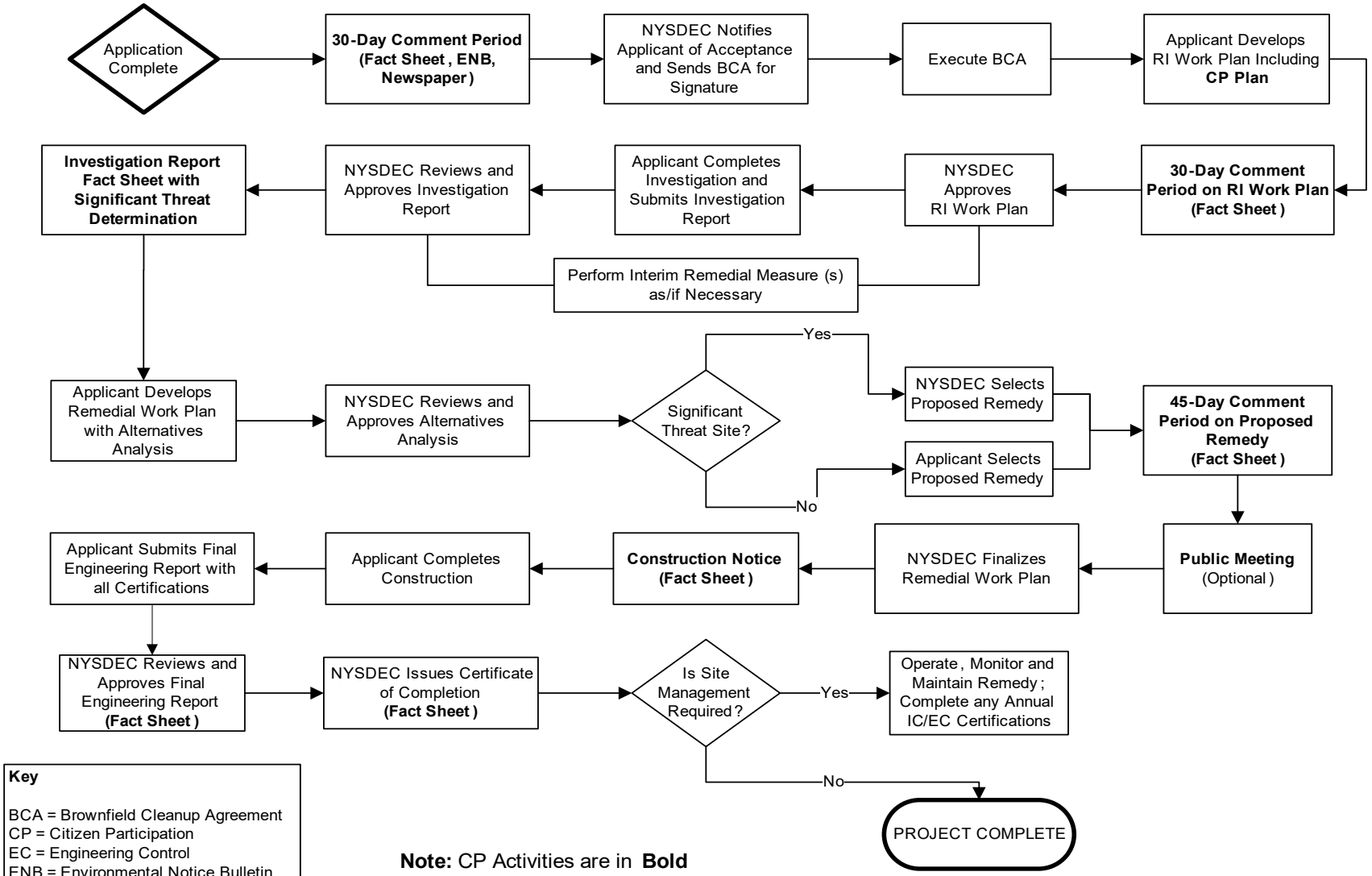
The public water supplier which services the area in which the property is located.

Geoffrey W. Gugel, Director (City of Rochester Bureau of Water) Bureau of Water 10 Felix Street Rochester, NY 14608	

Appendix C - Site Location Map



Appendix D– Brownfield Cleanup Program Process



Key

BCA = Brownfield Cleanup Agreement
CP = Citizen Participation
EC = Engineering Control
ENB = Environmental Notice Bulletin
IC = Institutional Control
RI = Remedial Investigation

Note: CP Activities are in **Bold**

NEW YORK STATE | Department of Environmental Conservation

Division of Environmental Remediation

Remedial Programs
Scoping Sheet for Major Issues of Public Concern

Instructions

This Scoping Sheet assesses major issues of public concern; impacts of the site and its remedial program on the community; community interest in the site; information the public needs; and information needed from the public.

The information generated helps to plan and conduct required citizen participation (CP) activities, and to choose and conduct additional CP activities, if appropriate. The scoping sheet can be revisited and updated as appropriate during the site's remedial process to more effectively implement the site's CP program.

Note: Use the information as an aid to prepare and update the Major Issues of Public Concern section of the site CP Plan.

General Instructions

- When to prepare: During preparation of the CP Plan for the site. It can be revisited and updated anytime during the site remedial process.
- Fill in site name and other information as appropriate.
- The Scoping Sheet may be prepared by DEC or a remedial party but must be reviewed and approved by the DER site project manager or his/her designee.

Instructions for Numbered Parts

Consider the bulleted issues and questions below and any others that may be unique or appropriate to the site and the community to help complete the five Parts of this Scoping Sheet. Identify the issue stakeholders in Parts 1 through 3 and adjust the site's contact list accordingly.

Part 1. List Major Issues of Public Concern and Information the Community Wants.

- Is our health being impacted? (e.g. Are there problems with our drinking water or air? Are you going to test our water, yards, sumps, basements? Have health studies been done?)
- There are odors in the neighborhood. Do they come from the site and are they hazardous?
- Are there restrictions on what we may do (e.g. Can our children play outside? Can we garden? Must we avoid certain areas? Can we recreate (fish, hunt, hike, etc. on/around the site?)
- How and when were the site's contamination problems created?
- What contaminants are of concern and why? How will you look for contamination and find out where it is going? What is the schedule for doing that?
- The site is affecting our property values!
- How can we get more information (e.g. who are the project contacts?)
- How will we be kept informed and involved during the site remedial process?
- Who has been contacted in the community about site remedial activities?
- What has been done to this point? What happens next and when?
- The site is going to be cleaned up for restricted use. What does that mean? We don't want redevelopment on a "dirty" site.

Part 2. List Important Information Needed From the Community, if Applicable.

- Can the community supplement knowledge about past/current uses of the site?
- Does the community have knowledge that the site may be significantly impacting nearby people, properties, natural resources, etc.?

- Are activities currently taking place at the site or at nearby properties that may need to be restricted?
- Who may be interested or affected by the site that has not yet been identified?
- Are there unique community characteristics that could affect how information is exchanged?
- Does the community and/or individuals have any concerns they want monitored?
- Does the community have information about other sources in the area for the contamination?

Part 3. List Major Issues and Information That Need to be Communicated to the Community.

- Specific site investigation or remediation activities currently underway, or that will begin in the near future.
- The process and general schedule to investigate, remediate and, if applicable, redevelop the site.
- Current understanding about the site contamination and effects, if any, on public health and the environment.
- Site impacts on the community and any restrictions on the public's use of the site and/or nearby properties.
- Planned CP activities, their schedule, and how they relate to the site's remedial process.
- Ways for the community to obtain/provide information (document repositories, contacts, etc.).

Part 4. Community Characteristics

a. - e. Obtain information from local officials, property owners and residents, site reports, site visits, "windshield surveys," other staff, etc.

f. Has the affected community experienced other **significant** present or past environmental problems unrelated to this site? Such experiences could significantly affect public concerns and perspectives about the site; how the community will relate to project staff; the image and credibility of project staff within the community; and the ways in which project staff communicate with the community.

g. In its remedial programs, DER seeks to integrate, and be consistent with, environmental justice principles set forth in *DEC Commissioner Policy 29 on Environmental Justice* and *DER 23 – Citizen Participation Handbook for Remedial Programs*. Is the site and/or affected community wholly or partly in an Environmental Justice (EJ) Area? Use the Search feature on DEC's public web site for "environmental justice". DEC's EJ pages define an EJ area, and link to county maps to help determine if the site and/or community are in an EJ area.

h. Consider factors such as:

- Is English the primary language of the affected community? If not, provisions should be considered regarding public outreach activities such as fact sheets, meetings, door-to-door visits and other activities to ensure their effectiveness.
- The age demographics of the community. For example, is there a significant number of senior citizens in the community? It may be difficult for some to attend public meetings and use document repositories. This may suggest adopting more direct interaction with the community with activities such as door-to-door visits, additional fact sheets, visits to community and church centers, nursing homes, etc.
- How do people travel about the community? Would most people drive to a public meeting or document repository? Is there adequate public transportation?

Part 5. Affected/Interested Public.

Individuals and organizations who need or want information and input can change during the site's remedial process. This need is influenced by real, potential, or perceived impacts of the site or the remedial process. Some people may want information and input throughout the remedial process. Others may participate only during specific remedial stages or may only be interested in particular issues.

It is important to revisit this question when reviewing this scoping sheet. Knowing who is interested in the site – and the issues that are important to them – will help to select and conduct appropriate outreach activities, and to identify their timing and the information to be exchanged.

Check all affected/interested parties that apply to the site. **Note: Adjust the site's contact list appropriately.** The following are some ways to identify affected/interested parties:

- Tax maps of adjacent property owners
- Attendees at public meetings
- Telephone discussions
- Letters and e-mails to DER, the remedial party, and other agencies
- Political jurisdictions and boundaries
- Media coverage
- Current/proposed uses of site and/or nearby properties (recreational, commercial, industrial)
- Discussions with community organizations: grass roots organizations, local environmental groups, environmental justice groups, churches, and neighborhood advisory groups

NEW YORK STATE | Department of Environmental Conservation

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Remedial Programs
Scoping Sheet for Major Issues of Public Concern (see instructions)

Site Name: 5 Flint Street

Site Number: C828162B

Site Address and County: 5 Flint Street, Rochester, NY Monroe County

Remedial Party(ies): 5 Flint Street LLC

Note: For Parts 1. – 3. the individuals, groups, organizations, businesses and units of government identified should be added to the site contact list as appropriate.

Part 1. List major issues of public concern and information the community wants. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and information needs. **Use this information as an aid to prepare or update the Major Issues of Public Concern section of the site Citizen Participation Plan.**

• A portion of the Genesee Riverway Trail will be closed during phases of the remedial work, including demolition of the on-site building. Temporary fencing and rerouting signs will be deployed in the morning prior to the start of work and will be removed at the end of the work day allowing public access to the bike path.

How were these issues and/or information needs identified?
Closure of the Riverway is necessary in order to maintain a safety buffer around heavy equipment.

Part 2. List important information needed **from** the community, if applicable. Identify individuals, groups, organizations, businesses and/or units of government related to the information needed.
NA

How were these information needs identified?
NA

Part 3. List major issues and information that need to be communicated **to** the community. Identify individuals, groups, organizations, businesses and/or units of government related to the issue(s) and/or information.

Contaminants can become airborne during investigation and cleanup activities. Testing will be performed during these activities to measure the level of contaminants in the air. Action will be taken if the levels get too high.

The community will be updated of milestones through fact sheets and public comment periods. Fact sheets and other reports for the site will be kept at the Phillis Wheatley Library 33 Dr. Samuel McCree Way, in Rochester, NY

How were these issues and/or information needs identified?
NA

Part 4. Identify the following characteristics of the affected/interested community. This knowledge will help to identify and understand issues and information important to the community, and ways to effectively develop and implement the site citizen participation plan (mark all that apply):

a. Land use/zoning at and around site:
☒ **Residential** ☐ **Agricultural** ☒ **Recreational** ☒ **Commercial** ☒ **Industrial**

b. Residential type around site:
☒ **Urban** ☐ **Suburban** ☐ **Rural**

c. Population density around site:
☒ **High** ☐ **Medium** ☐ **Low**

d. Water supply of nearby residences:
☒ **Public** ☐ **Private Wells** ☐ **Mixed**

e. Is part or all of the water supply of the affected/interested community currently impacted by the site?
☐ **Yes** ☒ **No**

Provide details if appropriate:
Click here to enter text.

f. Other environmental issues significantly impacted/impacting the affected community?
☐ **Yes** ☒ **No**

Provide details if appropriate:
Click here to enter text.

g. Is the site and/or the affected/interested community wholly or partly in an Environmental Justice Area?
☒ **Yes** ☐ **No**

h. Special considerations:
☒ **Language** ☐ **Age** ☐ **Transportation** ☐ **Other**

Explain any marked categories in **h:**
The Site is located in an Environmental Justice Area with a significant non-English speaking household. Translation request sheets will be included with all fact sheets.

Part 5. The site contact list must include, at a minimum, the individuals, groups, and organizations identified in Part 2. of the Citizen Participation Plan under 'Site Contact List'. Are *other* individuals, groups, organizations, and units of government affected by, or interested in, the site, or its remedial program? (Mark and identify all that apply, then adjust the site contact list as appropriate.)

☐ **Non-Adjacent Residents/Property Owners:** Click here to enter text.

☒ **Local Officials:** Provided in CPP

☒ **Media:** Provided in CPP

☐ **Business/Commercial Interests:** Click here to enter text.

☐ **Labor Group(s)/Employees:** Click here to enter text.

☐ **Indian Nation:** Click here to enter text.

☐ **Citizens/Community Group(s):** Click here to enter text.

☐ **Environmental Justice Group(s):** Click here to enter text.

☐ **Environmental Group(s):** Click here to enter text.

☐ **Civic Group(s):** Click here to enter text.

☐ **Recreational Group(s):** Click here to enter text.

☐ **Other(s):** Click here to enter text.

Prepared/Updated By: Sara Barrientos **Date:** 10/29/2025

Reviewed/Approved By: Noelle Clarke **Date:** 10/29/2025