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Sampling and Analysis Work Plan

DECONSTRUCTION OF DEFENSE FUEL SUPPORT POINT
VERONA, NEW YORK

Prepared for:

U.S. AIR FORCE

AFCEC CONTRACT NO.: FA890317D0038

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CDM/CAPE
a Joint Venture

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Verona, New York

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Prepared for:

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1.0 Introduction

CDM/CAPE, a Joint Venture (CDM Smith) has prepared this Sampling and Analysis Work Plan (SAP) for the construction and engineering activities supporting the deconstruction of the Defense Fuel Support Point (DFSP) in Verona, New York (NY) (The Site). The Site Layout is shown in **Figure 1**. The work is being performed on behalf of the U.S. Air Force Civil Engineer Center (AFCEC) and Defense Logistics Agency – Energy (DLA-Energy). Work will be performed in accordance with the January 2025 Statement of Work and the Project Specification Index (EA Engineering, P.C. and its Affiliate EA Science and Technology, February 2024). Any deviations are noted within this SAP.

CDM Smith and its subcontractors will perform work in a manner to minimize the polluting of air, water, or land and will, within reasonable limits, control noise and minimize the generation and disposal of solid waste materials, as well as other pollutants. Work will be performed in the areas permitted for work (limits of disturbance), and any areas outside of these work areas will be preserved and protected. Operation of equipment, storage of materials, disposition of excavated material, and construction in general will be conducted so as not to injure existing conditions and other properties adjacent to the work zones. CDM Smith has prepared this SAP to include both the Field Sampling Plan (FSP) and the Quality Assurance Project Plan (QAPP) to present the methodologies to be employed during sampling and analysis activities.

1.1 Background

Defense Fuel Support Point (DFSP) Verona is an inactive bulk fuel storage that formerly received, stored, and shipped jet propellant and aviation gasoline in support of various military installations. The objective of this project is to eliminate aging infrastructure that is no longer required to meet the Department of Defense (DoD) mission. Eliminating this infrastructure will reduce unnecessary maintenance costs and liability for stakeholders. Soils from select areas of the of site have been impacted with per- and polyfluoroalkyl substances (PFAS) which is attributed to the former use of Aqueous Film Forming Foam (AFFF) system. Fuel handling operations ceased in 2014. DLA Energy cleaned, secured, and closed the fuel facility between 2014 and 2017.

The DFSP removal work will generally consist of site preparation, aboveground buildings and infrastructure deconstruction, above and below ground pipeline deconstruction, tank deconstruction and foundation removal, pavement and underground utilities removal, grading, restoration, and waste handling/disposal. Pre-characterization will be completed for the per- and polyfluoroalkyl substances (PFAS) as described in **Section 2.1.1.3**.

Portions of the below-ground pipeline are covered in asphaltic wrap and known to contain asbestos. Additionally asbestos containing materials were identified in the buildings for demolition during the November 2018 Hazardous Material Survey conducted by HSM Consulting Services (HSM 2018). A licensed asbestos abatement contractor will be on-site to ensure the proper precautions are taken while shearing, removing, and disposing of the pipeline and performing demolition of buildings. Work will be conducted in accordance with the stormwater and erosion controls detailed in this plan, to minimize the disturbance of areas surrounding the pipeline. An environmental technician will be responsible for

assessment of releases including visual observation of soil, field screening, and if necessary, sample collection, as described throughout this SAP.

2.0 Field Sampling Plan

Field sampling at the site will be conducted to assess for releases of petroleum from former tanks and pipelines and to pre-characterize select areas of the site for PFAS. Additionally, the underground pipelines to be removed on-site are wrapped in a known asbestos-containing material which will be sampled in accordance with **Section 2.1.2**.

Sampling and analysis procedures for asbestos containing materials are described in the Asbestos Hazard Abatement Plan, provided under a separate cover. A licensed abatement subcontractor will collect samples of asbestos-containing pipeline materials, and the environmental technician shall submit them for analysis. Additional information on soil disposal sampling requirements is provided in the Waste Management Plan (WMP) provided under a separate cover and **Section 2.1.2.**

2.1 Field Sampling Procedures

Field sampling includes soil sampling in areas that indicate petroleum releases, PFAS pre-characterization soil sampling, soil disposal sampling, and pipeline materials sampling. Groundwater sampling is not anticipated for this project.

2.1.1 Soil

Soil will be disturbed to facilitate removal of fuel storage tanks, building foundations, below-ground fuel transfer pipelines, and various utilities. Soil will be sampled for pre-characterization, assessment of releases, and disposal.

2.1.1.1 Soil Field Screening

Soil that is disturbed, excavated, or regraded to facilitate the removal of site features, including the regrading of the soil containment dike material, will be observed for visual and olfactory indicators of petroleum contamination. Observations such as staining or sheen in the soil and petroleum-like odors would indicate that screening is necessary before continuing excavations. Screening will be conducted by the environmental technician using a photoionization detector (PID) for VOC vapors. The PID will be calibrated each morning of use in order to ensure accurate readings. A PID calibration form is included in **Appendix A**. A tracking spreadsheet documenting locations with visual/olfactory indicators of contamination and associated PID readings will be maintained throughout the project.

If the levels of VOCs in the PID readings exceed 100 parts per million (ppm), the soil will be excavated, stockpiled, and sampled in accordance with **Sections 2.1.1.2 and 2.1.1.4** for disposal off-site**.** 100 ppm is the agreed upon limit to identify grossly impacted petroleum, oil, and lubricant (POL) soils. The environmental technician will carefully document the PID readings and associated soil sample ID. A Standard Operation Procedure (SOP) for PID soil screening, SOP 1-10 is provided in **Appendix A.** The New York State Department of Environmental Conservation (NYSDEC) shall be notified of any known or suspected releases of petroleum through the NY State Spill Hotline (1-800-457-7362).

2.1.1.2 Additional Excavation and Soil Endpoint Samples

Where visual and olfactory evidence and PID readings indicate a release of petroleum, the soil shall be excavated at the direction of AFCEC. The excavation will be advanced until soil PID readings are below 100 ppm. At the limit of over-excavation, Soil Endpoint samples shall be collected in-situ from the bottom and side walls of the excavation to confirm that all petroleum impacted soil (above 100 ppm) has been removed. The endpoint samples will be collected at a rate of one sample per 50 square feet (sf) of potentially impacted soil if encountered in a large open excavation. Alternatively, if petroleum impacted soil is encountered while excavating within a utility or pipeline trench, the samples will be collected at a rate of one sample per 25 linear feet (lf) of the trench along the bottom and sidewalls of excavation.

The Endpoint Samples will be analyzed for petroleum related parameters, volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), and total petroleum hydrocarbons (TPH) diesel range organics (DRO) and gasoline range organics (GRO) per the methods specified in **Table 1.** The results of the sampling will be compared to NYSDEC Division of Environmental Remediation (DER)-10 Guidance standards included as **Appendix B** and used to delineate the extent of contamination if sampled in-situ. Results will be communicated to AFCEC and NYSDEC for direction. Any additional remedial action required will be addressed under a separate contract. There is no PFAS endpoint sampling planned for this project; any additional PFAS delineation or remediation will be conducted under the ongoing RI or a separate contract.

Endpoint Sampling Methodology

The safety and stability of the excavation shall be evaluated in determining soil sampling methods. The sampler shall not enter an excavation greater than a 4-foot (ft) depth. If the excavation is not safe to enter, the soil sample may be collected from the excavator bucket or with a hand auger. The CDM Smith technical standard operating procedures (SOPs) for surface soil sampling (SOP 1-3) and field equipment contamination (SOP 4-5) are included as **Appendix A**. Sampling will be conducted in accordance with the SOP and the following procedure:

1) Prior to sample collection, sampler to conduct field screening of the soil for total organic vapors per SOP 1-10 included as **Appendix A.**
2) Sampler must be wearing nitrile gloves.
3) Sampler will use a stainless-steel hand auger or trowel as a sampling tool to collect a discrete soil sample.
4) Sampler will fill bottle ware based on laboratory specifications.
5) Sampling equipment will be cleaned with water and phosphate-free detergent between sampling locations in order to prevent cross contamination of samples.
6) If collected in situ, the coordinates (X, Y) of each endpoint sample may be collected in the field using a handheld GPS Unit (Trimble Model or equivalent) or potentially marked with flagging or stakes, if needed.

Samples shall be submitted under the standard chain of custody (COC) procedures to the laboratory. The Department of Defense Environmental Laboratory Accreditation Program (DoD ELAP) and NY ELAP

certified laboratory, ALS Environmental of Rochester, NY, will be used to analyze soil samples. Additional information on laboratories is provided in **Section 2.3** and the Quality Assurance Project Plan in **Section 3**. **Table 1** shows the laboratory analytical parameters for the soil endpoint samples:

Table 1 Endpoint Soil Sample Parameters

Analysis	Method
VOCs	EPA Method 8260
TPH – GRO/DRO	EPA Method 8015
SVOCs	EPA Method 8270

2.1.1.3 PFAS Pre-Characterization Sampling

PFAS pre-characterization sampling will be completed across the site to assess if soil excavated or disturbed may be used locally as backfill or will be required for disposal off-site. A total of one hundred and four (104) PFAS sampling locations were selected within the tank berm areas, tank containment areas, infrastructure locations, and topsoil locations as shown on **Figure 2**. No additional pre-characterization sampling locations are planned. Prior to sampling, a survey of utility locations and other structures will be performed and PFAS sampling locations will be laid out by the surveyor. Sampling locations will be field confirmed, and measures taken to avoid encountering utilities.

Samples will be collected using a metal hand auger at variable depths (0 to 2 ft, 3 to 5 ft, or 0 to 0.5 ft below ground surface (bgs)) dependent on location as described below. A total of one hundred and ten (110) samples will be collected across two sampling rounds. A summary of samples and locations for each round is provided as follows:

- The first round of sampling is intended to characterize PFAS across the site including tank berms, containment areas, infrastructure locations, and topsoil areas. Each sample type and rationale are broken down below:
  - Four (4) samples will be collected from the containment areas from 0 to 2 ft bgs, labeled as CA-1 through CA-4. Samples will be collected approximately from the low point of the containment to assess for PFAS contamination from tank releases and the effect of stormwater accumulation.
  - Twelve (12) samples will be collected from tank berm locations from 0 to 2 ft bgs, labeled as TB-1 through TB-12. Samples will be collected at two feet above the elevation of the adjacent containment area elevation. The objective of this sampling is to assess the potential for lateral migration across the containment base, including the influence of stormwater migration within these structures.
  - Sixteen (16) samples from ten (10) locations will be collected from the infrastructure area near the foam fire suppression lines at depths of 0 to 2 ft or 3 to 5 ft bgs, or both depths, dependent on location**.** These samples are labeled as INF-1 through INF-10. The objective of this sampling is to assess for PFAS impacts related to releases from the foam suppression lines.

  - Four (4) samples will be collected from the topsoil in the potential staging/stockpiling area at depths of 0 to 0.5 ft bgs. These samples are labeled as TS-1 through TS-4. The objective of this sampling is to assess for potential cross contamination in case of material storage.

- The second round of sampling in the berm areas is specifically intended to characterize the berm soils that are anticipated to be excavated, managed, and/or reused as part of the deconstruction activities. Seventy-four (74) samples will be collected from tank berm locations from 0 to 2 ft bgs, labeled by the tank berm section (TB1 through TB12) with a cardinal direction designation to denote which side of the berm was sampled (N, S, E, or W). Samples will be collected from the mid- to upper level of the slope of the tank berm. Data from this sampling are considered more representative of the soil volumes subject to disturbance within the berm areas and form the basis for soil management decisions, including reuse determinations relative to DoD criteria.

PFAS pre-characterization soil samples will be collected using a hand auger due to the shallow depths. Procedures in the NYSDEC Sampling, Analysis, and Assessment of PFAS document will be followed and measures taken to prevent cross-contamination. Soils will be analyzed for the full list of 40 PFAS compounds included in the EPA Method 1633A including the compounds included in the EPA Regional Screening Level document. The laboratory performing the PFAS analysis will be ALS Environmental of Kelso, Washington (WA) due to their DoD and NY ELAP certifications for PFAS.

The analytical data will be compared to the DoD Screening Levels for Residential Soils. All disturbed soils which meet the criteria will be reused on-site as backfill. All disturbed soils which exceed the criteria will be properly disposed of off-site. A PFAS Sampling Summary Report will provide a summary of the sampling conducted, sampling methodology, laboratory analysis, final sample locations, sampling results, and final location of disturbed soils within the PFAS-impacted area which will be sent for disposal off-site. The anticipated quantities for total site soil excavated, soils to be reused on-site, and PFAS-impacted soils to be disposed of off-site will also be included in the PFAS Sampling Summary Report. The final quantities will be included in the Project Closure Report. The final survey data that defines the horizontal and vertical extent of the PFAS-impacted soil disturbance and backfill will also be provided with the Project Closure Report.

Based on the PFAS concentrations, only soil designated for off-site disposal will be analyzed for the soil disposal suite at the frequency and for parameters required by the disposal facility. Soil disposal sampling is described in **Section 2.1.1.4.**

2.1.1.4 Stockpile Characterization Sampling

Soil will be sent off-site for disposal if it is impacted by petroleum based on the screening and sampling described in **Sections 2.1.1.1 and 2.1.1.2** or if the results of PFAS pre-characterization sampling indicate that is not reusable as described in **Section 2.1.1.3**. The soil will be stockpiled separately in a stockpile staging area for characterization and subsequent off-site disposal. The staging area for storage of impacted material as shown in **Figure 1.** Soil samples will be collected directly from the stockpile staging area, as composite samples, in order to characterize the soil for disposal. Composite samples will be created by compositing at least eight discrete samples collected from newly exposed stockpiled material located at a minimum of 12 inches below the surface of the stockpile. Sampling will be conducted using the following procedure:

1) Sampler must be wearing nitrile gloves.
2) Sampler will use stainless steel spoon, stainless steel bowl, and steel hand auger or shovel without coating as sampling tools.
3) Sampler will collect each composite sample from at least eight individual locations from the stockpiled material.
4) Each discrete sample will be taken from newly exposed soil a minimum of 12 inches deep within the stockpile and combined with the other discrete samples in stainless steel. bowl to complete each composite sample.
5) Sampler will fill bottle based on labs specifications.
6) Sampling equipment will be cleaned with water and phosphate-free detergent between sampling locations in order to prevent cross contamination of samples.

It is anticipated that PFAS-impacted soil will be shipped to Republic Services' Wayne Disposal, Inc. facility (Wayne Disposal, Inc.) located in Belleville, Michigan. Petroleum impacted soil is anticipated to be shipped to Oneida-Herkimer Solid Waste Authority Landfill (Oneida-Herkimer Landfill) in Ava, New York. Composite samples will be submitted to the laboratory for a subset of the possible required disposal environmental analyses listed in **Table 2**. Based on disposal facility requirements, not all of the analytes listed in **Table 2** may be required. Other analyses, as deemed prudent based on soil source location history, may be conducted.

The sample frequency required by Wayne Disposal, Inc. is a minimum of one sample per each 500 tons of material. The sample frequency for Oneida-Herkimer Landfill is one sample per 1,000 tons of material. Sample methodology and/or frequency may be modified based on waste profile requirements of each. Analyses shall be in accordance with the latest version of the specified test method. Laboratories used for various analytes are described in **Section 2.3.**

Samples will additionally be field analyzed with a PID for total organic vapors in accordance with SOP 10-1 included in **Appendix A**.

Table 2 Potential Waste Characterization Soil Sample Parameters

Analysis	Method
VOCs	EPA Method 8260
Semi-volatile Organic Compounds (SVOCs)	EPA Method 8270 full list
Metals – MCP 14 metals (TCLP Metals only for Heritage Landfill)	EPA Method 6010C
Polychlorinated Biphenyls (PCBs)	EPA Method 8082
Total Petroleum Hydrocarbons	EPA Method 8015C
Hexavalent Chromium if Total Chromium >100 mg/kg	EPA Method 7196A
pH/Corrosivity	EPA Method 9045D
Herbicides	EPA Method 8151
Pesticides	EPA Method 8081
Ignitibility/Flash point	EPA Method 1030
Per- and Polyfluoroalkyl Substances (PFAS)	EPA Method 1633A
Reactive Cyanide	EPA Method 9012

Analysis	Method
Reactive Sulfide	EPA Method 9034
TCLP for any analyte exceeding EPA TCLP Trigger Values	EPA Method 1312
Paint Filter Test	Not Applicable
Percent Solids	Not Applicable

Note: Further details of laboratories and laboratory requirements are in **Sections 2.3** and **3.2** respectively.

2.1.1.5 Imported Soil Samples

Imported material, including topsoil and fill soil, may be required to restore excavations to the pre-construction condition and grade. Contaminated soils will not be used as backfill. Imported materials must be approved by AFCEC before being brought to the site. A Request to Import Soil/Fill form will be submitted to NYSDEC for review and approval prior to import of any soil or fill material. Imported soils must be sampled and tested in accordance with requirements and frequencies in the NYSDEC DER-10 Guidance and the NYSDEC Sampling, Analysis, and Assessment of PFAS document. The frequency and parameters for the imported material sampling according to DER-10 guidance are included in **Table 3** below. PFAS is not included in the DER-10 guidance but will be sampled for at the same rate as SVOCs, inorganics, PCBs, and Pesticides. In accordance with the response to Request for Information (RFI) 001, the imported soil shall comply with the January 2025 Department of Defense (DoD) Office of the Assistant Secretary of Defense Memorandum. Concentrations of PFAS in imported soil will be compared to Attachment 1, DoD Screening Levels for Residential Soil, to evaluate if acceptable for use on-site.

Results are required to comply with the DER-10 NYSDEC groundwater and NYCRR Part 375 Residential Use Soil Cleanup Objectives in **Appendix B**. PFAS results must meet DoD Screening Levels for Residential Soil criteria. The material will also be evaluated in accordance with the earthwork specifications. In accordance with the criteria outlined in DER-10 Section 5.4(e)5, imported materials such as crushed stone and riprap are not required to be sampled, provided that they consist of gravel, rock, or stone considered virgin material from a permitted mine or quarry and contain less than ten percent by weight of material that would pass through a size 80 sieve. A Request to Import Soil/Fill form and sieve results will be submitted to NYSDEC for review and approval prior to import.

Table 3 DER-10 Imported Soil Sample Parameters

Soil Quantity (cubic yards)	Recommended Number of Samples per Analyte	
	VOCs	PFAS, SVOCs, Inorganics, PCBs, and Pesticides
0-50	1	1
50-100	2	1
100-200	3	1
200-300	4	1
300-400	4	2
400-500	5	2
500-800	6	2
800-1,000	7	2
1,000	Add an additional 2 VOC and 1 composite for each additional 1,000 cubic yards	

The discrete and composite samples will be collected in accordance with the following methods:

- The VOC samples will be collected as grab samples. The VOC analysis list will be in accordance with the DER-10 standards listed as **Appendix B**.
- Samples for PFAS, SVOCs, inorganics, PCBs, and pesticides are collected as three-to-five-part composite samples. Thorough mixing of the soil will be completed before compositing the samples.

One sample must be collected from each imported fill sources, with the exception of gravel or rip rap, and volumes imported tracked. Weight slips, sampling results, and other imported fill data will be included in the Project Closeout Report.

2.1.2 Materials Testing

Two sections of the underground fuel transfer piping are potentially wrapped in asphaltic wrap which may be asbestos containing material (ACM) or may contain PCBs. If the wrap observed, two samples of pipeline wrap will be collected for analysis of total PCBs by EPA Method 8082A, TCLP PCBs by Method 8081, and asbestos using a bulk asbestos polarized light microscopy (PLM) methodology. The two samples of pipeline wrap would be collected from each pipeline section or if applicable, where the appearance of the wrap changes. The analysis of the ACM pipeline wrap material will be completed by Adirondack Environmental Services, Inc. of Albany, New York (Adirondack Environmental).

Additional building materials sampling is not required due to the hazardous material survey previously conducted for lead, PCBs, and asbestos. If potential ACM, that was not previously characterized in the hazardous material survey, is identified during building demolition, then the material would be assessed by a licensed asbestos professional.

2.1.3 Liquid Waste Testing

The fuel pipeline associated with the Buckeye property will be pigged prior to removal. The estimated volume of contaminated petroleum rinsate is 3,000 gallons since the pipelines have been previously cleaned and emptied by site background documents. The rinsate collected will be characterized for disposal based on Site information or will be sampled by CDM Smith and submitted to ALS Environmental for disposal characterization per facility requirements. Potential disposal parameters are included in **Table 4.**

Water associated with potential petroleum or PFAS contaminated soil excavations and the 5 gallons of incidental water associated with the removal of up to 25 lf of fuel lines within the Verona property will be captured and stored in a 20,000-gallon frac tank or other suitable containers. Dewatering water from contaminated areas will be containerized and disposed. Dewatering water from uncontaminated areas will be managed in accordance with the EPP and SWPPP, provided under separate cover. Once the frac tank is full, the water collected will be sampled by CDM Smith and submitted for laboratory analysis for disposal characterization per facility requirements. Anticipated waste characterization includes but are not limited to parameters identified in **Table 4.**

Table 4 Liquid Waste Characterization Sample Parameters

Analysis	Method
Volatile Organic Compounds	EPA Method 8260
Semi-volatile Organic Compounds	EPA Method 8270 full list
Metals – MCP 14 metals	EPA Method 6010C
Total Petroleum Hydrocarbons	EPA Method 8015C
PFAS	EPA Method 1633A

2.2 Sampling and Analysis of Waste

Demolition waste will include building foundations and structural materials, associated building electrical components, aboveground and below-ground utilities, tank materials, and all other waste streams. Sampling of building material waste is not required due to the hazardous materials survey conducted previously identifying materials containing lead, asbestos, and PCBs. Results of the hazardous material survey are provided in the WMP submitted under separate cover.

Asbestos sampling will be conducted for samples of the pipeline wrap and any uncharacterized or suspected ACM material. Any unanticipated asbestos sampling will be conducted in accordance with the Asbestos Hazard Abatement Plan, provided under separate cover.

All potentially hazardous solid waste streams that are not subject to a specific exclusion (e.g., scrap metal) or subject to special rules (e.g., lead-acid batteries) must be characterized in accordance with the requirements of 40 CFR 261 and New York Codes, Rules, and Regulations for hazardous waste (NYCRR Part 370 through 371). Waste determination will be based on user knowledge of the processes and materials used, and analytical data when necessary.

Further details about waste management are provided in the WMP, provided under separate cover. Waste Management areas include the stockpile and laydown areas. As described in the WMP, the generator will be responsible and liable for hazardous waste streams.

Analytical results and laboratory reports of waste analysis will be provided to the generator and AFCEC.

2.3 Laboratory Analysis

The following laboratories will be used based on the type of sample collected. Both ALS Environmental labs have the NY ELAP and DoD certifications.

- ALS Environmental of Rochester, NY will be used for soil endpoint sampling and soil disposal sampling.
- ALS Environmental of Kelso, WA will be used for PFAS soil analysis due to certifications.
- ALS Environmental of Middletown, PA will be used for analysis of TPH due to certifications.
- Adirondack Environmental of Albany, NY will be used for pipeline wrap sampling. Adirondack Environmental has the NH ELAP certification but does not have the DoD certification. Due to the difficulty identifying a lab capable of analyzing ACM material for non-asbestos parameters such

as PCBs with the DoD certifications, Adirondack Environmental will be requested for approval in a Request for Information (RFI).

DoD and NY ELAP certifications for the ALS Environmental laboratories are provided in **Appendix C**. Alternate laboratories may be required in the event of laboratory closure or loss of certification. Alternate laboratories with DoD and NY ELAP certifications will be identified.

2.4 Sample Collection, Handling, And Preservation

Samples (including quality assurance/quality control [QA/QC] samples specified in the QAPP) will be properly labeled and identified, and information will be recorded in a field logbook and on a laboratory-supplied chain-of-custody (COC) form. Additional details regarding QA/QC samples, frequency and protocols, sample labeling, and sample custody are provided in the QAPP. Care will be taken to ensure that the laboratory's pre-preserved containers are not overfilled during sampling.

2.5 Sample Identification

Collected samples will be identified on sample containers and chains of custody immediately following sample collection. The chain of custody will, at a minimum, identify the following:

- A unique sample number;
- The date the sample was collected;
- Analyses requested; and
- Sampling personnel.

Sample identification for all soil and pipeline materials samples will be as follows:

- Two or three characters to identify sample location type:
  - END- for endpoint soil sample
  - For the PFAS pre-characterization soil samples, labeling will vary based on location as follows:
    - TB for tank berm
      - Cardinal direction designations will be used for the second set of PFAS pre-characterization samples to indicate which side of a tank berm the sample is located on. For instance, the first sample taken at Tank Berm No. 02 on the north side of the berm would be labeled TB2-N1 and the second sample taken at Tank Berm No. 07 on the west side of the berm would be labeled TB7-W2.
    - CA for containment area
    - INF for infrastructure
    - TS for topsoil
  - PW- for pipeline wrap sample
- A number to identify the location of samples collected samples (e.g. TB-1, TB-2, TB-3, etc.)

- For the PFAS pre-characterization and endpoint sampling, two digits will be used to indicate the sample depth after the first two digits to indicate sample number. For the infrastructure locations, two sample depths will be collected from each location at 0-2 ft and 3-5 ft. For instance, the first infrastructure PFAS pre-characterization sample (INF-1) would have two separate samples at two depths labeled as "INF-1-0-2" for the 0-2 ft depth and "INF-1-3-5" for the 3-5 ft depth.
- Six-digit number to identify the date of the sample collected (MMDDYY)

For example, the third PFAS tank berm sampling location collected at a 0-2 ft depth on 5/22/2025 will be labeled as "TB-03-0-2-052225." The first endpoint soil sample theoretically collected on 7/4/2025 will be labeled as "END-01-070425."

Sample Identification for field quality control samples as described in Section 3.3 is as follows.

- Field Duplicates will be labeled as "Duplicate-01-Date" with the number to indicate the order of samples collected. The date will be labeled as MMDDYY.
- Equipment Blanks will be labeled as "Equipment Blank-01-Date" with the number to indicate the order of samples collected. The date will be labeled as MMDDYY.
- Trip Blanks will be labeled as "Trip Blank-01-Date" with the number to indicate the order of samples collected. The date will be labeled as MMDDYY.

2.6 Sample Characterization and Shipping

Prior to the sampling activities, sample containers will be pre-cleaned by the laboratory and delivered to the field representative. The field representative will place a label on the sample containers. As samples are collected, the label will be used to record the sample identifier, date and time of sample collection, and the name of the person collecting the sample. After the samples have been collected, they will be kept in a cooler with ice and will be delivered to the laboratory under proper chain of custody through the laboratory's courier service.

2.7 Bottleware and Holding Time Requirements

Bottleware, preservation, and holding time required for soil, groundwater, and pipeline material analysis are provided in the following sections.

2.7.1 Pipeline Closure Samples

Bottleware, preservation, and holding times for Endpoint sample analytes are provided in **Table 5** below. The hold times for each of the parameters are 14 days and the samples will be submitted to the lab in time for analysis within that period.

Table 5 Endpoint Soil Sample Bottleware, Preservation, and Holding Time

Analysis	Bottleware	Preservation	Holding Time
VOCs	3 - 40 milliliter (mL) vials 2-ounce (oz) jar	1 Methanol – 2 DI water	14 days
TPH DRO	4 oz clear glass jar	None	14 days

Analysis	Bottleware	Preservation	Holding Time
TPH GRO	2 oz clear glass jar	None	14 days
SVOCs	4 oz clear glass jar	None	14 days

Per the laboratory required volumes, multiple compounds can be analyzed from one 8 oz glass jar. Soil for TPH DRO and total lead analysis can be completed from one 8oz jar of material. VOCs and GRO analysis will be completed from the separate vials as shown in **Table 5.**

2.7.2 PFAS Pre-Characterization Soil Samples

The bottleware, preservation, and holding times for PFAS Characterization samples are provided in **Table 6** below.

Table 6 PFAS Pre-characterization Soil Sample Bottleware, Preservation, and Holding Time

Analysis	Bottleware	Preservation	Holding Time
PFAS	250 mL plastic nalgene	None	28 days

2.7.3 Waste Characterization Soil Samples

Bottleware, preservation, and holding times for stockpile waste characterization soil samples are provided in **Table 7** below. The shortest hold time is for reactive sulfide at 7 days and the samples will be submitted to the lab in time for analysis within that period. The hold time for pH is recommended for analysis as soon as possible. Based on discussion with the disposal facilities, results are still acceptable if not analyzed within the 24-hour hold time.

Table 7 Waste Characterization Soil Sample Bottleware, Preservation, and Holding Time

Analysis	Bottleware	Preservation	Holding Time
VOCs	3 - 40 milliliter (mL) vials 2-ounce (oz) jar	1 Methanol – 2 DI water	14 days
SVOCs	4 oz. jar	None	14 days
Metals – MCP 14 metals	2 oz. jar	None	6 months
PCBs	4 oz. jar	None	14 days
Total Petroleum Hydrocarbons	8 oz. jar	None	14 days
Hexavalent Chromium if Total Chromium >100 mg/kg	4 oz. jar	None	30 days
pH/Corrosivity	4 oz. jar	None	24 hours
Herbicides	8 oz. jar	None	14 days
Pesticides	8 oz. jar	None	14 days
PFAS	8 oz. jar	None	28 days
Ignitibility/Flash point	4 oz. jar	None	14 days
Reactive Cyanide	4 oz. jar	None	14 days
Reactive Sulfide	4 oz. jar	None	7 days

Per the laboratory required volumes, multiple compounds can be analyzed from one 4 oz glass jar. For each of the compounds in **Table 7**, the total glassware needed is as follows:

- One 2 oz jars for VOCs (in addition to vials) and GRO
- Three 40 mL vials for VOCs
- One 8 oz jar for pH, hexavalent chromium, ignitability, and reactivity
- One 8 oz jar for PCBs, pesticides, herbicides, SVOCs, and DRO
- One 4 oz jar for metals and mercury
- One 8 oz for TPH (Analyzed at ALS Environmental - Middletown, PA)
- One 250-mL plastic jar for PFAS (Analyzed at ALS Environmental – Kelso, WA)
- 2 oz jar for TCLP VOCs analysis contingent on results of total VOCs
- 8 oz jar for TCLP analysis (SVOCs, pesticides, herbicides, metals) contingent on results of total contaminants

2.7.4 Pipeline Material Sampling Bottleware

The following list of bottleware will be filled for the pipeline wrap PAH fingerprint samples and potential samples of paint or other coating from pipeline if encountered.

Table 8 Pipeline Material Sample Bottleware, Preservation, and Holding Time

Analysis	Bottleware	Preservation	Holding Time
PCBs (Total and TCLP)	Gallon bag (double bagged) – Minimum weight of 1 oz	None	6 months
Asbestos	Gallon bag (double bagged) – Minimum weight of 1 oz	None	None

2.7.5 Liquid Waste Characterization Sample Bottleware

The following list of bottleware will be filled for anticipated liquid waste sample parameters. The shortest hold time is for SVOCs at 7 days and the samples will be submitted to the lab in time for analysis within that period.

Table 9 Liquid Waste Characterization Sample Bottleware, Preservation, and Holding Time

Analysis	Bottleware	Preservation	Holding Time
VOCs	3 – 40 milliliter (mL) clear glass vials	Hydrochloric acid (HCl)	14 days
SVOCs	2 – 250 mL amber glass bottles	None	7 days
Metals – MCP 14 metals	2 – 125 mL plastic bottles	Nitric Acid (HNO3)	28 days (mercury) 6 months (metals)
TPH	250 mL amber glass bottle	None	7 days

2.8 Chain of Custody (COC)

Thorough sample custody procedures will be followed to provide a documented, legally defensible record that can be used to track samples from initial collection to final report filing. Changes to the COC form will be initialed and dated. Sample custody will be traceable by documenting sampling information in the project field logbook, field data sheets, sample labels, and/or the COC form.

A sample is considered to be under custody if it is:

- In actual possession of the person responsible
- In view following physical possession
- Locked or sealed to prevent tampering
- In a secure area

Sample custody will be maintained on a COC form provided by the laboratory. Information on the COC form will be checked against the sample labels prior to sample packaging and shipment. Upon transfer of custody, the COC form will be signed (including date and time) by the sampler and the laboratory courier receiving the samples. COC forms received by the laboratory will be signed and dated by the receiving laboratory representative.

The custodian at the laboratory will note the condition and integrity of the samples received. The custodian will also maintain a tracking record of the samples that will follow each sample through various stages of laboratory processing. Laboratory sample tracking records will include dates of sample preparation, extraction, and analysis. These records will be used to verify sample holding time compliance.

2.9 Calibration Procedures and Frequency

Field equipment (i.e., photoionization detectors, handheld colorimeters, etc.) will be calibrated daily, at a minimum, before use in the field. The calibration procedures will follow standard manufacturers' instructions. Instruments will be monitored for evidence of non-reproducible or erratic reading and recalibrated as deemed necessary by field personnel.

2.10 Equipment Decontamination

Field decontamination for the soil, water, and pipeline materials sampling will be minimized to the extent practical by using disposable equipment or pre-cleaned reusable equipment. If reusable sampling equipment is used, they will be decontaminated before use. The decontamination procedure will consist of a wash with a phosphate-free detergent and potable water, a potable water rinse, and a final distilled water rinse. The CDM Smith SOP for equipment decontamination is included within **Appendix A**. Any water generated from decontamination will be drummed for subsequent characterization and disposal.

For the PFAS pre-characterization sampling, sampling equipment decontamination will be completed in accordance with the April 2023 NYSDEC Sampling, Analysis, and Assessment of PFAS Guidance Document (NYSDEC 2023). A standard two-step decontamination using detergent (alconox) and PFAS-free water is considered acceptable according to the guidance.

2.11 Documentation of Field Activities

Field activities will be documented using a field logbook and chain of custody forms. The field logbook will have sequentially numbered pages and field notes will be recorded in black ink. The field team leader will maintain a field logbook during field work at the Site.

The following information will be recorded in the field logbook:

- Project name or number
- Names and affiliations of sampling personnel
- Date(s) of sampling and site location/address
- Sample IDs, associated PID readings and observations on evidence of release
- PID readings as necessary based on indicators of contamination
- Weather condition during field work
- A chronological record of the field activities performed
- Field duplicate sample identifications
- The names of Site visitors, their affiliation, and the purpose of their visit
- Any other pertinent field observations

Due to the high volume of samples collected throughout the project, a cumulative electronic sample tracking sheet will be maintained documenting sample ID, date collected, visual/olfactory observations, lab ID, date lab data received, and exceedances of the NY DER-10 Standards.

2.11.1 Weekly Reports

Field activities from the Daily Construction Inspection Reports will be summarized and submitted as Weekly Reports to NYSDEC and New York State Department of Health (NYSDOH). These Weekly Reports will include:

- Progress made during the week
- Locations of work
- Quantities and descriptions of materials imported to and exported from the site
- Summary of any complaints received
  - Including names and phone numbers
- Community Air Monitoring Data
  - Including if any CAMP exceedances occurred and what mitigation responses were implemented
    - CAMP exceedances will be reported to NYSDEC and NYSDOH the same day, or the next business day if after hours, along with the reason for exceedance, corrective actions completed, and if the action was effective.

- Notable site conditions
- Work plan deviations

2.12 Data Documentation and Reporting

Chemistry data packages will be provided periodically by the laboratory as samples are collected. This is further detailed in **Section 3.5.**

A Chemical Data Final Report will be submitted as a standalone document after project completion. It will include all chemical sampling and analysis data collected during the project. This is further detailed in **Section 4**.

3.0 Quality Assurance Project Plan (QAPP)

This QAPP provides quality assurance and quality control guidance for sampling associated with the demolition of the Defense Fuel Support Point located in Verona, New York. The QAPP will be used in conjunction with the FSP and the following Site-specific work plan documents to confirm that the data quality objectives defined for the monitoring activities noted above will be met:

- Waste Management Plan
- Accident Prevention Plan / Site Safety and Health Plan

3.1 Data Quality Objectives

Data collected during these construction activities will be used to evaluate fuel releases from the tanks or pipelines on-site, levels of PFAS in pre-characterized areas, and soil disposal. The data quality objectives (DQO) for samples collected during the construction activities are primarily to provide data of sufficient quality to assess contamination in soil indicating a release from tanks or the pipeline. To achieve these goals, samples will be analyzed for the parameters identified in the FSP. Quality assurance/quality control checks to be implemented in the field and in the laboratory are described below.

3.2 Analytical Laboratory Requirements

As discussed in **Section 2.3** the proposed laboratories for this project are ALS Environmental and Adirondack Environmental. Laboratory certifications are provided in **Appendix C.** The QC manual for ALS Environmental is provided in **Appendix D**. Adirondack Environmental does not distribute their QA manual outside of their accrediting facilities.

3.2.1 Laboratory Detection Limits

When environmental analytical data is required to be compared with predetermined "action levels" or other regulatory requirements, the reported laboratory method detection limits are of high importance. Analytical methods listed for this project should have a method detection limit of at least 50% below the action level. A table of laboratory method detection limits and reporting limits for both ALS Environmental and Adirondack Environmental is included as **Appendix E** in comparison to the DER-10 Residential standards if applicable. All soil detection limits for ALS Environmental are provided. For Adirondack Environmental pipeline wrap sampling, PCB detection limits are provided, and they report to 1% asbestos content. Each of the method detection limits are in conformance with the NY DER-10 Standards.

It is recognized that analytical detection limits are sample specific and are affected by sample volumes and the need for sample concentration or dilution. These circumstances will be accounted for in the review and interpretation of the analytical results.

3.2.2 Internal Laboratory Quality Control

Two separate levels of QC exist for all samples collected in support of this project, internal laboratory QC and field QC. Field QC is discussed in **Section 3.3.**

Internal laboratory QC is a function of the individual laboratory's QA/QC plan. A laboratory's QA/QC plan contains specific criteria governing how analyses are conducted and provides information on the laboratory's performance and control of the sources of error that exist in the lab. Included in the plan are requirements for the type and frequency of QC check samples that are to be analyzed on a routine basis.

All "Priority Pollutant" type laboratory analysis conducted for this project must include the following QC check samples:

- Surrogate spikes (where appropriate)
- Matrix Spike and Matrix Spike Duplicate (MS/MSD) or laboratory duplicates and laboratory control samples (where appropriate)
- Method blanks (Field Reagent Blanks, Laboratory Reagent Blanks, Laboratory Fortified Blanks)
- Calibration confirmation (Continuing Calibration Checks)
- Internal Standards

The laboratory may adhere to the analysis frequency specified in their QA/QC plan for these check samples, provided that the specified frequency is equal to or greater than the frequency specified below in **Table 10.**

Table 10 Laboratory Sample Frequency

QC Check Sample	Frequency of Analysis
Method Blanks	One per analytical batch or one per every twenty samples
Matrix Spike/Matrix Spike Duplicate (MS/MSD)	One per analytical batch or one per every twenty samples
Surrogate Spikes	One per every trace organic analysis

Note: The combination of laboratory duplicates and laboratory control samples may be substituted for MS/MSD analysis for parameters where they are more appropriate.

Internal laboratory QC for toxicity samples will comprise reference toxicant tests for each species and test method, and calibration checks.

3.2.3 Laboratory QC Deliverables Package

The following QC data is required to be reported per laboratory data package at a minimum:

- Case narrative
- Chain of Custody Forms
- Sample Log-In Form
- Sample Receipt Information

- Sample Results
- All applicable methods: QC information and raw data (e.g., laboratory blanks, duplicates, calibrations, ion ratios, internal standards, surrogates, etc.)
- MS/MSDs for all priority pollutant parameters. Frequency per the assumptions detailed in **Section 3.2.2**.

No specific acceptance criteria for blank and spike recoveries will be set forth here; however, all laboratories are expected to conform to the laboratory SOP, method specifications, and *Department of Defense Quality Systems Manual for Environmental Laboratories*. CDM Smith expects laboratories to reanalyze samples if quality control samples fail to meet method/SOP specifications.

The QC data may be presented as a QC section within the laboratory data package, or it may be integrated with the results.

3.2.4 Laboratory Performance

Analytical laboratories will be provided with this SAP (and contained QAPP) prior to sample collection and submittal.

The laboratory will apply laboratory qualifiers if QA/QC parameters are outside of method criteria and/or laboratory SOP criteria. The laboratory will review data prior to its release from the laboratory. Outlying data will be flagged in accordance with laboratory standard operating procedures, and corrective action will be taken to rectify the problem.

Further details on laboratory data verification and data validation by CDM Smith is provided in **Section 3.4**.

3.3 Field QA/QC

Field QA/QC is not required for waste characterization or PFAS pre-characterization samples but will be performed for endpoint samples.

The field QC program consists of QC check samples that are submitted to the laboratory for analysis "blind" along with actual environmental samples. These samples provide QC information for the entire sampling event, from the actual sampling and handling through laboratory analysis. They can provide the best overall estimate of the total uncertainty associated with the sampling event.

Program generated quality control samples collected in support of this project are:

- Duplicate samples
- Equipment blanks (where appropriate)
- Trip blanks

3.3.1 Equipment Blanks

An equipment blank is a sample collected using clean media placed over a decontaminated piece of sampling or other equipment to assess or document the thoroughness of the decontamination process.

An equipment blank will be collected from the decontaminated soil sampling equipment by using clean sand from a virgin source of material over the sampling equipment and into laboratory-supplied sample containers. An equipment blank will be collected from the decontaminated water sampling equipment by using distilled water over the sampling equipment and into laboratory-supplied sample containers.

Equipment blanks will only be collected when non-dedicated sampling equipment is used. Equipment blanks will be collected at a frequency of 1 per 20 of the total number of samples from non-dedicated sampling equipment. No equipment blanks will be collected from dedicated equipment or from equipment not used for sample collection.

3.3.2 Trip Blanks

A trip blank containing deionized water will be prepared by the lab for VOC analysis only and will be transported to the Site along with the other sample containers. Trip blanks will accompany a set of sample containers received from the lab through the entire sample collection process and will be shipped with the collected samples back to the laboratory. Trip blanks will be returned to the laboratory without opening and will serve as a check for potential VOC contamination originating from sample transport or shipping methods and from Site conditions.

One trip blank will be used during construction activities. Trip blanks will remain in the cooler and with the samples at all times.

3.3.3 Field Duplicate Samples

Field duplicates are samples that are divided into two portions at the time of sampling. Field duplicate samples provide information regarding sample homogeneity, handling, shipping, storage, preparation, and analysis. Field duplicate samples will be collected at a frequency of 1 per 20 of the total number of samples (i.e., one field duplicate per twenty samples). Field duplicate samples will be collected for each method listed on the COC and for each media being sampled during sampling. The blind field duplicate samples will be assigned fictitious sample identifications to disguise their true identity and analyzed for the same analytical parameters as their respective samples. The correct sample identification number will be recorded in the field logbook and on the field data sheet.

3.4 Data Validation

Data validation will be conducted for soil endpoint sampling and PFAS pre-characterization sampling only to assess the quality of the laboratory analytical data with the primary objective to determine if the data, as presented, meets the project specific criteria for data quality and data use. Data validation will not be completed for soil disposal sampling, imported material sampling, or pipeline materials sampling.

A third-party company will be performing data validation for the project and will review the data packages to determine completeness and compliance. A narrative describing how the data did or did not meet the validation criteria is part of the data validation procedure. The validation assessment will describe the overall quality of the data, and the data validation report/technical memorandum will provide a written statement upon completion of the validation indicating whether or not the data is valid and usable and will include a percent completeness value of usable data.

Data usability will be reviewed, and a Data Usability Summary Report will be prepared following the data review guidance in the general procedures found in the USEPA National Functional Guidelines (USEPA, 1999) and the USEPA Region I Environmental Data Review Program Guidance (USEPA, 2018).

The laboratory data packages will be verified/evaluated by CDM Smith and the third-party data validator to ensure the data is usable and defensible for project purposes. If serious data quality issues are identified, AFCEC be notified to discuss potential data gaps and the plan moving forward. The laboratory may also be contacted to discuss the deficiencies. Laboratory results shall be supported by sufficient back-up data and QA/QC results to enable the reviewer to conclusively determine the quality of the data.

3.5 Chemistry Data Package

A chemistry data package will be provided periodically throughout the soil and groundwater sampling. The package will include:

- Final laboratory reports and validated data tables.
- QA/QC results. Field duplicate sample comparison to corresponding primary sample results.

Electronic Data Deliverables (EDDs) – All laboratory data developed for this project will be included in a construction completion report. In addition, any data provided to the regulatory agencies in the form of a report will be provided in their EDD format.

Category B Reports – Laboratory data for all pre-characterization, imported soils, and endpoint samples will be provided in the form of Category B Laboratory Reports.

Data storage – The final laboratory reports and validated data tables will be loaded to an approved server for storage.

3.6 Project Organization

An organizational chart and table showing the reporting relationships of Quality Control personnel involved in sampling and analysis under this contract are provided below. The Contractor Quality Control Manager (CQCM) will support construction quality efforts. The Project Manager and Environmental Manager/Project Technical Leader will conform to the direction of the CQCM on any matters of Quality. The responsibilities, authorities, and reporting requirements of these positions are identified in the following sections. Resumes, Letters of Duty and Authorization for the personnel listed were provided in the Contractor Quality Control Plan, provided under separate cover.

Table 11 Summary of the Roles and Responsibilities for the QA Team

Position	Role	Responsibility
Construction Quality Control Manager (CQCM) **Jeffrey Mullen**	▪ Enforces strict conformance to contract and specification ▪ Conducts 3 phase QC meetings ▪ Completes quality reports ▪ Enforce hold points as required ▪ Manage sub-contractor CAPs	▪ Stop work authority ▪ Overall responsibility for quality on all project efforts ▪ Enforce three phase control on all work ▪ Completes daily QC reporting ▪ Facilitate weekly QC meetings

Position	Role	Responsibility
	▪ Enforce marine fill and wastewater sampling procedures/collection ▪ Proactively identify deficient work and required CAP enforcement ▪ Manage CDM QC requirements in project execution ▪ Manage site QC program	▪ Monitors field tests ▪ Documents QC logs, deficiencies, and CAPs ▪ Maintains Red-line drawings and ASIs ▪ Responsible for proper execution of quality corrective actions ▪ Manage a chain of custody logs. ▪ Manage the submitting process (revie and submittal) (gatekeeper) ▪ Ensure all materials meet contract and specification prior to receiving on site
Project Manager **Nicole Barry** **Rene Larson**	▪ Enforces Contract adherence and PMP requirements with input from CQCM, Safety and PTL ▪ Prepares/reviews/oversees Change Management and Project Schedule ▪ Works with PTL to obtain resources to support the project ▪ Supports audit program and lessons learned ▪ Facilitates monthly or weekly schedule/progress meetings with stakeholders	▪ Stop work authority ▪ Overall Project conformity to contract and schedule ▪ Supervises and manages the PMP ▪ Reports to CDM Senior Management ▪ Implement lessons learned ▪ Document deviations and changes including ▪ Keep Stakeholders informed of progress ▪ Sub-contractor management
Project Technical Leader / Environmental Manager **Amy Picunas**	▪ Ensures project work plans conform to the requirements of the project specifications ▪ Ensure environmental and chemistry related goals of the program are attained.	▪ Responsible for environmental sampling and analysis QC processes and procedures execution on the project. ▪ Implement procedures for laboratory corrective actions. ▪ Conduct internal review of all chemistry deliverables prepared by CDM ▪ Sign off on the final investigation reports, including the data validation technical memo.
Data Validator **Third-Party**	▪ Data Validation (PFAS pre-characterization and endpoint soil samples only)	▪ Ensuring laboratory analysis, data verification/evaluation, and data processing are performed. ▪ Ensuring laboratory data packages, and data deliverable procedures are performed in accordance with DQO. ▪ Prepare data validation technical memo per Sections 3.4 and 4 of this SAP.
Field Team **CDM Smith**	▪ Conduct soil, groundwater and pipeline material samples	▪ Collect samples and send samples for analysis in accordance with DQO.

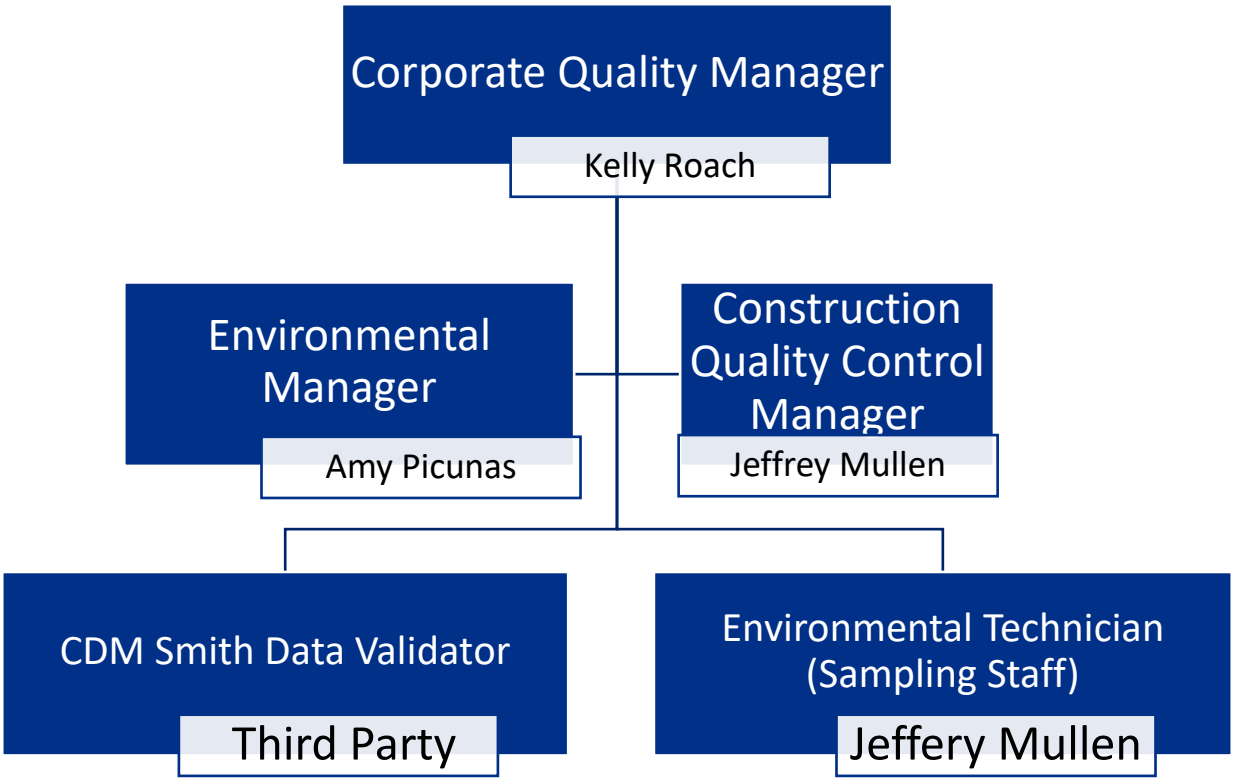


Figure 3 Quality Assurance Project Organizational Structure

Copies of the AFCEC approved SAP will be provided to all contracted laboratories, the field sampling crew, and the third-party data validation contractor.

4.0 Schedule and Reporting

Upon AFCEC approval, implementation of this SAP will begin. CDM Smith has informed facility ownership and management of the proposed sampling program. CDM Smith will verbally communicate progress, schedule, and potential access issues to the AFCEC Project Manager. A Sample Tracking Sheet will be maintained by CDM Smith, documenting sample collection date/time, sampler information, date results received, and a summary of results in comparison to applicable criteria. The Sample Tracking sheet will be shared with AFCEC upon request.

CDM Smith will complete and submit a Project Closeout Report to AFCEC and NYSDEC within 60 days of completion of the completion of demolition activities. The Project Closeout Report will include results of field soil screening, soil, and pipeline wrap sampling, and soil disposal documentation. Releases encountered during demolition and IRA processes including additional soil removal will also be documented in the closeout report.

The Chemical Data Final Report (CDFR) will be submitted as an appendix to the Project Closeout Report that includes the results of the soil, rinsate, and pipeline materials samples. This report will be developed as a brief Technical Memorandum. The report will include a summary of quality control practices employed and all chemical parameter measurement activities after project completion. The CDFR will contain the following:

- Summary of project scope and description.
- Summary of any deviations from the design chemical parameter measurement specifications.
- Summary of chemical parameter measurements performed as contingent measurements.
- Summary discussion of resulting data including achieving data reporting requirements.
- Summary of achieving project specific DQO.
- Presentation and evaluation of the data to include an overall assessment on the quality of the data for each method and matrix.
- Internal QC data generated during the project, including tabular summaries correlating sample identifiers with all blank, matrix spikes, surrogates, duplicates, laboratory control samples, and batch identifiers.
- A list of the affected sample results for each analyte (indexed by method and matrix) including the appropriate data qualifier flag (J, B, R, etc.), where sample results are negatively impacted by adverse quality control criteria.
- Summary of field and laboratory oversight activities, providing a discussion of the reliability of the data, QC problems encountered, and a summary of the evaluation of data quality for each analysis and matrix as indicated by the laboratory QC data and any other relevant findings.
- Appendices containing: (1) Chemistry data package, and (2) Results of the Chemical Quality Assurance Report (CQAR). The CQAR is a government produced document achieved through the inspection and analysis of QA samples and corresponding project sample data. The CQAR will

include review of all QC parameters such as holding times, detection limits, method blanks, surrogate recoveries, matrix spikes and duplicates, and inter-laboratory and intra-laboratory data comparisons.

5.0 References

1) EA Engineering, 2025. Project Specification Index, 100% Design Submittal, Demolition of Defense Fuel Support Point, Verona, New York. February 2024, Updated January 2025.

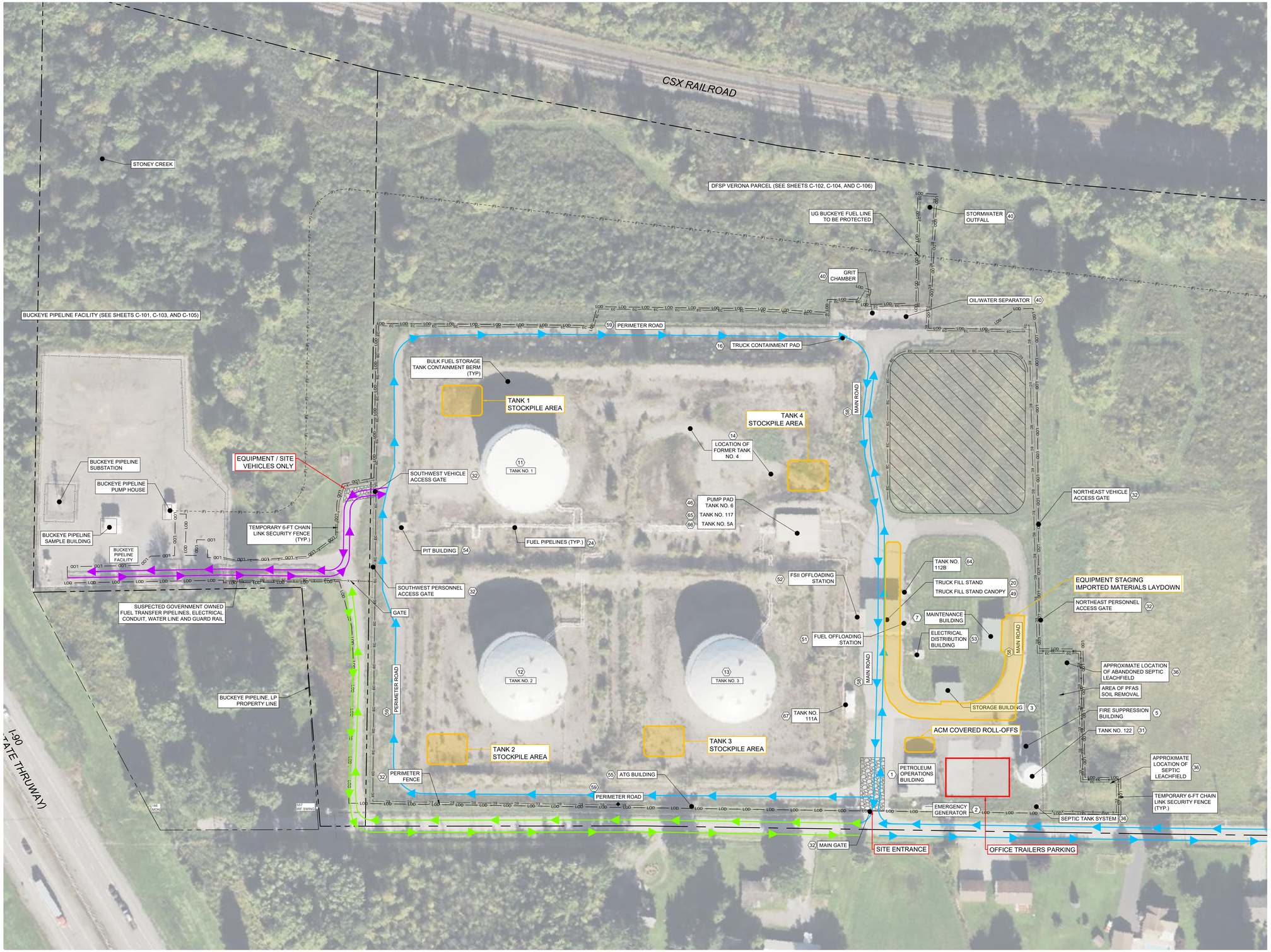
2) EA Engineering, 2025. *Statement of Work, Conus Worldwide Engineering and Construction (WEC), Demolition of Defense Fuel Support Point, Verona, New York*. 8 January 2025.

3) HSE Consulting Services, 2018. Report of Findings for Hazardous Materials Assessment, Verona DFSP, 5449 West Main Street, Verona, New York. 29 November 2018.

4) NYSDEC, 2023. *Sampling, Analysis, and Assessment of PFAS Guidance Document.* April 2023.

5) NYSDEC, 2010. *Department of Environmental Remediation (DER-10), Technical Guidance for Site Investigation and Remediation.* 3 May 2010, Revised 9 April 2019.

Figures



1" = 60'

30 0 60

N

NOTES:

1. IF NECESSARY, ASSUMED PFAS IMPACTED SOIL WILL BE STOCKPILED WITHIN THE ASSUMED PFAS IMPACTED AREA.
2. THE USE OF THE BUCKEYE ACCESS ROADS SHALL ONLY SUPPORT THE REMOVAL OF INFRASTRUCTURE ON THE BUCKEYE PIPELINE PROPERTY.

LEGEND:

- STOCKPILE / STAGING / LAYDOWN AREAS
- TRUCK HAULING ROUTE
- BUCKEYE PIPELINE PROPERTY TRUCK HAULING ROUTE
- BUCKEYE PIPELINE PROPERTY EQUIPMENT ACCESS ROUTE

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CDM Smith

Figure 1
SITE LAYOUT
January 2026

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1" = 40'
20 0 40

N

NOTES:

1. BASE PLAN SOURCED FROM FEBRUARY 2024 EA ENGINEERING 100% DESIGN DRAWINGS, DFSP DECONSTRUCTION DESIGN, VERONA.
2. SAMPLING LOCATIONS ARE APPROXIMATE.
3. BOUNDARIES OF EXCAVATION AREAS ARE APPROXIMATE.
4. EXCAVATED SOILS WITHIN THE PFAS-IMPACTED AREA WILL BE DISPOSED OF OFFSITE.

LEGEND:

- FIRST SAMPLING EVENT - MAY 2025
- SECOND SAMPLING EVENT - SEPTEMBER 2025
- PROPOSED EXCAVATION AREA
- PFAS-IMPACTED AREA
- SOILS FOR REUSE THROUGHOUT SITE
- SOILS FOR REUSE IN PLACE

CDM Smith

Figure 2
PFAS Sampling Plan
April 2026

Appendix A CDM Smith Technical Standard Operating Procedures

Surface Soil Sampling

SOP 1-3
Revision: 10
Date: August 2020

Approved: Ernest Ashley **Technical Review:** Robert Alexander

1.0 Objective

The purpose of this technical standard operating procedure (SOP) is to define the general techniques and requirements for the collection of surface soil samples.

2.0 Background

The techniques and protocols described herein may be used to collect other surface media, including sediment and sludge.

2.1 Definitions

Note: Definitions are often promulgated or codified in state or local statutes, regulations, or ordinances and can vary between regulatory agencies. Definitions should be verified against the definitions provided by agencies regulating the work when applicable.

Grab Sample - A discrete portion of sample material or an aliquot taken from a specific sample location at a given point in time

Composite Sample - A mixture of individual samples (grab samples) collected over a specific interval

Incremental Sampling – A sampling and laboratory processing methodology designed to obtain a single sample for analysis that has an analyte concentration representative of the decision unit. The additional steps beyond the collection of surface grab samples is beyond the scope of this SOP.

Spoon/Scoop - A small stainless steel, Teflon® or Teflon® -lined, or pre-cleaned plastic utensil measuring approximately 15 cm (6 inches) in length with a stem-like handle (for manual operation). Samples are collected using a scooping action.

Surface Soil - Soils generally defined as the soils extending from ground surface to approximately 30 centimeters (cm), or approximately one foot, below ground surface (bgs). Surface soil samples are commonly collected from 0 to 5 cm (0 to 2 inches) or 0 to 15 cm (0 to 6 inches) bgs. However, the soil interval sampled may vary based on project requirements.

Syringe - A hand-held, T-shaped, disposable plastic sampling device used to obtain undisturbed, unconsolidated material samples (e.g., soil or sediment) for laboratory analyses. Samples are collected by pushing the open end of the sampling device into the material to be sampled to retrieve a discrete sample, typically in the amount of 5 or 10 grams.

Trowel - A small stainless steel or Teflon or Teflon® -lined shovel measuring approximately 15 to 20 cm (6 to 8 inches) in length with a slight (approximately 140°) curve across the length. The trowel has a stem-like handle (for manual operation). Samples are collected using a scooping action.

2.2 Associated Procedures

- SOP 1-2, *Sample Custody*
- SOP 2-1, *Packaging and Shipping Environmental Samples*
- SOP 4-1, *Field Logbook Content and Control*
- SOP 4-5, *Field Equipment Decontamination at Nonradioactive Sites*

2.3 Discussion

Surface soil samples are collected to determine the type(s) and level(s) of contamination in soil and often provide information important to the completion of risk assessments or removal limits for a given site. Surface soil samples may be collected as part of a site investigation or as part of a site-specific sampling plan, and/or as a screen for “hot spots”, which may require more extensive sampling based on the results of the initial surface soil sampling.

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Sediment(s) and sludge(s) that have been exposed by evaporation, stream rerouting, or any other means are collected by the same methods as those for surface soil(s). Typically, the top 1 to 2 cm of material are carefully removed before collection of the sample. If a thick, matted root zone is encountered at or near the surface, it shall be removed before collecting the representative soil sample. Surface soil, exposed sediment, or sludge is collected using stainless steel, Teflon-lined, or pre-cleaned plastic trowels or scoops. Sampling implements are specified in the project-specific sampling plan or quality assurance project plan (QAPP).

3.0 General Responsibilities

Project Manager – The site or project manager, as appropriate, is responsible for ensuring that sampling efforts are conducted in accordance with this procedure and any other SOPs pertaining to the sampling of specific media. The project manager or field team leader, as appropriate, must also ensure that the quantity and location of surface soil samples collected meet the requirements of the site-specific sampling plan or QAPP.

Field Team Leader - The field team leader is responsible for ensuring that field personnel collect surface soil samples in accordance with this SOP and other relevant guidance for surface soil sampling.

Note: Responsibilities may vary from site to site. Therefore, all field team member responsibilities shall be defined in the site-specific sampling plan or QAPP.

4.0 Required Equipment

- Insulated cooler and clear waterproof sealing tape
- Securely-sealed bags of ice or "blue ice" packs
- Nitrile or other appropriate protective gloves
- Plastic zip-top bags
- Personal protective clothing and equipment
- Stainless steel and/or Teflon-lined spatulas and pans, trays, or bowls
- Plastic sheeting (disposable, protective ground cover)
- Stainless steel, Teflon-lined, and/or pre-cleaned plastic trowels or spoons/scoops (or other equipment as specified in the site-specific sampling plan)
- Appropriate project documents (including sampling or work plan, and health and safety plan)
- Appropriate sample containers
- Field logbook
- Indelible black ink pen and/or marker
- Sample chain-of-custody forms
- Custody seals
- Decontamination supplies
- Paper towels or Kimwipes
- Global positioning system (GPS) receiver or tablet computer to record sample information
-

*** If sampling for per- and polyfluoroalkyl Substances (PFAS)**, the potential for cross-contamination from common materials must be evaluated. Commonly used sampling materials and equipment to avoid (or verify composition) include:

- **PTFE, low density polyethylene (LDPE)**, **Teflon**, sticky notes, waterproof field book, aluminum foil, plastic sheeting
- Field filtering of water samples because of **glass** fiber filters
- Avoid use of markers, if possible, during sampling - use only regular ink pens. If needed, write over regular ink with marker after the sample containers are sealed.

Consult materials checklists for other equipment concerns. A check list containing common materials and sampling equipment that contain PFAS compounds is attached, and an up-to-date list will be maintained here:

https://www.yammer.com/cdmsmith.com/#/files/214861635584

Additional equipment is discussed in Section 5.2.2, VOC Field Sampling/Preservation Methods.

5.0 Procedures

5.1 Preparation

The following steps must be followed when preparing for sample collection:

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1. Review site-specific health and safety plan and project plans before initiating sampling activity.

2. Don the appropriate personal protective clothing as specified in the site-specific health and safety plan.

3. Locate sampling location(s) in accordance with project documents (e.g., QAPP) and document pertinent information in the field logbook. As specified, document the sample location using GPS or tablet computer, or reference sampling locations back to known, existing site features such as buildings, roads, intersections, etc., in the field logbook.

4. Processes for verifying sample collection depth must be specified in the site-specific sampling or work plans.

5. Place clean plastic sheeting on a flat, level surface near the sampling area, if possible, and place sampling equipment on the plastic; place the insulated cooler(s) on separate plastic sheeting to avoid the potential for any cross-contamination.

6. A clean, new or sufficiently decontaminated trowel, scoop, or spoon will be used to obtain sample material from each specified sample location. Other equipment may be used (e.g., shovels) to collect sample material if constructed of stainless steel and decontaminated appropriately prior to use.

5.2 Sample Collection

The following general steps must be followed when collecting surface soil samples.

1. Wear new, clean gloves during handling of all sample containers and sampling devices. Change out gloves at each sampling location, or each time a new sample is to be collected, to avoid cross-contamination.

2. Surface soil samples are typically collected from the areas of least contamination to the areas of the greatest contamination, if known.

3. Document the sampling process by recording applicable information in the designated field logbook and/or tablet computer. Document any and all deviations from SOPs and the sampling plan in the field logbook and include rationale for changes. See SOP 4-1 for guidance on entering information into field log books.

4. During sample collection, record observations made of the geologic features of the soil or sediments per American Society for Testing and Materials (ASTM) D 2448 (Standard Practice for Description and Identification of Soils (Visual-Manual Procedure) in the field logbook.

5. Carefully remove stones, vegetation, snow, etc. from the ground surface in the sampling location area. Clear the sample location using a new and/or appropriately decontaminated spoon, scoop, or other tool as described to expose a fresh sampling surface.

6. Collect the required sample aliquot for volatile analyses, as appropriate, as well as any other samples that may be degraded by aeration, followed by the collection of samples for other analyses. Note that samples are typically not collected from ground surface to approximately six (6) to twelve (12) inches below ground surface for volatile organic compound analysis because of the potential for volatile loss. Sample collection and preservation techniques, as appropriate, are discussed in the following subsections of this SOP.

7. Store samples at 4° Celsius (C) (±2°C) until samples are delivered to the designated analytical laboratory. An appropriate amount of ice or number of cold packs should be used according to the number of samples and/or the volume of sample material collected in order to ensure that a temperature of 4°C is achieved and maintained for delivery to the analytical laboratory. Sample holding times shall be determined with the appropriate analytical laboratory.

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8. Pack all samples as required by the work plan and/or laboratory requirements. Include properly completed documentation and affix signed and dated custody seals to the cooler lid. See SOPs 1-2 and 2-1 for guidance on sample custody procedures and packaging and shipping environmental samples.

9. Decontaminate sampling equipment between sample locations. See SOP 4-5 for guidance on decontamination of field equipment at non-radioactive sites.

5.2.1 Method for Collecting Samples for Nonvolatile Organic or Inorganic Compound Analysis

The requirements for collecting samples of surface soil for nonvolatile organic or inorganic analyses are as follows:

1. Wear new, clean gloves during handling of all sample containers and sampling devices. Change out gloves at each sampling location, or each time a new sample is to be collected, to avoid cross-contamination.

2. Clear the area to be sampled of debris as described in Section 5.2 of this SOP. Determine sample depth as described in the sampling plan.

3. Label each sample container with the appropriate sample collection information.

4. Use a decontaminated stainless steel or Teflon-lined trowel or spoon to obtain sufficient sample material from the required interval and subsampling points, if necessary, to fill the specified sample containers. If sampling only for inorganic compounds, pre-cleaned plastic scoops may be used.

5. Empty the contents of the sampling device directly into a clean stainless steel or Teflon-lined tray or bowl, or directly into the sample container, if specified.

6. Homogenize the sample by mixing with a spoon, spatula, or trowel.

7. Use the spoon, spatula, or trowel to distribute the mixture into the labeled sample containers. Fill organic sample containers first, then inorganic sample containers.

8. Secure the respective cap on each sample container immediately after filling.

9. Wipe the sample containers with a clean paper towel or Kimwipe to remove any residual soil from the sample container surface.

10. Place sample containers in individual zip-top plastic bags and seal the bags.

11. Store samples at 4° C (±2°C) until samples are delivered to the designated analytical laboratory

12. Pack all samples as required by the work plan and/or laboratory requirements. Include properly completed documentation and affix signed and dated custody seals to the cooler lid. See SOPs 1-2 and 2-1 for guidance on sample custody procedures and packaging and shipping environmental samples.

13. Decontaminate all non-disposable sampling equipment in accordance with SOP 4-5.

5.2.2 Method for Collecting Soil Samples for Volatile Organic Compound Analysis

The requirements for collecting grab samples of surface soil for volatile organic compounds (VOCs) or other samples degraded by aeration are as follows:

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1. VOC samples shall be collected with the least disturbance to the soil as possible. When grab sampling for VOC analysis or for analysis of any other compound(s) that may be degraded by aeration, it is necessary to minimize sample disturbance and consequently minimize analyte loss. The representativeness of a VOC grab sample is difficult to determine because the collected sample represents a single point, is not homogenized, and has been disturbed.

2. VOC samples shall be collected as grab samples as discussed in section 5.2.2 of this SOP. Although the method of collection may vary from site to site based on data quality objectives and the degree of known or suspected contamination, collection of samples for VOC analysis should follow the sampling and preservation methodology as described below.

3. Complete the sample label by filling in the appropriate information (e.g., sample identification, date and time of sample collection, and requested analyses) and securing the label to the container.

4. Use a clean stainless steel or Teflon-lined trowel or spoon/scoop to collect sufficient material in one grab to fill the sample containers.

5. With the aid of a clean stainless steel spatula, quickly fill the sample containers directly from the sampling device, removing stones, twigs, grass, etc., from the sample material, as needed. Fill the sample containers, compacting the sample material as much as possible to minimize headspace in each of the containers.

6. Immediately secure the Teflon-lined cap(s) on the sample container(s).

7. Wipe the containers with a clean Kimwipe or paper towel to remove any residual soil from the exterior of the container.

8. Place the sample containers in individual zip-top plastic bag(s) and seal the bag(s).

9. Store samples at 4° Celsius (C) (±2°C) until samples are delivered to the designated analytical laboratory. Determine sample holding times with the appropriate analytical laboratory.

10. Pack all samples as required by the work plan and/or laboratory requirements. Include properly completed documentation and affix signed and dated custody seals to the cooler lid. See SOPs 1-2 and 2-1 for guidance on sample custody procedures and packaging and shipping environmental samples.

11. Decontaminate all non-disposable sampling equipment in accordance with SOP 4-5.

Note: A trip blank shall be included with sample coolers containing VOC samples. QC sample requirements vary from project to project. Consult the project-specific sampling plan for requirements.

5.2.3 VOC Field Sampling/Preservation Methods

The following four sections contain SW-846 test methods for sampling and field preservation of soil samples for VOC analysis. These methods include the EnCore™ Sampler Method for low-level VOC analyses, EnCore Sampler Method for high-level VOC analyses, acid preservation for low-level VOC analyses, and methanol preservation for high-level VOC analyses. Equipment requirements in addition to the equipment specified in Section 4.0 of this SOP for each method are indicated at the beginning of each subsection as follows

When collecting soil samples using the EnCore Sampler Method, collection of soil for moisture content analysis is required. Results of the moisture analysis are used to adjust “wet” concentration results to “dry” concentrations to meet analytical method requirements.

Note: Some variation from these methods may be required depending on the contracted analytical laboratory. For example, sample volume requirements are general requirements. Actual sample volumes, sizes, and quantities may vary depending on client or laboratory requirements.

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5.2.3.1 EnCore Sampling Equipment and Collection for Low Level VOC Analyses (<200 µg/kg)

The following equipment is required for low-level analysis:

- Three new 5-gram (g) EnCore samplers
- One 110-milliliter (mL) (4-ounce) wide-mouth glass jar or applicable container for moisture analysis
- One EnCore sampler T-handle

The requirements for collecting samples for low level analysis (<200 µg/kg) of VOCs by the EnCore Sampler Method are as follows:

1. Wear new, clean gloves during handling of all sample containers and sampling devices. Change out gloves at each sampling location, or each time a new sample is to be collected, to avoid cross-contamination.

2. Clear the area to be sampled of debris as described in Section 5.2 of this SOP. Determine sample depth as described in the sampling plan.

3. Remove EnCore sampler and cap from package and attach T-handle to sampler body.

4. Push the sampler into the freshly-exposed sampling surface until the O-ring is visible within the hole on the side of the T-handle. If the O-ring is not visible within this window, then the sampler is not full.

5. Extract the sampler and wipe the sampler head with a clean paper towel or Kimwipe so that the sampler cap can be tightly attached.

6. Push the sampler cap on the head of the sampler with a twisting motion to secure it to the sampler body.

7. Rotate the sampler stem counterclockwise until the stem locks in place to retain the sample within the sampler body.

8. Fill out the sample label with the appropriate sample information (e.g., sample identification, date/time of sample collection, requested analyses) and attach to sampler.

9. Repeat procedure for each of the remaining two samplers.

10. Collect a representative moisture sample in a 110 milliliter (mL) (4-ounce) wide-mouth jar using a new or clean Teflon-lined stainless steel spoon, scoop, or trowel.

11. Store samples at 4° C (±2°C) until samples are delivered to the designated analytical laboratory Samples must be shipped and delivered to the analytical laboratory for extraction within 48 hours.

12. Pack all samples as required by the work plan and/or laboratory requirements. Include properly completed documentation and affix signed and dated custody seals to the cooler lid. See SOPs 1-2 and 2-1 for guidance on sample custody procedures and packaging and shipping environmental samples.

13. Decontaminate all non-disposable sampling equipment in accordance with SOP 4-5.

Note: Verify analytical laboratory requirements for extraction/holding times.

5.2.3.2 Acid Preservation Equipment and Sampling Requirements for Low Level VOC Analyses (<200 µg/kg)

Note: Although not common, acid preservation may be required and should only be performed if specified in the project specific sampling plans. If required, determine the specific field acid preservation procedure based on the requirements specified in the analytical method to be employed. Variations between analytical methods exist with respect to field acid preservation.

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The following equipment and supplies are required if field acid preservation is required:

- One 40-mL VOA vial with acid preservation (for field testing of soil pH)
- Two pre-weighed 40-mL VOA vials with acid preservative and stir bar (for lab analysis)
- Two pre-weighed 40-mL VOA vials with water and stir bar (in case samples cannot be pre-preserved)
- One pre-weighed jar containing methanol or a pre-weighed empty jar accompanied by a pre-weighed VOA vial containing methanol (for sample screening and/or high level VOC analysis)
- One 110-mL (4-oz) wide-mouth glass jar or other container appropriate for retaining a representative sample for moisture analysis
- One 55-mL (2-oz) jar containing acid preservative (additional acid may be needed because of high soil pH)
- One appropriately sized, non-reactive scoop or measuring spoon capable of delivering 1 g of solid sodium bisulfate
- pH paper
- Weighing scale capable of reading to 0.01 g
- Set of balance weights used in daily balance calibration
- Sodium bisulfate acid solution ($NaHS0_4$)
- A plastic syringe or other sampling device capable of collecting a sufficient sample volume of approximately 5 g

Testing Effervescing Capacity of Soils

Soils must be tested with acid to determine the amount of effervescing that will occur when preserved with acid. Effervescing will drive off VOCs as well as create a high pressure in a sealed VOA vial that could result in the explosion of the sample container. The following steps provide information on the effervescing capacity of the soil.

1. Wear new, clean gloves during handling of all sample containers and sampling devices. Change out gloves at each sampling location, or each time a new sample is to be collected, to avoid cross-contamination.

2. Clear the area to be sampled of debris as described in Section 5.2 of this SOP. Determine sample depth as described in the sampling plan.

3. Using a new, clean syringe, pace approximately 5 g of soil into a VOA vial that contains acid preservative and no stir bar.

4. Do not cap this vial as it may EXPLODE upon interaction with the soil.

5. Observe the sample for gas formation, or effervescence (bubbles that form due to the interaction of carbonates in the soil with the acid preservative).

6. If vigorous or sustained effervescence is observed, then acid is not an acceptable preservative for the sample.
   - In this case the samples need to be collected in the VOA vials containing only water as a preservative and a stir bar. The vials with acid preservative CANNOT be used.

7. If a small amount or no effervescence occurs, then acid is acceptable to preserve the sample. Keep this initial testing VOA vial for use in the buffering test as detailed below.
   - In this case the samples need to be collected in the VOA vials containing acid preservative and a stir bar.

Testing Buffering Capacity of Soils

The soils must be tested to determine the quantity of acid that is required to achieve a pH reading of ≤2 standard units (SUs). The following steps will assist in determining this quantity.

1. If acid preservation is acceptable for sampling soils, then the sample vial that was used to test the effervescing capacity of the soils can be used to test the buffering capacity.

2. Wear new, clean gloves during handling of all sample containers and sampling devices. Change out gloves at each sampling

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location, or each time a new sample is to be collected, to avoid cross-contamination.

3. Clear the area to be sampled of debris as described in Section 5.2 of this SOP. Determine sample depth as described in the sampling plan.

4. Cap the VOA vial containing the 5 g of soil, acid preservative, and no stir bar as retained during Step 7 of the effervescing test as described above.

5. Shake the VOA vial gently to homogenize the contents.

6. Open the VOA vial and test the pH of the acid solution with pH paper by dipping one end of a pH paper strip into the soil/acid solution.
   - If the pH paper indicates a pH below 2, then samples can be collected in the two pre-weighed 40-mL VOA vials with the acid preservative and stir bar. As the pH reading is below 2, it is not necessary to add additional acid to the VOA vials.
   - If the pH paper indicates a pH above 2, then additional acid needs to be added to the VOA vial.

7. To add acid to a sample with a pH above 2, measure out 1 g of the solid sodium bisulfate acid and add to the appropriate VOA vial.

8. Cap the VOA vial and shake thoroughly.

9. After an additional 1 g of solid sodium bisulfate has been added to the VOA vial containing sample material with a pH above 2, repeat Step 4.
   - If the pH paper reads below 2, then the samples can be collected in the two pre-weighed 40-mL VOA vials containing acid preservative, a stir bar, and 1 g of sodium bisulfate.
   - On the Chain of Custody and in the field log book, note that one additional gram of acid was added such that the laboratory can analyze the samples accordingly.
   - If the pH paper reads above 2, repeat Steps 5 through 7 until the sample pH is less than or equal to 2 SUs.

After the soil chemistry has been determined, samples can be collected. The procedure summarized below assumes the appropriate acid- or water-preserved VOA vials are used based on the guidance discussed.

Sample Preservation Steps

1. Wear new, clean gloves during handling of all sample containers and sampling devices. Change out gloves at each sampling location, or each time a new sample is to be collected, to avoid cross-contamination.

2. Add more acid to the sample if necessary (based on the buffering capacity testing discussed in the previous section).

3. Collect an approximately 5-g soil sample using a cutoff plastic syringe or other sampling device designed to obtain 5 g of soil from a freshly exposed sampling surface.

4. Carefully wipe exterior of sample collection device with a clean paper towel or Kimwipe.

5. Transfer the sample from the sample collection device to the appropriate VOA vial, using caution when extruding the sample to prevent splashing the acid outside of the vial.

6. Remove any soil from the threads of the VOA vial using a clean paper towel or Kimwipe.

7. Cap the VOA vial and weigh the jar to the nearest 0.01 g.

8. Record the exact weight on the sample label.

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9. Repeat this sampling procedure for the duplicate VOA vial.

10. Weigh the VOA vial containing methanol preservative to the nearest 0.01 g. If the weight of the vial with methanol varies by more than 0.01 g from the original weight recorded on the vial, discard the vial. If the weight is within tolerance, it can be used for soil preservation as discussed below.

11. Take a clean, empty sample jar or the jar that contains the methanol preservative and collect a 5-g or 25-g sample using a cutoff plastic syringe or other coring device designed to deliver 5 g or 25 g of soil from a freshly exposed sample surface. The 5-g or 25-g size is dependent on the client or analytical laboratory requirements, or as specified in the sampling plan.

12. Carefully wipe the exterior of the collection device with a clean paper towel or Kimwipe.

13. Transfer the soil to a clean, empty jar or a VOA vial that contains methanol. If extruding into a jar that contains methanol, be careful not to splash the methanol outside of the sample container.

14. If the jar used to collect the soil sample did not contain preservative before the soil was added, immediately preserve with the methanol provided, using only one vial of methanol preservative per sample jar.

15. Remove any soil from the threads of the VOA vial using a clean paper towel or Kimwipe and cap the vial.

16. Weigh the jar with sample to the nearest 0.01 g and record the weight on the sample label.

17. Collect dry weight sample using a clean stainless steel spoon or trowel.

18. Store samples at 4°C (±2°C) until samples are delivered to the designated analytical laboratory

19. Pack all samples as required by the work plan and/or laboratory requirements. Include properly completed documentation and affix signed and dated custody seals to the cooler lid. See SOPs 1-2 and 2-1 for guidance on sample custody procedures and packaging and shipping environmental samples.

20. Decontaminate all non-disposable sampling equipment in accordance with SOP 4-5.

5.2.3.3 EnCore Sampling Equipment and Sampling Requirements for High Level Analysis (≥200 µg/kg)

The following equipment is required for high-level analysis:

- One 5-g sampler or one 25-g sampler

Note: The volume requirements specified are general requirements. Actual sample volumes, container sizes, and quantities may vary depending on client or laboratory requirements.

- One 110-mL (4-oz) wide-mouth glass jar or applicable container specified for moisture analysis
- One T-handle EnCore sampler

The requirements for collecting high level analysis by the EnCore Sampler Method are as follows:

1. Wear new, clean gloves during handling of all sample containers and sampling devices. Change out gloves at each sampling location, or each time a new sample is to be collected, to avoid cross-contamination.

2. Clear the area to be sampled of debris as described in Section 5.2 of this SOP. Determine sample depth as described in the sampling plan.

3. Remove the EnCore sampler and cap from package and attach the T-handle to sampler body.

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4. Push the sampler into freshly exposed soil surface until the O-ring is visible within the hole/window on the side of the T-handle. If the O-ring is not visible within the window/hole, then the sampler is not full.

5. Use a clean paper towel or Kimwipe to wipe the sampler head so that the cap can be tightly attached.

6. Push the sampler cap on the sampler head with a twisting motion to secure it to the sampler body.

7. Fill out the sample label and attach it to sampler.

8. Rotate the sampler stem counterclockwise until the stem locks in place to retain the sample within the sampler body.

9. Collect a representative moisture sample in 110-mL (4-oz) wide-mouth glass jar or designated container using a clean stainless steel spoon or trowel.

10. Store samplers at 4°C (±2°C) until samples are delivered to the designated analytical laboratory. Samples must be shipped and delivered to the analytical laboratory for extraction within 48 hours.

11. Pack all samples as required by the work plan and/or laboratory requirements. Include properly completed documentation and affix signed and dated custody seals to the cooler lid. See SOPs 1-2 and 2-1 for guidance on sample custody procedures and packaging and shipping environmental samples.

12. Decontaminate all non-disposable sampling equipment in accordance with SOP 4-5.

Note: Verify requirements for extraction/holding times.

5.2.3.4 Methanol Preservation Equipment and Sampling Requirements for High Level Analyses (≥200 µg/kg)

The following equipment is required for high-level analysis:

- One pre-weighed jar that contains methanol or a pre-weighed empty jar accompanied by a pre-weighed VOA via that contains methanol (laboratory grade)
- Cutoff plastic syringe or other sampling device to obtain 5 g or 25 g of soil
- Set of balance weights used in daily balance calibration
- One dry weight cup
- Weighing balance that accurately weighs to 0.01 g

The requirements for sampling and preservation are as follows:

1. Wear new, clean gloves during handling of all sample containers and sampling devices. Change out gloves at each sampling location, or each time a new sample is to be collected, to avoid cross-contamination.

2. Clear the area to be sampled of debris as described in Section 5.2 of this SOP. Determine sample depth as described in the sampling plan.

3. Weigh the VOA vial containing methanol preservative to the nearest 0.01 g. If the weight of the VOA vial containing methanol varies by more than 0.01 g from the original weight recorded on the vial, discard the vial. If the weight is within tolerance, it can be used for soil preservation/collection as described below. (Commercial sources are available which supply pre-preserved and tared vials which eliminates the need to transport and handle larger quantities of methanol and eliminates the need for a precision scale vials with preservative).

4. Quickly collect a 5-g or 25-g sample using a plastic syringe or other sampling device designed to obtain 5 g or 25 g of soil from a freshly exposed sampling surface.

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5. Carefully wipe the exterior of the collection device with a clean paper towel or Kimwipe.

6. Quickly transfer the soil to an empty jar or a jar that contains methanol. If extruding into a jar that contains methanol, be careful not to splash the methanol outside of the vial. The type of jar used, and the sample volume needed is dependent on the client or laboratory requirements.

7. If the jar used to collect the soil sample was empty before the soil was added, immediately preserve with the methanol provided, using only one vial of methanol preservative per sample jar.

8. Remove any soil from the exterior of the vial using a clean paper towel or Kimwipe and cap the sample container.

9. Weigh the jar containing the soil to the nearest 0.01 g and record the weight on the sample label.

10 Collect a dry weight sample in a clean, unpreserved sample container using a clean stainless steel spoon or trowel.

11. Store samples at 4°C (±2°C) until samples are delivered to the designated analytical laboratory.

12. Pack all samples as required by the work plan and/or laboratory requirements. Include properly completed documentation and affix signed and dated custody seals to the cooler lid. See SOPs 1-2 and 2-1 for guidance on sample custody procedures and packaging and shipping environmental samples.

13. Decontaminate all non-disposable sampling equipment in accordance with SOP 4-5.

14. If dropping the samples off at the analytical laboratory or requesting a sample pick-up is not an option, sample containers may need to be shipped to the analytical laboratory. Samples should be packed with ice packs sufficient to maintain a temperature of 4° C in the cooler and shall be shipped in accordance with Department of Transportation (DOT) regulations. Consult CDM Smith's Health and Safety website (http://cdmweblegacy/h&s/hazmat_transport.html) for guidance on shipping hazardous materials.

5.2.4 Procedural Considerations for PFAS

The evolving regulatory standards for PFAS must be considered in the implementation of surface soil sampling as well as the development of project planning documents such as: work plans, sampling and analysis plans, quality assurance project plans, data management plans, accident prevention plans, health and safety plans and laboratory statements of work used to guide the collection of samples for PFAS analysis.

A consideration of the PFAS-specific sampling requirements is needed during the planning phase because cross-contamination is a prominent concern for data quality, particularly with PFAS action levels in the low parts per trillion (ppt) range. This means that the development of project data quality objectives (DQOs), and selection of action levels, reporting limits are all impacted with the inclusion of sampling for PFAS analysis.

Before implementing this surface soil sampling TSOP for collection of samples for PFAS analysis, it is important to review current regulatory standards to determine whether site- or project-specific changes to surface water sampling should be included in project planning documents to align with the latest regulatory standards and sampling guidance. CDM Smith Regulatory Updates can be located at the INFOCENTER. Specific State and Federal Regulatory Limit updates can be found here:

https://cdmsmith.libguides.com/PFAS_InfoCenter

Procedural modifications for surface water sampling and other related field activities at PFAS sites is included in this TSOP. A check list containing common materials and sampling equipment that contain PFAS compounds is attached and can also be found here:

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Procedural modifications to field activities when sampling for PFAS analysis involve the concerns listed below. Good Housekeeping, detailed documentation of these extra steps and vigilance about clearly defined exclusion zones that are strictly adhered to:

Good practices

- Utilize good safety planning and institute Exclusion Zones, Contamination Reduction Zones, and Support Zones (No visitors within 30 feet of sampling)
- Do not eat in or near sampling areas (food packaging may contain PFAS)
- Be vigilant about PPE donning and doffing practices
- Wash hands before and after eating
- Wear powderless nitrile gloves and change them frequently
- Only open sample container during sample collection and never set the sample container lid down
- Keep hands away from the container opening when sampling and keep lid protected
- Develop a Project Specific Checklist for review with field personnel
    - It must be project specific
    - Completed prior to beginning PFAS sampling event, or
    - Whenever there are staffing changes, or
    - Whenever sample media change and associated sampling/field equipment changes
    - Consider appropriate sampling/field work sequences for each matrix
    - Sampling/field work sequences
    - PFAS sampling/field work should occur first on sites where other contaminants will also be sampled
    - CDM Smith PFAS Sampling Guidance Team can assist with development of your project specific checklist

Avoid

- **PTFE, LDPE, Teflon**, sticky notes, waterproof field book, aluminum foil
- Field filtering of water samples because of **glass** fiber filters
- Avoid use of markers, if possible, during sampling use only regular ink pens. If needed, write over regular ink with marker after the sample containers are sealed.

Additional information on acceptable and unacceptable materials for use when surface soil sampling for PFAS compound is provided in the attachment below.

6.0 Restrictions/Limitations

As presented in Section 5.2 of this SOP, when grab sampling for VOC analysis or for analysis of any other compound(s) that may be degraded by aeration, it is necessary to minimize sample disturbance and consequently minimize analyte loss. The representativeness of a VOC grab sample is difficult to determine because the collected sample represents a single point, is not homogenized, and has been disturbed.

7.0 References

U. S. Environmental Protection Agency. *A Compendium of Superfund Field Operations Methods*, EPA/540/P-87/001. December 1987 or current revision.

_____. *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods (SW-846)*, Third Edition, November 1986, (as amended by Updates I, II, IIA, IIB, III, and IIIA, IIIB, and IVA, IVB). Method 5035 (***Note***: § 6.2.1.8 of this method says samples stored in EnCore™ samplers shall be analyzed within 48 hours or transferred to soil sample vials in the laboratory within 48 hours): December 1996, Revision O, Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples.

_____. 2014. Region 4. *The Field Branches Quality System and Technical Procedures, Soil Sampling. SESDPROC-300-R3*. August.

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Attachment

Item	Good to Use	Needs Verification (2)(3)	Should Avoid (1)(2)	Comments
Field Clothing or PPE				
Clothing or boots containing "water resistance" or "stain-treated" fabrics				
Cloths washed with fabric softeners				Fabric softeners may contain PFAS.
New and unwashed clothing				Fabric treatment may contain PFAS.
Uncoated Tyvek				USEPA PFAS sampling guidance from Region 2 prohibits use of Tyvek.
Coated Tyvek				
PVC or wax-coated fabrics				
Neoprene				
Synthetic and natural fibers (preferably cotton)				
Steel-toed boots made with polyurethane and PVC				If it is not possible to find PFAS free steel-toed footwear, PFAS-free over boots may be worn. The over boots must be put on and the hands washed after putting the over boots on prior to the beginning of the sampling activities. Over boots may only be removed in the staging area and after the sampling activities have been completed.
Well laundered clothes				Several times from time of purchase
Well washed cotton coveralls				Washed several times
Personnel Hygiene and Protective Skin Products				
Sunscreens				Good to use: Alba Organics Natural Sunscreen, Yes To Cucumbers, Aubrey Organics, Jason Natural Sun Block, Kiss my face, and baby sunscreens that are "free" or "natural."
Insect Repellents				Good to use: Jason Natural Quit Bugging Me, Repel Lemon Eucalyptus Insect repellant, Herbal Armor, California Baby Natural Bug Spray, BabyGanics.
International Brands of sunscreens and insect repellents				Must be evaluated on a case-by-case basis.
Field Sampling Items				
Waterproof field paper or books				Use loose plain paper.
Post-it notes				
Aluminum foil				
Brand-name markers				Sharpie may be used to label sample bottles in the staging area, but markers should not be used in the immediate sampling environment.

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Item	Good to Use	Needs Verification (2)(3)	Should Avoid (1)(2)	Comments
Off-brand markers				
Ball point pens				
Plastic clipboards				NJ DEP sampling guidance, use metal clipboard.
Plastic table cover				
Sampling Equipment				
Item containing high-density polyethylene (HDPE)				
Item containing polypropylene				PP sample bottles must be used for drinking-water samples in accordance with USEPA method 537.1.1.
Item containing polyurethane				
Item containing Polyvinyl chloride (PVC)				
Item containing silicon				
Item made of stainless steel				
Alconox®				
Citronex®				
Liquinox®				
Powderless nitrile gloves				
HDPE Hydrasleeves or sonic core bags				
Neoprene				
Crisco® or other vegetable-based greases for lubricating parts				
Item containing PTFE				Items or equipment that contain PTFE parts that will be in direct contact with sampling media.
Item containing Teflon®				Field sampling items or equipment that contains Teflon® and that will be in direct contact with the sampling media.
Item containing fluoropolymer				
Low-density polyethylene (LDPE)				Items or equipment that contains LDPE parts and that will be in direct contact with the sampling media.
Viton® O-rings				Viton® O-rings used in pressure washers used for sampling equipment decontamination.
Glass sample containers				
Field filter				Field filtration should be avoided regardless of filter types.
Decon 90				
Items containing fluorosurfactants				
Teflon-bearing plumber's tape				

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Item	Good to Use	Needs Verification (2)(3)	Should Avoid (1)(2)	Comments
Blue (or chemical) ice				Later data (unpublished) suggest no cross contamination from blue ice. The category may be changed after data are published.
Water ice				Double bag in polyethylene bags
Internal valves and equipment parts for sampling or decon				
Methanol or other solvents				
LDPE plastic bags (e.g., Ziploc® bags)				For larger biota sampling, Ziploc bags may be used, but collecting an equipment blank is recommended because these bags may be made of LDPE.
Drilling fluids				
LDPE sonic core sample bags				Manufactured by Boart Longyear and Hole Products.
Equipment with moving parts that may be lubricated with PFAS containing lubricants or greases				
Rental equipment				Must be verified to have no PFAS-bearing parts prior to use.
Others				
Food wrappers				Field personnel must wash hands after having food wrapped with grease-repelling paper.

(1) If an alternative is not available for an item that may contain PFAS, the item should be pre-tested for PFAS before use in the field.

(2) This mostly refers to the immediate sampling environment, particularly, the item is in contact with environmental media to be sampled.

(3) There are no standard operation procedures on how an item can be verified; please contact PFAS experts for advice on the best practice of testing a potential PFAS containing item. PFAS experts at CDM Smith may be contacted through the Emerging Contaminants Group.

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Field Measurement of Total Organic Vapors

SOP 1-10
Revision: 8
Date: February 2020

Approved: Ernest Ashley **Technical Review:** Nicholas Castonguay, P.G.

1.0 Objective

The objective of this technical standard operating procedure (SOP) is to define the techniques and the requirements for the measurement of total organic vapors in the field.

2.0 Background

2.1 Definitions

Note: Definitions are often promulgated or codified in state or local statutes, regulations, or ordinances and can vary between regulatory agencies. Definitions should be verified against the definitions provided by agencies regulating the work when applicable.

Photoionization Detector (PID) - A field portable, hand-held instrument that measures the concentration of gaseous organic compounds through the photoionization of organic vapors

Flame Ionization Detector (FID) - A field portable, hand-held instrument that measures the concentration of gaseous organic compounds through the flame ionization of organic vapors

Colorimetric Indicator Tubes - A field portable, hand-held pump that measures the concentration of specific organic gaseous compounds in air through a glass tube containing a granular carrier solid that has been saturated with a specific chemical reagent (i.e. benzene). The indicator tubes and pumps are typically referred to by their brand names such as Dräger Tubes®.

Gas Chromatograph - A field portable, hand-held instrument that measures the concentration of specific volatile organic compounds (VOCs) and is capable of analyzing groundwater, soil, and air samples. The gas chromatographs are typically referred by their brand names such as the FROG-5000™, which is identified as a gas chromatograph and photoionization detector (GC/PID).

2.2 Associated Procedures

- SOP 1-4, *Subsurface Soil Sampling*
- SOP 1-5, *Groundwater Sampling Using Bailers*
- SOP 1-6, *Water Level Measurement*
- SOP 1-8, *Volatile Organic Compound Air Sampling Using USEPA Method TO-15 with SUMMA Canister*
- SOP 1-12, *Low-Stress (Low-Flow) Groundwater Sampling*
- SOP 3-1, *Geoprobe® Sampling*
- SOP 3-5, *Lithologic Logging*
- SOP 4-3, *Well Development and Purging*

2.3 Discussion

The measurement of organic vapors is a required step during numerous field and site characterization activities. The primary purpose of such measurements is health and safety monitoring to determine if the breathing zone in a work area is acceptable or if personal protective equipment such as a respirator or a supplied air device is necessary for field personnel. At the perimeter of a work area, measurements can be taken as part of a perimeter air monitoring plan to document protection of a surrounding community. In addition to health and safety monitoring, total organic vapor measurement is also used in conjunction with sampling activities, including screening subsurface soil samples, soil vapor and indoor air sampling, and groundwater sampling, where measurements are useful for establishing approximate contaminant levels or ranges.

The two types of instruments most commonly used to measure total organic vapors are PIDs and FIDs. Both instruments first ionize the gaseous compound and then measure the response, which is proportional to the concentration. For site specific contaminants of concern (COCs) such as benzene, colorimetric tubes can be used to determine air concentrations in the breathing zone primarily for

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health and safety purposes. For multi-media organic vapor measurement, the GC/PID can be used to determine specific VOC concentrations primarily for site characterization purposes.

2.3.1 PID Operation

The PID is preferred when the compound of interest is an aromatic or halogenated volatile organic compound (VOC). The PID ionizes the sampled vapors using an ultraviolet lamp that emits light energy at a specific electron voltage (eV - labeled on the lamp). The ultraviolet lamp produces photons that are absorbed by the sampled vapor molecule. The molecule becomes excited, producing a positively charged ion and emitting an electron. The number of electrons emitted is proportional to the concentration of the sampled gases. Every organic compound has a specific ionization potential in electron volts. The energy emitted by the lamp should be higher than the ionization potential of the compound for the compound to become ionized and emit an electron. If the ionization potential of the compound is higher than the eV of the lamp, there will be no response on the instrument. Therefore, the ionization potential of the known or suspected compounds shall be checked against the energy of the ultraviolet lamp to verify that the energy provided by the lamp is greater. The manufacturer's manual should be consulted to determine the appropriate ultraviolent lamp to be used for the known or suspected compounds. Additionally, manufacturer's manuals shall be consulted to obtain the appropriate correction factors for known or suspected contaminants.

Water vapor in the vapor sample can interfere with the PID detector and cause the instrument to stop responding or cause the zero baseline to drift. This can occur using the PID on a rainy day or when sampling headspace samples that have been in the sun. If moisture interference is suspected, the calibration gas shall be used to check the instrument response by inserting the gas as a check sample, not by recalibrating. If the response is lower than the gas level, then the probe and the ionization chamber should be dried out before reusing the instrument.

The sampling probe shall not be inserted directly into soil samples or dusty areas, as the instrument vacuum will pull dirt into the ionization chamber. Under particularly dirty or dusty conditions, the lamp may become covered with a layer of dust. If dirty conditions are encountered, or if the instrument response seems to have decreased, then the lamp should be cleaned. The instrument manual provides instructions on how to remove the instrument cover to access the lamp, and how to clean the screen in the ionization chamber and the surface of the lamp.

The instrument manual may provide instruction on use of disposable dust and/or moisture filters for minimizing effects from dust and/or moisture. The ultraviolet lamp in the PID is sensitive to shock, especially when using the higher eV lamps. Therefore, they should be handled and transported carefully.

2.3.2 FID Operation

The FID is preferred when sampling for petroleum hydrocarbons and other organic compounds such as methane (landfill gases). It responds well to aromatic hydrocarbons but is not as convenient to use as the PID. The FID allows measurement of a wide variety of compounds, but in general its sensitivity is not as high as the PID for compounds where the PID is applicable. The FID is virtually unaffected by ambient levels of water vapor.

The FID ionizes the vapor sample by burning it in a hydrogen/air flame and measuring the response beyond what is caused by the hydrogen alone. This instrument requires a hydrogen supply, contained in a small tank in the instrument. This hydrogen, including the gas in the instrument tank, is considered a flammable gas and appropriate requirements should be adhered to when shipping. The instrument shall be emptied of hydrogen before shipping. Federal Express Hazardous Material shipping manifests must be completed when shipping the gas.

The hydrogen gas in the FID combustion chamber is ignited by pressing a red button on the side of the instrument, which sends electrical current to a small resistance coil igniter in the combustion chamber. This igniter is very sensitive, and if the red button is pressed for longer than 5 seconds, the coil will burn out and the instrument will be unusable unless another igniter is available. If the instrument will not light, check the electrical connections and switches for proper settings. Check that the pump is pumping and allow fresh air to flow through the combustion chamber for several minutes before lighting. Check to see if the exhaust port of the combustion chamber is dirty.

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2.3.3 Colorimetric Indicator Tube Operation (DrägerTubes®and Pump)

Colorimetric indicator tubes such as DrägerTubes® and pumps can provide real time VOC and other organic gaseous compound concentrations in ambient air. The colorimetric tube is preferred when monitoring for site specific COCs in the breathing zone. The pump is compatible with over 500 different short-term gas detection tubes and is suitable for site characterization and industrial hygiene purposes. The Dräger Tubes® are capable of analyzing VOCs in the air with results reporting in parts per million (ppm) concentrations. The glass colorimetric indicator tubes typically consist of a glass tube containing a granular solid that has been saturated with a specific chemical compound (i.e., benzene). As contaminated air is pumped through the glass tube, the contaminant reacts with the reagent on the granular solid to produce a color stain or change in color, which is proportional to the amount of contamination in the air. The air is drawn through the DrägerTubes® by a hand pump or a battery-powered pump that controls the volume of air sampled. The number of pump strokes (i.e. the volume of air) required to reach this full stain is compared to a chart to determine the concentration of the contaminant in the air. A set number of pump strokes (volumes) of air will be drawn through the tube and the length of stain is compared to a calibration scale, often printed on the tube, to determine the concentration. For these tubes, a high concentration would cause a deeper or darker color change after a set number of pump strokes. It is critical that the operator of the tube be familiar with the manufacturer's directions and knows which mode of operation is used.

2.3.4 Gas Chromatograph Operation (FROG-5000™)

A portable field gas chromatograph such as the FROG-5000™ can provide real time soil, groundwater, and air VOC concentrations that can aid in the characterization of contaminated sites. The FROG-5000™ chemical analysis system is a field portable gas chromatograph/photoionization detector (GC/PID) capable of analyzing samples in minutes. The FROG-5000™ is vendor calibrated for VOCs of interest and is ready to analyze samples upon arrival in the field. The FROG-5000™ quantitatively determines VOC concentrations down to single part per billion (ppb) or at high part per million (ppm) concentrations depending on its configuration. During sample analysis (thermal desorption), the VOCs are passed into a miniature GC column where the mixed VOC analytes are each separated. The PID then determines the resolved VOCs eluting from the GC and outputs the concentration. A real-time readout and associated laptop connected to the FROG-5000™ allows the field analyst to monitor analysis of each sample by observing the development of the gas chromatogram in real-time.

3.0 Responsibilities

Project Manager - The project manager is responsible for ensuring that field activities are conducted in accordance with this procedure and any other SOPs pertaining to the specific activity.

Field Team Leader - The field team leader is responsible for ensuring that field personnel conduct field activities in accordance with this and other relevant procedures. The field team leader is responsible for ensuring the appropriate field equipment is used for site specific or contaminants of concern.

Note: Responsibilities may vary from site to site. Therefore, all field team member responsibilities shall be defined in the field plan or site/project-specific quality assurance plan.

4.0 Required Equipment

- Site-specific plans (i.e., scope of work)
- Health and safety plan
- Field logbook
- Waterproof black ink pen
- Personal protective clothing and equipment
- Photoionization detector
- Flame ionization detector
- Dräger Tubes® for required COCs and pump
- Calibration gases in a range appropriate for the expected use

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- 0.5 liter (16-ounce) or "Mason" type glass jar or Ziploc-type plastic bags
- Hydrogen canister and fill valve and hose (if using FID for a period of more than 1 day)

5.0 Procedures

5.1 Direct Reading Measurement (PID and FID)

1. Connect the measurement probe to the instrument and make necessary operational checks (e.g., battery check, etc.) as outlined in the manufacturer's manual.

2. Calibrate the instrument following the applicable manufacturer's manual.

3. Make sure the instrument is reading zero and all function and range switches are set appropriately.

4. Insert the end of the probe directly into the atmosphere to be measured (e.g., breathing zone, monitoring well casing, split spoon, etc.) and read the total organic vapor concentration in parts per million (ppm) from the instrument display. Apply the appropriate correction factor if necessary. Record the highest instrument response.

5. Immediately document the reading in the field logbook or on the appropriate field form.

5.2 Headspace Measurement (PID and FID)

1. Connect the measurement probe to the instrument and make necessary operational checks (e.g., battery check, fan check, etc.) as outlined in the manufacturer's manual.

2. Calibrate the instrument following the appropriate manufacturer's manual.

3. Make sure the instrument is reading zero and all function and range switches are set appropriately.

4. Fill a clean glass jar or Ziploc-type plastic bag approximately half-full of the sample to be measured. For a jar, quickly cover the top of the jar with one or two sheets of clean aluminum foil and apply cap to seal the jar. For a bag, quickly seal the bag minimizing volume of air in the bag.

5. Allow headspace to develop for approximately 10 minutes. It is generally preferable to shake the sealed jar for 10 to 15 seconds at the beginning and end of headspace development. For a bag, kneed the bag to break apart the sample and maximize sample surface area.

Note: When the ambient temperature is below 0°C (32°F), the headspace development and subsequent measurement shall occur within a heated vehicle or building.

6. For a jar, remove the jar cap and quickly puncture the foil and insert the instrument probe to a point approximately one-half of the headspace depth. Do not let the probe contact the soil. For a bag, quickly puncture the bag wall and insert the probe, wrapping the bag wall around the probe stem to minimize loss of vapors. If using a PID and there is condensation on the inside of the jar or bag, only leave the probe in the jar or bag long enough to obtain a reading. Remove the probe and allow fresh air to flow through the instrument to avoid excess water vapor to build up.

7. Read the total organic vapor concentration in ppm from the instrument display. Apply the appropriate correction factor if necessary. Record the highest instrument response.

8. Immediately record the reading in the field logbook or on the appropriate field form.

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5.3 Colorimetric Indicator Tube Measurement (Dräger Tubes® and Pump)

1. Sample pumps should be checked for leaks to ensure that the appropriate volume of air is drawn through the tube. The pump should be allowed to fully complete every pump stroke. Incomplete strokes or leaks in the system will cause less than the appropriate volume of sample air to pass through the tube, potentially resulting in a lower reading than is actually present. Perform a pump leak test by inserting an unopened tube into the hand pump socket. Squeeze the pump completely and release. If the stroke indicator has not appeared after 15 minutes, then your pump is leak-proof. If the stroke indicator does appear, then try another pump or contact the field team leader for direction. Otherwise, remove the tube and reset the counter to zero and prepare for use.
2. Open both ends of the tube using the integrated ceramic blade on the bottom of the pump or use the tube opener. When using the opener on the pump, make sure to keep the tube pressed against the ceramic edge and turn the tube to score the glass. When using the tube opener, use the instructions on the side of the pump box. Insert the tube into the pump with the black arrow facing inwards. Squeeze the pump to create one stroke. The number of strokes required will be indicated on your chosen tube pack and instructions.

3. The tube with the hand pump may be operated as follows:

   A. The pump may be operated until the length of the stain reaches a certain preset point. The number of pump strokes (i.e. the volume of air) required to reach this full stain is compared to a chart to determine the concentration of the contaminant in the air. In this case, a high concentration of contaminant in the air would require fewer strokes to reach full stain.

   B. A set number of pump strokes (volumes) of air will be drawn through the tube and the length of stain is compared to a calibration scale, often printed on the tube, to determine the concentration. For a set number of pump strokes, a high concentration would cause a longer stain.

   C. A predetermined number of pump strokes of air are drawn through the tube and the degree or tint of the color change is compared to a chart to determine the concentration. For these tubes, a high concentration would cause a deeper or darker color change after a set number of pump strokes. It is critical that the operator of the tube be familiar with the manufacturer's directions and knows which mode of operation is used.

4. Read the total organic vapor concentration and record in the field logbook. If breathing zone air concentrations exceed contaminant thresholds, keep a safe distance from the work zone, contact the field team leader, and upgrade PPE (i.e. level D to C), if required and available. If upgraded PPE is not available, contact the field team leader to discuss plans for executing work when the appropriate PPE is available.

5.4 Gas Chromatograph Operation (FROG-5000™)

1. Before conducting field work, confirm the FROG-5000™ is functioning properly and can connect to the appropriate software on the portable computer.

2. Before sampling, make sure the instrument settings are correct for the application. Typically, the equipment rental company can provide training, calibrate, and set up project specific analytical parameters to analyze for so that the unit is ready to go. Run a blank before attempting sample analysis, a blank run should produce a clean baseline.

3. For soil, water and air sampling, refer to the FROG-5000™ user manual since there are numerous steps to prepare and analyze the samples. Before conducting field work, review the user manual to ensure proper and efficient use of the software and instruments in a field setting. The user manual is located here: http://www.defiant-tech.com/pdfs/FROG-5000-Manual-2017-Rev3.pdf.

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5.5 Procedural Considerations For PFAS

Development of PFAS awareness in guidance and incorporation into specific SOPs is necessary because cross-contamination is a prominent concern for data quality, particularly with PFAS action levels in the low parts per trillion (ppt) range. (For example, Federal drinking water MCL for Arsenic is 10,000 ppt where the EPA health advisory level is a combined 70 ppt for PFOA and PFOS.)

Procedural modifications to field activities when sampling for PFAS analysis involve the concerns listed below. Good housekeeping, detailed documentation of these extra steps, and vigilance about clearly defined exclusion zones that are strictly adhered to shall be followed:

PFAS Sampling Materials Checklist

- Use good safety planning and institute exclusion zones, contamination reduction zones, and support zones (no visitors within 30 feet of sampling).
- Do not eat in or near sampling areas (food packaging may contain PFAS).
- Be vigilant about PPE donning and doffing practices.
- Wash hands before and after eating.
- Wear powderless nitrile gloves and change them frequently.
- Only open sample container during sample collection and never set the sample container lid down.
- Keep hands away from the container opening when sampling and keep lid protected.
- Develop a project specific-checklist for review with field personnel.
    - It should be project-specific.
    - Completed prior to beginning PFAS sampling event or whenever there are staffing changes or whenever sample media change and associated sampling/field equipment changes
    - Consider appropriate sampling/field work sequences for each matrix
    - Sampling/field work sequences
    - PFAS sampling/field work should occur first on sites where other contaminants will also be sampled.
    - CDM Smith PFAS Sampling Guidance Team can assist with development of your project-specific checklist.

Avoid

- **PTFE, LDPE**, sticky notes, waterproof field book, aluminum foil
- Field filtering of water samples because of **glass** fiber filters
    - Avoid use of markers, if possible, during sampling; use only regular ink pens. If needed, write over regular ink with marker after the sample containers are sealed.
- Consult materials checklists for equipment concerns.

6.0 Restrictions/Limitations

The two PID and FID methods outlined above are the most commonly used for field measurement of total organic vapors but do not apply to all circumstances. Consult project- or program-specific procedures and guidelines for deviations. Both the PID and FID provide quantitative measurement of total organic vapors, but generally neither instrument is compound-specific. The typical reading range of the PID is 0 to 10,000 ppm, and the typical reading range of the FID is 0 to 50,000 ppm. The FID will measure methane while the PID will not. ***Note***: The presence of methane will cause erratic PID measurements. In methane rich environments, toxic organic vapors shall be monitored with an FID. If desired, a charcoal filter can be placed temporarily on the FID inlet probe, which will trap all organic vapors except methane. The filtered (methane only) reading can be subtracted from unfiltered (total organic vapors) to provide an estimate of non-methane organic vapors. The reading accuracy of both instruments can be affected by ambient temperature, barometric pressure, humidity, lithology, etc.

The colorimetric Dräger Tubes® method is commonly used to determine the concentration of site specific COCs primarily for industrial hygiene purposes. The tubes' accuracy may be affected by temperature, humidity and atmospheric pressure. Colder temperatures will typically slow down the reaction and high temperatures may affect the rate of chemical reaction. If tubes are to be used in cold weather, they should be stored in a warm place and carried next to the body. Where temperature will significantly affect the performance of the tube, the manufacturer will include compensation factors in the instructions. Regarding limitations, tubes can have poor accuracy with errors ranging from 25% to 50%. The manufacturers generally provide accuracy information with the

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instructions. The tubes have a specific shelf-life which may cause the degradation of the reagent. Chemical reagents will deteriorate over time, even if the tube is not opened and exposed to air. High temperatures may cause degradation of the reagent. The manufacturer will stamp an expiration date on each pack of tubes. Storing the tubes in a refrigerator may maintain or extend the shelf life, but expired tubes should not be used.

The GC/PID such as the FROG-5000™ is typically used for site characterization and can also be used for industrial hygiene purposes. The FROG-5000™ quantitatively determines soil, groundwater and air VOC concentrations down to single part per billion (ppb) concentrations or at high part per million (ppm) concentrations depending on its configuration. The chemicals commonly detected by the FROG-5000™ include benzene, toluene, ethylbenzene, xylenes, vinyl chloride, trans-1,2-dichloroethene, cis-1,2-dichloroethene, trichloroethene, tetrachloroethene, chlorinated alkenes, and naphthalene. Please refer to the user manual for restrictions/limitations: http://www.defiant-tech.com/pdfs/FROG-5000-Manual-2017-Rev3.pdf.

6.1 Conducting Total Organic Vapor Monitoring at Per- and Polyfluoroalkyl Substances (PFAS) Sites

At sites where sample collection for PFAS analysis will occur, the evolving regulatory standards for PFAS should be considered in the implementation of total organic vapor monitoring as well as the development of project planning documents such as: work plans, sampling and analysis plans, quality assurance project plans, data management plans, accident prevention plans, health and safety plans, and laboratory statements of work used to guide the collection of samples for PFAS analysis.

A consideration of the PFAS-specific sampling requirements is needed during the planning phase because cross-contamination is a prominent concern for data quality, particularly with PFAS action levels in the low parts per trillion (ppt) range. This means that the development of project data quality objectives (DQOs), and selection of action levels reporting limits are all impacted with the inclusion of sampling for PFAS analysist.

Before implementing total organic vapor monitoring during the collection of samples for PFAS analysis, it is important to review current regulatory standards to determine whether site- or project-specific changes to field measurements for total organic vapors should be included in project planning documents to align with the latest regulatory standards and sampling guidance. CDM Smith regulatory updates, as well as state and federal regulatory limit updates can be found on the PFAS InfoCenter: https://cdmsmith.libguides.com/PFAS_InfoCenter

Procedural modifications for groundwater gauging and other related field activities at PFAS sites is attached. A checklist containing common materials and sampling equipment that contain PFAS compounds can be found here: https://www.yammer.com/cdmsmith.com/#/files/214861635584

7.0 References

American Society for Testing & Materials (ASTM). D4490-96 (Re-Approved 2016), Standard Practice For Measuring the Concentration of Toxic Gasses or Vapors Using Detector Tubes.

Defiant Technologies Inc, FROG-5000™. Chemical Analysis User's Manual, 2018 (Rev.3). http://www.defiant-tech.com/pdfs/FROG-5000-Manual-2017-Rev3.pdf.

Department of Defense. Environmental Field Sampling Handbook, Revision 1. April 2013 or current revision.

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Lithologic Logging	SOP 3-5 Revision: 9 Date: August 2020

Approved: Ernest Ashley **Technical Review:** Ricky Chenenko

1.0 Objective

This technical standard operating procedure (SOP) governs lithologic logging of core, cuttings, split-spoon samples, and subsurface samples collected during field operations at sites where environmental investigations are performed. The purpose of this SOP is to present a set of descriptive protocols and standardized reporting formats to be used in making lithologic observations. It prescribes protocols for recording basic lithologic data including, but not limited to, lithologic names, texture, composition, color, sedimentary structures, bedding, lateral and vertical contacts, and secondary features such as fractures and bioturbation.

The goal of this SOP is to provide a set of instructions to produce uniform lithologic descriptions and to present a list of references to help in this task.

2.0 Background

2.1 Definitions

Note: Definitions are often promulgated or codified in state or local statutes, regulations, or ordinances and can vary between regulatory agencies. Definitions should be verified against the definitions provided by agencies regulating the work when applicable.

The following list of definitions corresponds to the description sequences outlined in Section 5.2.1. They are provided to give the geologist guidance for what to look for when following the sequences. Example lithologic logs are given in Attachment A.

Name of Sediment or Rock - In naming unconsolidated sediments, the logger shall use field equipment and reference charts to help identify the grain-size distribution and shall name the material according to the procedure in Section 5.2.1. In naming sedimentary, igneous, and metamorphic rocks, the logger shall examine the specimen for mineralogy and use the appropriate classification chart in the attachments.

Texture - In examining unconsolidated sediments, the texture shall refer to the grain-size distribution, particle angularity, sorting, and packing. The logger shall provide estimates of the grain sizes present using Attachments B and C. When larger particles such as cobbles are present, determine the size of the particles and give a percentage estimate. The sediment particles shall be examined for angularity by comparing with Attachment B and the sorting shall be determined by percentage estimation. The logger shall note that the Unified Soil Classification System (USCS) uses the term grading to describe how the materials are sorted. A poorly sorted unconsolidated material is well graded. In examining igneous rocks, texture refers to whether the specimen is aphanitic, phaneritic, glassy, fragmental, porphyritic, or pegmatitic. Attachment D has more specific definitions of these terms. For metamorphic rocks, texture refers to whether the specimen has a foliated structure (slaty, phyllitic, schistose, or gneissic) or nonfoliated structure (granular).

Color - Color may be determined using the appropriate Munsell color chart (soil or rock) and listing the Munsell number that corresponds to the color. If an unconsolidated material is mottled in color, the ranges in color shall be described. When describing core samples with several individual colors such as in phaneritic textures, individual color names shall be listed, and an overall best color name shall be given.

Sedimentary Structures - This term refers primarily to unconsolidated sediments and sedimentary rocks. There are several different sedimentary structures, and the logger is referred to Compton's *Manual of Field Geology* (1962) book for more details. Among the more common structures are bedding, cross-bedding, laminations, and burrows. These structures shall only be included in the description if found in the samples.

Degree of Consolidation - The degree of consolidation is applicable to sedimentary rocks and unconsolidated sediments and refers to how well the material has been indurated. Unconsolidated sediments may be compacted somewhat and shall be described as loose, moderately compacted, or strongly compacted. In some cases, they may be slightly cemented by caliche and shall be described as slightly cemented, moderately cemented, or strongly cemented. Sedimentary rocks are typically indurated but may vary in the degree of cementation. These materials shall be described as friable, moderately friable, or well indurated. When describing the cementing

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material, a test for reaction to hydrochloric acid (HCl) shall be performed and results recorded under the description. If the logger believes he/she can identify the cementing material, then it shall be included in the description.

Moisture Content - Moisture content refers to the amount of water within the sediment or the matrix. Typically, sedimentary rocks and unconsolidated sediments may have water within and shall be described as dry, moist, wet (not flowing), or saturated (flowing water). Igneous and metamorphic rocks may have water within fractures and cavities. The presence of water and pertinent observations that may help in site evaluation in these rocks shall be noted.

Presence of Fractures, Cavities, and Secondary Mineralization - The rock that may be encountered during drilling may have fractures or joints present within them. Should fractures be observed, they shall be noted and a description of the density of fractures shall be given. Cavities or vugs may be present, and the density of voids, as well as size estimation, shall be given. If fractures or cavities contain evidence of secondary minerals such as calcite, zeolites, clays, or iron oxides, then a description of the mineral fill shall be added.

Evidence of Contamination - The logger shall examine the core and note any obvious signs of contamination such as streaking, free product, odor, or discoloration. These observations shall be noted in the field book along with readings from the photoionization or flame ionization detector (PID/FID). PID/FID hits shall be recorded on the Lithologic Log Form.

Description of Contacts - The logger shall note any significant change in lithology. These changes may be gradational contacts within sediments or may be sharp contacts such as sediments over rocks. Whether the contacts are gradational or sharp shall be noted. Also note the depth below the surface.

Composition - The composition of the rock refers to the mineralogy of the material encountered. For sedimentary rocks, it is important to note the matrix composition and use Attachment E in naming. In igneous and metamorphic rocks, the minerals that make up the rock shall be identified, and an estimation of their percentage shall be noted. The classification charts listed in Attachments D and F provide a description of common compositions.

2.2 Associated Procedures

- SOP 4-1, *Field Logbook Content and Control*

2.3 Discussion

The installation of monitoring wells, piezometers, and boreholes is a standard practice at many sites requiring environmental investigations. The installation of these devices requires that a trained geologist, geotechnical engineer or other earth scientist under a geologist's supervision, provide lithologic descriptions as they encounter subsurface material during auguring or drilling. In evaluating these lithologic descriptions from different boreholes, monitoring wells, or piezometers, it is sometimes possible to correlate similar units. It is important to provide uniform and consistent descriptions to help with this task.

In describing lithologies, it is helpful to have a set of references covering items such as the classification of igneous, metamorphic, and sedimentary rocks; grain-size percentage estimation; particle shape; grain-size charts; and lithologic symbols. To make lithologic descriptions produced by CDM Smith staff as uniform and consistent as possible, this SOP provides a list of references to be used in the field. This SOP also provides a sequence for recording information on a standardized log form to make descriptions as uniform and consistent as possible.

3.0 General Responsibilities

Geologist - The field person performing lithologic logging is responsible for making a consistent and uniform log and for turning in field forms and logbooks to the field team leader (FTL).

Field Team Leader (FTL) - The FTL is responsible for maintaining logbooks and forms and for approving techniques of lithologic logging not specifically described in this SOP.

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***Note*:** Responsibilities may vary from site to site. Therefore, all field team member responsibilities shall be defined in the field plan or site/project specific quality assurance plan.

4.0 Required Equipment

The description of subsurface lithologies requires a minor amount of field equipment for the geologist. This section provides a list of equipment to be used by the lithologic logger but does not include equipment such as drill rigs, PID/FID, sampling equipment, and personal protection equipment. The following is a general list of equipment that may be used:

- Field logbook and Lithologic Log Form
- Clipboard
- Dilute (10 percent) HCl
- Plastic sheeting
- PVC sampling trays
- Waterproof pens
- No. 200 or 230 sieve
- 10x magnifying hand lens
- Reference field charts
- Engineers tape measure or folding stick

5.0 Procedures

5.1 Office

- Obtain field logbook and Lithologic Log Forms
- Coordinate schedules/actions with FTL
- Obtain necessary field equipment (i.e., hand lens, 10 percent HCl)
- Obtain CDM Smith reference field charts
- Review field support documents (i.e., sampling plan, health and safety plan)
- Review applicable geologic references such as U.S. Department of Agriculture (USDA) Soil Conservation Survey Soil Surveys and/or geologic maps

5.1.1 Documentation

Individuals performing lithologic logging will record their observations in a commercially available, bound field logbook (e.g., Lietz books) and/or on individual Lithologic Log Forms. Lithologic loggers will follow the general procedures for keeping a field logbook (SOP 4-1). When using a bound field logbook, record the same data required on the Lithologic Log Form. Data from the field logbook should be transcribed to the Lithologic Log Form if filling in the form in the field is not feasible. However, the data should be the same as that recorded in the field logbook. Editing field logbook data is not allowed. In addition, if data are transcribed to the Lithologic Log Form, it shall be done within one day of the original data recording. All blanks in the Lithologic Log Form should be filled out. If an item is not applicable, an "NA" shall be entered. Note that the Lithologic Log may be modified based on the type of drilling (i.e., changing the blow count column to rock quality designation (RQD) for rock coring).

The Lithologic Log Form shall be filled out according to the following instructions:

The front page of the form contains general information:

- The project name, location, and description
- Borehole number
- Date that the drilling activity was started and completed
- Name of the person logging the well shall be recorded along with the total depth drilled
- Borehole diameter(s) and drilling methods shall be recorded
- Name and company of the driller and the type of drill rig and bits used

A map showing the drilling location may be attached.

The continuation page(s) shall be completed according to the instructions provided within this section and according to the sequence provided in Section 5.2.1. The depth column refers to the depth below ground surface and shall be provided in feet. The tick marks can

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be arbitrarily set to any depth interval depending on the scale needed except where client requirements dictate the spacing. The lithology column shall contain a schematic representation of the subsurface according to the symbols found in Attachment G. Use a single X to mark the area where no core was recovered, and notes shall be recorded as to why the section was not recovered. The X shall be marked from the top to the bottom of the section so that the entire interval is marked. If the geologist can interpret the probable lithology of the missing section with reasonable confidence, they may fill in the symbols behind the X. Sharp or abrupt contacts between lithologies will be indicated by a solid horizontal line. Gradational changes in lithologic composition will be shown by a gradual change of lithologic symbol in the appropriate zone. PID/FID hits shall be recorded within the PID/FID column at the appropriate depth, if applicable. Blow counts specifically refer to the number of hammer blows it takes to drive a split-spoon into the ground. Usually this is recorded as the number of blows per 6 inches but may vary. The recording of blow counts provides a relative feel for the cohesiveness of the formation. The individual recording lithologic logs shall ask the FTL whether it is required information. The description column is the most important part of the Lithologic Log Form and is where the lithology is described. In completing this section, use the applicable reference charts and complete according to the sequence in Section 5.2.1. The sample interval column is reserved for noting any samples taken and processed for the laboratory. The sample number shall be filled in at the appropriate depth. The last column (prior to the remarks column) refers to the percent core recovery. The individual performing lithologic logging shall determine the amount recovered and write the percentage at the appropriate depth.

In addition to the information on the lithologic form, the logger shall record the appropriate information into the logbook when there is a rig shutdown, rig problems, failures to recover cores, or other issues.

5.2 General Guidelines for Using and Supplementing Lithologic Descriptive Protocols

This SOP is intended to serve as a guide for recording basic lithologic information with emphasis on those sediment or rock properties that affect groundwater flow and contaminant transport. The fields of specialization of geologists using this SOP will vary. If the user has expertise in a particular field of petrology or soil science that allows for descriptions of certain geologic sections beyond the basic level required by this SOP, they may expand their descriptions. This shall be done only with approval of the FTL. The descriptive protocol presented here should be followed in making basic observations. Any further descriptions should follow a protocol that is published and generally recognized by the geologic community as a standard reference.

General lithologic description will not include collecting detailed information that can be obtained from sieve analysis or petrographic analysis. This SOP is a guide for recording visual observations of samples in the field aided by a 10x hand lens and the other simple tools. Field descriptions shall be supplemented by petrographic analysis and sieve analysis when the FTL needs data on numerical grain-size distributions, secondary porosity development, or other data that can be collected by these methods.

Description detail will also depend on the drilling and sampling methods used. Descriptions of drill cuttings will generally be very basic verses detailed descriptions of soil split-spoon or rock core samples.

This SOP includes protocols for describing igneous, metamorphic, and sedimentary bedrock, and unconsolidated materials. Common abbreviations used for lithologic logging purposes are given in Attachment H. This SOP includes charts to be used for classification and naming of rocks, sediments, and soils and descriptions of texture, sedimentary structures, and percentage composition of grains. There is also a chart of lithologic symbols to be used and a list of abbreviations. For charts covering other observations or field procedures not specified by this SOP, the user is referred to the following for more information:

- *Compton's Manual of Field Geology and American Geological Society (AGI) Data Sheets for Geology in the Field, Laboratory, and Office* contain other reference charts applicable to descriptions. The source of the chart used should be recorded on the Lithologic Log Form or in the field logbook.
- The Munsell soil color chart may be used for descriptions of color.
- The *Dictionary of Geological Terms* (AGI) is to be used for definitions of geological terms.

Some observations will be common to all rock and soil descriptions. All descriptions shall include as appropriate: name of sediment or rock, color, sedimentary structures, texture, moisture content, composition, fabric, significant inclusions, and degree of consolidation or induration. The description of each category shall be separated by a semicolon. Each section that discusses descriptions of a particular

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lithology provides a sequence for recording observations. Follow these sequences for all descriptions. All interpretive comments shall be segregated from lithologic descriptions by recording them in the "remarks" column.

Secondary features affecting porosity and permeability such as fractures (joints or faults), cavities, and/or bioturbation shall be described if observed. Exact measurement of apparent bed thicknesses shall be made when logging core and should supplement terminology such as "thin" or "thick." Record exact locations of water tables, perched saturated zones, and description of visible contaminants.

In some cases, individuals logging may wish to describe materials such as unconsolidated sediments and soils according to different systems such as the USCS or USDA Soil Taxonomy System. These descriptions can provide additional information from what is required by this SOP. If an individual is competent in using other description methods, then they shall do so with permission from the FTL.

It is often more practical to use abbreviations for frequently repeated terminology when recording lithologic descriptions. For the terms given in this SOP, its attachments, or the associated charts to be used for description in the field, use only the designated abbreviations. Other abbreviations are allowed; however, the abbreviation and its meaning shall be recorded on the lithologic log the first time it is used and shall be recorded at least once for every well or boring log. Loggers are cautioned to limit the use of abbreviations to avoid producing a lithologic log that is excessively cryptic.

5.2.1 Protocols for Lithologic Description of Discrete Soil or Rock Cores

This section describes the protocols for completing a lithologic description based on discrete soil or rock core samples. The logger shall use the appropriate portion of this section when describing cores. In recording descriptions of sedimentary sections from a whole core, there are at least two strategies that can be used to reduce the description length. The first strategy is to look at as long of a section of core as possible, looking for the "big" picture. For instance, in a 20-foot-thick zone, the dominant lithology may be siltstone that is interrupted by several thin beds of another lithology such as gravel. This section description can be simplified by writing: 35-55 below ground surface (bgs) = siltstone (with other descriptors) except as noted; 37.5-38.5 gravel zone (with descriptors); 40-42 pebble zone (with descriptors); etc. This also aids in "seeing" the thickest unit designations possible for use in modeling. Another acceptable way to describe the same interval would be: 35-37.5 siltstone; 37.5-38.5 gravel zone (with descriptors); 38-40 same as 35-37.5; 40-42 pebble zone (with descriptors); etc.

Description of Unconsolidated Material

Unconsolidated material comprises a significant portion of the sections of interest at CDM Smith sites. The shallow subsurface is very important to the hydrogeologic investigation, as this is the portion of the geologic section where infiltration first occurs. Much of the contamination at sites being investigated is surface contamination and therefore lies on, or within, the upper portion of the surficial material.

The scientist shall use the USCS classification if consistent with project objectives (Attachment K). More detailed soil descriptions shall only be made in addition to descriptions outlined below.

Descriptions of unconsolidated sediments shall follow the following sequence:

- Name of sediment (sand, silt, clay, etc.)
- Texture
- Composition of larger-grained sediments
- Color
- Structure
- Degree of consolidation and cementation
- Moisture content
- Evidence of bioturbation
- Description of contacts

In naming unconsolidated material (refer to Attachment I - Naming of Unconsolidated Materials for a generalized approach from the Manual of Field Geology [Compton, 1962]), the particle size with the highest percentage is the root name. When additional grains are present in excess of 15 percent, the root name is modified by adding a term in front of the root name. For instance, if a material is 80 percent sand and 20 percent gravel, then it is gravelly sand. If the subordinate grains comprise less than 15 percent but greater than 5 percent, the name is written:

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_____(dominant grain) with _____(subordinate grain). For example, a sediment with 90 percent sand and 10 percent silt would be named a sand with silt. If a sediment contains greater than 15 percent of four particle sizes, then the name is comprised of the dominant grain size as the root name and modifiers as added before. For example, if a material is 60 percent sand, 20 percent silt, and 20 percent clay the name would be a silty clayey sand. If a material is 70 percent sand, 20 percent silt, and 10 percent clay, it would be a silty sand with clay. When large cobbles or boulders are present, their percentage shall be estimated, and their mineralogy recorded. Use AGI Data Sheet 29.1 (Attachment B) for grain terms. Refer to Attachment J for an example sorting chart. USCS or Burmister Soil Classification System may be used if suitable for the project or required.

Attachment K provides a summary of the USCS, including a grain size scale and a summary of soil classifications with generalized field characteristics. USCS subdivides soils into three classes – coarse grained (more than half the material by weight is comprised of grains visible to the naked eye); fine grained (more than half the material by weight is comprised of grains not visible to the naked eye) and highly organic soils. The soils are then further subdivided according to grain size distribution for coarse grained soils, and percent silt and clay for fine grained soils. Percent silt and clay is primarily estimated by plasticity in the field (ability to be rolled into a ribbon; stickiness); for laboratory classification liquid limit and grain size analysis by hydrometer may be used.

Attachment L provides a summary of the use of the Burmister Soil Classification System. Under the Burmister system, the color of the soil is listed first, followed the various grain sizes, or grain size ranges, listed in descending order of percentage. The major component (>50%) is fully capitalized and the first letter is capitalized for minor components. Burmister uses the following descriptors for percentage range:

- and – 35-50%
- some – 20-35%
- little – 10-20%
- trace – up to 10 %

For example, Gray medium to fine SAND, little gravel, trace silt is composed primarily of fine to medium sand (totaling at least 50%), 10-20% gravel and up to 10 % silt.

Attachment M provides the modified Wentworth grain size scale, which is often used with the Burmister Soil Classification System.

Attachment N provides scales of clay and sand consistency which can be used with any soil descriptions.

Description of Bedrock Material

Descriptions of rock core can vary in detail depending on the experience of the geologist and the scope of the project. However, features that shall be noted while logging rock core include depth of major fractures, mineralization in fractures and cavities, degree of weathering, hardness, and RQD. The RQD is a ratio of the total length of intact rock 4 inches in length or longer to the length of the core run. The RQD provides a numeric indication of the degree of fracturing and weathering, and thereby, and indication of conductive zones and preferential contaminant migration pathways. Only count natural fractures, often evident by fresh rough surfaces, as fractures. When in doubt, consider the fracture natural.

Description of Sedimentary Rocks

Sedimentary rocks consist of lithified detrital sediments such as sand and clay, chemically precipitated sediments such as limestone and gypsum, and biogenic material such as coal and coquina. The classification scheme for naming these rocks is found in Attachment E - Classification of Sedimentary Rocks.

Descriptions for sedimentary rocks shall be given in the lithologic log in the following sequence:

- Name of rock
- Texture
- Color
- Bedding
- Sedimentary structures
- Degree of induration
- Presence of fractures or vugs
- Bioturbation
- Description of contacts

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Description of Igneous and Metamorphic Rocks

Igneous and metamorphic rocks are not as commonly observed at work sites. Where they form bedrock, the development of fractures and vugs is important to their hydrologic properties. If the logger is unsure of the name of the rock because of difficulty in determining mineralogy, the name shall be accompanied by a question mark. Attachments D and F provide a classification system for these materials.

Igneous and metamorphic rock descriptions shall follow the general format:

- Name of rock
- Texture
- Color
- Degree of induration for volcaniclastics
- Composition
- Presence of fractures or vugs
- Presence of secondary mineralization
- Foliation

5.2.2 Protocols for Lithologic Description from Drill Cuttings

Many boreholes drilled in bedrock are drilled without sampling or coring. This section describes the protocols that may be used for completing lithologic logs when discrete soil samples or rock cores are not collected. Lithologic logging of boreholes drilled without sampling generally requires a higher level of experience from the geologist as interpretations need to be made based on a number of factors that are usually not taken into account when logging from discrete samples. Certain details recorded on lithologic logs based on discrete sampling will not be seen (such as sedimentary structures) and therefore cannot be recorded from drill cuttings. Below are general guidelines that shall be used while filling out boring logs based on drill cuttings:

Auger Drilling

The following are general guidelines that can be used to describe cuttings from auger drilling:

- Collect cuttings for descriptions at least every 5 feet or if a change in the cuttings is noticed.
- Keep in mind travel time for cuttings to reach the surface when estimating the depth from which the cuttings originated.
- Pay attention to the reaction of the drill rig as different lithologies are encountered such as chattering versus smooth drilling, rapid easy auger advancement versus slow hard drilling, and auger refusal.
- Watch for the occurrence of water.
- Examine soil on auger flites when they are pulled from the borehole

Bedrock Rotary Drilling (including air hammer, air rotary, and mud rotary)

The following are general guidelines that shall be used during rotary drilling:

- Use a strainer to collect cuttings at intervals of at least 10 feet or changes in lithology.
- Wash the cuttings in the strainer with potable water and examine for lithology.
- Note size of rock chips.
- Note changes in drill rig responses such as increasing or slowing drilling rate, sudden drop of the drill stem, increase in chatter and record in the remarks column of the lithologic log. These are usually good indicators of changes in lithology and/or fractures.
- If drilling with air, look for changes in color and reduction or disappearance of dust as an indicator of a lithology change and/or presence of water.
- If drilling with mud/fluid rotary, watch for gain or loss of water as an indicator of conductive zones.
- Record drilling rates as feet/minute, or as start and end times of each drill rod, in the remarks column of the boring log.

6.0 Restrictions/Limitations

Only geologists, or similarly qualified persons trained in lithologic description, are qualified to perform the duties described in this SOP. The FTL for a project will have the authority to decide whether or not an individual is qualified.

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7.0 References

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8.0 Attachments

Note: These attachments are for informational purposes. Other equivalent charts such as USCS or logs may be used.

Attachment A - Lithologic Logs
Attachment B - Grain-Size Scale; Graph determining size of sedimentary particles, particle degree of roundness charts
Attachment C - Comparison Chart for Estimating Percentage Composition
Attachment D - Classification of Igneous Rocks
Attachment E - Classification of Sedimentary Rocks
Attachment F - Classification of Metamorphic Rocks
Attachment G - Lithologic Symbol Chart
Attachment H - Common Abbreviations for Lithologic Logging
Attachment I - Naming of Unconsolidated Materials
Attachment J - Sorting Chart
Attachment K - Summary of Unified Soil Classification System (USCS)
Attachment L - Summary of Burmister Soil Classification System
Attachment M - Modified Wentworth Grain Size Scale
Attachment N - Soil Consistency Scale

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Attachment A

Lithologic Logs

CORING LOG		Client		Boring Number
Company Name CDM Smith		Drilling Subcontractor		Sheet 1 of Sheets
Project		Location		
Name of Driller		Drill Rig(s)		
Sizes and Types of Drilling and Sampling Equipment		Northing	Easting	ORNL Grid
		Surface Elevation		
		Date Started	Date Completed	
Overburden Thickness		Depth Groundwater Encountered		
Depth Drilled into Rock		Depth to Water and Elapsed Time After Drilling Completed		
Total Depth of Hole		Other Water Level Measurements (Specify)		
Drilling Method	Borehole Diameter(s)	Depth of Surface Casing		
Total Core Recovery	Total Number of Core Boxes	Signature of Geologist		
Location Map				
Project		Boring Number		

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Attachment A

Lithologic Logs (cont.)

CORING LOG
(continuation sheet)

Boring Number:

Project: | Geologist: | Sheet of Sheets

Elev (ft)	Depth (ft) bgs	Description of Materials	USCS/ Litho	Field Screening Results (ppm)	Core Run No.	RQD	Recovery (ft)	Remarks

Project: | Boring Number:

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Attachment A

Lithologic Logs (cont.)

DRILLING LOG		Client		Boring Number
Company Name CDM Smith		Drilling Subcontractor		Sheet 1 of Sheets
Project		Location		
Name of Driller		Drill Rig(s)		
Sizes and Types of Drilling and Sampling Equipment		Northing	Easting	ORNL Grid
		Surface Elevation		
		Date Started	Date Completed	
Overburden Thickness		Depth Groundwater Encountered		
Depth Drilled into Rock		Depth to Water and Elapsed Time After Drilling Completed		
Total Depth of Hole		Other Water Level Measurements (Specify)		
Drilling Method	Borehole Diameter(s)	Depth of Surface Casing	Signature of Geologist	
Location Map				
Project			Boring Number	

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Attachment A

Lithologic Logs (cont.)

DRILLING LOG
(continuation sheet)

Boring Number:

Project: | Geologist: | Sheet of Sheets

Elev (ft)	Depth (ft) bgs	Description of Materials	USCS/ Litho	Field Screening Results (ppm)	Sample No.	Blow Counts	Recovery (ft)	Remarks

Project: Boring Number:

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Attachment B

Grain-Size Scale; Graph determining size of particles, particle degree of roundness charts

AGI DATA SHEET 29.1

Grain-size Scales

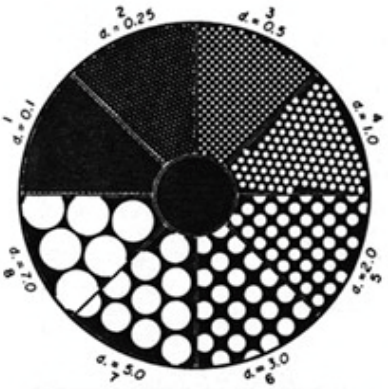
By Roy L. Ingram, University of North Carolina

GRAIN-SIZE SCALE USED BY AMERICAN GEOLOGISTS
Modified Wentworth Scale — after Lane, et al., 1947, Trans. American Geophysical Union, v. 28, p. 936-938

GRADE LIMITS phi	mm	mm	inches	U.S. Standard Sieve Series	GRADE NAME		
−12	4096		161.3		very large		
−11	2048		80.6		large		
−10	1024		40.3		medium	Boulders	
−9	512		20.2		small		
−8	256		10.1		large		
−7	128		5.0		small	Cobbles	GRAVEL
−6	64		2.52	63 mm	very coarse		
−5	32		1.26	31.5 mm	coarse		
−4	16		0.63	16 mm	medium	Pebbles	
−3	8		0.32	8 mm	fine		
−2	4		0.16	No. 5	very fine		
−1	2		0.08	No. 10	very coarse		
0	1		0.04	No. 18	coarse		
+1	1/2	0.500		No. 35	medium	Sand	SAND
+2	1/4	0.250		No. 60	fine		
+3	1/8	0.125		No. 120	very fine		
+4	1/16	0.062		No. 230	coarse		
+5	1/32	0.031			medium		
+6	1/64	0.016			fine	Silt	
+7	1/128	0.008			very fine		
+8	1/256	0.004			coarse		MUD
+9	1/512	0.002			medium		
+10	1/1024	0.001			fine	Clay size	
+11	1/2048	0.0005			very fine		
+12	1/4096	0.00025					

AGI DATA SHEET 29.2

LIGHT PARTICLES



References: (1) George V. Chilingar, 1956, Soviet classification of sedimentary particles and Vasil'evsky graph: AAPG Bull., v. 40, no. 7, p. 1714. (2) M.S. Shvetsov, 1948, Petrography of sedimentary rocks, 2nd ed., 387 p. Gosgeolizdat, Moscow-Leningrad

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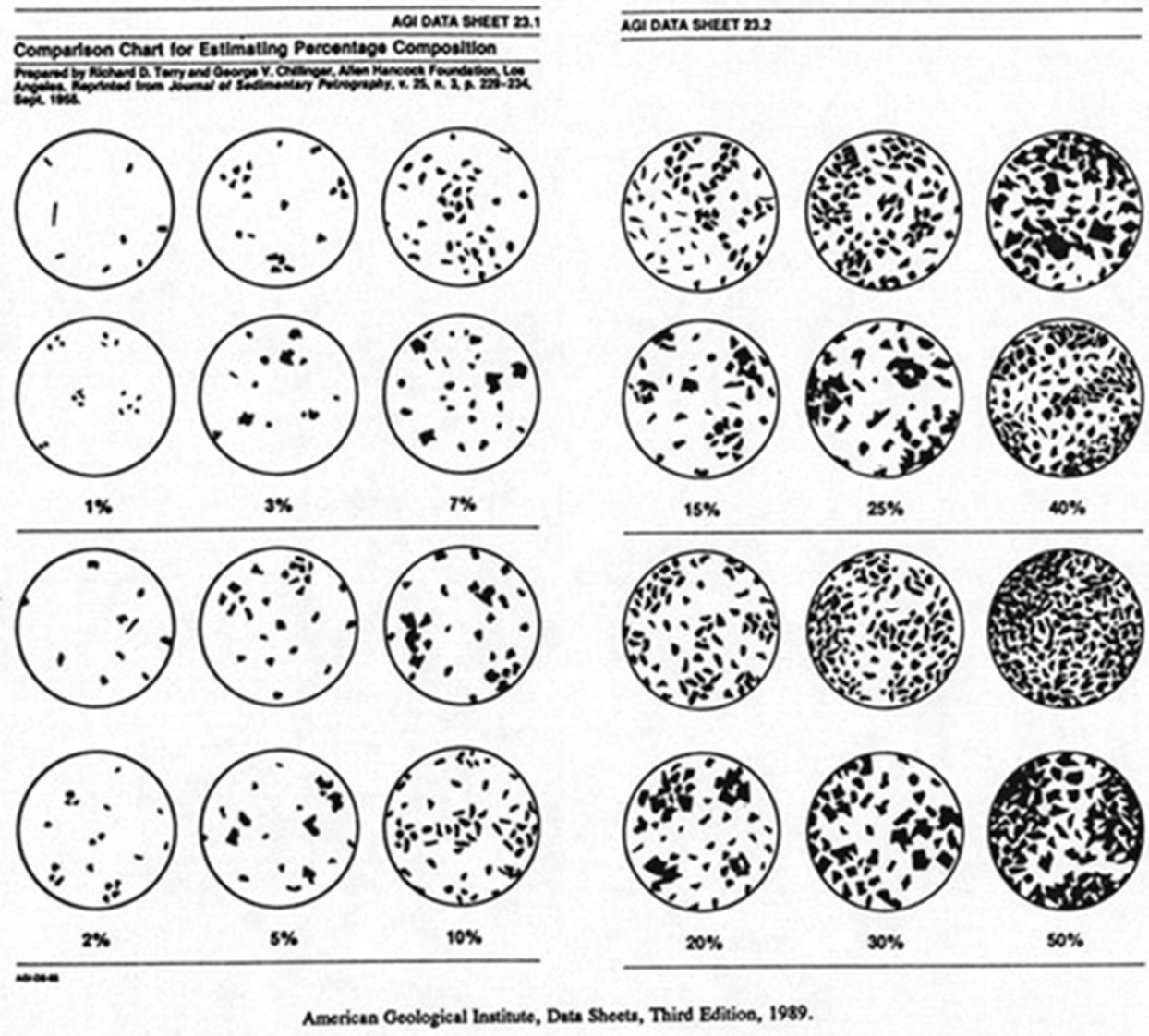
Attachment C

Comparison Chart for Estimating Percentage Composition



American Geological Institute, Data Sheets, Third Edition, 1989.

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Attachment D

Classification of Igneous Rocks

Classification of Igneous Rocks					
Mineral Composition					
		Quartz >10% Abundant feldspar Mafic minerals minor	Quartz <10% Abundant feldspar Mafic minerals moderate	Feldspar abundant Mafic Minerals 40-70%; Quartz minor or absent	Mafic minerals >70%
Color Index		Light Color	Intermediate color	Dark	Dark
Chemistry		SiO_2 70%	SiO_2 60%	SiO_2 50%	SiO_2 40%
TEXTURE	Phaneritic (visible with naked eye)	Granite (Gr)	Diorite (Dr)	Gabbro (Gb)	Peridotite (Pr) (mostly olivine)
	Aphanitic (microscopic)	Rhyolite (Ry) (quartz phenocrysts)	Andesite (An) (feldspar or mafic phenocrysts; no quartz)	Basalt (Ba)	Komatiite (Km) (very rare)
		Felsite (Fl) (no phenocrysts)			
	Glassy	Obsidian (ob) Pumice (Pu)		Rare	
	Glassy-Fragmental (Pyroclastic)	Tuff <4mm (Tf) Breccia >4mm (Br)		Rare	

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Attachment E

Classification of Sedimentary Rocks

Classification of Sedimentary Rocks				
Detrital	***Detrital Classification***	***Principal Composition***	***Additional Identifying Characteristics***	***Name of Rock***
	Rudaceous (clast diameter > 2 mm)	Gravel	Rounded Clasts	Conglomerate (Cg)
			Angular Clasts	Breccia (Br)
	Arenaceous (clast diameter between 0.0625 mm [1/16 mm] and 2 mm)	Sand	Mineral composition and detrital matrix content varies. Additional detrital matrix qualifiers (arenite or wacke) and mineral composition qualifiers (quartz, arkose, feldspathic, etc.) may be necessary.	Sandstone (Sa)
	Argillaceous (clast diameter <0.0625 mm)	Mud	Non-fissile along bedding planes, silt predominant over clay	Siltstone (Sls)
			Non-fissile along bedding planes, clay predominant over silt	Claystone
			Non-fissile along bedding planes, silt and clay fraction approximately equal or unknown	Mudstone (Ms)
			Fissile along bedding planes	Shale (Shl)
Chemical	***Chemical Classification***	***Principal Composition***	***Additional Identifying Characteristics***	***Name of Rock***
	Calcareous	Calcite (Calcium Carbonate)	Effervesces on contact with dilute HCl	Limestone (La)
		Dolomite (Calcium Magnesium Carbonate)	Pulverized sample effervesces on contact with dilute HCL	Dolomite (Dl), Dolostone
	Siliceous	Quartz (Silicon Dioxide)	Hard, dense, fractures conchoidally	Chert (Ch)
	Evaporites	Hydrated Calcium Sulfate	Earthy and crumbly	Gypsum (Gy)
		Calcium Sulfate	Usually exhibits indistinct stratification	Anhydrite
		Halite (Sodium Chloride)	Cubic cleavage	Rock Salt (Na)
Organic (Organogenetic or Biochemical)	***Chemical Classification***	***Principal Composition***	***Additional Identifying Characteristics***	***Name of Rock***
	Calcareous	Fossil shells and fragments	Loosely cemented fragmental limestone	Coquina (Cq)
		Foraminiferal shells	Soft, micritic limestone	Chalk (Chk)
		Calcite or aragonite	Derived from evaporation of spring water	Travertine (Tvr)
	Siliceous	Diatom shells (saltwater or freshwater organisms)	Light-colored, soft, friable, and porous siliceous deposit	Diatomite (Dm)
	Carbonaceous	Plant Remains	Degree of lithification varies-additional qualifiers such as peat, lignite, bituminous and anthracite may be necessary.	Coal (Cl)

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Attachment F

Classification of Metamorphic Rocks

Classification of Metamorphic Rocks			
Structure	**Texture**	**Chief Minerals**	**Name**
Non foliate	granular; breaks across grains	quartz	Quartzite (Qzt)
	granular; grains clearly visible	calcite	Marble (Mbl)
	granular; grains altered and indistinct	plagioclase, chlorite, epidote hornblende	Greenstone (Grs)
	very fine-grained	indistinguishable; mostly submicroscopic micas and clays	Hornfels (Hnf)
Foliate	slaty	submicroscopic mica, quartz	Slate (Slt)
	phyllitic	microscopic mica, quartz	Phyllite (Pyl)
	schistose	microscopic mica, quartz, amphibole	Blueschist
		chlorite, mica plagioclase	chlorite schist (CL-Sch)
		muscovite, quartz	Muscovite (Ms) Schist (Sch)
		garnet, muscovite	Garnet (G) Muscovite (Ms) Schist (Sch)
		hornblende, plagioclase	Amphibolite (Amp)
		staurolite, garnet, muscovite	Garnet (G) Staurolite (S) Muscovite (Ms) Schist (Sch)
	gneissose (banded)	plagioclase, hornblende	Amphibolite (Amp) Gneiss (Gns)
		feldspar, quartz	Granitie (Gr) Gneiss (Gns)
		eye-shaped feldspar, mica	Augen (Au) Gneiss (Gns)

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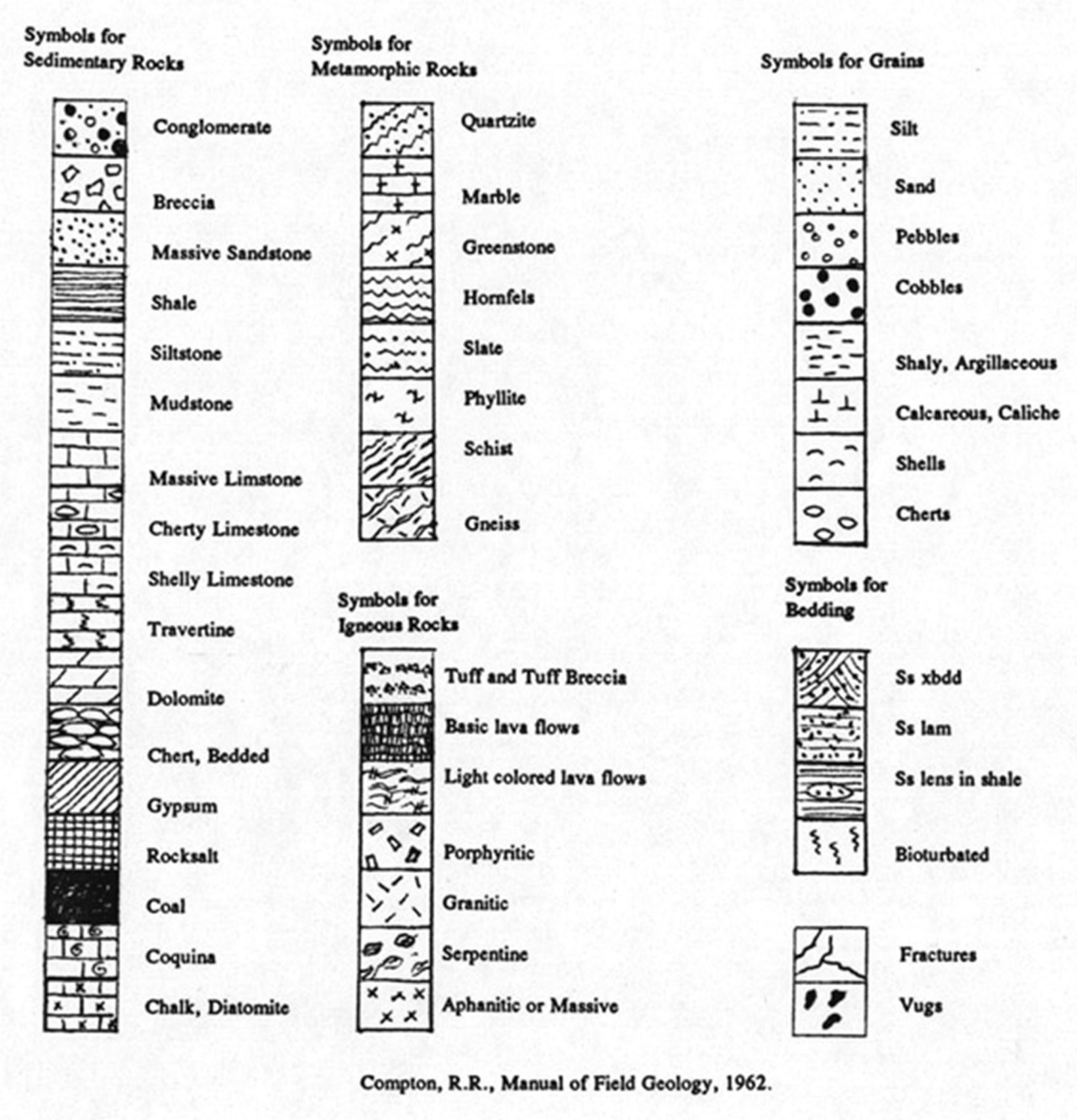
Attachment G

Lithologic Symbol Chart



Compton, R.R., Manual of Field Geology, 1962.

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Attachment H

Common Abbreviations for Lithologic Logging

Common Abbreviations		
Abundant – abnt	Diameter – dia	Laminated – lam
Amount – amt	Different – diff	Maximum – max
Approximate – approx	Disseminated – dissem	Pebble – pbl
Arenaceous – aren	Elevation – elev	Phenocryst – phen
Argillaceous – arg	Equivalent – equiv	Porphyritic – proph
Average – ave	foliated – fol	Probable – prob
Bedded – bdd	Formation frm	Quartz – qrz
Bedding – bdg	Fracture – frac	Regular – reg
Calcareous – calc	Fragmental – frag	Rocks – rx
Cemented – cmt	Granular – Gran	Rounded – rnd
Cobble – cbl	Gypsiferous – Gyp	Saturated – sat
Contact – ctc	Horizontal – hriz	Secondary – sec
Cross-bedded - xbdd	Igneous – ign	Siliceous – sil
Cross-bedding – xbdg	Inclusion – incl	Structure – struc
Cross-laminated – xlam	Interbedded – intbdd	Unconformity – uncnf
Crystal – xl	Irregular – ireg	Variegated – vrgt
Crystalline – xln	Joint – jnt	Vein – vn
Grain Size	**Contacts**	**Sorting**
grain – gn	gradational – grad	poor – pr
fine – f	erosional – er	moderate – mod
very fine – vf	abrupt – ab	well – well
medium – med		
coarse – crs	**Fabric**	
large – lg	grain supported – gs	
very large – vlg	matrix supported – ms	
small – sm	imbricate – im	

Adapted from, Compton, R.R., *Manual of Field Geology*, 1962.

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Attachment I

Naming of Unconsolidated Materials

Main Particle	Gravel	Sand	Silt	Clay
> 15 % gravel	Gravel	Gravelly Sand	Gravelly Silt	Gravelly Clay
> 15 % sand	Sandy Gravel	Sand	Sandy Silt	Sandy clay
> 15 % silt	Silty Gravel	Silty Sand	Silt	Silty Clay
> 15 % clay	Clayey Gravel	Clayey Sand	Clayey Silt	Clay
5-15 % gravel	Not Applicable	Sand with Gravel	Silt with Gravel	Clay with Gravel
5-15 % sand	Gravel with sand	Not applicable	Silt with Sand	Clay with sand
5-15 % silt	Gravel with silt	Sand with silt	Not applicable	Clay with silt
5-15 % clay	Gravel with clay	Sand with clay	Silt with clay	Not applicable
> 15% gravel plus 15% sand	Sandy Gravel	Gravelly Sand	Gravelly Sandy Silt	Gravelly Sandy Clay
> 15% gravel plus 15% silt	Silty Gravel	Gravelly Silty Sand	Gravelly Silt	Gravelly Silty Clay
> 15% gravel plus 15% clay	Clayey Gravel	Gravelly Clayey Sand	Gravelly Sandy Silt	Gravelly Clay
> 15% sand plus 15% silt	Silty Sand Gravel	Silty Sand	Sandy Silt	Sandy Silty Clay
> 15% sand plus 15% clay	Sandy Clayey Gravel	Clayey Sand	Sandy Clayey Silt	Sandy Clay
> 15% silt plus 15% clay	Silty Clayey Gravel	Silty Clayey Sand	Clayey Silt	Silty Clay
Note: Other combinations are possible when all particle sizes are present in greater than 15%. For example, a Silty Clayey Gravelly Sand. Other possible combinations exist such as a Gravelly Sand with silt.				

Compton, R.R., *Manual of Field Geology*, 1962.

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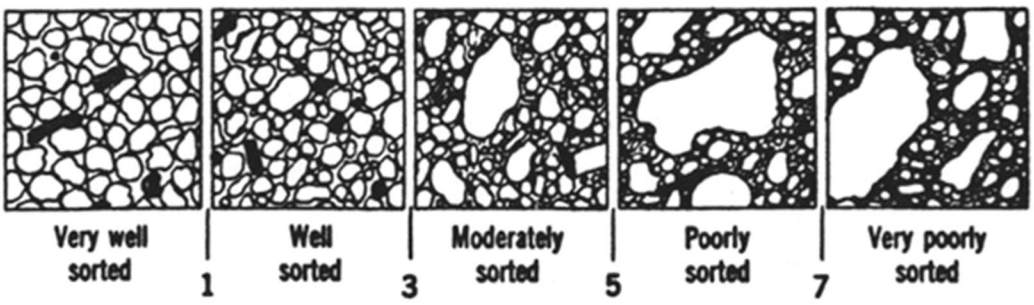
Attachment J

Sorting Chart



Compton, R.R., Manual of Field Geology, 1962.

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Attachment K
Summary of Unified Soil Classification System (USCS)
Grain Size Scale

Unified Soil Classification System (USCS)

	MILLIMETERS	INCHES	SIEVE SIZES	
BOULDERS	> 300	> 11.8	-	
COBBLES	75 - 300	2.9 - 11.8	-	
GRAVEL:				
COARSE	75 - 19	2.9 - .75	-	
FINE	19 - 4.8	.75 - .19	3/4" - No. 4	
SAND:				
COARSE	4.8 - 2.0	.19 - .08	No. 4 - No. 10	
MEDIUM	2.0 - .43	.08 - .02	No. 10 - No. 40	
FINE	.43 - .08	.02 - .003	No. 40 - No. 200	
FINES:				
SILTS	< .08	< .003	< No. 200	
CLAYS	< .08	< .003	< No. 200	

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Attachment K

Summary of Unified Soil Classification System (USCS) (Continued)

Summary of USCS Field Identification Tests							
Coarse-Grained Soils **More than half the material (by weight) is individual grains visible to the naked eye**	**Gravelly Soils** More than half of coarse fraction is larger than 4.75 mm		**Clean Gravels** Will not leave a stain on a wet palm	Well Graded Gravel: Substantial amounts of all grain particle sizes			GW
				Poorly Graded Gravel: Predominantly one size or range of sizes with some intermediate sizes missing			GP
			Dirty Gravels Will leave a stain on a wet palm	Silty Gravel: Non-plastic fines (to identify, see ML below)			GM
				Clayey Gravel: Plastic fines (to identify, see CL below)			GC
	Sandy Soils More than half of coarse fraction is smaller than 4.75 mm		**Clean Sands** Will not leave a stain on a wet palm	Well Graded Sand: Wide range in grain size and substantial amounts of all grain particle sizes.			SW
				Poorly Graded Sand: Predominantly one size or a range of sizes with some intermediate sizes missing			SP
			Dirty Sands Will leave a stain on a wet palm	Silty Sand: Non-plastic fines (to identify, see ML below)			SM
				Clayey Sand: Plastic fines (to identify, see CL below)			SC
Fine-Grained Soils **More than half the material (by weight) is individual grains not visible to the naked eye (<0.08 mm)**	**Ribbon**	**Liquid Limit**	**Dry Crushing Strength**	**Dilatancy Reaction**	**Toughness**	**Stickiness**	
	None	<50	None to Slight	Rapid	Low	None	ML - Silt
	Weak	<50	Medium to High	None to Very Slow	Medium to High	Medium	CL – Lean Clay
	Strong	>50	Slight to Medium	Slow to None	Medium	Low	MH -Elastic Silt
	Very Strong	>50	High to Very High	None	High	Very High	CH – Fat Clay
Highly Organic Soils	Readily identified by color, odor, spongy feel, and frequently by fibrous texture			**LL<50 organic clay or silt depending upon plasticity** **LL>50 organic clay or Silt depending upon plasticity** **Peat - Primarily dark, with organic odor**			OL OH Pt

Logger is encouraged to reference ASTM D2487-17 for additional detail in classifying soil. Classification Tables and figures from ASTM D248-17 follow.

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Attachment K

Summary of Unified Soil Classification System (USCS) (Continued)

TABLE 1 Soil Classification Chart

Criteria for Assigning Group Symbols and Group Names Using Laboratory Tests[A]				Soil Classification	
				Group Symbol	Group Name[B]
COARSE-GRAINED SOILS	Gravels (More than 50 % of coarse fraction retained on No. 4 sieve)	Clean Gravels (Less than 5 % fines[C])	$Cu \geq 4.0$ and $1 \leq Cc \leq 3.0$[D]	GW	Well-graded gravel[E]
			$Cu < 4.0$ and/or $[Cc < 1$ or $Cc > 3.0]$[D]	GP	Poorly graded gravel[E]
		Gravels with Fines (More than 12 % fines[C])	Fines classify as ML or MH	GM	Silty gravel[E,F,G]
			Fines classify as CL or CH	GC	Clayey gravel[E,F,G]
More than 50 % retained on No. 200 sieve	Sands (50 % or more of coarse fraction passes No. 4 sieve)	Clean Sands (Less than 5 % fines[H])	$Cu \geq 6.0$ and $1.0 \leq Cc \leq 3.0$[D]	SW	Well-graded sand[I]
			$Cu < 6.0$ and/or $[Cc < 1.0$ or $Cc > 3.0]$[D]	SP	Poorly graded sand[I]
		Sands with Fines (More than 12 % fines[H])	Fines classify as ML or MH	SM	Silty sand[E,G,I]
			Fines classify as CL or CH	SC	Clayey sand[E,G,I]
FINE-GRAINED SOILS	Silts and Clays Liquid limit less than 50	inorganic	PI > 7 and plots on or above "A" line[J]	CL	Lean clay[K,L,M]
			PI < 4 or plots below "A" line[J]	ML	Silt[K,L,M]
		organic	$\frac{\text{Liquid limit - oven dried}}{\text{Liquid limit - not dried}} < 0.75$	OL	Organic clay[K,L,M,N] / Organic silt[K,L,M,O]
50 % or more passes the No. 200 sieve	Silts and Clays Liquid limit 50 or more	inorganic	PI plots on or above "A" line	CH	Fat clay[K,L,M]
			PI plots below "A" line	MH	Elastic silt[K,L,M]
		organic	$\frac{\text{Liquid limit - oven dried}}{\text{Liquid limit - not dried}} < 0.75$	OH	Organic clay[K,L,M,P] / Organic silt[K,L,M,Q]
HIGHLY ORGANIC SOILS	Primarily organic matter, dark in color, and organic odor			PT	Peat

[A] Based on the material passing the 3-in. (75-mm) sieve.
[B] If field sample contained cobbles or boulders, or both, add "with cobbles or boulders, or both" to group name.
[C] Gravels with 5 to 12 % fines require dual symbols:
GW-GM well-graded gravel with silt
GW-GC well-graded gravel with clay
GP-GM poorly graded gravel with silt
GP-GC poorly graded gravel with clay
[D] $Cu = D_{60}/D_{10}$ $Cc = \frac{(D_{30})^2}{D_{10} \times D_{60}}$
[E] If soil contains ≥15 % sand, add "with sand" to group name.
[F] If fines classify as CL-ML, use dual symbol GC-GM, or SC-SM.
[G] If fines are organic, add "with organic fines" to group name.
[H] Sands with 5 to 12 % fines require dual symbols:
SW-SM well-graded sand with silt
SW-SC well-graded sand with clay
SP-SM poorly graded sand with silt
SP-SC poorly graded sand with clay
[I] If soil contains ≥15 % gravel, add "with gravel" to group name.
[J] If Atterberg limits plot in hatched area, soil is a CL-ML, silty clay.
[K] If soil contains 15 to <30 % plus No. 200, add "with sand" or "with gravel," whichever is predominant.
[L] If soil contains ≥30 % plus No. 200, predominantly sand, add "sand" to group name.
[M] If soil contains ≥30 % plus No. 200, predominantly gravel, add "gravelly" to group name.
[N] PI ≥ 4 and plots on or above "A" line.
[O] PI < 4 or plots below "A" line.
[P] PI plots on or above "A" line.
[Q] PI plots below "A" line.

Source: ASTM D2487-17

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Attachment K

Summary of Unified Soil Classification System (USCS) (Continued)

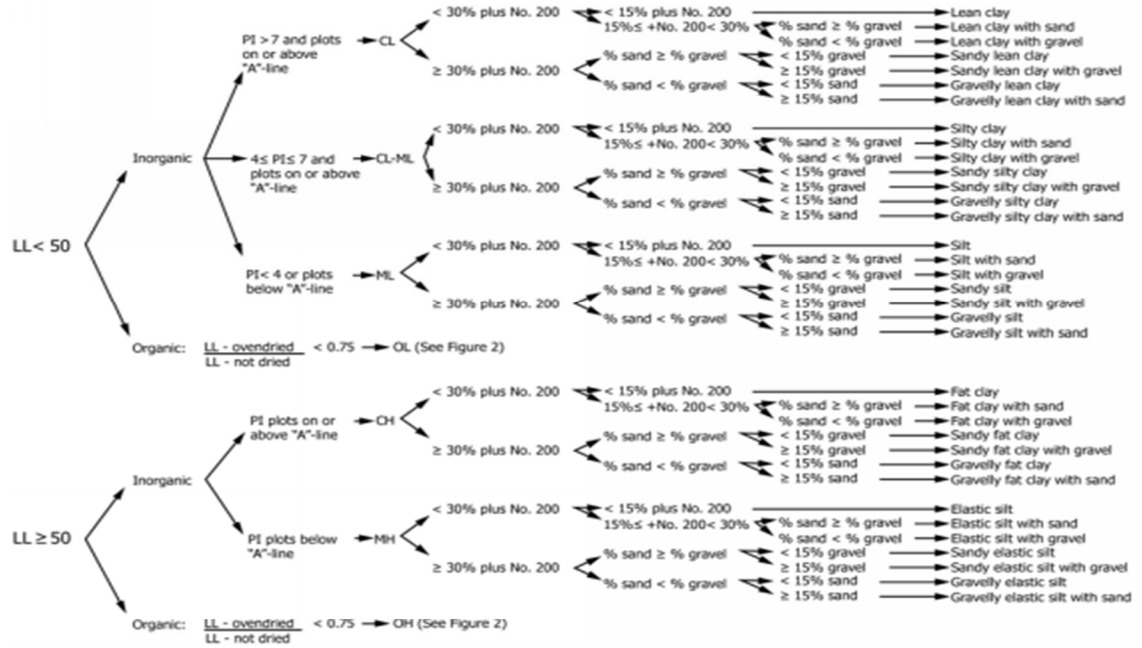

FIG. 1 Flow Chart for Classifying Fine-Grained Soil (50 % or More Passes No. 200 Sieve)

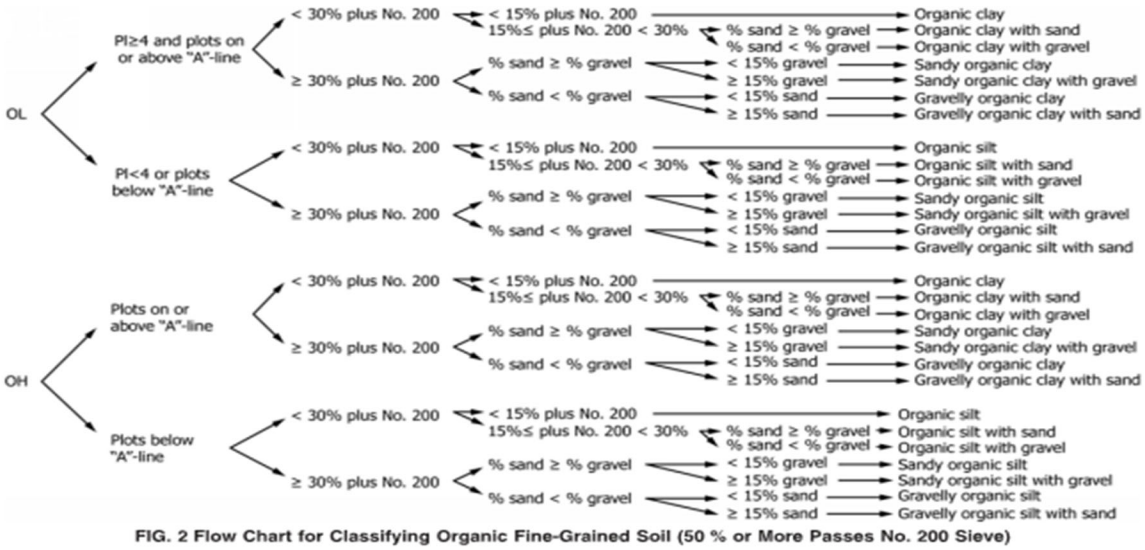

FIG. 2 Flow Chart for Classifying Organic Fine-Grained Soil (50 % or More Passes No. 200 Sieve)

Source: ASTM D2487-17

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Attachment K

Summary of Unified Soil Classification System (USCS)
(Continued)

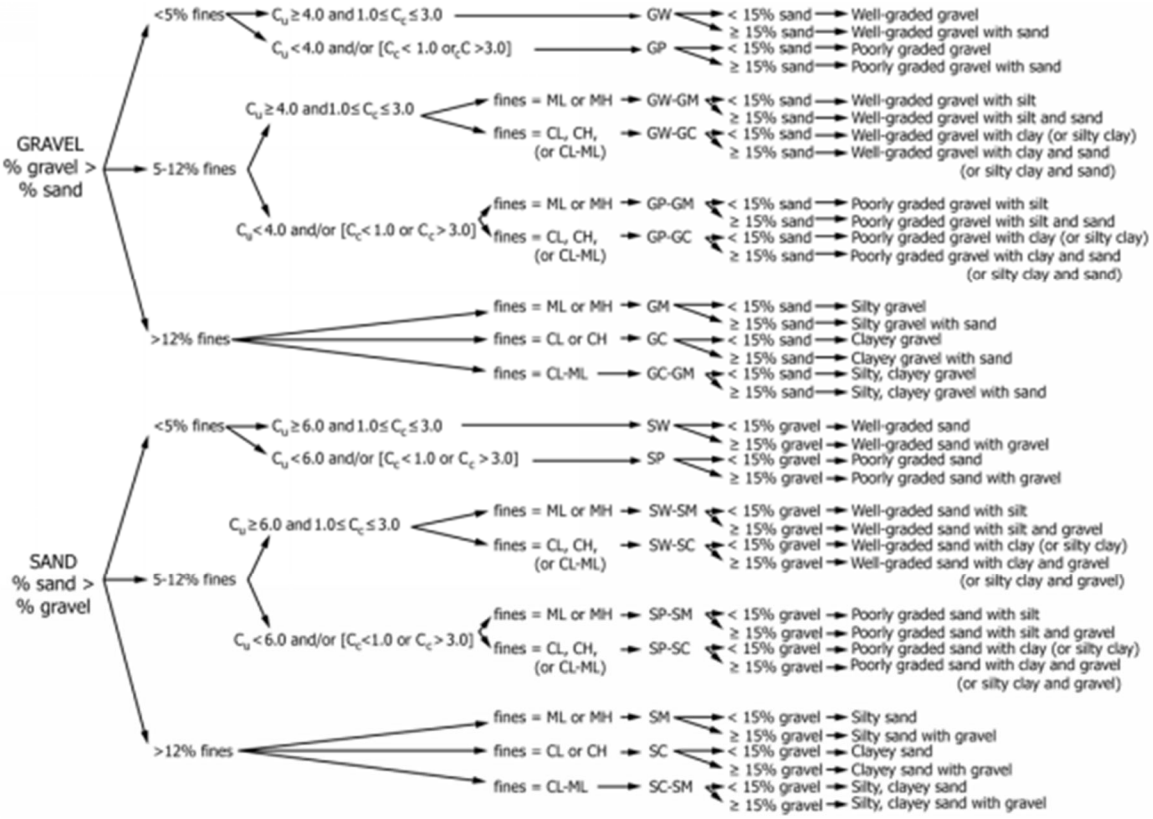

FIG. 3 Flow Chart for Classifying Coarse-Grained Soils (More Than 50 % Retained on No. 200 Sieve)

Source: ASTM D2487-17

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Attachment K

Summary of Unified Soil Classification System (USCS)
(Continued)

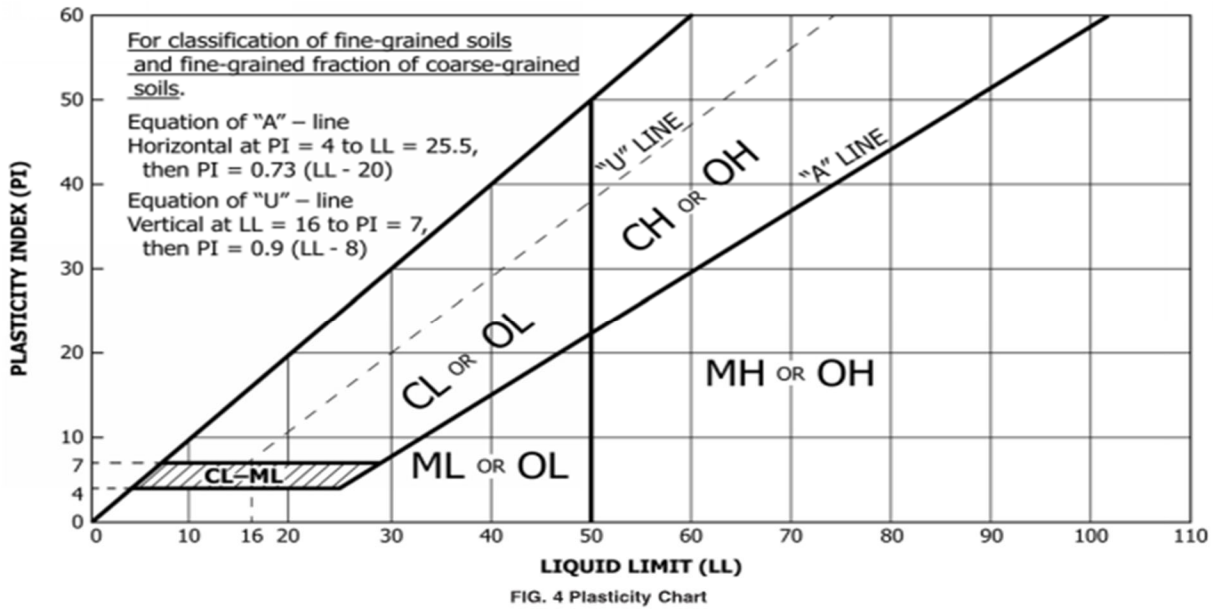

FIG. 4 Plasticity Chart

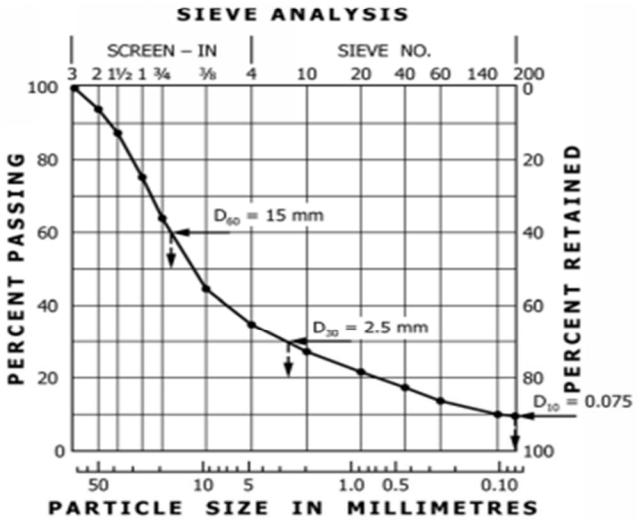

FIG. 5 Cumulative Particle-Size Plot

Source: ASTM D2487-17

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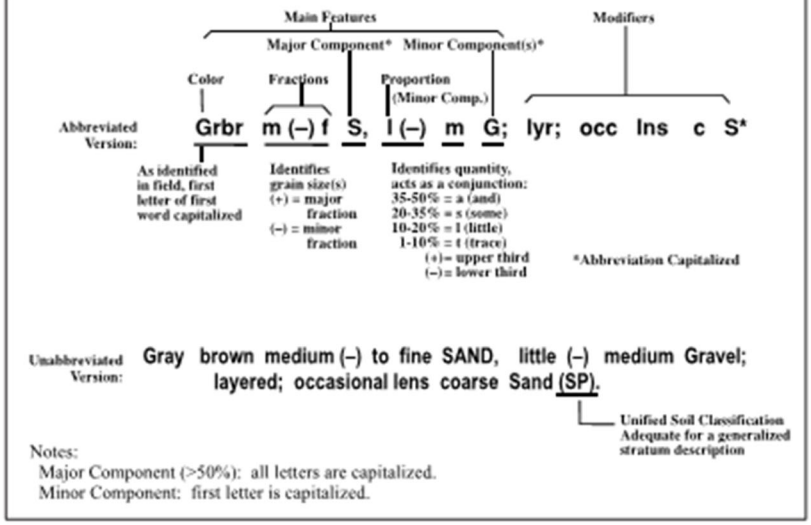
Attachment L

Summary of Burmister Soil Classification System

6.2.3.3 Burmister System

The Burmister System uses similar textural size ranges as the Wentworth scale (see Tables 6.4 through 6.7). In addition, it adds a specific nomenclature to describe the soil's texture, color, plasticity, mineralogy, and even geologic origin, etc. as shown below.

Table 6.4 Burmister Soil Classification Naming System (source: Dunn Geoscience Corporation)



Notes:
Major Component (>50%): all letters are capitalized.
Minor Component: first letter is capitalized.

Table 6.5 Burmister Soil Classification System Coarse-Grained Soils, Gradation of Components

Coarse to fine	cf	All sizes
Coarse to medium	cm	Less than 10% fine
Medium to fine	mf	Less than 10% coarse
Coarse	c	Less than 10% medium and fine
Medium	m	Less than 10% coarse and fine
Fine	f	Less than 10% coarse and medium

Source: New Jersey Department of Environmental Protection Field Sampling Procedures Manual, 2005

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Attachment L

Summary of Burmister Soil Classification System (continued)

Table 6.6 Burmister Soil Classification System Fine-Grained Soils, Plasticity of Components

Component	Symbol	Overall Plasticity	Plasticity Index
Silt	$	Non-plastic	0 to 1
Clayey Silt	Cy$	Slight	1 to 5
Silt & Clay	$ & C	Low	5 to 10
Clay & Silt	C & $	Medium	10 to 20
Silty Clay	$yC	High	20 to 40
Clay	C	Very High	over 40

Table 6.7 Burmister Soil Classification System, Components and Fractions, Modified from Burmister, 1950

	Millimeters	Sieve Size
Gravel (G):		
Coarse		1" - 3"
Medium		3/8" - 1"
Fine		No.10 - 3/8"
Sand (S):		
Coarse	0.590 - 2	No.30 - No.10
Medium	0.250 - 0.59	No.60 - No.30
Fine	0.074 - 0.25	No.200 - No.60
Silt ($):		
Coarse	0.074	0.02mm - No.200
Fine	< 0.020	< No. 200

Source: New Jersey Department of Environmental Protection Field Sampling Procedures Manual, 2005

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Attachment M

Modified Wentworth Grain Size Scale

Table 6.1 Wentworth Scale as Modified from Driscoll, 1986, and Folk, 1975.

Wentworth Size Class	Millimeters	Inches	Standard Sieve #
Boulder	256 +	10.08 +	
Cobble	64 - 256	2.52 - 10.08	
Pebble	4 - 64	0.16 - 2.52	
Very coarse gravel	32 - 64	1.26 - 2.52	
Coarse gravel	16 - 32	0.63 - 1.26	
Medium gravel	8 - 16	0.31 - 0.63	
Fine gravel	4 - 8	0.16 - 0.31	No. 5 +
Granule (v.f. gravel)	2 - 4	0.08 - 0.16	No. 5 - No. 10
Very coarse sand	1 - 2	0.04 - 0.08	No. 10 - No. 18
Coarse sand	0.5 - 1	0.02 - 0.04	No. 18 - No. 35
Medium sand	0.25 - 0.5	0.01 - 0.02	No. 35 - No. 60
Fine sand	0.125 - 0.25	0.005 - 0.01	No. 60 - No. 120
Very fine sand	0.0625 - 0.125	0.002 - 0.005	No. 120 - No. 230
Silt	0.004 - 0.0625	0.0002 - 0.002	analyze by pipette or hydrometer
Coarse silt	0.031 - 0.0625		
Medium silt	0.0156 - 0.0625		
Fine silt	0.0078 - 0.0156		
Very fine silt	0.0039 - 0.0078		
Clay	below 0.0039	below 0.0002	

Source – New Jersey Dept. of Environmental Protection Field Sampling Procedures Manual, 2005.

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Attachment N

Soil Consistency Scale

CLAY

CLAY CONSISTENCY	THUMB PENETRATION	SPT, N BLOWS/ FT.	Undrained Shear Strength c (PSF) TORVANE	Unconfined Compressive Strength q_u Pocket Penetrometer
VERY SOFT	Easily penetrated several inches by thumb. Exudes between thumb and finger's when squeezed in hand.	< 2	250	500
SOFT	Easily penetrated one inch by thumb. Molded by light finger pressure.	2 - 4	250 - 500	500 - 1000
MEDIUM STIFF	Can be penetrated over 1/4 " by thumb with moderate effort. Molded by strong finger pressure.	4 - 8	500 - 1000	1000 - 2000
STIFF	Indented about 1/4" by thumb but penetrated only with great effort.	8 - 15	1000 - 2000	2000 - 4000
VERY STIFF	Readily indented by thumbnail.	15 - 30	2000 - 4000	4000 - 8000
HARD	Indented with difficulty by thumbnail.	> 30	> 4000	> 8000

SAND

SOILTYPE	SPT, N Blows/ft.	Relative Density,%	FIELD TEST
VERY LOOSE SAND	4	0 - 15	Easily penetrated with 1/2" reinforcing rod pushed by hand.
LOOSE SAND	4 - 10	15 - 35	Easily penetrated with 1/2" reinforcing rod pushed by hand.
MEDIUM DENSE SAND	10 - 30	35 - 65	Penetrated a foot with 1/2" reinforcing rod driven with 5-lb hammer.
DENSE SAND	30 - 50	65 - 85	Penetrated a foot with 1/2" reinforcing rod driven with 5-lb hammer.
VERY DENSE SAND	50	85 - 100	Penetrated only a few inches with 1/2" reinforcing rod driven with 5-lb hammer.

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Field Equipment Decontamination at Nonradioactive Sites

SOP 4-5
Revision: 11
Date: March 2020

Approved: Ernest Ashley **Technical Review:** David Sembrot

1.0 Objective

The objective of this technical standard operating procedure (SOP) is to describe the general procedures required for decontamination of field equipment at nonradioactive sites. This SOP serves as a general guide and is applicable at most sites; however, it shall be noted that site-specific conditions (i.e., type of contamination, type of media sampled), the governing agency (e.g., EPA, DOE, USACE), and site-specific work plans, sampling and analysis plans and/or quality assurance (QA) project plans may require modifications to the decontamination procedures provided in this SOP. Decontamination of field equipment is necessary to ensure acceptable quality of samples by preventing cross contamination. Further, decontamination reduces health hazards and prevents the spread of contaminants offsite.

2.0 Background

2.1 Definitions

Note: Definitions are often promulgated or codified in state or local statutes, regulations, or ordinances and can vary between regulatory agencies. Definitions should be verified against the definitions provided by agencies regulating the work when applicable.

Acid Rinse - A solution of 10 percent nitric or hydrochloric acid made from reagent grade acid and analyte-free water

Analyte-Free Water - Tap water that has been treated so that the water contains no detectable heavy metals or other inorganic compounds. Analyte-free water shall be stored only in clean glass, stainless steel, or plastic containers that can be closed when not in use.

Clean - Free of contamination and when decontamination has been completed in accordance with this SOP

Cross Contamination - The transfer of contaminants through equipment or personnel from the contamination source to less contaminated or noncontaminated samples or areas.

Decontamination - The process of rinsing or otherwise cleaning the surfaces of sampling or other equipment to rid them of contaminants and to minimize the potential for cross contamination of samples or exposure to personnel

Safety Data Sheets (SDS) - These documents discuss the proper storage and physical and toxicological characteristics of a particular substance used during decontamination. These documents, generally included in site health and safety plans, shall be kept on site at all times during field operations.

Organic-Free/Analyte-Free Water - Tap water that has been treated so that the water meets the analyte-free water criteria and contains no detectable organic compounds. Organic-free/analyte-free water shall be stored only in clean glass, Teflon™, or stainless steel containers that can be closed when not in use.

PFAS – Per- and polyfluoroalkyl substances are a group of man-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals.

Potable Water - Tap water may be obtained from any municipal system. Chemical analysis of the water source may be required before it is used for decontamination purposes.

Sampling Equipment - Equipment that comes into direct contact with the sample media. Such equipment includes split spoon samplers, well casing and screens, and spatulas or bowls used to homogenize samples.

Soap - Low-sudsing, nonphosphate detergent such as Liquinox™.

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Solvent Rinse - Pesticide grade, or better, isopropanol, acetone, or methanol.

2.2 Associated Procedures

- SOP 1-1 – *Surface Water Sampling*
- SOP 1-3 – *Surface Soil Sampling*
- SOP 1-4 – *Subsurface Soil Sampling*
- SOP 1-5 – *Groundwater Sampling Using Bailers*
- SOP 1-7 – *Wipe Sampling*
- SOP 1-9 – *Tap Water Sampling*
- SOP 1-11 – *Sediment/Sludge Sampling*
- SOP 1-12 – *Low Flow (Low-Stress) Groundwater Sampling*
- SOP 1-13 – *Drum Sampling*
- SOP 1-14 – *Lagoon Sampling*
- SOP 1-15 – Procedures for Determination of Screening-Level Elemental Concentrations in Soil and Sediment using Field Portable X-Ray Fluorescence Spectrometry
- SOP 2-2 – *Guide to Handling Investigation-Derived Waste*
- SOP 3-1 – *Geoprobe® Sampling*

3.0 Responsibilities

The project manager or designee, generally the field team leader (FTL), ensures that field personnel are trained in the performance of this procedure and that decontamination is conducted in accordance with this SOP and site-specific work plans. The FTL may also be required to collect and document rinsate samples (also known as equipment blanks) to provide quantitative verification that these procedures have been correctly implemented.

Note: Responsibilities may vary from site to site. Therefore, all field team member responsibilities shall be defined in the field plan or site-/project-specific quality assurance project plan (QAPP).

4.0 Required Equipment

- Stiff-bristle scrub brushes
- Plastic buckets and troughs
- Soap
- Nalgene or Teflon sprayers or wash bottles or 2- to 5-gallon, manual-pump sprayer (pump sprayer material must be compatible with the solution used)
- Plastic sheeting, plastic bags, and/or aluminum foil to keep decontaminated equipment clean between uses
- Disposable wipes, rags, or paper towels
- Potable water*
- Analyte-free water
- PFAS-free water, as determined by regulatory needs of the project and obtained from your laboratory
- Organic-free/analyte-free water
- Gloves, safety glasses, and other protective clothing as specified in the site-specific health and safety plan
- High-pressure pump with soap dispenser or steam-spray unit (for large equipment only)
- Appropriate decontamination solutions pesticide grade or better and traceable to a source (e.g., 10 percent and/or 1 percent nitric acid [HNO_3], acetone, methanol, isopropanol, hexane)
- Tools for equipment assembly and disassembly (as required)
- 55-gallon drums or tanks for temporary storage of decontamination water (as required)
- Pallets for drums or tanks holding decontamination water (as required)

* Potable water may be required to be tested for contaminants before use. Check field plan for requirements.

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4.1 PFAS Materials Considerations

Consider the PFAS-specific sampling requirements is needed during the planning phase because cross-contamination is a prominent concern for data quality, particularly with PFAS action levels in the low parts per trillion (ppt) range. This means that the development of project data quality objectives (DQOs), and selection of action levels and reporting limits are impacted with the inclusion of sampling for PFAS analysis.

Before implementing TSOP 4-5 for field equipment decontamination where samples for PFAS analysis may be collected, it is important to review current regulatory standards to determine whether site- or project-specific changes to TSOP 1-5 should be included in project planning documents to align with the latest regulatory standards and sampling guidance. CDM Smith Regulatory Updates can be located in the InfoCenter. Specific state and federal regulatory limits updates can be found at:
https://cdmsmith.libguides.com/PFAS_InfoCenter.

Because of the evolving nature of PFAS regulation and guidance, the information provided here is based on our current knowledge. Some of the recommendations made here may reflect an overly cautious approach to avoid cross-contamination by removing items from the immediate sampling environment. As additional information about PFAS is confirmed the checklist included at the end of this document will be revised to reflect the recommended practices for PFAS sampling. Procedures and Regulatory Updates will be provided separately. Awareness of these concerns is essential to ensure our field sampling teams accurately document field activities they are performing or overseeing.

5.0 Procedures

All reusable equipment (nondedicated) used to collect, handle, or measure samples shall be decontaminated before coming into contact with any sampled media or personnel using the equipment. Decontamination of equipment shall occur either at a central decontamination station or at portable decontamination stations set up at the sampling location, drill site, or monitoring well location. The centrally located decontamination station shall include an appropriately sized bermed and lined area on which equipment decontamination shall occur and shall be equipped with a collection system and storage vessels. In certain circumstances, berming is not required when small quantities of water are being generated and for some short duration field activities (i.e., pre-remedial sampling). Equipment shall be transported to and from the decontamination station in a manner to prevent cross contamination of equipment and/or area. For example, precautions taken may include enclosing augers in plastic wrap while being transported on a flatbed truck.

The decontamination area shall be constructed so that contaminated water is either collected directly into appropriate containers (5-gallon buckets or steel wash tubs) or within the berms of the decontamination area that then drains into a collection system. Water from the collection system shall be transferred into 55-gallon drums or portable tanks for temporary storage. Typically, decontamination water shall be staged until sampling results or waste characterization results are obtained and evaluated and the proper disposition of the waste is determined (SOP 2-2, *Guide to Handling Investigation-Derived Waste*). The exact procedure for decontamination waste disposal shall be discussed in the work plan. Also, solvent and acid rinse fluids may need to be segregated from other investigation-derived wastes.

All items that shall come into contact with potentially contaminated media shall be decontaminated before use and between sampling and/or drilling locations. If decontaminated items are not immediately used, they shall be covered either with clean plastic or aluminum foil depending on the size of the item. All decontamination procedures for the equipment being used are as follows:

General Guidelines

- Potable, analyte-free water shall be free of all contaminants of concern. Following the field QA sampling procedure described in the sampling plan, analytical data from the water source may be required.
- If sampling for PFAS compounds, PFAS-free water will need to be obtained from your project selected laboratory. (Note: PFAS free water, if needed, must be obtained from your selected project laboratory and the analyte list and detection limits of PFAS will be site-specific and dependent on latest regulatory updates from applicable state and federal regulators.)
- PFAS containing materials should be avoided. (See PFAS Materials Table at the end of this document)

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- Sampling equipment that has come into contact with oil and grease shall be cleaned with methanol or other approved alternative to remove the oily material. This may be followed by a hexane rinse and then another methanol rinse. Regulatory or client requirements regarding solvent use shall be stated in the sampling plan.
- All solvents and acids shall be pesticide grade or better and traceable to a source. If provided, certificates of analyses should be placed in the project files. The corresponding lot numbers shall be recorded in the appropriate logbook.

Note: Solvents and acids are potentially hazardous materials and must be handled, stored, and transported accordingly. Solvents shall never be used in a closed building. See the site-specific health and safety plan and/or the chemical's MSDS for specific information regarding the safe use of the chemical.

- Decontaminated equipment shall be allowed to air dry before being used.
- Documentation of all equipment type, date, time, and method of decontamination along with associated field QA sampling shall be recorded in the appropriate logbook.
- Gloves, boots, safety glasses, and any other personnel protective clothing and equipment shall be used as specified in the site-specific health and safety plan.

5.1 Heavy Equipment Decontamination

Heavy equipment includes drilling rigs, well development rigs, and backhoes. Follow these steps when decontaminating this equipment:

1. Establish a bermed decontamination area that is large enough to fully contain the equipment to be cleaned. If available, an existing wash pad or appropriate paved and bermed area may be used; otherwise, use one or more layers of heavy plastic sheeting to cover the ground surface and berms. All decontamination pads shall be upwind of the area under investigation.

2. With the rig in place, spray areas (rear of rig or backhoe) exposed to contaminated media using a hot water high-pressure sprayer. Be sure to spray down all surfaces, including the undercarriage.

3. Use brushes, soap, and potable water to remove dirt whenever necessary.

4. Remove equipment from the decontamination pad and allow it to air dry before returning it to the work site.

5. After decontamination activities are completed, collect all contaminated wastewater, plastic sheeting, and disposable gloves, boots, and clothing in separate containers or receptacles. All receptacles containing contaminated items must be properly labeled for disposal as detailed in the field plan. Liquids and solids must be drummed separately.

5.2 Downhole Equipment Decontamination

Downhole equipment includes hollow-stem augers, drill pipes, rods, stems, etc. Follow these steps when decontaminating this equipment:

1. Set up a centralized decontamination area, if possible. This area shall be set up to collect contaminated rinse waters and to minimize the spread of airborne spray.

2. Set up a "clean" area upwind of the decontamination area to receive cleaned equipment for air-drying. At a minimum, clean plastic sheeting must be used to cover the ground, tables, or other surfaces on which decontaminated equipment is to be placed. All decontamination pads shall be upwind of any areas under investigation.

3. Place the object to be cleaned on aluminum foil or plastic-covered wooden sawhorses or other supports. The objects to be cleaned shall be at least 2 feet above the ground to avoid splashback when decontaminating.

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4. Using soap and potable water in the hot water high-pressure sprayer (or steam unit), spray the contaminated equipment. Aim downward to avoid spraying outside the decontamination area. Be sure to spray inside corners and gaps especially well. Use a brush, if necessary, to dislodge dirt.

5. If using soapy water, rinse the equipment using clean, potable water. If using hot water, the rinse step is not necessary if the hot water does not contain a detergent. If the hot water contains a detergent, this final clean water rinse is required.

6. Using a suitable sprayer, rinse the equipment thoroughly with analyte-free water.

7. Remove the equipment from the decontamination area and place in a clean area upwind to air dry.

8. After decontamination activities are completed, collect all contaminated wastewaters, plastic sheeting, and disposable gloves, boots, and clothing in separate containers or receptacles. All receptacles containing contaminated items must be properly labeled for disposal. Liquids and solids must be drummed separately.

5.3 Sampling Equipment Decontamination

Follow these steps when decontaminating sampling equipment:

1. Set up a decontamination line on plastic sheeting. The decontamination line shall progress from "dirty" to "clean." A clean area shall be established upwind of the decontamination wash/rinse activities to dry the equipment. At a minimum, clean plastic sheeting must be used to cover the ground, table, or other surfaces that the decontaminated equipment is placed for drying.

2. Disassemble any items that may trap contaminants internally. Do not reassemble the items until decontamination and air drying are complete.

3. Wash the items with potable water and soap using a stiff brush as necessary to remove particulate matter and surface films. The items may be steam cleaned using soap and hot water as an alternative to brushing. Note: Polyvinyl chloride or plastic items shall not be steam cleaned. Items that have come into contact with concentrated and/or oily contaminants may need to be rinsed with a solvent such as hexane and allowed to air dry prior to this washing step.

4. Thoroughly rinse the items with potable water.

5. The specific chemicals and/or fluids to be used in the decontamination process will be defined in the sampling plan. If sampling for metals, typically the potable water and soap wash is followed by a potable water rinse then an analyte-free water rinse; alternatively, an acid solution (e.g., 10 percent nitric acid) rinse followed by a rinse using analyte-free water may be specified in some instances. If sampling for organic compounds, thoroughly rinse the items with solvent (e.g., isopropanol) followed by a rinse using organic-free/analyte-free water. Again, the specific chemicals used in any acid rinse or solvent rinse phases shall be specified in the sampling plan. Any acid rinsate and solvent rinsate must each be containerized separately. Acids and solvents are potentially hazardous materials and care must be exercised when using these chemicals to prevent adverse health affects (e.g., skin burns, irritation to the eyes and respiratory system). Appropriate personal protective equipment must be worn when using these chemicals. The use of acids and solvents for decontamination should be carefully considered. These chemicals (including spent rinsate) must be managed and stored appropriately. Special measures such as proper labels, paperwork, notification, etc. may be required when transporting or shipping these chemicals.

6. Allow the items to air dry completely.

7. After drying, reassemble the parts as necessary and wrap the items in clean plastic wrap or in aluminum foil.

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8. After decontamination activities are completed, collect all contaminated waters, used solvents and acids, plastic sheeting, and disposable personal protective equipment. Place the contaminated items in properly labeled drums for disposal. Liquids and solids must be drummed separately. Refer to site-specific plans for labeling and waste management requirements.

5.4 Pump Decontamination

Follow the manufacturer's recommendation for specified pump decontamination procedures. At a minimum, follow these steps when decontaminating pumps:

1. Set up the decontamination area and separate "clean" storage area using plastic sheeting to cover the ground, tables, and other surfaces. Set up four containers: the first container shall contain dilute (nonfoaming) soapy water, the second container shall contain potable water, the third container shall be empty to receive wastewater, and the fourth container shall contain analyte-free water.

2. The pump shall be set up in the same configuration as for sampling. Submerge the pump intake (or the pump, if submersible) and all downhole-wetted parts (tubing, piping, foot valve) in the soapy water of the first container. Place the discharge outlet in the wastewater container above the level of the wastewater. Pump soapy water through the pump assembly until it discharges to the waste container. Scrub the outside of the pump and other wetted parts with a metal brush.

3. Move the pump assembly to the potable water container while leaving discharge outlet in the waste container. All downhole-wetted parts must be immersed in the potable water rinse. Pump potable water through the pump assembly until it runs clear.

4. Move the pump intake to the analyte-free water container. Pump the water through the pump assembly. Pump the volume of water through the pump specified in the field plan. Usually, three pump-and-line-assembly volumes shall be required.

5. Decontaminate the discharge outlet by hand, following the steps outlined in Section 5.3.

6. Remove the decontaminated pump assembly to the clean area and allow it to air dry upwind of the decontamination area. Intake and outlet orifices shall be covered with aluminum foil to prevent the entry of airborne contaminants and particles.

5.5 Low Stress (Low Flow) Sampling Pump Decontamination

Sampling equipment used for Low Stress (Low Flow) Groundwater Sampling (SOP 1-12) must be decontaminated thoroughly each day before use (daily decontamination) and after each well is sampled (between-well decontamination). All non-disposable equipment, including the pump (support cable and electrical wires which are in contact with the sample) will be decontaminated as described below. Dedicated, in-place pumps and tubing must be thoroughly decontaminated using "daily decontamination" procedures prior to their initial use or installation.

5.5.1 Prior to Sampling Event Decontamination

Please Note: Steps 5 through 13 should only be performed once (for each pump that is to be used) before the commencement of a particular sampling event by a person qualified to disassemble pumps.

1. Pre-rinse: Operate pump in a deep basin containing 8 to 10 gallons of potable water for 5 minutes and thoroughly flush other equipment with potable water.

2. Wash: Operate pump in a deep basin containing 8 to 10 gallons of a non-phosphate detergent solution, such as Liquinox™, for 5 minutes and thoroughly flush other equipment with fresh detergent solution. Use the detergent sparingly.

3. Rinse: Operate pump in a deep basin of potable water for 5 minutes and thoroughly flush other equipment with potable water for 5 minutes.

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4. Analyte-Free Rinse: Operate pump in a deep basin of analyte-free water to pump out 1 to 2 gallons of this final rinse water. (Note: PFAS free water, if needed, must be obtained from your selected project laboratory and the analyte list and detection limits of PFAS will be site-specific and dependent on latest regulatory updates from applicable state and federal regulators.)

5. Disassemble pump.

6. Wash pump parts (inlet screen, shaft suction interconnector, motor lead assembly, stator house): Place the disassembled parts of the pump into a deep basin containing 8 to 10 gallons of non-phosphate detergent solution. Scrub all pump parts with a test tube brush.

7. Rinse pump parts with potable water for five minutes.

8. Rinse the pump parts with demonstrated analyte-free water.

9. If sampling for metals, an acid rinse may be specified in the sampling plan; if so, place impeller assembly in a large glass beaker and rinse with 1% nitric acid (HNO3).

10. Rinse impeller assembly with potable water for five minutes.

11. If sampling for organics, a solvent rinse may be specified; if so, place impeller assembly in a large glass bleaker and rinse with isopropanol or appropriate organic solvent specified in the site-specific plan.

12. Thoroughly rinse impeller assembly with demonstrated analyte-free water.

13. Reassemble pump.

5.5.2 Daily and Between-Well Decontamination

1. Pre-rinse: Operate pump in a deep basin containing 8 to 10 gallons of potable water for 5 minutes and thoroughly flush other equipment with potable water for five minutes.

2. Wash: Operate pump in a deep basin containing 8 to 10 gallons of a non-phosphate detergent solution, such as Liquinox™, for 5 minutes and thoroughly flush other equipment with fresh detergent solution. Use the detergent sparingly.

3. Rinse: Operate pump in a deep basin of potable water for 5 minutes and thoroughly flush other equipment with potable water for five minutes.

4. Final Rinse: Operate pump in a deep basin of analyte-free water to pump out 1 to 2 gallons of this final rinse water.

5.6 Instrument Probe Decontamination

Instrument probes used for field measurements such as pH meters, conductivity meters, etc. shall be decontaminated between samples and after use with analyte-free, or better, water.

5.7 Waste Disposal

Refer to site-specific plans and SOP 2-2 for waste disposal requirements. The following are guidelines for disposing of wastes:

- All wash water, rinse water, and decontamination solutions that have come in contact with contaminated equipment are to be handled, packaged, labeled, marked, stored, and disposed of as investigation-derived waste.
- Small quantities of decontamination solutions may be allowed to evaporate to dryness.
- If large quantities of used decontamination solutions shall be generated, each type of waste shall be contained in separate containers.
- Unless otherwise required, plastic sheeting and disposable protective clothing may be treated as solid, nonhazardous waste.

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- Waste liquids shall be sampled, analyzed for contaminants of concern in accordance with disposal regulations, and disposed of accordingly.
- PFAS disposal requirements are being initiated by many disposal facilities in anticipation of regulatory initiatives on the state and federal level.

5.7.1 PFAS Considerations for IDW disposal

Currently, PFAS characterization and disposal requirements are being initiated by many disposal facilities in anticipation of regulatory initiatives on the state and federal level. These evolving regulatory standards for PFAS must be considered in the implementation of many SOPs including SOP 2-2 and SOP 4-5. These same concerns must be considered in the development of general project planning documents such as: work plans, sampling and analysis plans, quality assurance project plans, data management plans, accident prevention plans, health and safety plans and laboratory statements of work used to guide the collection of samples for PFAS analysis.

- A consideration of the PFAS-specific sampling requirements is needed during the project planning phase because cross-contamination is a prominent concern for data quality, particularly with PFAS action levels in the low parts per trillion (ppt) range. This means that the development of project data quality objectives (DQOs), and selection of action levels, reporting limits are all impacted with the inclusion of sampling for PFAS analysis.

- Before implementing the IDW (SOP 2.2) for collection of samples for PFAS waste characterization analysis for disposal purposes, it is important to review current disposal facility requirements and state and federal regulatory standards to determine whether site- or project-specific changes to this SOP should be included in project planning documents to align with the latest regulatory standards and sampling guidance. CDM Smith Regulatory Updates can be located at the INFOCENTER. Specific State and Federal Regulatory Limit updates can be found here: https://cdmsmith.libguides.com/PFAS_InfoCenter

6.0 Restrictions/Limitations

Nitric acid and polar solvent rinses are necessary only when sampling for metals or organics, respectively. These steps shall not be used, unless required, because of the potential for acid burns and ignitability hazards.

If the field equipment is not thoroughly rinsed and allowed to completely air dry before use, volatile organic residue, which interferes with the analysis, may be detected in the samples. The occurrence of residual organic solvents is often dependent on the time of year sampling is conducted. In the summer, volatilization is rapid, and in the winter, volatilization is slow. Check with your EPA region, state, and client for approved decontamination solvents.

7.0 References

American Society for Testing and Materials. 2015. *Standard Practice for Decontamination of Field Equipment at Waste Sites*, ASTM D5088-15. January 15.

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PFAS Sampling Checklist

Development of PFAS sampling guidance is necessary because cross-contamination is a prominent concern for data quality, particularly with PFAS action levels in the parts per trillion (ppt) range. The levels of awareness for PFAS cross contamination vary by the opportunities of introducing PFAS into the environment media under investigation.

1. Critical: Items in direct contact of environmental media under investigation. These can include, but not limited to, sample containers, sampling parts and equipment, drilling equipment, well construction items and materials, parts and equipment for hydrogeological testing, in-situ treatment parts and equipment.

2. Very Important: PPE, personal hygiene that are used by sampling personnel.

3. Important: Items used in coolers for shipping and transporting PFAS samples.

4. Less important/Awareness level concern: Activities in the staging area away from immediate PFAS investigation area.

Item	Good to Use	Need Verification (2)(3)	Should Avoid (1)(2)	Comments
Field Clothing or PPE				
Clothing or boots containing "water resistance" or "stain-treated" fabrics				
Cloths washed with fabric softeners				Fabric softeners may contain PFAS
New and unwashed clothing				fabric treatment may contain PFAS
Uncoated Tyvek				USEPA PFAS sampling guidance from Region 2 prohibits use of Tyvek
Coated Tyvek				
PVC or wax-coated fabrics				
Neoprene				
Synthetic and natural fibers (preferably cotton)				
Steel-toed boots made with polyurethane and PVC				If it is not possible to find PFAS free steel-toed footwear, PFAS-free over boots may be worn. The over boots must be put on and the hands washed after putting the over boots on prior to the beginning of the sampling activities. Over boots may only be removed in the staging area and after the sampling activities have been completed
Well laundered clothes				several times from time of purchase
Well washed cotton coveralls				washed several times

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Item	Good to Use	Need Verification (2)(3)	Should Avoid (1)(2)	Comments
Personnel Hygiene and Protective Skin Products				
Sunscreens				Good to use: Alba Organics Natural Sunscreen, Yes To Cucumbers, Aubrey Organics, Jason Natural Sun Block, Kiss my face, and baby sunscreens that are “free” or “natural
Insect Repellents				Good to use: Jason Natural Quit Bugging Me, Repel Lemon Eucalyptus Insect repellant, Herbal Armor, California Baby Natural Bug Spray, BabyGanics
International Brands of sunscreens and insect repellents				Must be evaluated on a case-by-case basis
Field Sampling Items				
Water proof field paper or books				Use loose plain paper
Post-it notes				
Aluminum foil				
Brand-name markers				Sharpie may be used to label sample bottles in the staging area, but markers should not be used in the immediate sampling environment
Off-brand markers				
Ball point pens				
plastic clipboards				NJ DEP sampling guidance, use metal clipboard
Plastic table cover				
Sampling Equipment				
Item containing high-density polyethylene (HDPE)				
Item containing polypropylene				PP sample bottles must be used for drinking-water samples in accordance with USEPA method 537.1.1
Item containing polyurethane				
Item containing Polyvinyl chloride (PVC)				
Item containing silicon				

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Item	Good to Use	Need Verification (2)(3)	Should Avoid (1)(2)	Comments
Item made of stainless steel				
Alconox®				
Citronex®				
Liquinox®				
Powderless nitrile gloves				
HDPE Hydrasleeves or sonic core bags				
Neoprene				
Crisco® or other vegetable-based greases for lubricating parts				
Item containing PTFE				Items or equipment that contains PTFE parts that will be in direct contact with sampling media
Item containing Teflon®				Field sampling items or equipment that contains Teflon® and that will be in direct contact with the sampling media
Item containing fluoropolymer				
Low-density polyethylene (LDPE)				Items or equipment that contains LDPE parts and that will be in direct contact with the sampling media
Viton® O-rings				Viton® O-rings used in pressure washers used for sampling equipment decontamination
Glass sample containers				
Field filter				Field filtration should be avoided regardless of filter types
Decon 90				
Items containing fluorosurfactants				
Teflon-bearing plumber's tape				
Blue (or chemical) ice				Later data (unpublished) suggest no cross contamination from blue ice. The category may be changed after data are published
Water ice				Double bag in polyethylene bags
Internal valves and equipment parts for sampling or decon				

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Item	Good to Use	Need Verification (2)(3)	Should Avoid (1)(2)	Comments
Methanol or other solvents				
LDPE plastic bags (e.g., Ziploc® bags)				For larger biota sampling, Ziploc bags may be used, but collecting an equipment blank is recommended because these bags may be made of LDPE
Drilling fluids				
LDPE sonic core sample bags				Manufactured by Boart Longyear and Hole Products
Equipment with moving parts that may be lubricated with PFAS containing lubricants or greases				
Rental equipment				Must be verified to have no PFAS-bearing parts prior to use
Others				
Food wrappers				Field personnel must wash hands after having food wrapped with grease repelling paper

(1) If an item which may contain PFAS but alternative is not available, the item should be tested for PFAS before use

(2) This mostly refers to the immediate sampling environment, particularly, the item is in contact with environmental media to be sampled

(3) There are no standard operation procedures on how an item can be verified, please contact PFAS experts for advices on the best practice of testing a potential PFAS containing item.

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PID Calibration Tracking Form
Complete Demolition of DFSP Verona
Verona, New York

Calibration Date	Calibration Time	Staff Name	PID Model	PID Gas Used	PID Reading - Calibration Gas	PID Reading - Fresh Air	Notes

Appendix B DER-10 Standards

Note: DER-10, Technical Guidance for Site Investigation and Remediation, will follow the revised 6 NYCRR 375, Environmental Remediation Programs, which is effective as of December 31, 2025. See the included Tables 375-6.8(a) and 375-6.8(b) for revised levels.

Appendix 5
Allowable Constituent Levels for Imported Fill or Soil
Subdivision 5.4(e)

Source: This table is derived from soil cleanup objective (SCO) tables in 6 NYCRR 375. Table 375-6.8(a) is the source for unrestricted use and Table 375-6.8(b) is the source for restricted use.

Note: For constituents not included in this table, refer to the contaminant for supplemental soil cleanup objectives (SSCOs) in the Commissioner Policy on *Soil Cleanup Guidance*. If an SSCO is not provided for a constituent, contact the DER PM to determine a site-specific level.

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Metals					
Arsenic	13	16	16	16	13
Barium	350	350	400	400	433
Beryllium	7.2	14	47	47	10
Cadmium	2.5	2.5	4.3	7.5	4
Chromium, Hexavalent[1]	1 [3]	19	19	19	1 [3]
Chromium, Trivalent[1]	30	36	180	1500	41
Copper	50	270	270	270	50
Cyanide	27	27	27	27	NS
Lead	63	400	400	450	63
Manganese	1600	2000	2000	2000	1600
Mercury (total)	0.18	0.73	0.73	0.73	0.18
Nickel	30	130	130	130	30
Selenium	3.9	4	4	4	3.9
Silver	2	8.3	8.3	8.3	2
Zinc	109	2200	2480	2480	109
PCBs/Pesticides					
2,4,5-TP Acid (Silvex)	3.8	3.8	3.8	3.8	NS
4,4'-DDE	0.0033 [3]	1.8	8.9	17	0.0033 [3]
4,4'-DDT	0.0033 [3]	1.7	7.9	47	0.0033 [3]
4,4'-DDD	0.0033 [3]	2.6	13	14	0.0033 [3]
Aldrin	0.005	0.019	0.097	0.19	0.14
Alpha-BHC	0.02	0.02	0.02	0.02	0.04 [4]
Beta-BHC	0.036	0.072	0.09	0.09	0.6
Chlordane (alpha)	0.094	0.91	2.9	2.9	1.3
Delta-BHC	0.04	0.25	0.25	0.25	0.04 [4]
Dibenzofuran	7	14	59	210	NS
Dieldrin	0.005	0.039	0.1	0.1	0.006
Endosulfan I	2.4[2]	4.8	24	102	NS
Endosulfan II	2.4[2]	4.8	24	102	NS
Endosulfan sulfate	2.4[2]	4.8	24	200	NS
Endrin	0.014	0.06	0.06	0.06	0.014
Heptachlor	0.042	0.38	0.38	0.38	0.14
Lindane	0.1	0.1	0.1	0.1	6
Polychlorinated biphenyls	0.1	1	1	1	1

Constituent	Unrestricted Use	Residential Use	Restricted Residential Use	Commercial or Industrial Use	If Ecological Resources are Present
Semi-volatile Organic Compounds					
Acenaphthene	20	98	98	98	20
Acenaphthylene	100	100	100	107	NS
Anthracene	100	100	100	500	NS
Benzo(a)anthracene	1	1	1	1	NS
Benzo(a)pyrene	1	1	1	1	2.6
Benzo(b)fluoranthene	1	1	1	1.7	NS
Benzo(g,h,i)perylene	100	100	100	500	NS
Benzo(k)fluoranthene	0.8	1	1.7	1.7	NS
Chrysene	1	1	1	1	NS
Dibenz(a,h)anthracene	0.33 [3]	0.33 [3]	0.33 [3]	0.56	NS
Fluoranthene	100	100	100	500	NS
Fluorene	30	100	100	386	30
Indeno(1,2,3-cd)pyrene	0.5	0.5	0.5	5.6	NS
m-Cresol(s)	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	NS
Naphthalene	12	12	12	12	NS
o-Cresol(s)	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	NS
p-Cresol(s)	0.33	0.33	0.33	0.33	NS
Pentachlorophenol	0.8 [3]	0.8 [3]	0.8 [3]	0.8 [3]	0.8 [3]
Phenanthrene	100	100	100	500	NS
Phenol	0.33 [3]	0.33 [3]	0.33 [3]	0.33 [3]	30
Pyrene	100	100	100	500	NS
Volatile Organic Compounds					
1,1,1-Trichloroethane	0.68	0.68	0.68	0.68	NS
1,1-Dichloroethane	0.27	0.27	0.27	0.27	NS
1,1-Dichloroethene	0.33	0.33	0.33	0.33	NS
1,2-Dichlorobenzene	1.1	1.1	1.1	1.1	NS
1,2-Dichloroethane	0.02	0.02	0.02	0.02	10
1,2-Dichloroethene(cis)	0.25	0.25	0.25	0.25	NS
1,2-Dichloroethene(trans)	0.19	0.19	0.19	0.19	NS
1,3-Dichlorobenzene	2.4	2.4	2.4	2.4	NS
1,4-Dichlorobenzene	1.8	1.8	1.8	1.8	20
1,4-Dioxane	0.1 [3]	0.1 [3]	0.1 [3]	0.1 [3]	0.1
Acetone	0.05	0.05	0.05	0.05	2.2
Benzene	0.06	0.06	0.06	0.06	70
Butylbenzene	12	12	12	12	NS
Carbon tetrachloride	0.76	0.76	0.76	0.76	NS
Chlorobenzene	1.1	1.1	1.1	1.1	40
Chloroform	0.37	0.37	0.37	0.37	12
Ethylbenzene	1	1	1	1	NS
Hexachlorobenzene	0.33 [3]	0.33 [3]	1.2	3.2	NS
Methyl ethyl ketone	0.12	0.12	0.12	0.12	100
Methyl tert-butyl ether	0.93	0.93	0.93	0.93	NS
Methylene chloride	0.05	0.05	0.05	0.05	12

Volatile Organic Compounds (continued)					
Propylbenzene-n	3.9	3.9	3.9	3.9	NS
Sec-Butylbenzene	11	11	11	11	NS
Tert-Butylbenzene	5.9	5.9	5.9	5.9	NS
Tetrachloroethene	1.3	1.3	1.3	1.3	2
Toluene	0.7	0.7	0.7	0.7	36
Trichloroethene	0.47	0.47	0.47	0.47	2
Trimethylbenzene-1,2,4	3.6	3.6	3.6	3.6	NS
Trimethylbenzene-1,3,5	8.4	8.4	8.4	8.4	NS
Vinyl chloride	0.02	0.02	0.02	0.02	NS
Xylene (mixed)	0.26	1.6	1.6	1.6	0.26

All concentrations are in parts per million (ppm)
NS = Not Specified

Footnotes:
[1] The SCO for Hexavalent or Trivalent Chromium is considered to be met if the analysis for the total species of this contaminant is below the specific SCO for Hexavalent Chromium.
[2] The SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.
[3] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.
[4] This SCO is derived from data on mixed isomers of BHC.

(iii) the depth of placement of the backfill material relative to groundwater;

(iv) the volume of backfill material;

(v) the potential for odor from the backfill material;

~~(vi) the presence of historic fill in the vicinity of the site;~~

~~(vii~~(vi) a department issued beneficial use determination, pursuant to Part 360 of this Title; or

(~~viii~~vii) background levels of contamination in areas surrounding the site.

375-6.8 Soil cleanup objective tables.

(a) Unrestricted use soil cleanup objectives.

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
Metals		
Arsenic	7440-38-2	13 [c]
Barium	7440-39-3	[350]410 [c]
Beryllium	7440-41-7	[7.2]4.4
Cadmium	7440-43-9	2.5 [c]
Chromium, hexavalent[e]	18540-29-9	1 [b]
Chromium, trivalent[e]	16065-83-1	30 [c]
Copper	7440-50-8	50
Total Cyanide [e, f]		[27]2.3 [c]
Lead	7439-92-1	63 [c]
Manganese	7439-96-5	1600 [c]
Mercury (Total)		0.18 [c]
Nickel	7440-02-0	30
Selenium	7782-49-2	[3.9[c]]4.0 [c]
Silver	7440-22-4	2
Zinc	7440-66-6	109 [c]
PCBs/Pesticides		
[2,4,5-TP Acid (Silvex) [f]]	[93-72-1]	[3.8]
4,4'-DDE	72-55-9	0.0033 [b]

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
4,4'-DDT	50-29-3	0.0033 [b]
4,4'-DDD	72-54-8	0.0033 [b]
Aldrin	309-00-2	[.005]0.0048 [c]
alpha-BHC	319-84-6	0.02
beta-BHC	319-85-7	[.036]0.021
Chlordane (alpha)	5103-71-9	[0.094]0.014
delta-BHC [g]	319-86-8	[.04]0.024
[Dibenzofuran [f]]	[132-64-9]	[7]
Dieldrin	60-57-1	0.005 [c]
Endosulfan I [d, f]	959-98-8	[2.4]4.3
Endosulfan II [d, f]	33213-65-9	[2.4]4.3
Endosulfan sulfate [d, f]	1031-07-8	[2.4]4.3
Endrin	72-20-8	0.014
Heptachlor	76-44-8	[0.042]0.013
Lindane	58-89-9	[0.1]0.026
Polychlorinated biphenyls	1336-36-3	0.1
Semivolatile organic compounds		
1,4 Dioxane	123-91-1	0.1 [b]
Acenaphthene	83-32-9	20
Acenaphthylene [f]	208-96-8	100 [a]
Anthracene [f]	120-12-7	100 [a]
Benz(a)anthracene [f]	56-55-3	1[c]
Benzo(a)pyrene	50-32-8	1[c]
Benzo(b)fluoranthene [f]	205-99-2	1[c]
Benzo(g,h,i)perylene [f]	191-24-2	[100]0.64
Benzo(k)fluoranthene [f]	207-08-9	0.8 [c]

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
Chrysene [f]	218-01-9	1 [c]
Dibenz(a,h)anthracene [f]	53-70-3	0.33 [b]
Dibenzofuran [f]	132-64-9	2.1
Fluoranthene [f]	206-44-0	[100 [a]]85
Fluorene	86-73-7	30
Indeno(1,2,3-cd)pyrene [f]	193-39-5	0.5 [c]
m-Cresol [f]	108-39-4	0.33 [b]
Naphthalene [f]	91-20-3	12
o-Cresol [f]	95-48-7	0.33 [b]
p-Cresol [f]	106-44-5	0.33 [b]
Pentachlorophenol	87-86-5	0.8 [b]
Perfluorooctane Sulfonic Acid (PFOS)	1763-23-1	0.00088
Perfluorooctanoic Acid (PFOA)	335-67-1	0.00066
Phenanthrene [f]	85-01-8	[100]1.1 [c]
Phenol	108-95-2	0.33 [b]
Pyrene [f]	129-00-0	[100]64
Volatile organic compounds		
1,1,1-Trichloroethane [f]	71-55-6	0.68
1,1-Dichloroethane [f]	75-34-3	0.27
1,1-Dichloroethene [f]	75-35-4	[0.33]0.24
1,2-Dichlorobenzene [f]	95-50-1	1.1
1,2-Dichloroethane	107-06-2	0.02 [c]
cis -1,2-Dichloroethene [f]	156-59-2	[0.25]0.19
trans-1,2-Dichloroethene [f]	156-60-5	0.19

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
1,3-Dichlorobenzene [f]	541-73-1	2.4
1,4-Dichlorobenzene	106-46-7	1.8
[1,4 Dioxane]	[123-91-1]	[0.1 [b]]
Acetone	67-64-1	[0.05]0.03
Aniline	62-53-3	0.038
Benzene	71-43-2	0.06
n-Butylbenzene [f]	104-51-8	[12]18
Carbon tetrachloride [f]	56-23-5	0.76
Chlorobenzene	108-90-7	1.1
Chloroform	67-66-3	0.37
Ethylbenzene [f]	100-41-4	1
Hexachlorobenzene [f]	118-74-1	0.33 [b]
Methyl ethyl ketone	78-93-3	[0.12]0.10
Methyl tert-butyl ether [f]	1634-04-4	[0.93]0.1
Methylene chloride	75-09-2	0.05
Nitrobenzene	98-95-3	0.08[c]
n – Propylbenzene [f]	103-65-1	[3.9]5
sec-Butylbenzene [f]	135-98-8	[11]25
tert-Butylbenzene [f]	98-06-6	[5.9]11
Tetrachloroethene	127-18-4	1.3
Toluene	108-88-3	0.7
Trichloroethene	79-01-6	0.47
1,2,4-Trimethylbenzene [f]	95-63-6	[3.6]0.51
1,3,5-Trimethylbenzene [f]	108-67-8	[8.4]0.51
Vinyl chloride [f]	75-01-4	0.02

Table 375-6.8(a): Unrestricted Use Soil Cleanup Objectives

Contaminant	CAS Number	Unrestricted Use
Xylene (mixed)	1330-20-7	0.26
All soil cleanup objectives (SCOs) are in parts per million (ppm).		

[a] The SCOs for unrestricted use were capped at a maximum value of 100 ppm. See Technical Support Document (TSD), section 9.3.
[b] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the Track 1 SCO value.
[c] For constituents where the calculated SCO was lower than the rural soil background concentration, as determined by the department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 1 SCO value for this use of the site.
[d] SCO is the sum of endosulfan I, endosulfan II and endosulfan sulfate.
[e] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.
[f] Protection of ecological resources SCOs were not developed for contaminants identified in Table 375-6.8(b) with *NS*. Where such contaminants appear in Table 375-6.8(a), the applicant may be required by the department to calculate a protection of ecological resources SCO according to the TSD.
[g] This SCO applies to total mercury and is based on the Rural Soil Background Concentration (RSBC) for habitat.

TABLE 6.8b
(b) Restricted use soil cleanup objectives.

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Groundwater
		Residential	Restricted-Residential	Commercial	Industrial		
Metals							
Arsenic	7440-38-2	16 [f]	16 [f]	16 [f]	16 [f]	13 [f]	16 [f]
Barium	7440-39-3	[350 [f]]410	[400]410	[400]410	10,000 [d]	433	820
Beryllium	7440-41-7	[14]8.8	[72]43	[590]670	[2700]750	10	47
Cadmium	7440-43-9	2.5 [f]	[4.3]2.5 [f]	[9.3]3.7	[60]4.4	4	7.5
Chromium, hexavalent [h]	18540-29-9	[22]1 [e]	[110]1 [e]	[400]11	[800]11	[1 [e]]20	19

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
Chromium, trivalent [h]	16065-83-1	[36]30	[180]110	[1500]1,700	[6800]2,000	[41]160	NS
Copper	7440-50-8	[270]280	[270]280	[270]280	10,000 [d]	50	1720
Total Cyanide [h]		[27]2.6	[27]13	[27]28	[10,000 [d]]240	NS	40
Lead	7439-92-1	400	400	1,000	3,900	63 [f]	450
[Manganes [e]]Manganese	7439-96-5	2,000 [f]	2,000 [f]	10,000 [d]	10,000 [d]	1600 [f]	2,000 [f]
Mercury (Total)		[0.81]0.26 [j]	[0.81]0.26 [j]	[2.8]1.1 [j]	[5.7]1.1 [j]	0.18 [f]	0.73
Nickel	7440-02-0	[140]44	[310]210	[310]320	[10,000 [d]]3,400	30	130
Selenium	7782-49-2	[36]22	[180]110	[1,500]1,700	[6,800]2,000	3.9 [f]	4 [f]
Silver	7440-22-4	[36]22	[180]110	[1,500]1,700	[6,800]2,000	2	8.3
Zinc	7440-66-6	[2200]1,300	[10,000 [d]]6,600	10,000 [d]	10,000 [d]	109 [f]	2,480
PCBs/Pesticides							
[2,4,5 TP Acid (Silvex)]	[92-72-1]	[58]	[100 [a]]	[500 [b]]	[1,000 [c]]	[NS]	[3.8]
4,4'-DDE	72-55-9	[1.8]0.78	[8.9]3.4	[62]22	[120]22	0.0033 [e]	[17]9.3
4,4'-DDT	50-29-3	[1.7]0.78	[7.9]3.8	[47]27	[94]27	0.0033 [e]	[136]135
4,4'- DDD	72-54-8	[2.6]1.2	[13]5	[92]33	[180]33	0.0033 [e]	14
Aldrin	309-00-2	[0.019]0.0088	[0.097]0.044	[0.68]0.33	[1.4]0.33	0.14	0.19
alpha-BHC	319-84-6		[0.48]0.22	[3.4]1.6		0.04 [g]	0.02

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
		[0.097]0.044			[6.8]1.6		
beta-BHC	319-85-7	[0.072]0.042	[0.36]0.18	[3]1.8	[14]2.9	0.6	0.09
Chlordane (alpha)	5103-71-9	[0.91]0.14	[4.2]0.65	[24]8.2	[47]11	1.3	[2.9]4.5
delta-BHC	319-86-8	100 [a]	100 [a]	500 [b]	1,000 [c]	0.04 [g]	[0.25]0.1
[Dibenzofuran]	[132-64-9]	[14]	[59]	[350]	[1,000[c]]	[NS]	[210]
Dieldrin	60-57-1	[0.039]0.017	[0.2]0.075	[1.4]0.48	[2.8]0.48	0.006	0.1
Endosulfan I	959-98-8	[4.8]8.4 [i]	[24]35 [i]	[200]360[i]	[920]580 [i]	NS	[102]65
Endosulfan II	33213-65-9	[4.8]8.4 [i]	[24]35 [i]	[200]360 [i]	[920]580 [i]	NS	[102]44
Endosulfan sulfate	1031-07-8	[4.8]8.4 [i]	[24]35 [i]	[200]360 [i]	[920]580 [i]	NS	[1,000]47 [c]
Endrin	72-20-8	[2.2]1.2	[11]5.3	[89]55	[410]87	0.014	0.06
Heptachlor	76-44-8	[0.42]0.12	[2.1]0.53	[15]5.1	[29]5.1	0.14	0.38
Lindane	58-89-9	[0.28]0.052	[1.3]0.24	[9.2]3.0	[23]4.2	6	[0.1]0.05
Polychlorinated biphenyls	1336-36-3	1	1	1	25	1	3.2
Semivolatiles							
1,4-Dioxane	123-91-1	1.4	5.7	36	36	0.1 [e]	0.1 [e]
Acenaphthene	83-32-9	100 [a]	100 [a]	500 [b]	1,000 [c]	20	98
Acenaphthylene	208-96-8	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	[107]365

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
Anthracene	120-12-7	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	1,000 [c]
Benz(a)anthracene	56-55-3	1 [f]	[1 [f]]1.4	[5.6]37	[11]37	NS	1 [f]
Benzo(a)pyrene	50-32-8	1 [f]	1 [f]	[1 [f]]3.7	[1.1]3.7	2.6	22
Benzo(b)fluoranthene	205-99-2	1 [f]	[1 [f]]1.4	[5.6]37	[11]37	NS	[1.7]2.1
Benzo(g,h,i)perylene	191-24-2	[100 [a]]1.2	[100 [a]]4.9	[500 [b]]47	[1,000 [c]]78	NS	1,000 [c]
Benzo(k)fluoranthene	207-08-9	[1]1.2	[3.9]4.9	[56]47	[110]78	NS	[1.7]2
Chrysene	218-01-9	[1 [f]]1.2	[3.9]4.9	[56]47	[110]78	NS	1[f][f]
Dibenz(a,h)anthracene	53-70-3	0.33 [e]	0.33 [e]	[0.56]3.7	[1.1]3.7	NS	1,000 [c]
Dibenzofuran	132-64-9	4.2	18	180	290	NS	110
Fluoranthene	206-44-0	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	1,000 [c]
Fluorene	86-73-7	100 [a]	100 [a]	500 [b]	1,000 [c]	30	386
Indeno(1,2,3-cd)pyrene	193-39-5	0.5 [f]	[0.5 [f]]1.4	[5.6]37	[11]37	NS	[8.2]6.6
m-Cresol	108-39-4	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	0.33 [e]
Naphthalene	91-20-3	[100 [a]]84 [a]	100 [a]	500 [b]	1,000 [c]	NS	12
o-Cresol	95-48-7	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	0.33 [e]
p-Cresol	106-44-5	[34]100 [a]	100 [a]	500 [b]	1,000 [c]	NS	0.33 [e]
Pentachlorophenol	87-86-5	[2.4]0.8[e]	[6.7]1.3	[6.7]6.9	[55]7	0.8 [e]	0.8 [e]
Perfluorooctane Sulfonic Acid (PFOS)	1763-23-1	0.0088	0.044	0.44	0.44	NS	0.0010 [k]

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
Perfluorooctanoic Acid (PFOA)	335-67-1	0.0066	0.033	0.5	0.6	NS	0.0008 [k]
Phenanthrene	85-01-8	[100 [a]]1.2	[100 [a]]4.9	[500 [b]]47	[1000 [c]]78	NS	1,000 [c]
Phenol	108-95-2	100 [a]	100 [a]	500 [b]	1,000 [c]	30	0.33 [e]
Pyrene	129-00-0	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	1,000 [c]
Volatiles							
1,1,1-Trichloroethane	71-55-6	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	0.68
1,1-Dichloroethane	75-34-3	19	[26]47	240	[480]240	NS	0.27
1,1-Dichloroethene	75-35-4	[100 [a]]0.41	[100 [a]]0.98	[500 [b]]5.1	[1,000 [c]]5.1	NS	0.33
1,2-Dichlorobenzene	95-50-1	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	1.1
1,2-Dichloroethane	107-06-2	[2.3]2.4	[3.1]5.8	30	[60]30	10	0.02 [f]
cis-1,2-Dichloroethene	156-59-2	[59]8.7	[100 [a]]41	500 [b]	[1,000 [c]]590	NS	[0.25]0.19
trans-,2-Dichloroethene	156-60-5	[100 [a]]75	100 [a]	500 [b]	1,000 [c]	NS	0.19
1,3-Dichlorobenzene	541-73-1	[17]11	[49]38	280	[560]280	NS	[2.4]2.6
1,4-Dichlorobenzene	106-46-7	[9.8]10	[13]24	130	[250]130	20	1.8
[1,4 Dioxane]	[123-91-1]	[9.8]	[13]	[130]	[250]	[0.1[e]]	[0.1[e]]
Acetone	67-64-1	100 [a]	100 [b]	500 [b]	1,000 [c]	2.2	[0.05]0.03
Aniline	62-53-3	6.7	8.1	36	36	32	0.04

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
Benzene	71-43-2	[2.9]1.2	[4.8]3.7	[44]20	[89]20	70	0.06
n-Butylbenzene	104-51-8	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	[12]18
Carbon tetrachloride	56-23-5	[1.4]1.9	[2.4]7.1	[22]41	[44]41	[40]NS	0.76
Chlorobenzene	108-90-7	[100 [a]]73	100 [a]	500 [b]	1,000 [c]	40	1.1
Chloroform	67-66-3	[10]4.8	[49]24	[350]180	[700]180	12	0.37
Ethylbenzene	100-41-4	[30]32	[41]76	390	[780]390	NS	1
Hexachlorobenzene	118-74-1	0.33 [e]	[1.2]0.33 [e]	[6]1.8	[12]2.9	NS	3.2
Methyl ethyl ketone	78-93-3	100 [a]	100 [a]	500 [b]	1,000 [c]	100 [a]	[0.12]0.10
Methyl tert-butyl ether	1634-04-4	[62]40	100 [a]	500 [b]	[1,000 [c]]890	NS	[0.93]0.1
Methylene chloride	75-09-2	[51]17	[100 [a]]81	500 [b]	1,000 [c]	12	0.05
Nitrobenzene	98-95-3	0.77	1.8	8.9	8.9	2	0.08[f]
n-Propylbenzene	103-65-1	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	[3.9]5
sec-Butylbenzene	135-98-8	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	[11]25
tert-Butylbenzene	98-06-6	100 [a]	100 [a]	500 [b]	1,000 [c]	NS	[5.9]11
Tetrachloroethene	127-18-4	[5.5]15	[19]18	[150]81	[300]81	2	1.3
Toluene	108-88-3	100 [a]	100 [a]	500 [b]	1,000 [c]	36	0.7
Trichloroethene	79-01-6	[10]1.7	[21]6.4	[200]54	[400]54	2	0.47
1,2,4-Trimethylbenzene	95-63-6	[47]0.51	[52]0.52	[190]2.2	[380]2.2	NS	[3.6]5.9
	108-67-8	[47]0.51	[52]0.52	[190]2.2		NS	[8.4]3.1

Contaminant	CAS Number	Protection of Public Health				Protection of Ecological Resources	Protection of Ground-water
		Residential	Restricted-Residential	Commercial	Industrial		
1,3,5-Trimethylbenzene					[380]2.2		
Vinyl chloride	75-01-4	[0.21]0.099	[0.9]0.48	[13]7.1	[27]7.1	NS	[0.02]0.03
Xylene (mixed)	1330-20-7	100 [a]	100 [a]	500 [b]	1,000 [c]	0.26	[1.6]1.2
All soil cleanup objectives (SCOs) are in parts per million (ppm).							
NS = Not specified. See Technical Support Document (TSD).							

[a] The SCOs for residential, restricted-residential and ecological resources use were capped at a maximum value of 100 ppm. See TSD section 9.3.
[b] The SCOs for commercial use were capped at a maximum value of 500 ppm. See TSD section 9.3.
[c] The SCOs for industrial use and the protection of groundwater were capped at a maximum value of 1000 ppm. See TSD section 9.3.
[d] The SCOs for metals were capped at a maximum value of 10,000 ppm. See TSD section 9.3.
[e] For constituents where the calculated SCO was lower than the contract required quantitation limit (CRQL), the CRQL is used as the SCO value.
[f] For constituents where the calculated SCO was lower than the rural soil background concentration as determined by the department and Department of Health rural soil survey, the rural soil background concentration is used as the Track 2 SCO value for this use of the site.
[g] This SCO is derived from data on mixed isomers of BHC.
[h] The SCO for this specific compound (or family of compounds) is considered to be met if the analysis for the total species of this contaminant is below the specific SCO.
[i] This SCO is for the sum of endosulfan I, endosulfan II, and endosulfan sulfate.
~~[j] This SCO is the lower of the values for mercury (elemental) or mercury (inorganic salts). See TSD Table 5.6-1.~~
[j] Protection of public health SCOs for total mercury are based on either the Rural Soil Background Concentration for total mercury (0.3 ppm) or the most toxic mercury form that may be present in soil samples.
[k] Protection of groundwater SCOs for Perfluorooctane Sulfonic Acid (PFOS) and Perfluorooctanoic Acid (PFOA) are considered interim SCOs. The leaching and transport of these chemicals through the subsurface are not understood well at this time and are currently the focus of extensive scientific research. Any new scientific information will be considered in determining cleanup goals for remediation sites. These SCOs apply only to the remedial programs in 6NYCRR Part 375 and are not to be applied to other DEC regulatory programs unless directed by those programs.

375-6.9 Development or modification of soil cleanup objectives.

Appendix C Laboratory Certificates

ALS Environmental Laboratory Certifications

PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc.
has assessed the Organization of:

ALS Environmental - Rochester
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623

(Hereinafter called the Organization) and hereby declares that Organization has met the requirements of ISO/IEC 17025:2017 General Requirements for the competence of Testing and Calibration Laboratories and the United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP) requirements identified within the DoD/DOE Quality Systems Manual (DoD/DOE QSM) Version 5.4 October 2021 and is accredited in accordance with the:

United States Department of Defense
Environmental Laboratory Accreditation Program
(DoD-ELAP)

This accreditation demonstrates the technical competence for the defined scope and the operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

Environmental Testing
(As detailed in the supplement)

Accreditation claims for such activities shall only be made from the addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation Body's duty to observe and comply with the said rules.

Initial Accreditation Date:	*Issue Date:*	*Expiration Date*
January 22, 2010	June 27, 2024	July 31, 2026

For PJLA

Tracy Szerszen
President

Accreditation No:	*Certificate No:*
65817	L24-480

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: **www.pjlabs.com**

Certificate of Accreditation: Supplement

ALS Environmental - Rochester
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
General Chemistry	
ALS SOP GEN-DWPS by Gravimetry	20049416
Solid	
Percent Solid	1950
EPA 1010B by Pensky-Martens Closed Cup Tester	10234830
Aqueous	
Ignitability	1780
Solid	
Ignitability	1780
EPA 1030 by Manual Ignition (Burn Mold/ Burn Rate)	10117212
Solid	
Ignitability	1780
EPA 335.4 by Colorimetry	10061402
Aqueous	
Cyanide (Total)	1645
EPA 351.2 by Colorimetry	10065404
Aqueous	
Total Kjeldahl Nitrogen (TKN)	1795
EPA 410.4 by Colorimetry	10077404
Aqueous	
Chemical Oxygen Demand (COD)	1565
EPA 420.4 by Colorimetry	10080203
Aqueous	
Phenolics (Total Recoverable)	1905
EPA 9012B by Colorimetry	10243228
Aqueous	
Cyanide (Total)	1645
EPA 9034 by Titrimetry	10196006
Aqueous	
Sulfide	2005
Solid	
Sulfide, Acid Soluble	2010
EPA 9040C by Ion Selective Electrode (ISE)	10244403
Aqueous	
pH	1900
EPA 9045D by Ion Selective Electrode (ISE)	10198455
Solid	
pH (Corrosivity)	1625

Certificate of Accreditation: Supplement

ALS Environmental - Rochester
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
General Chemistry	
EPA 9060A by TOC Analyzer	10244823
Aqueous	
Total Organic Carbon (TOC)	2040
EPA 9066 by Colorimetry	10200609
Aqueous	
Phenolics (Total Recoverable)	1905
Kelada-01 by Colorimetry	60005303
Aqueous	
Cyanide (Total)	1645
Lloyd Kahn by TOC Analyzer	60041001
Solid	
Total Organic Carbon (TOC)	2040
SM 2320B (2011) by Titrimetry	20045618
Aqueous	
Alkalinity (as CaCO3)	1505
SM 2340B (2011) by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP/AES)	20046611
Aqueous	
Hardness (Total, as CaCO3, By Calculation)	1755
SM 2540B (2015) by Gravimetry	20049416
Aqueous	
Solids (Total, TS, Residue)	1950
SM 2540C (2015) by Gravimetry	20050413
Aqueous	
Solids (Total Dissolved, TDS, Residue, Filterable)	1955
SM 2540D (2015) by Gravimetry	20051212
Aqueous	
Solids (Total Suspended, TSS, Non-Filterable Residue)	1960
SM 2540E (2015) by Gravimetry	20051596
Aqueous	
Solids (Total Volatile, TVS)	1970
SM 4500 H+B (2011) by Ion Selective Electrode (ISE)	20105220
Aqueous	
pH	1900
SM 4500 S2F (2011) by Titrimetry	20126663
Aqueous	
Sulfide	2005

Certificate of Accreditation: Supplement

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1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
General Chemistry	
SM 5210B (2016) by 5-Day BOD Test	20135266
Aqueous	
Biochemical Oxygen Demand (BOD)	1530
SM 5210B (2016) by Electrochemical Electrode	20135266
Aqueous	
Carbonaceous Biochemical Oxygen Demand (CBOD)	1555
Inorganic	
EPA 200.7 by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10013806
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190

Certificate of Accreditation: Supplement

ALS Environmental - Rochester
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 200.8 by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10014605
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Cadmium	1030
Chromium	1040
Cobalt	1050
Copper	1055
Lead	1075
Manganese	1090
Nickel	1105
Selenium	1140
Silver	1150
Thallium	1165
Vanadium	1185
Zinc	1190
EPA 218.6 by Ion Chromatography and UV-visible spectrophotometry (IC, UV-Vis)	10028009
Aqueous	
Hexavalent Chromium (Cr VI)	1045
EPA 245.1 by Cold Vapor Atomic Absorption Spectrophotometry (CVAAS)	10036609
Aqueous	
Mercury	1095
EPA 300.0 by Ion Chromatography (IC)	10053200
Aqueous	
Bromide	1540
Chloride	1575
Fluoride	1730
Nitrate (as N)	1810
Nitrite (as N)	1840
Sulfate	2000
EPA 350.1 by Colorimetry	10063602
Aqueous	
Ammonia (as N)	1515

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Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6010C by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP/AES)	10155905
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035

ALS Environmental - Rochester
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Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6010C by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP/AES)	10155905
Solid	
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
EPA 6010D by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP/AES)	10155950
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090

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Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6010D by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP/AES)	10155950
Aqueous	
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165

Certificate of Accreditation: Supplement

ALS Environmental - Rochester
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6010D by Inductively Coupled Plasma Atomic Emission Spectrometry (ICP/AES)	10155950
Solid	
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
EPA 6020A by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156419
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Cadmium	1030
Chromium	1040
Cobalt	1050
Copper	1055
Lead	1075
Manganese	1090
Nickel	1105
Selenium	1140
Silver	1150
Thallium	1165
Vanadium	1185
Zinc	1190
EPA 6020B by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156408
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Cadmium	1030
Chromium	1040
Cobalt	1050
Copper	1055
Lead	1075
Manganese	1090

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ALS Environmental - Rochester
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Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6020B by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156408
Aqueous	
Nickel	1105
Selenium	1140
Silver	1150
Thallium	1165
Vanadium	1185
Zinc	1190
EPA 7199 by Ion Chromatography and UV-visible spectrophotometry (IC, UV-Vis)	10163005
Aqueous	
Hexavalent Chromium (Cr VI)	1045
Solid	
Hexavalent Chromium (Cr VI)	1045
EPA 7470A by Cold Vapor Atomic Absorption Spectrophotometry (CVAAS)	10165807
Aqueous	
Mercury	1095
EPA 7471B by Cold Vapor Atomic Absorption Spectrophotometry (CVAAS)	10166457
Solid	
Mercury	1095
EPA 9056A by Ion Chromatography (IC)	10199607
Aqueous	
Bromide	1540
Chloride	1575
Fluoride	1730
Nitrate (as N)	1810
Nitrite (as N)	1840
Sulfate	2000
Organic	
ALS-Rochester SOP HPLC-METACID by High Performance Liquid Chromatography (HPLC)	NC
Aqueous	
Acetic Acid	9300
Butanoic Acid (Butyric Acid)	1543
Formic Acid	1738
Lactic Acid	1797
Propionic Acid	1912
Pyruvic Acid	1922

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1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 608.3 by Gas Chromatography Electron Capture Detector (GC/ECD)	10296614
Aqueous	
4,4'-DDD	7355
4,4'-DDE	7360
4,4'-DDT	7365
Aldrin	7025
alpha-BHC (a-BHC, alpha-Hexachlorocyclohexane)	7110
alpha-Chlordane (cis-Chlordane)	7240
Aroclor 1016	8880
Aroclor 1221	8885
Aroclor 1232	8890
Aroclor 1242	8895
Aroclor 1248	8900
Aroclor 1254	8905
Aroclor 1260	8910
beta-BHC (b-BHC, beta-Hexachlorocyclohexane)	7115
Chlordane (Technical)	7250
delta-BHC (d-BHC)	7105
Dieldrin	7470
Endosulfan I	7510
Endosulfan II	7515
Endosulfan Sulfate	7520
Endrin	7540
Endrin Aldehyde	7530
Endrin Ketone	7535
gamma-BHC (γ-BHC, Lindane, gamma-Hexachlorocyclohexane)	7120
gamma-Chlordane	7245
Heptachlor	7685
Heptachlor Epoxide	7690
Methoxychlor	7810
Toxaphene (Chlorinated Camphene)	8250
EPA 624.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10298121
Aqueous	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloroethane	5165
1,1-Dichloroethane	4630

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Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 624.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10298121
Aqueous	
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromo-3-Chloropropane (DBCP)	4570
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether (2-CEVE)	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Acetone	4315
Benzene	4375
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
cis-1,2-Dichloroethylene	4645

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Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 624.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10298121
Aqueous	
cis-1,3-Dichloropropene	4680
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Ethylbenzene	4765
Isopropylbenzene (Cumene)	4900
m,p-Xylene	5240
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methyl tert Butyl Ether (MTBE)	5000
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
o-Xylene (1,2-Xylene)	5250
sec-Butylbenzene	4440
Styrene	5100
tert-Butylbenzene	4445
Tetrachloroethene (Perchloroethene, PCE)	5115
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
EPA 625.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10300024
Aqueous	
1,2,4-Trichlorobenzene	5155
1,2-Diphenylhydrazine (as Azobenzene)	6220
2,2'-Oxybis(1-Chloropropane)	4659
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185

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Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 625.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10300024
Aqueous	
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol, Dinitro-o-Cresol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3+4-Methylphenol (m+p Cresol)	6412
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chlorophenyl Phenylether	5825
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Acetophenone	5510
Anthracene	5555
Benzidine	5595
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Benzoic Acid	5610
bis(2-Chloroethoxy)Methane	5760
bis(2-Chloroethyl)ether	5765
bis(2-Ethylhexy)Phthalate (DEHP, as di(2-ethylhexyl) Phthalate)	6065
Butyl Benzyl Phthalate	5670
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
di-n-Octyl Phthalate	6200
Fluoranthene	6265

ALS Environmental - Rochester
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 625.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10300024
Aqueous	
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3-cd)Pyrene	6315
Isophorone	6320
Naphthalene	5005
Nitrobenzene	5015
n-Nitrosodimethylamine	6530
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
EPA 8081B by Gas Chromatography Electron Capture Detector (GC/ECD)	10178811
Aqueous	
4,4'-DDD	7355
4,4'-DDE	7360
4,4'-DDT	7365
Aldrin	7025
alpha-BHC (a-BHC, alpha-Hexachlorocyclohexane)	7110
alpha-Chlordane (cis-Chlordane)	7240
beta-BHC (b-BHC, beta-Hexachlorocyclohexane)	7115
Chlordane (Technical)	7250
delta-BHC (d-BHC)	7105
Dieldrin	7470
Endosulfan I	7510
Endosulfan II	7515
Endosulfan Sulfate	7520
Endrin	7540
Endrin Aldehyde	7530
Endrin Ketone	7535
gamma-BHC (γ-BHC, Lindane, gamma-Hexachlorocyclohexane)	7120

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	Code
Organic	
EPA 8081B by Gas Chromatography Electron Capture Detector (GC/ECD)	10178811
Aqueous	
gamma-Chlordane	7245
Heptachlor	7685
Heptachlor Epoxide	7690
Methoxychlor	7810
Toxaphene (Chlorinated Camphene)	8250
Solid	
4,4'-DDD	7355
4,4'-DDE	7360
4,4'-DDT	7365
Aldrin	7025
alpha-BHC (a-BHC, alpha-Hexachlorocyclohexane)	7110
alpha-Chlordane (cis-Chlordane)	7240
beta-BHC (b-BHC, beta-Hexachlorocyclohexane)	7115
Chlordane (Technical)	7250
delta-BHC (d-BHC)	7105
Dieldrin	7470
Endosulfan I	7510
Endosulfan II	7515
Endosulfan Sulfate	7520
Endrin	7540
Endrin Aldehyde	7530
Endrin Ketone	7535
gamma-BHC (γ-BHC, Lindane, gamma-Hexachlorocyclohexane)	7120
gamma-Chlordane	7245
Heptachlor	7685
Heptachlor Epoxide	7690
Methoxychlor	7810
Toxaphene (Chlorinated Camphene)	8250
EPA 8082A by Gas Chromatography Electron Capture Detector (GC/ECD)	10179358
Aqueous	
Aroclor 1016	8880
Aroclor 1221	8885
Aroclor 1232	8890
Aroclor 1242	8895
Aroclor 1248	8900
Aroclor 1254	8905

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8082A by Gas Chromatography Electron Capture Detector (GC/ECD)	10179358
Aqueous	
Aroclor 1260	8910
Aroclor 1262	8912
Aroclor 1268	8913
Solid	
Aroclor 1016	8880
Aroclor 1221	8885
Aroclor 1232	8890
Aroclor 1242	8895
Aroclor 1248	8900
Aroclor 1254	8905
Aroclor 1260	8910
Aroclor 1262	8912
Aroclor 1268	8913
EPA 8151A by Gas Chromatography Electron Capture Detector (GC/ECD)	10183207
Aqueous	
2,4,5-T	8655
2,4-Dichlorophenoxyacetic Acid (2,4-D)	8545
Dicamba	8595
Dinoseb (2-sec-Butyl-4,6-Dinitrophenol, DNBP)	8620
Pentachlorophenol (PCP)	6605
Silvex (2,4,5-TP)	8650
Solid	
2,4,5-T	8655
2,4-Dichlorophenoxyacetic Acid (2,4-D)	8545
Dicamba	8595
Pentachlorophenol (PCP)	6605
Silvex (2,4,5-TP)	8650
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromo-3-Chloropropane (DBCP)	4570
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trichlorobenzene	6800
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether (2-CEVE)	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Allyl Chloride (3-Chloropropene)	4355
Benzene	4375
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Carbon Disulfide	4450
Carbon Tetrachloride	4455

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
Chloroprene (2-Chloro-1,3-Butadiene)	4525
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Cyclohexane	4555
Cyclohexanone	4560
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Dichlorofluoromethane (Freon 21)	4627
Diethyl Ether	4725
Di-Isopropylether (DIPE)	9375
Ethyl Methacrylate	4810
Ethyl tert Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Hexachlorobutadiene	4835
Iodomethane (Methyl Iodide)	4870
Isobutyl Alcohol (2-Methyl-1-Propanol, Isobutanol)	4875
Isopropylbenzene (Cumene)	4900
m,p-Xylene	5240
Methacrylonitrile	4925
Methyl Acetate	4940
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methyl Methacrylate	4990
Methyl tert Butyl Ether (MTBE)	5000
Methylcyclohexane	4965
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
o-Xylene (1,2-Xylene)	5250
Propionitrile (Ethyl Cyanide)	5080
sec-Butylbenzene	4440

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
Styrene	5100
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene (Perchloroethene, PCE)	5115
Tetrahydrofuran (THF)	5120
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
trans-1,4-Dichloro-2-Butene	4605
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
Solid	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromo-3-Chloropropane (DBCP)	4570
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trichlorobenzene	6800
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615

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	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Solid	
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether (2-CEVE)	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Allyl Chloride (3-Chloropropene)	4355
Benzene	4375
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
Chloroprene (2-Chloro-1,3-Butadiene)	4525
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Cyclohexane	4555
Cyclohexanone	4560
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Diethyl Ether	4725
Di-Isopropylether (DIPE)	9375

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Solid	
Ethyl Methacrylate	4810
Ethyl tert Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Hexachlorobutadiene	4835
Iodomethane (Methyl Iodide)	4870
Isobutyl Alcohol (2-Methyl-1-Propanol, Isobutanol)	4875
Isopropylbenzene (Cumene)	4900
m,p-Xylene	5240
Methacrylonitrile	4925
Methyl Acetate	4940
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methyl Methacrylate	4990
Methyl tert Butyl Ether (MTBE)	5000
Methylcyclohexane	4965
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
o-Xylene (1,2-Xylene)	5250
Propionitrile (Ethyl Cyanide)	5080
sec-Butylbenzene	4440
Styrene	5100
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene (Perchloroethene, PCE)	5115
Tetrahydrofuran (THF)	5120
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
trans-1,4-Dichloro-2-Butene	4605
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Solid	
Xylenes (Total)	5260
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS) (Calc)	10307003
Aqueous	
1,2-Dichloroethene (Total, cis & trans)	4705
Solid	
1,2-Dichloroethene (Total, cis & trans)	4705
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Aqueous	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromo-3-Chloropropane (DBCP)	4570
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trichlorobenzene	6800
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether (2-CEVE)	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Aqueous	
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (propenal)	4325
Acrylonitrile	4340
Allyl Chloride (3-Chloropropene)	4355
Benzene	4375
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
Chloroprene (2-Chloro-1,3-Butadiene)	4525
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Cyclohexane	4555
Cyclohexanone	4560
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Dichlorofluoromethane (Freon 21)	4627
Diethyl Ether	4725
Diisopropyl Ether (DIPE)	9375
Ethyl Methacrylate	4810
Ethyl tert-Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Hexachlorobutadiene	4835
Iodomethane (Methyl Iodide)	4870
Isobutyl Alcohol (Isobutanol, 2-Methyl-1-Propanol)	4875
Isopropylbenzene (Cumene)	4900

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Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Aqueous	
m,p-Xylene	5240
Methacrylonitrile	4925
Methyl Acetate	4940
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methyl Methacrylate	4990
Methyl tert Butyl Ether (MTBE)	5000
Methylcyclohexane	4965
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
o-Xylene (1,2-Xylene)	5250
Propionitrile (Ethyl Cyanide)	5080
sec-Butylbenzene	4440
Styrene	5100
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene	5115
Tetrahydrofuran (THF)	5120
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
trans-1,4-Dichloro-2-Butene	4605
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
Solid	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Solid	
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromo-3-Chloropropane (DBCP)	4570
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trichlorobenzene	6800
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether (2-CEVE)	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (propenal)	4325
Acrylonitrile	4340
Allyl Chloride (3-Chloropropene)	4355
Benzene	4375
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400

Certificate of Accreditation: Supplement

ALS Environmental - Rochester
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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Solid	
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
Chloroprene (2-Chloro-1,3-Butadiene)	4525
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Cyclohexane	4555
Cyclohexanone	4560
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Diethyl Ether	4725
Diisopropyl Ether (DIPE)	9375
Ethyl Methacrylate	4810
Ethyl tert-Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Hexachlorobutadiene	4835
Iodomethane (Methyl Iodide)	4870
Isobutyl Alcohol (Isobutanol, 2-Methyl-1-Propanol)	4875
Isopropylbenzene (Cumene)	4900
m,p-Xylene	5240
Methacrylonitrile	4925
Methyl Acetate	4940
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methyl Methacrylate	4990
Methyl tert Butyl Ether (MTBE)	5000
Methylcyclohexane	4965
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
o-Xylene (1,2-Xylene)	5250
Propionitrile (Ethyl Cyanide)	5080

ALS Environmental - Rochester
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Solid	
sec-Butylbenzene	4440
Styrene	5100
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene	5115
Tetrahydrofuran (THF)	5120
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
trans-1,4-Dichloro-2-Butene	4605
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS) (Calc)	10307127
Aqueous	
1,2-Dichloroethene (Total, cis & trans)	4705
Solid	
1,2-Dichloroethene (Total, cis & trans)	4705
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
1,1´-Biphenyl (BZ-0, Biphenyl)	6703
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,2-Diphenylhydrazine (as Azobenzene)	6220
1,3-Dichlorobenzene (1,3-DCB)	4615
1,4-Dichlorobenzene	4620
1-Methylnaphthalene	6380
2,2'-Oxybis(1-Chloropropane)	4659
2,3,4,6-Tetrachlorophenol	6735
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dichlorophenol	6005
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol, Dinitro-o-Cresol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3+4-Methylphenol (m+p Cresol)	6412
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Acetophenone	5510
Anthracene	5555
Atrazine	7065
Benzaldehyde	5570
Benzidine	5595
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
bis(2-Chloroethoxy)Methane	5760

Certificate of Accreditation: Supplement

ALS Environmental - Rochester
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Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
bis(2-Chloroethyl)ether	5765
bis(2-Ethylhexy)Phthalate (DEHP, as di(2-ethylhexyl) Phthalate)	6065
Butyl Benzyl Phthalate	5670
Caprolactam	7180
Carbazole	5680
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
di-n-Octyl Phthalate	6200
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3-cd)Pyrene	6315
Isophorone	6320
Naphthalene	5005
Nitrobenzene	5015
n-Nitrosodiethylamine	6525
n-Nitrosodimethylamine	6530
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Solid	
1,1′-Biphenyl (BZ-0, Biphenyl)	6703
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,2-Diphenylhydrazine (as Azobenzene)	6220

ALS Environmental - Rochester
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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Solid	
1,3-Dichlorobenzene (1,3-DCB)	4615
1,4-Dichlorobenzene	4620
2,2'-Oxybis(1-Chloropropane)	4659
2,3,4,6-Tetrachlorophenol	6735
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dichlorophenol	6005
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol, Dinitro-o-Cresol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3+4-Methylphenol (m+p Cresol)	6412
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Acetophenone	5510
Anthracene	5555
Atrazine	7065
Benzaldehyde	5570
Benzidine	5595
Benzo(a)Anthracene	5575

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Solid	
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
bis(2-Chloroethoxy)Methane	5760
bis(2-Chloroethyl)ether	5765
bis(2-Ethylhexy)Phthalate (DEHP, as di(2-ethylhexyl) Phthalate)	6065
Butyl Benzyl Phthalate	5670
Caprolactam	7180
Carbazole	5680
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
di-n-Octyl Phthalate	6200
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3-cd)Pyrene	6315
Isophorone	6320
Naphthalene	5005
Nitrobenzene	5015
n-Nitrosodiethylamine	6525
n-Nitrosodimethylamine	6530
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625

Certificate of Accreditation: Supplement

ALS Environmental - Rochester
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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Solid	
Pyrene	6665
EPA 8270D SIM by Gas Chromatography Mass Spectrometry (GC/MS) Selective Ion Monitoring (SIM)	10186002
Aqueous	
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Aqueous	
1,1´-Biphenyl (BZ-0, Biphenyl)	6703
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,2-Diphenylhydrazine (as Azobenzene)	6220
1,3-Dichlorobenzene (1,3-DCB)	4615
1,4-Dichlorobenzene	4620
1-Methylnaphthalene	6380
2,2'-Oxybis(1-Chloropropane)	4659
2,3,4,6-Tetrachlorophenol	6735
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dichlorophenol	6005
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3+4-Methylphenol (m+p Cresol)	6412
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700

ALS Environmental - Rochester
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Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Aqueous	
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Acetophenone	5510
Anthracene	5555
Atrazine	7065
Benzaldehyde	5570
Benzidine	5595
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
bis(2-Chloroethoxy)Methane	5760
bis(2-Chloroethyl)Ether	5765
bis(2-Ethylhexy)Phthalate (DEHP, as di(2-ethylhexyl) phthalate)	6065
Butyl Benzyl Phthalate	5670
Caprolactam	7180
Carbazole	5680
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
di-n-Octyl Phthalate	6200
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285

ALS Environmental - Rochester
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Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Aqueous	
Hexachloroethane	4840
Indeno(1,2,3,cd)Pyrene	6315
Isophorone	6320
Naphthalene	5005
Nitrobenzene	5015
n-Nitrosodiethylamine	6525
n-Nitrosodimethylamine	6530
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Solid	
1,1´-Biphenyl (BZ-0, Biphenyl)	6703
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,2-Diphenylhydrazine (as Azobenzene)	6220
1,3-Dichlorobenzene (1,3-DCB)	4615
1,4-Dichlorobenzene	4620
2,2'-Oxybis(1-Chloropropane)	4659
2,3,4,6-Tetrachlorophenol	6735
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dichlorophenol	6005
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400

ALS Environmental - Rochester
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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Solid	
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3+4-Methylphenol (m+p Cresol)	6412
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Acetophenone	5510
Anthracene	5555
Atrazine	7065
Benzaldehyde	5570
Benzidine	5595
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
bis(2-Chloroethoxy)Methane	5760
bis(2-Chloroethyl)Ether	5765
bis(2-Ethylhexy)Phthalate (DEHP, as di(2-ethylhexyl) phthalate)	6065
Butyl Benzyl Phthalate	5670
Caprolactam	7180
Carbazole	5680
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethyl Phthalate	6135

Certificate of Accreditation: Supplement

ALS Environmental - Rochester
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Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Solid	
di-n-Butyl Phthalate	5925
di-n-Octyl Phthalate	6200
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3,cd)Pyrene	6315
Isophorone	6320
Naphthalene	5005
Nitrobenzene	5015
n-Nitrosodiethylamine	6525
n-Nitrosodimethylamine	6530
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
EPA 8270E SIM by Gas Chromatography Mass Spectrometry (GC/MS) Selective Ion Monitoring (SIM)	10242565
Aqueous	
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735

Certificate of Accreditation: Supplement

ALS Environmental - Rochester
1565 Jefferson Road, Building 300, Suite 360, Rochester, NY 14623
Contact Name: Vicky Collom Phone: 585-288-5380

Accreditation is granted to the facility to perform the following testing:

		Code
Preparation		
Aqueous		
ALS-Rochester SOP SOC-1,4-DIOXANE	Solid-Phase Extraction (SPE) for 1,4 Dioxane	
EPA 1311	Toxicity Characteristic Leaching Procedure (TCLP), Zero-Headspace Extraction Vessel (ZHE)	
EPA 3005A	Acid Digestion of Waters for Total Recoverable or Dissolved Metals	
EPA 3010A	Acid Digestion for Total Metals (Hot Block)	
EPA 3510C	Separatory Funnel Liquid-Liquid Extraction	
EPA 3620B	Florisil Cleanup	
EPA 3660B	Sulfur Cleanup	
EPA 3665A	Sulfuric Acid Cleanup	
EPA 5030B	Purge-and-Trap for Volatile Organics in Aqueous Samples	
EPA 9030B	Distillation (Acid-Soluble and Acid-Insoluble Sulfides)	
Solid		
EPA 1311	Toxicity Characteristic Leaching Procedure (TCLP), Zero-Headspace Extraction Vessel (ZHE)	
EPA 3050B	Acid Digestion for Metals	
EPA 3060A	Alkaline Digestion (Hexavalent Chromium)	
EPA 3541	Soxhlet Extraction (Automated)	
EPA 3546	Microwave Extraction (Organics)	
EPA 3620B	Florisil Cleanup	
EPA 3660B	Sulfur Cleanup	
EPA 3665A	Sulfuric Acid Cleanup	
EPA 5035	Purge-and-Trap and Extraction For Volatile Organics (Closed-System)	
EPA 5035A	Purge-and-Trap and Extraction For Volatile Organics (Closed-System)	
EPA 9030B	Distillation (Acid-Soluble and Acid-Insoluble Sulfides)	

Footnotes:
> Method codes are typically based on The NELAC Institute (TNI) Laboratory Accreditation Management System (LAMS) and are used to compare to the laboratory reported Performance Test (PT) results. Although the method code may not represent the specific method version, it is the method code used to represent the method/technology used to report PTs. (NC = No Code)

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2025
Issued April 01, 2024
Revised November 07, 2024

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Bacteriology	
Coliform, Total / E. coli (Qualitative)	SM 20, 21-23 9223B (-04) (Colilert)
Dissolved Gases	
Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175
Fuel Additives	
Methyl tert-butyl ether	EPA 524.2
Naphthalene	EPA 524.2
Metals I	
Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4

Serial No.: 69702

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Metals I	
Zinc, Total	EPA 200.8 Rev. 5.4
Metals II	
Aluminum, Total	EPA 200.7 Rev. 4.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Molybdenum, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4
Vanadium, Total	EPA 200.7 Rev. 4.4
Metals III	
Boron, Total	EPA 200.7 Rev. 4.4
Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Potassium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4
Miscellaneous	
1,4-Dioxane	EPA 522
Organic Carbon, Total	SM 21-23 5310B (-00)
Turbidity	EPA 180.1 Rev. 2.0
UV 254	SM 21-23 5910B (-00,-11)
Non-Metals	
Alkalinity	SM 21-23 2320B (-97)
Calcium Hardness	SM 18-22 2340B (-97)
Chloride	EPA 300.0 Rev. 2.1

Serial No.: 69702

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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Revised November 07, 2024

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Non-Metals	
Color	SM 21-23 2120B (-01)
Corrosivity	SM 18-22 2330
Cyanide	Kelada 01, Rev. 1.2
	EPA 335.4 Rev. 1.0
Fluoride, Total	EPA 300.0 Rev. 2.1
Nitrate (as N)	EPA 353.2 Rev. 2.0
Nitrite (as N)	EPA 353.2 Rev. 2.0
Orthophosphate (as P)	EPA 365.1 Rev. 2.0
Solids, Total Dissolved	SM 21-23 2540C (-97)
Specific Conductance	EPA 120.1 Rev. 1982
Sulfate (as SO4)	EPA 300.0 Rev. 2.1
Trihalomethanes	
Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2
Total Trihalomethanes	EPA 524.2
Volatile Aromatics	
1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2

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Volatile Aromatics

4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2
tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2
1,3-Dichloropropane	EPA 524.2

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Volatile Halocarbons

2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

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Acrylates

Acrolein (Propenal)	EPA 8260D
	EPA 8260C
	EPA 624.1
Acrylonitrile	EPA 8260D
	EPA 8260C
	EPA 624.1
Ethyl methacrylate	EPA 8260D
	EPA 8260C
Methyl acrylonitrile	EPA 8260D
	EPA 8260C
Methyl methacrylate	EPA 8260D
	EPA 8260C

Amines

1,2-Diphenylhydrazine	EPA 625.1
	EPA 8270D
	EPA 8270E
1,4-Phenylenediamine	EPA 8270D
	EPA 8270E
1-Naphthylamine	EPA 8270D
	EPA 8270E
2-Naphthylamine	EPA 8270D
	EPA 8270E
2-Nitroaniline	EPA 8270D
	EPA 8270E
3-Nitroaniline	EPA 8270D
	EPA 8270E
4-Chloroaniline	EPA 8270D

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Amines

4-Chloroaniline	EPA 8270E
4-Nitroaniline	EPA 8270D
	EPA 8270E
5-Nitro-o-toluidine	EPA 8270D
	EPA 8270E
Aniline	EPA 625.1
	EPA 8270D
	EPA 8270E
Carbazole	EPA 625.1
	EPA 8270D
	EPA 8270E
Diphenylamine	EPA 8270D
	EPA 8270E
Methapyrilene	EPA 8270D
	EPA 8270E
Pronamide	EPA 8270D
	EPA 8270E
Propionitrile	EPA 8260D
	EPA 8260C
Pyridine	EPA 625.1
	EPA 8270D

Benzidines

3,3'-Dichlorobenzidine	EPA 625.1
	EPA 8270D
	EPA 8270E
3,3'-Dimethylbenzidine	EPA 8270D
	EPA 8270E

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Benzidines

Benzidine	EPA 625.1
	EPA 8270D
	EPA 8270E

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
	EPA 608.3
4,4'-DDE	EPA 8081B
	EPA 608.3
4,4'-DDT	EPA 8081B
	EPA 608.3
Aldrin	EPA 8081B
	EPA 608.3
alpha-BHC	EPA 8081B
	EPA 608.3
alpha-Chlordane	EPA 8081B
	EPA 608.3
beta-BHC	EPA 8081B
	EPA 608.3
Chlordane Total	EPA 8081B
	EPA 608.3
Chlorobenzilate	EPA 8270D
	EPA 8270E
delta-BHC	EPA 8081B
	EPA 608.3
Diallate	EPA 8270D
	EPA 8270E
Dieldrin	EPA 8081B

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Chlorinated Hydrocarbon Pesticides

Dieldrin	EPA 608.3
Endosulfan I	EPA 8081B
	EPA 608.3
Endosulfan II	EPA 8081B
	EPA 608.3
Endosulfan sulfate	EPA 8081B
	EPA 608.3
Endrin	EPA 8081B
	EPA 608.3
Endrin aldehyde	EPA 8081B
	EPA 608.3
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
	EPA 608.3
Heptachlor	EPA 8081B
	EPA 608.3
Heptachlor epoxide	EPA 8081B
	EPA 608.3
Isodrin	EPA 8270D
	EPA 8270E
Kepone	EPA 8270D
	EPA 8270E
Lindane	EPA 8081B
	EPA 608.3
Methoxychlor	EPA 8081B
	EPA 608.3
Mirex	EPA 8081B

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Chlorinated Hydrocarbon Pesticides

PCNB	EPA 8270D
	EPA 8270E
Toxaphene	EPA 8081B
	EPA 608.3

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260D
	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
	EPA 8270E
1,2,4-Trichlorobenzene	EPA 625.1
	EPA 8270D
	EPA 8270E
2-Chloronaphthalene	EPA 625.1
	EPA 8270D
	EPA 8270E
Hexachlorobenzene	EPA 625.1
	EPA 8270D
	EPA 8270E
Hexachlorobutadiene	EPA 625.1
	EPA 8270D
	EPA 8270E
Hexachlorocyclopentadiene	EPA 625.1
	EPA 8270D
	EPA 8270E
Hexachloroethane	EPA 625.1
	EPA 8270D
	EPA 8270E

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Chlorinated Hydrocarbons

Hexachloropropene	EPA 8270D
	EPA 8270E
Pentachlorobenzene	EPA 8270D
	EPA 8270E

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8151A
	EPA 8270D
	EPA 8270E
Pentachlorophenol	EPA 8151A

Demand

Biochemical Oxygen Demand	SM 5210B-2016
Carbonaceous BOD	SM 5210B-2016
Chemical Oxygen Demand	Hach 8000 (1979)
	EPA 410.4, Rev. 2.0 (1993)

Dissolved Gases

Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175

Fuel Oxygenates

Di-isopropyl ether	EPA 8260D

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Fuel Oxygenates

Di-isopropyl ether	EPA 8260C
	EPA 8015C
Ethanol	EPA 8015C
Methyl tert-butyl ether	EPA 8260D
	EPA 8260C
	EPA 624.1
tert-amyl methyl ether (TAME)	EPA 8260D
	EPA 8260C
tert-butyl alcohol	EPA 8260D
	EPA 8260C
	EPA 624.1
tert-butyl ethyl ether (ETBE)	EPA 8260D
	EPA 8260C

Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 625.1
	EPA 8270D
	EPA 8270E
4-Bromophenylphenyl ether	EPA 625.1
	EPA 8270D
	EPA 8270E
4-Chlorophenylphenyl ether	EPA 625.1
	EPA 8270D
	EPA 8270E
Bis(2-chloroethoxy)methane	EPA 625.1
	EPA 8270D
	EPA 8270E
Bis(2-chloroethyl)ether	EPA 625.1

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Haloethers

Bis(2-chloroethyl)ether	EPA 8270D
	EPA 8270E

Low Level Polynuclear Aromatics

Acenaphthene Low Level	EPA 8270D
	EPA 8270E
Acenaphthylene Low Level	EPA 8270D
	EPA 8270E
Anthracene Low Level	EPA 8270D
	EPA 8270E
Benzo(a)anthracene Low Level	EPA 8270D
	EPA 8270E
Benzo(a)pyrene Low Level	EPA 8270D
	EPA 8270E
Benzo(b)fluoranthene Low Level	EPA 8270D
	EPA 8270E
Benzo(g,h,i)perylene Low Level	EPA 8270D
	EPA 8270E
Benzo(k)fluoranthene Low Level	EPA 8270D
	EPA 8270E
Chrysene Low Level	EPA 8270D
	EPA 8270E
Dibenzo(a,h)anthracene Low Level	EPA 8270D
	EPA 8270E
Fluoranthene Low Level	EPA 8270D
	EPA 8270E
Fluorene Low Level	EPA 8270D
	EPA 8270E

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Low Level Polynuclear Aromatics

Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D
	EPA 8270E
Naphthalene Low Level	EPA 8270D
	EPA 8270E
Phenanthrene Low Level	EPA 8270D
	EPA 8270E
Pyrene Low Level	EPA 8270D
	EPA 8270E

Metals I

Barium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Cadmium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Calcium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
Chromium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D

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Metals I

Chromium, Total	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Copper, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Iron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
Lead, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Magnesium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
Manganese, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)

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MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
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NY Lab Id No: 10145

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Metals I

Nickel, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Potassium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
Silver, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Sodium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
Strontium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)

Metals II

Aluminum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

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Metals II

Aluminum, Total	EPA 6010D
	EPA 200.8, Rev. 5.4 (1994)
Antimony, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Arsenic, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Beryllium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Chromium VI	EPA 218.6, Rev. 3.3 (1994)
	EPA 7196A
	EPA 7199
	SM 3500-Cr B-2011
Mercury, Low Level	EPA 1631E
Mercury, Total	EPA 245.1, Rev. 3.0 (1994)
	EPA 7470A

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Metals II

Selenium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Vanadium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Zinc, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)

Metals III

Cobalt, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Molybdenum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

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Metals III

Molybdenum, Total	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Palladium, Total	EPA 6020A
	EPA 6020B
Platinum, Total	EPA 6020A
	EPA 6020B
Thallium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
	EPA 6020A
	EPA 6020B
	EPA 200.8, Rev. 5.4 (1994)
Tin, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
Titanium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
Uranium (Mass)	EPA 6020A
	EPA 6020B

Mineral

Alkalinity	SM 2320B-2011
Calcium Hardness	SM 2340B-2011
Chloride	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A

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Mineral

Fluoride, Total	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Hardness, Total	SM 2340B-2011
Sulfate (as SO4)	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A

Miscellaneous

Boron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6010D
Bromide	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Color	SM 2120F-2011 (ADMI)
	SM 2120B-2011
Corrosivity	SM 2330-2016
Cyanide, Available	SM 4500-CN G-2016
Cyanide, Total	Kelada-01
	SM 4500-CN E-2016
	EPA 335.4, Rev. 1.0 (1993)
	SM 4500-CN N-2016
	EPA 9012B
Formaldehyde	EPA 8315A
non-Polar Extractable Material (TPH)	EPA 1664B
Oil and Grease Total Recoverable	EPA 1664B
Organic Carbon, Total	SM 5310B-2014
	EPA 9060A
Phenols	EPA 420.4, Rev. 1.0 (1993)
	EPA 9066

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Miscellaneous

Specific Conductance	EPA 120.1 (Rev. 1982)
Sulfide (as S)	SM 4500-S2- F-2011
	EPA 9034
Turbidity	EPA 180.1, Rev. 2.0 (1993)

Nitroaromatics and Isophorone

1,3,5-Trinitrobenzene	EPA 8270D
	EPA 8270E
1,3-Dinitrobenzene	EPA 8270D
	EPA 8270E
1,4-Naphthoquinone	EPA 8270D
	EPA 8270E
2,4-Dinitrotoluene	EPA 625.1
	EPA 8270D
	EPA 8270E
2,6-Dinitrotoluene	EPA 625.1
	EPA 8270D
	EPA 8270E
4-Nitroquinoline-1-oxide	EPA 8270D
	EPA 8270E
Isophorone	EPA 625.1
	EPA 8270D
	EPA 8270E
Nitrobenzene	EPA 625.1
	EPA 8270D
	EPA 8270E

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Nitrosoamines

N-Nitrosodiethylamine	EPA 8270D
	EPA 8270E
N-Nitrosodimethylamine	EPA 625.1
	EPA 8270D
	EPA 8270E
N-Nitrosodi-n-butylamine	EPA 8270D
	EPA 8270E
N-Nitrosodi-n-propylamine	EPA 625.1
	EPA 8270D
	EPA 8270E
N-Nitrosodiphenylamine	EPA 625.1
	EPA 8270D
	EPA 8270E
N-nitrosomethylethylamine	EPA 8270D
	EPA 8270E
N-nitrosomorpholine	EPA 8270D
	EPA 8270E
N-nitrosopiperidine	EPA 8270D
	EPA 8270E
N-Nitrosopyrrolidine	EPA 8270D
	EPA 8270E

Nutrient

Ammonia (as N)	EPA 350.1, Rev. 2.0 (1993)
Kjeldahl Nitrogen, Total	EPA 351.2, Rev. 2.0 (1993)
Nitrate (as N)	EPA 353.2, Rev. 2.0 (1993)
	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A

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Nutrient

Nitrate-Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)
Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)
	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Orthophosphate (as P)	EPA 365.1, Rev. 2.0 (1993)
Phosphorus, Total	EPA 365.1, Rev. 2.0 (1993)

Organophosphate Pesticides

Atrazine	EPA 8270D
	EPA 8270E
Dimethoate	EPA 8270D
	EPA 8270E
Disulfoton	EPA 8270D
	EPA 8270E
Famphur	EPA 8270D
	EPA 8270E
Parathion ethyl	EPA 8270D
	EPA 8270E
Parathion methyl	EPA 8270D
	EPA 8270E
Phorate	EPA 8270D
	EPA 8270E
Sulfotepp	EPA 8270D
	EPA 8270E
Thionazin	EPA 8270D
	EPA 8270E

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Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015C
Gasoline Range Organics	EPA 8015C
Phthalate Esters	
Benzyl butyl phthalate	EPA 625.1
	EPA 8270D
	EPA 8270E
Bis(2-ethylhexyl) phthalate	EPA 625.1
	EPA 8270D
	EPA 8270E
Diethyl phthalate	EPA 625.1
	EPA 8270D
	EPA 8270E
Dimethyl phthalate	EPA 625.1
	EPA 8270D
	EPA 8270E
Di-n-butyl phthalate	EPA 625.1
	EPA 8270D
	EPA 8270E
Di-n-octyl phthalate	EPA 625.1
	EPA 8270D
	EPA 8270E
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
	EPA 608.3
Aroclor 1221 (PCB-1221)	EPA 8082A
	EPA 608.3

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Polychlorinated Biphenyls

Aroclor 1232 (PCB-1232)	EPA 8082A
	EPA 608.3
Aroclor 1242 (PCB-1242)	EPA 8082A
	EPA 608.3
Aroclor 1248 (PCB-1248)	EPA 8082A
	EPA 608.3
Aroclor 1254 (PCB-1254)	EPA 8082A
	EPA 608.3
Aroclor 1260 (PCB-1260)	EPA 8082A
	EPA 608.3
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A

Polynuclear Aromatics

2-Acetylaminofluorene	EPA 8270D
	EPA 8270E
3-Methylcholanthrene	EPA 8270D
	EPA 8270E
7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
	EPA 8270E
Acenaphthene	EPA 625.1
	EPA 8270D
	EPA 8270E
Acenaphthylene	EPA 625.1
	EPA 8270D
	EPA 8270E
Anthracene	EPA 625.1
	EPA 8270D

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Polynuclear Aromatics

Anthracene	EPA 8270E
Benzo(a)anthracene	EPA 625.1
	EPA 8270D
	EPA 8270E
Benzo(a)pyrene	EPA 625.1
	EPA 8270D
	EPA 8270E
Benzo(b)fluoranthene	EPA 625.1
	EPA 8270D
	EPA 8270E
Benzo(g,h,i)perylene	EPA 625.1
	EPA 8270D
	EPA 8270E
Benzo(k)fluoranthene	EPA 625.1
	EPA 8270D
	EPA 8270E
Chrysene	EPA 625.1
	EPA 8270D
	EPA 8270E
Dibenzo(a,h)anthracene	EPA 625.1
	EPA 8270D
	EPA 8270E
Fluoranthene	EPA 625.1
	EPA 8270D
	EPA 8270E
Fluorene	EPA 625.1
	EPA 8270D

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Polynuclear Aromatics

Fluorene	EPA 8270E
Indeno(1,2,3-cd)pyrene	EPA 625.1
	EPA 8270D
	EPA 8270E
Naphthalene	EPA 625.1
	EPA 8270D
	EPA 8270E
Phenanthrene	EPA 625.1
	EPA 8270D
	EPA 8270E
Pyrene	EPA 625.1
	EPA 8270D
	EPA 8270E

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270D
	EPA 8270E
2,4,5-Trichlorophenol	EPA 625.1
	EPA 8270D
	EPA 8270E
2,4,6-Trichlorophenol	EPA 625.1
	EPA 8270D
	EPA 8270E
2,4-Dichlorophenol	EPA 625.1
	EPA 8270D
	EPA 8270E
2,4-Dimethylphenol	EPA 625.1
	EPA 8270D

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Priority Pollutant Phenols

2,4-Dimethylphenol	EPA 8270E
2,4-Dinitrophenol	EPA 625.1
	EPA 8270D
	EPA 8270E
2,6-Dichlorophenol	EPA 8270D
	EPA 8270E
2-Chlorophenol	EPA 625.1
	EPA 8270D
	EPA 8270E
2-Methyl-4,6-dinitrophenol	EPA 625.1
	EPA 8270D
	EPA 8270E
2-Methylphenol	EPA 625.1
	EPA 8270D
	EPA 8270E
2-Nitrophenol	EPA 625.1
	EPA 8270D
	EPA 8270E
3-Methylphenol	EPA 625.1
	EPA 8270D
	EPA 8270E
4-Chloro-3-methylphenol	EPA 625.1
	EPA 8270D
	EPA 8270E
4-Methylphenol	EPA 625.1
	EPA 8270D
	EPA 8270E

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WADSWORTH CENTER

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Revised August 06, 2024

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MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Priority Pollutant Phenols

4-Nitrophenol	EPA 625.1
	EPA 8270D
	EPA 8270E
Cresols, Total	EPA 8270D
	EPA 8270E
Pentachlorophenol	EPA 625.1
	EPA 8270D
	EPA 8270E
Phenol	EPA 625.1
	EPA 8270D
	EPA 8270E

Residue

Settleable Solids	SM 2540 F-2015
Solids, Total	SM 2540 B-2015
Solids, Total Dissolved	SM 2540 C-2015
Solids, Total Suspended	SM 2540 D-2015
Solids, Volatile	SM 2540 E-2015

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270D
	EPA 8270E
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
	EPA 8270E
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
	EPA 8270E
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
	EPA 8270E

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Semi-Volatile Organics

2-Methylnaphthalene	EPA 625.1
	EPA 8270D
	EPA 8270E
2-Picoline	EPA 8270D
	EPA 8270E
4-Amino biphenyl	EPA 8270D
	EPA 8270E
Acetophenone	EPA 625.1
	EPA 8270D
	EPA 8270E
alpha-Terpineol	EPA 625.1
Aramite	EPA 8270D
	EPA 8270E
Benzaldehyde	EPA 8270D
	EPA 8270E
Benzoic Acid	EPA 8270D
	EPA 8270E
Benzyl alcohol	EPA 8270D
	EPA 8270E
Caprolactam	EPA 8270D
	EPA 8270E
Dibenzofuran	EPA 8270D
	EPA 8270E
Ethyl methanesulfonate	EPA 8270D
	EPA 8270E
Isosafrole	EPA 8270D
	EPA 8270E

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Semi-Volatile Organics

Methyl methanesulfonate	EPA 8270D
	EPA 8270E
O,O,O-Triethyl phosphorothioate	EPA 8270D
	EPA 8270E
p-Dimethylaminoazobenzene	EPA 8270D
	EPA 8270E
Phenacetin	EPA 8270D
	EPA 8270E
Safrole	EPA 8270D
	EPA 8270E

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260D
	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260D
	EPA 8260C
1,2-Dichlorobenzene	EPA 8260D
	EPA 8260C
	EPA 624.1
1,3,5-Trimethylbenzene	EPA 8260D
	EPA 8260C
1,3-Dichlorobenzene	EPA 8260D
	EPA 8260C
	EPA 624.1
1,4-Dichlorobenzene	EPA 8260D
	EPA 8260C
	EPA 624.1
2-Chlorotoluene	EPA 8260D

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Volatile Aromatics

2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260D
	EPA 8260C
Benzene	EPA 8260D
	EPA 8260C
	EPA 624.1
Bromobenzene	EPA 8260D
	EPA 8260C
Chlorobenzene	EPA 8260D
	EPA 8260C
	EPA 624.1
Ethyl benzene	EPA 8260D
	EPA 8260C
	EPA 624.1
Isopropylbenzene	EPA 8260D
	EPA 8260C
m/p-Xylenes	EPA 8260D
	EPA 8260C
	EPA 624.1
Naphthalene, Volatile	EPA 8260D
	EPA 8260C
	EPA 624.1
n-Butylbenzene	EPA 8260D
	EPA 8260C
n-Propylbenzene	EPA 8260D
	EPA 8260C
o-Xylene	EPA 8260D

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Volatile Aromatics

o-Xylene	EPA 8260C
	EPA 624.1
p-Isopropyltoluene (P-Cymene)	EPA 8260D
	EPA 8260C
sec-Butylbenzene	EPA 8260D
	EPA 8260C
Styrene	EPA 8260D
	EPA 8260C
	EPA 624.1
tert-Butylbenzene	EPA 8260D
	EPA 8260C
Toluene	EPA 8260D
	EPA 8260C
	EPA 624.1
Total Xylenes	EPA 8260D
	EPA 8260C
	EPA 624.1

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260D
	EPA 8260C
1,1,1-Trichloroethane	EPA 8260D
	EPA 8260C
	EPA 624.1
1,1,2,2-Tetrachloroethane	EPA 8260D
	EPA 8260C
	EPA 624.1
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260D

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Volatile Halocarbons

1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
	EPA 624.1
1,1,2-Trichloroethane	EPA 8260D
	EPA 8260C
	EPA 624.1
1,1-Dichloroethane	EPA 8260D
	EPA 8260C
	EPA 624.1
1,1-Dichloroethene	EPA 8260D
	EPA 8260C
	EPA 624.1
1,1-Dichloropropene	EPA 8260D
	EPA 8260C
1,2,3-Trichloropropane	EPA 8260D
	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260D
	EPA 8260C
1,2-Dibromoethane	EPA 8260D
	EPA 8260C
1,2-Dichloro-1,1,2-Trifluoroethane	EPA 8260D
	EPA 8260C
1,2-Dichloroethane	EPA 8260D
	EPA 8260C
	EPA 624.1
1,2-Dichloropropane	EPA 8260D
	EPA 8260C
	EPA 624.1

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Volatile Halocarbons

1,3-Dichloropropane	EPA 8260D
	EPA 8260C
2,2-Dichloropropane	EPA 8260D
	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260D
	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260D
	EPA 8260C
	EPA 624.1
3-Chloropropene (Allyl chloride)	EPA 8260D
	EPA 8260C
Bromochloromethane	EPA 8260D
	EPA 8260C
Bromodichloromethane	EPA 8260D
	EPA 8260C
	EPA 624.1
Bromoform	EPA 8260D
	EPA 8260C
	EPA 624.1
Bromomethane	EPA 8260D
	EPA 8260C
	EPA 624.1
Carbon tetrachloride	EPA 8260D
	EPA 8260C
	EPA 624.1
Chloroethane	EPA 8260D
	EPA 8260C

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Volatile Halocarbons

Chloroethane	EPA 624.1
Chloroform	EPA 8260D
	EPA 8260C
	EPA 624.1
Chloromethane	EPA 8260D
	EPA 8260C
	EPA 624.1
cis-1,2-Dichloroethene	EPA 8260D
	EPA 8260C
	EPA 624.1
cis-1,3-Dichloropropene	EPA 8260D
	EPA 8260C
	EPA 624.1
Dibromochloromethane	EPA 8260D
	EPA 8260C
	EPA 624.1
Dibromomethane	EPA 8260D
	EPA 8260C
Dichlorodifluoromethane	EPA 8260D
	EPA 8260C
	EPA 624.1
Hexachlorobutadiene, Volatile	EPA 8260D
	EPA 8260C
Methyl iodide	EPA 8260D
	EPA 8260C
Methylene chloride	EPA 8260D
	EPA 8260C

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Volatile Halocarbons

Methylene chloride	EPA 624.1
Tetrachloroethene	EPA 8260D
	EPA 8260C
	EPA 624.1
trans-1,2-Dichloroethene	EPA 8260D
	EPA 8260C
	EPA 624.1
trans-1,3-Dichloropropene	EPA 8260D
	EPA 8260C
	EPA 624.1
trans-1,4-Dichloro-2-butene	EPA 8260D
	EPA 8260C
Trichloroethene	EPA 8260D
	EPA 8260C
	EPA 624.1
Trichlorofluoromethane	EPA 8260D
	EPA 8260C
	EPA 624.1
Vinyl chloride	EPA 8260D
	EPA 8260C
	EPA 624.1

Volatiles Organics

1,4-Dioxane	EPA 8260D
	EPA 8260C
	EPA 8270D
	EPA 8270D SIM
	EPA 8270E

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Volatiles Organics

1,4-Dioxane	EPA 8270E SIM
2-Butanone (Methylethyl ketone)	EPA 8260D
	EPA 8260C
2-Hexanone	EPA 8260D
	EPA 8260C
2-Nitropropane	EPA 8260D
	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260D
	EPA 8260C
	EPA 624.1
Acetone	EPA 8260D
	EPA 8260C
	EPA 624.1
Acetonitrile	EPA 8260D
	EPA 8260C
	EPA 624.1
Carbon Disulfide	EPA 8260D
	EPA 8260C
Cyclohexane	EPA 8260D
	EPA 8260C
Di-ethyl ether	EPA 8260D
	EPA 8260C
Ethyl Acetate	EPA 8260D
	EPA 8260C
	EPA 8015C
Ethylene Glycol	EPA 8015C
Isobutyl alcohol	EPA 8260D

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Volatiles Organics

Isobutyl alcohol	EPA 8260C
	EPA 8015C
Isopropanol	EPA 8260D
	EPA 8260C
Methanol	EPA 8015C
Methyl acetate	EPA 8260D
	EPA 8260C
Methyl cyclohexane	EPA 8260D
	EPA 8260C
n-Butanol	EPA 8260D
	EPA 8260C
o-Toluidine	EPA 8270D
	EPA 8270E
Propylene Glycol	EPA 8015C
Tetrahydrofuran	EPA 8260D
	EPA 8260C
	EPA 624.1
Vinyl acetate	EPA 8260D
	EPA 8260C
	EPA 624.1

Sample Preparation Methods

EPA 5030C
SM 4500-CN B-2016 and C-2016
EPA 200.2
EPA 9030B
EPA 3010A
EPA 3005A

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All approved analytes are listed below:

Sample Preparation Methods

EPA 3510C

EPA 3535A

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All approved analytes are listed below:

Acrylates

Acrolein (Propenal)	EPA 8260D
	EPA 8260C
Acrylonitrile	EPA 8260D
	EPA 8260C
Ethyl methacrylate	EPA 8260D
	EPA 8260C
Methyl acrylonitrile	EPA 8260D
	EPA 8260C
Methyl methacrylate	EPA 8260D
	EPA 8260C

Amines

1,2-Diphenylhydrazine	EPA 8270D
	EPA 8270E
1,4-Phenylenediamine	EPA 8270D
	EPA 8270E
1-Naphthylamine	EPA 8270D
	EPA 8270E
2-Naphthylamine	EPA 8270D
	EPA 8270E
2-Nitroaniline	EPA 8270D
	EPA 8270E
3-Nitroaniline	EPA 8270D
	EPA 8270E
4-Chloroaniline	EPA 8270D
	EPA 8270E
4-Nitroaniline	EPA 8270D
	EPA 8270E

Serial No.: 69269

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Amines

5-Nitro-o-toluidine	EPA 8270D
	EPA 8270E
Aniline	EPA 8270D
	EPA 8270E
Carbazole	EPA 8270D
	EPA 8270E
Diphenylamine	EPA 8270D
	EPA 8270E
Methapyrilene	EPA 8270D
	EPA 8270E
Pronamide	EPA 8270D
	EPA 8270E

Benzidines

3,3'-Dichlorobenzidine	EPA 8270D
	EPA 8270E
3,3'-Dimethylbenzidine	EPA 8270D
	EPA 8270E
Benzidine	EPA 8270D
	EPA 8270E

Characteristic Testing

Corrosivity (pH)	EPA 9040C
	EPA 9045D
Free Liquids	EPA 9095B
Ignitability	EPA 1030
	EPA 1010B
Synthetic Precipitation Leaching Proc.	EPA 1312

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WADSWORTH CENTER

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Characteristic Testing

TCLP	EPA 1311

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
Atrazine	EPA 8270D
	EPA 8270E
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
Chlorobenzilate	EPA 8270D
	EPA 8270E
delta-BHC	EPA 8081B
Diallate	EPA 8270D
	EPA 8270E
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin aldehyde	EPA 8081B
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B

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Chlorinated Hydrocarbon Pesticides

Isodrin	EPA 8270D
	EPA 8270E
Kepone	EPA 8270D
	EPA 8270E
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Pentachloronitrobenzene	EPA 8270D
	EPA 8270E
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260D
	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
	EPA 8270E
1,2,4-Trichlorobenzene	EPA 8270D
	EPA 8270E
1-Chloronaphthalene	EPA 8270D
	EPA 8270E
2-Chloronaphthalene	EPA 8270D
	EPA 8270E
Hexachlorobenzene	EPA 8270D
	EPA 8270E
Hexachlorobutadiene	EPA 8270D
	EPA 8270E
Hexachlorocyclopentadiene	EPA 8270D
	EPA 8270E
Hexachloroethane	EPA 8270D

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Chlorinated Hydrocarbons

Hexachloroethane	EPA 8270E
Hexachloropropene	EPA 8270D
	EPA 8270E
Pentachlorobenzene	EPA 8270D
	EPA 8270E

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8270D
	EPA 8270E
Pentachlorophenol	EPA 8151A

Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 8270D
	EPA 8270E
4-Bromophenylphenyl ether	EPA 8270D
	EPA 8270E
4-Chlorophenylphenyl ether	EPA 8270D
	EPA 8270E
Bis(2-chloroethoxy)methane	EPA 8270D
	EPA 8270E
Bis(2-chloroethyl)ether	EPA 8270D
	EPA 8270E

Low Level Polynuclear Aromatic Hydrocarbons

Acenaphthene Low Level	EPA 8270D

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Low Level Polynuclear Aromatic Hydrocarbons

Acenaphthene Low Level	EPA 8270E
Acenaphthylene Low Level	EPA 8270D
	EPA 8270E
Anthracene Low Level	EPA 8270D
	EPA 8270E
Benzo(a)anthracene Low Level	EPA 8270D
	EPA 8270E
Benzo(a)pyrene Low Level	EPA 8270D
	EPA 8270E
Benzo(b)fluoranthene Low Level	EPA 8270D
	EPA 8270E
Benzo(g,h,i)perylene Low Level	EPA 8270D
	EPA 8270E
Benzo(k)fluoranthene Low Level	EPA 8270D
	EPA 8270E
Chrysene Low Level	EPA 8270D
	EPA 8270E
Dibenzo(a,h)anthracene Low Level	EPA 8270D
	EPA 8270E
Fluoranthene Low Level	EPA 8270D
	EPA 8270E
Fluorene Low Level	EPA 8270D
	EPA 8270E
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D
	EPA 8270E
Naphthalene Low Level	EPA 8270D
	EPA 8270E

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Low Level Polynuclear Aromatic Hydrocarbons

Phenanthrene Low Level	EPA 8270D
	EPA 8270E
Pyrene Low Level	EPA 8270D
	EPA 8270E

Metals I

Barium, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Cadmium, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Calcium, Total	EPA 6010C
	EPA 6010D
Chromium, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Copper, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Iron, Total	EPA 6010C
	EPA 6010D
Lead, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Magnesium, Total	EPA 6010C
	EPA 6010D
Manganese, Total	EPA 6010C

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Metals I

Manganese, Total	EPA 6010D
	EPA 6020A
Nickel, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Potassium, Total	EPA 6010C
	EPA 6010D
Silver, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Sodium, Total	EPA 6010C
	EPA 6010D
Strontium, Total	EPA 6010C
	EPA 6010D

Metals II

Aluminum, Total	EPA 6010C
	EPA 6010D
Antimony, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Arsenic, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Beryllium, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Chromium VI	EPA 7199

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Metals II

Lithium, Total	EPA 6010C
	EPA 6010D
Mercury, Total	EPA 7471B
Selenium, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Vanadium, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Zinc, Total	EPA 6010C
	EPA 6010D
	EPA 6020A

Metals III

Cobalt, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Molybdenum, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Silica, Dissolved	EPA 6010C
	EPA 6010D
Thallium, Total	EPA 6010C
	EPA 6010D
	EPA 6020A
Tin, Total	EPA 6010C
	EPA 6010D
Titanium, Total	EPA 6010C

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Metals III	
Titanium, Total	EPA 6010D
Minerals	
Bromide	EPA 9056A
Chloride	EPA 9056A
Fluoride, Total	EPA 9056A
Sulfate (as SO4)	EPA 9056A
Miscellaneous	
Boron, Total	EPA 6010C
	EPA 6010D
Cyanide, Total	EPA 9012B
Organic Carbon, Total	Lloyd Kahn Method
Phenols	EPA 9066
Sulfide (as S)	EPA 9034
Nitroaromatics and Isophorone	
1,3,5-Trinitrobenzene	EPA 8270D
	EPA 8270E
1,3-Dinitrobenzene	EPA 8270D
	EPA 8270E
1,4-Naphthoquinone	EPA 8270D
	EPA 8270E
2,4-Dinitrotoluene	EPA 8270D
	EPA 8270E
2,6-Dinitrotoluene	EPA 8270D
	EPA 8270E
4-Dimethylaminoazobenzene	EPA 8270D
	EPA 8270E

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Nitroaromatics and Isophorone

4-Nitroquinoline-1-oxide	EPA 8270D
	EPA 8270E
Isophorone	EPA 8270D
	EPA 8270E
Nitrobenzene	EPA 8270D
	EPA 8270E
Pyridine	EPA 8270D
	EPA 8270E

Nitrosoamines

N-Nitrosodiethylamine	EPA 8270D
	EPA 8270E
N-Nitrosodimethylamine	EPA 8270D
	EPA 8270E
N-Nitrosodi-n-butylamine	EPA 8270D
	EPA 8270E
N-Nitrosodi-n-propylamine	EPA 8270D
	EPA 8270E
N-Nitrosodiphenylamine	EPA 8270D
	EPA 8270E
N-nitrosomethylethylamine	EPA 8270D
	EPA 8270E
N-nitrosomorpholine	EPA 8270D
	EPA 8270E
N-nitrosopiperidine	EPA 8270D
	EPA 8270E
N-Nitrosopyrrolidine	EPA 8270D

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Nutrients	
Nitrate (as N)	EPA 9056A
Nitrite (as N)	EPA 9056A
Organophosphate Pesticides	
Dimethoate	EPA 8270D
	EPA 8270E
Disulfoton	EPA 8270D
	EPA 8270E
Famphur	EPA 8270D
	EPA 8270E
Parathion ethyl	EPA 8270D
	EPA 8270E
Parathion methyl	EPA 8270D
	EPA 8270E
Phorate	EPA 8270D
	EPA 8270E
Sulfotepp	EPA 8270D
	EPA 8270E
Thionazin	EPA 8270D
	EPA 8270E
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015C
Gasoline Range Organics	EPA 8015C
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270D
	EPA 8270E
Bis(2-ethylhexyl) phthalate	EPA 8270D

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Phthalate Esters

Bis(2-ethylhexyl) phthalate	EPA 8270E
Diethyl phthalate	EPA 8270D
	EPA 8270E
Dimethyl phthalate	EPA 8270D
	EPA 8270E
Di-n-butyl phthalate	EPA 8270D
	EPA 8270E
Di-n-octyl phthalate	EPA 8270D
	EPA 8270E

Polychlorinated Biphenyls

Aroclor 1016 (PCB-1016)	EPA 8082A
Aroclor 1016 (PCB-1016) in Oil	EPA 8082A
Aroclor 1221 (PCB-1221)	EPA 8082A
Aroclor 1221 (PCB-1221) in Oil	EPA 8082A
Aroclor 1232 (PCB-1232)	EPA 8082A
Aroclor 1232 (PCB-1232) in Oil	EPA 8082A
Aroclor 1242 (PCB-1242)	EPA 8082A
Aroclor 1242 (PCB-1242) in Oil	EPA 8082A
Aroclor 1248 (PCB-1248)	EPA 8082A
Aroclor 1248 (PCB-1248) in Oil	EPA 8082A
Aroclor 1254 (PCB-1254)	EPA 8082A
Aroclor 1254 (PCB-1254) in Oil	EPA 8082A
Aroclor 1260 (PCB-1260)	EPA 8082A
Aroclor 1260 (PCB-1260) in Oil	EPA 8082A
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1262 (PCB-1262) in Oil	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A

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Polychlorinated Biphenyls

Aroclor 1268 (PCB-1268) in Oil	EPA 8082A

Polynuclear Aromatic Hydrocarbons

2-Acetylaminofluorene	EPA 8270D
	EPA 8270E
3-Methylcholanthrene	EPA 8270D
	EPA 8270E
7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
	EPA 8270E
Acenaphthene	EPA 8270D
	EPA 8270E
Acenaphthylene	EPA 8270D
	EPA 8270E
Anthracene	EPA 8270D
	EPA 8270E
Benzo(a)anthracene	EPA 8270D
	EPA 8270E
Benzo(a)pyrene	EPA 8270D
	EPA 8270E
Benzo(b)fluoranthene	EPA 8270D
	EPA 8270E
Benzo(g,h,i)perylene	EPA 8270D
	EPA 8270E
Benzo(k)fluoranthene	EPA 8270D
	EPA 8270E
Chrysene	EPA 8270D
	EPA 8270E
Dibenzo(a,h)anthracene	EPA 8270D

Serial No.: 69269

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2025
Issued April 01, 2024
Revised April 05, 2024

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MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Polynuclear Aromatic Hydrocarbons

Dibenzo(a,h)anthracene	EPA 8270E
Fluoranthene	EPA 8270D
	EPA 8270E
Fluorene	EPA 8270D
	EPA 8270E
Indeno(1,2,3-cd)pyrene	EPA 8270D
	EPA 8270E
Naphthalene	EPA 8270D
	EPA 8270E
Phenanthrene	EPA 8270D
	EPA 8270E
Pyrene	EPA 8270D
	EPA 8270E

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270D
	EPA 8270E
2,4,5-Trichlorophenol	EPA 8270D
	EPA 8270E
2,4,6-Trichlorophenol	EPA 8270D
	EPA 8270E
2,4-Dichlorophenol	EPA 8270D
	EPA 8270E
2,4-Dimethylphenol	EPA 8270D
	EPA 8270E
2,4-Dinitrophenol	EPA 8270D
	EPA 8270E
2,6-Dichlorophenol	EPA 8270D

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Priority Pollutant Phenols

2,6-Dichlorophenol	EPA 8270E
2-Chlorophenol	EPA 8270D
	EPA 8270E
2-Methyl-4,6-dinitrophenol	EPA 8270D
	EPA 8270E
2-Methylphenol	EPA 8270D
	EPA 8270E
2-Nitrophenol	EPA 8270D
	EPA 8270E
3-Methylphenol	EPA 8270D
	EPA 8270E
4-Chloro-3-methylphenol	EPA 8270D
	EPA 8270E
4-Methylphenol	EPA 8270D
	EPA 8270E
4-Nitrophenol	EPA 8270D
	EPA 8270E
Pentachlorophenol	EPA 8270D
	EPA 8270E
Phenol	EPA 8270D
	EPA 8270E

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270D
	EPA 8270E
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
	EPA 8270E
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D

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Semi-Volatile Organics

1,3-Dichlorobenzene, Semi-volatile	EPA 8270E
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
	EPA 8270E
2-Methylnaphthalene	EPA 8270D
	EPA 8270E
2-Picoline	EPA 8270D
	EPA 8270E
4-Amino biphenyl	EPA 8270D
	EPA 8270E
Acetophenone	EPA 8270D
	EPA 8270E
Aramite	EPA 8270D
	EPA 8270E
Benzaldehyde	EPA 8270D
	EPA 8270E
Benzoic Acid	EPA 8270D
	EPA 8270E
Benzyl alcohol	EPA 8270D
	EPA 8270E
Caprolactam	EPA 8270D
	EPA 8270E
Dibenzofuran	EPA 8270D
	EPA 8270E
Ethyl methanesulfonate	EPA 8270D
	EPA 8270E
Isosafrole	EPA 8270D
	EPA 8270E

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Semi-Volatile Organics

Methyl methanesulfonate	EPA 8270D
	EPA 8270E
O,O,O-Triethyl phosphorothioate	EPA 8270D
	EPA 8270E
Phenacetin	EPA 8270D
	EPA 8270E
Safrole	EPA 8270D
	EPA 8270E

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260D
	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260D
	EPA 8260C
1,2-Dichlorobenzene	EPA 8260D
	EPA 8260C
1,3,5-Trimethylbenzene	EPA 8260D
	EPA 8260C
1,3-Dichlorobenzene	EPA 8260D
	EPA 8260C
1,4-Dichlorobenzene	EPA 8260D
	EPA 8260C
2-Chlorotoluene	EPA 8260D
	EPA 8260C
4-Chlorotoluene	EPA 8260D
	EPA 8260C
Benzene	EPA 8260D
	EPA 8260C

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Volatile Aromatics

Bromobenzene	EPA 8260D
	EPA 8260C
Chlorobenzene	EPA 8260D
	EPA 8260C
Ethyl benzene	EPA 8260D
	EPA 8260C
Isopropylbenzene	EPA 8260D
	EPA 8260C
m/p-Xylenes	EPA 8260D
	EPA 8260C
Naphthalene, Volatile	EPA 8260D
	EPA 8260C
n-Butylbenzene	EPA 8260D
	EPA 8260C
n-Propylbenzene	EPA 8260D
	EPA 8260C
o-Xylene	EPA 8260D
	EPA 8260C
p-Isopropyltoluene (P-Cymene)	EPA 8260D
	EPA 8260C
sec-Butylbenzene	EPA 8260D
	EPA 8260C
Styrene	EPA 8260D
	EPA 8260C
tert-Butylbenzene	EPA 8260D
	EPA 8260C
Toluene	EPA 8260D

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Volatile Aromatics

Toluene	EPA 8260C
Total Xylenes	EPA 8260D
	EPA 8260C

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260D
	EPA 8260C
1,1,1-Trichloroethane	EPA 8260D
	EPA 8260C
1,1,2,2-Tetrachloroethane	EPA 8260D
	EPA 8260C
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260D
	EPA 8260C
1,1,2-Trichloroethane	EPA 8260D
	EPA 8260C
1,1-Dichloroethane	EPA 8260D
	EPA 8260C
1,1-Dichloroethene	EPA 8260D
	EPA 8260C
1,1-Dichloropropene	EPA 8260D
	EPA 8260C
1,2,3-Trichloropropane	EPA 8260D
	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260D
	EPA 8260C
1,2-Dibromoethane	EPA 8260D
	EPA 8260C
1,2-Dichloroethane	EPA 8260D

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Volatile Halocarbons

1,2-Dichloroethane	EPA 8260C
1,2-Dichloropropane	EPA 8260D
	EPA 8260C
1,3-Dichloropropane	EPA 8260D
	EPA 8260C
2,2-Dichloropropane	EPA 8260D
	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260D
	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260D
	EPA 8260C
3-Chloropropene (Allyl chloride)	EPA 8260D
	EPA 8260C
Bromochloromethane	EPA 8260D
	EPA 8260C
Bromodichloromethane	EPA 8260D
	EPA 8260C
Bromoform	EPA 8260D
	EPA 8260C
Bromomethane	EPA 8260D
	EPA 8260C
Carbon tetrachloride	EPA 8260D
	EPA 8260C
Chloroethane	EPA 8260D
	EPA 8260C
Chloroform	EPA 8260D
	EPA 8260C

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Volatile Halocarbons

Chloromethane	EPA 8260D
	EPA 8260C
cis-1,2-Dichloroethene	EPA 8260D
	EPA 8260C
cis-1,3-Dichloropropene	EPA 8260D
	EPA 8260C
Dibromochloromethane	EPA 8260D
	EPA 8260C
Dibromomethane	EPA 8260D
	EPA 8260C
Dichlorodifluoromethane	EPA 8260D
	EPA 8260C
Hexachlorobutadiene, Volatile	EPA 8260D
	EPA 8260C
Methyl iodide	EPA 8260D
	EPA 8260C
Methylene chloride	EPA 8260D
	EPA 8260C
Tetrachloroethene	EPA 8260D
	EPA 8260C
trans-1,2-Dichloroethene	EPA 8260D
	EPA 8260C
trans-1,3-Dichloropropene	EPA 8260D
	EPA 8260C
trans-1,4-Dichloro-2-butene	EPA 8260D
	EPA 8260C
Trichloroethene	EPA 8260D

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Volatile Halocarbons

Trichloroethene	EPA 8260C
Trichlorofluoromethane	EPA 8260D
	EPA 8260C
Vinyl chloride	EPA 8260D
	EPA 8260C

Volatile Organics

1,4-Dioxane	EPA 8260D
	EPA 8260C
	EPA 8270D
	EPA 8270E
2-Butanone (Methylethyl ketone)	EPA 8260D
	EPA 8260C
2-Hexanone	EPA 8260D
	EPA 8260C
2-Nitropropane	EPA 8260D
	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260D
	EPA 8260C
Acetone	EPA 8260D
	EPA 8260C
Acetonitrile	EPA 8260D
	EPA 8260C
Carbon Disulfide	EPA 8260D
	EPA 8260C
Cyclohexane	EPA 8260D
	EPA 8260C
Di-ethyl ether	EPA 8260D

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Volatile Organics

Di-ethyl ether	EPA 8260C
Ethylene Glycol	EPA 8015C
Isobutyl alcohol	EPA 8260D
	EPA 8260C
Isopropanol	EPA 8260D
	EPA 8260C
Methyl acetate	EPA 8260D
	EPA 8260C
Methyl cyclohexane	EPA 8260D
	EPA 8260C
Methyl tert-butyl ether	EPA 8260D
	EPA 8260C
n-Butanol	EPA 8260D
	EPA 8260C
o-Toluidine	EPA 8270D
	EPA 8270E
Propionitrile	EPA 8260D
	EPA 8260C
tert-butyl alcohol	EPA 8260D
	EPA 8260C
Tetrahydrofuran	EPA 8260D
	EPA 8260C
Vinyl acetate	EPA 8260D
	EPA 8260C

Sample Preparation Methods

	EPA 5035A-L
	EPA 5035A-H

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Sample Preparation Methods

EPA 3580A
EPA 9030B
EPA 3050B
EPA 3546
EPA 3060A
EPA 3541

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PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc.
has assessed the Organization of:

ALS Environmental - Kelso
1317 South 13th Avenue, Kelso, WA 98626

(Hereinafter called the Organization) and hereby declares that Organization has met the requirements of ISO/IEC 17025:2017 General Requirements for the competence of Testing and Calibration Laboratories and the United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP) requirements identified within the DoD/DOE Quality Systems Manual (DoD/DOE QSM) Version 5.4 October 2021 and is accredited in accordance with the:

United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP)

This accreditation demonstrates the technical competence for the defined scope and the operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

Chemical and Environmental Testing
(As detailed in the supplement)

Accreditation claims for such activities shall only be made from the addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation Body's duty to observe and comply with the said rules.

Initial Accreditation Date:	*Issue Date:*	*Expiration Date*
July 19, 2011	June 28, 2024	June 30, 2026

Revision Date:
September 11, 2024

Accreditation No:	*Certificate No:*
65188	L24-486-R1

For PJLA

Tracy Szerszen
President

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: **www.pjlabs.com**

Certificate of Accreditation: Supplement

ALS Environmental - Kelso
1317 South 13th Avenue, Kelso, WA 98626
Contact Name: Bradley Davis Phone: 360-501-3354

Accreditation is granted to the facility to perform the following testing:

	Code
General Chemistry	
ASTM D1426-93B by Potentiometry	30007397
Aqueous	
Total Kjeldahl Nitrogen (TKN)	1795
Solid	
Total Kjeldahl Nitrogen (TKN)	1795
ASTM D4129-05 MOD (ALS Kelso SOP GEN-ASTM) by Coulometry	30018907
Solid	
Total Organic Carbon (TOC)	2040
ASTM D422-63 (2007) by Gravimetry	30030854
Solid	
Grain Size (Sieving)	6118
EPA 1020A by Setaflash Closed-Cup Apparatus	10117007
Aqueous	
Ignitability	1780
Solid	
Ignitability	1780
EPA 160.3 MOD by Gravimetry	10009800
Solid	
Solids (Total, TS, Residue)	1950
EPA 160.4 by Gravimetry	10256801
Aqueous	
Solids (Total Volatile, TVS)	1970
EPA 1664A by Gravimetry	10127807
Aqueous	
n-Hexane Extractable Material (HEM) Oil & Grease (O&G)	1803
Total Petroleum Hydrocarbons (TPH)	1803
EPA 180.1 by Turbidimetry	10011402
Aqueous	
Turbidity	2055
EPA 9012B by Colorimetry	10243206
Aqueous	
Cyanide (Total)	1645
Solid	
Cyanide (Total)	1645
EPA 9030B by Distillation	10195605
Aqueous	
Sulfide, Acid Soluble	2010
Solid	
Sulfide, Acid Soluble	2010

Certificate of Accreditation: Supplement

ALS Environmental - Kelso
1317 South 13th Avenue, Kelso, WA 98626
Contact Name: Bradley Davis Phone: 360-501-3354

Accreditation is granted to the facility to perform the following testing:

	Code
General Chemistry	
EPA 9030B by Distillation	10195605
Solid	
EPA 9040C by Potentiometry	20105220
Aqueous	
pH	1900
EPA 9045D by Potentiometry	10244607
Solid	
pH (Corrosivity)	1625
EPA 9060A by TOC Analyzer	10244823
Aqueous	
Total Organic Carbon (TOC)	2040
Solid	
Total Organic Carbon (TOC)	2040
In-House Method (ALS-Kelso SOP SOP GEN-AVS) by Colorimetry	99999AVS
Solid	
Acid Volatile Sulfides (AVS)	1504
Kelada-01 by Colorimetry	60005303
Aqueous	
Cyanide (Total)	1645
Lloyd Kahn by TOC Analyzer	10244823
Solid	
Total Organic Carbon (TOC)	2040
Puget Sound Estuary Protocols (PSEP) (ALS-Kelso SOP SOIL-PSP) by Gravimetry	90014509
Solid	
Grain Size (Sieving)	6118
SM 2130B (2011) by Turbidimetry	10011402
Aqueous	
Turbidity	2055
SM 2320B (2011) by Titrimetry	20045618
Aqueous	
Alkalinity (as CaCO3)	1505
SM 2340B (2011) by Calculation	20046611
Aqueous	
Hardness (Total, as CaCO3, By Calculation)	1755
SM 2510B (2011) by Potentiometry	20048617
Aqueous	
Specific Conductance (Conductivity)	1610

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Accreditation is granted to the facility to perform the following testing:

	Code
General Chemistry	
SM 2540B (2011) by Gravimetry	20049416
Aqueous	
Solids (Total, TS, Residue)	1950
SM 2540C (2011) by Gravimetry	20050413
Aqueous	
Solids (Total Dissolved, TDS, Residue, Filterable)	1955
SM 2540D (2011) by Gravimetry	20051212
Aqueous	
Solids (Total Suspended, TSS, Non-Filterable Residue)	1960
SM 2540G (2011) by Gravimetry	20005270
Solid	
Solids (Total Fixed and Volatile, TS)	1950
SM 4500 CN E (2011) by Colorimetry	20096428
Aqueous	
Cyanide (Total)	1645
SM 4500 CN G (2011) by Colorimetry	20097227
Aqueous	
Cyanide (Amenable to Chlorination)	1510
SM 4500 NH3 G (2011) by Colorimetry	20111415
Aqueous	
Ammonia (as N)	1515
SM 4500 P E (2011) by Colorimetry	10070607
Aqueous	
Orthophosphate (as P)	1870
SM 4500 S2 D (2011) by Titrimetry	20125864
Aqueous	
Sulfide	2005
SM 5220C (2011) by Titrimetry	20136010
Aqueous	
Chemical Oxygen Demand (COD)	1565
SM 5310C (2011) by TOC Analyzer (Chemical Oxidation/IR)	20138823
Aqueous	
Total Organic Carbon (TOC)	2040
Inorganic	
EPA 1631E by Cold Vapor Atomic Fluorescence Spectrophotometry (CVAFS)	10237204
Aqueous	
Mercury (Low Level)	1095

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	Code
Inorganic	
EPA 1631E by Cold Vapor Atomic Fluorescence Spectrophotometry (CVAFS)	10237204
Solid	
Mercury (Low Level)	1095
EPA 200.7 by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10013806
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020

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	Code
Inorganic	
EPA 200.7 by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10013806
Solid	
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
EPA 200.8 by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10014605
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070

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Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 200.8 by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10014605
Aqueous	
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150

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Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 200.8 by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10014605
Solid	
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
EPA 245.1 by Cold Vapor Atomic Absorption Spectrophotometry (CVAAS)	10036609
Aqueous	
Mercury	1095
EPA 300.0 by Ion Chromatography (IC)	10053200
Aqueous	
Bromide	1540
Chloride	1575
Fluoride	1730
Nitrate (as N)	1810
Nitrite (as N)	1840
Sulfate	2000
EPA 350.1 by Colorimetry	10063602
Aqueous	
Ammonia (as N)	1515
Solid	
Ammonia (as N)	1515
EPA 353.2 by Colorimetry	10067604
Aqueous	
Nitrate + Nitrite (as N)	1820
EPA 365.3 by Colorimetry	10070607
Aqueous	
Phosphorous (Total)	1910
Solid	
Phosphorous (Total)	1910
EPA 6010B by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155609
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010

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Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6010B by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155609
Aqueous	
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055

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Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6010B by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155609
Solid	
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
EPA 6010C by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155803
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125

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Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6010C by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155803
Aqueous	
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185

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	Code
Inorganic	
EPA 6010C by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155803
Solid	
Zinc	1190
EPA 6010D by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155916
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020

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	Code
Inorganic	
EPA 6010D by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155916
Solid	
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
EPA 6020 by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156204
Aqueous	
Calcium	1035
Magnesium	1085
Potassium	1125
Sodium	1155
Solid	
Calcium	1035
Magnesium	1085
Potassium	1125
Sodium	1155
EPA 6020A by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156419
Aqueous	
Aluminum	1000

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	Code
Inorganic	
EPA 6020A by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156419
Aqueous	
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040

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	Code
Inorganic	
EPA 6020A by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156419
Solid	
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
EPA 6020B by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156420
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100

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	Code
Inorganic	
EPA 6020B by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156420
Aqueous	
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175

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Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6020B by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156420
Solid	
Titanium	1180
Vanadium	1185
Zinc	1190
EPA 7196A by Colorimetry	10162400
Aqueous	
Hexavalent Chromium (Cr VI)	1045
EPA 7470A by Cold Vapor Atomic Absorption Spectrophotometry (CVAAS)	10165807
Aqueous	
Mercury	1095
EPA 7471A by Cold Vapor Atomic Absorption Spectrophotometry (CVAAS)	10166208
Solid	
Mercury	1095
EPA 7471B by Cold Vapor Atomic Absorption Spectrophotometry (CVAAS)	10166457
Solid	
Mercury	1095
EPA 9020B by Titrimetry	10194408
Aqueous	
Total Organic Halides (TOX)	2045
EPA 9056A by Ion Chromatography (IC)	10199607
Aqueous	
Bromide	1540
Chloride	1575
Fluoride	1730
Sulfate	2000
Solid	
Bromide	1540
Chloride	1575
Fluoride	1730
Nitrate (as N)	1810
Sulfate	2000
Organic	
AK-101 (GRO) by Gas Chromatography Flame Ionization Detection (GC/FID)	90015002
Aqueous	
Total Petroleum Hydrocarbons Gasoline Range Organics (TPH GRO)	9408
Solid	
Total Petroleum Hydrocarbons Gasoline Range Organics (TPH GRO)	9408

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
AK-102 (DRO) by Gas Chromatography Flame Ionization Detection (GC/FID)	90015206
Aqueous	
Total Petroleum Hydrocarbons Diesel Range Organics (TPH DRO)	9369
Solid	
Total Petroleum Hydrocarbons Diesel Range Organics (TPH DRO)	9369
AK-103 (RRO) by Gas Chromatography Flame Ionization Detection (GC/FID)	90015400
Aqueous	
Residual Range Organics (RRO)	9506
Solid	
Residual Range Organics (RRO)	9506
Draft EPA Method 1633 (Draft 1) by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS)	10123429
Aqueous	
10:2 Fluorotelomer Sulfonic Acid (10:2FTS)	9616
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	9490
1H, 1H, 2H, 2H-Perfluorodecanesulfonic Acid (8:2 Fluorotelomersulfonic Acid, 8:2FTS)	6948
1H, 1H, 2H, 2H-Perfluorohexanesulfonic Acid (4:2 Fluorotelomersulfonic Acid, 4:2FTS)	6946
1H, 1H, 2H, 2H-Perfluorooctanesulfonic Acid (6:2 Fluorotelomersulfonic Acid, 6:2FTS)	6947
2H,2H,3H,3H-Perfluorodecanoic Acid (7:3 FTCA, 3-Perfluoroheptyl Propanoic Acid)	9340
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3 FTCA)	9338
4,4,5,5,6,6,6-Heptafluorohexanoi Acid (3:3 FTCA, 4,4,5,5,6,3-Perfluoropropyl Propanoic Acid, 3-Perfluoropropyl Propanoic Acid)	9353
4,8-Dioxa-3H-Perfluorononanoic Acid (ADONA)	6951
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9-Cl-PF3ONS)	6952
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) – GenX	9460
n-Ethylperfluorooctane Sulfonamide (EtFOSA, NEtFOSA)	9395
n-Ethylperfluorooctane sulfonamido Acetic Acid (EtFOSAA, NEtFOSAA)	4846
N-Ethylperfluorooctane Sulfonamido Ethanol (EtFOSE, NEtFOSE)	9431
n-Methylperfluorooctane Sulfonamido Acetic Acid (MeFOSAA, NMeFOSAA)	4847
N-Methylperfluorooctane Sulfonamido Ethanol (MeFOSE, NMeFOSE)	6949
N-methylperfluorooctanesulfonamide (MeFOSA, NMeFOSA)	9433
Nonafluoro-3,6-dioxaheptanoic Acid (NFDHA)	6956
Perfluoro(2-ethoxyethane)sulfonic Acid (PFEESA)	6957
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	6965
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	6966
Perfluorobutane Sulfonic Acid (PFBS)	6918
Perfluorobutanoic Acid (PFBA)	6915
Perfluorodecane Sulfonic Acid (PFDS)	6920
Perfluorodecanoic Acid (PFDA)	6905

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	Code
Organic	
Draft EPA Method 1633 (Draft 1) by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS)	10123429
Aqueous	
Perfluorododecane Sulfonic Acid (PFDoS)	6923
Perfluorododecanoic Acid (PFDoA)	6903
Perfluoroheptane Sulfonic Acid (PFHpS)	9470
Perfluoroheptanoic Acid (PFHpA)	6908
Perfluorohexadecanoic Acid (PFHxDA)	6958
Perfluorohexane Sulfonic Acid (PFHxS)	6927
Perfluorohexanoic Acid (PFHxA)	6913
Perfluorononane Sulfonic Acid (PFNS)	6929
Perfluorononanoic Acid (PFNA)	6906
Perfluorooctadecanoic Acid (PFODA)	6916
Perfluorooctane Sulfonamide (PFOSA, PFOSAm)	6917
Perfluorooctane Sulfonic Acid (PFOS)	6931
Perfluorooctanoic Acid (PFOA)	6912
Perfluoropentane Sulfonic Acid (PFPeS)	6934
Perfluoropentanoic Acid (PFPeA)	6914
Perfluorotetradecanoic Acid (PFTDA, PFTeDA)	6902
Perfluorotridecanoic Acid (PFTrDA)	9563
Perfluoroundecanoic Acid (PFUnA, PFUnDA)	6904
Solid	
10:2 Fluorotelomer Sulfonic Acid (10:2FTS)	9616
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	9490
1H, 1H, 2H, 2H-Perfluorodecanesulfonic Acid (8:2 Fluorotelomersulfonic Acid, 8:2FTS)	6948
1H, 1H, 2H, 2H-Perfluorohexanesulfonic Acid (4:2 Fluorotelomersulfonic Acid, 4:2FTS)	6946
1H, 1H, 2H, 2H-Perfluorooctanesulfonic Acid (6:2 Fluorotelomersulfonic Acid, 6:2FTS)	6947
2H,2H,3H,3H-Perfluorodecanoic Acid (7:3 FTCA, 3-Perfluoroheptyl Propanoic Acid)	9340
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3 FTCA)	9338
4,4,5,5,6,6,6-Heptafluorohexanoi Acid (3:3 FTCA, 4,4,5,5,6,3-Perfluoropropyl Propanoic Acid, 3-Perfluoropropyl Propanoic Acid)	9353
4,8-Dioxa-3H-Perfluorononanoic Acid (ADONA)	6951
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9-Cl-PF3ONS)	6952
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) – GenX	9460
n-Ethylperfluorooctane Sulfonamide (EtFOSA, NEtFOSA)	9395
n-Ethylperfluorooctane sulfonamido Acetic Acid (EtFOSAA, NEtFOSAA)	4846
N-Ethylperfluorooctane Sulfonamido Ethanol (EtFOSE, NEtFOSE)	9431
n-Methylperfluorooctane Sulfonamido Acetic Acid (MeFOSAA, NMeFOSAA)	4847
N-Methylperfluorooctane Sulfonamido Ethanol (MeFOSE, NMeFOSE)	6949

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
Draft EPA Method 1633 (Draft 1) by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS)	10123429
Solid	
N-methylperfluorooctanesulfonamide (MeFOSA, NMeFOSA)	9433
Nonafluoro-3,6-dioxaheptanoic Acid (NFDHA)	6956
Perfluoro(2-ethoxyethane)sulfonic Acid (PFEESA)	6957
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	6965
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	6966
Perfluorobutane Sulfonic Acid (PFBS)	6918
Perfluorobutanoic Acid (PFBA)	6915
Perfluorodecane Sulfonic Acid (PFDS)	6920
Perfluorodecanoic Acid (PFDA)	6905
Perfluorododecane Sulfonic Acid (PFDoS)	6923
Perfluorododecanoic Acid (PFDoA)	6903
Perfluoroheptane Sulfonic Acid (PFHpS)	9470
Perfluoroheptanoic Acid (PFHpA)	6908
Perfluorohexadecanoic Acid (PFHxDA)	6958
Perfluorohexane Sulfonic Acid (PFHxS)	6927
Perfluorohexanoic Acid (PFHxA)	6913
Perfluorononane Sulfonic Acid (PFNS)	6929
Perfluorononanoic Acid (PFNA)	6906
Perfluorooctadecanoic Acid (PFODA)	6916
Perfluorooctane Sulfonamide (PFOSA, PFOSAm)	6917
Perfluorooctane Sulfonic Acid (PFOS)	6931
Perfluorooctanoic Acid (PFOA)	6912
Perfluoropentane Sulfonic Acid (PFPeS)	6934
Perfluoropentanoic Acid (PFPeA)	6914
Perfluorotetradecanoic Acid (PFTDA, PFTeDA)	6902
Perfluorotridecanoic Acid (PFTrDA)	9563
Perfluoroundecanoic Acid (PFUnA, PFUnDA)	6904
Tissue	
10:2 Fluorotelomer Sulfonic Acid (10:2FTS)	9616
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	9490
1H, 1H, 2H, 2H-Perfluorodecanesulfonic Acid (8:2 Fluorotelomersulfonic Acid, 8:2FTS)	6948
1H, 1H, 2H, 2H-Perfluorohexanesulfonic Acid (4:2 Fluorotelomersulfonic Acid, 4:2FTS)	6946
1H, 1H, 2H, 2H-Perfluorooctanesulfonic Acid (6:2 Fluorotelomersulfonic Acid, 6:2FTS)	6947
2H,2H,3H,3H-Perfluorodecanoic Acid (7:3 FTCA, 3-Perfluoroheptyl Propanoic Acid)	9340
2H,2H,3H,3H-Perfluorooctanoic Acid (5:3 FTCA)	9338

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1317 South 13th Avenue, Kelso, WA 98626
Contact Name: Bradley Davis Phone: 360-501-3354

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
Draft EPA Method 1633 (Draft 1) by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS)	10123429
Tissue	
4,4,5,5,6,6,6-Heptafluorohexanoi Acid (3:3 FTCA, 4,4,5,5,6,3-Perfluoropropyl Propanoic Acid, 3-Perfluoropropyl Propanoic Acid)	9353
4,8-Dioxa-3H-Perfluorononanoic Acid (ADONA)	6951
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9-Cl-PF3ONS)	6952
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) – GenX	9460
n-Ethylperfluorooctane Sulfonamide (EtFOSA, NEtFOSA)	9395
n-Ethylperfluorooctane sulfonamido Acetic Acid (EtFOSAA, NEtFOSAA)	4846
N-Ethylperfluorooctane Sulfonamido Ethanol (EtFOSE, NEtFOSE)	9431
n-Methylperfluorooctane Sulfonamido Acetic Acid (MeFOSAA, NMeFOSAA)	4847
N-Methylperfluorooctane Sulfonamido Ethanol (MeFOSE, NMeFOSE)	6949
N-methylperfluorooctanesulfonamide (MeFOSA, NMeFOSA)	9433
Nonafluoro-3,6-dioxaheptanoic Acid (NFDHA)	6956
Perfluoro(2-ethoxyethane)sulfonic Acid (PFEESA)	6957
Perfluoro-3-Methoxypropanoic Acid (PFMPA)	6965
Perfluoro-4-Methoxybutanoic Acid (PFMBA)	6966
Perfluorobutane Sulfonic Acid (PFBS)	6918
Perfluorobutanoic Acid (PFBA)	6915
Perfluorodecane Sulfonic Acid (PFDS)	6920
Perfluorodecanoic Acid (PFDA)	6905
Perfluorododecane Sulfonic Acid (PFDoS)	6923
Perfluorododecanoic Acid (PFDoA)	6903
Perfluoroheptane Sulfonic Acid (PFHpS)	9470
Perfluoroheptanoic Acid (PFHpA)	6908
Perfluorohexadecanoic Acid (PFHxDA)	6958
Perfluorohexane Sulfonic Acid (PFHxS)	6927
Perfluorohexanoic Acid (PFHxA)	6913
Perfluorononane Sulfonic Acid (PFNS)	6929
Perfluorononanoic Acid (PFNA)	6906
Perfluorooctadecanoic Acid (PFODA)	6916
Perfluorooctane Sulfonamide (PFOSA, PFOSAm)	6917
Perfluorooctane Sulfonic Acid (PFOS)	6931
Perfluorooctanoic Acid (PFOA)	6912
Perfluoropentane Sulfonic Acid (PFPeS)	6934
Perfluoropentanoic Acid (PFPeA)	6914
Perfluorotetradecanoic Acid (PFTDA, PFTeDA)	6902
Perfluorotridecanoic Acid (PFTrDA)	9563

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	Code
Organic	
Draft EPA Method 1633 (Draft 1) by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS)	10123429
Tissue	
Perfluoroundecanoic Acid (PFUnA, PFUnDA)	6904
EPA 504.1 by Gas Chromatography Electron Capture Detector (GC/ECD)	10082607
Drinking Water	
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
EPA 524.2 by Gas Chromatography Mass Spectrometry (GC/MS)	10088809
Drinking Water	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
2,2-Dichloropropane	4665
2-Chlorotoluene	4535
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
Benzene	4375
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Carbon Tetrachloride	4455
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575

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	Code
Organic	
EPA 524.2 by Gas Chromatography Mass Spectrometry (GC/MS)	10088809
Drinking Water	
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Ethylbenzene	4765
Hexachlorobutadiene	4835
Isopropylbenzene (Cumene)	4900
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
sec-Butylbenzene	4440
Styrene	5100
tert-Butylbenzene	4445
Tetrachloroethene (Perchloroethene, PCE)	5115
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
EPA 537.1 by High-Performance Liquid Chromatography Tandem Mass Spectrometry (HPLC/MS/MS)	10091595
Drinking Water	
11-Chloroeicosafluoro-3-Oxaundecane-1-Sulfonic Acid (11Cl-PF3OUdS)	9490
4,8-Dioxa-3H-Perfluorononanoic Acid (ADONA)	6951
9-Chlorohexadecafluoro-3-Oxanonane-1-Sulfonic Acid (9-Cl-PF3ONS)	6952
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) – GenX	9460
n-Ethylperfluorooctane sulfonamido Acetic Acid (EtFOSAA, NEtFOSAA)	4846
n-Methylperfluorooctane Sulfonamido Acetic Acid (MeFOSAA, NMeFOSAA)	4847
Perfluorobutane Sulfonic Acid (PFBS)	6918
Perfluorodecanoic Acid (PFDA)	6905

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 537.1 by High-Performance Liquid Chromatography Tandem Mass Spectrometry (HPLC/MS/MS)	10091595
Drinking Water	
Perfluorododecanoic Acid (PFDoA)	6903
Perfluoroheptanoic Acid (PFHpA)	6908
Perfluorohexane Sulfonic Acid (PFHxS)	6927
Perfluorohexanoic Acid (PFHxA)	6913
Perfluorononanoic Acid (PFNA)	6906
Perfluorooctane Sulfonic Acid (PFOS)	6931
Perfluorooctanoic Acid (PFOA)	6912
Perfluorotetradecanoic Acid (PFTDA, PFTeDA)	6902
Perfluorotridecanoic Acid (PFTrDA)	9563
Perfluoroundecanoic Acid (PFUnA, PFUnDA)	6904
EPA 537.1.1 by High-Performance Liquid Chromatography Tandem Mass Spectrometry (HPLC/MS/MS)	10091675
Drinking Water	
n-Ethylperfluorooctane sulfonamido Acetic Acid (EtFOSAA, NEtFOSAA)	4846
n-Methylperfluorooctane Sulfonamido Acetic Acid (MeFOSAA, NMeFOSAA)	4847
Perfluorobutane Sulfonic Acid (PFBS)	6918
Perfluorodecanoic Acid (PFDA)	6905
Perfluorododecanoic Acid (PFDoA)	6903
Perfluoroheptanoic Acid (PFHpA)	6908
Perfluorohexane Sulfonic Acid (PFHxS)	6927
Perfluorohexanoic Acid (PFHxA)	6913
Perfluorononanoic Acid (PFNA)	6906
Perfluorooctane Sulfonate (PFOS)	6909
Perfluorooctanoic Acid (PFOA)	6912
Perfluorotetradecanoic Acid (PFTDA, PFTeDA)	6902
Perfluorotridecanoic Acid (PFTrDA)	9563
Perfluoroundecanoic Acid (PFUnA, PFUnDA)	6904
EPA 8015B by Gas Chromatography Flame Ionization Detection (GC/FID)	10173805
Aqueous	
Residual Range Organics (RRO)	9506
Total Petroleum Hydrocarbons Diesel Range Organics (TPH DRO)	9369
Total Petroleum Hydrocarbons Gasoline Range Organics (TPH GRO)	9408
Solid	
Residual Range Organics (RRO)	9506
Total Petroleum Hydrocarbons Diesel Range Organics (TPH DRO)	9369
Total Petroleum Hydrocarbons Gasoline Range Organics (TPH GRO)	9408

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1317 South 13th Avenue, Kelso, WA 98626
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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8015C by Gas Chromatography Flame Ionization Detection (GC/FID)	10173805
Aqueous	
Residual Range Organics (RRO)	9506
Total Petroleum Hydrocarbons Diesel Range Organics (TPH DRO)	9369
Total Petroleum Hydrocarbons Gasoline Range Organics (TPH GRO)	9408
Solid	
Residual Range Organics (RRO)	9506
Total Petroleum Hydrocarbons Diesel Range Organics (TPH DRO)	9369
Total Petroleum Hydrocarbons Gasoline Range Organics (TPH GRO)	9408
EPA 8081A by Gas Chromatography Electron Capture Detector (GC/ECD)	10178606
Aqueous	
4,4'-DDD	7355
4,4'-DDE	7360
4,4'-DDT	7365
Aldrin	7025
alpha-BHC (a-BHC, alpha-Hexachlorocyclohexane)	7110
alpha-Chlordane (cis-Chlordane)	7240
beta-BHC (b-BHC, beta-Hexachlorocyclohexane)	7115
Chlordane (Technical)	7250
delta-BHC (d-BHC)	7105
Dieldrin	7470
Endosulfan I	7510
Endosulfan II	7515
Endosulfan Sulfate	7520
Endrin	7540
Endrin Aldehyde	7530
Endrin Ketone	7535
gamma-BHC (γ-BHC, Lindane, gamma-Hexachlorocyclohexane)	7120
gamma-Chlordane	7245
Heptachlor	7685
Heptachlor Epoxide	7690
Methoxychlor	7810
Toxaphene (Total)	8250
Solid	
4,4'-DDD	7355
4,4'-DDE	7360
4,4'-DDT	7365
Aldrin	7025

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	Code
Organic	
EPA 8081A by Gas Chromatography Electron Capture Detector (GC/ECD)	10178606
Solid	
alpha-BHC (a-BHC, alpha-Hexachlorocyclohexane)	7110
alpha-Chlordane (cis-Chlordane)	7240
beta-BHC (b-BHC, beta-Hexachlorocyclohexane)	7115
Chlordane (Technical)	7250
delta-BHC (d-BHC)	7105
Dieldrin	7470
Endosulfan I	7510
Endosulfan II	7515
Endosulfan Sulfate	7520
Endrin	7540
Endrin Aldehyde	7530
Endrin Ketone	7535
gamma-BHC (γ-BHC, Lindane, gamma-Hexachlorocyclohexane)	7120
gamma-Chlordane	7245
Heptachlor	7685
Heptachlor Epoxide	7690
Methoxychlor	7810
Toxaphene (Total)	8250
EPA 8081B by Gas Chromatography Electron Capture Detector (GC/ECD)	10178811
Aqueous	
2,4'-DDD	8580
2,4'-DDE	8585
2,4'-DDT	8590
4,4'-DDD	7355
4,4'-DDE	7360
4,4'-DDT	7365
Aldrin	7025
alpha-BHC (a-BHC, alpha-Hexachlorocyclohexane)	7110
alpha-Chlordane (cis-Chlordane)	7240
beta-BHC (b-BHC, beta-Hexachlorocyclohexane)	7115
Chlordane (Technical)	7250
Chlorpyrifos (Dursban)	7300
cis-Nonachlor	7925
delta-BHC (d-BHC)	7105
Dieldrin	7470
Endosulfan I	7510

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	Code
Organic	
EPA 8081B by Gas Chromatography Electron Capture Detector (GC/ECD)	10178811
Aqueous	
Endosulfan II	7515
Endosulfan Sulfate	7520
Endrin	7540
Endrin Aldehyde	7530
Endrin Ketone	7535
gamma-BHC (γ-BHC, Lindane, gamma-Hexachlorocyclohexane)	7120
gamma-Chlordane	7245
Heptachlor	7685
Heptachlor Epoxide	7690
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachloroethane	4840
Isodrin	7725
Methoxychlor	7810
Mirex	7870
Oxychlordane	3890
Toxaphene (Total)	8250
trans-Nonachlor	7910
Solid	
2,4'-DDD	8580
2,4'-DDE	8585
2,4'-DDT	8590
4,4'-DDD	7355
4,4'-DDE	7360
4,4'-DDT	7365
Aldrin	7025
alpha-BHC (a-BHC, alpha-Hexachlorocyclohexane)	7110
alpha-Chlordane (cis-Chlordane)	7240
beta-BHC (b-BHC, beta-Hexachlorocyclohexane)	7115
Chlordane (Technical)	7250
Chlorpyrifos (Dursban)	7300
cis-Nonachlor	7925
delta-BHC (d-BHC)	7105
Dieldrin	7470
Endosulfan I	7510
Endosulfan II	7515

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	Code
Organic	
EPA 8081B by Gas Chromatography Electron Capture Detector (GC/ECD)	10178811
Solid	
Endosulfan Sulfate	7520
Endrin	7540
Endrin Aldehyde	7530
Endrin Ketone	7535
gamma-BHC (γ-BHC, Lindane, gamma-Hexachlorocyclohexane)	7120
gamma-Chlordane	7245
Heptachlor	7685
Heptachlor Epoxide	7690
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachloroethane	4840
Isodrin	7725
Methoxychlor	7810
Mirex	7870
Oxychlordane	3890
Toxaphene (Total)	8250
trans-Nonachlor	7910
EPA 8082 by Gas Chromatography Electron Capture Detector (GC/ECD)	10179007
Aqueous	
Aroclor 1016	8880
Aroclor 1221	8885
Aroclor 1232	8890
Aroclor 1242	8895
Aroclor 1248	8900
Aroclor 1254	8905
Aroclor 1260	8910
Aroclor 1262	8912
Aroclor 1268	8913
Solid	
Aroclor 1016	8880
Aroclor 1221	8885
Aroclor 1232	8890
Aroclor 1242	8895
Aroclor 1248	8900
Aroclor 1254	8905
Aroclor 1260	8910

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8082 by Gas Chromatography Electron Capture Detector (GC/ECD)	10179007
Solid	
Aroclor 1262	8912
Aroclor 1268	8913
EPA 8082A by Gas Chromatography Electron Capture Detector (GC/ECD)	10179201
Aqueous	
Aroclor 1016	8880
Aroclor 1221	8885
Aroclor 1232	8890
Aroclor 1242	8895
Aroclor 1248	8900
Aroclor 1254	8905
Aroclor 1260	8910
Aroclor 1262	8912
Aroclor 1268	8913
PCB-101 (2,2',4,5,5'-Pentachlorobiphenyl)	8980
PCB-105 (2,3,3',4,4'-Pentachlorobiphenyl)	8985
PCB-114 (2,3,4,4',5-Pentachlorobiphenyl)	9005
PCB-118 (2,3',4,4',5-Pentachlorobiphenyl)	8995
PCB-123 (2,3',4,4',5'-Pentachlorobiphenyl)	9000
PCB-126 (3,3',4,4',5-Pentachlorobiphenyl)	9015
PCB-128 (2,2',3,3',4,4'-Hexachlorobiphenyl)	9020
PCB-138 (2,2',3,4,4',5'-Hexachlorobiphenyl)	9025
PCB-153 (2,2',4,4',5,5'-Hexachlorobiphenyl)	9040
PCB-156 (2,3,3',4,4',5-Hexachlorobiphenyl)	9050
PCB-157 (2,3,3',4,4',5'-Hexachlorobiphenyl)	9045
PCB-158 (2,3,3',4,4',6-Hexachlorobiphenyl)	9193
PCB-167 (2,3',4,4',5,5'-Hexachlorobiphenyl)	9055
PCB-168 (2,3',4,4',5',6-Hexachlorobiphenyl)	9218
PCB-169 (3,3',4,4',5,5'-Hexachlorobiphenyl)	9060
PCB-170 (2,2',3,3',4,4',5-Heptachlorobiphenyl)	9065
PCB-18 (2,2',5-Trichlorobiphenyl)	8930
PCB-180 (2,2',3,4,4',5,5'-Heptachlorobiphenyl)	9134
PCB-183 (2,2',3,4,4',5',6-Heptachlorobiphenyl)	9075
PCB-184 (2,2',3,4,4',6,6'-Heptachlorobiphenyl)	9139
PCB-187 (2,2',3,4',5,5',6-Heptachlorobiphenyl)	9080
PCB-189 (2,3,3',4,4',5,5'-Heptachlorobiphenyl)	9085
PCB-195 (2,2',3,3',4,4',5,6-Octachlorobiphenyl)	9103

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	Code
Organic	
EPA 8082A by Gas Chromatography Electron Capture Detector (GC/ECD)	10179201
Aqueous	
PCB-206 (2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl)	9095
PCB-209 (2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl)	9105
PCB-28 (2,4,4'-Trichlorobiphenyl)	9252
PCB-44 (2,2',3,5'-Tetrachlorobiphenyl)	8945
PCB-52 (2,2',5,5'-Tetrachlorobiphenyl)	8955
PCB-60 (2,3,4,4'-Tetrachlorobiphenyl)	9221
PCB-66 (2,3',4,4'-Tetrachlorobiphenyl)	8960
PCB-77 (3,3',4,4'-Tetrachlorobiphenyl)	8965
PCB-8 (2,4'-Dichlorobiphenyl)	9256
PCB-81 (3,4,4',5-Tetrachlorobiphenyl)	8970
PCB-87 (2,2',3,4,5'-Pentachlorobiphenyl)	8975
PCB-90 (2,2',3,4',5-Pentachlorobiphenyl)	9155
Solid	
Aroclor 1016	8880
Aroclor 1221	8885
Aroclor 1232	8890
Aroclor 1242	8895
Aroclor 1248	8900
Aroclor 1254	8905
Aroclor 1260	8910
Aroclor 1262	8912
Aroclor 1268	8913
PCB-101 (2,2',4,5,5'-Pentachlorobiphenyl)	8980
PCB-105 (2,3,3',4,4'-Pentachlorobiphenyl)	8985
PCB-114 (2,3,4,4',5-Pentachlorobiphenyl)	9005
PCB-118 (2,3',4,4',5-Pentachlorobiphenyl)	8995
PCB-123 (2,3',4,4',5'-Pentachlorobiphenyl)	9000
PCB-126 (3,3',4,4',5-Pentachlorobiphenyl)	9015
PCB-128 (2,2',3,3',4,4'-Hexachlorobiphenyl)	9020
PCB-138 (2,2',3,4,4',5'-Hexachlorobiphenyl)	9025
PCB-153 (2,2',4,4',5,5'-Hexachlorobiphenyl)	9040
PCB-156 (2,3,3',4,4',5-Hexachlorobiphenyl)	9050
PCB-157 (2,3,3',4,4',5'-Hexachlorobiphenyl)	9045
PCB-158 (2,3,3',4,4',6-Hexachlorobiphenyl)	9193
PCB-167 (2,3',4,4',5,5'-Hexachlorobiphenyl)	9055
PCB-168 (2,3',4,4',5',6-Hexachlorobiphenyl)	9218

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8082A by Gas Chromatography Electron Capture Detector (GC/ECD)	10179201
Solid	
PCB-169 (3,3',4,4',5,5'-Hexachlorobiphenyl)	9060
PCB-170 (2,2',3,3',4,4',5-Heptachlorobiphenyl)	9065
PCB-18 (2,2',5-Trichlorobiphenyl)	8930
PCB-180 (2,2',3,4,4',5,5'-Heptachlorobiphenyl)	9134
PCB-183 (2,2',3,4,4',5',6-Heptachlorobiphenyl)	9075
PCB-184 (2,2',3,4,4',6,6'-Heptachlorobiphenyl)	9139
PCB-187 (2,2',3,4',5,5',6-Heptachlorobiphenyl)	9080
PCB-189 (2,3,3',4,4',5,5'-Heptachlorobiphenyl)	9085
PCB-195 (2,2',3,3',4,4',5,6-Octachlorobiphenyl)	9103
PCB-206 (2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl)	9095
PCB-209 (2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl)	9105
PCB-28 (2,4,4'-Trichlorobiphenyl)	9252
PCB-44 (2,2',3,5'-Tetrachlorobiphenyl)	8945
PCB-52 (2,2',5,5'-Tetrachlorobiphenyl)	8955
PCB-60 (2,3,4,4'-Tetrachlorobiphenyl)	9221
PCB-66 (2,3',4,4'-Tetrachlorobiphenyl)	8960
PCB-77 (3,3',4,4'-Tetrachlorobiphenyl)	8965
PCB-8 (2,4'-Dichlorobiphenyl)	9256
PCB-81 (3,4,4',5-Tetrachlorobiphenyl)	8970
PCB-87 (2,2',3,4,5'-Pentachlorobiphenyl)	8975
PCB-90 (2,2',3,4',5-Pentachlorobiphenyl)	9155
EPA 8151A by Gas Chromatography Electron Capture Detector (GC/ECD)	10183207
Aqueous	
2,4,5-T	8655
2,4-DB	8560
2,4-Dichlorophenoxyacetic Acid (2,4-D)	8545
Dalapon	8555
Dicamba	8595
Dichloroprop (2,4-DP)	8605
Dinoseb (2-sec-Butyl-4,6-Dinitrophenol, DNBP)	8620
MCPA	7775
MCPP	7780
Silvex (2,4,5-TP)	8650
Solid	
2,4,5-T	8655
2,4-DB	8560

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8151A by Gas Chromatography Electron Capture Detector (GC/ECD)	10183207
Solid	
2,4-Dichlorophenoxyacetic Acid (2,4-D)	8545
Dalapon	8555
Dicamba	8595
Dichloroprop (2,4-DP)	8605
Dinoseb (2-sec-Butyl-4,6-Dinitrophenol, DNBP)	8620
MCPA	7775
MCPP	7780
Silvex (2,4,5-TP)	8650
EPA 8260B by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether (2-CEVE)	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
4-Chlorotoluene (p-Chlorotoluene)	4540

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260B by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Benzene	4375
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Di-Isopropylether (DIPE)	9375
Ethyl tert Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Hexachlorobutadiene	4835
Isopropylbenzene (Cumene)	4900
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methyl tert Butyl Ether (MTBE)	5000
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
sec-Butylbenzene	4440
Styrene	5100
tert-Amyl Methyl Ether (TAME)	4370

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260B by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene (Perchloroethene, PCE)	5115
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
Solid	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether (2-CEVE)	4500
2-Chlorotoluene	4535

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260B by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Solid	
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Benzene	4375
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Di-Isopropylether (DIPE)	9375
Ethyl tert Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Hexachlorobutadiene	4835
Isopropylbenzene (Cumene)	4900
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methyl tert Butyl Ether (MTBE)	5000
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
sec-Butylbenzene	4440

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260B by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Solid	
Styrene	5100
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene (Perchloroethene, PCE)	5115
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
2,2-Dichloropropane	4665

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether (2-CEVE)	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Benzene	4375
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Di-Isopropylether (DIPE, Propane)	9375
Ethyl tert Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Hexachlorobutadiene	4835
Isopropylbenzene (Cumene)	4900
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methyl tert Butyl Ether (MTBE)	5000
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
sec-Butylbenzene	4440
Styrene	5100
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene (Perchloroethene, PCE)	5115
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
Solid	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660

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	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Solid	
1,4-Dichlorobenzene	4620
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether (2-CEVE)	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Benzene	4375
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Di-Isopropylether (DIPE, Propane)	9375
Ethyl tert Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Hexachlorobutadiene	4835
Isopropylbenzene (Cumene)	4900
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methyl tert Butyl Ether (MTBE)	5000

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Solid	
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
sec-Butylbenzene	4440
Styrene	5100
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene (Perchloroethene, PCE)	5115
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
EPA 8260C SIM by Gas Chromatography Mass Spectrometry (GC/MS) Selective Ion Monitoring (SIM)	10307003
Aqueous	
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloroethane	5165
1,1-Dichloroethylene	4640
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,4-Dichlorobenzene	4620
Bromodichloromethane	4395
Carbon Tetrachloride	4455
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroform	4505
cis-1,2-Dichloroethylene	4645
Methyl Chloride (Chloromethane)	4960
Methylene Chloride (Dichloromethane)	4975
Tetrachloroethene (Perchloroethene, PCE)	5115
trans-1,2-Dichloroethylene	4700
Trichloroethene (TCE, Trichloroethylene)	5170

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260C SIM by Gas Chromatography Mass Spectrometry (GC/MS) Selective Ion Monitoring (SIM)	10307003
Aqueous	
Vinyl Chloride (Chloroethene)	5235
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Aqueous	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether (2-CEVE)	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Benzene	4375

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Aqueous	
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Di-Isopropylether (DIPE)	9375
Ethyl tert Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Hexachlorobutadiene	4835
Isopropylbenzene (Cumene)	4900
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methyl tert Butyl Ether (MTBE)	5000
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
sec-Butylbenzene	4440
Styrene	5100
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene (Perchloroethene, PCE)	5115
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
Trichloroethene (TCE, Trichloroethylene)	5170

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Aqueous	
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
Solid	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether (2-CEVE)	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Isopropyltoluene, p-Cymene)	4910
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325

Certificate of Accreditation: Supplement

ALS Environmental - Kelso
1317 South 13th Avenue, Kelso, WA 98626
Contact Name: Bradley Davis Phone: 360-501-3354

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Solid	
Acrylonitrile	4340
Benzene	4375
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Di-Isopropylether (DIPE)	9375
Ethyl tert Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Hexachlorobutadiene	4835
Isopropylbenzene (Cumene)	4900
Methyl Bromide (Bromomethane)	4950
Methyl Chloride (Chloromethane)	4960
Methyl tert Butyl Ether (MTBE)	5000
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Propylbenzene (1-phenylpropane)	5090
sec-Butylbenzene	4440
Styrene	5100
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene (Perchloroethene, PCE)	5115
Toluene	5140
trans-1,2-Dichloroethylene	4700

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Solid	
trans-1,3-Dichloropropylene	4685
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
EPA 8270C by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,3-Dichlorobenzene (1,3-DCB)	4615
1,4-Dichlorobenzene	4620
1-Methylnaphthalene	6380
2,2'-Oxybis(1-Chloropropane)	4659
2,3,4,6-Tetrachlorophenol	6735
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol, Dinitro-o-Cresol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825

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	Code
Organic	
EPA 8270C by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
4-Methylphenol (p-Cresol, as 3+4-Methylphenol)	6410
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Aniline	5545
Anthracene	5555
Benzidine	5595
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
bis(2-Chloroethoxy)Methane	5760
bis(2-Chloroethyl)ether	5765
bis(2-Ethylhexy)Phthalate (DEHP, as di(2-ethylhexyl) Phthalate)	6065
Butyl Benzyl Phthalate	5670
Carbazole	5680
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
di-n-Octyl Phthalate	6200
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3-cd)Pyrene	6315
Isophorone	6320
Naphthalene	5005

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270C by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
Nitrobenzene	5015
n-Nitrosodimethylamine	6530
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
Pentachlorobenzene	6590
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
Solid	
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,3-Dichlorobenzene (1,3-DCB)	4615
1,4-Dichlorobenzene	4620
1-Methylnaphthalene	6380
2,2'-Oxybis(1-Chloropropane)	4659
2,3,4,6-Tetrachlorophenol	6735
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol, Dinitro-o-Cresol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660

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	Code
Organic	
EPA 8270C by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Solid	
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Methylphenol (p-Cresol, as 3+4-Methylphenol)	6410
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Aniline	5545
Anthracene	5555
Benzidine	5595
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
bis(2-Chloroethoxy)Methane	5760
bis(2-Chloroethyl)ether	5765
bis(2-Ethylhexy)Phthalate (DEHP, as di(2-ethylhexyl) Phthalate)	6065
Butyl Benzyl Phthalate	5670
Carbazole	5680
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
di-n-Octyl Phthalate	6200
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840

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	Code
Organic	
EPA 8270C by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Solid	
Indeno(1,2,3-cd)Pyrene	6315
Isophorone	6320
Naphthalene	5005
Nitrobenzene	5015
n-Nitrosodimethylamine	6530
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
Pentachlorobenzene	6590
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,3-Dichlorobenzene (1,3-DCB)	4615
1,4-Dichlorobenzene	4620
1-Methylnaphthalene	6380
2,2'-Oxybis(1-Chloropropane)	4659
2,3,4,6-Tetrachlorophenol	6735
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol, Dinitro-o-Cresol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Nitroaniline	6460

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	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Methylphenol (p-Cresol, as 3+4-Methylphenol)	6410
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Aniline	5545
Anthracene	5555
Benzidine	5595
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
bis(2-Chloroethoxy)Methane	5760
bis(2-Chloroethyl)ether	5765
bis(2-Ethylhexy)Phthalate (DEHP, as di(2-ethylhexyl) Phthalate)	6065
Butyl Benzyl Phthalate	5670
Carbazole	5680
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
di-n-Octyl Phthalate	6200
Fluoranthene	6265
Fluorene	6270

Certificate of Accreditation: Supplement

ALS Environmental - Kelso
1317 South 13th Avenue, Kelso, WA 98626
Contact Name: Bradley Davis Phone: 360-501-3354

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3-cd)Pyrene	6315
Isophorone	6320
Naphthalene	5005
Nitrobenzene	5015
n-Nitrosodimethylamine	6530
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
Pentachlorobenzene	6590
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
Solid	
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,3-Dichlorobenzene (1,3-DCB)	4615
1,4-Dichlorobenzene	4620
1-Methylnaphthalene	6380
2,2'-Oxybis(1-Chloropropane)	4659
2,3,4,6-Tetrachlorophenol	6735
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol, Dinitro-o-Cresol)	6360

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Solid	
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Methylphenol (p-Cresol, as 3+4-Methylphenol)	6410
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Aniline	5545
Anthracene	5555
Benzidine	5595
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
bis(2-Chloroethoxy)Methane	5760
bis(2-Chloroethyl)ether	5765
bis(2-Ethylhexy)Phthalate (DEHP, as di(2-ethylhexyl) Phthalate)	6065
Butyl Benzyl Phthalate	5670
Carbazole	5680
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Solid	
di-n-Octyl Phthalate	6200
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3-cd)Pyrene	6315
Isophorone	6320
Naphthalene	5005
Nitrobenzene	5015
n-Nitrosodimethylamine	6530
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
Pentachlorobenzene	6590
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
EPA 8270D SIM by Gas Chromatography Mass Spectrometry (GC/MS) Selective Ion Monitoring (SIM)	10242509
Aqueous	
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
2-Methylnaphthalene	6380 6385
Acenaphthene	5500
Acenaphthylene	5505
Anthracene	5555
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Fluoranthene	6265

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D SIM by Gas Chromatography Mass Spectrometry (GC/MS) Selective Ion Monitoring (SIM)	10242509
Aqueous	
Fluorene	6270
Indeno(1,2,3-cd)Pyrene	6315
Naphthalene	5005
Phenanthrene	6615
Pyrene	6665
Solid	
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
2-Methylnaphthalene	6380 6385
Acenaphthene	5500
Acenaphthylene	5505
Anthracene	5555
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Fluoranthene	6265
Fluorene	6270
Indeno(1,2,3-cd)Pyrene	6315
Naphthalene	5005
Phenanthrene	6615
Pyrene	6665
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Aqueous	
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,3-Dichlorobenzene (1,3-DCB)	4615
1,4-Dichlorobenzene	4620
1-Methylnaphthalene	6380
2,2'-Oxybis(1-Chloropropane)	4659
2,3,4,6-Tetrachlorophenol	6735
2,4,5-Trichlorophenol	6835

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Aqueous	
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol, Dinitro-o-Cresol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Methylphenol (p-Cresol, as 3+4-Methylphenol)	6410
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Aniline	5545
Anthracene	5555
Benzidine	5595
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
bis(2-Chloroethoxy)Methane	5760
bis(2-Chloroethyl)ether	5765

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Aqueous	
bis(2-Ethylhexy)Phthalate (DEHP, as di(2-ethylhexyl) Phthalate)	6065
Butyl Benzyl Phthalate	5670
Carbazole	5680
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
di-n-Octyl Phthalate	6200
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3-cd)Pyrene	6315
Isophorone	6320
Naphthalene	5005
Nitrobenzene	5015
n-Nitrosodimethylamine	6530
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
Pentachlorobenzene	6590
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
Solid	
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,3-Dichlorobenzene (1,3-DCB)	4615
1,4-Dichlorobenzene	4620
1-Methylnaphthalene	6380

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Solid	
2,2'-Oxybis(1-Chloropropane)	4659
2,3,4,6-Tetrachlorophenol	6735
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol, Dinitro-o-Cresol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Methylphenol (p-Cresol, as 3+4-Methylphenol)	6410
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Aniline	5545
Anthracene	5555
Benzidine	5595
Benzo(a)Anthracene	5575
Benzo(a)Pyrene	5580
Benzo(b)Fluoranthene	5585
Benzo(g,h,i)Perylene	5590
Benzo(k)Fluoranthene	5600
Benzoic Acid	5610

Certificate of Accreditation: Supplement

ALS Environmental - Kelso
1317 South 13th Avenue, Kelso, WA 98626
Contact Name: Bradley Davis Phone: 360-501-3354

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Solid	
Benzyl Alcohol	5630
bis(2-Chloroethoxy)Methane	5760
bis(2-Chloroethyl)ether	5765
bis(2-Ethylhexy)Phthalate (DEHP, as di(2-ethylhexyl) Phthalate)	6065
Butyl Benzyl Phthalate	5670
Carbazole	5680
Chrysene	5855
Dibenz(a,h)Anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
di-n-Octyl Phthalate	6200
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3-cd)Pyrene	6315
Isophorone	6320
Naphthalene	5005
Nitrobenzene	5015
n-Nitrosodimethylamine	6530
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
Pentachlorobenzene	6590
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
NWTPH-Dx by Gas Chromatography Flame Ionization Detection (GC/FID)	90018409
Aqueous	
Total Petroleum Hydrocarbons Diesel Range Organics (TPH DRO)	9369

Certificate of Accreditation: Supplement

ALS Environmental - Kelso
1317 South 13th Avenue, Kelso, WA 98626
Contact Name: Bradley Davis Phone: 360-501-3354

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
NWTPH-Dx by Gas Chromatography Flame Ionization Detection (GC/FID)	90018409
Solid	
Total Petroleum Hydrocarbons Diesel Range Organics (TPH DRO)	9369
NWTPH-Gx by Gas Chromatography Flame Ionization Detection (GC/FID)	90018603
Aqueous	
Total Petroleum Hydrocarbons Gasoline Range Organics (TPH GRO)	9408
Solid	
Total Petroleum Hydrocarbons Gasoline Range Organics (TPH GRO)	9408
NWTPH-Rx by Gas Chromatography Flame Ionization Detection (GC/FID)	90015400
Aqueous	
Residual Range Organics (RRO)	9506
Solid	
Residual Range Organics (RRO)	9506
PFAS by LC/MS/MS Compliant with Table B-15 of QSM 5.3 or Latest Version by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS)	90000451
Aqueous	
1H, 1H, 2H, 2H-Perfluorodecanesulfonic Acid (8:2 Fluorotelomersulfonic Acid, 8:2FTS)	6948
1H, 1H, 2H, 2H-Perfluorododecane Sulfonic Acid (10:2 FTS)	9616
1H, 1H, 2H, 2H-Perfluorohexanesulfonic Acid (4:2 Fluorotelomersulfonic Acid, 4:2FTS)	6946
1H, 1H, 2H, 2H-Perfluorooctanesulfonic Acid (6:2 Fluorotelomersulfonic Acid, 6:2FTS)	6947
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) – GenX	9460
n-Ethylperfluorooctane Sulfonamide (EtFOSA, NEtFOSA)	9395
n-Ethylperfluorooctane sulfonamido Acetic Acid (EtFOSAA, NEtFOSAA)	4846
N-Ethylperfluorooctane Sulfonamido Ethanol (EtFOSE, NEtFOSE)	9431
n-Methylperfluorooctane Sulfonamide (NMeFOSA)	6954
n-Methylperfluorooctane Sulfonamido Acetic Acid (MeFOSAA, NMeFOSAA)	4847
N-Methylperfluorooctane Sulfonamido Ethanol (MeFOSE, NMeFOSE)	6949
Perfluorobutane Sulfonic Acid (PFBS)	6918
Perfluorobutanoic Acid (PFBA)	6915
Perfluorodecane Sulfonic Acid (PFDS)	6920
Perfluorodecanoic Acid (PFDA)	6905
Perfluorododecanoic Acid (PFDoA)	6903
Perfluoroheptane Sulfonic Acid (PFHpS)	9470
Perfluoroheptanoic Acid (PFHpA)	6908
Perfluorohexane Sulfonic Acid (PFHxS)	6927
Perfluorohexanoic Acid (PFHxA)	6913
Perfluorononane Sulfonic Acid (PFNS)	6929
Perfluorononanoic Acid (PFNA)	6906

ALS Environmental - Kelso
1317 South 13th Avenue, Kelso, WA 98626
Contact Name: Bradley Davis Phone: 360-501-3354

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
PFAS by LC/MS/MS Compliant with Table B-15 of QSM 5.3 or Latest Version by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS)	90000451
Aqueous	
Perfluorooctane Sulfonamide (PFOSA, PFOSAm)	6917
Perfluorooctane Sulfonic Acid (PFOS)	6931
Perfluorooctanoic Acid (PFOA)	6912
Perfluoropentane Sulfonic Acid (PFPeS)	6934
Perfluoropentanoic Acid (PFPeA)	6914
Perfluorotetradecanoic Acid (PFTDA, PFTeDA)	6902
Perfluorotridecanoic Acid (PFTrDA)	9563
Perfluoroundecanoic Acid (PFUnA, PFUnDA)	6904
Solid	
1H, 1H, 2H, 2H-Perfluorodecanesulfonic Acid (8:2 Fluorotelomersulfonic Acid, 8:2FTS)	6948
1H, 1H, 2H, 2H-Perfluorododecane Sulfonic Acid (10:2 FTS)	9616
1H, 1H, 2H, 2H-Perfluorohexanesulfonic Acid (4:2 Fluorotelomersulfonic Acid, 4:2FTS)	6946
1H, 1H, 2H, 2H-Perfluorooctanesulfonic Acid (6:2 Fluorotelomersulfonic Acid, 6:2FTS)	6947
Hexafluoropropylene Oxide Dimer Acid (HFPO-DA) – GenX	9460
n-Ethylperfluorooctane Sulfonamide (EtFOSA, NEtFOSA)	9395
n-Ethylperfluorooctane sulfonamido Acetic Acid (EtFOSAA, NEtFOSAA)	4846
N-Ethylperfluorooctane Sulfonamido Ethanol (EtFOSE, NEtFOSE)	9431
n-Methylperfluorooctane Sulfonamide (NMeFOSA)	6954
n-Methylperfluorooctane Sulfonamido Acetic Acid (MeFOSAA, NMeFOSAA)	4847
N-Methylperfluorooctane Sulfonamido Ethanol (MeFOSE, NMeFOSE)	6949
Perfluorobutane Sulfonic Acid (PFBS)	6918
Perfluorobutanoic Acid (PFBA)	6915
Perfluorodecane Sulfonic Acid (PFDS)	6920
Perfluorodecanoic Acid (PFDA)	6905
Perfluorododecanoic Acid (PFDoA)	6903
Perfluoroheptane Sulfonic Acid (PFHpS)	9470
Perfluoroheptanoic Acid (PFHpA)	6908
Perfluorohexane Sulfonic Acid (PFHxS)	6927
Perfluorohexanoic Acid (PFHxA)	6913
Perfluorononane Sulfonic Acid (PFNS)	6929
Perfluorononanoic Acid (PFNA)	6906
Perfluorooctane Sulfonamide (PFOSA, PFOSAm)	6917
Perfluorooctane Sulfonic Acid (PFOS)	6931
Perfluorooctanoic Acid (PFOA)	6912
Perfluoropentane Sulfonic Acid (PFPeS)	6934

Certificate of Accreditation: Supplement

ALS Environmental - Kelso
1317 South 13th Avenue, Kelso, WA 98626
Contact Name: Bradley Davis Phone: 360-501-3354

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
PFAS by LC/MS/MS Compliant with Table B-15 of QSM 5.3 or Latest Version by Liquid Chromatography Tandem Mass Spectrometry (LC/MS/MS)	90000451
Solid	
Perfluoropentanoic Acid (PFPeA)	6914
Perfluorotetradecanoic Acid (PFTDA, PFTeDA)	6902
Perfluorotridecanoic Acid (PFTrDA)	9563
Perfluoroundecanoic Acid (PFUnA, PFUnDA)	6904
SOC-Butyl by Gas Chromatography Flame Photometric Detector (GC/FPD)	9999Butyl
Aqueous	
di-n-Butyltin	5913
n-Butyltin	1206
tetra-n-Butyltin	1209
tri-n-Butyltin	1213
Solid	
di-n-Butyltin	5913
n-Butyltin	1206
tetra-n-Butyltin	1209
tri-n-Butyltin	1213

Certificate of Accreditation: Supplement

ALS Environmental - Kelso
1317 South 13th Avenue, Kelso, WA 98626
Contact Name: Bradley Davis Phone: 360-501-3354

Accreditation is granted to the facility to perform the following testing:

		Code
Preparation		
Aqueous		
ASTM D3590-17A	Total Kjeldahl Nitrogen (TKN) Digestion	
ASTM D3590-89	Total Kjeldahl Nitrogen (TKN) Digestion	
EPA 1311	Toxicity Characteristic Leaching Procedure (TCLP)	
EPA 1312	Synthetic Precipitation Leaching Procedure (SPLP)	
EPA 1640	Reductive Metals Precipitation	
EPA 3005A and EPA CLP ILM04.0 (ALS-Kelso SOP MET-DIG)	Acid Digestion of Waters for Total Recoverable or Dissolved Metals	
EPA 3010A	Acid Digestion for Total Metals (Hot Block)	
EPA 3020A	Acid Digestion of Aqueous Samples and Extracts for Total Metals	
EPA 3510C	Separatory Funnel Liquid-Liquid Extraction	
EPA 3511	Microextraction for Organics	
EPA 3520C	Continuous Liquid-Liquid Extraction	
EPA 3535A	Solid-Phase Extraction (SPE)	
EPA 3620C	Florisil Cleanup	
EPA 3630C	Silica Gel Clean Up	
EPA 3640A	Gel-Permeation Cleanup	
EPA 3660	Sulfur Cleanup	
EPA 3665A	Sulfuric Acid Cleanup	
EPA 5030B	Purge-and-Trap for Volatile Organics in Aqueous Samples	
Solid		
ASTM D3590-17A	Total Kjeldahl Nitrogen (TKN) Digestion	
ASTM D3590-89	Total Kjeldahl Nitrogen (TKN) Digestion	
EPA 1311	Toxicity Characteristic Leaching Procedure (TCLP)	
EPA 1312	Synthetic Precipitation Leaching Procedure (SPLP)	
EPA 1629 MOD (ALS-Kelso SOP GEN-AVS)	Acid Digestion for Metals (Simultaneously Extracted)	
EPA 3050B	Acid Digestion for Metals	
EPA 3060	Alkaline Digestion (Hexavalent Chromium)	
EPA 3541	Soxhlet Extraction (Automated)	
EPA 3546	Microwave Extraction (Organics)	
EPA 3550B	Ultrasonic Extraction	
EPA 3620C	Florisil Cleanup	
EPA 3630C	Silica Gel Clean Up	
EPA 3640A	Gel-Permeation Cleanup	
EPA 3660	Sulfur Cleanup	
EPA 3665A	Sulfuric Acid Cleanup	

Certificate of Accreditation: Supplement

ALS Environmental - Kelso
1317 South 13th Avenue, Kelso, WA 98626
Contact Name: Bradley Davis Phone: 360-501-3354

Accreditation is granted to the facility to perform the following testing:

		Code
EPA 5035A	Purge-and-Trap and Extraction For Volatile Organics (Closed-System)	
EPA 5050	Bomb Digestion (Total Chlorine)	
EPA 9013	Cyanide Extraction for Solids and Oils	

Footnotes:
> Method codes are typically based on The NELAC Institute (TNI) Laboratory Accreditation Management System (LAMS) and are used to compare to the laboratory reported Performance Test (PT) results. Although the method code may not represent the specific method version, it is the method code used to represent the method/technology used to report PTs. (NC = No Code)

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2025
Issued April 01, 2024

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. KURT CLARKSON
ALS ENVIRONMENTAL - KELSO
1317 S 13TH AVENUE
KELSO, WA 98626

NY Lab Id No: 12060

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved subcategories and/or analytes are listed below:

Perfluorinated Alkyl Acids

11CL-PF3OUDS	EPA 1633 (Draft)
4:2FTS	EPA 1633 (Draft)
6:2FTS	EPA 1633 (Draft)
8:2FTS	EPA 1633 (Draft)
9CL-PF3ONS	EPA 1633 (Draft)
ADONA	EPA 1633 (Draft)
Hexafluoropropylene Oxide Dimer Aci	EPA 1633 (Draft)
NETFOSAA	EPA 1633 (Draft)
NMEFOSAA	EPA 1633 (Draft)
Nonafluoro-3,6-Dioxaheptanoic Acid	EPA 1633 (Draft)
Perflourotridecanoic Acid (PFTRDA)	EPA 1633 (Draft)
Perfluordecanoic Acid (PFDA)	EPA 1633 (Draft)
Perfluoro-3-Methoxypropanoic Acid	EPA 1633 (Draft)
Perfluoro-4-Methoxybutanoic Acid	EPA 1633 (Draft)
Perfluorobutanesulfonic Acid (PFBS)	EPA 1633 (Draft)
Perfluorobutanoic Acid (PFBA)	EPA 1633 (Draft)
Perfluorododecanoic Acid (PFDOA)	EPA 1633 (Draft)
Perfluoroheptanesulfonic Acid (PFHPS	EPA 1633 (Draft)
Perfluoroheptanoic Acid (PFHPA)	EPA 1633 (Draft)
Perfluorohexanesulfonic Acid (PFHXS	EPA 1633 (Draft)
Perfluorohexanoic Acid (PFHXA)	EPA 1633 (Draft)
Perfluorononanoic Acid (PFNA)	EPA 1633 (Draft)
Perfluorooctanesulfonic Acid (PFOS)	EPA 1633 (Draft)
Perfluorooctanoic Acid (PFOA)	EPA 1633 (Draft)
Perfluoropentanesulfonic Acid (PFPES	EPA 1633 (Draft)
Perfluoropentanoic Acid (PFPEA)	EPA 1633 (Draft)
Perfluorotetradecanoic Acid (PFTA)	EPA 1633 (Draft)

Serial No.: 69233

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2025
Issued April 01, 2024

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. KURT CLARKSON
ALS ENVIRONMENTAL - KELSO
1317 S 13TH AVENUE
KELSO, WA 98626

NY Lab Id No: 12060

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved subcategories and/or analytes are listed below:

Perfluorinated Alkyl Acids

Perfluoroundecanoic Acid (PFUNA)	EPA 1633 (Draft)
PFEESA	EPA 1633 (Draft)

Serial No.: 69233

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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MR. KURT CLARKSON
ALS ENVIRONMENTAL - KELSO
1317 S 13TH AVENUE
KELSO, WA 98626

NY Lab Id No: 12060

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Perfluorinated Alkyl Acids

11CL-PF3OUDS	EPA 533
	EPA 537.1
4:2FTS	EPA 533
6:2FTS	EPA 533
8:2FTS	EPA 533
9CL-PF3ONS	EPA 533
	EPA 537.1
ADONA	EPA 533
	EPA 537.1
Hexafluoropropylene Oxide Dimer Acic	EPA 533
	EPA 537.1
NETFOSAA	EPA 537
	EPA 537.1
NMEFOSAA	EPA 537
	EPA 537.1
Nonafluoro-3,6-Dioxaheptanoic Acid	EPA 533
Perflourotridecanoic Acid (PFTRDA)	EPA 537
	EPA 537.1
Perfluordecanoic Acid (PFDA)	EPA 533
	EPA 537
	EPA 537.1
Perfluoro-3-Methoxypropanoic Acid	EPA 533
Perfluoro-4-Methoxybutanoic Acid	EPA 533
Perfluorobutanesulfonic Acid (PFBS)	EPA 533
	EPA 537
	EPA 537.1
Perfluorobutanoic Acid (PFBA)	EPA 533

Serial No.: 69232

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MR. KURT CLARKSON
ALS ENVIRONMENTAL - KELSO
1317 S 13TH AVENUE
KELSO, WA 98626

NY Lab Id No: 12060

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Perfluorinated Alkyl Acids

Perfluorododecanoic Acid (PFDOA)	EPA 533
	EPA 537
	EPA 537.1
Perfluoroheptanesulfonic Acid (PFHPS	EPA 533
Perfluoroheptanoic Acid (PFHPA)	EPA 533
	EPA 537
	EPA 537.1
Perfluorohexanesulfonic Acid (PFHXS	EPA 533
	EPA 537
	EPA 537.1
Perfluorohexanoic Acid (PFHXA)	EPA 533
	EPA 537
	EPA 537.1
Perfluorononanoic Acid (PFNA)	EPA 533
	EPA 537
	EPA 537.1
Perfluorooctanesulfonic Acid (PFOS)	EPA 533
	EPA 537
	EPA 537.1
Perfluorooctanoic Acid (PFOA)	EPA 533
	EPA 537
	EPA 537.1
Perfluoropentanesulfonic Acid (PFPES	EPA 533
Perfluoropentanoic Acid (PFPEA)	EPA 533
Perfluorotetradecanoic Acid (PFTA)	EPA 537
	EPA 537.1
Perfluoroundecanoic Acid (PFUNA)	EPA 533

Serial No.: 69232

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

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MR. KURT CLARKSON
ALS ENVIRONMENTAL - KELSO
1317 S 13TH AVENUE
KELSO, WA 98626

NY Lab Id No: 12060

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Perfluorinated Alkyl Acids

Perfluoroundecanoic Acid (PFUNA)	EPA 537
	EPA 537.1
PFEESA	EPA 533

Serial No.: 69232

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2025
Issued April 01, 2024

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. KURT CLARKSON
ALS ENVIRONMENTAL - KELSO
1317 S 13TH AVENUE
KELSO, WA 98626

NY Lab Id No: 12060

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Perfluorinated Alkyl Acids

8:2FTS	EPA 1633 (Draft)
NETFOSAA	EPA 1633 (Draft)
NMEFOSAA	EPA 1633 (Draft)
Perflourotridecanoic Acid (PFTRDA)	EPA 1633 (Draft)
Perfluordecanoic Acid (PFDA)	EPA 1633 (Draft)
Perfluorobutanoic Acid (PFBA)	EPA 1633 (Draft)
Perfluorododecanoic Acid (PFDOA)	EPA 1633 (Draft)
Perfluoroheptanoic Acid (PFHPA)	EPA 1633 (Draft)
Perfluorohexanoic Acid (PFHXA)	EPA 1633 (Draft)
Perfluorononanoic Acid (PFNA)	EPA 1633 (Draft)
Perfluorooctanesulfonic Acid (PFOS)	EPA 1633 (Draft)
Perfluorooctanoic Acid (PFOA)	EPA 1633 (Draft)
Perfluoropentanoic Acid (PFPEA)	EPA 1633 (Draft)
Perfluorotetradecanoic Acid (PFTA)	EPA 1633 (Draft)
Perfluoroundecanoic Acid (PFUNA)	EPA 1633 (Draft)

Serial No.: 69234

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

PERRY JOHNSON LABORATORY ACCREDITATION, INC.

Certificate of Accreditation

Perry Johnson Laboratory Accreditation, Inc.
has assessed the Organization of:

ALS - Middletown
301 Fulling Mill Road, Middletown, PA 17057

(Hereinafter called the Organization) and hereby declares that Organization has met the requirements of ISO/IEC 17025:2017 General Requirements for the competence of Testing and Calibration Laboratories and the United States Department of Defense Environmental Laboratory Accreditation Program (DoD-ELAP) requirements identified within the DoD/DOE Quality Systems Manual (DoD/DOE QSM) Version 5.4 October 2021 and is accredited in accordance with the:

United States Department of Defense
Environmental Laboratory Accreditation Program
(DoD-ELAP)

This accreditation demonstrates the technical competence for the defined scope and the operation of a laboratory quality management system
(as outlined by the joint ISO-ILAC-IAF Communiqué dated April 2017):

Environmental Testing
(As detailed in the supplement)

Accreditation claims for such activities shall only be made from the addresses referenced within this certificate. This Accreditation is granted subject to the system rules governing the Accreditation referred to above, and the Organization hereby covenants with the Accreditation Body's duty to observe and comply with the said rules.

Initial Accreditation Date:	*Issue Date:*	*Expiration Date*
August 22, 2017	January 16, 2024	February 28, 2026

For PJLA

Tracy Szerszen
President

Accreditation No:	*Certificate No:*
74618	L24-71

Perry Johnson Laboratory Accreditation, Inc. (PJLA)
755 W. Big Beaver, Suite 1325
Troy, Michigan 48084

The validity of this certificate is maintained through ongoing assessments based on a continuous accreditation cycle. The validity of this certificate should be confirmed through the PJLA website: **www.pjlabs.com**

Certificate of Accreditation: Supplement

ALS - Middletown

301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

	Code
General Chemistry	
EPA 1010B by Pensky-Martens Closed Cup Tester	10234830
Aqueous	
Ignitability (Flashpoint)	1780
Solid	
Ignitability (Flashpoint)	1780
EPA 1030 by Manual Ignition	10117212
Solid	
Ignitability (Flashpoint)	1780
EPA 1664B by Gravimetry	10261617
Aqueous	
n-Hexane Extractable Material (HEM) (O&G)	1803
Total Petroleum Hydrocarbons (TPH)	1853
Solid	
Total Petroleum Hydrocarbons (TPH)	1853
EPA 7.3.3.2 by Colorimetry	10001204
Aqueous	
Cyanide (Reactive)	1923
Solid	
Cyanide (Reactive)	1923
EPA 9012B by Colorimetry	10243206
Aqueous	
Cyanide (Total)	1645
Solid	
Cyanide (Total)	1645
EPA 9020B by Combustion	10194408
Aqueous	
Total Organic Halides (TOX)	2045
EPA 9023 by Combustion	10195003
Solid	
Total Organic Halides (TOX)	2045
EPA 9034 by Titrimetry	10196006
Solid	
Sulfide	2005
EPA 9040C by Electrode	10244403
Aqueous	
pH	1900
EPA 9045D by Electrode	10244607
Solid	
pH (Corrosivity)	1625

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301 Fulling Mill Road, Middletown, PA 17057
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Accreditation is granted to the facility to perform the following testing:

	Code
General Chemistry	
EPA 9045D by Electrode	10244607
Solid	
EPA 9050A by Ion Selective Electrode (ISE)	10198808
Aqueous	
Specific Conductance (Conductivity)	1610
EPA 9060A by TOC Analyzer	10244823
Aqueous	
Total Organic Carbon (TOC)	2040
Solid	
Total Organic Carbon (TOC)	2040
EPA 9066 by Colorimetry	10200609
Aqueous	
Phenolics (Total Recoverable)	1905
Solid	
Phenolics (Total Recoverable)	1905
EPA 9071B by Gravimetry	10201602
Solid	
n-Hexane Extractable Material (HEM) (O&G)	1803
Total Petroleum Hydrocarbons (TPH)	1803
EPA 9095B by Gravimetry	10245600
Solid	
Paint Filter Liquids Test	1434
NJEPH (C8-C44) by Gravimetry	90014258
Aqueous	
Extractable Petroleum Hydrocarbons (EPH)	3797
Solid	
Extractable Petroleum Hydrocarbons (EPH)	3797
SM 2130B-11 (23rd Edition) by Turbidimetry	20048220
Aqueous	
Turbidity	2055
SM 2320B-11 (23rd Edition) by Titrimetry	20045618
Aqueous	
Alkalinity (as CaCO3)	1505
SM 2340B-11 (23rd Edition) by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	20046611
Aqueous	
Hardness (as CaCO3) (Calc)	1550
Hardness (Total, as CaCO3, By Calc)	1755

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	Code
General Chemistry	
SM 2340B-11 (23rd Edition) by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	20046611
Solid	
Hardness (as CaCO3) (Calc)	1550
Hardness (Total, as CaCO3, By Calc)	1755
SM 2540C-15 (23rd Edition) by Gravimetry	20050413
Aqueous	
Solids (Total Dissolved, TDS)	1955
SM 2540D-15 (23rd Edition) by Gravimetry	20051212
Aqueous	
Solids (Total Suspended (TSS), Non-Filterable Residue)	1960
SM 2540G-11&15 (23rd Edition) by Gravimetry	20005270
Solid (as Aqueous)	
Solids (Total)	1970
SM 3500 Fe B-11 (23rd Edition) by Colorimetry	20068819
Aqueous	
Ferrous Iron (Fe II)	1073
SM 4500-S2 F-11 (23rd Edition) by Titrimetry	20126663
Aqueous	
Sulfide	2005
SM 5210B-16 (23rd Edition) by 5-Day BOD Test	20135266
Aqueous	
Biochemical Oxygen Demand (BOD)	1530
SM 5210B-16 (23rd Edition) by Electrochemical Electrode	20135266
Aqueous	
Carbonaceous Biochemical Oxygen Demand (CBOD)	1555
SM 5310B-14 (23rd Edition) by TOC Analyzer (Combustion/IR)	20137820
Aqueous	
Total Organic Carbon (TOC)	2040
SW846 7.3.4.2 by Colorimetry	10245702
Aqueous	
Sulfide (Reactive)	1925
Solid	
Sulfide (Reactive)	1925
Inorganic	
ASTM D6919-17 by Ion Chromatography (IC)	30032952
Aqueous	
Ammonia (as N)	1515

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	Code
Inorganic	
ASTM D6919-17 by Ion Chromatography (IC)	30032952
Solid	
Ammonia (as N)	1515
EPA 1631E by Cold Vapor Atomic Absorption Spectrophotometry (CVAAS)	10237204
Aqueous	
Mercury (Low Level)	1095
EPA 200.7 by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10013806
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silica (as SiO2)	1990
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
EPA 200.8 by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10014605
Aqueous	
Aluminum	1000

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	Code
Inorganic	
EPA 200.8 by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10014605
Aqueous	
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Cadmium	1030
Chromium	1040
Cobalt	1050
Copper	1055
Lead	1075
Manganese	1090
Molybdenum	1100
Nickel	1105
Selenium	1140
Silver	1150
Thallium	1165
Vanadium	1185
Zinc	1190
EPA 218.6 by Ion Chromatography (IC)	10028009
Aqueous	
Chromium (Hexavalent)	1045
EPA 245.1 by Cold Vapor Atomic Absorption Spectrophotometry (CVAAS)	10036609
Aqueous	
Mercury	1095
EPA 300.0 by Ion Chromatography (IC)	10053200
Aqueous	
Bromide	1540
Chloride	1575
Fluoride	1730
Nitrate (as N)	1810
Nitrite (as N)	1840
Sulfate	2000
Solid	
Bromide	1540
Chloride	1575
Fluoride	1730
Nitrate (as N)	1810

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	Code
Inorganic	
EPA 300.0 by Ion Chromatography (IC)	10053200
Solid	
Nitrite (as N)	1840
Sulfate	2000
EPA 314.0 by Ion Chromatography (IC)	10277006
Aqueous	
Perchlorate	1895
EPA 365.1 by Spectrophotometry	10070005
Aqueous	
Phosphorous (Total)	1910
Solid	
Phosphorous (Total)	1910
EPA 410.4 by Colorimetry	10077404
Aqueous	
Chemical Oxygen Demand (COD)	1565
EPA 5540C by Spectrophotometry	20145066
Aqueous	
Surfactants (MBAS)	2025
EPA 6010C by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155905
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Bismuth	1023
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Lithium	1080
Magnesium	1085
Manganese	1090
Molybdenum	1100

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	Code
Inorganic	
EPA 6010C by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155905
Aqueous	
Nickel	1105
Potassium	1125
Selenium	1140
Silica (as SiO2)	1990
Silver	1150
Sodium	1155
Strontium	1160
Sulfur	2017
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Bismuth	1023
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Lithium	1080
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silica (as SiO2)	1990

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	Code
Inorganic	
EPA 6010C by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155905
Solid	
Silver	1150
Sodium	1155
Strontium	1160
Sulfur	2017
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
EPA 6010D by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155916
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Bismuth	1023
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Lithium	1080
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silica (as SiO2)	1990
Silver	1150
Sodium	1155
Strontium	1160

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	Code
Inorganic	
EPA 6010D by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155916
Aqueous	
Sulfur	2017
Thallium	1165
Tin	1175
Titanium	1180
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Bismuth	1023
Boron	1025
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Lithium	1080
Magnesium	1085
Manganese	1090
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silica (as SiO2)	1990
Silver	1150
Sodium	1155
Strontium	1160
Sulfur	2017
Thallium	1165
Tin	1175
Titanium	1180

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Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6010D by Inductively Coupled Plasma Optical Emission Spectrometry (ICP/OES)	10155916
Solid	
Vanadium	1185
Zinc	1190
EPA 6020A by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156419
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Mercury	1095
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Uranium	3055
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010

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	Code
Inorganic	
EPA 6020A by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156419
Solid	
Barium	1015
Beryllium	1020
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Mercury	1095
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Uranium	3055
Vanadium	1185
Zinc	1190
EPA 6020B by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156420
Aqueous	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050

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Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6020B by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156420
Aqueous	
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Mercury	1095
Molybdenum	1100
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Uranium	3055
Vanadium	1185
Zinc	1190
Solid	
Aluminum	1000
Antimony	1005
Arsenic	1010
Barium	1015
Beryllium	1020
Cadmium	1030
Calcium	1035
Chromium	1040
Cobalt	1050
Copper	1055
Iron	1070
Lead	1075
Magnesium	1085
Manganese	1090
Mercury	1095
Molybdenum	1100

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Accreditation is granted to the facility to perform the following testing:

	Code
Inorganic	
EPA 6020B by Inductively Coupled Plasma Mass Spectrometry (ICP/MS)	10156420
Solid	
Nickel	1105
Potassium	1125
Selenium	1140
Silver	1150
Sodium	1155
Strontium	1160
Thallium	1165
Tin	1175
Titanium	1180
Uranium	3055
Vanadium	1185
Zinc	1190
EPA 7196A by Spectrophotometry	10162400
Aqueous	
Hexavalent Chromium (Cr VI)	1045
Solid	
Hexavalent Chromium (Cr VI)	1045
EPA 7470A by Cold Vapor Atomic Absorption Spectrophotometry (CVAAS)	10165807
Aqueous	
Mercury	1095
EPA 7471B by Cold Vapor Atomic Absorption Spectrophotometry (CVAAS)	10166402
Solid	
Mercury	1095
EPA 9056A by Ion Chromatography (IC)	10199607
Aqueous	
Bromide	1540
Chloride	1575
Fluoride	1730
Nitrate (as N)	1810
Nitrite (as N)	1840
Sulfate	2000
Solid	
Bromide	1540
Chloride	1575
Fluoride	1730
Nitrate (as N)	1810

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	Code
Inorganic	
EPA 9056A by Ion Chromatography (IC)	10199607
Solid	
Nitrite (as N)	1840
Sulfate	2000
Kelada-01 by Spectrophotometry	60005303
Aqueous	
Cyanide (Amenable)	1510
Cyanide (Total)	1645
SM 4500 NH3G-11 (23rd Edition) by Spectrophotometry	20111415
Aqueous	
Total Kjeldahl Nitrogen (TKN)	1795
Solid	
Total Kjeldahl Nitrogen (TKN)	1795
SM 4500 PE-11 (23rd Edition) by Spectrophotometry	20124225
Aqueous	
Orthophosphate (as P)	1870
Organic	
EPA 522 by Gas Chromatography Mass Spectrometry (GC/MS)	10088570
Aqueous	
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
EPA 608.3 by Gas Chromatography Electron Capture Detector (GC/ECD)	10296625
Aqueous	
4,4'-DDD	7355
4,4'-DDE	7360
4,4'-DDT	7365
Aldrin	7025
alpha-BHC (a-BHC, alpha-Hexachlorocyclohexane)	7110
alpha-Chlordane (cis-Chlordane)	7240
Aroclor 1016	8880
Aroclor 1221	8885
Aroclor 1232	8890
Aroclor 1242	8895
Aroclor 1248	8900
Aroclor 1254	8905
Aroclor 1260	8910
Aroclor 1262	8912
Aroclor 1268	8913
beta-BHC (b-BHC, beta-Hexachlorocyclohexane)	7115

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	Code
Organic	
EPA 608.3 by Gas Chromatography Electron Capture Detector (GC/ECD)	10296625
Aqueous	
Chlordane (Technical)	7250
delta-BHC (d-BHC)	7105
Dieldrin	7470
Endosulfan I	7510
Endosulfan II	7515
Endosulfan Sulfate	7520
Endrin	7540
Endrin Aldehyde	7530
Endrin Ketone	7535
gamma-BHC (γ-BHC, Lindane)	7120
gamma-chlordane	7245
Heptachlor	7685
Heptachlor Epoxide	7690
Methoxychlor	7810
Mirex	7870
Toxaphene	8250
EPA 624.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10298121
Aqueous	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloro-2-Propanone	7450
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromo-3-Chloropropane (DBCP)	4570
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloropropane	4655

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 624.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10298121
Aqueous	
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,4-Dichlorobenzene	4620
1-Chlorobutane	4480
1-Chlorohexane	4510
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
2-Nitropropane	5020
4-Chlorotoluene (p-Chlorotoluene)	4540
4-Isopropyltoluene (p-Cymene)	4910
4-Methyl-2-Pentanone (MIBK)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Allyl Chloride (3-Chloropropene)	4355
Benzene	4375
Benzyl chloride	5635
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Bromomethane (Methyl Bromide)	4950
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chloroacetonitrile	4470
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
Chloromethane (Methyl Chloride)	4960
Chloroprene (2-Chloro-1,3-Butadiene)	4525

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	Code
Organic	
EPA 624.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10298121
Aqueous	
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Cyclohexane	4555
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Dichlorofluoromethane (Freon 21)	4627
Diethyl Ether	4725
di-Isobutylene	4877
Di-Isopropylether (DIPE)	9375
Ethyl acetate	4755
Ethyl Methacrylate	4810
Ethylbenzene	4765
Ethyl-tert-butylether (ETBE) (2-Ethoxy-2-methylpropane)	4770
Heptane	4825
Hexachlorobutadiene	4835
Hexachloroethane	4840
Iodomethane (Methyl Iodide)	4870
Isopropyl Alcohol (IPA, 2-Propanol, Isopropanol)	4895
Isopropylbenzene (Cumene)	4900
m,p-Xylene	5240
Methacrylonitrile	4925
Methyl Acetate	4940
Methyl Acrylate	4945
Methyl Methacrylate	4990
Methyl tert Butyl Ether (MTBE)	5000
Methylcyclohexane	4965
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Hexane	4855
Nitrobenzene	5015
n-Octane (Octane)	5027
n-Pentane (Pentane)	5028
n-Propanol (1-Propanol)	5055
n-Propylbenzene (Propylbenzene, 1-phenylpropane)	5090
n-Propylbromide	3877

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	Code
Organic	
EPA 624.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10298121
Aqueous	
o-Xylene (1,2-Xylene)	5250
Pentachloroethane	5035
Propionitrile (Ethyl Cyanide)	5080
sec-Butylbenzene	4440
Styrene	5100
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene	5115
Tetrahydrofuran (THF)	5120
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
trans-1,4-Dichloro-2-Butene	4605
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
EPA 625.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10300024
Aqueous	
1,1´-Biphenyl (Biphenyl)	6703
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,2-Dinitrobenzene (1,2-DNB)	6155
1,2-Diphenylhydrazine	6220
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dinitrobenzene (1,3-DNB)	6160
1,4-Dichlorobenzene	4620
1,4-Dinitrobenzene (1,4-DNB)	6165
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
1-Methylnaphthalene	6380
2,2'-Oxybis(1-Chloropropane)	4659
2,2'-Oxybis(1-Chloropropane) (was bis(2-Chloroiospropyl)ether)	4659
2,3,4,6-Tetrachlorophenol	6735

ALS - Middletown
301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 625.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10300024
Aqueous	
2,3,5,6-Tetrachlorophenol	6740
2,3-Dichloroaniline	9363
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dichlorophenol	6005
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Naphthylamine	6430
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3+4-Methylphenol (m+p Cresol)	6412
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl-phenylether	5825
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Acetophenone	5510
alpha-Terpineol	6700
Aniline	5545
Anthracene	5555
Atrazine	7065
Azobenzene (1,2-Diphenylhydrazine)	5562
Benzaldehyde	5570

ALS - Middletown
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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 625.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10300024
Aqueous	
Benzidine	5595
Benzo(a)anthracene	5575
Benzo(a)pyrene	5580
Benzo(b)fluoranthene	5585
Benzo(g,h,i)perylene	5590
Benzo(k)fluoranthene	5600
Benzyl Alcohol	5630
Bis(2-chloroethoxy)methane	5760
bis(2-Chloroethyl)ether	5765
bis(2-ethylhexy)phthalate (DEHP)	6065
bis(2-Ethylhexyl)adipate	6062
Butyl Benzyl Phthalate	5670
Caprolactam	7180
Carbazole	5680
Chrysene	5855
Dibenz(a,h)anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethoate	7475
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
di-n-octyl Phthalate	6200
Diphenylamine	6205
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3,cd)pyrene	6315
Isophorone	6320
Naphthalene	5005
n-Decane	4435
n-Heptadecane	9515
Nitrobenzene	5015
n-Nitrosodiethylamine	6525

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	Code
Organic	
EPA 625.1 by Gas Chromatography Mass Spectrometry (GC/MS)	10300024
Aqueous	
n-Nitrosodimethylamine	6530
n-Nitroso-di-n-Butylamine	5025
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
n-Nitrosopyrrolidine	6565
n-Octadecane	6580
Pentachlorobenzene	6590
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
EPA 7580 by Gas Chromatography Flame Photometric Detector (GC/FPD)	10168204
Aqueous	
White Phosphorus (Elemental Phosphorus)	1715
Solid	
White Phosphorus (Elemental Phosphorus)	1715
EPA 8011 by Gas Chromatography Electron Capture Detector (GC/ECD)	10173009
Aqueous	
1,2,3-Trichloropropane (TCP)	5180
1,2-Dibromo-3-Chloropropane (DBCP)	4570
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
EPA 8015C by Gas Chromatography Flame Ionization Detection (GC/FID)	10173816
Aqueous	
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Ethanol	4750
Ethyl Acetate	4755
Ethylene Glycol	4785
Isoamyl Alcohol	4546
Isopropyl Alcohol (IPA, 2-Propanol, Isopropanol)	4895
Methanol	4930
n-Butyl Alcohol (1-Butanol, n-Butanol)	4425
n-Propanol (1-Propanol)	5055
Propylene Glycol	6657
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8015D by Gas Chromatography Flame Ionization Detection (GC/FID)	10305609
Aqueous	
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
4-Methyl-2-Pentanone (Methyl Isobutyl Ketone (MIBK), Hexone)	4995
Ethanol	4750
Ethyl Acetate	4755
Ethylene Glycol	4785
Isoamyl Alcohol	4546
Isopropyl Alcohol (IPA, 2-Propanol, Isopropanol)	4895
Methanol	4930
n-Butyl Alcohol (1-Butanol, n-Butanol)	4425
n-Propanol (1-Propanol)	5055
Oil Range Organics (ORO)	9526
Propylene Glycol	6657
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
TPH Diesel (DRO)	9369
TPH Gasoline (GRO)	9408
Solid	
Oil Range Organics (ORO)	9526
TPH Diesel (DRO)	9369
TPH Gasoline (GRO)	9408
EPA 8081B by Gas Chromatography Electron Capture Detector (GC/ECD)	10178800
Aqueous	
4,4'-DDD	7355
4,4'-DDE	7360
4,4'-DDT	7365
Aldrin	7025
alpha-BHC (a-BHC, alpha-Hexachlorocyclohexane)	7110
alpha-Chlordane (cis-Chlordane)	7240
beta-BHC (b-BHC, beta-Hexachlorocyclohexane)	7115
Chlordane (Technical)	7250
delta-BHC (d-BHC)	7105
Dieldrin	7470
Endosulfan I	7510
Endosulfan II	7515
Endosulfan Sulfate	7520
Endrin	7540
Endrin Aldehyde	7530

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	Code
Organic	
EPA 8081B by Gas Chromatography Electron Capture Detector (GC/ECD)	10178800
Aqueous	
Endrin Ketone	7535
gamma-BHC (γ-BHC, Lindane)	7120
gamma-Chlordane	7245
Heptachlor	7685
Heptachlor Epoxide	7690
Methoxychlor	7810
Mirex	7870
Toxaphene (Chlorinated Camphene)	8250
Solid	
4,4'-DDD	7355
4,4'-DDE	7360
4,4'-DDT	7365
Aldrin	7025
alpha-BHC (a-BHC, alpha-Hexachlorocyclohexane)	7110
alpha-Chlordane (cis-Chlordane)	7240
beta-BHC (b-BHC, beta-Hexachlorocyclohexane)	7115
Chlordane (Technical)	7250
delta-BHC (d-BHC)	7105
Dieldrin	7470
Endosulfan I	7510
Endosulfan II	7515
Endosulfan Sulfate	7520
Endrin	7540
Endrin Aldehyde	7530
Endrin Ketone	7535
gamma-BHC (γ-BHC, Lindane)	7120
gamma-Chlordane	7245
Heptachlor	7685
Heptachlor Epoxide	7690
Methoxychlor	7810
Mirex	7870
Toxaphene (Chlorinated Camphene)	8250
EPA 8082A by Gas Chromatography Electron Capture Detector (GC/ECD)	10179201
Aqueous	
Aroclor 1016	8880
Aroclor 1221	8885

ALS - Middletown
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	Code
Organic	
EPA 8082A by Gas Chromatography Electron Capture Detector (GC/ECD)	10179201
Aqueous	
Aroclor 1232	8890
Aroclor 1242	8895
Aroclor 1248	8900
Aroclor 1254	8905
Aroclor 1260	8910
Aroclor 1262	8912
Aroclor 1268	8913
Solid	
Aroclor 1016	8880
Aroclor 1221	8885
Aroclor 1232	8890
Aroclor 1242	8895
Aroclor 1248	8900
Aroclor 1254	8905
Aroclor 1260	8910
Aroclor 1262	8912
Aroclor 1268	8913
EPA 8151A by Gas Chromatography Electron Capture Detector (GC/ECD)	10183207
Aqueous	
2,4,5-T	8655
2,4-DB	8560
2,4-Dichlorophenoxyacetic Acid (2,4-D)	8545
4-Nitrophenol	6500
Dalapon	8555
Dicamba	8595
Dichloroprop (2,4-DP)	8605
Dinoseb (2-sec-Butyl-4,6-Dinitrophenol, DNBP)	8620
MCPA	7775
MCPP	7780
Pentachlorophenol (PCP)	6605
Silvex (2,4,5-TP)	8650
Solid	
2,4,5-T	8655
2,4-DB	8560
2,4-Dichlorophenoxyacetic Acid (2,4-D)	8545
4-Nitrophenol	6500

Certificate of Accreditation: Supplement

ALS - Middletown
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Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8151A by Gas Chromatography Electron Capture Detector (GC/ECD)	10183207
Solid	
Dalapon	8555
Dicamba	8595
Dichloroprop (2,4-DP)	8605
Dinoseb (2-sec-Butyl-4,6-Dinitrophenol, DNBP)	8620
MCPA	7775
MCPP	7780
Pentachlorophenol (PCP)	6605
Silvex (2,4,5-TP)	8650
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloro-2-Propanone	7450
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromo-3-Chloropropane (DBCP)	4570
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloroethene (Total, cis & trans)	4705
1,2-Dichloropropane	4655
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,3-Dichloropropene	4675
1,4-Dichlorobenzene	4620
1-Chlorobutane	4480
1-Chlorohexane	4510

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	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
2-Nitropropane	5020
4-Isopropyltoluene (p-Cymene)	4910
4-Methyl-2-Pentanone (MIBK)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Allyl Chloride (3-Chloropropene)	4355
Benzene	4375
Benzyl Chloride	5635
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Bromomethane (Methyl Bromide)	4950
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chloroacetonitrile	4470
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
Chloromethane (Methyl Chloride)	4960
Chloroprene (2-Chloro-1,3-Butadiene)	4525
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Cyclohexane	4555
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Dichlorofluoromethane (Freon 21)	4627
Diethyl Ether	4725

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Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
Diisobutylene (2,4,4-Trimethyl-l-Pentene)	4689
Diisopropyl Ether (Propane)	NR
Ethyl Acetate	4755
Ethyl Methacrylate	4810
Ethyl tert-Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Heptane	4825
Hexachlorobutadiene	4835
Hexachloroethane	4840
Iodomethane (Methyl Iodide)	4870
Isopropyl Alcohol (IPA, 2-Propanol, Isopropanol)	4895
Isopropylbenzene (Cumene)	4900
m,p-Xylene	5240
Methacrylonitrile	4925
Methyl Acetate	4940
Methyl Acrylate	4945
Methyl Methacrylate	4990
Methyl tert Butyl Ether (MTBE)	5000
Methylcyclohexane	4965
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Hexane	4855
Nitrobenzene	5015
n-Octane (Octane)	5027
n-Pentane (Pentane)	5028
n-Propanol (1-Propanol)	5055
n-Propylbenzene (Propylbenzene, 1-phenylpropane)	5090
o-Xylene (1,2-Xylene)	5250
Pentachloroethane	5035
Propionitrile (Ethyl Cyanide)	5080
sec-Butylbenzene	4440
Stryene	5100
tert-Amyl Alcohol (TAA, 2-Methyl-2-But)	4368
tert-Amyl Ethyl Ether (TAEE)	4369
tert-Amyl Methyl Ether (TAME)	4370

ALS - Middletown
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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Aqueous	
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene	5115
Tetrahydrofuran (THF)	5120
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
trans-1,4-Dichloro-2-Butene	4605
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
Solid	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloro-2-Propanone	7450
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromo-3-Chloropropane (DBCP)	4570
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloroethene (Total, cis & trans)	4705
1,2-Dichloropropane	4655
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660

ALS - Middletown
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	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Solid	
1,3-Dichloropropene	4675
1,4-Dichlorobenzene	4620
1-Chlorobutane	4480
1-Chlorohexane	4510
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
2-Nitropropane	5020
4-Isopropyltoluene (p-Cymene)	4910
4-Methyl-2-Pentanone (MIBK)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Allyl Chloride (3-Chloropropene)	4355
Benzyl Chloride	5635
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Bromomethane (Methyl Bromide)	4950
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chloroacetonitrile	4470
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
Chloromethane (Methyl Chloride)	4960
Chloroprene (2-Chloro-1,3-Butadiene)	4525
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Cyclohexane	4555
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625

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	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Solid	
Dichlorofluoromethane (Freon 21)	4627
Diethyl Ether	4725
Diisobutylene (2,4,4-Trimethyl-l-Pentene)	4689
Diisopropyl Ether (Propane)	NR
Ethyl Acetate	4755
Ethyl Methacrylate	4810
Ethyl tert-Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Heptane	4825
Hexachlorobutadiene	4835
Hexachloroethane	4840
Iodomethane (Methyl Iodide)	4870
Isopropyl Alcohol (IPA, 2-Propanol, Isopropanol)	4895
Isopropylbenzene (Cumene)	4900
m,p-Xylene	5240
Methacrylonitrile	4925
Methyl Acetate	4940
Methyl Acrylate	4945
Methyl Methacrylate	4990
Methyl tert Butyl Ether (MTBE)	5000
Methylcyclohexane	4965
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Hexane	4855
Nitrobenzene	5015
n-Octane (Octane)	5027
n-Pentane (Pentane)	5028
n-Propanol (1-Propanol)	5055
n-Propylbenzene (Propylbenzene, 1-phenylpropane)	5090
o-Xylene (1,2-Xylene)	5250
Pentachloroethane	5035
Propionitrile (Ethyl Cyanide)	5080
sec-Butylbenzene	4440
Stryene	5100
tert-Amyl Alcohol (TAA, 2-Methyl-2-But)	4368

ALS - Middletown
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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260C by Gas Chromatography Mass Spectrometry (GC/MS)	10307003
Solid	
tert-Amyl Ethyl Ether (TAEE)	4369
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene	5115
Tetrahydrofuran (THF)	5120
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
trans-1,4-Dichloro-2-Butene	4605
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Aqueous	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloro-2-Propanone	7450
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromo-3-Chloropropane (DBCP)	4570
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloroethene (Total, cis & trans)	4705
1,2-Dichloropropane	4655

ALS - Middletown
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	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Aqueous	
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,3-Dichloropropene	4675
1,4-Dichlorobenzene	4620
1-Chlorobutane	4480
1-Chlorohexane	4510
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chloroethyl Vinyl Ether	4500
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
2-Nitropropane	5020
4-Isopropyltoluene (p-Cymene)	4910
4-Methyl-2-Pentanone (MIBK)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Allyl Chloride (3-Chloropropene)	4355
Benzene	4375
Benzyl Chloride	5635
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Bromomethane (Methyl Bromide)	4950
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chloroacetonitrile	4470
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485
Chloroform	4505
Chloromethane (Methyl Chloride)	4960
Chloroprene (2-Chloro-1,3-Butadiene)	4525

ALS - Middletown
301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Aqueous	
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Cyclohexane	4555
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Dichlorofluoromethane (Freon 21)	4627
Diethyl Ether	4725
Diisobutylene (2,4,4-Trimethyl-l-Pentene)	4689
Diisopropyl Ether (Propane)	NR
Ethyl Acetate	4755
Ethyl Methacrylate	4810
Ethyl tert-Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Heptane	4825
Hexachlorobutadiene	4835
Hexachloroethane	4840
Iodomethane (Methyl Iodide)	4870
Isopropyl Alcohol (IPA, 2-Propanol, Isopropanol)	4895
Isopropylbenzene (Cumene)	4900
m,p-Xylene	5240
Methacrylonitrile	4925
Methyl Acetate	4940
Methyl Acrylate	4945
Methyl Methacrylate	4990
Methyl tert Butyl Ether (MTBE)	5000
Methylcyclohexane	4965
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Hexane	4855
Nitrobenzene	5015
n-Octane (Octane)	5027
n-Pentane (Pentane)	5028
n-Propanol (1-Propanol)	5055
n-Propylbenzene (Propylbenzene, 1-phenylpropane)	5090
o-Xylene (1,2-Xylene)	5250

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Aqueous	
Pentachloroethane	5035
Propionitrile (Ethyl Cyanide)	5080
sec-Butylbenzene	4440
Stryene	5100
tert-Amyl Alcohol (TAA, 2-Methyl-2-But)	4368
tert-Amyl Ethyl Ether (TAEE)	4369
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene	5115
Tetrahydrofuran (THF)	5120
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
trans-1,4-Dichloro-2-Butene	4605
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
Solid	
1,1,1,2-Tetrachloroethane	5105
1,1,1-Trichloroethane	5160
1,1,2,2-Tetrachloroethane	5110
1,1,2-Trichloro-1,2,2-Trifluoroethane (Trichlorotrifluoroethane, Freon 113)	5185
1,1,2-Trichloroethane	5165
1,1-Dichloro-2-Propanone	7450
1,1-Dichloroethane	4630
1,1-Dichloroethylene	4640
1,1-Dichloropropene	4670
1,2,3-Trichlorobenzene	5150
1,2,3-Trichloropropane (TCP)	5180
1,2,4-Trichlorobenzene	5155
1,2,4-Trimethylbenzene	5210
1,2-Dibromo-3-Chloropropane (DBCP)	4570
1,2-Dibromoethane (EDB, Ethylene Dibromide)	4585

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Solid	
1,2-Dichlorobenzene	4610
1,2-Dichloroethane (Ethylene Dichloride, EDC)	4635
1,2-Dichloroethene (Total, cis & trans)	4705
1,2-Dichloropropane	4655
1,3,5-Trimethylbenzene	5215
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dichloropropane	4660
1,3-Dichloropropene	4675
1,4-Dichlorobenzene	4620
1-Chlorobutane	4480
1-Chlorohexane	4510
2,2-Dichloropropane	4665
2-Butanone (Methyl Ethyl Ketone, MEK)	4410
2-Chlorotoluene	4535
2-Hexanone (Methyl Butyl Ketone, MBK)	4860
2-Nitropropane	5020
4-Isopropyltoluene (p-Cymene)	4910
4-Methyl-2-Pentanone (MIBK)	4995
Acetone	4315
Acetonitrile	4320
Acrolein (Propenal)	4325
Acrylonitrile	4340
Allyl Chloride (3-Chloropropene)	4355
Benzene	4375
Benzyl Chloride	5635
Bromobenzene	4385
Bromochloromethane	4390
Bromodichloromethane	4395
Bromoform	4400
Bromomethane (Methyl Bromide)	4950
Carbon Disulfide	4450
Carbon Tetrachloride	4455
Chloroacetonitrile	4470
Chlorobenzene	4475
Chlorodibromomethane (Dibromochloromethane)	4575
Chloroethane (Ethyl Chloride)	4485

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Solid	
Chloroform	4505
Chloromethane (Methyl Chloride)	4960
Chloroprene (2-Chloro-1,3-Butadiene)	4525
cis-1,2-Dichloroethylene	4645
cis-1,3-Dichloropropene	4680
Cyclohexane	4555
Dibromomethane (Methylene Bromide)	4595
Dichlorodifluoromethane (Freon 12)	4625
Dichlorofluoromethane (Freon 21)	4627
Diethyl Ether	4725
Diisobutylene (2,4,4-Trimethyl-l-Pentene)	4689
Diisopropyl Ether (Propane)	NR
Ethyl Acetate	4755
Ethyl Methacrylate	4810
Ethyl tert-Butyl Ether (ETBE, 2-Ethoxy-2-Methylpropane)	4770
Ethylbenzene	4765
Heptane	4825
Hexachlorobutadiene	4835
Hexachloroethane	4840
Iodomethane (Methyl Iodide)	4870
Isopropyl Alcohol (IPA, 2-Propanol, Isopropanol)	4895
Isopropylbenzene (Cumene)	4900
m,p-Xylene	5240
Methacrylonitrile	4925
Methyl Acetate	4940
Methyl Acrylate	4945
Methyl Methacrylate	4990
Methyl tert Butyl Ether (MTBE)	5000
Methylcyclohexane	4965
Methylene Chloride (Dichloromethane)	4975
Naphthalene	5005
n-Butylbenzene	4435
n-Hexane	4855
Nitrobenzene	5015
n-Octane (Octane)	5027
n-Pentane (Pentane)	5028

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8260D by Gas Chromatography Mass Spectrometry (GC/MS)	10307127
Solid	
n-Propanol (1-Propanol)	5055
n-Propylbenzene (Propylbenzene, 1-phenylpropane)	5090
o-Xylene (1,2-Xylene)	5250
Pentachloroethane	5035
Propionitrile (Ethyl Cyanide)	5080
sec-Butylbenzene	4440
Stryene	5100
tert-Amyl Alcohol (TAA, 2-Methyl-2-But)	4368
tert-Amyl Ethyl Ether (TAEE)	4369
tert-Amyl Methyl Ether (TAME)	4370
tert-Butyl Alcohol (TBA, 2-Methyl-2-Propanol, t-Butanol)	4420
tert-Butylbenzene	4445
Tetrachloroethene	5115
Tetrahydrofuran (THF)	5120
Toluene	5140
trans-1,2-Dichloroethylene	4700
trans-1,3-Dichloropropylene	4685
trans-1,4-Dichloro-2-Butene	4605
Trichloroethene (TCE, Trichloroethylene)	5170
Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	5175
Vinyl Acetate	5225
Vinyl Chloride (Chloroethene)	5235
Xylenes (Total)	5260
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
1,1´-Biphenyl (Biphenyl)	6703
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,2-Dinitrobenzene (1,2-DNB)	6155
1,2-Diphenylhydrazine	6220
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dinitrobenzene (1,3-DNB)	6160
1,4-Dichlorobenzene	4620
1,4-Dinitrobenzene (1,4-DNB)	6165
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
1-Methylnaphthalene	6380
2,2-Oxybis(2-Chloropropane) (Bis(2-Chloroisopropyl)ether)	5780
2,3,4,6-Tetrachlorophenol	6735
2,3,5,6-Tetrachlorophenol	6740
2,3,7,8-Tetrachlorodibenzo-p-Dioxin (2,3,7,8-TCDD, Qualitative Screen)	9619
2,3-Dichloroaniline	9363
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dichlorophenol	6005
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Naphthylamine	6430
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3′-Dichlorobenzidine	5945
3+4-Methylphenol (m+p Cresol)	6412
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Acetophenone	5510
Alpha-Terpineol	6700
Aniline	5545

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
Anthracene	5555
Atrazine	7065
Azobenzene (1,2-Diphenylhydrazine)	5562
Benzaldehyde	5570
Benzidine	5595
Benzo(a)anthracene	5575
Benzo(a)pyrene	5580
Benzo(b)fluoranthene	5585
Benzo(g,h,i)perylene	5590
Benzo(k)fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
Bis(2-Chloroethoxy) Ether	NR
Bis(2-chloroethoxy)methane	5760
Bis(2-Chloroethyl)ether	5765
bis(2-ethylhexy)phthalate (DEHP)	6065
bis(2-Ethylhexyl)adipate	6062
Butyl Benzyl Phthalate	5670
Caprolactam	7180
Carbazole	5680
Chrysene	5855
Dibenz(a,h)anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethoate	7475
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
Di-n-octyl Phthalate	6200
Diphenylamine	6205
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3,cd)pyrene	6315

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301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Aqueous	
Isophorone	6320
Naphthalene	5005
n-Decane	5875
n-Heptadecane	9515
Nitrobenzene	5015
n-Nitrosodiethylamine	6525
n-Nitrosodimethylamine	6530
n-Nitroso-di-n-Butylamine	5025
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
n-Nitrosopyrrolidine	6565
n-Octadecane	6580
Pentachlorobenzene	6590
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
Solid	
1,1´-Biphenyl (Biphenyl)	6703
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,2-Dinitrobenzene (1,2-DNB)	6155
1,2-Diphenylhydrazine	6220
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dinitrobenzene (1,3-DNB)	6160
1,4-Dichlorobenzene	4620
1,4-Dinitrobenzene (1,4-DNB)	6165
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
1-Methylnaphthalene	6380
2,2-Oxybis(2-Chloropropane) (Bis(2-Chloroisopropyl)ether)	5780
2,3,4,6-Tetrachlorophenol	6735
2,3,5,6-Tetrachlorophenol	6740
2,3,7,8-Tetrachlorodibenzo-p-Dioxin (2,3,7,8-TCDD, Qualitative Screen)	9619
2,3-Dichloroaniline	9363

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Solid	
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dichlorophenol	6005
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Naphthylamine	6430
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3+4-Methylphenol (m+p Cresol)	6412
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Acetophenone	5510
Alpha-Terpineol	6700
Aniline	5545
Anthracene	5555
Atrazine	7065
Azobenzene (1,2-Diphenylhydrazine)	5562
Benzaldehyde	5570
Benzidine	5595
Benzo(a)anthracene	5575

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Solid	
Benzo(a)pyrene	5580
Benzo(b)fluoranthene	5585
Benzo(g,h,i)perylene	5590
Benzo(k)fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
Bis(2-Chloroethoxy) Ether	NR
Bis(2-chloroethoxy)methane	5760
Bis(2-Chloroethyl)ether	5765
bis(2-ethylhexy)phthalate (DEHP)	6065
bis(2-Ethylhexyl)adipate	6062
Butyl Benzyl Phthalate	5670
Caprolactam	7180
Carbazole	5680
Chrysene	5855
Dibenz(a,h)anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethoate	7475
Dimethyl Phthalate	6135
di-n-Butyl Phthalate	5925
Di-n-octyl Phthalate	6200
Diphenylamine	6205
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3,cd)pyrene	6315
Isophorone	6320
Naphthalene	5005
n-Decane	5875
n-Heptadecane	9515
Nitrobenzene	5015
n-Nitrosodiethylamine	6525

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D by Gas Chromatography Mass Spectrometry (GC/MS)	10186002
Solid	
n-Nitrosodimethylamine	6530
n-Nitroso-di-n-Butylamine	5025
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
n-Nitrosopyrrolidine	6565
n-Octadecane	6580
Pentachlorobenzene	6590
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
Resorcinol	6680
EPA 8270D SIM by Gas Chromatography Mass Spectrometry (GC/MS) Selective Ion Monitoring (SIM)	10242509
Aqueous	
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
1-Methylnaphthalene	6380
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Methylnaphthalene	6385
Acenaphthene	5500
Acenaphthylene	5505
Anthracene	5555
Benzo(a)Anthracene	5575
Benzo(a)pyrene	5580
Benzo(b)fluoranthene	5585
Benzo(g,h,i)perylene	5590
Benzo(k)fluoranthene	5600
Bis(2-Chloroethyl)ether	5765
Chrysene	5855
Dibenz(a,h)anthracene	5895
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Indeno(1,2,3,cd)pyrene	6315
Naphthalene	5005

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270D SIM by Gas Chromatography Mass Spectrometry (GC/MS) Selective Ion Monitoring (SIM)	10242509
Aqueous	
Phenanthrene	6615
Pyrene	6665
Solid	
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
1-Methylnaphthalene	6380
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Methylnaphthalene	6385
Acenaphthene	5500
Acenaphthylene	5505
Anthracene	5555
Benzo(a)anthracene	5575
Benzo(a)pyrene	5580
Benzo(b)fluoranthene	5585
Benzo(g,h,i)perylene	5590
Benzo(k)fluoranthene	5600
Bis(2-Chloroethyl)ether	5765
Chrysene	5855
Dibenz(a,h)anthracene	5895
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Indeno(1,2,3,cd)pyrene	6315
Naphthalene	5005
Phenanthrene	6615
Pyrene	6665
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Aqueous	
1,1′-Biphenyl (Biphenyl)	6703
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,2-Dinitrobenzene (1,2-DNB)	6155
1,2-Diphenylhydrazine	6220
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dinitrobenzene (1,3-DNB)	6160

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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Aqueous	
1,4-Dichlorobenzene	4620
1,4-Dinitrobenzene (1,4-DNB)	6165
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
1-Methylnaphthalene	6380
2,2-Oxybis(2-Chloropropane) (Bis(2-Chloroisopropyl)ether)	5780
2,3,4,6-Tetrachlorophenol	6735
2,3,5,6-Tetrachlorophenol	6740
2,3,7,8-Tetrachlorodibenzo-p-Dioxin (2,3,7,8-TCDD, Qualitative Screen)	9619
2,3-Dichloroaniline	9363
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dichlorophenol	6005
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Naphthylamine	6430
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3+4-Methylphenol (m+p Cresol)	6412
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505

ALS - Middletown
301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Aqueous	
Acetophenone	5510
Alpha-Terpineol	6700
Aniline	5545
Anthracene	5555
Atrazine	7065
Azobenzene (1,2-Diphenylhydrazine)	5562
Benzaldehyde	5570
Benzidine	5595
Benzo(a)anthracene	5575
Benzo(a)pyrene	5580
Benzo(b)fluoranthene	5585
Benzo(g,h,i)perylene	5590
Benzo(k)fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
Bis(2-Chloroethoxy) Ether	NR
Bis(2-chloroethoxy)methane	5760
Bis(2-Chloroethyl)ether	5765
bis(2-ethylhexy)phthalate (DEHP)	6065
bis(2-Ethylhexyl)adipate	6062
Butyl Benzyl Phthalate	5670
Caprolactam	7180
Carbazole	5680
Chrysene	5855
Dibenz(a,h)anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethoate	7475
Dimethyl Phthalate	6135
di-n-butylphthalate	5925
di-n-octyl Phthalate	6200
Diphenylamine	6205
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835

Certificate of Accreditation: Supplement

ALS - Middletown

301 Fulling Mill Road, Middletown, PA 17057
Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Aqueous	
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3,cd)pyrene	6315
Isophorone	6320
Naphthalene	5005
n-Decane	5875
n-Heptadecane	9515
Nitrobenzene	5015
n-Nitrosodiethylamine	6525
n-Nitrosodimethylamine	6530
n-Nitroso-di-n-Butylamine	5025
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
n-Nitrosopyrrolidine	6565
n-Octadecane	6580
Pentachlorobenzene	6590
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
Solid	
1,1´-Biphenyl (Biphenyl)	6703
1,2,4,5-Tetrachlorobenzene	6715
1,2,4-Trichlorobenzene	5155
1,2-Dichlorobenzene	4610
1,2-Dinitrobenzene (1,2-DNB)	6155
1,2-Diphenylhydrazine	6220
1,3-Dichlorobenzene (1,3-DCB)	4615
1,3-Dinitrobenzene (1,3-DNB)	6160
1,4-Dichlorobenzene	4620
1,4-Dinitrobenzene (1,4-DNB)	6165
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
1-Methylnaphthalene	6380
2,2-Oxybis(2-Chloropropane) (Bis(2-Chloroisopropyl)ether)	5780
2,3,4,6-Tetrachlorophenol	6735

ALS - Middletown
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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Solid	
2,3,5,6-Tetrachlorophenol	6740
2,3,7,8-Tetrachlorodibenzo-p-Dioxin (2,3,7,8-TCDD, Qualitative Screen)	9619
2,3-Dichloroaniline	9363
2,4,5-Trichlorophenol	6835
2,4,6-Trichlorophenol	6840
2,4-Dichlorophenol	6000
2,4-Dimethylphenol	6130
2,4-Dinitrophenol	6175
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dichlorophenol	6005
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Chloronaphthalene	5795
2-Chlorophenol	5800
2-Methyl-4,6-Dinitrophenol (4,6-Dinitro-2-Methylphenol)	6360
2-Methylnaphthalene	6385
2-Methylphenol (o-Cresol)	6400
2-Naphthylamine	6430
2-Nitroaniline	6460
2-Nitrophenol	6490
3,3´-Dichlorobenzidine	5945
3+4-Methylphenol (m+p Cresol)	6412
3-Nitroaniline	6465
4-Bromophenyl Phenyl Ether (BDE-3)	5660
4-Chloro-3-Methylphenol	5700
4-Chloroaniline	5745
4-Chlorophenyl Phenylether	5825
4-Nitroaniline	6470
4-Nitrophenol	6500
Acenaphthene	5500
Acenaphthylene	5505
Acetophenone	5510
Alpha-Terpineol	6700
Aniline	5545
Anthracene	5555
Atrazine	7065
Azobenzene (1,2-Diphenylhydrazine)	5562

ALS - Middletown
301 Fulling Mill Road, Middletown, PA 17057
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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Solid	
Benzaldehyde	5570
Benzidine	5595
Benzo(a)anthracene	5575
Benzo(a)pyrene	5580
Benzo(b)fluoranthene	5585
Benzo(g,h,i)perylene	5590
Benzo(k)fluoranthene	5600
Benzoic Acid	5610
Benzyl Alcohol	5630
Bis(2-Chloroethoxy) Ether	NR
Bis(2-chloroethoxy)methane	5760
Bis(2-Chloroethyl)ether	5765
bis(2-ethylhexy)phthalate (DEHP)	6065
bis(2-Ethylhexyl)adipate	6062
Butyl Benzyl Phthalate	5670
Caprolactam	7180
Carbazole	5680
Chrysene	5855
Dibenz(a,h)anthracene	5895
Dibenzofuran	5905
Diethyl Phthalate	6070
Dimethoate	7475
Dimethyl Phthalate	6135
di-n-butylphthalate	5925
di-n-octyl Phthalate	6200
Diphenylamine	6205
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Hexachlorobutadiene	4835
Hexachlorocyclopentadiene	6285
Hexachloroethane	4840
Indeno(1,2,3,cd)pyrene	6315
Isophorone	6320
Naphthalene	5005
n-Decane	5875

ALS - Middletown
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Contact Name: Susan Magness Phone: 717-944-5541

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E by Gas Chromatography Mass Spectrometry (GC/MS)	10242543
Solid	
n-Heptadecane	9515
Nitrobenzene	5015
n-Nitrosodiethylamine	6525
n-Nitrosodimethylamine	6530
n-Nitroso-di-n-Butylamine	5025
n-Nitrosodi-n-Propylamine	6545
n-Nitrosodiphenylamine	6535
n-Nitrosopyrrolidine	6565
n-Octadecane	6580
Pentachlorobenzene	6590
Pentachlorophenol (PCP)	6605
Phenanthrene	6615
Phenol	6625
Pyrene	6665
Pyridine	5095
Resorcinol	6680
EPA 8270E SIM by Gas Chromatography Mass Spectrometry (GC/MS) Selective Ion Monitoring (SIM)	10242565
Aqueous	
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
1-Methylnaphthalene	6380
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Methylnaphthalene	6385
Acenaphthene	5500
Acenaphthylene	5505
Anthracene	5555
Benzo(a)anthracene	5575
Benzo(a)pyrene	5580
Benzo(b)fluoranthene	5585
Benzo(g,h,i)perylene	5590
Benzo(k)fluoranthene	5600
Bis(2-Chloroethyl)ether	5765
Chrysene	5855
Dibenz(a,h)anthracene	5895
Fluoranthene	6265
Fluorene	6270

Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8270E SIM by Gas Chromatography Mass Spectrometry (GC/MS) Selective Ion Monitoring (SIM)	10242565
Aqueous	
Hexachlorobenzene	6275
Indeno(1,2,3,cd)pyrene	6315
Naphthalene	5005
Phenanthrene	6615
Pyrene	6665
Solid	
1,4-Dioxane (1,4-Diethyleneoxide, p-Dioxane)	4735
1-Methylnaphthalene	6380
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Methylnaphthalene	6385
Acenaphthene	5500
Acenaphthylene	5505
Anthracene	5555
Benzo(a)anthracene	5575
Benzo(a)pyrene	5580
Benzo(b)fluoranthene	5585
Benzo(g,h,i)perylene	5590
Benzo(k)fluoranthene	5600
Bis(2-Chloroethyl)ether	5765
Chrysene	5855
Dibenz(a,h)anthracene	5895
Fluoranthene	6265
Fluorene	6270
Hexachlorobenzene	6275
Indeno(1,2,3,cd)pyrene	6315
Naphthalene	5005
Phenanthrene	6615
Pyrene	6665
EPA 8330B by High Performance Liquid Chromatography (HPLC)	10308006
Aqueous	
1,3,5-Trinitrobenzene (1,3,5-TNB)	6885
1,3-Dinitrobenzene (1,3-DNB)	6160
2,4,6-Trinitrotoluene (2,4,6-TNT)	9651
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190

Certificate of Accreditation: Supplement

ALS - Middletown

301 Fulling Mill Road, Middletown, PA 17057
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Accreditation is granted to the facility to perform the following testing:

	Code
Organic	
EPA 8330B by High Performance Liquid Chromatography (HPLC)	10308006
Aqueous	
2-Amino-4,6-Dinitrotoluene (2-Am-DNT)	9303
2-Nitrotoluene (2-NT)	9507
3,5-Dinitroaniline	6150
3-Nitrotoluene (3-NT)	9510
4-Amino-2,6-Dinitrotoluene (4-Am-DNT)	9306
4-Nitrotoluene (4-NT)	9513
HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine)	9522
Nitrobenzene	5015
Nitroglycerin	6485
Pentaerythritoltetranitrate (PETN)	9558
RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	9432
Tetryl (Methyl-2,4,6-Trinitrophenylnitramine)	6415
Solid	
1,3,5-Trinitrobenzene (1,3,5-TNB)	6885
1,3-Dinitrobenzene (1,3-DNB)	6160
2,4,6-Trinitrotoluene (2,4,6-TNT)	9651
2,4-Dinitrotoluene (2,4-DNT)	6185
2,6-Dinitrotoluene (2,6-DNT)	6190
2-Amino-4,6-Dinitrotoluene (2-Am-DNT)	9303
2-Nitrotoluene (2-NT)	9507
3,5-Dinitroaniline	6150
3-Nitrotoluene (3-NT)	9510
4-Amino-2,6-Dinitrotoluene (4-Am-DNT)	9306
4-Nitrotoluene (4-NT)	9513
HMX (Octahydro-1,3,5,7-Tetranitro-1,3,5,7-Tetrazocine)	9522
Nitrobenzene	5015
Nitroglycerin	6485
Pentaerythritoltetranitrate (PETN)	9558
RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	9432
Tetryl (Methyl-2,4,6-Trinitrophenylnitramine)	6415
RSK 175 by Gas Chromatography Flame Ionization Detection (GC/FID)	10212905
Aqueous	
Ethane	4747
Ethene	4752
Methane	4926

Certificate of Accreditation: Supplement

ALS - Middletown

301 Fulling Mill Road, Middletown, PA 17057
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Accreditation is granted to the facility to perform the following testing:

		Code
Preparation		
Aqueous		
ASTM D3987	Leachate Extraction	
EPA 1311	Toxicity Characteristic Leaching Procedure (TCLP), Zero-Headspace Extraction Vessel (ZHE)	
EPA 1312	Synthetic Precipitation Leaching Procedure (SPLP)	
EPA 3015A	Acid Digestion for Metals (Microwave)	
EPA 3510C	Separatory Funnel Liquid-Liquid Extraction	
EPA 3511	Microextraction for Organics	
EPA 3535A	Solid-Phase Extraction (SPE)	
EPA 3620B	Florisil Cleanup	
EPA 3660B	Sulfur Cleanup	
EPA 3665A	Sulfuric Acid Cleanup	
EPA 5030B	Purge-and-Trap for Volatile Organics in Aqueous Samples	
EPA 5030C	Purge-and-Trap for Volatile Organics in Aqueous Samples	
SM 4500 Norg B+C	Kjeldahl Method	
Solid		
ASTM D3987	Leachate Extraction	
EPA 1311	Toxicity Characteristic Leaching Procedure (TCLP), Zero-Headspace Extraction Vessel (ZHE)	
EPA 1312	Synthetic Precipitation Leaching Procedure (SPLP)	
EPA 3050B	Acid Digestion for Metals	
EPA 3051A	Acid Digestion for Metals	
EPA 3546	Microwave Extraction (Organics)	
EPA 3580A	Waste Dilution Extraction for Extractable Organics	
EPA 3620B	Florisil Cleanup	
EPA 3660B	Sulfur Cleanup	
EPA 3665A	Sulfuric Acid Cleanup	
EPA 5035A	Purge-and-Trap and Extraction For Volatile Organics (Closed-System)	
EPA 9030B	Distillation (Acid-Soluble and Acid-Insoluble Sulfides)	
SM 4500 Norg B+C	Kjeldahl Method	

Footnotes:

> Method codes are typically based on The NELAC Institute (TNI) Laboratory Accreditation Management System (LAMS) and are used to compare to the laboratory reported Performance Test (PT) results. Although the method code may not represent the specific method version, it is the method code used to represent the method/technology used to report PTs. (NC = No Code)

Adirondack Environmental Laboratory Certifications

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2025
Issued April 01, 2024
Revised January 09, 2025

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. TARA DANIELS
ADIRONDACK ENVIRONMENTAL SERVICES INC
314 NORTH PEARL STREET
ALBANY, NY 12207

NY Lab Id No: 10709

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Bacteriology

Coliform, Total / E. coli (Qualitative)	SM 20, 21-23 9223B (-04) (Colilert)
E. coli (Enumeration)	SM 20, 21-23 9223B (-04) (Colilert)
Heterotrophic Plate Count	SimPlate

Disinfection By-products

Bromochloroacetic acid	EPA 552.2
Dibromoacetic acid	EPA 552.2
Dichloroacetic acid	EPA 552.2
Monobromoacetic acid	EPA 552.2
Monochloroacetic acid	EPA 552.2
Trichloroacetic acid	EPA 552.2

Fuel Additives

Methyl tert-butyl ether	EPA 524.2

Metals I

Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4

Serial No.: 69836

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All approved analytes are listed below:

Metals I

Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4

Metals II

Aluminum, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4
Vanadium, Total	EPA 200.8 Rev. 5.4

Metals III

Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Potassium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4

Microextractables

1,2-Dibromo-3-chloropropane, Low Le	EPA 504.1
1,2-Dibromoethane, Low Level	EPA 504.1

Miscellaneous

Asbestos	EPA 100.1

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All approved analytes are listed below:

Miscellaneous

Odor	SM 21-23 2150 B (-97)
Organic Carbon, Dissolved	SM 21-23 5310C (-00)
Organic Carbon, Total	SM 21-23 5310C (-00)
Turbidity	EPA 180.1 Rev. 2.0
UV 254	SM 21-23 5910B (-00,-11)

Non-Metals

Alkalinity	SM 21-23 2320B (-97)
Calcium Hardness	EPA 200.7 Rev. 4.4
Chloride	EPA 300.0 Rev. 2.1
Color	SM 21-23 2120B (-01)
Corrosivity	SM 18-22 2330
Cyanide	EPA 335.4 Rev. 1.0
Fluoride, Total	EPA 300.0 Rev. 2.1
Nitrate (as N)	EPA 300.0 Rev. 2.1
	SM 21-23 4500-NO3 F (-00)
Nitrite (as N)	SM 21-23 4500-NO2 B (-00)
Orthophosphate (as P)	EPA 300.0 Rev. 2.1
Solids, Total Dissolved	SM 21-23 2540C (-97)
Specific Conductance	SM 21-23 2510B (-97)
Sulfate (as SO4)	EPA 300.0 Rev. 2.1

Organohalide Pesticides

Aldrin	EPA 508
Chlordane Total	EPA 508
Dieldrin	EPA 508
Endrin	EPA 508
Heptachlor	EPA 508

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All approved analytes are listed below:

Organohalide Pesticides

Heptachlor epoxide	EPA 508
Lindane	EPA 508
Methoxychlor	EPA 508
Propachlor	EPA 508
Toxaphene	EPA 508

Polychlorinated Biphenyls

PCB Screen	EPA 508

Trihalomethanes

Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2

Volatile Aromatics

1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2
1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2

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All approved analytes are listed below:

Volatile Aromatics

Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2
tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2

Serial No.: 69836

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2025
Issued April 01, 2024
Revised January 09, 2025

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. TARA DANIELS
ADIRONDACK ENVIRONMENTAL SERVICES INC
314 NORTH PEARL STREET
ALBANY, NY 12207

NY Lab Id No: 10709

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Volatile Halocarbons

Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2025
Issued April 01, 2024
Revised August 15, 2024

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ENVIRONMENTAL ANALYSES POTABLE WATER
All approved subcategories and/or analytes are listed below:

Bacteriology

Legionella	ISO 11731:2017(E)

Miscellaneous

Total Glycol	NYSDOH APC 44

Serial No.: 69523

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WADSWORTH CENTER

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Revised January 29, 2025

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All approved analytes are listed below:

Acrylates

Acrolein (Propenal)	EPA 8260C
	EPA 624.1
Acrylonitrile	EPA 8260C
	EPA 624.1
Ethyl methacrylate	EPA 8260C
Methyl acrylonitrile	EPA 8260C
Methyl methacrylate	EPA 8260C

Amines

1,2-Diphenylhydrazine	EPA 8270D
1,4-Phenylenediamine	EPA 8270D
1-Naphthylamine	EPA 8270D
2-Naphthylamine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4,4'-Methylenebis(2-chloroaniline)	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
5-Nitro-o-toluidine	EPA 8270D
a,a-Dimethylphenethylamine	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 8270D
Diphenylamine	EPA 8270D
Methapyrilene	EPA 8270D
Pronamide	EPA 8270D
Pyridine	EPA 8270D

Serial No.: 69944

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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Issued April 01, 2024
Revised January 29, 2025

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314 NORTH PEARL STREET
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All approved analytes are listed below:

Bacteriology	
Coliform, Fecal	Colilert-18
E. coli (Enumeration)	Colilert-18
Benzidines	
3,3'-Dichlorobenzidine	EPA 625.1
	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270D
Benzidine	EPA 625.1
	EPA 8270D
Carbamate Pesticides	
Carbofuran	EPA 632
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081B
	EPA 608.3
4,4'-DDE	EPA 8081B
	EPA 608.3
4,4'-DDT	EPA 8081B
	EPA 608.3
Aldrin	EPA 8081B
	EPA 608.3
alpha-BHC	EPA 8081B
	EPA 608.3
alpha-Chlordane	EPA 8081B
beta-BHC	EPA 8081B
	EPA 608.3
Captan	EPA 8270D
Chlordane Total	EPA 8081B

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Chlorinated Hydrocarbon Pesticides

Chlordane Total	EPA 608.3
Chlorobenzilate	EPA 8270D
delta-BHC	EPA 8081B
	EPA 608.3
Diallate	EPA 8270D
Dieldrin	EPA 8081B
	EPA 608.3
Endosulfan I	EPA 8081B
	EPA 608.3
Endosulfan II	EPA 8081B
	EPA 608.3
Endosulfan sulfate	EPA 8081B
	EPA 608.3
Endrin	EPA 8081B
	EPA 608.3
Endrin aldehyde	EPA 8081B
	EPA 608.3
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
	EPA 608.3
Heptachlor epoxide	EPA 8081B
	EPA 608.3
Isodrin	EPA 8270D
Kepone	EPA 8270D
Lindane	EPA 8081B
	EPA 608.3

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Chlorinated Hydrocarbon Pesticides

Methoxychlor	EPA 8081B
	EPA 608.3
Mirex	EPA 8081B
Toxaphene	EPA 8081B
	EPA 608.3

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 625.1
	EPA 612
	EPA 8270D
1-Chloronaphthalene	EPA 8270D
2-Chloronaphthalene	EPA 625.1
	EPA 8270D
Hexachlorobenzene	EPA 625.1
	EPA 8270D
Hexachlorobutadiene	EPA 625.1
	EPA 8270D
Hexachlorocyclopentadiene	EPA 625.1
	EPA 8270D
Hexachloroethane	EPA 625.1
	EPA 8270D
Hexachloropropene	EPA 8270D
Pentachlorobenzene	EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8321B

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Chlorophenoxy Acid Pesticides	
2,4,5-TP (Silvex)	EPA 8321B
2,4-D	EPA 8321B
Demand	
Biochemical Oxygen Demand	SM 5210B-2016
Carbonaceous BOD	SM 5210B-2016
Chemical Oxygen Demand	EPA 410.4, Rev. 2.0 (1993)
Fuel Oxygenates	
Ethanol	EPA 1671
	EPA 8260C
	EPA 624.1
	EPA 8015D
Methyl tert-butyl ether	EPA 8260C
	EPA 624.1
tert-amyl methyl ether (TAME)	EPA 8260C
tert-butyl alcohol	EPA 8260C
Haloethers	
2,2'-Oxybis(1-chloropropane)	EPA 625.1
	EPA 8270D
4-Bromophenylphenyl ether	EPA 625.1
	EPA 8270D
4-Chlorophenylphenyl ether	EPA 625.1
	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 625.1
	EPA 8270D
Bis(2-chloroethyl)ether	EPA 625.1
	EPA 8270D

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Metals I

Barium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Cadmium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Calcium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Chromium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Copper, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Iron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Lead, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Magnesium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Manganese, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Nickel, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

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Metals I

Nickel, Total	EPA 200.8, Rev. 5.4 (1994)
Potassium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Silver, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Sodium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Strontium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

Metals II

Aluminum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Antimony, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Arsenic, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Beryllium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Chromium VI	EPA 7196A
	SM 3500-Cr B-2011
Mercury, Low Level	EPA 1631E
Mercury, Total	EPA 245.1, Rev. 3.0 (1994)

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Metals II

Mercury, Total	EPA 7470A
Selenium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Vanadium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Zinc, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)

Metals III

Cobalt, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Molybdenum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Thallium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Tin, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Titanium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

Mineral

Acidity	SM 2310B-2011
Alkalinity	SM 2320B-2011

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Mineral

Calcium Hardness	EPA 200.7, Rev. 4.4 (1994)
Chloride	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-Cl- C-2011
Fluoride, Total	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-F- C-2011
Hardness, Total	SM 2340B-2011
Sulfate (as SO4)	EPA 300.0, Rev. 2.1 (1993)

Miscellaneous

Boron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Bromide	EPA 300.0, Rev. 2.1 (1993)
Color	SM 2120B-2011
Corrosivity	SM 2330-2016
Cyanide, Total	SM 4500-CN E-2016
	EPA 335.4, Rev. 1.0 (1993)
Formaldehyde	EPA 8315A
non-Polar Extractable Material (TPH)	EPA 1664A
Oil and Grease Total Recoverable	EPA 1664A
Organic Carbon, Total	SM 5310C-2014
Phenols	EPA 420.1 (Rev. 1978)
Specific Conductance	EPA 120.1 (Rev. 1982)
	SM 2510B-2011
Sulfide (as S)	SM 4500-S2- D-2011
Surfactant (MBAS)	SM 5540C-2011
Turbidity	SM 2130 B-2011
	EPA 180.1, Rev. 2.0 (1993)

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Nitroaromatics and Isophorone

1,3,5-Trinitrobenzene	EPA 8270D
1,3-Dinitrobenzene	EPA 8270D
1,4-Naphthoquinone	EPA 8270D
2,4-Dinitrotoluene	EPA 625.1
	EPA 8270D
2,6-Dinitrotoluene	EPA 625.1
	EPA 8270D
4-Nitroquinoline-1-oxide	EPA 8270D
Isophorone	EPA 625.1
	EPA 8270D
Nitrobenzene	EPA 625.1
	EPA 8270D

Nitrosoamines

N-Nitrosodiethylamine	EPA 8270D
N-Nitrosodimethylamine	EPA 625.1
	EPA 8270D
N-Nitrosodi-n-butylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 625.1
	EPA 8270D
N-Nitrosodiphenylamine	EPA 625.1
	EPA 8270D
N-nitrosomethylethylamine	EPA 8270D
N-nitrosomorpholine	EPA 8270D
N-nitrosopiperidine	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270D

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All approved analytes are listed below:

Nutrient

Ammonia (as N)	SM 4500-NH3 G-2011
	SM 4500-NH3 C-2011
	EPA 350.1, Rev. 2.0 (1993)
Kjeldahl Nitrogen, Total	SM 4500-NH3 C-2011
Nitrate (as N)	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-NO3 F-2016
Nitrate-Nitrite (as N)	SM 4500-NO3 F-2016
Nitrite (as N)	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-NO2 B-2011
Organic Nitrogen (as N)	TKN minus Ammonia (as N)
Orthophosphate (as P)	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-P E-2011
Phosphorus, Total	SM 4500-P E-2011
	SM 4500-P (F-H)-2011

Organophosphate Pesticides

Atrazine	EPA 8141B
Azinphos methyl	EPA 8141B
Chlorpyriphos	EPA 8141B
Diazinon	EPA 8141B
Dimethoate	EPA 8141B
Disulfoton	EPA 8141B
Famphur	EPA 8141B
Malathion	EPA 8141B
Parathion ethyl	EPA 8141B
Parathion methyl	EPA 8141B
Pendimethalin	EPA 8141B
Phorate	EPA 8141B

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ADIRONDACK ENVIRONMENTAL SERVICES INC
314 NORTH PEARL STREET
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Organophosphate Pesticides	
Simazine	EPA 8141B
Sulfotepp	EPA 8141B
Thionazin	EPA 8141B
Phthalate Esters	
Benzyl butyl phthalate	EPA 625.1
	EPA 606
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625.1
	EPA 606
	EPA 8270D
Diethyl phthalate	EPA 625.1
	EPA 606
	EPA 8270D
Dimethyl phthalate	EPA 625.1
	EPA 606
	EPA 8270D
Di-n-butyl phthalate	EPA 625.1
	EPA 606
	EPA 8270D
Di-n-octyl phthalate	EPA 625.1
	EPA 606
	EPA 8270D
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
	EPA 608.3
Aroclor 1221 (PCB-1221)	EPA 8082A

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Polychlorinated Biphenyls

Aroclor 1221 (PCB-1221)	EPA 608.3
Aroclor 1232 (PCB-1232)	EPA 8082A
	EPA 608.3
Aroclor 1242 (PCB-1242)	EPA 8082A
	EPA 608.3
Aroclor 1248 (PCB-1248)	EPA 8082A
	EPA 608.3
Aroclor 1254 (PCB-1254)	EPA 8082A
	EPA 608.3
Aroclor 1260 (PCB-1260)	EPA 8082A
	EPA 608.3
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A

Polynuclear Aromatics

2-Acetylaminofluorene	EPA 8270D
3-Methylcholanthrene	EPA 8270D
7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
Acenaphthene	EPA 625.1
	EPA 8270D
Acenaphthylene	EPA 625.1
	EPA 8270D
Anthracene	EPA 625.1
	EPA 8270D
Benzo(a)anthracene	EPA 625.1
	EPA 8270D
Benzo(a)pyrene	EPA 625.1
	EPA 8270D

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Polynuclear Aromatics

Benzo(b)fluoranthene	EPA 625.1
	EPA 8270D
Benzo(g,h,i)perylene	EPA 625.1
	EPA 8270D
Benzo(k)fluoranthene	EPA 625.1
	EPA 8270D
Chrysene	EPA 625.1
	EPA 8270D
Dibenzo(a,h)anthracene	EPA 625.1
	EPA 8270D
Fluoranthene	EPA 625.1
	EPA 8270D
Fluorene	EPA 625.1
	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 625.1
	EPA 8270D
Naphthalene	EPA 625.1
	EPA 8270D
Phenanthrene	EPA 625.1
	EPA 8270D
Pyrene	EPA 625.1
	EPA 8270D

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 625.1
	EPA 8270D

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Priority Pollutant Phenols

2,4-Dichlorophenol	EPA 625.1
	EPA 8270D
2,4-Dimethylphenol	EPA 625.1
	EPA 8270D
2,4-Dinitrophenol	EPA 625.1
	EPA 8270D
2,6-Dichlorophenol	EPA 8270D
2-Chlorophenol	EPA 625.1
	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 625.1
	EPA 8270D
2-Methylphenol	EPA 8270D
2-Nitrophenol	EPA 625.1
	EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 625.1
	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 625.1
	EPA 8270D
Cresols, Total	EPA 8270D
Pentachlorophenol	EPA 625.1
	EPA 8270D
Phenol	EPA 625.1
	EPA 8270D

Residue

Settleable Solids	SM 2540 F-2015

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All approved analytes are listed below:

Residue

Solids, Total	SM 2540 B-2015
Solids, Total Dissolved	SM 2540 C-2015
Solids, Total Suspended	SM 2540 D-2015
Solids, Volatile	SM 2540 E-2015

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
2-Picoline	EPA 8270D
4-Amino biphenyl	EPA 8270D
Acetophenone	EPA 8270D
alpha-Terpineol	EPA 625.1
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Ethyl methanesulfonate	EPA 8270D
Isosafrole	EPA 8270D
Methyl methanesulfonate	EPA 8270D
n-Decane	EPA 625.1
n-Octadecane	EPA 625.1
O,O,O-Triethyl phosphorothioate	EPA 8270D
p-Dimethylaminoazobenzene	EPA 8270D

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Semi-Volatile Organics

Phenacetin	EPA 8270D
Safrole	EPA 8270D

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
	EPA 601
	EPA 624.1
	EPA 602
	EPA 524.2
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
	EPA 601
	EPA 624.1
	EPA 602
1,4-Dichlorobenzene	EPA 8260C
	EPA 601
	EPA 624.1
	EPA 602
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
	EPA 624.1
	EPA 602
	EPA 524.2
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C

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Volatile Aromatics

Chlorobenzene	EPA 601
	EPA 624.1
	EPA 602
	EPA 524.2
Ethyl benzene	EPA 8260C
	EPA 624.1
	EPA 602
Isopropylbenzene	EPA 8260C
m/p-Xylenes	EPA 8260C
	EPA 624.1
Naphthalene, Volatile	EPA 8260C
	EPA 624.1
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
	EPA 624.1
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
	EPA 624.1
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
	EPA 624.1
	EPA 602
	EPA 524.2
Total Xylenes	EPA 8260C
	EPA 624.1

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Volatile Aromatics	
Total Xylenes	EPA 602
Volatile Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
	EPA 601
	EPA 624.1
1,1,2,2-Tetrachloroethane	EPA 8260C
	EPA 601
	EPA 624.1
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
	EPA 624.1
1,1,2-Trichloroethane	EPA 8260C
	EPA 601
	EPA 624.1
1,1-Dichloroethane	EPA 8260C
	EPA 601
	EPA 624.1
1,1-Dichloroethene	EPA 8260C
	EPA 601
	EPA 624.1
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
	EPA 601
	EPA 624.1

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Volatile Halocarbons

1,2-Dichloroethane	EPA 524.2
1,2-Dichloropropane	EPA 8260C
	EPA 601
	EPA 624.1
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C
	EPA 601
	EPA 624.1
3-Chloropropene (Allyl chloride)	EPA 8260C
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C
	EPA 601
	EPA 624.1
Bromoform	EPA 8260C
	EPA 601
	EPA 624.1
Bromomethane	EPA 8260C
	EPA 601
	EPA 624.1
Carbon tetrachloride	EPA 8260C
	EPA 601
	EPA 624.1
Chloroethane	EPA 8260C
	EPA 601
	EPA 624.1

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Volatile Halocarbons

Chloroform	EPA 8260C
	EPA 601
	EPA 624.1
	EPA 524.2
Chloromethane	EPA 8260C
	EPA 601
	EPA 624.1
cis-1,2-Dichloroethene	EPA 8260C
	EPA 624.1
cis-1,3-Dichloropropene	EPA 8260C
	EPA 601
	EPA 624.1
cis-1,4-Dichloro-2-butene	EPA 8260C
Dibromochloromethane	EPA 8260C
	EPA 601
	EPA 624.1
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
	EPA 601
	EPA 624.1
Hexachlorobutadiene, Volatile	EPA 8260C
Methyl iodide	EPA 8260C
Methylene chloride	EPA 8260C
	EPA 601
	EPA 624.1
	EPA 524.2
Tetrachloroethene	EPA 8260C

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Volatile Halocarbons

Tetrachloroethene	EPA 601
	EPA 624.1
trans-1,2-Dichloroethene	EPA 8260C
	EPA 601
	EPA 624.1
trans-1,3-Dichloropropene	EPA 8260C
	EPA 601
	EPA 624.1
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
	EPA 601
	EPA 624.1
Trichlorofluoromethane	EPA 8260C
	EPA 601
	EPA 624.1
Vinyl chloride	EPA 8260C
	EPA 601
	EPA 624.1

Volatiles Organics

1,4-Dioxane	EPA 8260C
	EPA 8270D SIM
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
2-Nitropropane	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
	EPA 524.2
Acetone	EPA 8260C

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Volatiles Organics

Acetone	EPA 624.1
	EPA 524.2
Acetonitrile	EPA 1671
	EPA 8260C
	EPA 624.1
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Diethylamine	EPA 1671
Dimethyl sulfoxide	EPA 1671
Ethyl Acetate	EPA 624.1
Ethylene Glycol	EPA 8015D
Ethylene thiourea	EPA 509 (1995)
Isobutyl alcohol	EPA 8260C
Isopropanol	EPA 8260C
Methanol	EPA 1671
	EPA 8015D
Methyl acetate	EPA 8260C
	EPA 8015D
Methyl cellosolve (2-Methoxyethanol)	EPA 1671
Methyl cyclohexane	EPA 8260C
n-Butanol	EPA 8260C
n-Propanol	EPA 624.1
o-Toluidine	EPA 8260C
	EPA 8270D
Propylene Glycol	EPA 8015D
Tetrahydrofuran	EPA 624.1

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MS. TARA DANIELS
ADIRONDACK ENVIRONMENTAL SERVICES INC
314 NORTH PEARL STREET
ALBANY, NY 12207

NY Lab Id No: 10709

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Volatiles Organics

Tetrahydrofuran	EPA 524.2
Triethylamine	EPA 1671
Vinyl acetate	EPA 8260C

Sample Preparation Methods

SM 4500-P B(5)-2011
EPA 5030C
EPA 3010A
EPA 3005A
EPA 3510C
EPA 3535A
SM 4500-N Org B-2011 or C-2011

Serial No.: 69944

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

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Issued April 01, 2024
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ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved subcategories and/or analytes are listed below:

Bacteriology

Legionella	ISO 11731:2017(E)

Miscellaneous

Cyanide, Available	OIA-1677-09
Cyanide, Free	OIA-1677-09

Nitrosoamines

N-Nitrosodiphenylamine	AES Method 86306G

Serial No.: 69933

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Revised May 07, 2024

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All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260C
Acrylonitrile	EPA 8260C
Amines	
2-Chloroaniline	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
Carbazole	EPA 8270D
Benzidines	
3,3'-Dichlorobenzidine	EPA 8270D
Benzidine	EPA 8270D
Characteristic Testing	
Corrosivity (pH)	EPA 9040C
	EPA 9045D
Free Liquids	EPA 9095B
Ignitability	EPA 1030
	EPA 1010A
Synthetic Precipitation Leaching Proc.	EPA 1312
TCLP	EPA 1311
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B

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Revised May 07, 2024

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Chlorinated Hydrocarbon Pesticides

alpha-Chlordane	EPA 8081B
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
delta-BHC	EPA 8081B
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin aldehyde	EPA 8081B
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Mirex	EPA 8081B
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 8270D
1-Chloronaphthalene	EPA 8270D
2-Chloronaphthalene	EPA 8270D
Hexachlorobenzene	EPA 8270D
Hexachlorobutadiene	EPA 8270D
Hexachlorocyclopentadiene	EPA 8270D

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Chlorinated Hydrocarbons	
Hexachloroethane	EPA 8270D
Chlorophenoxy Acid Pesticides	
2,4,5-T	EPA 8321B
2,4,5-TP (Silvex)	EPA 8321B
2,4-D	EPA 8321B
Haloethers	
2,2'-Oxybis(1-chloropropane)	EPA 8270D
4-Bromophenylphenyl ether	EPA 8270D
4-Chlorophenylphenyl ether	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 8270D
Bis(2-chloroethyl)ether	EPA 8270D
Metals I	
Barium, Total	EPA 6010C
Cadmium, Total	EPA 6010C
Calcium, Total	EPA 6010C
Chromium, Total	EPA 6010C
Copper, Total	EPA 6010C
Iron, Total	EPA 6010C
Lead, Total	EPA 6010C
Magnesium, Total	EPA 6010C
Manganese, Total	EPA 6010C
Nickel, Total	EPA 6010C
Potassium, Total	EPA 6010C
Silver, Total	EPA 6010C
Sodium, Total	EPA 6010C
Strontium, Total	EPA 6010C

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Metals II

Aluminum, Total	EPA 6010C
Antimony, Total	EPA 6010C
Arsenic, Total	EPA 6010C
Beryllium, Total	EPA 6010C
Chromium VI	EPA 7196A
Mercury, Total	EPA 7471B
Selenium, Total	EPA 6010C
Vanadium, Total	EPA 6010C
Zinc, Total	EPA 6010C

Metals III

Cobalt, Total	EPA 6010C
Molybdenum, Total	EPA 6010C
Thallium, Total	EPA 6010C
Tin, Total	EPA 6010C
Titanium, Total	EPA 6010C

Minerals

Bromide	EPA 9056A
Chloride	EPA 9056A
Fluoride, Total	EPA 9056A
Sulfate (as SO4)	EPA 9056A

Miscellaneous

Boron, Total	EPA 6010C
Cyanide, Total	EPA 9012B
Organic Carbon, Total	Lloyd Kahn Method

Nitroaromatics and Isophorone

2,4-Dinitrotoluene	EPA 8270D

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Nitroaromatics and Isophorone

2,6-Dinitrotoluene	EPA 8270D
Isophorone	EPA 8270D
Pyridine	EPA 8270D

Nitrosoamines

N-Nitrosodimethylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 8270D
N-Nitrosodiphenylamine	EPA 8270D
N-nitrosomorpholine	EPA 8270D

Nutrients

Nitrate (as N)	EPA 9056A
Nitrite (as N)	EPA 9056A
Orthophosphate (as P)	EPA 9056A

Organophosphate Pesticides

Azinphos methyl	EPA 8141B
Diazinon	EPA 8141B
Disulfoton	EPA 8141B
Famphur	EPA 8141B
Malathion	EPA 8141B
Parathion ethyl	EPA 8141B
Parathion methyl	EPA 8141B
Phorate	EPA 8141B
Sulfotepp	EPA 8141B
TEPP	EPA 8141B
Thionazin	EPA 8141B

Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015D

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Petroleum Hydrocarbons	
Gasoline Range Organics	EPA 8015D
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 8270D
Diethyl phthalate	EPA 8270D
Dimethyl phthalate	EPA 8270D
Di-n-butyl phthalate	EPA 8270D
Di-n-octyl phthalate	EPA 8270D
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
Aroclor 1016 (PCB-1016) in Oil	EPA 8082A
Aroclor 1221 (PCB-1221)	EPA 8082A
Aroclor 1221 (PCB-1221) in Oil	EPA 8082A
Aroclor 1232 (PCB-1232)	EPA 8082A
Aroclor 1232 (PCB-1232) in Oil	EPA 8082A
Aroclor 1242 (PCB-1242)	EPA 8082A
Aroclor 1242 (PCB-1242) in Oil	EPA 8082A
Aroclor 1248 (PCB-1248)	EPA 8082A
Aroclor 1248 (PCB-1248) in Oil	EPA 8082A
Aroclor 1254 (PCB-1254)	EPA 8082A
Aroclor 1254 (PCB-1254) in Oil	EPA 8082A
Aroclor 1260 (PCB-1260)	EPA 8082A
Aroclor 1260 (PCB-1260) in Oil	EPA 8082A
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1262 (PCB-1262) in Oil	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A

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Polychlorinated Biphenyls

Aroclor 1268 (PCB-1268) in Oil	EPA 8082A

Polynuclear Aromatic Hydrocarbons

Acenaphthene	EPA 8270D
Acenaphthylene	EPA 8270D
Anthracene	EPA 8270D
Benzo(a)anthracene	EPA 8270D
Benzo(a)pyrene	EPA 8270D
Benzo(b)fluoranthene	EPA 8270D
Benzo(g,h,i)perylene	EPA 8270D
Benzo(k)fluoranthene	EPA 8270D
Chrysene	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270D
Fluoranthene	EPA 8270D
Fluorene	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270D
Naphthalene	EPA 8270D
Phenanthrene	EPA 8270D
Pyrene	EPA 8270D

Priority Pollutant Phenols

2,4,5-Trichlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 8270D
2,4-Dichlorophenol	EPA 8270D
2,4-Dimethylphenol	EPA 8270D
2,4-Dinitrophenol	EPA 8270D
2,6-Dichlorophenol	EPA 8270D
2-Chlorophenol	EPA 8270D

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Priority Pollutant Phenols

2-Methyl-4,6-dinitrophenol	EPA 8270D
2-Methylphenol	EPA 8270D
2-Nitrophenol	EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 8270D
Pentachlorophenol	EPA 8270D
Phenol	EPA 8270D

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
Acetophenone	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
1,3,5-Trimethylbenzene	EPA 8260C

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Volatile Aromatics

1,3-Dichlorobenzene	EPA 8260C
1,4-Dichlorobenzene	EPA 8260C
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
Ethyl benzene	EPA 8260C
Isopropylbenzene	EPA 8260C
m/p-Xylenes	EPA 8260C
Naphthalene, Volatile	EPA 8260C
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
Total Xylenes	EPA 8260C

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
1,1,2,2-Tetrachloroethane	EPA 8260C
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
1,1,2-Trichloroethane	EPA 8260C
1,1-Dichloroethane	EPA 8260C

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Volatile Halocarbons

1,1-Dichloroethene	EPA 8260C
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
1,2-Dichloropropane	EPA 8260C
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C
Bromoform	EPA 8260C
Bromomethane	EPA 8260C
Carbon tetrachloride	EPA 8260C
Chloroethane	EPA 8260C
Chloroform	EPA 8260C
Chloromethane	EPA 8260C
cis-1,2-Dichloroethene	EPA 8260C
cis-1,3-Dichloropropene	EPA 8260C
Dibromochloromethane	EPA 8260C
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
Hexachlorobutadiene, Volatile	EPA 8260C
Methylene chloride	EPA 8260C
Tetrachloroethene	EPA 8260C
trans-1,2-Dichloroethene	EPA 8260C

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Volatile Halocarbons

trans-1,3-Dichloropropene	EPA 8260C
Trichloroethene	EPA 8260C
Trichlorofluoromethane	EPA 8260C
Vinyl chloride	EPA 8260C

Volatile Organics

1,4-Dioxane	EPA 8260C
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Acetonitrile	EPA 8260C
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Ethylene Glycol	EPA 8015D
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
Methyl tert-butyl ether	EPA 8260C
Vinyl acetate	EPA 8260C

Sample Preparation Methods

	EPA 5035A-L
	EPA 5035A-H
	EPA 3580A
	EPA 3010A
	EPA 3005A
	EPA 3050B

Serial No.: 69357

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2025
Issued April 01, 2024
Revised May 07, 2024

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. TARA DANIELS
ADIRONDACK ENVIRONMENTAL SERVICES INC
314 NORTH PEARL STREET
ALBANY, NY 12207

NY Lab Id No: 10709

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Sample Preparation Methods

EPA 3545A

EPA 3060A

Serial No.: 69357

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ALBANY, NY 12207

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is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual
Lead in Dust Wipes	EPA 6010C
Lead in Paint	EPA 6010C

Sample Preparation Methods

	EPA 3050B

Serial No.: 68537

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ALBANY, NY 12207

NY Lab Id No: 10709

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved analytes are listed below:

Metals II

Beryllium, Total	NIOSH 7300
Mercury, Total	NIOSH 6009

Metals III

Chromium, Total	NIOSH 7300

Serial No.: 68538

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

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314 NORTH PEARL STREET
ALBANY, NY 12207

NY Lab Id No: 10709

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Fuels

B.T.U.	ASTM D2015-77
Percent Sulfur	ASTM D4294

Metals I

Lead, Total	NIOSH 7300

Miscellaneous

Asbestos	40 CFR 763 APX A No. III
	YAMATE,AGARWAL GIBB
	NIOSH 7402
Fibers	NIOSH 7400 A RULES

Serial No.: 68539

Property of the New York State Department of Health. Certificates are valid only at the address shown and must be conspicuously posted by the laboratory. Continued accreditation depends on the laboratory's successful ongoing participation in the Program. Consumers may verify a laboratory's accreditation status online at https://apps.health.ny.gov/pubdoh/applinks/wc/elappublicweb/, by phone (518) 485-5570 or by email to elap@health.ny.gov.

Appendix D Laboratory Quality Assurance Manuals

QUALITY ASSURANCE MANUAL

ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON RD, BUILDING 300, SUITE 360
ROCHESTER, NY 14623
(585) 288-5380 (PHONE)
(585) 288-8475 (FAX)
WWW.ALSGLOBAL.COM

Doc ID: QAM	Rev. Number: 33	Effective Date: 11/27/2023

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1. Scope

This Quality Assurance Manual (QAM) describes the policies, procedures and accountabilities established by the Rochester, NY Laboratory of ALS Environmental (ALS) to ensure that the test results reported from analysis of air, water, soil, waste, and other matrices are reliable and of known and documented quality. This document describes the quality assurance and quality control procedures followed to generate reliable analytical data. This QAM applies to Environmental work included in Rochester's scope of accreditation (see Appendix J). This QAM is designed to be an overview of ALS operations. Detailed methodologies and practices are written in ALS Standard Operating Procedures (SOPs). Where appropriate, ALS SOPs are referenced in this document to direct the reader to more complete information.

ALS maintains accreditations pertaining to various commercial and government entities. Each accreditation requires that the laboratory continue to perform at levels specified by the programs issuing accreditation. Program requirements can be rigorous; they include performance evaluations as well as annual audits of the laboratory to verify compliance.

Quality Assurance Policy

ALS is committed to producing legally defensible analytical data of known and documented quality acceptable for its intended use and in compliance with applicable regulatory programs. This QAM is designed to satisfy the applicable requirements of the Various States, United States Environmental Protection Agency (USEPA), TNI Volume 1 2003/2009/2016, ISO/IEC 17025:2017, and DOD QSM 5.4.

ALS corporate management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM and other client and project related requirements.

ALS management reviews its operations on an ongoing basis and seeks input from staff and clients to make improvements. ALS is committed to good professional practice and a high standard of service.

It is the policy of ALS that all employees be familiar with all quality documentation.

Quality System

This QAM and SOPs referenced in this document comprise the ALS management system. This management system includes all quality assurance policies and quality control procedures.

Although verbal communication with employees is essential, written and visual communication through email and computer systems is the cornerstone of effective communication at ALS. Computer workstations throughout the lab provide access to LIMS, Procedures and email systems. All information essential for effective and consistent communication of analytical requirements and details affecting quality is available through these computerized systems.

Ethics and Data Integrity

It is the policy of ALS to perform work for clients in the most efficient manner possible, avoiding waste of resources. It is the role of both ALS management and employees to ensure that work for clients is performed most efficiently and effectively by properly utilizing ALS purchased materials, equipment, and the time and ability of personnel.

It is the policy of ALS to generate accurate and reliable data in accordance with contractual and regulatory requirements. The ALS SOP CE-GEN-001 "Laboratory Ethics and Data Integrity" details ALS policy and includes procedures, policy, and definitions on these topics:

- Any undue pressure applied to employees in the performance of their duties must be reported.

- It is against ALS policy to improperly manipulate or falsify data or to engage in any other unethical conduct.
- Prevention and detection of improper, unethical or illegal actions.
- Reporting and investigation of data manipulation, falsification of data, waste of resources, or other unethical practice or misconduct. For DOD work, the lab will report any instances of inappropriate and prohibited practices to the DOD ELAP Accreditation Body (PJLA) within 15 business days of the discovery, and submit records of associated corrections taken or proposed corrective actions within 30 business days of the discovery,

Laboratory Data Integrity and Ethics Training - initial and annual refresher training on Ethics and Data Integrity is performed for all employees. The training includes the SOP CE-GEN-001. Key topics covered are the critical need for honesty and full disclosure in all analytical reporting, how and when to report data integrity issues, and record keeping. Training includes discussion regarding all data integrity procedures, data integrity training documentation, in-depth data monitoring, and examples of improper actions.

The pertinent ALS Project Manager must approve deviations from contractual requirements. The Project Manager obtains approval for any such deviations, either in writing or by phone (documented in a phone log) from pertinent contract authorities. In addition, ALS requires that deviations from contractual requirements that might affect data quality be reported to clients. Any employee who knowingly manipulates and/or falsifies data or documents or engages in any unethical conduct is subject to immediate release from employment.

2. Normative References

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO/IEC 17025:2017, "General requirements for the competence of testing and calibration laboratories"

TNI 2009 and 2016, VOLUME 1, "MANAGEMENT AND TECHNICAL REQUIREMENTS FOR LABORATORIES PERFORMING ENVIRONMENTAL ANALYSIS"

DoD/DOE QSM, "Department of Defense (DoD), Department of Energy (DOE) Consolidated Quality Systems Manual (QSM) for Environmental Laboratories"

ISO/IEC Guide 99, International vocabulary of metrology – Basic and general concepts and associated terms (VIM1)

ISO/IEC 17000, Conformity assessment – Vocabulary and general principles

3. Terms and Definitions

- Impartiality - presence of objectivity
- Complaint - expression of dissatisfaction by any person or organization to a laboratory, relating to the activities or results of that laboratory, where a response is expected.
- Inter-laboratory comparison - organization, performance and evaluation of measurements or tests on the same or similar items by two or more laboratories in accordance with predetermined conditions
- Intra-laboratory comparison - organization, performance and evaluation of measurements or tests on the same or similar items within the same laboratory in accordance with predetermined conditions

- Proficiency testing - evaluation of participant performance against pre-established criteria by means of inter-laboratory comparisons
- Laboratory - body that performs one or more of the following activities:
  - testing;
  - calibration;
  - sampling, associated with subsequent testing or calibration
- Decision rule - rule that describes how measurement uncertainty is accounted for when stating conformity with a specified requirement
- Verification - provision of objective evidence that a given item fulfils specified requirements
- Validation - verification , where the specified requirements are adequate for an intended use

4. General Requirements

4.1 Impartiality

4.1.1 All employees are required to enter into the following agreements:

- **Code of Conduct Agreement**
  Provides a framework for decisions and actions in relation to conduct in employment. The agreement covers a wide range of topics including personal and professional behavior, conflicts of interest, gifts and favors, confidentiality, legal compliance, security of information, among others. The code of conduct agreement is administered by the USA Human Resources department. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed.

- **Confidentiality Agreement**
  Describes policies for identifying and protecting information owned by ALS and its customers, and for keeping this information in confidence. The confidentiality agreement is administered by the USA Human Resources department. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed as part of the Code of Conduct Agreement.

- **Ethics and Data Integrity Agreement**
  Provided to the employee as part of the hiring and induction process and reviewed during periodic ethics refresher training. This is coordinated between the Human Resources and Quality Assurance (QA) departments. This agreement is provided to the employee during the hiring and induction process and the agreement is reviewed and signed. All employees are required to take annual ethics and data integrity refresher training.

In addition to the agreements, project managers act as a firewall to insulate the analysts from clients so that the lab personnel have no contact with clients. Lab IDs are assigned to samples and used throughout preparation and analysis to make the samples ambiguous to lab personnel. Together these agreements and procedures ensure freedom from undue internal and external commercial, financial, and other pressures or influences that could adversely affect the quality of work. They protect customers' confidential information and ALS' proprietary rights. They ensure avoidance of

activities that could diminish confidence in the competence, impartiality, judgment or integrity of any ALS laboratory and staff.

4.1.2 It is the responsibility of all staff to comply with all procedures, be familiar with current management systems and policies, and to record all data as established by management. This and the peer review of all data will ensure that all testing is objective and conflicts of interest do not exist. As a commercial laboratory, the decision making using test results, opinions and interpretation of data is outside the scope of the laboratory activities.

4.2 Confidentiality

All employees signed confidentiality statement upon employment. These are maintained by Human Resources (HR).

Documents provided to the laboratory are held in strict confidence by project management staff. Documents pertaining to quality assurance and analytical requirements are reviewed with appropriate managers and staff through the project specific meetings and LIMS. Project related information provided by clients is securely archived using procedures described in the ALS SOP ADM-ARCH "Record Storage and Archiving."

It is the responsibility of all ALS employees to safeguard sensitive company information, client data, records, and information; and matters of national security concern should they arise. All information, data, and reports collected or assembled on behalf of a client is treated as confidential. Information may not be given to third parties without the consent of the client.

The transmittal of final results is specified by clients and follows those requirements unless specific changes are made by the ALS Project Manager assigned to the client/project.

5. Structural Requirements

5.1 The laboratory, a legal entity, is part of ALS USA Corp. The Laboratory Director reports to the General Manager, Life Sciences, North America. There are other support functions such as human resources, accounting, safety oversight and computer systems that are provided to the laboratory by corporate entities but none of which is responsible for managing laboratory activities. The support functions of this laboratory involved with testing and services are under the direction of the laboratory director.

5.2 The responsibility for this laboratory is under the direction of the laboratory director. Key employees in the management systems are identified in section 5.5.

5.3 This laboratory performs a range of inorganic and organic analyses using EPA SW-846 methods, CWA methodologies, some drinking water methods, and some stack testing methods. This QAM is designed to be an overview of ALS operations. Detailed methodologies and practices are written in ALS Standard Operating Procedures (SOPs). Where appropriate, ALS SOPs are referenced in this document to direct the reader to more complete information.

5.4 ALS is committed to producing legally defensible analytical data of known and documented quality acceptable for its intended use and in compliance with applicable regulatory programs. This QAM is designed to satisfy the applicable requirements of various states, United States Environmental Protection Agency (USEPA), and the normative references in Section 2 of this manual.

5.5 Org Chart and Key personnel-see Appendix B.

5.5.1 ALS Laboratory Director, The Laboratory Director is responsible to ensure:

- ✓ Implementation of quality policy and applicable standards, including communicating to the operation the importance of meeting customer, statutory, and regulatory requirements.
- ✓ Employees have sufficient experience and training to perform QAM-related duties and procedures.
- ✓ That the necessary facilities and equipment are available to meet the commitments of the laboratory.
- ✓ Sample receiving, handling, instrument calibration, sample analysis, and related operational and analytical activities are conducted and documented as described in this QAM, its related Standard Operating Procedures (SOPs), and its referenced methods.
- ✓ That routine QC samples are prepared, analyzed, and reviewed as required by this QAM.
- ✓ That at regular intervals audits are conducted and documented to assess compliance with this QAM.
- ✓ That corrective action is initiated and completed to remedy discrepancies or problems identified in any laboratory process.
- ✓ Management review of all processes and procedures associated with the management system.

5.5.2 ALS Laboratory Supervisor, The Laboratory Supervisor is responsible to ensure the directives of the Laboratory Director are carried out.

5.5.3 Quality Manager, The Quality Manager reports directly to top management and is responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Understand, monitor and evaluate the quality assurance (QA) and quality control (QC) activities described in this QAM and its references, reporting deficiencies and identifying resource requirements to the Laboratory Director.
- ✓ Conduct and document an annual internal audit of laboratory procedures to ensure compliance with this QAM and its references.
- ✓ Conduct an annual update of this QAM and review or update laboratory Standard Operating Procedures (SOPs).
- ✓ Arrange for the analysis of performance evaluation (PE) samples.
- ✓ Maintain a record of ongoing personnel training for QAM-related activities, reporting training deficiencies to the Laboratory Director.
- ✓ Maintain the laboratory documentation of nonconformance, corrective action, preventive action, and improvement programs. Monitor corrective actions.
- ✓ Maintain metrological records, archived logbooks, PT study results.
- ✓ Participate in root cause analysis and approve corrective action reports.
- ✓ Evaluate data in an objective manner, free of outside or managerial influence, including monitoring trends.

5.5.4 Technical Managers, The managers of these operations report directly to Top Management and are responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Read, understand and follow this QAM with its references.
- ✓ Ensure that each set of reported results meets the requirements specified in this QAM and meets the client's requirements as defined in the applicable project requirements. Record the quality of all data reported by the laboratory.
- ✓ Ensure that personnel are trained, authorized and utilized effectively.
- ✓ Ensure that facilities and equipment are maintained and utilized effectively.
- ✓ Ensure that supplies are available and utilized effectively.
- ✓ Immediately report technical and quality problems to the Laboratory Director or Quality Manager.

5.5.5 Project Managers, Project Managers report directly to Top Management. Project Managers are responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Complete and distribute project related information for each project before the laboratory starts work on the project.
- ✓ Immediately communicate to the laboratory changes made to projects in progress and document these changes as appropriate.
- ✓ Respond to client requests for information.
- ✓ Ensure LIMS work orders are reviewed and meet client project requirements before release to the laboratory.
- ✓ Perform a review of results to verify that data reports submitted to the client meet project requirements.
- ✓ Issue test reports

5.5.6 Support Management (Sample Management, Computers (IT), Purchasing, Health and Safety, Human Resources) are responsible to:

- ✓ Ensure implementation of quality policy and applicable standards.
- ✓ Read, understand, and follow this QAM with its references.
- ✓ Ensure that procedures are followed and meets the client's requirements as defined in the applicable project requirements.
- ✓ Ensure that personnel are trained, authorized and utilized effectively.
- ✓ Ensure that facilities and equipment are maintained and utilized effectively.
- ✓ Ensure that supplies are available and utilized effectively.
- ✓ Immediately report technical and quality problems to the Laboratory Director or Quality Assurance Manager.
- ✓ Training staff to comply with all processes

5.5.7 Deputies - In the case of absence of the Laboratory Director, Technical Director or QA PM, deputies are assigned to act in that role. Deputies must be assigned when Technical Directors are absent for more than 15 consecutive calendar days. If a Technical Director is absent for more than 35 consecutive calendar days, the accreditation authorities must be notified.

Position	Deputy
Lead Technical Director	Another individual meeting the qualifications of a Technical Director
Laboratory Director	Laboratory Supervisor, Lead Technical Director or Regional Director
Quality Manager	Lead Technical Director
Technical Director(s)	Lead Technical Director or Experienced analyst meeting the qualifications of a Technical Director.
Management (CEO, North America Manager, Life Sciences USA Manager, Regional Operations Manager)	One organizational position above current.
Sample Management, IT Manager, Purchasing manager, Project Managers, Health and Safety Manager, Human Resources Manager	Another experienced individual within the affected group.

5.6 It is the responsibility of all technical and support staff to comply with all procedures and be familiar with current quality systems and policies as established by management. To comply with these requirements all staff are responsible, at a minimum, to the following:

- ✓ Follow project requirements as delineated by project managers to ensure analyses and commitments, including TAT, are performed as requested.
- ✓ Develop knowledge and understanding of the QAM requirements under which samples are handled and tested.
- ✓ Notify managers and Quality Assurance personnel when QA problems arise.
- ✓ Follow Quality Assurance requirements as outlined in the QAM and SOPs.
- ✓ Follow appropriate channels regarding modification of existing SOPs.
- ✓ Maintain accurate electronic and written records.
- ✓ Ensure that applicable data are included in each process in accordance with applicable SOPs.
- ✓ Record all nonconformance.
- ✓ Follow appropriate protocols when the handling and testing does not meet acceptance criteria.
- ✓ Apply integrity and professional judgment when dealing with analytical processes and laboratory operations.

5.7 ALS management is committed to improvements of the management systems through compliance with its own policies and procedures. When changes are planned and implemented, the integrity of the management system is maintained. Changes must be documented in SOPs signed by management, including the Quality Manager and, the Technical Director. The management is familiar with the impacts changes may make to other systems and ensures impacts are minimized or accounted for in the change process.

6. Resources Requirements

6.1 General

6.1.1 ALS management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM. The ALS/Rochester staff, consisting of approximately 45 employees, includes chemists, technicians and support personnel. They represent diverse educational backgrounds and experience, and provide the comprehensive skills that the laboratory requires. During seasonal workload increases, additional temporary employees may be hired to perform specific tasks. See Appendix B for organization charts.

6.2 Personnel

6.2.1 It is the responsibility of all staff to comply with all procedures, be familiar with current management systems and policies, and to record all data as established by management. This will ensure that all testing is objective and conflicts of interest do not exist. As a commercial laboratory, the decision making using test results is outside the scope of the laboratory activities. The ALS laboratory employs sufficient personnel to complete required chemical, physical, and biological analyses and support activities.

6.2.2 The ALS training program specified in the ALS SOP ADM-TRAINING includes quality training, technical training, safety training, computer security awareness training and other training as described in this QAM. ALS managers are responsible to ensure that all staff training is initiated, completed, verified, and documented. Management

communicates to personnel their duties, responsibilities, and authorities. Records are maintained that contain a certification that the employee has read, understands, and is using the latest version of the management system documents relating to the employee's job responsibilities.

The specific training and experience of laboratory personnel is documented in individual training files maintained in accordance with ADM-TRAINING and includes records of analytical proficiency through the analysis of QC samples.

Job Descriptions include requirements for education, qualification, training, technical knowledge, skills and experience.

6.2.3 All ALS staff assigned to perform tasks affecting or relating to testing receives training relative to pertinent areas of responsibility, both prior to performing work on client samples and on an ongoing basis. Such training comes from internal and external sources.

6.2.4 Laboratory personnel have resources needed to carry out their duties. See 5.6. Technical Directors at ALS Rochester may not also be a Technical Director at another laboratory without authorization from the primary accrediting bodies.

6.2.5 When the laboratory management determines a need for personnel in the organization, the management determines the goals for the position, the requisite educational, experience and skill requirements, and works with human resources to post the position, screen potential candidates against the job description and forward qualified candidates to the hiring manager for interview. The supervisor for the position is defined. The organization chart shows the supervision structure. Each employee is supervised to the extent required to ensure adherence to the management system and ALS policies. It is the responsibility of the supervisor to authorize staff to perform specific laboratory activities. Records are retained for the pertinent authorizations by the Quality Assurance department. The supervisor monitors the competence of personnel throughout the course of work and performs an annual performance review.

Minimum requirements based on current accreditations:

Position	Education	Experience
Lead Technical Director (may be named as Laboratory Director or Laboratory Supervisor for state requirements)	Bachelors degree in biology, chemistry, or closely related field plus 30 college credits in chemistry.	3 years in an environmental analysis lab, 24 months chemical analysis of representative organic and inorganic methods supervised
Technical Director - Chemistry	Bachelors degree in biology, chemistry, or closely related field plus 30 college credits in chemistry.	2 years in an environmental analysis lab, 12 months chemical analysis of representative organic and inorganic methods supervised
Technical Director - Microbiology	Associates degree in science with 4 credits in microbiology	1 year of environmental microbiological experience
Quality Manager		Have documented training and/or experience in QA/QC procedures and the laboratory quality system. Have a general knowledge of analytical methods in use in the lab.
Instrumentation Analysts	H.S. diploma plus 8 college credits in chemistry	none
Analysts	High School Diploma	none

6.3 Facilities and Environmental Conditions

6.3.1 ALS management has committed its full support to provide the personnel, facilities, equipment, and procedures required by this QAM.

6.3.2 Records are maintained for the requirements and conditions necessary for method and regulatory compliance in the facility.

6.3.3 Records are retained with analytical data for monitoring and control of environmental conditions relevant to method and regulatory specifications.

6.3.4 See Appendix D for floor plan.

The ALS Rochester facility features over 23000 square feet of laboratory and administrative workspace at its Rochester, NY location. To maintain facility security and thus sample security, entrance to the ALS facility can be attained only through

security access (keytag proximity reader), except at the main business entrance and sample receiving entrance; these are open only during normal business hours and monitored by the receptionist at the business entrance and Sample Receipt Technicians at the sample receiving entrance. All non-employees are required to sign in with the receptionist at the main entrance.

The laboratory accommodations and environmental condition design provides safeguards against cross-contamination of samples and is arranged according to work function, which enhances the efficiency of analytical operations. The ventilation system has been specially designed to meet the needs of the analyses performed in each work space. The organics extraction area is physically separated from the Volatile instrument area and the Volatiles instrument room is positively pressured to minimize cross contamination. Samples suspected of containing high concentrations of analytes are isolated from other samples. Standards and reference materials are stored separately from samples, extracts, and digestates. ALS further minimizes laboratory contamination sources by employing janitorial staff to ensure good housekeeping. Facilities maintenance is performed by qualified contractors.

Each area in the laboratory has adequate lighting, temperature control, bench space, access to sinks, hot and cold water, reagent water, gasses, suction, electrical outlets, chemical storage, fume hoods, ventilation, eyewashes, fire extinguishers, and aisle space as needed for instrumentation, safety, and for the processes assigned to that area.

Fume hoods have visual indicators to ensure flow is maintained during use and are performance tested semi-annually.

All safety inspection records are kept on file for a minimum of five years.

6.4 Equipment

6.4.1 A comprehensive list of major instrumentation, support equipment, and associated computer hardware and software utilized at ALS is included in Appendix E. Redundant instruments are maintained for particular analyses. The method SOPs detail the reagents and standards, minor equipment and supplies and reference information needed for performing the analysis, including instrument configuration and settings.

6.4.2 Laboratory equipment items such as analytical balances, and thermometers are verified against reference standards. Laboratory reference thermometers are certified by ISO accredited vendors against National Metrology Institute (NMI) traceable standards. Reference thermometers are certified every 3 years. Analytical balances are serviced on an annual basis by a professional metrology organization (currently Precision Scale and Balance). New certificates of calibration for each balance are issued to the laboratory on an annual basis. The calibration of each analytical balance is checked by the user each day of use with Class-1 verified weights bracketing the working range. The weights are verified annually against the balance vendors certified traceable weights. Records are kept which contain the recorded measurements, identification and location of equipment, acceptance criteria and the initials of the user who performed the checks. See SOP SMO-DALYCK for instructions and further information. All support equipment is maintained in proper working order and verified. For volumetric verifications refer to ADM-PCAL "Mechanical Volume Dispensing Devices, Volumetric and Non-Volumetric Labware".

6.4.3 Temperature Control Devices

Temperatures are monitored and recorded for all of the temperature-critical support equipment such as refrigerators, freezers, ovens, and incubators. Fridges, Freezers,

and Incubators are equipped with a centralized temperature monitoring system from Mesa Labs. The use of this system is described in the *SOP for Calibration Check Procedures for Support Equipment (SOP ADM-DALYCK).* The SOP also includes the acceptance criteria. Customers are notified of catastrophic failure of storage equipment when their samples were potentially impacted and whenever corrective action is not taken within 24 hours of system notification of an out-of-control storage equipment condition.

Where the operating temperature is specified as a test condition the temperature is recorded on the raw data.

6.4.4 Water Purification System

ALS uses a Siemens water purification system designed to produce reagent water meeting method specifications. The system consists of a series of pumps, filters, and resin beds designed to yield water meeting the specifications of ASTM Type II water, and *Standard Methods for the Examination of Water and Wastewater* (SM1080, 20th Ed.) *High Quality* water. The system is maintained by Evoqua Water Systems.

The conductivity of water from the purification system is checked and recorded by the laboratory every business day using the systems in-line meter. When the lab analyzes samples for conductivity, the DI system is checked with the Method Blank on a meter calibrated according to GEN-120.1. This serves as a check of the in-line meter. Other checks are performed regularly by the subcontracted water system service (Evoqua). These checks are discussed further in ADM-DALYCK. The laboratory may use the results of laboratory method blanks for impromptu checks of TOC, TDS, and chloroform if a problem is suspected. The water in the volatiles department is further purified by a Millipore polishing system.

6.4.5 Routine maintenance is performed on laboratory instruments and equipment according to manufacturer recommendations. Maintenance is provided under warranty, through service contracts, and by ALS in-house personnel. Records of routine maintenance, emergency maintenance, and a return to control are kept with the instruments in hardcopy or electronic maintenance logbooks according to SOP ADM-DATANTRY "Making Entries and Control of Records". The preventive maintenance schedule is included in Appendix E.

6.4.6 Calibration program - All instruments are calibrated or verified before use, using reference materials with traceability established. Specific calibration requirements are detailed in the method SOP and support equipment SOP and comply with method and regulatory requirements. Equipment is labelled with a unique ID that is traceable to its status of calibration, including the date when last calibrated. The SOPs detail the equipment calibration verification criteria and when recalibration is due. Support equipment is labelled with expiration dates if applicable.

6.4.7 The instrument manuals are provided in electronic format usually in the software programs, CDs, and available on network drives. Software is controlled through licensing and is the responsibility of computer support to maintain licenses required. Hardcopy manuals for older instruments are kept near the instrument or on a shelf designated for equipment manuals.

6.4.8 Equipment that has been subjected to overloading or mishandling, gives questionable results, or has been shown to be defective or outside specified requirements, is taken out of service. It shall be recalibrated and not returned to service until it has been verified to perform correctly. The laboratory shall examine the effect of the defect or deviation from specified requirements and shall notify clients or reanalyze samples as applicable and appropriate.

6.4.9 All reference materials ordered by ALS have available documentation of purity, traceability and uncertainty.

6.4.10 Records of instruments are retained and include specifications, manufacturer, serial numbers, identification, software version, firmware version, location, status and the date of purchase.

6.4.11 Records of calibration, reference materials used, calibration checks or verifications are kept with analytical data.

6.4.12 Passing verification criteria ensures that unintended adjustment of equipment is identified.

6.5 Metrological Traceability

6.5.1 All measurements made by the laboratory require an unbroken chain to NMI, Reference Standards or Reference Materials.

6.5.2 Reference Standards and Reference Materials

a) Reference Standards

Reference standards used by the laboratory are calibrated at determined intervals by outside vendors for the following equipment. These reference standards are maintained under the control of QA personnel and are used for verifying intermediate materials used by the laboratory. Quality Assurance is responsible for maintaining records and schedules of calibration.

- Reference Thermometers
- Reference Weights
- Intermediate checks are used in the laboratory to verify performance of support equipment and are verified to traceable reference standards. Records of such verifications are retained by Quality Assurance.

b) Reference Materials

Reference materials used at ALS must be of the grade or quality specified by the pertinent analytical procedure or methodology.

Purchased reference materials must be traceable to a National Metrology Institute (NMI) or equivalent national or international standards where possible.

Stock solutions and calibration standard solutions are prepared fresh as often as necessary according to their stability. All standard solutions are properly labeled with standard name, analyte concentration, solvent, date, preparer, and expiration date; these entries are also recorded in the appropriate logbook(s) following ADM-DATANTRY. To ensure traceability, all standards are labeled with an in-house code that can be traced back to the original stock standard received by the vendor and thus, the certificate of analysis. Prior to introduction into the analytical system/process, reference materials are verified for accuracy with a second, independent source of the material. In addition, the independent source of reference material is also used to check the calibration standards for signs of deterioration. All standards, reagents and reference materials shall be stored per analytical SOP requirements to ensure their integrity. Safe handling and transportation of these materials are discussed in the respective analytical SOP and/or Laboratory Safety Manual. Standards and reference materials are stored separately from samples, extracts, and digestates.

6.5.3 Reference Standards are calibrated by vendors certified to ISO/IEC 17025:2017. ALS uses reference materials from ISO/IEC 17034:2010 accredited vendors whenever possible.

Second source reference materials are purchased and used in the testing process as an independent verification of primary reference materials. The secondary reference material does not require accredited vendors.

6.6 Externally Provided Products and Services

6.6.1 Analytical services are subcontracted when the laboratory needs to balance workload or when the requested analyses are not performed by the laboratory. Subcontracting is only done with the knowledge and approval of the client and to qualified laboratories. Subcontracting to another ALS laboratory is preferred over external-laboratory subcontracting. Subcontracting is done using capable and qualified laboratories, qualified using established procedures. These procedures are described in the *SOP for Qualification of Subcontract Laboratories (ADM-SUBLAB)*. ALS accepts responsibility to the customer for the subcontractor's work unless the customer or a regulatory authority specified which subcontractor was to be used.

6.6.2 ALS SOP ADM-PUR "Procurement and Control of Laboratory Services and Supplies" outlines the process, evaluation, criteria and records maintained from the evaluation and reevaluation of supplies and services. ALS uses vendors which supply the level of quality required to perform testing activities. ALS maintains a relationship with multiple vendors and uses vendors with comparable certifications or accreditations. The quality level of reagents and materials (grade, traceability, etc.) required is specified in analytical SOPs. Department supervisors ensure that the proper materials are ordered, using an electronic system which requires approval by ALS Operations Management. Any changes to the order by the purchasing department must be approved by the department supervisors prior to ordering. Inspection and verification of material received is performed at the time of receipt by receiving personnel. The receiving staff labels the material with the date received, assigns the material an internal lot number and records the receipt. Expiration dates are assigned as appropriate for the material. Storage conditions and expiration dates are specified in the analytical SOP. *ADM-PUR* provides default expiration requirements. Supplies and services that are critical in maintaining the quality of laboratory testing are procured from pre-approved vendors. The lab must communicate any necessary specifications to the external provider. If the product or service is not meeting the laboratory's requirements, actions must be taken to return the laboratory to the standard of quality needed from a vendor.

Consumable reference materials routinely purchased by the laboratories (e.g., analytical standards) are purchased from nationally recognized, reputable vendors. All vendors have fulfilled the requirements for ISO 9001 certification and/or are accredited by a nationally recognized Accrediting Body (typically A2LA or ANAB). ALS relies on a primary vendor (currently Fisher Scientific) for the majority of its analytical supplies. Consumable primary stock standards are obtained from certified commercial sources or from sources referenced in a specific method. Supelco, Ultra Scientific, AccuStandard, Chem Services, Inc., Aldrich Chemical Co., Baker, Spex, etc. are examples of the vendors used. Reference material information is recorded in the appropriate logbook(s) and materials are stored under conditions that provide maximum protection against deterioration and contamination. The logbook entry includes such information as an assigned logbook identification code, the source of the material (i.e. vendor identification), solvent (if applicable) and concentration of analyte(s), reference to the certificate of analysis and an assigned expiration date. The

date that the standard is received in the laboratory is marked on the container. See ADM-PUR for more detailed information. Receipt procedures include technical review of the purchase order/request to verify that what was received is identical to the item ordered. The laboratory checks new lots of reagents for unacceptable levels of contamination prior to use in sample preservation, sample preparation, and sample analysis by following the requirements in ADM-PUR.

7. Process Requirements

7.1 Review of Requests Tenders and Contracts

Requests for new work are reviewed prior to signing any contracts or otherwise agreeing to perform the work. The specific analytical methods to be used are agreed upon between the laboratory and the client. A capability review is performed to determine if the laboratory has or needs to obtain certification to perform the work, to determine if the laboratory has the resources (personnel, equipment, materials, capacity, skills, expertise) to perform the work, and if the laboratory is able to meet the client's required reporting and QC limits. The results of this review are communicated to the client and any potential conflict, deficiency, lack of appropriate accreditation status, lack of appropriate method (incorrect, obsolete or improper) or concerns of the ability to complete the client's work are resolved. Any differences between the request or tender and the contract shall be resolved before any work commences. The client should be notified at this time if work is expected to be subcontracted. Each contract shall be acceptable both to the laboratory and the client. Records are maintained of pertinent discussions with a client relating to the client's requirements or the results of the work. If a contract needs to be amended after work has commenced, the contract review process is repeated and any amendments are communicated to all affected personnel. Changes in accreditation status affecting ongoing projects must be reported to the client. Revocation, suspension, or lapse of accreditation in part or full must be communicated to applicable clients as soon as possible (within 48 hours for PA).

When a customer requests a modification to an SOP, policy, or standard specification the Project Manager will discuss the proposed deviation with the Laboratory Director, and department manager (if applicable) to obtain approval for the deviation. The Quality Manager may also be involved. All project-specific requirements must be on-file and with the service request upon logging in the samples. The modification or deviation must be documented and it must not impact the integrity of the laboratory or the validity of the results. Waivers from DOD QSM requirements must be requested in writing from the customer identified technical point of contact on a project-specific basis and include technical justification. A Project-Specific Communication Form, or similar, may be used to document such deviations.

Project Managers are responsible for maintaining, archiving, and retrieving all contracts, project requirements and QAPPs provided to ALS by clients and related to projects completed by ALS. Specific procedures for client communication and required documentation are listed in the ALS SOP ADM-PCR "Project Manager Duties and Report Review."

7.2 Selection, Verification, and Validation of Methods

7.2.1 Published Methods - ALS employs methods and analytical procedures from a variety of external sources. The primary method references are: USEPA SW-846, Third Edition and with Updates and online updates for hazardous waste samples, and USEPA 600/4-79-020, 600/4-91-010, 600/4-82-057, 600/R-93/100, 600/4-88-039, 600/R-94-111, EPA 40CFR parts 136 and 141, and Supplements; and *Standard Methods for the Examination of Water and Wastewater* for water and wastewater

samples. Complete citations for these references can be found in Appendix K. Other published procedures, such as state-specific methods, program-specific methods, or in-house methods may be used. Several factors are involved with the selection of analytical methods to be used in the laboratory. These include the method detection limit, the concentration of the analyte being measured, method selectivity, accuracy and precision of the method, the type of sample being analyzed, and the regulatory compliance objectives. The implementation of methods by ALS is described in SOPs specific to each method. A list of NELAP-accredited methods is given in Appendix J.

7.2.2 Standard Operating Procedures (SOPs) - ALS maintains SOPs for use in both technical and administrative functions. An SOP is available for each accredited method. SOPs are written following standardized format and content requirements as described in the *SOP for Preparation of Standard Operating Procedures (ADM-SOP)*. Each SOP is reviewed and approved by a minimum of two managers (the Technical Director and the Quality Assurance Program Manager). All technical SOPs undergo a documented annual review to make sure current practices are described. The QA Manager maintains a comprehensive list of current SOPs. The SOP list is in Appendix G. The document control process ensures that only the most currently prepared version of an SOP is being used. The QA Manual, QAPPs, SOPs, standards preparation logbooks, current methodology, maintenance logbooks, et al., are controlled documents. The procedures for document control are described in the *SOP for Document Control* (ADM-DOC_CTRL). All controlled documents are readily available to all personnel on the ALS Rochester Intranet.

7.2.3 Modified Procedures - ALS policy is that all SOPs be compliant with the reference method. When several methods are referenced in an SOP, all procedures must be compliant with all referenced methods. All SOPs include a section describing changes and clarifications from the reference method. In the event that an analytical method is modified, the SOP documentation must include a description of the modification, any justification of the method modification which includes, but is not limited to, method performance and recovery data, any other supporting data, and approval from the Technical Managers, Quality Manager, and Laboratory Director. In the event that an analytical method must be modified or is modified from the SOP to perform on specific sample matrices, the modification and reason must be stated in the case narrative. Modified methods will be identified on the analytical report. Modifications allowed by EPA are not reported as modifications, but the modification and justification are documented in the SOP.

When a customer requests a modification to an SOP (such as a change in reporting limit, addition or deletion of target analyte(s), etc.), the project chemist or Technical Sales Representative (TSR) handling that project must discuss the proposed deviation with the department manager in charge of the analysis and obtain their approval to accept the project. The project chemist or TSR is responsible for documenting the approved or allowed deviation from the SOP by placing a detailed description of the deviation attached to the quotation or in the project file and also providing an appropriate comment on the service request when the samples are received.

For circumstances when a deviation or departure from company policies or procedures involving any non-technical function is found necessary, approval must be obtained from the appropriate supervisor, manager, or other level of authority. Frequent departure from policy is not encouraged. However, if frequent departure from any policy is noted, the Laboratory Director will address the possible need for a change in policy.

7.2.4 Validation - The policy of ALS is to apply analytical methods that have been approved, validated, and published by government agencies, professional societies, and organizations, respected private entities, and other recognized authorities.

These methods have been validated for their intended use and ALS uses the demonstration of competency procedures, calibration of instruments and sensitivity determination procedures to verify laboratory capability.

Published methods may be modified as a result of the request of the client or operational conditions prevailing in the laboratory. Operational conditions might relate to, for example, the availability of equipment or the performance of the method as determined by calibration processes, detection limits, or the results obtained for quality control samples.

Validation procedures describe three different classifications of validations for method modification. New methods, permanent modifications to a published method which will be used in subsequent laboratory determinations, and temporary modifications applied only to immediate analytical projects. These methods are used with approval from the clients.

The essential quality control elements for modification and validation include:

Calibration - Performance and acceptance criteria must meet or exceed requirements of ALS SOP ADM-ICAL "Initial Calibration". The initial calibration demonstrates a concentration range where the analyte response is proportional to concentration.

Demonstration of Capability (Precision and Bias) - QC samples prepared in the specific matrix, are assessed. If possible the recoveries are compared to method or historical control limits used for the reference method. All analytical methods and preparatory method combinations are routinely evaluated statistical control limits and reporting limits. The ALS SOP ADM-CTRL_LIM "Control Limits and Trending" describes how control limits are established and updated.

Sensitivity -. Method Detection Limits (MDL) for methods performed at ALS are determined during initial method set up and are verified or reestablished annually. The MDL will also be verified or reestablished if any significant changes are made to the analytical system. MDL procedures follow 40CFR136 Appendix B. Limit of detection (LOD) verification and Limit of quantitation (LOQ) verification is performed on every instrument used in the analysis. The sensitivity procedures are found in the *SOP ADM-MDL "Establishing Method Detection Limits, Limits of Detection and Limits of Quantitation (ADM-MDL)*.

The Method Reporting Limit (MRL) is the lowest amount of an analyte in a sample that can be quantitatively determined with stated, acceptable precision and accuracy under stated analytical conditions (i.e. limit of quantitation- LOQ). The MRL cannot be lower than the lowest calibration standard.

Current MDLs and MRLs are available from the laboratory. They were established using SOP, "Establishing Method Detection Limits, Limits of Detection, and Limits of Quantitation."

7.3 Sampling

The quality of analytical results is highly dependent upon the quality of the procedures used to collect, preserve, and store samples. ALS recommends that clients follow sampling guidelines described in 40 CFR 136, 40 CFR 141, USEPA SW-846, and state-specific sampling guidelines, if applicable. Sampling factors that must be taken into account to insure accurate, defensible analytical results include:

- Amount of sample taken
- Type of container used
- Type of sample preservation
- Sample storage time
- Proper custodial documentation

ALS uses the sample preservation, container, and holding-time recommendations published in a number of documents. The primary documents of reference are: USEPA SW-846, Third Edition and Updates I, II, IIA, IIB, III, IV, V and New Methods for hazardous waste samples; USEPA 600/4-79-020, 600/4-91-010, 600/4-82-057, 600/R-93/100, 600/4-88-039, 600/R-94-111, and Supplements; EPA 40CFR parts 136 and 141; and *Standard Methods for the Examination of Water and Wastewater* for water and wastewater samples (see Section 18 for complete citations). The container, preservation and holding time information for these references is summarized in Appendix F for soil, water, and drinking water.

ALS routinely provides sample containers with appropriate preservatives for our clients. Containers are purchased precleaned,and conform to the requirements for samples established by the USEPA. Certificates of analysis for the sample containers are available to clients if requested. Reagent water used for sampling blanks (trip blanks, etc.) and chemical preservation reagents are pretested by the laboratory to ensure that they are free of interferences and documented. Our sample kits typically consist of foam-lined, precleaned shipping coolers, (cleaned inside and out, rinsed thoroughly and air-dried), specially prepared and labeled sample containers individually wrapped in protective material, chain-of-custody (COC) forms, and custody seals. Container labels and custody seals are provided for each container. The proper preservative is typically added to the sample containers prior to shipment, unless otherwise instructed by the client.

See SOP, SMO-BPS for more specific information regarding the packing and shipping of sample kits. See SOP, SMO-GEN for the Sample Acceptance Policy.

ALS keeps client-specific shipping requirements on file and utilizes major transportation carriers to guarantee that sample shipping requirements (same-day, overnight, etc.) are met. ALS also provides courier service that makes regularly scheduled trips to the Rochester, Syracuse and Buffalo areas.

7.4 Handling of Test Items

Standard Operating Procedures (SMO-GEN) are established for the receiving of samples into the laboratory. These procedures ensure that samples are received and properly logged into the laboratory, and that all associated documentation, including chain of custody forms, is complete and consistent with the samples received.

Once samples are delivered to the ALS sample management office (SMO), a Cooler Receipt and Preservation Check Form is used to assess the shipping cooler and its contents as received by the laboratory personnel. Verification of sample integrity includes the following activities:

- Assessment of custody seal presence/absence;
- Temperature of sample containers upon receipt;
- Chain of custody documents properly used (entries in ink, signature present, etc.);
- Sample containers checked for integrity (broken, leaking, etc.);
- Sample is clearly marked and dated (bottle labels complete with required information);
- Appropriate containers (size, type) are received for the requested analyses;
- Sample container labels and/or tags agree with chain of custody entries (identification, required analyses, etc.);
- Assessment of proper sample preservation; and
- VOC containers are inspected for the presence/absence of bubbles. (Assessment of proper preservation of VOC containers is performed by lab personnel).

Samples are logged into a Laboratory Information Management System (LIMS). Any anomalies or discrepancies observed during the initial assessment are recorded on the CRPF and COC documents. Potential problems with a sample shipment are addressed by contacting the client and resolving the pertinent issues.

During the login process, each sample container is given a unique laboratory code. The laboratory code consists of the local ALS laboratory, the year in which the samples were logged, a folder number unique to the job, and an extension for the sample number within that job. The format of the laboratory code is as follows:

e.g. Lab Code R2303233-001 =

R - Rochester
23 - Year 2023
03233- Folder Number (sequential number of jobs logged in that year)
001 – Sample number in that Folder.

The LIMS generates a Summary that contains client information, sample descriptions, sample matrix information, required analyses, sample collection dates, analysis due dates and other pertinent information. The service request is reviewed by the appropriate Project Chemist for accuracy, completeness, and consistency of requested analyses and for client project objectives.

Sample Storage and Security

Following receipt, samples are stored in accordance with analytical method requirements until they undergo analysis, unless otherwise specified, using various refrigerators or freezers, or designated secure areas. ALS/Rochester has two walk-in cold storage units which house the majority of sample containers received at the laboratory. The storage areas for VOC samples are monitored using storage blanks, as described in the *SOP for Volatile Storage Blanks (VOC-BLANK).* ALS also has freezers capable of storing samples at -20° C. The temperature of each sample storage unit is monitored. Recording thermometers placed in refrigerators provide a record of the storage conditions to which samples are exposed.

Unless other arrangements have been made in advance, most aqueous and soil samples are retained at 0-6°C in refrigerators for at least 30 days from receipt. Samples are required to be held for at least 60 days. Samples removed from the refrigerators are moved to an ambient temperature storage room as needed for an additional 30 days. Upon expiration of these time limits, the samples are either returned to the client or disposed according to approved disposal practices. All samples are characterized according to hazardous/non-hazardous waste criteria and are segregated accordingly. All hazardous waste samples are disposed of according to formal procedures outlined in the Sample Disposal SOP (SMO-SPLDIS). All waste produced at the laboratory, including the laboratory's own various hazardous waste streams, is treated in accordance with all applicable local and Federal laws. The bar coding system used to track samples through the lab, including disposal, produces cradle to grave sample history for each sample aliquot.

To maintain facility security and thus sample security, entrance to the ALS facility can be attained only through security access, except at the main business entrance; this is open only during normal business hours and monitored by the receptionist. All non-employees are required to sign in with the receptionist at the main entrance. The entrance to the Sample Receiving area remains locked and is opened by the sample receiving personnel only to receive samples. The ALS facility is equipped with an alarm system.

Sample Tracking and Custody

Sample custody transfer at the time of sample receipt is documented using chain-of-custody (COC) forms accompanying the samples.

Facility security is described in the previous section.

A bar-coding system is used to document internal sample tracking. The system uniquely identifies the sample container. The system can be used for a full internal custody record if the client notifies the lab of the need of Legal Chain of Custody. The procedures are described in the *SOP for Sample Tracking and Internal Chain of Custody (SMO-ICOC).*

7.5 Technical Records

7.5.1 The generation, compilation, reporting, and archiving of data is a critical component of laboratory operations. In order to generate data of known and acceptable quality, the quality assurance systems and quality control practices (including electronic data systems) must be complete and comprehensive and in keeping with the overall quality assurance objectives of the organization.

Original raw data is obtained electronically, whenever possible. When manual recording of data is necessary, direct manual entry to a spreadsheet is preferable to handwritten records. When handwritten records are used, it is typically for entries to logbooks for support equipment, maintenance logs, or standard and reagent preparation logs. Laboratory notebook entries are standardized following the guidelines in the *SOP for Making Entries and Control of Records* (ADM-DATANTRY). Entries made into laboratory notebooks are reviewed and approved by the appropriate supervisor at a regular interval.

The SOP for *Data Archiving* (ADM-ARCH) describe what records are maintained, how and where they are maintained, how long they are maintained, and how they are disposed.

In the event that the laboratory transfers ownership or goes out of business, laboratory records shall be retained for the contracted period and clients shall be notified prior to early destruction or disposal or samples or data. Samples may be shipped to another network location under client approval. Accrediting authorities shall be notified as soon as possible.

The control of electronic records are described in the following:

- **Information Management Systems -**ALS currently uses StarLIMS v.9 throughout the laboratory. This data management and retrieval system is deployed via Citrix XenApp Server from a centralized application server farm located in Portland, OR. This LIMS system utilizes Oracle 10g R1 as its database server, which runs on a Linux Operating System. The system allows the user to acquire data from instrumentation and to generate ASCII, spreadsheet, database, and/or print files. The ALS Laboratory Information Management System (LIMS) is used to manage sample information, sample tracking, sample workload projections, sample result storage, reporting, and invoicing. The LIMS is used to track the status of a sample and is important in maintaining internal chain of custody. Access is controlled by password. The laboratory will notify the customer prior to changes in LIMS software or hardware configuration if the change will adversely affect customer electronic data. The LIMS is inspected annually by the Quality Manager or designee to ensure the integrity of electronic data.
- **Backup and Security -**ALS laboratory data is acquired directly to the centralized acquisition server. All backups are performed using CommVault Simpana software to an offsite SAN in one of the ALS datacenters. These disk backups are then archived to tape for long-term storage. Incremental backups are performed daily, and a full backup is performed weekly**.** Weekly backups are stored for a month. The last of the month is stored for one year. The last backup of the year is stored for 10 years**.** All installed software, software versions, and software changes are managed via ServiceNow (ALS service management software). The server is also locally mirrored to a hard drive to provide quick restoration of the server should the server need to be replaced.

  The external e-mail system and Internet access is established via a single gateway to discourage unauthorized entry. ALS uses a closed system for company e-mail. Files, such as electronic deliverables, are sent through the external e-mail system only via a trusted agent. The external messaging system operates through a single secure gateway. Email attachments sent in and out of the gateway are subject to a virus scan. Because the Internet is not regulated, we use a limited access approach to provide a firewall for added security. Virus screening is performed continuously on all network systems.

7.5.2 ALS ensures that amendments to technical records are tracked to previous versions or to original observations. Both the original and amended data and files are retained, including the date of alteration, an indication of the altered aspects and the personnel responsible for the alterations.

7.6 Evaluation of Measurement Uncertainty

Uncertainty is associated with most of the results obtained in the laboratory testing conducted by ALS. It is meaningful to estimate the extent of the uncertainty associated with each result generated by the laboratory. It is also useful to recognize that this measurement of uncertainty is likely to be much less than that associated with sample collection activities.

In practice, the uncertainty of a result may arise from many possible sources. ALS has considered the relative contribution of major sources of error. The approach to estimating uncertainty adopted by the laboratory resulted in the conclusion that many sources of error are insignificant compared to the processes of sample preparation, calibration, and instrumental measurement. Uncertainty attributed to the laboratory processes can be estimated, if requested, using the Laboratory Control Sample (LCS) limits. Since the LCS undergoes the same sample handling as the sample, the average recovery and standard deviation of the LCS represents the expected average recovery and standard deviation of the sample. This approach does not account for uncertainty attributed to sampling variability and specific sample matrix interferences. Field Duplicates, Field Blanks, and Sample Matrix Spikes may be used to further interpret the field influence on the data. The estimation of uncertainty applied by ALS relates only to measurements conducted in the laboratory. Uncertainty associated with processes conducted external to the laboratory (e.g., sampling activities) are not considered.

Calculation of uncertainty may use the precision measurement values for duplicate samples when LCS or QC samples are not used in testing.

The calculation of uncertainty is not required for qualitative tests. The process is assessed for contributors to uncertainty but the calculation of uncertainty has limited value when empirical values are not available.

7.7 Ensuring the Validity of Results

Before samples are analyzed, the analytical system must be in a controlled, reproducible state from which results of known and acceptable quality can be obtained. That state is verified through the use of Quality Control (QC) procedures intended to ensure accuracy, precision, selectivity, sensitivity, freedom from interference, and freedom from contamination. The QC procedures performed at ALS include: calibration and calibration verification; analysis and comparison of resultant data to predetermined control limits for method blanks, laboratory control samples, spiked matrix samples, duplicate matrix samples, and surrogates added to samples; analysis of performance evaluation samples; determination of Reporting Limits; and the tracking and evaluation of precision and accuracy. The standard lab limits for these QA objectives are found in the Data Quality Objectives table in Appendix. For specific analytical methods, other QC procedures are implemented as required by the method.

These QC procedures are performed and evaluated on a batch basis. Batching procedures and requirements are found in the ALS SOP ADM-BATCH "Sample Batches and Analytical Sequences." The samples in a batch are processed together, through each step of the preparation and analysis, to ensure that all samples receive consistent and equal treatment. Consequently, results from the batch QC samples, not including field sample QC, are used to evaluate the results for all samples in the batch.

In general terms, instrument calibration, method quality control, and data evaluation is described in analytical SOPs.

All QC parameters set by the applicable ALS SOP or method reference shall not be exceeded without proper documentation in the client report.

The hierarchy of quality control requirements begins with:

- ✓ Client Requirements (if specified and documented)
- ✓ Method and/or SOP requirements
- ✓ Guidance from QAM and other general SOPs

Calibration and Calibration Verification

Instrument calibration is a QC measure taken to verify selectivity and sensitivity. Calibration of instruments at ALS is accomplished through the use of high quality reference materials. . ISO or National Metrology Institute (NMI) traceable reference materials are procured and used if they are available. When ISO or National Metrology Institute (NMI) traceable reference materials are not available, certified reference materials from government agencies or reliable vendors are used. In all cases, written records are maintained that allow all analytical results to be traced unambiguously to the reference materials used for calibration.

In general, analytical instruments are initially calibrated with standard solutions made from the reference materials at levels appropriate for the analysis. This is called the initial calibration (ICAL). This calibration is verified with a standard solution independently prepared from a different lot of the reference material, preferably from a different vendor. This step is called initial calibration verification or ICV. At specified intervals throughout the analytical sequence, the calibration is re-verified again through the analysis of a calibration check solution, usually the mid-point standard solution. This process is called the continuing calibration verification or CCV. If the ICAL, the ICV, or any CCV fails criteria in the analytical method, the system is recalibrated or the results are narrated. It is ALS' intention to only report results generated under acceptable calibration conditions. Specific calibration procedures are found in the SOPs associated with each method of analysis.

Calibration blanks are analyzed at designated frequencies for some methods. These calibration blanks (CCBs) are solutions of either analyte-free water, reagent, or solvent that are analyzed in order to verify the analytical system is contamination-free. The frequency of CCB analysis is specified in the analytical SOP and usually once every ten samples. Additional project-specific requirements may also apply to continuing calibration blanks.

Alternative calibration sequences or procedures will be discussed with clients.

Analysis of Method Blanks

The method blank is an analyte-free matrix (water, soil, etc.) subjected to the entire preparation and analytical process. When analyte-free soil is not available, organic-free sand, glass beads, Teflon chips or an acceptable substitute is used. The method blank is analyzed to demonstrate that the analytical system itself does not introduce contamination. The method blank results should be below the Method Reporting Limit (MRL) or, if required for DoD projects, < ½ LOQ for the analyte(s) being tested. Otherwise, corrective action must be taken. A method blank is included with the analysis of every sample preparation batch, every 20 samples, or as stated in the method, whichever is more frequent.

Analysis of Laboratory Control Samples

The laboratory control sample (LCS) is an aliquot of analyte-free water or analyte-free solid to which known amounts of the method analyte(s) is (are) added. A reference material of known matrix type, containing certified amounts of target analytes, may also be used as an LCS. An LCS is prepared and analyzed at a minimum frequency of one LCS per 20 samples, with every analytical batch or as stated in the method, whichever is more frequent. The LCS sample is prepared and analyzed in exactly the same manner as the field samples.

The percent recovery of the target analytes in the LCS is compared to established control limits and assists in determining whether the methodology is in control and whether the laboratory is capable of making accurate and precise measurements at the required reporting limit. Comparison of batch-to-batch LCS analyses enables the laboratory to evaluate batch-to-batch precision and accuracy.

The results of the LCS are reported as percent recovery:

$$\%\ Recovery\ = \frac{X}{K} x\ 100$$

Where: X = Measured value and K = Expected value

Analysis of Spiked Matrix Samples

Matrix QC samples are generally used to determine acceptability of methods chosen on a field sample and are therefore not used to determine batch acceptability. If the analysis of matrix spike is not possible, a duplicate LCS or QC should be analyzed in the batch.

Matrix spiked samples are aliquots of samples to which a known amount of the target analyte (or analytes) is (are) added. The samples are then prepared and analyzed in the same analytical batch, and in exactly the same manner as are routine samples. For the appropriate methods, matrix spiked samples are prepared and analyzed and at a minimum frequency of one spiked sample (and one duplicate spiked sample, if appropriate) per twenty samples. The spike recovery measures the effects of interferences caused by the sample matrix and reflects the accuracy of the method for the particular matrix in question. The results are reported as percent recovery.

$$\%\ Recovery\ = \frac{(Xs\ -\ Xu)}{K} x\ 100$$

Where Xs = Measured value in the spiked sample, Xu = Measured value in the unspiked sample, and K= Expected value

Laboratory criteria will be used in the absence of client-specified criteria. Failure to meet these criteria will be noted in the report.

Analysis of Duplicate Matrix Samples

Matrix QC samples are generally used to determine acceptability of methods chosen on a field sample and are therefore not used to determine batch acceptability. If the analysis of matrix spike is not possible, a duplicate LCS or QC should be analyzed in the batch.

A duplicate matrix spike sample or duplicate matrix sample is used to monitor the precision (repeatability) of the method chosen on a field sample. If a sufficient amount of the analyte(s) of interest is present in the field sample, a matrix duplicate sample is analyzed directly. If the analyte(s) of interest are not present in a sufficient amount, two additional portions of field sample are spiked with the analyte(s) of interest to ensure that meaningful results are obtained. A pair of duplicate samples (matrix/matrix duplicate or matrix spike/matrix spike duplicate) is analyzed with every analytical batch of environmental samples. The results of the analysis of duplicate samples are reported as relative percent difference (RPD).

$$RPD = \frac{|X_1 - X_2|}{\left[\frac{(X_1 + X_2)}{2}\right]} x\ 100$$

Where: $|X_1 - X_2|$ = The absolute value of the difference between the two sample values, $[(X_1 + X_2)/2]$= The average of the two sample values

Laboratory criteria will be used in the absence of client-specified criteria. Failure to meet these criteria will be noted in the report.

Analysis of Surrogates Added to Samples

Surrogates are organic compounds which are similar in chemical composition and chromatographic behavior to the analytes of interest, but which are not normally found in environmental samples. Depending on the analytical method, one or more of these compounds is added to method blanks, calibration and check standards, and samples (including duplicates, matrix spike samples, duplicate matrix spike samples and laboratory control samples) prior to extraction and analysis in order to monitor the method performance on each sample. Surrogate recovery is a measure of the accuracy and selectivity of the method in the sample matrix. Surrogate results are reported as percent recovery.

$$\%\ Recovery = \frac{X}{K} x\ 100$$

Where: X = Measured value and K = Expected value

Analysis of Internal Standards (IS)

Internal standards are known amounts of specific compounds that are added to each sample prior to instrument analysis. Internal standards are generally used for GC/MS and ICP-MS procedures to correct sample results that have been affected by changes in instrument conditions or changes caused by matrix effects. The requirements for evaluation of internal standards are specified in each method and SOP.

Analysis of Interference Check Samples

An interference check sample (ICS) is a solution containing both interfering and analyte elements of known concentration that can be analyzed to verify background and interelement correction factors in metals analyses. The ICS is prepared to contain known concentrations (method or program specific) of elements that will provide an adequate test of the correction factors. The ICS is analyzed at the beginning and end of an analytical run or at a method-specified frequency. Results must meet method criteria and any project-specific criteria.

Analysis of Post Digestion Spikes

Post digestion spikes are samples prepared for metals analyses that have an analyte spike added to determine if matrix effects may be a factor in the results. The spike addition should produce a method-specified minimum concentration above the method reporting limit. A post digestion spike is analyzed with each batch of samples and recovery criteria are specified for each method.

Analysis of MRL Standards (CRDL, LFB)

A laboratory blank fortified at the MRL used to verify the minimum reporting limit. The LFB is carried through the entire extraction and analytical procedure. A LFB is required with every batch of drinking water samples.

Analysis of Performance Evaluation Samples (PT)

Proficiency testing (PT) samples are prepared by an independent organization outside the laboratory. PT providers are evaluated as per the requirements for External Suppliers and must be accredited by TNI for TNI work or ISO/IEC 17043:2010 for work requiring ISO accreditation. They are received and analyzed at regular intervals to monitor laboratory accuracy. ALS Laboratories sends the PT sample results to the independent organization, where they are evaluated and then forwarded directly from that organization to accreditation bodies as needed. PT samples are introduced into the regular sample stream of the laboratory and analyzed as routine samples by analysts who regularly perform the method. Laboratory personnel follow all instructions provided by the PT provider.

Procedures for these analyses are described in the SOP for *Proficiency Sample Testing Analysis* (ADM-PTS). This SOP details prohibited practices regarding Proficiency Testing.

ALS routinely participates in the following studies:

- Water Pollution (WP) and additional water parameters, 2 per year.
- Water Supply (WS) PT studies, 2 per year.
- Hazardous Waste/Soil PT studies, 2 per year.
- Microbiology (WS) PT studies, 2 per year.
- Other studies as required for specific certifications, accreditations, or validations.

PT samples are processed by entering them into the LIMS system as samples (assigned Service Request, due date, testing requirements, etc.) and are processed the same as field samples. The laboratory sections handle samples the same as field samples, performing the analyses following method requirements and performing data review. The laboratory sections submit results to the QA Program Manager for subsequent reporting to the appropriate agencies or study provider. Results of the performance evaluation samples and audits are reviewed by the QA PM, Laboratory Director, and the laboratory staff. For any results outside acceptance criteria, the analysis data is reviewed to attempt to identify a root cause for the deficiency, and corrective action is taken and documented through nonconformance procedures.

The Laboratory Director, Technical Managers or the Quality Manager can institute the analysis of additional PT samples or modify the performance evaluation program as appropriate.

Data Review of Batch

The integrity of the data generated is assessed through the evaluation of the sample results (examples below), initial calibrations, and QC samples. The criteria for evaluation of QC samples are listed within each method-specific SOP. Data is formally reviewed by the analyst and a peer using a checklist which details the items to be reviewed. The data review procedures and decision rules are in the SOP *Laboratory Data Review Process* (ADM-DREV). Records of the data review are maintained and available for external review.

- Holding Times – Holding times assigned by hours are tracked from the minute of sampling to the minute of analysis. Holding times assigned by days are tracked by the day, the holding time ends at midnight of the last day. Holding times prescribed in longer units (weeks, months, years) are handled in the same manner as a holding time defined in days, after converting the holding time to days. Weeks are defined as 7 days; months are defined as 30 days; years are defined as 365 days. When a time of sampling is not provided by the client, ALS uses the first minute of the sampling day (00:00) in the calculation of holding time. Examples:

  48 hour holding time: Sampled May 1 09:32. Holding time is exceeded if not analyzed by May 3 09:32.

  5 day holding time: Sampled May 1 09:32. Holding time is exceeded if not analyzed by May 6 at 23:59.

  6 month holding time: Sampled May 1 09:32. Holding time is exceeded if not analyzed by Oct 28 23:59.

- Sample Results (Inorganic) – Following sample analysis and calculations (including any dilutions made due to the sample matrix) the result is verified to fall within the calibration range. If the result is above the calibration range, the sample is diluted and analyzed to bring the result into calibration range. When sample and sample duplicates are analyzed for precision, the calculated RPD is compared to the specified limits. The sample and duplicate are reanalyzed if the criteria are exceeded. The samples may require re-preparation and reanalysis.

- Sample Results (Organic) – For GC/MS analyses, it is verified that the analysis was within the prescribed tune window. If not, the sample is reanalyzed. Following sample analysis and calculations (including any dilutions made due to the sample matrix) peak integrations, retention times, and spectra are evaluated to confirm qualitative identification. Internal standard responses and surrogate recoveries are evaluated against specified criteria. If internal standard response does not meet criteria, the sample is diluted and reanalyzed. Results outside of the calibration range are diluted to within the calibration range. For GC and HPLC tests, results from confirmation analysis are evaluated to confirm positive results and to determine the reported value. The procedure to determine which result to report is described in the SOP for *Confirmation of Organic Analyte Identification and Quantitation (ADM-CONFIRM).* If obvious matrix interferences are present, additional cleanup of the sample using appropriate procedures may be necessary and the sample is reanalyzed. When dilutions are performed, the MRL is elevated accordingly and qualified.

Tracking, Trending, and Evaluation of Long Term Accuracy and Precision

In addition to evaluating individual batch QC results against control limits, QC results from successive batches are also evaluated for possible trends. While a trend is not necessarily an out-of-control situation in itself, it can provide an early warning of a condition that can cause the system to go out of control.

ALS analytical staff identify trends in analytical systems through the routine evaluation of data. Quality Assurance produces control charts as requested to assess trends but this activity by QA is not preventive and is only used to verify trends exist. The occurrence of a trend does not invalidate data that are otherwise in control. However, trends do require attention to determine whether a cause can be assigned to the trend so that appropriate preventive action can be undertaken.

The generation of control charts is routinely performed at ALS. Surrogate and LCS recoveries are monitored and charted using in-house software (ALS QC Control) and . Control charts are available to monitor the data and to identify various trends in the analytical results. Evaluation of long term trends is performed quarterly and annually for all LCS and surrogates using average and standard deviation. The annual comparison of all LCS and surrogates provides a longer-term view of overall trends. The Quality Manager compares the newly generated statistical limits to the old and determines whether the new acceptance criteria is to replace the previous criteria. Investigative action may be taken if charts reveal a potential problem with data quality. See SOP for *Control Limits and Trending* (ADM-CTRL_LIM).

7.8 Reporting of Results

7.8.1 The following procedures describe our peer review procedures.

- When an analyst determines that the analytical data has met the data quality objectives (and/or any client-specific data quality objectives) of the method and has qualified any anomalies in a clear, acceptable fashion, the data package is reviewed by another trained analyst or supervisor. If the data package is acceptable, the secondary reviewer approves the data in LIMS.
- When all of the data in the LIMS has been approved by the analytical departments, the system indicates that report is ready for generation. A report writer generates the applicable report from the LIMS and assembles the package based upon the package level. The instructions for generation of a report and package assembly is given in the SOP for *Data Reporting and Report Generation* (ADM-RG).

7.8.2 The reports produced by ALS meet the following requirements:

- ✓ The report identifies the method used. If the method is modified, it is noted as "modified" in the report.
- ✓ Any abnormal sample conditions, deviation from hold time, irregularities in preservation or other situations that might affect the analytical results are noted in the report and associated with the analytical results.

The contents of the report include:

- ✓ The report title with a unique report number
- ✓ the name, address, and telephone number of the laboratory
- ✓ The name and address of the client or project
- ✓ Sample description and associated unique laboratory identification numbers
- ✓ The dates of sample collection, sample receipt, sample preparation, and analysis

- ✓ The time of sample preparation and/or analysis if the required hold time for either activity is 48 hours or less
- ✓ A method identifier for each method, including methods for preparation steps
- ✓ The MDL or minimum reporting limit for the analytical results
- ✓ The analytical results with units and qualifiers as required
- ✓ A description of any quality control failures and deviations from the accepted method
- ✓ The name and title of the individual(s) who accepts responsibility for the content of the report.
- ✓ The date the report is issued
- ✓ Clear identification of any results generated by a subcontract laboratory
- ✓ If sampling activities are performed by ALS personnel, a reference to the sampling procedures. ALS does not perform any sampling for DOD sites.
- ✓ Page numbers and total number of pages

Prior to release of the report to the client, the project chemist reviews the entire report for completeness according to the SOP for *Project Manager Duties and Report Review* (ADM-PCR). The Project Manager ensures that any and all client-specified objectives were successfully achieved. All data are reported in units consistent with project specifications to enable easy comparison of data from report to report.

For subcontracted analyses, the Project Chemist verifies that the report received from the subcontractor is complete. This includes checking that the correct analyses were performed, the analyses were performed for each sample as requested, a report is provided for each analysis, and the report is signed. The Project Chemist accepts the report if all verification items are complete. Acceptance is demonstrated by forwarding the report to the client.

7.8.3 ALS provides results objectively. ALS does not interpret results or state opinions.

7.8.4 ALS does not perform calibration services.

7.8.5 The laboratory reports results based on the sample provided by the customer. If ALS reports to a specification it is only for the sample results. The lab is not involved with decision rules applied to the sampling site.

7.8.6 Amended reports of analytical results are issued to correct errors. Amended reports require the following items:

Amendments to analytical reports will only be made in supplemental documents and shall contain identification similar to “Amended”.

Include the date amended or released to the client.

Amended reports shall meet all reporting and client requirements.

Amended Reports are stored with the original report, are uniquely identified, and make reference to original reports.

A peer review process is used to ensure amended results are accurate.

Any information changed in the report must have the reason for the change documented in the report.

7.8.7 Deliverables

In order to meet individual project needs, ALS provides several levels of analytical reports. Standard specifications for each level of deliverable are described in Table 7-1. Variations may be provided based on client or project specifications.

When requested, ALS provides Electronic Data Deliverables (EDDs) in the format specified by client need or project specification. ALS is capable of generating EDDs with many different formats and specifications. The EDD is prepared by report production staff using the electronic version of the laboratory report to minimize transcription errors. User guides and EDD specification outlines are used in preparing the EDD. The EDD is reviewed and compared to the hard-copy report for accuracy.

Table 7-1
Descriptions of ALS Standard Data Deliverables

Tier II. This Report includes the following:

1. Transmittal letter
2. Case Narrative
3. Sample Detection Summary
4. Sample Cross Reference
5. Chain of custody documents and sample/cooler receipt documentation
6. Report Qualifiers and Definitions, Acronyms, Accreditation IDs, Analyst Summary
7. Sample analytical results
8. Method blank results
9. Surrogate recovery results and acceptance criteria for applicable organic methods
10. Matrix spike result(s) with calculated recovery and including associated acceptance criteria
11. Duplicate or duplicate matrix spike result(s) (as appropriate to method), with calculated relative percent difference
12. Laboratory Control Sample result(s) with calculated recovery and including associated acceptance criteria
13. Dates of sample preparation and analysis for all samples and QC

Tier IV. Full Data Validation Package. In addition to the Tier III Deliverables, this Report includes the following:

1. All raw data associated with the sample analysis, including but not limited to:
   a. Preparation and analysis bench sheets and instrument printouts,
   b. For organics analyses, all applicable chromatograms, spectral, confirmation, and manual integration raw data. For GC/MS this includes tuning results, mass spectra of all positive hits, and the results and spectra of TIC compounds when requested.
   c. QC data,
   d. Calibration data (initial, verification, continuing, etc),
   e. Calibration blanks or instrument blanks (as appropriate to method).

7.9 Complaints

ALS has a documented process (ADM-FEEDBACK "Handling Customer Feedback") for how complaints are received, recorded, and evaluated. Complaints may result in Nonconformance documentation and/or corrective action. Decisions and outcomes are monitored and communicated. These outcomes are available upon request.

7.10 Nonconforming Work

7.10.1 The laboratory takes all appropriate steps necessary to ensure all sample results are reported with acceptable quality control results. When sample results do not conform to established quality control procedures, responsible management will evaluate the significance of the nonconforming work and address the nonconformance according to the procedures in the SOP *Nonconformance and Corrective Action (ADM-CA)*. Most non-conformances are random events and can be addressed on the analytical report with standard qualifiers and statements prior to the release of the report. If a quality control measure is found to be out of control, and the data is to be reported, all samples associated with the failed quality control measure shall be reported with the appropriate data qualifier(s) as found in Appendix H

When a nonconformance or other quality issue occurs that casts doubt on the validity of reported test results or additional client instructions are needed, the Project Chemist notifies the client within 10 business days of the discovery. This gives the laboratory time to ascertain the extent and significance of the problem. The SOP for Data Recall (CE-GEN006) is used to guide the recall decision and recall action.

When identification of non-conformances casts doubts on the laboratory's compliance with its own policies and procedures, or on its compliance with applicable Standards (TNI, DOD QSM) or State regulations, the appropriate areas of activity are audited as soon as possible. In addition, the appropriate project chemist is promptly notified of any problems in order to inform the client and proceed with appropriate action. Actions (including halting or repeating of work and withholding of reports, as necessary) are based upon the risk levels established by the laboratory.

- ✓ Any employee may stop work when a task cannot be performed safely or the quality of data is determined to be or could be negatively affected. Metrics utilized for work stoppage may include but are not limited to exceeding instrument or sample control limits, QC trending, instrument problems, etc. The appropriate manager shall be consulted for any work stoppage.
- ✓ the management team is responsible for authorizing the resumption of work.

7.10.2 The laboratory retains records on all nonconformance.

7.10.3 If this evaluation determines the problem has or can reoccur or it is against the laboratories own policies or procedures the event requires a corrective action as described in section 8.7.

7.11 Control of Data and Information Management

7.11.1 The laboratory has access to all data and information through the internet, intranet, network locations and hard copy.

7.11.2 All of the software used for data reduction, verification, and reporting is documented and validated by the ALS computer support staff or by the vendor from whom it is purchased. ALS software is controlled and secured according to ALS SOP ADM-SWQADATA, "Software Quality Assurance and Data Security". A continuing effort is made at ALS to increase the use of automated data handling, improve efficiency, and minimize human error. All raw data is retained. If electronic audit trail functions are available, they are to be in use at all times. Handwritten data is verified for transcription errors by the secondary reviewer.

Software errors are treated as a nonconformance under section 7.10 or as a corrective action under 8.7.

7.11.3 Access to ALS networks are controlled through passwords and windows security. Access to LIMS is controlled through user names and passwords. LIMS passwords are changed at a minimum of once per year. Computer security awareness training is provided upon hiring and on an annual basis. Records of the training are maintained.

7.11.4 Network drives are backed up locally at the Rochester lab and remotely at another ALS location.

7.11.5 Access to network locations is managed with windows security and roles throughout the system.

7.11.6 Calculations and data transfers are checked using the peer review process and through documentation of computer programs by the IT staff. The QA department checks calculations on any lab produced spreadsheet templates. The spreadsheets are provided to the lab as Read Only with protection of calculations to prevent accidental changes.

7.11.7 Inspections of the LIMS is performed at least annually by the Quality Manager or designee to endure integrity of electronic data. Records of the inspections are made and a report is submitted to laboratory management, noting any problems identified. Any corrective actions are documented in the corrective action documentation system.

8. Management System Requirements

8.1 Options

8.1.1 The laboratory has implemented **Option A** from the ISO/IEC 17025:2017 standard as a management system. The following sections 8.2 through 8.9 address the required elements of Option A. This manual addresses management systems and demonstrates compliance with this document.

8.2 Management System Documentation

8.2.1 This manual describes or references the policies and objectives of the ALS management system. The laboratory SOPs describe the details on how objectives are accomplished.

8.2.2 Policies and objectives of the management system address how competence is demonstrated and assessed, how testing is objectively reviewed and how consistent operations are accomplished. These are addressed in various procedures that define the processes used.

8.2.3 Evidence of commitment is the review of this manual annually and the records of reading by all employees. Additionally, employees are assigned pertinent procedures as needed to ensure objectivity and consistency.

8.2.4 The policies are supported in this management system with references to the procedures as appropriate.

8.2.5 All employees have access to the Quality Assurance Manual and the supporting procedures, documents, and forms.

8.3 Control of Management System Documents

8.3.1 Procedures for control and maintenance of documents are described in ALS SOP "Document Control". The requirements of these SOPs apply to all laboratory logbooks (standards, maintenance, run logbooks, etc), certificates of analysis, SOPs, QAMs, and other controlled documents (Appendix I). External documents, such as reference methods, accreditation policies and requirements, and reference manuals are maintained under document control policies through the use of hardcopy and network drives.

8.3.2 Revisions are made to uniquely identified internal documents in accordance with the "Document Control" SOP. Assignments are made to the responsible ALS manager or designee to review and update SOPs applicable to the area of responsibility. After revision, the appropriate Manager, Quality Manager, and Laboratory Director must approve the updated SOP. Filing and distribution is performed by the QA PM, or designee, and ensure that only the most current version of the document is distributed and in use. Logbooks and SOPs that are no longer in use are archived according to ADM-ARCH.

8.4 Control of Records

8.4.1 ALS maintains most records electronically. Some records are stored in hardcopy. All records are stored in accordance with *SOP for Data Archiving (ADM-ARCH)*. Analytical records are kept for 10 years. Logbook entries are standardized following the *SOP for Making Entries and Control of Records* (ADM-DATANTRY). ALS personnel are responsible for retention, retrieval, and disposition of final records of laboratory data and activities. This includes: sample receipt, data packages, laboratory notebooks, instrument maintenance logs, training records, internal and external audits, management reviews, PT reports, QC charts, MDL calculations, accreditations, subcontractor accreditations, Controlled documents, metrology, data investigations, complaints, non-conformances, corrective actions, vendor approvals, purchasing documents, receipt records, and certificates of analysis.

Changes made to data, including electronic data, must clearly identify the date and the person making the change and must follow the procedures in ADM-DATANTRY.

All records are available to the accreditation bodies. Whenever possible, electronic instrument records are stored on the network, which is backed up remotely to prevent data loss due to hardware failure. Software for decommissioned instruments is maintained in ServiceNow (see section 7.5).

8.5 Actions to Address Risks and Opportunities

Multiple Quality System tools are used with the goal of identifying trends and preventing non-conformance with pro-active systems. These tools include the use of Preventive Maintenance, Data Review procedures (ADM-DREV), purchasing from approved vendors (ADM-PUR), the use of second source standards and batch QC, Proficiency Testing, QC Charting, Customer Feedback, Internal auditing, Management Review, Electronic Data backup and computer security procedures, Training procedures, Monthly Risk reporting,

Document Control, Annual SOP review, initial and annual ethics training, and the use of SOPs. When systematic non-conformances are identified in one area, corrective actions are examined for implementation in other lab areas and other ALS labs, as applicable.

All bench level personnel are responsible to continually detect short-term trends in QC data and respond appropriately (instrument maintenance, check of extraction or instrument conditions, check of standards, etc.). Long Term trends are identified with QC Charting, review of Holding Time exceedances, and review of recurring non-conformances.

ALS views risk management as a key component of its corporate governance responsibilities and an essential process in achieving and mandating a viable organization. ALS is committed to enterprise wide risk management to ensure its corporate governance responsibilities are met and its strategic goals are realized.

Refer to ALS Limited Risk Management Policy and Framework CAR-GL-GRP-POL-007 and Risk Appetite and Tolerance Statement CAR-GL-POL-011 for details.

Risk is defined at ALS as the effect of uncertainty on objectives. Objectives for the organization have different attributes and aspects, such as financial, service, quality, health & safety, environmental stewardship, and are considered at different levels, such as enterprise-wide, operational, and project levels. ALS interprets risk as anything that could impact meeting its corporate strategic objectives, and believes risks can provide positive opportunities as well as having negative impacts.

Tools for evaluating and managing risk include routine procedures such as employee evaluations, Management Review, control limits trending, corrective action reports, nonconforming events, SOP review, internal and external audits, and PT results.

Risk reporting mechanisms vary from routine reporting mechanisms and immediate action for lower risk situations to immediate notification of the ALS CEO in extreme cases.

Refer to: ALS Code of Conduct, ALS Whistleblower Policy and Integrity and Compliance Helpline

Regardless of the mechanism used, the policies and tools provide a framework for categorizing, assessing, analyzing, and addressing risk, as well as monitoring and reviewing actions taken. Roles and responsibilities are defined in the relevant procedures.

Risk severity is evaluated during the decision making process. For each risk there is an opportunity.

Risks to our business and how we address them include:

Impartiality by Employees

Analytical testing is completed without undue pressure to modify results to meet client objectives.
ALS does not view this as a risk. There are many firewalls in the lab process to prevent occurrence.

- Project Managers are in contact with clients but there is no ability to influence testing results
- A data generated must be peer reviewed by a second party
- Lab operations only see samples, sample names and numbers. They do not have direct contact with clients.
- Annual Ethics and Data Integrity Training for all employees
- ALS Code of Conduct, ALS Whistleblower Policy, ALS Integrity Hotline, and Integrity and Compliance Helpline.

Chemical Exposure

Failure to practice procedures as trained, issues with the facility, and poor engineering controls can result in injury to employees, lost time, med/hospital situation, contamination, and can close the site.

ALS has policies, chemical exposure training, and readily available SDS sheets. Employees are expected to offer suggestions for improvement and formally report any conditions where concern for safety is recognized.

Explosion/Chemical Fire

Improper chemical storage and usage along with lack of equipment and facility upkeep can result in loss of life, loss of property, and laboratory down time.

ALS performs inspections and training, keeps an inventory of chemicals, establishes storage locations, and maintains minimal quantities of chemicals.

Supply Disruption

Natural disaster and vendors unable to provide needed supplies can disrupt the business, increase expenses, and result in lost production and lost clients.

ALS maintains multiple sources for supplies, develops relationships with our vendors, and emphasizes communication between analysts, managers, purchasing and vendors.

Loss of Key Employees

Resignation, leave for personal reasons or for other employment can negatively impact the business.

Communication, cross-training, designated backups, and having a pool of potential replacements minimizes this risk. We provide a positive atmosphere for employees and provide small perks to reward dedication.

Computer and Instrument Issues

Computer, instrument, or other IT failures can result in loss of revenue, loss of service, and loss of data.

ALS provides necessary IT resources for instruments and computers including replacing older computers, keeping related systems in good repair, and replacing when necessary. ALS continues to build robust data systems and make provisions for stellar back-up storage for all data.

Reputation

Falsifying test results can result in loss of credibility, loss of clients, loss of revenue, and loss of accreditation.

All new employees must sign an ethics agreement and have initial ethics and data integrity training. Annually, all employees must take ethics and data integrity refresher training. All data undergoes a proper peer review. ALS maintains a strong quality system.

Legal Ramifications

Not following workplace and environmental laws and failure to practice procedures as trained can result in license revocation, fines, and disruption of the business.

Targeted and ongoing training, inspections, and having established procedures minimizes this risk. ALS continues to follow all laws and regulations.

Loss Time Injury

Failure to practice procedures as trained and not having proper safeguards in place can result in injury to employees, lost time, med/hospital situation, contamination, and can close the site.

Policies, specific task related training, targeted and ongoing training, inspections, workplace safeguards, cross training, and designated backups, minimize this risk. ALS continues to grow the safety program and culture.

Loss of Revenue

Can be caused by various audit fines and contract penalties for late data resulting in loss of revenue and disruption in business.

Policies, specific quality training, targeted and ongoing training, inspections, workplace safeguards, and internal audits minimize this risk. ALS continues to perform lab operations at the highest level.

8.6 Improvement

8.6.1 ALS management is committed to continually improving the effectiveness of the management and quality systems by implementing the requirements of this quality manual. ALS is committed to improvements of the management systems through compliance with its own policies and procedures, including the use of the quality policy, quality objectives, audit results, analysis of data, corrective and preventive actions and management review. ALS management is also committed to compliance with requirements related to current DoD/DOE QSM, and other client and project related requirements.

8.6.2 ALS surveys clients and gains feedback on services provided. This input to management is managed at a corporate level and is reviewed during the management review processes. Customer feedback provides important information to allow the company to continually improve. The laboratory maintains and documents timely communication with the client for the purposes of seeking feedback and clarifying customer requests. Feedback is used and analyzed to improve the quality of services. The *SOP for Handling Customer Feedback* (ADM-FEEDBACK) is in place for these events.

8.7 Corrective Actions

8.7.1 ALS Laboratory operations are governed by documented procedures, requirements, quality assurance plans, project plans, and contracts. When any operation, for any reason, does not conform to the requirements of the governing documents, the aberrant event, item, or situation must be properly documented and evaluated. If the evaluation indicates a systematic problem, root cause evaluation is undertaken and corrective action is initiated. Procedures for the documentation and resolution of corrective action are detailed in the ALS SOP ADM-CA "Nonconformance and Corrective Action". Corrective action may include changes to procedural or management system. It is the policy of ALS that any corrective action which impacts results of testing must include notification to clients. When the lab makes changes that affect a DOD ELAP approved corrective action plan, the DOD ELAP accreditation body is to be notified.

8.8 Internal Audits

8.8.1 Internal audits are conducted in accordance with ALS SOP ADM-IAUD "Internal Audits". When internal and external audits or data assessments reveal a cause for concern with the quality of the data an investigation is initiated by quality assurance personnel to determine the extent of the problem. Internal audits include examination of laboratory practice, the use of data handling systems, documentation and document control, personnel qualification and training records, procurement activities, and other systems that support and augment the laboratory analytical function. Audit findings and any event that casts doubt on the validity of the testing results requires client notification within 15 business days of the discovery of the issue and proposed corrective actions to resolve nonconformance submitted to the customer within 30 business days of the discovery.

8.9 Management Review

8.9.1 Review of the Management System is completed on an ongoing basis in accordance with ALS SOP ADM-MGMTRVW "Management Review".

8.9.2 Inputs to management reviews may be kept in agenda notes and include but are not limited to:

a) Changes in internal and external issues that are relevant to the laboratory; including risks to the laboratory's impartiality and any plan to minimize risks

b) Fulfilment of objectives;

c) Suitability of policies and procedures;

d) Status of actions from previous management reviews;

e) Outcome of recent internal audits;

f) Corrective actions; Preventive Actions

g) Assessments by external bodies;

h) Changes in the volume and type of the work or in the range of laboratory activities;

i) Customer and personnel feedback;

j) Complaints;

k) Effectiveness of any implemented improvements;

l) Adequacy of resources;

m) Results of risk and opportunity identification;

n) Outcome of the assurance of the validity of results (interlaboratory comparisons or proficiency tests);

o) Other relevant factors, such as monitoring activities, quality control activities, and training.

p) Reports from managerial and supervisory personnel

q) Certifications, Accreditations, Licenses, Permits

r) Recommendations for improvement

s) Facility Control

8.9.3 The outputs from the management review shall record all decisions and actions related to at least:

a) The effectiveness of the management system and its processes;

b) Improvement of the laboratory activities related to the fulfilment of the requirements of this document;

c) Provision of required resources;

d) Any need for change.

A summary of these outputs is generated annually.

9. Appendices

Appendices are available upon request. The documents listed in this section are dynamic; accordingly they can change without notice or revision to this QAM. Please contact the laboratory for the most current documents.

APPENDIX A – Definitions

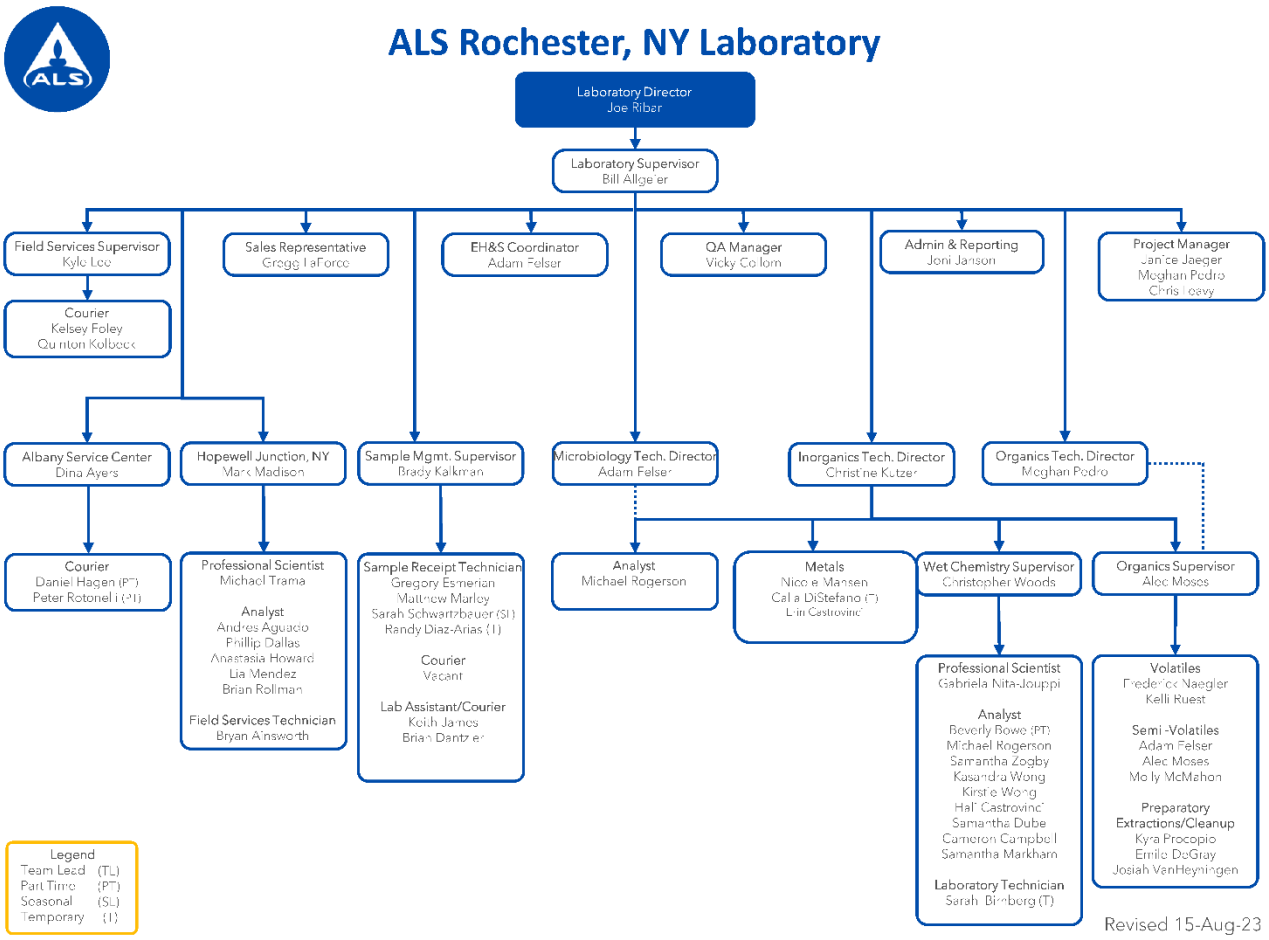
ACRONYM	DEFINITION
AA	Atomic Absorption Spectrometry (aka AAS) instrument used to measure concentration of metals in samples
ACS	American Chemical Society
ASTM	American Society for Testing and Materials
BFB	4-Bromofluorobenzene
BNA	Base Neutral Acid organic compounds (aka SOC or SVOCs)
BOD	Biochemical Oxygen Demand
BTEX/BETX	Benzene, Toluene, Ethylbenzene, Xylenes
CAS Number	Chemical Abstract Service Registry Number
CCB	Continuing Calibration Blank sample
CCC	Continuing Calibration Check sample
CCV	Continuing Calibration Verification sample
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
CLP	Contract Laboratory Program (through USEPA)
COC	Chain-of-Custody
COD	Chemical Oxygen Demand
DCM	Dichloromethane (aka Methylene Chloride)
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality

DHS	Department of Health Services
DOC	Demonstration of Capability
DOE	Department of Ecology (state or federal) or Department of Energy
DOH	Department of Health
EPA	U. S. Environmental Protection Agency (aka USEPA)
EPCRA	Emergency Planning & Community Right-to-Know Act
ERA	Environmental Resource Associates
ELAP	Environmental Laboratory Accreditation Program
FDA	Food & Drug Administration
FIA	Flow Injection Analysis
FID	Flame Ionization Detector
FIFRA	Federal Insecticide, Fungicide & Rodenticide Act
FR	Federal Register
GAO	General Accounting Office
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
HECD/ELCE	Hall Electrolytic Conductivity Detector
HP	Hewlett-Packard (mfg. GC instruments)
HPLC	High Pressure Liquid Chromatography
IC	Ion Chromatography
ICB	Initial Calibration Blank sample
ICP-AES	Inductively Coupled Plasma Atomic Emission Spectrometry (aka ICPAES)
ICP-MS	Inductively Coupled Plasma Mass Spectrometry
ICV	Initial Calibration Verification sample
IFB	Invitation for Bid
IR	Infrared Spectrophotometer
ISE	Ion Selective Electrode
LCS	Laboratory Control Sample
LIMS	Laboratory Information Management System
LOD	Limit of Detection
LOQ	Limit of Quantitation

LUFT	Leaking Underground Fuel Tank
MB	Method Blank
M	Modified
MCL	Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
MS	Matrix Spike
NA	Not Applicable
NAS	National Academy of Sciences
NCASI	National Council for Air and Stream Improvement (for the Paper Industry)
NCI	National Cancer Institute
ND	Not Detected (at or above MRL)
NIH	National Institute of Health
NIOSH	National Institute for Occupational Safety and Health
NIST	National Institute of Standards and Technology
NPDES	National Pollutant Discharge Elimination System
NSF	National Science Foundation
NTIS	National Technical Information System
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PCBs	Polychlorinated Biphenyls
PE	Performance Evaluation sample (AKA PT – Proficiency Test sample)
PID	Photoionization Detector
PQL	Practical Quantitation Limit
QA	Quality Assurance
QC	Quality Control
RCRA	Resource Conservation and Recovery Act
RFP	Request for Proposal
RPD	Relative Percent Difference

SIM	Selected Ion Monitoring
SMO	Sample Management Office (aka Sample Receiving)
SOC	Semi-Volatile Organic Compounds
SOQ	Statement of Qualifications
SOW	Statement of Work
SVOAs	Semi-Volatile Organic Analytes
SVOCs	Semi-Volatile Organic Compounds
SW-846	Test Methods for Evaluating Solid Waste, Physical/Chemical Methods
TOC	Total Organic Carbon (test to determine organic content)
TOX	Total Organic Halides (test to determine organic halide content)
TPH	Total Petroleum Hydrocarbons
TSCA	Toxic Substances Control Act
UST	Underground Storage Tank
UV	Ultraviolet Spectrophotometer
VOA	Volatile Organic Analyte
VOC	Volatile Organic Compounds
WP	Water Pollution
WS	Water Supply
UNITS	
mg/kg	Milligrams per Kilogram (same as ppm)
mg/L	Milligrams per Liter (same as ppm)
ug/L	Micrograms per liter (same as ppb)
ppb	Parts Per Billion
ppm	Parts Per Million

APPENDIX B – Key Personnel and Organization Charts



Joe Ribar

3352 128th Avenue | Holland, MI 49424 | +1 616 218 7990

Education

Purdue University,
Lafayette, IN
B.S. Biology, 2002

Regional Director

2020 – Present

Responsible for the Fort Collins, CO, Cincinnati, OH, Middletown, PA, Holland, MI, and Rochester, NY laboratories. Provides administrative, operational, and technical leadership through planning, allocation, and management of resources.

Previous Experience

Laboratory Director, '17 - '21

ALS Environmental Cincinnati, OH 2017 – Present *Rochester, NY 2018 – 2021*
Responsible for all laboratory activities as the highest-level manager. Providing administrative, operational, and technical leadership through planning, allocation, management of personnel, and management of resources. Provides resources for implementation of the QA program.

Previous Experience

ALS Environmental **Operations Manager, '11 – '17**
Holland, MI
Responsibilities included overseeing laboratory and field staff of 60+ people, ensuring timely completion of work, and exceeding client expectations. Duties also included management of greater than $1 million in projects annually, interacting with clients and lab personnel through effective communication, and working with sales staff to develop new and existing clients. Acted as program manager for national accounts.

ALS Environmental **Project Manager, '07 – '11**
Holland, MI
Responsible for management of incoming work; set up projects to meet client specifications, quote pricing, review and report data. Served as the liaison between the laboratory and client to set up projects to ensure the laboratory could meet client's needs; including methods, reporting limits, and turnaround time. Oversaw and reported projects pertaining to wastewater compliance monitoring, product analysis, brownfield remediation, and ongoing groundwater monitoring.

e-Lab Inc. **Field Services Technician, 04 – '07**
Holland, MI
Responsible for scheduling and sampling at numerous industries in the NW Indiana/Chicagoland region to ensure client compliance. Provided consultation to clients regarding industrial/environmental compliance issues; serving as liaison between clients and municipalities. Conducted groundwater monitoring utilizing low flow sampling protocol. Managed supply inventory and helped facilitate overnight shipping of samples to laboratory for large industrial remediation project to ensure hold times were met. Assembled sample kits and coordinated with clients to make sure they had appropriate supplies required for projects.

Severn-Trent Laboratories **Analytical Chemist '02 – '04**
Valparaiso, IN
Obtained analytical data through the use of titration, spectrophotometry, etc. Worked with management to shore up inefficiencies in sample processing including bringing automated instrumentation online including BOD assay and Auto-titrator. Communicated with project managers on a daily basis to update them on specific samples and make them aware of any issues.

Bill Allgeier

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380

ALS Environmental

Education

State University of New York at Brockport, Brockport, NY
BS, Biology, 1997

Erie Community College, Orchard Park, NY
AA, Liberal Arts, 1995

Laboratory Supervisor

2022 – Present

Primary responsibilities include management of all laboratory departments, scheduling, productivity, reporting and evaluation of analytical methodologies, project planning and Quality Assurance/Quality Control protocols.

Previous Experience

ALS Environmental. **Organics Analyst, 2011 – 2022**
Rochester, NY
Analysis, data review, and reporting of pesticides/PCBs, herbicides, semivolatiles, volatiles, and other GC, GC/MS, and HPLC methods.

Columbia Analytical Services **Organics Analyst**, 1999-2011
Rochester, NY
Duties as above.

Advanced Environmental Services **Organics Analyst**,1998-1999
Niagara Falls, NY
Duties as above.

Willow Pond Aqua Farm **Field Technician**, 1997
Hopewell, NY
Assist in maintaining a variety of fish species and installation of water garden ponds.

Christine M. Kutzer

1565 Jefferson Road, Building 300, Suite 360 ● Rochester, NY 14623 ● +1 585 288 5380

ALS Environmental

Education

St. Bonaventure University,
Olean, NY
BS, Chemistry, 1992

Technical Director

Organics Laboratory 2018-Present

Inorganics Laboratory 2015 - Present

Development and implementation of a quality system, including: monitoring standards of performance in quality control and quality assurance; monitoring the validity of analyses performed and data generated to ensure reliable data; ensuring that sufficient numbers of qualified personnel are employed to supervise and perform the work of the laboratory; and providing educational direction to laboratory staff. Plans and manages all activities in the Inorganics Department, including Metals and General Chemistry. Responsible for coordinating the workload and scheduling employees' daily activities. Assist in the operation, troubleshooting, and maintenance of instrumentation. Responsible for scheduling samples. Accountable for analytical data entry, analytical data approval and High Level metals package generation through MARRS. Responsible for coordinating method development in the Inorganics Laboratory.

Previous Experience

ALS Environmental — **Technical Manager, Inorganics Laboratory, '11 – '15**
Rochester, NY
Responsibilities same as above.

Columbia Analytical Services, Inc. — **Technical Manager, Inorganics Laboratory** *'04-'11*
Rochester, NY
Duties same as above.

Columbia Analytical Services, Inc. — **Technical Manager, Metals and Organics Prep Laboratories** *'02-'04*
Rochester, NY
Duties as above for Metals Department. Responsible for coordinating the workload and scheduling employees' daily activities and troubleshooting in the organics preparation laboratory.

Columbia Analytical Services, Inc. — **Technical Manager, Laboratory** *'96-'02*
Rochester, NY
Duties as above for Metals Department.

General Testing Corporation — **Analyst**, *'96-'96*
Rochester, NY
Responsible for instrument troubleshooting and maintenance, digestion of samples, and TCLP extractions. Also responsible for data entry, approval, and package review.

General Testing Corporation — **Chemist**, *'92-'96*
Rochester, NY
Duties as listed above.

Meghan L. Pedro

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380

ALS Environmental

Education

Nazareth College,
Rochester, NY
MS, Management, 2011

Nazareth College,
Rochester, NY
BS, Chemistry, 2000

Project Manager/Organics Technical Director

2018 – Present / 2022 - Present

Assist clients to determine what analyses are required. Oversee projects from quote initiation to final report submission. Act as liaison between client requirements and laboratory capabilities for projects. Update clients on progress of their project and answer any questions they may have. Respond promptly to client requests and develop new client contacts within and outside of our current client base.

Serves as a technical resource for the Organics Department. Ensures implementation of a quality system and validity of data through the regular review of Organics data.

Previous Experience

ALS Environmental. **Organics Prep Lab Supervisor, '11 – '18**
Rochester, NY

Supervised the organics preparation laboratory for the extraction of pesticides/PCBs, herbicides, semivolatiles and other GC and GC/MS methods. Analysis of the same.

Administration of the laboratory health and safety policies, including formulation and implementation, supervision on new employee safety training, review of accidents, incidents and prevention plans, and the conduction of safety inspections.

Columbia Analytical Services **Organics Prep Lab Supervisor**, '04-'11
Rochester, NY

Duties as above.

Columbia Analytical Services **Organics Analyst**,'02-'04
Rochester, NY

Duties as above, without the supervisory role.

Columbia Analytical Services **Analyst, Organics Preparation**, '01-'02
Rochester, NY

Extraction, concentration, and clean-up of water, soil, and oil samples for Semi-VOA compounds using EPA methodologies.

Adam Felser

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380

ALS Environmental

Education

State University of New York,
Alfred State College,
Alfred, NY
BS, Forensic Science,
AAS Biological Sciences
2017

Organic Analyst and Microbiology Technical Director

2021 - Present

Oversees the Microbiology department. Performs organic analysis using EPA approved methods.

Previous Experience

ALS Environmental,
Rochester, NY

Organic Analyst, Microbiology Analyst, and Wetchemistry Analyst
2019-2021

Performed preparation and analysis, using EPA approved methods.

ALS Environmental,
Rochester, NY

Wetchemistry and Microbiology Analyst
2018-2019

Performed preparation and analysis, using EPA approved methods.

ALS Environmental,
Rochester, NY

Wetchemistry Analyst
2017-2018

Performed Wetchemistry preparation and analysis, using EPA approved methods

Janice M. Jaeger

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380

ALS Environmental

Education

Ohio Wesleyan University, Delaware, OH
BA, Pre-Veterinary Medicine and Pre-Professional Zoology (Double Major), 1983

Project Manager

2011 - Present

Assist clients to determine what analyses are required. Oversee projects from quote initiation to final report submission. Act as liaison between client requirements and laboratory capabilities for projects. Update clients on progress of their project and answer any questions they may have. Respond promptly to client requests and develop new client contacts within and outside of our current client base

Previous Experience

Columbia Analytical Services, Inc. **Project Manager** *'96-'11*
Rochester, NY
Responsibilities: Assist clients to determine what analyses are required. Responsibilities primarily as above.

General Testing Corporation **Customer Service Representative/**
Rochester, NY **Sample Receiving,'89-'96**
Primary responsibilities included client services as listed above. Also responsible for sample receipt, log in and distribution as well as bottle preparation.

Penfield Veterinary Hospital **Surgical Assistant, '84-'89**
Rochester, NY
Primary responsibilities included preparation of instruments, surgical area, and animal for surgery. Also responsible for monitoring the animal before and after surgery.

Chris Leavy

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380

Education

State University of New York, Fredonia, NY
BS, Geology, 2018

Project Manager

2022 - Present

Assist clients to determine what analyses are required. Oversee projects from quote initiation to final report submission. Act as liaison between client requirements and laboratory capabilities for projects. Update clients on progress of their project and answer any questions they may have. Respond promptly to client requests and develop new client contacts within and outside of our current client base.

Previous Experience

Paradigm Environmental Services — **Lab Technician** *2022*
Rochester, NY
Responsibilities: Performed water and soil extractions for the Semivolatiles Department. Performed Asbestos analysis, including PCM counts. Prepared PLM samples.

Highpower Validation Testing and Lab Services Inc. — **Lab Technician** *2020-2021*
Rochester, NY
Responsible for soiling medical devices, running the cleaning procedures, and analyzing the devices for cleanliness by performing testing for hemoglobin and TOC. Generated reports for FDA approval of the devices and worked closely with the Project Manager to verify client needs were being met.

Pace, Melville, NY — **Lab Technician** *2019-2020*
Performed water and soil extractions for the Semivolatiles Department. Performed TCLP extractions and Ignitability/flashpoint testing.

Prior work history is not relevant to current position

Gregg LaForce

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380

ALS Environmental

Education

State University of New York Environmental Science and Forestry at Syracuse, Syracuse, NY **Coursework, Environmental Forestry Biology – Wildlife Management**, 1998-2002

Monroe Community College, Rochester, NY, Coursework, Biological Studies 1996-1998

Technical Sales Representative

2022 - Present

Responsible for establishing, developing, and maintaining business relationships with current customers and prospective customers to generate new business for the laboratory's services. Develops clear and effective written proposals and quotations for current and prospective customers. Participates in trade shows and conventions. Promotes and sells laboratory services from existing and prospective customers through a relationship-based approach.

Previous Experience

ALS Rochester, NY — **Supervisor Specialty Area 2 '09-'22**

Supervised the bottle set preparation and the breakdown of samples for distribution to the laboratory. Responsible for coordination of workload, conducting employee performance reviews, supervision and training of department analysts, inventory management of bottle and preservative supplies, management of sample storage and final sample disposal. Supervised Passive Diffusion Sampler ordering, production, and shipment. Coordinated courier pickups.

Columbia Analytical Services, Rochester, NY — **Senior Analyst, '06 – '09**

Analysis of GC/ECD methods.

Columbia Analytical Services, Rochester, NY — **Analyst III**, '02-'06

Extraction, concentration, and clean-up of samples for SVOA analysis.

Upstate Laboratories, Syracuse, NY — **Laboratory Chemist Tech**,'01

Responsibilities: Performed general chemistry preparation and analysis..

Monroe Community College, Rochester, NY — **Biology Laboratory Assistant Tech**, '96-'98

Responsibilities: identified and propagated plant species, performed plant maintenance of greenhouse, set up laboratories for Biology, Botany, and Zoology courses.

Vicky Collom

1565 Jefferson Road, Building 300, Suite 360 • Rochester, NY 14623 • +1 585 288 5380

ALS Environmental

Education

Westminster College,
New Wilmington, PA
BS, Environmental Science, 1995

Quality Assurance Manager

2015 - Present

Responsible for the overall coordination of the laboratory QA program and for ensuring implementation and compliance with established quality objectives and quality systems at all times. Responsible for Quality Assurance functions including the Quality Assurance Manual, certifications, documenting standard operating procedures, and maintaining performance evaluation records. Oversees balance calibration and sample storage temperature control. Maintains certifications/accreditations for regulatory agencies and client certifications or approval programs. Acts as primary point of contact during laboratory audits. Provides audit responses and initiates any changes in procedures resulting from an audit. Ensures continuous process improvement through the use of control charts, performance evaluation samples and preventive action. Conducts internal audits and makes recommendations for corrective action and improving effective quality assurance and quality control. Ensures that all personnel understand their contributions to the quality system and that communication takes place at all levels within the laboratory regarding the effectiveness of the quality system, and evaluating the effectiveness of training.

Provides technical assistance to laboratory staff on QA/QC issues, project feasibility, and methods interpretation/development.

Previous Experience

ALS Environmental. **Quality Assurance Specialist, '11 – '15**
Rochester, NY
Assisted the Quality Assurance Manager in the above duties.

Columbia Analytical Services **Quality Assurance Specialist**, '01-'11
Rochester, NY
Assisted the Quality Assurance Manager in the above duties.

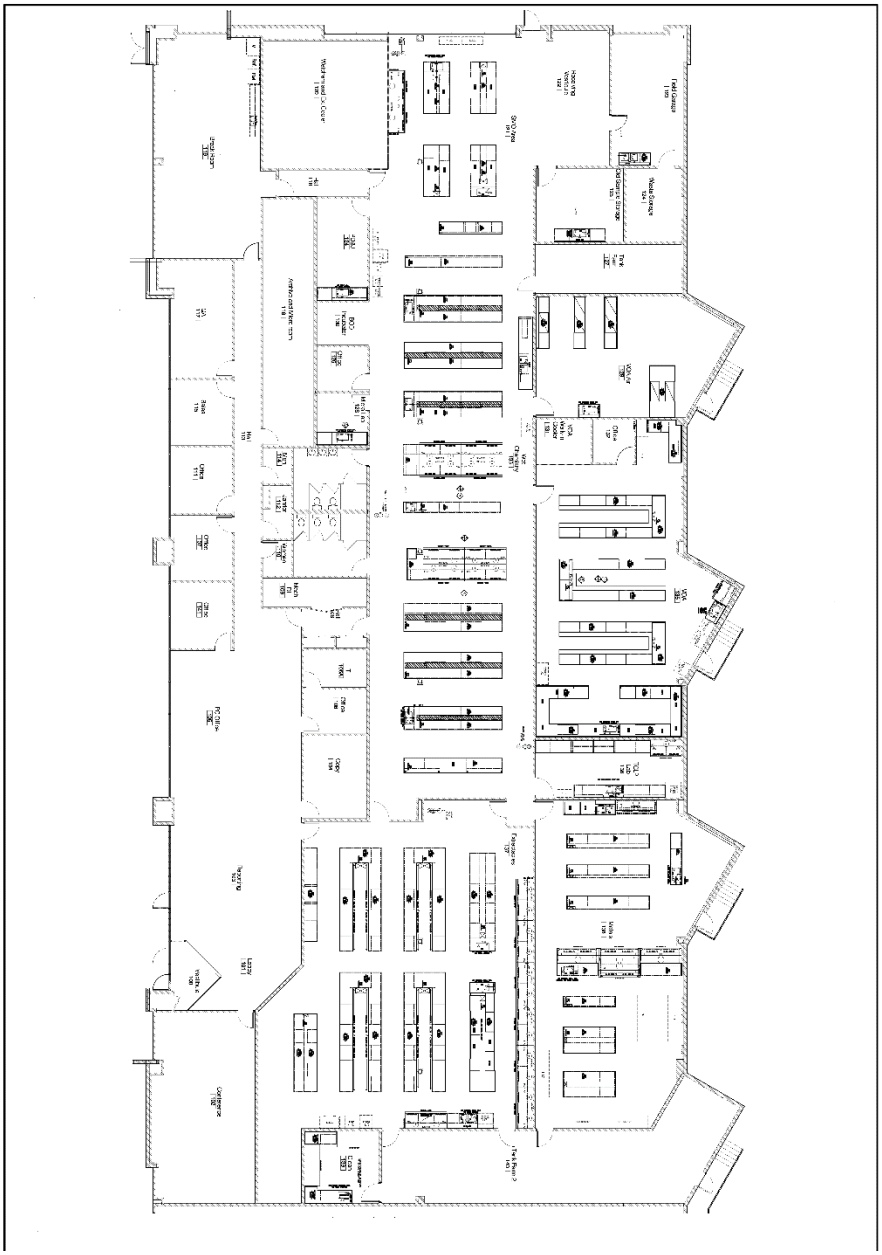
Columbia Analytical Services **Analyst, Wet Chemistry**,'97-'01
Rochester, NY
Responsibilities: Performed general chemistry preparation and analysis, including BOD, titrations, solids, operation and maintenance of instruments including Ion Chromatography, TOC analyzer, Lachat Flow Injection. Performed secondary review of data and participated in method development.

Lawrence County Department of Recycling **Intern**, '95
Solid Waste
New Castle, PA
Responsibilities: Community Education about recycling, data collection for the state about waste haulers, organized a telephone book recycling program.

APPENDIX C – Ethics and Data Integrity Policy

See CE-GEN001

APPENDIX D – Laboratory Floor Plan



APPENDIX E – Analytical & Support Equipment

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
MASS SPECTROMETERS - VOAs					
GC/MS #10 (R-MS-10)	Gas Chromatograph	Agilent 6890N	CN10633045	VOAs	2006
	Mass Spec Detector	Agilent 5975B	US62723782		
	Purge and Trap Autosampler and Concentrator	Atomx	US15195006		
	Computer Workstation	HP Z2 SFF G9 NARCEWX055	MXL2521YFC		
	Firmware	GC N.05.05 MS 7.02.29			
	Analytical Software	Masshunter 10.1.49.0			
GC/MS #14 (R-MS-14)	Gas Chromatograph	Agilent 7890A	CN10945114	VOAs	2010
	Mass Spec Detector	Agilent 5975C	US9433887		
	Purge and Trap Autosampler and Concentrator	Tekmar Atomx	US13271003		
	Computer Workstation	HP Z2 SFF G9 NARCEWX053	MXL2521YF8		
	Firmware	GC A.01.10.2 MS 7.02.29			
	Analytical Software	Masshunter 10.1.49.0			
R-MS-16	Gas Chromatograph	Agilent 7890B	CN13473179	VOAs 8260/524.2	used 2021
	Mass Spec Detector	Agilent 5975C	US10263617		
	Purge and Trap Autosampler and Concentrator	Tekmar Atomx XYZ	US21084010		
	Computer Workstation	HP Prodesk NARCEWX013	MXK0122RGM		
	Firmware	GC B.02.02 MS 7.02.29			
	Analytical Software	Mass Hunter B.07.06.2704			

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
R-MS-17	Gas Chromatograph	Agilent 8890	US2146A055	VOA	2022 - used from Ft. Collins
	Mass Spec Detector	Agilent 5977B	US143M008		
	Purge and Trap Autosampler and Concentrator	Teledyne Atomx XYZ	US21355008		
	Computer Workstation	HP Z25FF65 NARCEWX048	MXL1361WHM		
	Firmware	GC 2.5.1.9 MS 6.00.34			
	Analytical Software	Mass Hunter 10.2.489			

MASS SPECTROMETERS -SVOAs

GC/MS 5973C (R-MS-53)	Gas Chromatograph	Agilent 6890N (G1530N)	US10232036	Low Level	2002
	Mass Spec Detector	Agilent 5973 (G2578A)	US21853642		
	AutoSampler	Agilent 7683 (G2614A)	CN31023400		
	Injector	Agilent 7683 (G2613A)	DE82400931		
	Computer Workstation	Gateway P7-450 ALRCEWP003	13645026		
	Firmware	GC N.04.08 MS 3.01.58			
	Analytical Software	HP Chemstation Enviroquant G1701 v.D.00.00.38			

GC/MS 5975E (R-MS-56)	Gas Chromatograph	7890A	CN10391141	1,4-Dioxane	2010
	Mass Spec Detector	HP5975C	US1037615		
	AutoSampler	HP7693	CN10340022		
	Injector	HP7693	CN10340059		
	Computer Workstation	HP Z2 SFF G9 NARCEWX056	MXL2521YCK		
	Firmware	GC A.01.11 MS 7.02.29			
	Analytical Software	Masshunter 10.1.49.0			

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
R-MS-64	Gas Chromatograph	7890A	CN10923101	SemiVOAs	used 2021
	Mass Spec Detector	HP5977A	US1352L201		
	AutoSampler	HP7683	CN51032422		
	Injector	HP7683	CN74143962		
	Computer Workstation	HP ProDesk NARCEWX015	MXL0122QBY		
	Firmware	GC A.01.16 MS 6.00.34			
	Analytical Software	Mass Hunter GCMS B.07.06.2704			
R-MS-65	Gas Chromatograph	8890 (G3542A)	US2051A032	625/8270	2022
	Mass Spec Detector	5977B	US2151M037		
	AutoSampler	7693A	R021077008		
	Injector	G4513A	R022015070		
	Computer Workstation	HPZ2 SFF G5 NARCEWX035	MXL1413GFD		
	Firmware	GC 2.4.1.10 MS 6.00.34			
	Analytical Software	Mass Hunter V10			
R-MS-66	Gas Chromatograph	7890A	CN11451177	625/8270	2022 - used from Ft. Collins
	Mass Spec Detector	5975C Triple Axis	US11423931		
	AutoSampler	7693	CN11360005		
	Injector	G4513A	CN1139001		
	Computer Workstation	HP Elitedesk 800 G6 NARCEWX045	MXL2125MN3		
	Firmware	GC A.01.13 MS 5.02.14			
	Analytical Software	Chemstation G1701EA E.02.02.1431			

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GAS CHROMATOGRAPHS - VOAs					
R-GC-70	Gas Chromatograph	Agilent 6890	US00029263	RSK175	2023
	Detector	FID			
	Computer Workstation	HP Elitedesk 800G2 SFF NARCEW7038	2UA102GZD		
	Firmware	A.03.07			
	Analytical Software	MSD Chemstation G1701EA E.02.02.1431			
R-GC-71	Gas Chromatograph	Agilent 6890Plus	US00025479	GRO	2008
	Detector	FID			
	Autosampler	Teledyne Atomx	US14015025		
	Computer Workstation	HP Z210 SFF ALRCEW7002	2UA2110SNN		
	Firmware	A.03.08			
	Analytical Software	MSD Chemstation E.02.02.1431			
GAS CHROMATOGRAPHS - EXTRACTABLES					
HP6890- D (R-GC-54)	Gas Chromatograph	HP 6890	22174	Herbicides	1998
	ECD - Front	Agilent G2397A	U41392		
	ECD - Back	Agilent G2397A	U41393		
	Injector	HP7683			
	Autosampler	Agilent G2614A	CN23021382		
	Computer Workstation	Dell Dimension 3000 DMC ALRCEWXP046	7BQRS71		
	Firmware	A.03.07			
	Analytical Software	MSD Chemstation D.01.02.16			
6890N- G (R-GC-58)	Gas Chromatograph	Agilent 6890N	US10520018	PCB	2005
	ECD - Front	Agilent G2397A	U39249		
	ECD - Back	Agilent G2397A	U39364		
	Injector	Agilent G2913A	US82401428		
	Autosampler	Agilent G2614A	CN74245816		
	Computer Workstation	HP Z2 SFF G9 NARCEWX051	MXL2521Y69		
	Firmware	N.05.05			
	Analytical Software	Masshunter 10.1.49.0			

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
6890N- I (R-GC-59)	Gas Chromatograph	Agilent 6890N	US10552066	Petroleum Hydrocarbons, Method 18	2006
	Detector	FID			
	Injector	Agilent G2913A_7683B	CN60931630		
	Autosampler	Agilent G2614A	US04910055		
	Computer Workstation	HP Z2 SFF G9 NARCEWX054	MXL2621Y6D		
	Firmware	N.05.05			
	Analytical Software	Masshunter 10.1.49.0			
HP6890-J (R-GC-60)	Gas Chromatograph	Agilent 6890	US00039730	8015	2008
	Detector	FID			
	Injector	7683 Tower G2613A	US10301831		
	Autosampler	Agilent G2614A	CN61739545		
	Computer Workstation	DELL ALRCEWP012	818W761		
	Firmware	A.03.07			
	Analytical Software	MSD Chemstation D.02.00.275			
HP6890-K (R-GC-61)	Gas Chromatograph	Agilent 6890	CN10647081	Method 18	2008
	Detector	FID			
	Injector	7683 Tower G2913A	CN23126455		
	Autosampler	Agilent G2614A	CN52534608		
	Computer Workstation	HP Z2 SFF G9 NARCEWX054	MXL2621Y6D		
	Firmware	N.05.05			
	Analytical Software	Masshunter 10.1.49.0			
7890-M (R-GC-62)	Gas Chromatograph	Agilent 7890	CN12161177	Pesticides	2013
	ECD - Back				
	ECD - Front				
	Injector	Agilent 7693	CN16220015		
	Tray	Agilent 7693	CN16220031		
	Computer Workstation	HP Z2 SFF G9 NARCEWX051	MXL2521Y69		
	Firmware	A.01.14			
	Analytical Software	Masshunter 10.1.49.0			

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
7890-N (R-GC-63)	Gas Chromatograph	Agilent 7890B(G3440B)	CN16283107	Pesticides	2016
	ECD - Front	Agilent G2397A	U38612		
	ECD - Back	Agilent G2397A	U35841		
	Injector	Agilent G4513A	CN12120018		
	Tray	Agilent G4514A	CN11450020		
	Computer Workstation	HP Z2 SFF G9 NARCEWX026	MXL2521Y9D		
	Firmware	B.02.04.2			
	Analytical Software	Masshunter 10.1.49.0			
R-GC-67	Gas Chromatograph	Agilent 8890 (G3540A)	US2111A037	Method 18	2022 (Former Ft. Collins)
	Detector	FID			
	Autosampler	Agilent G4514A	CN11100079		
	Computer Workstation	HP Z2 SFF G4 NARCEWX047	MXL1041G41		
	Firmware	2.5.1.9			
	Analytical Software	Masshunter 10.1.64.1			
R-GC-68	Gas Chromatograph	Agilent 7890A (G3440A)	CN11171043	PCB	2023 (Former Ft. Collins)
	ECD - Front	Agilent G2397A	U18968		
	ECD - Back	Agilent G2397A	U19002		
	Injector				
	Autosampler				
	Computer Workstation	HP Z2 SFF G9 NARCEWX026	MXL2521Y9D		
	Firmware	A.01.16			
	Analytical Software	Masshunter 10.1.49.0			

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
EXTRACTABLES SUPPORT EQUIPMENT					
Buchi #1	Unit	Buchi Rotavapor R-300	1100049910	Concentrations	2021
	Interface	Buchi-I-300Pro	1100046460		
	Vacuum Pump	Buchi V-300	1100050299		
	Recirculating Chiller	Buchi F-314	2214120		
	Firmware	01.11.00.00			
Buchi #2	Unit	Buchi Rotavapor R-300	1100085505	Concentrations	2021
	Interface	Buchi-I-300Pro	1100080782		
	Vacuum Pump	Buchi V-300	1100082191		
	Recirculating Chiller	Buchi F-314	2214120		
	Firmware	01.12.00.00			
L6	Nitrogen Evap System	LabConco RapidVap	191083869	Concentrations	2019
L8	Nitrogen Evap System	LabConco RapidVap	200593843	Concentrations	2021
N-EVAP	Organomation N-EVAP	Model 112	7531	Concentrations	<2011
SI600	Incubated Shaker	Lab Companion SI600	R069376	Extractions	<2011
Microwave #1	Microwave	CEM MARS6 Model 910900	MY1656	Soil Extractions	used 2020
	Firmware	1.64			
Microwave #2	Microwave	CEM MARS6 Model 910900	MJ2199	Soil Extractions	used 2021
	Firmware	1.64			
Automated Soxhlet #1	Automated Soxhlet	Gerhardt SOX416	1/8465080006	Soil Extractions	2008
Automated Soxhlet #2	Automated Soxhlet	Gerhardt SOX416	1/8465080007	Soil Extractions	2008
Automated Soxhlet #3	Automated Soxhlet	Gerhardt SOX416	1/8465090004	Soil Extractions	2009
Automated Soxhlet #4	Automated Soxhlet	Gerhardt SOX416	1/8465090005	Soil Extractions	2009
Soxhlet Controller	Software/ Firmware	Gerhardt Soxtherm Manager SX PC 2.16			
Autoshaker #4	Automated Shaker	Glas-Col Model 099A VS20012	11811288	Extractions	2018
	Funnel Holders	Model 099A VH2000T	11811281 11811282 11811286 11811287		
Autoshaker #5	Automated Shaker	Glas-Col Model 099AVS20012	11811289	Extractions	2018
	Funnel Holders	Model 099A VH2000T	11811280 11811283 11811284 11811285		
Autoshaker-06	Rotator		5046WKBL00005	Extractions	2019
WristShaker-01	Burrell Wrist Action Shaker	Model 75		Extractions	<2011
641276A	Centrifuge	Dynac11		Extractions	<2011

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
HPLC					
HPLC03 (R-HPLC-03)	Binary Pumps	Shimadzu LCD10ADVP	1(A) C20963851348US 2(B) C20963851344US	Hydroquinone	2005
	UV/VIS Detector	Shimadzu SPD10AVVP	C21004050470US		
	Fluorescence Detector	Shimadzu RF-20A	L204949 50092US		
	AutoSampler	Shimadzu SIL10ADVP	C21053850511US		
	System Controller	Shimadzu SCL10AVP	C21013851302US		
	Degasser	Shimadzu DGU 14A	101076		
	Temperature Control Module	Shimadzu cto-20a	L20205152152		
	Computer Workstation	Gateway P7-450 ALRCENW010	14045751		
	Firmware	Concentrator SLC-10ADVp5.33 Pumps LC-10ADUp 9.18 Injector SIL-10ADVp 6.32 Gum CTO-20A 1.08 UV-vis SPD-10AUUP 5.23 Fluor RF-20A 1.05			
	Analytical Software	HP Chemstation G1701BA B.01.00			
HPLC05 (R-HPLC-05)	Degasser	Degasser G1322A	JP02200464	Metabolic Acids/client specific	2007
	Binary Pump	Agilent 1100/G1312A	US70600653		
	Diode Array Detector	Agilent 1100/G1315B	DE11112376		
	Temperature Control Module	Agilent 1100	DE82205606		
	AutoSampler	Agilent 1100/G1313A ALS	DE72003859		
	Computer	ALRCEWP008	0014823598		
	Firmware	A.05.11 (013)			
	Analytical Software	Chemstation A.10.02 (1757)	Data Acquisition and Instrument Control		
HPLC06 (R-HPLC-06)	Detector	Agilent 1100/G1315A	US74901960	Formaldyhyde	2011
	Degasser	Agilent 1100/G1322A	JP73010194		
	AutoSampler	Agilent 1100/G1313A	US80603194		
	Quaternary Pump	Agilent 1100/G1310A	DE33206020		
	Temperature Control Module	Agilent 1100/G1316A	US54000565		
	Computer	Dell Optiplex GX260 DH5 ALRCEXP019	XYDLX11		
	Firmware	A.05.11 (013)			
	Analytical Software	Chemstation for HPLC Rev A.09.03[1417]	Data Acquisition and Instrument Control		

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
METALS					
FIMS-02 (or FIMS II) (R-CVAA-02)	CVAA-FIMS	Perkin Elmer FIMS 100	101S12110203	Mercury	2013
	Autosampler	S-10	102S13020818		
	Computer Workstation	Lenova ThinkCentre NARCEW7031			
	Firmware	Spectrophotometer and FIAS 2.20, Autosampler 1.85			
	Analytical Software	PE AA WinLab 32 v.7.2			
R-CVAA-03	CVAA	Teledyne Quick Trace M7600	US23110001	Mercury	2023
	Autosampler	Teledyne ASX-560	052310A560		
	Computer Workstation	Optiplex 3000 NARCEWX060			
	Firmware				
	Analytical Software	QuickTrace version 3.2.0.236			
Teledyne Leeman Quick Trace (R-CVAF-02)	CVAF	Teledyne Quick Trace M-8000	US17335019	Low Level Mercury	2018
	Autosampler	Teledyne ASX 280	121738A280		
	Computer Workstation	Dell Optiplex 3050 NARCEWX003	-		
	Analytical Software	QuickTrace Rev.3.1	-		
ICP #6 (R-ICP-AES-06)	Instrument	Agilent 5100	MY15340001	Metals	2015
	Autosampler	SPS4	AU15340450		
	Computer Workstation	HP Z230 NARCEW7024			
	Firmware	3585			
	Analytical Software	ICP Expert Pro 7.4.1.10449			
ICP #7 (R-ICP-AES-07)	Instrument	Agilent 5800	MY2309CQ22	Metals	2023
	Autosampler	G8410A	AU230315267		
	Recirculator/ chiller	G8496-24000	2302-02167		
	Computer Workstation	NARCEWX059 HP Z2 SFF G5			
	Firmware	5590			
	Analytical Software	ICP Expert Pro 7.6.1.12212			

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
Agilent 7900 (R-ICP-MS-02)	ICP/MS	Agilent 7900	JP1649642	Metals	2017 (used)
	Autosampler	SPS 4	Au16321750		
	Computer Workstation	HPZ240 NARCEW7035	ZuA6373K2L		
	Firmware	4.00.03 003.04.			
	Analytical Software	MassHunter 4.4	G7201C version C.01.04 Build 544.3		
HOTBLOCKS - METALS					
WC Block #1	54 wells -50 mL	Environmental Express		Metals Digestions	2012
Hotblock #4	25 wells - 100 mL	Environmental Express		Metals Digestions	2005
Hotblock #7	54 wells -50 mL	Environmental Express		Metals Digestions	<2017
Hotblock #8	54 wells -50 mL	Environmental Express		Metals Digestions	<2017
Hotblock #9	120 wells - 10 mL	ALS	Control Box ALS16074	Metals Digestions	2017
Hotblock #10	120 wells - 10 mL	ALS	Control Box ALS16075	Metals Digestions	2017
Hotblock #11	54 wells -50 mL	Environmental Express		Metals Digestions	2021
Hotblock #12	54 wells -50 mL	Environmental Express		Metals Digestions	2021
TCLP					
TCLP Rotator #4	10 place box	Lars Lande		TCLP/SPLP	<2003
TCLP Rotator #6	12 place box	Environmental Express	8507-12-660	TCLP/SPLP	2013
TCLP Rotator #7	12 place collar	Analytical Testing Corp	5685YEBC0019	TCLP/SPLP	2021

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
GENERAL CHEMISTRY					
Skalar (R-Buret-02) (R-DOmeter-05) (R-pH-08) (R-Condmeter-04)	Robotics	Skalar SP2003 21088903-01	15207	Alkalinity, pH	2016
	Autoitrator	Metrohm 848 Titrino Plus	1066010		
	Buret	Exchangeable 20 mL	1066010		
	DO Meters	2 x YSI ProODO 626281	15H100558 15H100559		
	YSI ProComm II Kit	2 x Item 605404	15G100513		
	YSI ProOBOD Probe	2 x 626400	15F102995 15F102996		
	External Pump	Skalar 21007965-01	15821		
	Conductivity Meter	Skalar Consort C6010	not in use		
	Conductivity probe	Skalar Consort 20T	107769		
	pH probe	Metrohm Aquatrode			
	Computer Workstation	Dell Optiplex 3020 NARCEW7025			
	Analytical Software/Firmware	Skalar Robotics v.1.74Release firmware 1088 version 2.23 714: 705:3.0 710:3.4	99300021USA		
230940	digital Barometer	VWR 10510-922	221782237	Barometric Pressure	2023
TOC#1 (R-TOC-01)	TOC Analyzer	OI Model 1010	J245710349	out of service	2003
	Autosampler	OI Model 1051	B247751184		
	Computer Workstation	Gateway GP6-300 ALRCENW017	10709094		
	Firmware	version 365			
	Analytical Software	OI WinTOC for 1010 v.01 Rev 225	-		
TOC#3 (R-TOC-03)	TOC Analyzer	Elementar Vario TOC Cube	38135054	TOC Soils	2014
	Computer Workstation	Dell Optiplex 3020 NARCEW7006	25127169373		
	Firmware	version 1CC			
	Analytical Software	Vario TOC v3.0.8	1cc5b019		
TOC-04 (R-TOC-04)	TOC Analyzer	Shimadzu TOC-L(csh) Model 638-91151-43	H54425930043 CS	TOC	2022
	Autosampler	Shimadzu ASI-L	H57406001837		
	Computer Workstation	Dell Precision 3450 with Windows 10 HBB4RJ3	Service Tag # HBB4RJ3		
	Firmware	version 1.09			
	Analytical Software	TOC-Control L Software	TOCL-10900-101045		

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
TOC#5 (R-TOC-05)	TOC Analyzer	Elementar Vario TOC Cube	3811BC1012	TOC	2023
	Computer Workstation	Dell Optiplex 3020 NARCEW7006	DQLKRY3		
	Syringe	Hamilton Cat#38.00-0068			
	Firmware	Version 1cc			
	Analytical Software	Vario TOC v 4.1.2	Fe49264c4		
QC8500 (R-FIA-05)	Flow Injection System	Lachat 8500		Cyanide, NO2/NO3, Phosphorus, Silica, Ammonia, TKN	2011
	Colorimeter		110100001295		
	Amperometric Detector	BASi CC-5e	5966		
	Cell	BASi CC-3D	11314		
	Pump	14951	0595996-2		
	Autosampler	ASX-260	021109A260		
	Computer Workstation	Dell Optiplex 780 ALRCEXP043			
	Firmware	V.9.0.333.0			
	Analytical Software	Omnion FIA v.3.0	-		
R-Discrete-02	Instrument	ThermoFisher Gallery	861000110585	NO2, OPO4, Cr6+, Ammonia	2017
	Computer Workstation	Dell Optiplex 7040 NARCEW7033			
	Firmware	V.6.0			
	Software	Gallery			
SAN++ (R-FIA-06)	Flow Injection System	Skalar 5000	182775	Phenol Cyanide	2018
	UV Digester	5565	18122		
	Reagent Valve	21530919	18922		
	Computer Interface				
	Autosampler	21074900-01	18882		
	Computer Workstation	Dell Optiplex 3050 NARCEWX005			
	Firmware	Version Lab 7			
	Analytical Software	FlowAccess V4			

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
IC#3 (R-IC-03)	Ion Chromatograph	Metrohm 861 Advanced Compact IC		26A Anions	2005
	Basic Chromatography Module	Metrohm	861-02114		
	Pump	Metrohm	62824100s20		
	Conductivity Detector	Metrohm	integrated		
	Autosampler	Metrohm	838-04105		
	Computer Workstation	Dell OptiPlex GX520 ALRCEXP004	6VRC581		
	Firmware	SR#2			
	Analytical Software	IC NET 2.3 SR2	A.701.0016		
IC #8 (R-IC-08)	Ion Chromatograph	Dionex ICS-2100	12030901	Cr6+	2012
	Heated Conductivity Cell	DS6	12030664		
	Reagent Pump	AXP	20045075		
	Variable Wavelength Detector		12031294		
	Autosampler	AS-AP	12031171		
	Computer Workstation	Dell Optiplex 790 NARCEW7040	15105322945		
	Firmware	Version 1127			
	Analytical Software	Chromeleon 7.0	151838		
IC # 9 (R-IC-09)	Ion Chromatograph with gradient pump	Dionex 2100	12090703	Cr6+	2013
	Variable Wavelength Detector	ICS Series VWD	12031294		
	Autosampler	ASDV	12090422		
	Computer Workstation	Shares with IC#8			
	Firmware	Version 1127			
	Analytical Software	Shares with IC#8			

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
IC # 10 (R-IC-10)	Ion Chromatograph	Metrohm 930 Complact IC Flex		Anions	2020
	Basic Chromatography Module	Metrohm	1930200072154		
	Pump	Metrohm	40654		
	Conductivity Detector	Metrohm	18509010566141		
	Autosampler	Metrohm	1858002007735		
	Computer Workstation	Del Optiplex AIO NARCEWX010	OHL3QR4		
	Firmware	SR#130			
	Analytical Software	MagIC Net Version 3.3	4612612		
IC # 11 (R-IC-11)	Basic Chromatography Module	Thermo Scientific Integrion PN 22153-60312 Firmware version 1.7.0	23023003	Cr6+ LL	2023
	Pump	Thermo Integrion HPIC Firmware version 6.2.0	23023003		
	Variable Wavelength Detector	Thermo ICS-Series PN 070220: 1 Channel Firmware version 01.60.00	22120603		
	Autosampler	Thermo AS-AP PN 074922 Formware version 1.9.0	23013030		
	Computer Workstation	Dell Optiplex XE3 NARCEWX049	00329-00000-00003-AA574		
	Analytical Software	Chromeleon7.3.1	7304416		
IC # 12 (R-IC-12)	Ion Chromatograph	Metrohm ECO IC		TMA	2023
	Basic Chromatography Module	Metrohm	1925002005099		
	Conductivity Detector	Metrohm IC Professional	Integrated		
	Autosampler	Metrohm 863 Compact	1863001078112		
	Computer Workstation	Dell Optiplex 7400 AIO NARCEWX050	00329-0000-0003-AA039		
	Firmware	137			
	Analytical Software	MagIC Net Version 4.0 basic	66059400		

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
Autodiluter#1	Autosampler	Teledyne Cetac Technologies ASX-560 SimPrep	32-0407-067	Dilutions	2023
	Dilution unit	Teledyne SimPrep MicroLab 600 with Hamilton Syringes	1193495		
HB#6	54 place Hotblock with stirbase	Environmental Express SC154		Cr6+ digestions / Amenable Cyanide Prep / Metals digestions	<2015
TDS HB#1	24 place Hotblock for Stableweigh bags	Environmental Express TDS024	2021TDSW135	TDS evaporation	2021
TDS HB#2	24 place Hotblock for Stableweigh bags	Environmental Express TDS024	2021TDSW134	TDS evaporation	2021
Autoclave	Tutternauer	3870m	2801669	Micro/TPO4	2011
Midi #1	Midi Distillation System	BSL Co	none	Sulfide Distillation	1997
Midi #2	Midi Distillation System			Sulfide Distillation	~2011
Micro Dist #1	Micro Distillation System	Lachat MicroDist	100500002065	Cyanide Distillation	2010
Micro Dist #2	Micro Distillation System	Lachat MicroDist	100500002066	Cyanide Distillation	2010
Turbidimeter (R-Turbidimeter-02)	Turbidimeter	HF Scientific Micro 100	609246	Turbidity	2000
MR 21D (R-UV-VIS-06)	Spectro-photometer	Milton Roy Model 332278	3152011032	COD	Received used 2019
1600PC (R-UV-VIS-05)	Spectro-photometer	VWR 1600PC 10037-436	UEE1605011	UV254, H2O2, Fe2+	2016
LDO Meter #3 (R-DOMeter-03)	Dissolved Oxygen Meter	Hach HQ40d	131783034008	DO, BOD	2013
LDO Meter #4 (R-DOMeter-04)	Dissolved Oxygen Meter	Hach HQ40d	131783034012	DO, BOD	2013
Closed Cup (R-Flash-02)	Closed Cup Flashpoint Tester	Boekel Model 152800	none	Ignitability - liquid waste	1993
Karl Fischer Titrator (R-KF-02)	Mettler Toledo	V20 Karl Fischer Titrator	B426750030	% Water	2014

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
OLD #1	TKN Digestion Block and Control	AI Scientific Pty Ltd AIM600	4726A12136	TKN digest	2007
NEW #2	TKN Digestion Block and Control	Seal Analytical AIM600	5146UO0286	TKN digest	2014
Fluorometer (R-Fluorometer-01)	Fluorometer	Turner Designs Trilogy 7200-000	720000843	Chlorphyll a	2012
	Chlorophyll a Module	Turner 7200-040	-		
Cicero	Solids Vacuum Manifold	Environmental Express Stable Weigh 6 place Filling Station TDS600F	Lot 67-8107	TDS	2018
OG Manifold 1	6 station Stainless Steel Solid Phase Extraction	Environmental Express Advantec G1300	-	1664	used 2022
OG Manifold 2	6 station Stainless Steel Solid Phase Extraction	Environmental Express Advantec G1300	-	1664	used 2022

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
Dry Bath 01	Oil and Grease Nitrogen Evaporator	Thermo Drybath Stdrd Cat #8887003	HBBT70003040	1664	2018
Dry Bath 03			HCBT70003024	1664	2019
Dry Bath 04				1664	2020
COD Block #1	COD Blocks	Hach 45600-00	31000025012	COD Digestion	<1998
COD Block #2		Hach 45600-00	30800024827		<1998
COD Block #3		Environmental Express HotBlock COD			2018
pHat Albert (R-pH-01)	pH Meters	VWR SympHony B10P Probe Orion 9156BNWP	13246S0013	WC Support	2013
Toto (R-pH-06)		VWR SympHony B10P Probe Orion 9156BNWP	13219S0006	WC Support	2013
Robin (R-pH-07)		VWR SympHony B10P Probe Orion 9156BNWP	14021S0009	WC Support	2014
R-pH-05		SympHony SB80PC pH Probe VWR 89231-572	D04334	pH SMO-PH	2008
R-pH-09		VWR SympHony SB80PC pH Probe 14002-780 Cond Probe Thermo 013005MD	D00582	Extractables pH / WC Cond	2008
R-pH-10		Metrohm 913 pH meter with probe: Metrohm 6.0228.020	1913001015318	WC Support	2021
R-REDOX-02	ORP Meters	Hanna Instruments HI98120	04440065101	REDOX	2019
R-REDOX-03		Hanna Instruments HI98120	07230380111	REDOX	2022

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Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
R-Balance-03	Top Loading Balances	Mettler Toledo PB602-S	1118331281	Metals	<2002
R-Balance-05		Mettler Toledo PB602-S	1125322050	Extractables	2004
R-Balance -14		Ohaus ScoutPro SP6001	7/31340865	SMO	2010
R-Balance -16		Ohaus ScoutPro SP4001	7126311345	out of service	2013
R-Balance-20		Sartorius Entris 3202-1S	36306768	Wetchem	2018
R-Balance-22		Ohaus AX422/E	C009047236	VOA	2020
R-Balance-23		Ohaus AX2202	C123930637	WC	2021
R-Balance-02	Analytical Balances	Mettler AE240	F96727	VOA	1996 used
R-Balance-10		Mettler AE200	J29745	Wetchem	2008 used
R-Balance-11		Mettler AG204	120330501	Wetchem	2001
R-Balance-13		Mettler AE160	D40689	Extractables	2008 used
R-Balance-18		Ohaus PA224C	B507619728	Wetchem	2015
R-Balance-19		Ohaus PA224C	B507619729	Metals	2015
R-Balance-24	Semi-Micro Balance	Sartorius Secura A225D	43702060	Wetchem	2023
R-Oven-Metal-01	Thermo Scientific	Model 6528	604341-206	104	2008
R-Oven-07	VWR	1370FM	601403	104	2011
R-Oven-08	VWR	89511-412	41623188	Sulfate drying	2014
R-Oven-09	VWR Oven Gr Con 6.2CF	Cat# 89511-408	42473430	180	2019
R-Oven-10	VWR Oven F Air 6.2CF	Cat#89511-414	42749456	104	2021
R-Oven-11	VWR Oven Gr Con 6.2CF	Cat# 89511-408	42857592	90, 104	2021
Kiln	Skutt Automatic Kiln	Model KM-1218-3	001168	Glassware/Sodium sulfate purification	2011
Thermolyne F48025-60	Muffle Furnace	F48025-60	150440201110801	Wetchem	2011

ALS Environmental
Rochester, NY

EQUIPMENT LIST

Instrument ID	Instrument Configuration	Manufacturer Part	Serial Number	Analyses Performed	Year Acquired
C-1	Sample Cooler	Bally Engineered Structures, Inc.	VOA	Sample Storage	2011
C-2	Sample Cooler	American Cooler Technologies		Sample Storage	2011
Micro Incubator #2	Incubator	Barnstead Model 403	1463060539124	not in use	2017 used
Micro Incubator #3	Incubator	VWR Incubator GrCon 4CF Cat#89511-420	42440095	Micro	2019
Micro Water Bath #1	Water Bath	VWR MX28C135-V11B	2102-00031	Micro	2021
BOD Incubator	Incubator	Shultz		BOD Closet	2011
R-4	Reagent Fridge	Revco Scientific	TY90605E	WC Reagents	<1997
R-10	Sample Fridge	Kenmore 253.70722410	WA44402244	VOA Bulk Soil Sample Storage	2014
R11	Standards Fridge	Haier HC27SF10RB	BS0880E1G 00BKEA80781	FID Standards	2015
R14	Sample Cooler	True Manufacturing Co GDM-72-HC-TSL01	9108913	WC Samples	2017
R15	Sample Cooler	True Manufacturing Co GDM-72-HC-TSL01	9097760	WC Samples	2017
R16	Sample Cooler	True Manufacturing Co GDM-72-HC-TSL01	9108912	WC Samples	2017
R18	Sample Cooler			High Conc VOA Cooler	2018 used
R20	Sample Fridge	Frigidaire JD-20 Model FF2021TS8	4A11211543	Extactables	2021
R21	Standards Fridge	Migali C-23RM-HC	003211102092C009	WC Standards	2022
R22	Sample Fridge	Avantco 178GDC69HCB	6589311821093219	WC Samples	2022
R23	Extract Fridge	Avantco 178GDC15HCW	6722310421124800	Extactables	2022
F- 5	Sample Freezer	Maytag	12377439GV	SMO Sample Storage	
F-6	Extract Freezer	GE	SH175743	Extractables	
F-08	Standard Freezer	Signature	23429-1	VOA Standards	
F-9	Sample Freezer	GE	MS145661	VOA Sample Storage (5035)	
F-10	Sample Freezer	Labline		SMO Sample Storage	
F-12	Standards Freezer	Whirlpool WZF34X16DW01	470303370	Extractables	2017
F-24	Extract Freezer	Avantco Model 178SS1FHC	6681 1702 2110 0190	Extractables	2022
F-25	SMO/VOA Freezer	Avantco Model 178A49FHC	774777781	Extractables	2023

Note that the computers listed with the instruments are dedicated to that instrument for data aquisition, but the data files are saved to a lab-wide network and data may be accessed by any computer with the correct software - provided the user is authorized to do so.

Preventive Maintenance Procedures

Instrument	Activity	Laboratory or Vendor Performed	Frequency
Refrigerators and Coolers	Clean coils	Vendor	As needed
	Check coolant	Vendor	As needed or if temperature outside limit
Fume Hoods	Face velocity measured	Laboratory	Quarterly
	Sash operation	Laboratory	As needed
Ovens	Clean	Laboratory	As needed or if temperature outside limit
Incubators	Record temperatures	Laboratory	Every 15 minutes, electronically
Autoclave	Check temperature	Laboratory	Each use
	Clean	Laboratory	as needed
Top Loading Balances	Check calibration	Laboratory	Before every use
	Check alignment	Laboratory	Before every use
	Cleaning, calibration, adjustment, and spec compliance	Vendor	Annually
	Repair	Vendor	As needed
Analytical Balances	Check alignment	Laboratory	Before every use
	Check calibration	Laboratory	Daily,before use
	Clean pans and compartment	Laboratory	After every use
	Cleaning, calibration, adjustment, and spec compliance	Vendor	Annually
	Repair	Vendor	As needed
Dissolved Oxygen Meter	Check for scratches on sensors	Laboratory	Daily
pH probes	Condition probe	Laboratory	When fluctuations occur
UV-visible Spectrophotometer	Wavelength check	Vendor	Annually
Discrete Analyzer	Empty and Rinse Cuvette Container	Laboratory	Daily
	Empty and Rinse Waste Container	Laboratory	Daily
	Fill Diluent with fresh DI	Laboratory	Daily
	Follow prompts from instrument	Laboratory	Daily/Weekly/Monthly

Preventive Maintenance Procedures			
Instrument	**Activity**	**Lab or Vendor Performed**	**Frequency**
Total Organic Carbon Analyzers	Check IR zero	Laboratory	Weekly
	Check digestion/condensation vessels	Laboratory	Each use
	Clean digestion chamber	Laboratory	Every 2000 hours, or as needed
	Clean permeation tube	Laboratory	Every 2000 hours, or as needed
	Clean six-port valves	Laboratory	Every 200 -2000 hours, or as needed
	Clean sample pump	Laboratory	Every 200 -2000 hours, or as needed
	Clean carbon scrubber Clean IR cell	Laboratory Laboratory	Every 200 -2000 hours, or as needed Every 2000 -4000 hours, or as needed
Flow Injection Analyzer	Check valve flares	Laboratory	Quarterly
	Check valve ports	Vendor	As needed
	Check pump tubing	Laboratory	Daily
	Check flow cell flares	Laboratory	Quarterly
	Change bulb	Laboratory	As needed
	Check manifold tubing	Laboratory	Every six months
	Check T's and connectors	Laboratory	Every six months
Ion Chromatograph	Change column bed supports	Laboratory	Monthly or as needed
	Clean column	Laboratory	Monthly or as needed
	Change column	Laboratory	Every six months or as needed
	Change tubing Eluent pump	Laboratory Laboratory	Annually or as needed Annually
Atomic Absorption Spectro-photometers -CVAA	Check gases	Laboratory	Daily
	Check aspiration tubing	Laboratory	Daily
	Empty waste container	Laboratory	Weekly
ICP-AES	Check argon dewar	Laboratory	Daily
	Replace peristaltic pump tubing	Laboratory	Daily, or as needed
	Empty waste container , , spray torch	Laboratory Laboratory	Daily, or as needed Every two weeks, or as needed
	Replace water filter	Laboratory	Quarterly, or as needed
	Replace or vacuum air filters	Laboratory	Monthly, or as needed

Preventive Maintenance Procedures				
Instrument	**Activity**	**Lab or Vendor Performed**	**Frequency**	**Instrument**
ICP-MS	Check argon dewar		Laboratory	Daily
	Replace peristaltic pump tubing		Laboratory	Daily, or as needed
	Empty waste container Clean nebulizer, spray chamber, and torch		Laboratory Laboratory	Daily, or as needed Every two weeks, or as needed
	Clean Cone		Laboratory	As needed
	Check air filters		Laboratory	Annually or as needed
	Check rotary pump oil Clean ion lens stack		Laboratory Laboratory	Quarterly, or as needed Annually or as needed
Chromatographs	Clean and repack column		Laboratory	As needed
	Backflush valves		Laboratory	As needed
Gas Chromatographs	Check gas supplies		Laboratory	Daily, replace when pressure reaches 250 psi
	Change in-line filters		Laboratory	Quarterly or after 30 tanks of gas
	Change injection port liner		Laboratory	Daily or as needed
	Clip first foot of capillary column		Laboratory	As needed
	Change guard column		Laboratory	As needed
	Replace analytical column		Laboratory	As needed when peak resolution fails
	Check system for gas leaks		Laboratory	After changing columns
	Clean FID		Laboratory	As needed
	Leak test ECD		Laboratory	Annually
Gas Chromatograph/Mass Spectrometers	Check gas supplies		Laboratory	Daily, replace when pressure reaches 50 psi
	Change in-line filters		Laboratory	Quarterly or after 30 tanks of gas
	Change septum		Laboratory	Daily
	Change injection port liner		Laboratory	Weekly or as needed
	Clip first foot of capillary column		Laboratory	As needed
	Change guard column		Laboratory	As needed
	Replace analytical column		Laboratory	As needed when peak resolution fails
	Clean jet separator		Laboratory	As needed
	Clean source		Laboratory	As needed when tuning problems
	Change pump oil Oil wick		Laboratory Laboratory	Every six months Every six months

Preventive Maintenance Procedures

Instrument	Activity	Lab or Vendor Performed	Frequency
Purge and Trap Concentrators	Change trap	Laboratory	As needed
	Change transfer lines	Laboratory	As needed
HPLC	Check gas supplies	Laboratory	Daily, replace when pressure reaches 200 psi
	Change guard column	Laboratory	As needed
	Change analytical column	Laboratory	As needed
	Change inlet filters	Laboratory	As needed
TCLP/SPLP Extractors	Monitor Room Temperature	Laboratory	Daily with use
	Monitor RPM of Rotators	Laboratory	Daily with use
	Leak Check ZHEs	Laboratory	Daily with use
	Grease fittings O-ring replacement	Laboratory	As needed

APPENDIX F – Sample Preservation, Containers, and Hold Times

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Bacterial Tests						
Coliform, Total	SM9223B	W	Sterile P,G	100	Cool, ≤6°C, 0.008% $Na_2S_2O_3$[d] No $Na_2S_2O_3$ if from unchlorinated source	30 hours
Inorganic Tests						
Alkalinity	SM2320B	W	P,G	125	Cool, ≤6°C no headspace	14 days
Ammonia	EPA 350.1	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Ammonia	EPA 350.1	S, NAq	P,G	4 oz.	Cool, ≤6°C	28 days
Ash, Percent	ASTM D482	NonAq Liq	P,G	250	Cool, ≤6°C	None Listed
Biochemical Oxygen Demand (BOD/ CBOD)	SM5210B	W	P,G	1000	Cool, ≤6°C	48 hours
Bromide	300.0/9056A	W	P,G	125	Cool, ≤6°C (not required)	28 days
Bromide	9056A	Naq, S	P,G	4 oz.	Cool, ≤6°C (not required)	None listed
Chemical Oxygen Demand (COD)	410.4	W, NAq	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Chemical Oxygen Demand (COD)	SM 5220B	S, NAq	G	4 oz.	Cool, ≤6°C	28 days
Chloride	300.0/ 9056A	W	P,G	125	Cool, ≤6°C (not required)	28 days
Chloride	9056A	Naq, S	P,G	4 oz.	Cool, ≤6°C (not required)	None listed
Chlorine, Total Residual	SM4500Cl F	W	P,G	500	None Required- field analysis preferred	15 minutes
Chlorine Demand	SM 409A	W	P,G	500	Cool, ≤6°C	None listed
Chlorophyll a - fluorometric	SM 10200H	W	P, Amber G, or filter	1000 or filter	Filter immediately and freeze filter	3 weeks
Color	SM2120B	W	P,G	100	Cool, ≤6°C	48 hours
Cyanide, Total, Amenable to Chlorination, Weak Acid Dissociable	335.4/ SM4500CNG /9012B/ Kelada-01	W	P,G	125	Cool, ≤6°C, NaOH to pH>12	14 days
Cyanide, Total	9012B	S	P,G	4 oz.	Cool, ≤6 °C	14 days
Density	ASTM D4052	NonAq Liq	P,G	250	None	None listed
Ethylene Glycol	NYSDEC 89-9	W	G	3x40 mL	Cool, ≤6°C	None listed
Fluoride	300.0/9056A	W	P,G	125	Cool, ≤6°C (not required)	28 days

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Fluoride	9056A	Naq, S	P,G	4 oz.	Cool, ≤6°C (not required)	None listed
Hardness	SM2340BorC	W	P,G	250	HNO_3 to pH<2	6 months
Hydrogen Ion (pH)	SM4500 H+B/ 9040	W	P,G	100	None Required – field analysis preferred	15 minutes
Ignitability – closed cup	1010A	Liquid	G	3 x 40mL	Cool, ≤6°C	14 days
Iodide	300	W	P,G	125	Cool, ≤6°C	28 days suggested
Iron, Ferrous	SM 3500 Fe D	W	P,G	125	Cool, ≤6 °C, no headspace	Immediate (24 hours – Field preferred)
Kjeldahl and Organic Nitrogen	351.2	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Kjeldahl and Organic Nitrogen	351.2	S, NAq	P,G	4oz.	Cool, ≤6°C	28 days
Nitrate	300.0/9056A	W	P,G	125	Cool, ≤6°C	48 hours
Nitrate	9056A	Naq, S	P,G	4 oz	Cool, ≤6°C	None listed
Nitrate-Nitrite	353.2	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Nitrite	300.0/9056A/ 353.2	W	P,G	125	Cool, ≤6°C	48 hours
Nitrite	9056A	S, Naq	P,G	4 oz	Cool, ≤6°C	None listed
Odor	SM 2150B	W	G	300 mL	None	Immediate
Oil and Grease	1664A	W	G, Teflon-Lined Cap	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Orthophosphate	365.1	W	P,G	125	Filter in field, Cool, ≤6°C	48 hours
Phenolics, Total	420.4/9066	W	Amber G Only	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Phenolics, Total	9066	S	G	4 oz.	Cool, ≤6°C	28 days
Phenolics, Total	9066	NAq	G	250	Cool, ≤6°C	28 days
Phosphorus, Total	365.1	W	P,G	250	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Phosphorus, Total	365.1	S, NAq	P,G	4 oz.	Cool, ≤6°C	28 days
Reactive Cyanide and Sulfide	Chpt7/9010	W,S	P,G	500 or 4 oz.	Cool, ≤6 °C	None listed
Residue, Total	SM2540B	W	P,G	250	Cool, ≤6°C	7 days
Residue, Filterable (TDS)	SM2540C	W	P,G	250	Cool, ≤6°C	7 days
Residue, Nonfilterable (TSS)	SM2540D	W	P,G	1000	Cool, ≤6°C	7 days
Residue, Settleable	SM2540F	W	P,G	1000	Cool, ≤6°C	48 hours

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Residue, Volatile (TVS, TVSS, TVDS)	SM 2540G	W	P,G	See Total Residue	Cool, ≤6°C	7 days
Residue, Volatile	SM 2540G	S	P,G	4 oz.	Cool, ≤6°C	none
Specific Conductance	120.1	W	P,G	100	Cool, ≤6°C Reagent Waters – no headspace	28 days Reagent Waters – 48 hours suggested
Specific Gravity	ASTM D1475	NonAq Liq	P,G	250	None	None listed
Sulfate	300.0/9056A	W	P,G	125	Cool, ≤6°C	28 days
Sulfate	9056A	Naq, S	G	4 oz.	Cool, ≤6°C	28 days
Sulfide, Acid Soluble	SM 4500-S2 F /9034	W	P,G	500	Cool, ≤6°C, Add Zinc Acetate plus NaOH to pH>9 No headspace	7 days
Sulfide, Acid Soluble	9030B/9034	S	P,G	4 oz.	Cool, ≤6°C No headspace	7 days
Sulfite	SM 4500-SO32-B	W	P,G	250	None Required- field analysis preferred	15 minutes
Sulfur – Peroxide Digestion	300	W,S,Naq	P,G	250	Cool, ≤6°C	None
Sulfuric Acid	8	A impingers	P,G	250	None	None
Temperature	170.1	W	NA	NA	None Required	Analyze immediately
Total Petroleum Hydrocarbons, Recoverable (gravimetric)	1664A	W	G, Teflon-Lined Cap	250	Cool, ≤6°C, HCl or H_2SO_4 to pH<2	28 days
Turbidity	180.1	W	P,G	100	Cool, ≤6°C	48 hours
UV Absorbing Constituents	SM 5910 B	W	P,G	125	Cool, ≤6°C	48 hours
Water, Percent	ASTM E203	W	P,G	4 oz.	Cool, ≤6°C	None listed

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Metals						
Chromium VI	218.6	W (not Drinking Water)	P,G	125	Cool, ≤6°C Buffering = pH 9.3-9.7 with specific solution	24 hours: 28 days if buffered
Chromium VI	218.6	Drinking Water	P,G	125	Cool, ≤6°C Buffering = pH 9.0-9.5 with specific solution	24 hours: 5 days if buffered
Chromium VI	218.7	Drinking Water	P,G	125	Cool, ≤6°C Buffering = pH >8 with specific solution	14 days
Chromium VI	7199, SM3500CrB	W	P,G	125	Cool, ≤6°C	24 hours
Chromium VI	7199	S	P,G	4 oz.	Cool, ≤6°C	30 days until digestion; 7 days until pH adjustment and analysis
Mercury, Low Level	1631E	W	G, double bagged	500	HCl BrCl in-lab, in bottle	28 days to BrCl 90 days from collection to analysis
Mercury	245.1/7470A	W	P,G	250	HNO_3 to pH<2	28 days
Mercury	245.5/7471B	S	P,G	4 oz.	Cool, ≤6°C	28 days
Metals, except Chromium VI and Mercury	200.7/200.8/ 6020A	W	P,G	125	HNO_3 to pH<2	180 days
Metals, except Chromium VI and Mercury	6010C	W	P,G	250	HNO_3 to pH<2	180 days
Lead and Copper for Public Water Systems	200.8	Drinking Water	P,G	1000-wide mouth	HNO_3 to pH<2 (upon receipt)	180 days
Lead for Schools	200.8	Drinking Water	P,G	250-wide mouth	HNO_3 to pH<2 (upon receipt)	180 days
Metals, except Chromium VI and Mercury	6010C/ 6020A	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	180 days
Metals, except Chromium VI and Mercury	6010C/ 6020A	Tissue	G, Teflon-Lined Cap	4 oz.	Freeze, ≤-10°C	180 days
Organics						
Organic Carbon, Total (TOC)	SM 5310B/C /9060	W	G	40	Cool, ≤6°C, H_2SO_4 to pH<2	28 days
Total Inorganic Carbon (TIC)	SM 5310C	W	G	125	Cool, ≤6°C	28 days
Organic Carbon, Total (TOC)/ Total Inorganic Carbon (TIC)	EPA Lloyd Kahn	S	G	4 oz	Cool, ≤6°C, no headspace	14 days
Organic Carbon, Total (TOC)/ Total Inorganic Carbon (TIC	EPA Lloyd Kahn	NAq	G	4 oz	Cool, ≤6°C, no headspace	None listed
Petroleum Hydrocarbons, Total	310-13	W	G, Teflon-Lined Cap	2x1000	Cool, ≤6°C,	7 days until extraction; 40 days after extraction
Petroleum Hydrocarbons, Total	310-13	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	8260C/624.1	W	G, Teflon-Lined Septum Cap	3x40	No Headspace, Cool, ≤6°C, **Typical:** HCl to pH<2, **Residual Chlorine Known to be Present**: 25mg Ascorbic, then HCl to pH<2, Cool, ≤6°C 2-chloroethyl vinyl ether – unpreserved only Acrolein (624 only)– unpreserved (or field preserved to pH 4-5)	14 days 7 days if not chemically preserved 7 days 3 days (14 days if field preserved to pH 4-5)
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	8260	S-Bulk Will be narrated	G, Teflon-Lined Cap	2 oz.	Cool, ≤6°C, Minimize Headspace	14 days
Purgeable Halocarbons and Aromatics (including BTEX, Oxygenates)	8260	S - 5035	G, Teflon-Lined, Septum Cap	5g cores in 2x40 DI 1x40 MeOH Or 3 x 5g cores	Cool, ≤6°C, Freeze upon receipt Cool, ≤6°C or freeze, in coring tool, lab transfer to 2x40 DI 1x40 MeOH within 48 hours	14 days
Dissolved Gases	RSK-175	W	G, Teflon-Lined Septum Cap	3x40	Cool, ≤6°C, HCl to pH<2 No Headspace	14 days 7 days if not chemically preserved

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Semivolatile Organics						
Petroleum Hydrocarbons, Extractable (Diesel-Range Organics)	8015	W	G, Teflon-Lined Cap	2x1000	Cool, ≤6°C	7 days until extraction 40 days after extraction
Petroleum Hydrocarbons, Extractable (Diesel-Range Organics)	8015	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction
Non-Halogenated Organics	8015	W,S, NAq	G, Teflon-Lined Cap	3x40, 4 oz.	Cool, ≤6°C, No Headspace[g]	14 days
Phenols, Phthalate Esters, Nitrosamines, Nitroaromatics and Cyclic Ketones, Haloethers, Chlorinated Hydrocarbons, PAHs	625.1/ 8270	W	G, Teflon-Lined Cap	2x250 LL: 2x1000	Cool, ≤6°C, store in dark[g]	7 days until extraction; 40 days after extraction
Phenols, Phthalate Esters, Nitrosamines, Nitroaromatics and Cyclic Ketones, Haloethers, Chlorinated Hydrocarbons, PAHs	8270	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C, store in dark	14 days until extraction; 40 days after extraction
Polynuclear Aromatic Hydrocarbons	610/8310 625.1/ 8270 LL	W	G, Teflon-Lined Cap	2x1000.	Cool, ≤6°C, Store in Dark	7 days until extraction; 40 days after extraction
Polynuclear Aromatic Hydrocarbons	8270	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C, Store in Dark	14 days until extraction; 40 days after extraction
Polynuclear Aromatic Hydrocarbons	8270	T	G, Teflon-Lined Cap	4 oz.	Freeze, ≤-10°C, Store in Dark	14 days until extraction; 40 days after extraction
Organochlorine Pesticides	608.3/ 8081	W	G, Teflon-Lined Cap	2x250	Cool, ≤6°C, Adjust pH to 5-9 unless extracted within 72 hours	7 days until extraction; 40 days after extraction
Organochlorine Pesticides	8081	S, NAq	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction
Organochlorine Pesticides	8081	T	G, Teflon-Lined Cap	Hexane rinsed double aluminum foil and double bag	Frozen, ≤-20°C	Check client QAP 14/40 RIM Frozen 1 year for EPA Region 1
PCBs	608.3/8082	W	G, Teflon-Lined Cap	2x250, LL: 2x1000	Cool, ≤6°C	1 year until extraction and analysis
PCBs	608.3/8082	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	1 year until extraction and analysis
PCB Homologs	680	W	G, Teflon-Lined Cap	2x1000	Adjust pH to 5-9, Cool, ≤6°C, If not pH 5-9	7 days until extraction 40 days after extraction, 72 hours
PCB Homologs	680	T,S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	None listed

Containers, Preservation and Holding Times

DETERMINATION	METHOD	MATRIX[b]	CONTAINER[c]	PREFERRED VOLUME (mL)	PRESERVATION	MAXIMUM HOLDING TIME[a]
Chlorinated Herbicides	8151	W	G, Teflon-Lined Cap	2x250	Cool, ≤6°C	7 days until extraction; 40 days after extraction
Chlorinated Herbicides	8151	S	G, Teflon-Lined Cap	4 oz.	Cool, ≤6°C	14 days until extraction; 40 days after extraction
Metabolic/Fatty/Organic Acids	In house	W	G, Teflon-Lined Cap	2x40 or 250	Cool, ≤6°C, H_3PO_4	28 days recommended
Carbonyl Compounds (Formaldehyde)	8315	W	G, Teflon-Lined Cap	500	Cool, ≤6°C	3 days until extraction, 3 days after extraction
1,4-Dioxane	522	DW	G, Teflon-Lined Cap	500	Dechlorinate Na_2SO_3, Cool, ≤6°C, pH <4 $NaHSO_4$	28 days until extraction; 28 days after extraction
1,4-Dioxane	8270	W	G, Teflon-Lined Cap	500	Cool, ≤6°C[4]	7 days until extraction; 40 days after extraction
Toxicity Characteristic Leaching Procedure (TCLP)						
Mercury	7470	HW	P,G	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: HNO_3 to pH<2	28 days until extraction; 28 days after extraction
Metals, except Mercury	6010	HW	P,G	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: HNO_3 to pH<2	180 days until extraction; 180 days after extraction
Volatile Organics	8260	HW	G, Teflon-Lined Cap	2 oz. (25g)	Sample: Cool, ≤6°C Minimize Headspace TCLP extract: Cool, ≤6°C, HCl to pH<2, No Headspace	14 days until extraction; 14 days after extraction
Semivolatile Organics	8270	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C, Store in Dark[g] TCLP extract: Cool, ≤6°C, Store in Dark	14 days until TCLP; 7 days until extraction; 40 days after extraction
Organochlorine Pesticides	8081	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: Cool, ≤6°C	14 days until TCLP; 7 days until extraction; 40 days after extraction
Chlorinated Herbicides	8151	HW	G, Teflon-Lined Cap	100g/ 1000mL	Sample: Cool, ≤6°C TCLP extract: Cool, ≤6°C	14 days until TCLP; 7 days until extraction; 40 days after extraction

a Holding time is from collection to analysis unless otherwise specified. Where allowed by project sampling and analysis protocols, the holding time for sediment, soil, and tissue samples may be extended for a defined period when stored frozen at -20°C.
b W=Water, S=Soil or Sediment, A = Air, HW = Hazardous Waste, T=Tissue, NAq = Non-Aqueous Liquid
c P=Polyethylene G=Glass
d For chlorinated water samples
e The recommended maximum holding time is variable, and is dependent upon the geographical proximity of sample source to the laboratory
g If the water sample contains residual chlorine, 10% sodium thiosulfate is used to dechlorinate.

APPENDIX G – Standard Operating Procedures

STANDARD OPERATING PROCEDURES

SOP NAME	FILE NAME
DATA RECALL	CE-GEN006
LABORATORY ETHICS and DATA INTEGRITY	CE-GEN001
SAMPLE BATCHES AND ANALYTICAL SEQUENCES	ADM-BATCH
CONFIRMATION OF ORGANIC ANALYTE IDENTIFICATION AND QUANTITATION	ADM-CONFIRM
NONCONFORMANCE AND CORRECTIVE ACTION	ADM-CA
CONTROL LIMITS AND TRENDING	ADM-CTRL_LIM
MAKING ENTRIES ONTO ANALYTICAL RECORDS	ADM-DATANTRY
DOCUMENT CONTROL	ADM-DOC_CRTL
HANDLING CUSTOMER FEEDBACK	ADM-FEEDBACK
MECHANICAL VOLUMETRIC DISPENSING DEVICES, VOLUMETRIC AND NON-VOLUMETRIC LABWARE	ADM-PCAL
INITIAL CALIBRATION	ADM-ICAL
INTERNAL AUDITS	ADM-IAUD
PREPARING SAMPLE DILUTIONS	ADM-DIL
GENERATION OF ELECTRONIC DATA DELIVERABLES USING EDDGE	ADM-EDD
LABORATORY DATA REVIEW PROCESS	ADM-DREV
DELAWARE HSCA PROGRAM SOP	ADM-DNREC-HSCA
USE OF ACCREDITATION ORGANIZATION NAMES SYMBOLS AND LOGOS	ADM-LOGO
PROJECT CHEMIST DUTIES AND REPORT REVIEW	ADM-PCR
PROCUREMENT AND CONTROL OF LAB SERVICES AND SUPPLIES	ADM-PUR
REPORT GENERATION	ADM-RG
RECORD STORAGE AND ARCHIVING	ADM-ARCH
CALIBRATION CHECK PROCEDURES FOR SUPPORT EQUIPMENT	ADM-DALYCK
MANUAL INTEGRATION	ADM-INT
MANAGEMENT REVIEW	ADM-MGMTRVW
PERFORMING METHOD DETECTION LIMIT STUDIES AND ESTABLISHING LIMITS OF DETECTION AND QUANTITATION	ADM-MDL
SOFTWARE QUALITY ASSURANCE AND DATA SECURITY	ADM-SWQADATA
PH MEASUREMENTS FOR SUPPORT OF OTHER METHODS - CALIBRATION, USE, AND DOCUMENTATION	ADM-PhSUPPORT
PROFICIENCY TESTING SAMPLE ANALYSIS	ADM-PTS
SIGNIFICANT FIGURES	ADM-SIG.FIG
ESTABLISHING STANDARD OPERATING PROCEDURES	ADM-SOP
SAMPLE PREPARATION, COMPOSITING, AND SUBSAMPLING	ADM-SPLPREP
QUALIFICATION OF SUBCONTRACT LABORATORIES	ADM-SUBLAB
TRAINING AND ORIENTATION	ADM-TRAINING
COORDINATION AND REPORTING OF SAMPLES REQUIRING DECANTED PERCENT SOLIDS	ADM-DECANT
CARBON DIOXIDE BY CALCULATION	ADM-4500 CO2 D
HARDNESS BY CALCULATION	GEN-2340B
LANGLIER INDEX CALCULATION	ADM-2330B
UN-IONIZED SULFIDE BY CALCULATION	ADM-H2SCALC
FIELD SAMPLING	FLD-SAMPLE
TEMPERATURE - FIELD	FLD-2550B
FIELD MEASUREMENTS OF DISSOLVED OXYGEN BY MEMBRANE ELECTRODE	FLD-4500OG
FIELD CHLORINE RESIDUAL	FLD4500CLG
pH IN WATER AND AQUEOUS WASTE	FLD-4500H+B
METHOD 18 - AIR SAMPLING	FLD-18
METHOD 26A - AIR SAMPLING	FLD-26A
BOTTLE PREPARATION, PACKING, AND SHIPPING	SMO-BPS
RECEIPT, STORAGE AND DISPOSAL OF FOREIGN SOIL UNDER USDA PERMIT	SMO-FOREIGN SOIL
SAMPLE RECEIVING	SMO-GEN
INTERNAL CHAINS OF CUSTODY	SMO-ICOC
SAMPLE DISPOSAL	SMO-SPLDIS

STANDARD OPERATING PROCEDURES

SOP NAME	FILE NAME
AMMONIA BY COLORIMETRY	GEN-350.1
ASH, DETERMINATION OF	GEN-ASH
BIOCHEMICAL OXYGEN DEMAND	GEN-5210B
CHEMICAL OXYGEN DEMAND-Soils	GEN-CODS
CHEMICAL OXYGEN DEMAND-Waters	GEN-410.4
CHLORINE DEMAND	GEN-409A
CHLORINE RESIDUAL	GEN-4500ClF
CHLOROPHYLL A BY FLUOROMETRY	GEN-CHLPHA
COLILERT AND VERIFICATION OF E.COLI IN MUG CULTURES	GEN-9223B
COLOR	GEN-2120B
CONDUCTIVITY IN WATER	GEN-120.1
TOTAL CYANIDE BY AUTOMATED IN-LINE UV DIGESTION, FLASH DISTILLATION, AND COLORIMETRIC ANALYSIS	GEN-KELADA
CYANIDE, AMENABLE TO CHLORINE	GEN-4500 CN G
CYANIDE, MIDI DISTILLATION	GEN-9012
CYANIDE, WEAK ACID DISSOCIABLE	GEN-WADCN
DENSITY OR SPECIFIC GRAVITY BY WEIGHT PER GALLON CUP	GEN-D1475Cup
DISSOLVED OXYGEN	GEN-DO
GLYCOLS AND FORMALDEHYDE BY COLORIMETRY	GEN-89-9
FERROUS IRON	GEN-3500
HARDNESS, TOTAL	GEN-2340C
ALKALINE DIGESTION FOR HEXAVALENT CHROMIUM IN SOIL	GEN-3060
HEXAVALENT CHROMIUM BY IC	GEN-7199
HEXAVALENT CHROMIUM - WATERS	GEN-CR6
HYDROGEN PEROXIDE IN AIR IMPINGERS BY MANUAL COLORIMETRY WITH TITANIUM (IV)	GEN-OSHAVI6
IN-LAB FILTRATION	GEN-FILTER
ION CHROMATOGRAPHY, DETERMINATION OF ANIONS BY	GEN-300.0
NITRATE AND NITRITE	GEN-353.2
NITROGEN, TOTAL KJELDAHL	GEN-351.2
OIL AND GREASE HEXANE EXTRACTION	GEN-1664
PAINT FILTER TEST	SMO-9095
PERCENT WATER BY KARL FISCHER	GEN-H2O
pH IN WATER AND AQUEOUS WASTE	SMO-PH
pH IN WATER AND AQUEOUS WASTE	SMO-PH
PHENOLICS, TOTAL	GEN-420.4/9066
PHOSPHORUS, ORTHO	GEN- OPO4
PHOSPHORUS, TOTAL	GEN-365.1
SKALAR, SPECIFIC CONDUCTANCE, PH, and ALKALINITY	GEN-SKALAR
SOLIDS, PERCENT	GEN-DWPS
SOLIDS, TOTAL	GEN-2540B
SOLIDS, TOTAL DISSOLVED	GEN-2540C
SOLIDS, TOTAL SUSPENDED	GEN-2540D
SOLIDS, VOLATILE AND FIXED (TOTAL, DISSOLVED, and SUSPENDED)	GEN-160.4
SOLIDS, PERCENT VOLATILE	GEN-2540G
SETTEABLE SOLIDS	GEN-2540F
SUSPENDED SEDIMENT CONCENTRATION IN WATER SAMPLES by ASTM D3977	GEN-SSC
SULFIDE, ACID SOLUBLE	GEN-9030B
SULFIDE, TOTAL AND DISSOLVED IN WATERS	GEN-4500S2F
SULFITE	GEN-4500SO3B
SULFURIC ACID BY METHOD 8	GEN-8
TMA and TMAH IN SORBENT TUBES AND WATER USNG IC	GEN-TMA(H)
TOTAL ORGANIC CARBON OR TIC BY LLOYD KAHN/9060	GEN-TOCLK/9060
TOTAL ORGANIC CARBON-WATERS	GEN-5310

STANDARD OPERATING PROCEDURES

SOP NAME	FILE NAME
TOTAL INORGANIC CARBON - WATERS	GEN-TICW
TURBIDITY	SMO-180.1
UV-ABSORBING CONSTITUENTS	GEN-5910B
WET CHEMISTRY GLASSWARE CLEANING	GEN-GC
DETERMINATION OF METALS AND TRACE ELEMENTS BY ICP	MET-200.7/6010C
DETERMINATION OF METALS AND TRACE ELEMENTS BY ICP-MS	MET-6020A
MERCURY IN WATER AND SOLID OR SEMISOLID WASTE BY COLD VAPOR ATOMIC ABSORPTION SPECTROMETRY	MET-HG
MERCURY IN WATER BY OXIDATION, P&T, AND CVAFS	MET-1631
METALS DIGESTION, WATERS FOR ICP	MET-3010A
METALS DIGESTION, SOIL, SEDIMENT, SLUDGE FOR ICP AND GFAA ANALYSIS	MET-3050B
CLP DIGESTION TECHNIQUES FOR WATERS AND SOILS	MET-CLPDIG
SPLP EXTRACTION FOR METALS AND SEMIVOLATILES	MET-SPLP
METALS AND SEMIVOLATILES TCLP EXTRACTION (METHOD 1311)	MET-TCLP
ZERO HEADSPACE EXTRACTION (EPA METHOD 1311)	MET-TZHE
METALS GLASSWARE CLEANING	MET-GC
VOLATILE SCREENING	VOC-SCREEN
PREPARATION AND MONITORING PROCEDURES FOR VOLATILE STORAGE BLANKS	VOC-BLK
MIXED GASES BY RSK-175M	VOC-8015/RSK175
CLOSED SYSTEM PURGE AND TRAP	VOC-5035
ANALYSIS OF VOLATILE ORGANIC COMPOUNDS BY GC/MS IN DRINKING WATER	VOC-524
VOLATILE ORGANIC COMPOUNDS BY GC/MS	VOC-8260
DETERMINATION OF POLYAROMATIC HYDROCARBONS BY HPLC	HPLC-8310
DETERMINATION OF CARBONYL COMPOUNDS BY HPLC	HPLC-8315A
ANALYSIS OF WATER SAMPLES FOR METABOLIC ACIDS	HPLC-METACIDS
DETERMINATION OF HYDROQUINONE BY HPLC/ECD FOR "Client"	HPLC-Hydroquinone
SEPARATORY FUNNEL LIQUID-LIQUID EXTRACTION	EXT-3510C
AUTOMATED SOXHLET EXTRACTION	EXT-3541
MICROWAVE EXTRACTION OF SOILS, SEDIMENTS, AND SOLIDS FOR ORGANIC ANALYTES	EXT-3546
WASTE DILUTION	EXT-3580A
SHAKE EXTRACTION FOR IMMISCIBLE NON-AQUEOUS LIQUID SAMPLES	EXT-NAQ
ADDITION OF SPIKES AND SURROGATES	EXT-SAS
PREPARATION OF ANHYDROUS SODIUM SULFATE	EXT-SUL
CONCENTRATION OF EXTRACTS	EXT-CONC
FLORISIL CLEANUP	EXT-3620B
SULFUR CLEANUP	EXT-3660B
SULFURIC ACID CLEANUP OF PCB EXTRACTS	EXT-3665A
ORGANIC EXTRACTIONS GLASSWARE CLEANING	EXT-GC
DIAZOMETHANE PREPARATION	EXT-DIAZ
GASEOUS ORGANIC COMPOUNDS ON MEDIA BY GC/FID	SOC-18
PETROLEUM PRODUCTS IN WATER (HYDROCARBON SCAN)-NYSDOH Mtd	SOC-310-13
1,4-DIOXANE IN DRINKING WATER BY SPE AND GC/MS SIM	SOC-522
1,4-DIOXANE IN WATER BY SPE AND GC/MS SIM OPT IDMS	SOC-14-DIOXANE
NONHALOGENATED ORGANICS BY GC/FID	SOC-8015
PETROLEUM HYDROCARBONS AS DIESEL IN WATERS, SOILS, AND WASTE	SOC-8015-DRO
ORGANOCHLORINE PESTICIDES IN WATERS AND SOILS	SOC-8081A
PCBs IN WATERS and SOILS	SOC-8082
CHLORINATED HERBICIDES	SOC-8151A
SEMIVOLATILE ORGANIC COMPOUNDS BY GC/MS	SOC-8270

APPENDIX H –

Data Qualifiers and Statement of Accreditations

REPORT QUALIFIERS AND DEFINITIONS

U Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.

J Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).

B Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.

E Inorganics- Concentration is estimated due to the serial dilution was outside control limits.

E Organics- Concentration has exceeded the calibration range for that specific analysis.

D Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.

* Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.

H Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.

Spike was diluted out.

+ Correlation coefficient for MSA is <0.995.

N Inorganics- Matrix spike recovery was outside laboratory limits.

N Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.

S Concentration has been determined using Method of Standard Additions (MSA).

W Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.

P Concentration >40% difference between the two GC columns.

C Confirmed by GC/MS

Q DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).

X See Case Narrative for discussion.

MRL Method Reporting Limit. Also known as:
LOQ Limit of Quantitation (LOQ)
The lowest concentration at which the method analyte may be reliably quantified under the method conditions.

MDL Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).

LOD Limit of Detection. A value at or above the MDL which has been verified to be detectable.

ND Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for State Accreditations[1]

NELAP States
Florida ID # E87674
New Hampshire ID # 2941
New York ID # 10145
Pennsylvania ID# 68-786
Virginia #460167

Non-NELAP States
Connecticut ID #PH0556
Delaware Approved
Maine ID #NY01587
North Carolina #36701
North Carolina #676
Rhode Island LAO00333

[1] Analyses were performed according to our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current NELAP/TNI standards or state or agency requirements, where applicable, except as noted in the case narrative. Since not all analyte/method/matrix combinations are offered for state/NELAC accreditation, this report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory. To verify NH accredited analytes, go to https://www4.des.state.nh.us/CertifiedLabs/Certified-Method.aspx.

ALS Environmental

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% (25% for CLP) difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Lab ID # for Massachusetts Certification
M-NY032

Analyses were conducted in accordance with Massachusetts Department of Environmental Protection certification standards, except as noted in the laboratory case narrative provided. A copy of the current Department issued parameter list is included in this report.

REPORT QUALIFIERS AND DEFINITIONS

U	Analyte was analyzed for but not detected. The sample quantitation limit has been corrected for dilution and for percent moisture, unless otherwise noted in the case narrative.
J	Estimated value due to either being a Tentatively Identified Compound (TIC) or that the concentration is between the MRL and the MDL. Concentrations are not verified within the linear range of the calibration. For DoD: concentration >40% difference between two GC columns (pesticides/Arclors).
B	Analyte was also detected in the associated method blank at a concentration that may have contributed to the sample result.
E	Inorganics- Concentration is estimated due to the serial dilution was outside control limits.
E	Organics- Concentration has exceeded the calibration range for that specific analysis.
D	Concentration is a result of a dilution, typically a secondary analysis of the sample due to exceeding the calibration range or that a surrogate has been diluted out of the sample and cannot be assessed.
*	Indicates that a quality control parameter has exceeded laboratory limits. Under the "Notes" column of the Form I, this qualifier denotes analysis was performed out of Holding Time.
H	Analysis was performed out of hold time for tests that have an "immediate" hold time criteria.
#	Spike was diluted out.
+	Correlation coefficient for MSA is <0.995.
N	Inorganics- Matrix spike recovery was outside laboratory limits.
N	Organics- Presumptive evidence of a compound (reported as a TIC) based on the MS library search.
S	Concentration has been determined using Method of Standard Additions (MSA).
W	Post-Digestion Spike recovery is outside control limits and the sample absorbance is <50% of the spike absorbance.
P	Concentration >40% difference between the two GC columns.
C	Confirmed by GC/MS
Q	DoD reports: indicates a pesticide/Aroclor is not confirmed (≥100% Difference between two GC columns).
X	See Case Narrative for discussion.
MRL LOQ	Method Reporting Limit. Also known as: Limit of Quantitation (LOQ) The lowest concentration at which the method analyte may be reliably quantified under the method conditions.
MDL	Method Detection Limit. A statistical value derived from a study designed to provide the lowest concentration that will be detected 99% of the time. Values between the MDL and MRL are estimated (see J qualifier).
LOD	Limit of Detection. A value at or above the MDL which has been verified to be detectable.
ND	Non-Detect. Analyte was not detected at the concentration listed. Same as U qualifier.

Rochester Lab ID # for Accreditations[1]

NELAP State Accreditation #
Florida ID # E87674
New Hampshire ID # 2941
New York ID # 10145
Pennsylvania ID# 68-786
Virginia #460167

Non-NELAP State Accreditation #
Connecticut ID #PH0556
Delaware Approved
Maine ID #NY01587
North Carolina #36701
North Carolina #676
Rhode Island ID #LAO00333

PJLA Testing
DoD ELAP
Accreditation #65817

[1] Analyses were performed according to the current DoD Quality Systems Manual, our laboratory's NELAP-approved quality assurance program and any applicable state or agency requirements. The test results meet requirements of the current requirements, where applicable, except as noted in the case narrative. This report may contain results which are not accredited. For a specific list of accredited analytes, contact the laboratory. To verify NH accredited analytes, go to https://www4.des.state.nh.us/CertifiedLabs/Certified-Method.aspx

APPENDIX I – Master List of Controlled Documents

CONTROLLED FORMS

Click here to access specific sections of the list:

QA
- Data Review Checklists
- Initial Calibration Checklists
- Training
- Training Plan Forms (Initial Training)

SMO
WC
- WC Logs
- WC Flowcharts
- WC Forms
- WC Benchsheets
- WC Standards Prep

Metals
- Metals Flowcharts
- Metals Benchsheets
- Metals Logbooks
- Metals MDLs

Extractables
VOAs
- GCVOA Calibration Templates

Project Management
Instrument Manuals

Master List:

	Form	Revision	Date
QA			
	Archive Access Log	0	1/13/21
	Balance Log Template	5	7/25/19
	Distribution Control Form	2	10/24/19
	Induction Training record	0	4/9/19
	New Employee QA and Ethics Orientation Training	2021	6/8/21
	Non-Disclosure Agreement		
	Project Communication Form	0	11/12/12
	SOP Attestation Form	1	11/27/12
	SOP Change Form	1	1/13/21
	Vendor Evaluation Form	1	12/15/2020
	Volume Verification Log	0	2/6/17
	Log of LIMS Test Request – Change Control		
	Maintenance Log – Fridge/Freezer	0	12/23/19
	Gases Receipt and Use Log	0	1/6/2020
	Vendor Evaluation	0	12/21/22
Data Review Checklists			

	EXT Extractables (GC)	1	12/1/11
	EXT_PCBs	3	3/27/12
	EXT Pesticides	1	3/27/12
	EXT HPLC	1	11/29/11
	EXT SVOA	5	4/2/2020
	EXT 1,4-Dioxane	2	9/2/22
	MET ICP/CVAA/1631	10	9/6/23
	MET ICPMS	9	9/6/23
	MET MARRS	0	1/7/13
	SMO pH/Conductivity	3	1/5/18
	SMO Sett/Color/Turbidity	0	2/20/12
	VOC GC	1	12/1/11
	VOC GCMS	4	7/5/22
	VOC GCMS sub-checklist for rushes	1	1/23/13
	WC	5	9/6/23
	Ion Chromatography	1	11/11/21
Initial Calibration Checklists			
	ICAL checklists - All Departments	6	2/15/19
	ICAL checklist – Pest-PCB	7-PEST-PCB	3/20/2020
	ICAL checklist – 1,4-Dioxane	3	5/15/23
	TOC_ICAL_RF_CALC	0	2/7/23
Training			
	Training Sign-In	1	8/3/17
	Critical Job Function Authorization Statement	3	1/23/18
	DOC Cover Page	2	3/29/19
Training Plan Forms (Initial)			
	Filtering	1	1/2/13
	Generic – use only if none other is applicable	1	1/2/13
	Glassware Cleaning	1	1/2/13
	Thermometer and Balance	1	1/2/13
	Pipette Use	1	1/2/13
	pH Meter	1	1/2/13
	SMO GEN	1	1/4/13
	SMO BPS	1	1/4/13
	Extractables - 3510	2	8/15/18
	Extractables – 3541	2	8/15/18
	Extractables – 3546	0	2/2/22
	HPLC	1	1/2/13
	Metals – TCLP	0	10/7/13
	Metals –ZHE TCLP	0	10/7/13
	Metals – SPLP	0	10/7/13
	Metals –ZHE SPLP	0	10/7/13
	Metals – Digestion	1	1/2/13
	Metals- Instrument	1	1/2/13
	VOC- GC	1	1/2/13
	VOC- MS	1	1/2/13
	SVOA GC ECD	1	4/26/21
	SVOA GC	1	1/2/13
	SVOA MS	1	1/2/13
	WC BOD	2	9/28/18
	WC Extraction	1	2/28/2020
	WC Distillation/Digestion	1	1/2/13
	WC Ion Chromatography	1	1/4/13
	WC Lachat	1	1/4/13
	WC Solids	1	1/4/13
	WC Manual Spec	1	1/4/13
	WC Titration	1	1/4/13
	WC TOC	1	1/4/13

DOC 4 rep Spreadsheets	reserved		
SMO			
	Bottle Kit Preservations	0	4/9/21
	Cooler Receipt and Preservation Form	20.1	1/23/23
	Cr6+ Preservation Log	4	10/22/21
	Containers, Preservation, and Holding Time	33	6/16/2020
	Foreign Soil Log	1	12/14/16
	Internal Tracking Form for Short Holding Time Samples	1	10/29/12
	Sample Preparation, Compositing, and Subsampling	0	1/17/13
	Sampling Instructions and Preservative Information	1	10/18/12
	Sampling 1631 Instructions	1	9/18/13
	Sampling 522 1,4-Dioxane Instructions	1	12/17/21
	Sampling 524.2 Instructions	1	7/16/18
	Sampling Instructions Coliform	3	7/20/15
	Sampling Instructions 5035 Terracore	0	6/3/15
	Short Holding Times Job Aid	4	7/21/22
	DI Conductivity Log	0	11/12/19
WC logs			
	IC Repeat Log	1	6/13/18
	IC Standards Log	02042016	2/4/16
	Pipettor Calibration Log	4	12/23/19
	Pipettor Calibration Calculator	1	4/1/2020
	Solids Oven In/Out Log	2	10/7/19
	6 mL Cyanide Tube Volume Verification	0	1/9/17
	6 mL Cyanide Tube – Excel for Calcs	0	1/9/17
	pH Meter Calibration	0	2/9/17
WC Flowcharts and Postings			
	Alcoa Common Dilutions	0	11/12/18
	Autoclave Operation	1	1/17/13
	BOD Evaluation Flowchart	0	8/5/21
	Colilert Flowchart	6	2/16/2021
	Colilert Package Instructions	0	3/7/18
	Hexavalent Chromium Soil Digest Flowchart	1	2/7/13
	Monday AM Checklist IC	0	8/30/23
	Oil and Grease Flowchart	1	3/15/21
	Phenol Print Windows	0	10/9/18
	Quanticult Instructions	0	3/7/18
	Scan Instructions for COAs	0	1/6/20
	Solids – TDS Volume Determination	0	3/7/13
	TOC-LK Linear Ranges	1	9/2/14
	TMAH Dilutions	0	11/7/17
	WC Spiking Levels	8/5/2020	8/5/2020
WC Standards Prep			//
	Ammonia 8500	2	1/18/23
	TOTN	3	8/4/17
	TKN	3	12/20/19
	TPO4	2	1/24/18
	TPO4 – low level	2	1/23/18
WC Forms			
	Sample Dilutions	2	9/18/15

	BOD Dilution and Screening Sheet	2	1/19/17
		0	
WC/Micro Benchsheets	All linked to I:\Acquadata\Wetchem		
	%Ash	1	12/5/13
	%Water	2	9/4/14
	Alkalinity –Low Level	3	2/1/16
	Alkalinity –Regular Level	4	12/9/15
	Alkalinity – High Level	4	12/9/15
	BOD	12	11/15/18
	Chlorine Demand	1	12/5/13
	Chlorophyll a Fluorometric	3	5/23/19
	COD –LL	8	2/17/22
	COD-HL	9	2/17/22
	COD Soil	1	12/6/13
	Colilert	0	8/9/21
	Color	1	4/13/21
	Conductivity	5	3/18/19
	Cr6 Soil Digest	4	8/24/18
	Cr6 pH Adjust	1	1/17/2020
	Cyanide – Residual	1	12/6/13
	Cyanide-Micro	3	11/8/17
	Density	1	12/6/13
	Dissolved Oxygen	1	1/2/15
	Ethylene Glycol	1	5/1/13
	Ferrous Iron	7	2/17/22
	Hardness	4	2/1/16
	Hydrogen Peroxide in Air	2	10/13/15
	Hydrogen Peroxide in Water	0	7/23/15
	Method 8	2	4/15/14
	Oil and Grease/ TPH 1664	4	3/15/21
	Paint Filter – Free Liquid	1	3/16/15
	pH	3	1/4/18
	REDOX	4	12/5/19
	Residual Chlorine	2	4/7/2020
	Solids	8	9/15/21
	Solids-%Volatile	2	3/16/16
	Solids-Volatile Total	4	10/26/16
	Solids-Volatile Suspended	4	10/26/16
	Solids - Settleable	1	5/19/21
	Specific Gravity – Cup	1	12/6/13
	Sulfide 4500	3	2/1/16
	Sulfide 9030/9034	5	12/28/21
	Sulfite	1	12/9/13
	TKN Digest	6	2/1/23
	TPO4 Digest	4	12/19/19
	Turbidity	1	10/30/2020
	UV 254	3	1/4/21
Metals			
	Flowchart 200.2	1	10/18/17
	Flowchart 3010	0	1/16/15
	Flowchart 3050	1	12/2/2020
	ICP True Values	0	1/13/2020
	M33 Values	0	12/1/21
	Relative Error Instructions	0	2/16/22
	Tier IV Data	0	8/31/23
Metals MDL Postings			
	Mercury	2022 r0	12/5/22
	ICPMS water	2022 r0	12/5/22
	ICPMS soil	2022 r0	12/5/22
	200.7	2022 r0	12/5/22
	6010 water	2022 r0	12/5/22
	6010 soil	2022 r0	12/5/22

Metals Benchsheets			
	LLHg Calibration Blank Template	0	6/11/21
	LLHg Dilution Sheet	0	11/18/21
	Soil Weight Sheet	1	10/11/19
Metals Logbooks			
	MDL Standards Log	03232023	03/23/23
	LOQ Prep Log	01142015	01/14/15
	ICP Standards Log	003082022	03/08/2022
	ODD Metals Standard Log	2	6/13/13
	ICP 6 Runlog	2	11/23/2020
	ICP 7 Runlog	0	5/19/2023
	Agilent ICPMS Runlog	1	6/16/21
	CVAA-03 Runlog	0	9/26/23
	Mercury Run Log	4	2/12/2020
	LL Mercury M8000 Runlog	1	12/30/2020
	Mercury Standards Log	2	2/24/16
	LL Mercury Standards Log	1	11/18/21
	MS Standards Log	03082022	3/8/22
	Mercury Reagents and Acid Lot Tests	0	10/3/14
TCLP			
	TCLP MB Vessel Rotation	0	5/18/15
	TCLP Fluid Determination	0	1/25/23
	TCLP Benchsheet	8	4/23/2020
	ZHE TCLP Benchsheet	6	3/6/18
	SPLP Benchsheet	4	3/13/18
	TCLP Job Aid	0	8/9/21
Extractables			
	2 mL Vial Calibration Log	1	10/22/15
	8151 Extraction of Soils Flowchart	1	3/30/2020
	8151 Extraction of Waters Flowchart	1	3/26/2020
	8270 Cal Postings - excel	0	2/24/23
	8270 Cal Postings - 8270	0	2/24/23
	8270 Cal Postings – 8270LL	0	2/24/23
	8270 Cal Postings – kf phen	0	2/24/23
	8270 Cal Postings – Kodak	0	2/24/23
	8270 Cal Postings - Phen	0	2/24/23
	Concentration Tracking Log	0	12/2/2020
	Confirmation Policy Flowchart	2	10/30/17
	Concentration Table	3	11/17/2021
	Extractables Prep Benchsheet	0	4/24/2020
	Pipettor Calibration Log	4	12/23/19
	Glassware Cleaning Flowchart	1	12/26/12
	Kiln Operation Instructions	1	12/19/12
	Methods Summary Spreadsheet (Spikes)	7	4/14/23
	Microwave Vessel Loading Posting	0	11/16/2020
	pH Meter Calibration Log	1	1/4/17
	Maintenance Log - Org	0	3/4/16
	Maintenance Log - LC	0	2/7/17
	Runlog HPLC	3	10/13/23
	Runlog HPLC05	1	10/13/23
	Runlog GC Ext	2	4/27/17
	Sodium Sulfate Prep Log	0	12/5/17
VOAs			
	Runlog MSVOA	5	1/11/22
	Runlog GCVOA	1	12/5/12
	5035 Prep Log		
VOA-GC Calibration Templates			

	RSK	2	10/10/18
Project Manager			
	Qualifier Page - Routine	7	9/15/23
	Qualifier Page –Routine for Massachusetts	3	5/13/13
	Qualifier Page – No NELAC	0	6/17/13
	Qualifier Page - DOD	1	11/9/23
	Inorganic Preparation Methods	2	12/20/19
	Cr6+ EHpH Graphs	1	4/17/15
	Langlier, Ryznar, and Saturation Index	3	9/28/22
	Un-Ionized Sulfide Calculation	1	8/11/17
	Calculation Tests		6/28/22
	Terms and Conditions		
	Raw Data Order for scanning	0	3/7/18
	Drinking Water Certs and Limits	2022 r0	1/18/23
Instrument Manuals			
	Thermometer 398 Instructions Autoclave	Autoclave	
	Thermometer 412 Sper Sci 800007	Ovens	
	Excursion-Trac Datalogging Thermometer		
	R-Oven-09 Operating Manual		
	R-Incubator-03 Operating Manual		
	Coliform Water Bath Operating Manual		
	SympHony pH Meters B10P, B30PCI		
	Symphony pH Meter SB80PC		
	SympHony pH Probes		
	Analytical Balances Mettler AE200		
	Analytical Balances Mettler AE240		
	Sartorius LA5200D Manual		
	Skalar San++		
	REDOX-02 – Hanna Instruction Manual		
	Trilogy User Manual	chlorophyll	
	Buchi Operation Manual for I-300 Pro	Concentration	
	Buchi Operation Manual for R-300 Rotavapor		
	Buchi Operation Manual for V-300 Vacuum Pump		
	Buchi Operation Manual for F-314 chiller		
		Location	
	Perkin Elmer FIMS Flow Injection Mercury System Hardware Guide April 2007	Metals Shelf	
	Perkin Elmer FIMS Flow Injection Mercury Setting Up and Performing Analyses July 2003	Metals Shelf	
	Agilent 5100 ICP-OES Users Guide 2014	Metals Shelf	
	Agilent SPS 4 Autosampler User's Guide G8410-90000, Rev. A, May 2015	Metals Shelf	
	Perkin Elmer Concepts, Instrumentation, and techniques in Inductively Coupled Plasma	Metals Shelf	

	Atomic Emission Spectrometry, Boss and Fredeen, 1989		
	Perkin Elmer Concepts, Instrumentation, and techniques in Atomic Absorption Spectrophotometry, Beaty and Kerber 1993	Metals Shelf	
	Perkin Elmer Elan 9000 Hardware Guide 1002729A, 2001	Metals Shelf	
	Perkin Elmer ELAN Version 2.4 Software Guide 1002821A, 1999-2001	Metals Shelf	
	Perkin Elmer WinLab32 Data Management Software Guide 2000	Metals Shelf	
	Perkin Elmer AS-93plus Autosampler for Atomic Spectrometry User's Guide 0993-5278 Release 3 July 2000	Metals Shelf	
	Perkin Elmer S10 Autosampler for Atomic Spectrometry User's Guide 0993-6788 Release B December 2007	Metals Shelf	
	Perkin Elmer WinLab32 Instrument Control Software, Software Guide, 0993-6335 Release B January 2000	Metals Shelf	
	PolyScience Refrigerated Recirculating Chillers Operator's Manual 110-811 03.13.12	Metals Shelf	
	Leeman Labs HYDRA AF Automated Mercury Analyzer Manual 150-00214 Rev 05	Metals Shelf	
	Polyscience Refrigerated Recirculating Chillers Operator's Manual for Model N0772036 110-462 8/24/09	Metals Shelf	
	Polyscience Refrigerated Recirculating Chillers Operator's Manual for Model N0772026 110-240 02/05	Metals Shelf	
	Polyscience Refrigerated Recirculating Chillers Operator's Manual for Model N0772046 110-811 02/25/15	Metals Shelf	
	Labindustries REPIPET II Dispensers. Barnstead Internations. Assembly, Operation and Maintenance Instructions, Parts List and Warranty. LT832X1 6/17/02	Metals Shelf	
	Barnstead/Thermolyne Type RC2200 Remote Control Hot Plate Operation Manual and Parts List Serier 410/411 LT410X1 6/18/97	Metals Shelf	
	Agilent Tech 2015 ICP Expert Help, Version 1.0.1.0, April 2015	In Instrument Software	
	Agilent 5973 MSD	Part of Software	**Voa or Ext. Shelf Organic Managers Office**
	Agilent 5975 MSD	Part of Software	**Voa or Ext. Shelf Organic Managers Office**
	Agilent 6890 GC	Part of Software	**Voa or Ext. Shelf Organic Managers Office**
	Agilent 7890 GC	Part of Software	**Voa Shelf Organic Managers Office**
	Atomx Auto Sampler	Part of Software	
	Archon Autosampler	Voa Shelf	
	Encon Concentrator	Voa Shelf	
	Tekmar 3400 GC	Voa Shelf	
	Agilent HPLC	Part of Software	
	Shimadzu HPLC	Ext. Shelf	
	Gerhardt Soxtherm	Ext. Shelf	
	Horizon SPE	Ext. Shelf	

	LabConco Concentrator	Ext. Shelf	
	Metrohm IC Net 2.3 SR2 6.6034.033 8.102.0013 Software Manual 04.2005/chs	Wetchem Shelf	
	Metrohm Autodatabase 1.0 8.110.8213 25.01.2000/do	Wetchem Shelf	
	Metrohm IC Cap 2.2 Administrator Manual 8.102.1013 04.2005/chs	Wetchem Shelf	
	Metrohm Illustrated Spare Parts Guide Jan 1, 2011	Wetchem Shelf	
	Metrohm Environmental Application 9702.C2.1001 2011	Wetchem Shelf	
	Metrohm 838 Advanced Sample Processor Instructions for Use 8.838.1003 09.2004/dm	Wetchem Shelf	
	Metrohm Using "IC Net 2.3"Software to comply with FDA 21CFRPart11 compliance white paper 8.110.8293 11.2003/pkl	Wetchem Shelf	
	Metrohm IC Cap 2.2 User Manual 8.102.1119 04.2005/chs	Wetchem Shelf	
	Metrohm 838 Addvanced Sample Processor Installation Instructions 8.838.1303 07.2004/dm	Wetchem Shelf	
	OI Analytical TOC Analyzer Operator's Manual WinTOC Cersion 5.01 Control Software for the Model 1010 TOC Analyzer	Wetchem Shelf	
	OI Analytical Model 1051 Vial Autosampler Operator's Manual Rev.4 July 2000 Part#278549	Wetchem Shelf	
	OI Analytical Model 1010 Instrument Validation Package SN02112603 Rev. 3.1 1998-2002	Wetchem Shelf	
	Dionex DRS 600 Suppressor Quick Start Doc No. 065750-01 Jan2018		
	Dionex PeakNet Software User's Guide 034914 rev 8 May 1998	Wetchem Shelf	
	Dionex ED40 Electrochemical Detector Operator's Manual 034855 Rev. 03 March 1995	Wetchem Shelf	
	Dionex DX-120 Ion Chromatograph Operator's Manual 031183 rev. 03 Sept 1998	Wetchem Shelf	
	Dionex AS40 Automated Sampler Operator's Manual 034970 Rev. 02 June 1994	Wetchem Shelf	
	Dionex Installing the Dionex PeakNet System 034941 Rev. 10 April 1999	Wetchem Shelf	
	Dionex GP40 Gradient Pump Operator's Manual 034856 Rev. 03 May 1995	Wetchem Shelf	
	Dionex Introduction to the Dionex DX500 Chromatography Systems 034892 Rev 02 Oct 1996	Wetchem Shelf	
	Dionex LC20 Chromatography Enclosure Operator's Manual 034859 Release 02 Sept 1993	Wetchem Shelf	
	Dionex ICS Series AS-AP Autosampler Operation Manual, PN 065361-05, 065470-02	Wetchem Shelf	
	AI Scientific AIM 600 Users Manual Rev. F September 2012 DG-U-UM001	Wetchem Shelf	
	Thermo Scientific Thermolyne Furnace Benchtop Muffle Type 47900and 48000 Installation and Operation Manual 2010	Wetchem Shelf	
	Environmental Express Hotblock Digestion System Operation and Instruction Manual May 2011	Wetchem Shelf	
	Lachat QuikChem 8500 Series 2 FIA Automated Ion Analyzer User Manual June 2008, Edition 4	Wetchem Shelf	
	Lachat Quik Chem 8500 Series Automated Ion Analyzers Training Manual, May 2008, Ed. 4	Wetchem Shelf	
	Operation Manual for Technicon Proportioning Pumps II and III, Technical	Wetchem Shelf	

	Publication TAO-0159-00 Sept 1970		
	Technicon Automating Manual Methods using Technicon AutoAnalyzer II System Techniques, Manual TN1-0170-01, 1972 HH/71	Wetchem Shelf	
	Technicon Troubleshooting Guide for the Technicaon Autoanalyzer II System, Technical Publication No TD2-0170-00, April 1972	Wetchem Shelf	
	LabLine Magnistirs Operation Manual, Manual NO. 057-539-00 Rev. 0, ECN 18222	Wetchem Shelf	
	Hach COD Reactor Model 45600 Instrument Manual 45600-18, 2000.	Wetchem Shelf	
	YSI ProOBOD IDS ProOBOD User manual Document #626471, Rev C Drawing #A626471 April 2013	Wetchem Shelf	
	YSI ProODO User Manual Item #626279 Rev C Drawing #A626279 March 2009	Wetchem Shelf	
	YSI ProODO Handheld Quick-Start Guide, Item #626280 Drawing # A626280 Rev B, December 2008.	Wetchem Shelf	
	Metrohm 848 Titrino Plus Manual 8.848.8008EN/2015-01-19	Wetchem Shelf	
	Metrohm 806 Exchange Unit Manual 8.806.8002ML 01/2011	Wetchem Shelf	

ACCREDITED IN ACCORDANCE WITH nelac

APPENDIX J – Laboratory Accreditations

The current accreditations with scope and expiration dates are available by request.

ALS/Rochester Certifications/Accreditations/Contracts

Federal, National, and International Programs

- NELAP/TNI Accreditation, since January 2001.
  Primary Accreditation with New York (see below).
  Secondary Accreditation with New Hampshire, Pennsylvania, and Virginia (see below).

- United States Department of Defense Environmental Laboratory Accreditation Program (DOD-ELAP) since January 2010. Currently accredited to QSM 5.4. Accredited through Perry Johnson Laboratory Accreditation. Accreditation #65817. Expires 6/30/2024.

- ISO/IEC 17025:2017. Accredited through Perry Johnson Laboratory Accreditation. Accreditation #65817. Expires 6/30/2024.

State and Local Programs

- State of Connecticut, Department of Health Services, Approved Public Health Laboratory.
  Certified Laboratory for Potable Water, Waste Water, Solid Waste and Soil.
  Examination for Inorganic Chemicals and Organic Chemicals. Registration No. PH-0556.
  Exp. 6/30/25.

- State of Delaware, Department of Natural Resources and Environmental Control. Approved for Delaware Hazardous Substance Cleanup Act.

- State of Florida, Department of Health, Bureau of Public Health Laboratories. Non-Potable Water, Solid Waste. Lab E87674. Expires 6/30/2024.

- State of Maine, Department of Health and Human Services.
  Drinking Water, Wastewater, and Solid Waste. Certification No.NY0032. Expires 11/12/2024.

- The Commonwealth of Massachusetts, Department of Environmental Protection.
  Non-Potable Water. Certification No. M-NY032. Exp. 06/30/2024.

- State of New York, Department of Health, Environmental Laboratory Approval Program.
  Potable Water, Air, Non-Potable Water, and Solid and Hazardous Waste.
  Certification No. 10145. Exp. 04/01/2024.

- State of New Hampshire, Department of Environmental Services
  Non-Potable Water, Drinking Water, Solid Waste. Certification No. 294102. Exp. 10/14/2024.

- State of North Carolina, Department of the Environment and Natural Resources, Division of Water Quality
  Wastewater, Ground water. Certificate 676. Expires 12/31/2023.

- State of North Carolina, Department of Health and Human Services
  Drinking Water, 1,4-Dioxane only. Lab 36701. Expires 7/31/2024.

- Pennsylvania Department of Environmental Protection.
  Non-Potable Water, Solid and Chemical Materials. Lab ID No. 68-00786. Expires 6/30/2024.

- State of Rhode Island, Department of Health
  Approved for Surface Water, WasteWater, and Sewage. LAO00333. Exp. 12/30/2023.

- Virginia Department of General Services Division of Consolidated Laboratory Services.
  Non-potable Water and Solid and Chemical Materials, Metals Category only. ID# 460167. Exp. 6/14/2024.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2024
Issued April 01, 2023
Revised September 13, 2023

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Bacteriology	
Coliform, Total / E. coli (Qualitative)	SM 20, 21-23 9223B (-04) (Colilert)
Disinfection By-products	
Bromide	EPA 300.0 Rev. 2.1
Dissolved Gases	
Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175
Fuel Additives	
Methyl tert-butyl ether	EPA 524.2
Naphthalene	EPA 524.2
Metals I	
Arsenic, Total	EPA 200.8 Rev. 5.4
Barium, Total	EPA 200.8 Rev. 5.4
Cadmium, Total	EPA 200.8 Rev. 5.4
Chromium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Copper, Total	EPA 200.8 Rev. 5.4
Iron, Total	EPA 200.7 Rev. 4.4
Lead, Total	EPA 200.8 Rev. 5.4
Manganese, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Mercury, Total	EPA 245.1 Rev. 3.0
Selenium, Total	EPA 200.8 Rev. 5.4
Silver, Total	EPA 200.7 Rev. 4.4

Serial No.: 68023

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Metals I	
Silver, Total	EPA 200.8 Rev. 5.4
Zinc, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Metals II	
Aluminum, Total	EPA 200.7 Rev. 4.4
Antimony, Total	EPA 200.8 Rev. 5.4
Beryllium, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Molybdenum, Total	EPA 200.7 Rev. 4.4
	EPA 200.8 Rev. 5.4
Nickel, Total	EPA 200.8 Rev. 5.4
Thallium, Total	EPA 200.8 Rev. 5.4
Vanadium, Total	EPA 200.7 Rev. 4.4
Metals III	
Boron, Total	EPA 200.7 Rev. 4.4
Calcium, Total	EPA 200.7 Rev. 4.4
Magnesium, Total	EPA 200.7 Rev. 4.4
Potassium, Total	EPA 200.7 Rev. 4.4
Sodium, Total	EPA 200.7 Rev. 4.4
Miscellaneous	
1,4-Dioxane	EPA 522
Organic Carbon, Total	SM 21-23 5310B (-00)
Turbidity	EPA 180.1 Rev. 2.0
UV 254	SM 21-23 5910B (-00,-11)
Non-Metals	
Alkalinity	SM 21-23 2320B (-97)

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Non-Metals	
Calcium Hardness	SM 18-22 2340B (-97)
Chloride	EPA 300.0 Rev. 2.1
Color	SM 21-23 2120B (-01)
Corrosivity	SM 18-22 2330
Cyanide	Kelada 01, Rev. 1.2
	EPA 335.4 Rev. 1.0
Fluoride, Total	EPA 300.0 Rev. 2.1
Nitrate (as N)	EPA 353.2 Rev. 2.0
Nitrite (as N)	EPA 353.2 Rev. 2.0
Orthophosphate (as P)	EPA 365.1 Rev. 2.0
Solids, Total Dissolved	SM 21-23 2540C (-97)
Specific Conductance	EPA 120.1 Rev. 1982
Sulfate (as SO4)	EPA 300.0 Rev. 2.1
Trihalomethanes	
Bromodichloromethane	EPA 524.2
Bromoform	EPA 524.2
Chloroform	EPA 524.2
Dibromochloromethane	EPA 524.2
Total Trihalomethanes	EPA 524.2
Volatile Aromatics	
1,2,3-Trichlorobenzene	EPA 524.2
1,2,4-Trichlorobenzene	EPA 524.2
1,2,4-Trimethylbenzene	EPA 524.2
1,2-Dichlorobenzene	EPA 524.2
1,3,5-Trimethylbenzene	EPA 524.2
1,3-Dichlorobenzene	EPA 524.2

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All approved analytes are listed below:

Volatile Aromatics

1,4-Dichlorobenzene	EPA 524.2
2-Chlorotoluene	EPA 524.2
4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Chlorobenzene	EPA 524.2
Ethyl benzene	EPA 524.2
Hexachlorobutadiene	EPA 524.2
Isopropylbenzene	EPA 524.2
n-Butylbenzene	EPA 524.2
n-Propylbenzene	EPA 524.2
p-Isopropyltoluene (P-Cymene)	EPA 524.2
sec-Butylbenzene	EPA 524.2
Styrene	EPA 524.2
tert-Butylbenzene	EPA 524.2
Toluene	EPA 524.2
Total Xylenes	EPA 524.2

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 524.2
1,1,1-Trichloroethane	EPA 524.2
1,1,2,2-Tetrachloroethane	EPA 524.2
1,1,2-Trichloroethane	EPA 524.2
1,1-Dichloroethane	EPA 524.2
1,1-Dichloroethene	EPA 524.2
1,1-Dichloropropene	EPA 524.2
1,2,3-Trichloropropane	EPA 524.2
1,2-Dichloroethane	EPA 524.2

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2024
Issued April 01, 2023
Revised September 13, 2023

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Volatile Halocarbons

1,2-Dichloropropane	EPA 524.2
1,3-Dichloropropane	EPA 524.2
2,2-Dichloropropane	EPA 524.2
Bromochloromethane	EPA 524.2
Bromomethane	EPA 524.2
Carbon tetrachloride	EPA 524.2
Chloroethane	EPA 524.2
Chloromethane	EPA 524.2
cis-1,2-Dichloroethene	EPA 524.2
cis-1,3-Dichloropropene	EPA 524.2
Dibromomethane	EPA 524.2
Dichlorodifluoromethane	EPA 524.2
Methylene chloride	EPA 524.2
Tetrachloroethene	EPA 524.2
trans-1,2-Dichloroethene	EPA 524.2
trans-1,3-Dichloropropene	EPA 524.2
Trichloroethene	EPA 524.2
Trichlorofluoromethane	EPA 524.2
Vinyl chloride	EPA 524.2

NEW YORK STATE Department of Health

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Acrylates	
Acrolein (Propenal)	EPA 8260C
	EPA 624.1
Acrylonitrile	EPA 8260C
	EPA 624.1
Ethyl methacrylate	EPA 8260C
Methyl acrylonitrile	EPA 8260C
Methyl methacrylate	EPA 8260C
Amines	
1,2-Diphenylhydrazine	EPA 625.1
	EPA 8270D
1,4-Phenylenediamine	EPA 8270D
1-Naphthylamine	EPA 8270D
2-Naphthylamine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
5-Nitro-o-toluidine	EPA 8270D
Aniline	EPA 625.1
	EPA 8270D
Carbazole	EPA 625.1
	EPA 8270D
Diphenylamine	EPA 8270D
Methapyrilene	EPA 8270D
Pronamide	EPA 8270D
Propionitrile	EPA 8260C
Pyridine	EPA 625.1

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Amines	
Pyridine	EPA 8270D
Benzidines	
3,3'-Dichlorobenzidine	EPA 625.1
	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270D
Benzidine	EPA 625.1
	EPA 8270D
Chlorinated Hydrocarbon Pesticides	
4,4'-DDD	EPA 8081B
	EPA 608.3
4,4'-DDE	EPA 8081B
	EPA 608.3
4,4'-DDT	EPA 8081B
	EPA 608.3
Aldrin	EPA 8081B
	EPA 608.3
alpha-BHC	EPA 8081B
	EPA 608.3
alpha-Chlordane	EPA 8081B
	EPA 608.3
beta-BHC	EPA 8081B
	EPA 608.3
Chlordane Total	EPA 8081B
	EPA 608.3
Chlorobenzilate	EPA 8270D
delta-BHC	EPA 8081B

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Chlorinated Hydrocarbon Pesticides

delta-BHC	EPA 608.3
Diallate	EPA 8270D
Dieldrin	EPA 8081B
	EPA 608.3
Endosulfan I	EPA 8081B
	EPA 608.3
Endosulfan II	EPA 8081B
	EPA 608.3
Endosulfan sulfate	EPA 8081B
	EPA 608.3
Endrin	EPA 8081B
	EPA 608.3
Endrin aldehyde	EPA 8081B
	EPA 608.3
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
	EPA 608.3
Heptachlor	EPA 8081B
	EPA 608.3
Heptachlor epoxide	EPA 8081B
	EPA 608.3
Isodrin	EPA 8270D
Kepone	EPA 8270D
Lindane	EPA 8081B
	EPA 608.3
Methoxychlor	EPA 8081B
	EPA 608.3

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Chlorinated Hydrocarbon Pesticides

Mirex	EPA 8081B
PCNB	EPA 8270D
Toxaphene	EPA 8081B
	EPA 608.3

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 625.1
	EPA 8270D
2-Chloronaphthalene	EPA 625.1
	EPA 8270D
Hexachlorobenzene	EPA 625.1
	EPA 8270D
Hexachlorobutadiene	EPA 625.1
	EPA 8270D
Hexachlorocyclopentadiene	EPA 625.1
	EPA 8270D
Hexachloroethane	EPA 625.1
	EPA 8270D
Hexachloropropene	EPA 8270D
Pentachlorobenzene	EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dicamba	EPA 8151A

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Chlorophenoxy Acid Pesticides	
Dinoseb	EPA 8151A
	EPA 8270D
Pentachlorophenol	EPA 8151A
Demand	
Biochemical Oxygen Demand	SM 5210B-2016
Carbonaceous BOD	SM 5210B-2016
Chemical Oxygen Demand	EPA 410.4, Rev. 2.0 (1993)
Dissolved Gases	
Acetylene	RSK-175
Ethane	RSK-175
Ethene (Ethylene)	RSK-175
Methane	RSK-175
Propane	RSK-175
Fuel Oxygenates	
Di-isopropyl ether	EPA 8260C
	EPA 8015C
Ethanol	EPA 8015C
Methyl tert-butyl ether	EPA 8260C
	EPA 624.1
tert-amyl methyl ether (TAME)	EPA 8260C
tert-butyl alcohol	EPA 8260C
	EPA 624.1
tert-butyl ethyl ether (ETBE)	EPA 8260C
Haloethers	
2,2'-Oxybis(1-chloropropane)	EPA 625.1
	EPA 8270D

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Haloethers

4-Bromophenylphenyl ether	EPA 625.1
	EPA 8270D
4-Chlorophenylphenyl ether	EPA 625.1
	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 625.1
	EPA 8270D
Bis(2-chloroethyl)ether	EPA 625.1
	EPA 8270D

Low Level Polynuclear Aromatics

Acenaphthene Low Level	EPA 8270D
Acenaphthylene Low Level	EPA 8270D
Anthracene Low Level	EPA 8270D
Benzo(a)anthracene Low Level	EPA 8270D
Benzo(a)pyrene Low Level	EPA 8270D
Benzo(b)fluoranthene Low Level	EPA 8270D
Benzo(g,h,i)perylene Low Level	EPA 8270D
Benzo(k)fluoranthene Low Level	EPA 8270D
Chrysene Low Level	EPA 8270D
Dibenzo(a,h)anthracene Low Level	EPA 8270D
Fluoranthene Low Level	EPA 8270D
Fluorene Low Level	EPA 8270D
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D
Naphthalene Low Level	EPA 8270D
Phenanthrene Low Level	EPA 8270D
Pyrene Low Level	EPA 8270D

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Metals I

Barium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Cadmium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Calcium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Chromium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Copper, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Iron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Lead, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Magnesium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Manganese, Total	EPA 200.7, Rev. 4.4 (1994)

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Metals I

Manganese, Total	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Nickel, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Potassium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Silver, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Sodium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Strontium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

Metals II

Aluminum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 200.8, Rev. 5.4 (1994)
Antimony, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Arsenic, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

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Metals II

Arsenic, Total	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Beryllium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Chromium VI	EPA 218.6, Rev. 3.3 (1994)
	EPA 7196A
	EPA 7199
	SM 3500-Cr B-2011
Mercury, Low Level	EPA 1631E
Mercury, Total	EPA 245.1, Rev. 3.0 (1994)
	EPA 7470A
Selenium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Vanadium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Zinc, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)

Metals III

Cobalt, Total	EPA 200.7, Rev. 4.4 (1994)

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Metals III

Cobalt, Total	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Molybdenum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Thallium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Tin, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Titanium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Uranium (Mass)	EPA 6020A

Mineral

Alkalinity	SM 2320B-2011
Calcium Hardness	SM 2340B-2011
Chloride	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Fluoride, Total	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Hardness, Total	SM 2340C-2011
	SM 2340B-2011
Sulfate (as SO4)	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A

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Miscellaneous

Boron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
Bromide	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Color	SM 2120B-2011
Corrosivity	SM 2330-2016
Cyanide, Available	SM 4500-CN G-2016
Cyanide, Total	Kelada-01
	SM 4500-CN E-2016
	EPA 335.4, Rev. 1.0 (1993)
	EPA 9012B
Formaldehyde	EPA 8315A
non-Polar Extractable Material (TPH)	EPA 1664B
Oil and Grease Total Recoverable	EPA 1664B
Organic Carbon, Total	SM 5310B-2014
	EPA 9060A
Phenols	EPA 420.4, Rev. 1.0 (1993)
	EPA 9066
Specific Conductance	EPA 120.1 (Rev. 1982)
Sulfide (as S)	SM 4500-S2- F-2011
	EPA 9034
Turbidity	EPA 180.1, Rev. 2.0 (1993)

Nitroaromatics and Isophorone

1,3,5-Trinitrobenzene	EPA 8270D
1,3-Dinitrobenzene	EPA 8270D
1,4-Naphthoquinone	EPA 8270D
2,4-Dinitrotoluene	EPA 625.1

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Nitroaromatics and Isophorone	
2,4-Dinitrotoluene	EPA 8270D
2,6-Dinitrotoluene	EPA 625.1
	EPA 8270D
4-Nitroquinoline-1-oxide	EPA 8270D
Isophorone	EPA 625.1
	EPA 8270D
Nitrobenzene	EPA 625.1
	EPA 8270D
Nitrosoamines	
N-Nitrosodiethylamine	EPA 8270D
N-Nitrosodimethylamine	EPA 625.1
	EPA 8270D
N-Nitrosodi-n-butylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 625.1
	EPA 8270D
N-Nitrosodiphenylamine	EPA 625.1
	EPA 8270D
N-nitrosomethylethylamine	EPA 8270D
N-nitrosomorpholine	EPA 8270D
N-nitrosopiperidine	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270D
Nutrient	
Ammonia (as N)	EPA 350.1, Rev. 2.0 (1993)
Kjeldahl Nitrogen, Total	EPA 351.2, Rev. 2.0 (1993)
Nitrate (as N)	EPA 353.2, Rev. 2.0 (1993)
	EPA 300.0, Rev. 2.1 (1993)

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Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Nutrient	
Nitrate (as N)	EPA 9056A
Nitrate-Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)
Nitrite (as N)	EPA 353.2, Rev. 2.0 (1993)
	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Orthophosphate (as P)	EPA 365.1, Rev. 2.0 (1993)
Phosphorus, Total	EPA 365.1, Rev. 2.0 (1993)
Organophosphate Pesticides	
Atrazine	EPA 8270D
Dimethoate	EPA 8270D
Disulfoton	EPA 8270D
Famphur	EPA 8270D
Parathion ethyl	EPA 8270D
Parathion methyl	EPA 8270D
Phorate	EPA 8270D
Sulfotepp	EPA 8270D
Thionazin	EPA 8270D
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015C
Phthalate Esters	
Benzyl butyl phthalate	EPA 625.1
	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625.1
	EPA 8270D
Diethyl phthalate	EPA 625.1
	EPA 8270D

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Phthalate Esters	
Dimethyl phthalate	EPA 625.1
	EPA 8270D
Di-n-butyl phthalate	EPA 625.1
	EPA 8270D
Di-n-octyl phthalate	EPA 625.1
	EPA 8270D
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
	EPA 608.3
Aroclor 1221 (PCB-1221)	EPA 8082A
	EPA 608.3
Aroclor 1232 (PCB-1232)	EPA 8082A
	EPA 608.3
Aroclor 1242 (PCB-1242)	EPA 8082A
	EPA 608.3
Aroclor 1248 (PCB-1248)	EPA 8082A
	EPA 608.3
Aroclor 1254 (PCB-1254)	EPA 8082A
	EPA 608.3
Aroclor 1260 (PCB-1260)	EPA 8082A
	EPA 608.3
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
Polynuclear Aromatics	
2-Acetylaminofluorene	EPA 8270D
3-Methylcholanthrene	EPA 8270D

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Polynuclear Aromatics

7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
Acenaphthene	EPA 625.1
	EPA 8270D
Acenaphthylene	EPA 625.1
	EPA 8270D
Anthracene	EPA 625.1
	EPA 8270D
Benzo(a)anthracene	EPA 625.1
	EPA 8270D
Benzo(a)pyrene	EPA 625.1
	EPA 8270D
Benzo(b)fluoranthene	EPA 625.1
	EPA 8270D
Benzo(g,h,i)perylene	EPA 625.1
	EPA 8270D
Benzo(k)fluoranthene	EPA 625.1
	EPA 8270D
Chrysene	EPA 625.1
	EPA 8270D
Dibenzo(a,h)anthracene	EPA 625.1
	EPA 8270D
Fluoranthene	EPA 625.1
	EPA 8270D
Fluorene	EPA 625.1
	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 625.1
	EPA 8270D

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Polynuclear Aromatics	
Naphthalene	EPA 625.1
	EPA 8270D
Phenanthrene	EPA 625.1
	EPA 8270D
Pyrene	EPA 625.1
	EPA 8270D
Priority Pollutant Phenols	
2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 625.1
	EPA 8270D
2,4,6-Trichlorophenol	EPA 625.1
	EPA 8270D
2,4-Dichlorophenol	EPA 625.1
	EPA 8270D
2,4-Dimethylphenol	EPA 625.1
	EPA 8270D
2,4-Dinitrophenol	EPA 625.1
	EPA 8270D
2,6-Dichlorophenol	EPA 8270D
2-Chlorophenol	EPA 625.1
	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 625.1
	EPA 8270D
2-Methylphenol	EPA 625.1
	EPA 8270D
2-Nitrophenol	EPA 625.1
	EPA 8270D

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Priority Pollutant Phenols

3-Methylphenol	EPA 625.1
	EPA 8270D
4-Chloro-3-methylphenol	EPA 625.1
	EPA 8270D
4-Methylphenol	EPA 625.1
	EPA 8270D
4-Nitrophenol	EPA 625.1
	EPA 8270D
Cresols, Total	EPA 8270D
Pentachlorophenol	EPA 625.1
	EPA 8270D
Phenol	EPA 625.1
	EPA 8270D

Residue

Settleable Solids	SM 2540 F-2015
Solids, Total	SM 2540 B-2015
Solids, Total Dissolved	SM 2540 C-2015
Solids, Total Suspended	SM 2540 D-2015
Solids, Volatile	SM 2540 E-2015

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270D
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 625.1
	EPA 8270D

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Semi-Volatile Organics

2-Picoline	EPA 8270D
4-Amino biphenyl	EPA 8270D
Acetophenone	EPA 625.1
	EPA 8270D
alpha-Terpineol	EPA 625.1
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Ethyl methanesulfonate	EPA 8270D
Isosafrole	EPA 8270D
Methyl methanesulfonate	EPA 8270D
O,O,O-Triethyl phosphorothioate	EPA 8270D
p-Dimethylaminoazobenzene	EPA 8270D
Phenacetin	EPA 8270D
Safrole	EPA 8270D

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
	EPA 624.1
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
	EPA 624.1
1,4-Dichlorobenzene	EPA 8260C

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Volatile Aromatics

1,4-Dichlorobenzene	EPA 624.1
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
	EPA 624.1
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
	EPA 624.1
Ethyl benzene	EPA 8260C
	EPA 624.1
Isopropylbenzene	EPA 8260C
m/p-Xylenes	EPA 8260C
	EPA 624.1
Naphthalene, Volatile	EPA 8260C
	EPA 624.1
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
	EPA 624.1
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
	EPA 624.1
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
	EPA 624.1
Total Xylenes	EPA 8260C

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Volatile Aromatics	
Total Xylenes	EPA 624.1
Volatile Halocarbons	
1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
	EPA 624.1
1,1,2,2-Tetrachloroethane	EPA 8260C
	EPA 624.1
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
	EPA 624.1
1,1,2-Trichloroethane	EPA 8260C
	EPA 624.1
1,1-Dichloroethane	EPA 8260C
	EPA 624.1
1,1-Dichloroethene	EPA 8260C
	EPA 624.1
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C
1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloro-1,1,2-Trifluoroethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
	EPA 624.1
1,2-Dichloropropane	EPA 8260C
	EPA 624.1
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260C

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Volatile Halocarbons

2-Chloroethylvinyl ether	EPA 8260C
	EPA 624.1
3-Chloropropene (Allyl chloride)	EPA 8260C
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C
	EPA 624.1
Bromoform	EPA 8260C
	EPA 624.1
Bromomethane	EPA 8260C
	EPA 624.1
Carbon tetrachloride	EPA 8260C
	EPA 624.1
Chloroethane	EPA 8260C
	EPA 624.1
Chloroform	EPA 8260C
	EPA 624.1
Chloromethane	EPA 8260C
	EPA 624.1
cis-1,2-Dichloroethene	EPA 8260C
	EPA 624.1
cis-1,3-Dichloropropene	EPA 8260C
	EPA 624.1
Dibromochloromethane	EPA 8260C
	EPA 624.1
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
	EPA 624.1

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Volatile Halocarbons

Hexachlorobutadiene, Volatile	EPA 8260C
Methyl iodide	EPA 8260C
Methylene chloride	EPA 8260C
	EPA 624.1
Tetrachloroethene	EPA 8260C
	EPA 624.1
trans-1,2-Dichloroethene	EPA 8260C
	EPA 624.1
trans-1,3-Dichloropropene	EPA 8260C
	EPA 624.1
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
	EPA 624.1
Trichlorofluoromethane	EPA 8260C
	EPA 624.1
Vinyl chloride	EPA 8260C
	EPA 624.1

Volatiles Organics

1,4-Dioxane	EPA 8260C
	EPA 8270D
	EPA 8270D SIM
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
2-Nitropropane	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
	EPA 624.1
Acetone	EPA 8260C

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Volatiles Organics

Acetone	EPA 624.1
Acetonitrile	EPA 8260C
	EPA 624.1
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Ethyl Acetate	EPA 8260C
	EPA 8015C
Ethylene Glycol	EPA 8015C
Isobutyl alcohol	EPA 8260C
	EPA 8015C
Isopropanol	EPA 8260C
Methanol	EPA 8015C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
n-Butanol	EPA 8260C
o-Toluidine	EPA 8270D
Propylene Glycol	EPA 8015C
Tetrahydrofuran	EPA 8260C
	EPA 624.1
Vinyl acetate	EPA 8260C
	EPA 624.1

Sample Preparation Methods

	EPA 5030C
	EPA 200.2
	EPA 9030B
	EPA 3010A

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Sample Preparation Methods

EPA 3005A
EPA 3510C
EPA 3535A

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Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Acrylates	
Acrolein (Propenal)	EPA 8260C
Acrylonitrile	EPA 8260C
Ethyl methacrylate	EPA 8260C
Methyl acrylonitrile	EPA 8260C
Methyl methacrylate	EPA 8260C
Amines	
1,2-Diphenylhydrazine	EPA 8270D
1,4-Phenylenediamine	EPA 8270D
1-Naphthylamine	EPA 8270D
2-Naphthylamine	EPA 8270D
2-Nitroaniline	EPA 8270D
3-Nitroaniline	EPA 8270D
4-Chloroaniline	EPA 8270D
4-Nitroaniline	EPA 8270D
5-Nitro-o-toluidine	EPA 8270D
Aniline	EPA 8270D
Carbazole	EPA 8270D
Diphenylamine	EPA 8270D
Methapyrilene	EPA 8270D
Pronamide	EPA 8270D
Benzidines	
3,3'-Dichlorobenzidine	EPA 8270D
3,3'-Dimethylbenzidine	EPA 8270D
Benzidine	EPA 8270D
Characteristic Testing	
Corrosivity (pH)	EPA 9040C

Serial No.: 66887

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WADSWORTH CENTER

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Characteristic Testing

Corrosivity (pH)	EPA 9045D
Free Liquids	EPA 9095B
Synthetic Precipitation Leaching Proc.	EPA 1312
TCLP	EPA 1311

Chlorinated Hydrocarbon Pesticides

4,4'-DDD	EPA 8081B
4,4'-DDE	EPA 8081B
4,4'-DDT	EPA 8081B
Aldrin	EPA 8081B
alpha-BHC	EPA 8081B
alpha-Chlordane	EPA 8081B
Atrazine	EPA 8270D
beta-BHC	EPA 8081B
Chlordane Total	EPA 8081B
Chlorobenzilate	EPA 8270D
delta-BHC	EPA 8081B
Diallate	EPA 8270D
Dieldrin	EPA 8081B
Endosulfan I	EPA 8081B
Endosulfan II	EPA 8081B
Endosulfan sulfate	EPA 8081B
Endrin	EPA 8081B
Endrin aldehyde	EPA 8081B
Endrin Ketone	EPA 8081B
gamma-Chlordane	EPA 8081B
Heptachlor	EPA 8081B
Heptachlor epoxide	EPA 8081B

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Chlorinated Hydrocarbon Pesticides

Isodrin	EPA 8270D
Kepone	EPA 8270D
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Pentachloronitrobenzene	EPA 8270D
Toxaphene	EPA 8081B

Chlorinated Hydrocarbons

1,2,3-Trichlorobenzene	EPA 8260C
1,2,4,5-Tetrachlorobenzene	EPA 8270D
1,2,4-Trichlorobenzene	EPA 8270D
1-Chloronaphthalene	EPA 8270D
2-Chloronaphthalene	EPA 8270D
Hexachlorobenzene	EPA 8270D
Hexachlorobutadiene	EPA 8270D
Hexachlorocyclopentadiene	EPA 8270D
Hexachloroethane	EPA 8270D
Hexachloropropene	EPA 8270D
Pentachlorobenzene	EPA 8270D

Chlorophenoxy Acid Pesticides

2,4,5-T	EPA 8151A
2,4,5-TP (Silvex)	EPA 8151A
2,4-D	EPA 8151A
Dicamba	EPA 8151A
Dinoseb	EPA 8270D
Pentachlorophenol	EPA 8151A

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Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 8270D
4-Bromophenylphenyl ether	EPA 8270D
4-Chlorophenylphenyl ether	EPA 8270D
Bis(2-chloroethoxy)methane	EPA 8270D
Bis(2-chloroethyl)ether	EPA 8270D

Low Level Polynuclear Aromatic Hydrocarbons

Acenaphthene Low Level	EPA 8270D
Acenaphthylene Low Level	EPA 8270D
Anthracene Low Level	EPA 8270D
Benzo(a)anthracene Low Level	EPA 8270D
Benzo(a)pyrene Low Level	EPA 8270D
Benzo(b)fluoranthene Low Level	EPA 8270D
Benzo(g,h,i)perylene Low Level	EPA 8270D
Benzo(k)fluoranthene Low Level	EPA 8270D
Chrysene Low Level	EPA 8270D
Dibenzo(a,h)anthracene Low Level	EPA 8270D
Fluoranthene Low Level	EPA 8270D
Fluorene Low Level	EPA 8270D
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D
Naphthalene Low Level	EPA 8270D
Phenanthrene Low Level	EPA 8270D
Pyrene Low Level	EPA 8270D

Metals I

Barium, Total	EPA 6010C
	EPA 6020A
Cadmium, Total	EPA 6010C

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Metals I

Cadmium, Total	EPA 6020A
Calcium, Total	EPA 6010C
Chromium, Total	EPA 6010C
	EPA 6020A
Copper, Total	EPA 6010C
	EPA 6020A
Iron, Total	EPA 6010C
Lead, Total	EPA 6010C
	EPA 6020A
Magnesium, Total	EPA 6010C
Manganese, Total	EPA 6010C
	EPA 6020A
Nickel, Total	EPA 6010C
	EPA 6020A
Potassium, Total	EPA 6010C
Silver, Total	EPA 6010C
	EPA 6020A
Sodium, Total	EPA 6010C
Strontium, Total	EPA 6010C

Metals II

Aluminum, Total	EPA 6010C
Antimony, Total	EPA 6010C
	EPA 6020A
Arsenic, Total	EPA 6010C
	EPA 6020A
Beryllium, Total	EPA 6010C
	EPA 6020A

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Metals II	
Chromium VI	EPA 7199
Lithium, Total	EPA 6010C
Mercury, Total	EPA 7471B
Selenium, Total	EPA 6010C
	EPA 6020A
Vanadium, Total	EPA 6010C
	EPA 6020A
Zinc, Total	EPA 6010C
	EPA 6020A
Metals III	
Cobalt, Total	EPA 6010C
	EPA 6020A
Molybdenum, Total	EPA 6010C
	EPA 6020A
Silica, Dissolved	EPA 6010C
Thallium, Total	EPA 6010C
	EPA 6020A
Tin, Total	EPA 6010C
Titanium, Total	EPA 6010C
Minerals	
Bromide	EPA 9056A
Chloride	EPA 9056A
Fluoride, Total	EPA 9056A
Sulfate (as SO4)	EPA 9056A
Miscellaneous	
Boron, Total	EPA 6010C

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Miscellaneous

Cyanide, Total	EPA 9012B
Organic Carbon, Total	Lloyd Kahn Method
Phenols	EPA 9066
Sulfide (as S)	EPA 9034

Nitroaromatics and Isophorone

1,3,5-Trinitrobenzene	EPA 8270D
1,3-Dinitrobenzene	EPA 8270D
1,4-Naphthoquinone	EPA 8270D
2,4-Dinitrotoluene	EPA 8270D
2,6-Dinitrotoluene	EPA 8270D
4-Dimethylaminoazobenzene	EPA 8270D
4-Nitroquinoline-1-oxide	EPA 8270D
Isophorone	EPA 8270D
Nitrobenzene	EPA 8270D
Pyridine	EPA 8270D

Nitrosoamines

N-Nitrosodiethylamine	EPA 8270D
N-Nitrosodimethylamine	EPA 8270D
N-Nitrosodi-n-butylamine	EPA 8270D
N-Nitrosodi-n-propylamine	EPA 8270D
N-Nitrosodiphenylamine	EPA 8270D
N-nitrosomethylethylamine	EPA 8270D
N-nitrosomorpholine	EPA 8270D
N-nitrosopiperidine	EPA 8270D
N-Nitrosopyrrolidine	EPA 8270D

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Nutrients	
Nitrate (as N)	EPA 9056A
Nitrite (as N)	EPA 9056A
Organophosphate Pesticides	
Dimethoate	EPA 8270D
Disulfoton	EPA 8270D
Famphur	EPA 8270D
Parathion ethyl	EPA 8270D
Parathion methyl	EPA 8270D
Phorate	EPA 8270D
Sulfotepp	EPA 8270D
Thionazin	EPA 8270D
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015C
Phthalate Esters	
Benzyl butyl phthalate	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 8270D
Diethyl phthalate	EPA 8270D
Dimethyl phthalate	EPA 8270D
Di-n-butyl phthalate	EPA 8270D
Di-n-octyl phthalate	EPA 8270D
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
Aroclor 1016 (PCB-1016) in Oil	EPA 8082A
Aroclor 1221 (PCB-1221)	EPA 8082A
Aroclor 1221 (PCB-1221) in Oil	EPA 8082A
Aroclor 1232 (PCB-1232)	EPA 8082A

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Polychlorinated Biphenyls

Aroclor 1232 (PCB-1232) in Oil	EPA 8082A
Aroclor 1242 (PCB-1242)	EPA 8082A
Aroclor 1242 (PCB-1242) in Oil	EPA 8082A
Aroclor 1248 (PCB-1248)	EPA 8082A
Aroclor 1248 (PCB-1248) in Oil	EPA 8082A
Aroclor 1254 (PCB-1254)	EPA 8082A
Aroclor 1254 (PCB-1254) in Oil	EPA 8082A
Aroclor 1260 (PCB-1260)	EPA 8082A
Aroclor 1260 (PCB-1260) in Oil	EPA 8082A
Aroclor 1262 (PCB-1262)	EPA 8082A
Aroclor 1262 (PCB-1262) in Oil	EPA 8082A
Aroclor 1268 (PCB-1268)	EPA 8082A
Aroclor 1268 (PCB-1268) in Oil	EPA 8082A

Polynuclear Aromatic Hydrocarbons

2-Acetylaminofluorene	EPA 8270D
3-Methylcholanthrene	EPA 8270D
7,12-Dimethylbenzyl (a) anthracene	EPA 8270D
Acenaphthene	EPA 8270D
Acenaphthylene	EPA 8270D
Anthracene	EPA 8270D
Benzo(a)anthracene	EPA 8270D
Benzo(a)pyrene	EPA 8270D
Benzo(b)fluoranthene	EPA 8270D
Benzo(g,h,i)perylene	EPA 8270D
Benzo(k)fluoranthene	EPA 8270D
Chrysene	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270D

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Polynuclear Aromatic Hydrocarbons

Fluoranthene	EPA 8270D
Fluorene	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270D
Naphthalene	EPA 8270D
Phenanthrene	EPA 8270D
Pyrene	EPA 8270D

Priority Pollutant Phenols

2,3,4,6 Tetrachlorophenol	EPA 8270D
2,4,5-Trichlorophenol	EPA 8270D
2,4,6-Trichlorophenol	EPA 8270D
2,4-Dichlorophenol	EPA 8270D
2,4-Dimethylphenol	EPA 8270D
2,4-Dinitrophenol	EPA 8270D
2,6-Dichlorophenol	EPA 8270D
2-Chlorophenol	EPA 8270D
2-Methyl-4,6-dinitrophenol	EPA 8270D
2-Methylphenol	EPA 8270D
2-Nitrophenol	EPA 8270D
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 8270D
Pentachlorophenol	EPA 8270D
Phenol	EPA 8270D

Semi-Volatile Organics

1,1'-Biphenyl	EPA 8270D

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Semi-Volatile Organics

1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D
2-Methylnaphthalene	EPA 8270D
2-Picoline	EPA 8270D
4-Amino biphenyl	EPA 8270D
Acetophenone	EPA 8270D
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
Benzoic Acid	EPA 8270D
Benzyl alcohol	EPA 8270D
Caprolactam	EPA 8270D
Dibenzofuran	EPA 8270D
Ethyl methanesulfonate	EPA 8270D
Isosafrole	EPA 8270D
Methyl methanesulfonate	EPA 8270D
O,O,O-Triethyl phosphorothioate	EPA 8270D
Phenacetin	EPA 8270D
Safrole	EPA 8270D

Volatile Aromatics

1,2,4-Trichlorobenzene, Volatile	EPA 8260C
1,2,4-Trimethylbenzene	EPA 8260C
1,2-Dichlorobenzene	EPA 8260C
1,3,5-Trimethylbenzene	EPA 8260C
1,3-Dichlorobenzene	EPA 8260C
1,4-Dichlorobenzene	EPA 8260C
2-Chlorotoluene	EPA 8260C

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Volatile Aromatics

4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
Ethyl benzene	EPA 8260C
Isopropylbenzene	EPA 8260C
m/p-Xylenes	EPA 8260C
Naphthalene, Volatile	EPA 8260C
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
Total Xylenes	EPA 8260C

Volatile Halocarbons

1,1,1,2-Tetrachloroethane	EPA 8260C
1,1,1-Trichloroethane	EPA 8260C
1,1,2,2-Tetrachloroethane	EPA 8260C
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA 8260C
1,1,2-Trichloroethane	EPA 8260C
1,1-Dichloroethane	EPA 8260C
1,1-Dichloroethene	EPA 8260C
1,1-Dichloropropene	EPA 8260C
1,2,3-Trichloropropane	EPA 8260C

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NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2024
Issued April 01, 2023

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE
Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MS. CHRISTINE KUTZER
ALS ENVIRONMENTAL - ROCHESTER
1565 JEFFERSON ROAD BUILDING 300, SUITE 360
ROCHESTER, NY 14623

NY Lab Id No: 10145

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Volatile Halocarbons

1,2-Dibromo-3-chloropropane	EPA 8260C
1,2-Dibromoethane	EPA 8260C
1,2-Dichloroethane	EPA 8260C
1,2-Dichloropropane	EPA 8260C
1,3-Dichloropropane	EPA 8260C
2,2-Dichloropropane	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260C
2-Chloroethylvinyl ether	EPA 8260C
3-Chloropropene (Allyl chloride)	EPA 8260C
Bromochloromethane	EPA 8260C
Bromodichloromethane	EPA 8260C
Bromoform	EPA 8260C
Bromomethane	EPA 8260C
Carbon tetrachloride	EPA 8260C
Chloroethane	EPA 8260C
Chloroform	EPA 8260C
Chloromethane	EPA 8260C
cis-1,2-Dichloroethene	EPA 8260C
cis-1,3-Dichloropropene	EPA 8260C
Dibromochloromethane	EPA 8260C
Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
Hexachlorobutadiene, Volatile	EPA 8260C
Methyl iodide	EPA 8260C
Methylene chloride	EPA 8260C
Tetrachloroethene	EPA 8260C
trans-1,2-Dichloroethene	EPA 8260C

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Volatile Halocarbons

trans-1,3-Dichloropropene	EPA 8260C
trans-1,4-Dichloro-2-butene	EPA 8260C
Trichloroethene	EPA 8260C
Trichlorofluoromethane	EPA 8260C
Vinyl chloride	EPA 8260C

Volatile Organics

1,4-Dioxane	EPA 8260C
	EPA 8270D
2-Butanone (Methylethyl ketone)	EPA 8260C
2-Hexanone	EPA 8260C
2-Nitropropane	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Acetonitrile	EPA 8260C
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Ethylene Glycol	EPA 8015C
Isobutyl alcohol	EPA 8260C
Isopropanol	EPA 8260C
Methyl acetate	EPA 8260C
Methyl cyclohexane	EPA 8260C
Methyl tert-butyl ether	EPA 8260C
n-Butanol	EPA 8260C
o-Toluidine	EPA 8270D
Propionitrile	EPA 8260C
tert-butyl alcohol	EPA 8260C

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All approved analytes are listed below:

Volatile Organics

Tetrahydrofuran	EPA 8260C
Vinyl acetate	EPA 8260C

Sample Preparation Methods

EPA 5035A-L
EPA 5035A-H
EPA 3580A
EPA 9030B
EPA 3050B
EPA 3546
EPA 3060A
EPA 3541

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All approved analytes are listed below:

Miscellaneous

Sulfur Dioxide	40 CFR 60 Method 8
Sulfuric Acid	40 CFR 60 Method 8

Serial No.: 66888

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Page 1 of 1

APPENDIX K –
References for Quality System Standards, External Documents, Manuals, and Test Procedures

- National Environmental Laboratory Accreditation Program (NELAP), 2003 Quality Standards.
- TNI Standard, The NELAC Institute, 2009 and 2016.
- International Standard *General requirements for the competence of testing and calibration laboratories,* ISO/IEC 17025:2017(E)
- *DoD Quality Systems Manual for Environmental Laboratories,* Version 5.4 or most current version.
- *Good Automated Laboratory Practices, Principles and Guidance to Regulations For Ensuring Data Integrity In Automated Laboratory Operations*, EPA 2185 (August 1995).
- *Manual for the Certification of Laboratories Analyzing Drinking Water*, 5th Edition, EPA 815-R-05-004 (2005).
- *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, Third Edition, (September 1986) and Updates I (July 1992), II (September 1994), IIA (August 1993), IIB (January 1995), III (December 1996), Final Update IV (February 2007), Final Update V (August 2015) and updates posted online at http://www.epa.gov/epaoswer/hazwaste/test/sw846.htm. See Chapters 1, 2, 3, and 4.
- *Methods for Chemical Analysis of Water and Wastes*, EPA-600/4-79-020, (Revised March 1983).
- *Methods for the Determination of Inorganic Substances in Environmental Samples*, EPA/600/R-93/100 (August 1993).
- *Methods for the Determination of Metals in Environmental Samples*, EPA/600/4-91/010 (June 1991) and Supplements.
- *Methods for Organic Chemical Analysis of Municipal and Industrial Wastewater*, EPA 600/4-82-057 (July 1982) and 40 CFR Part 136, Appendix A.
- *Methods for the Determination of Organic Compounds in Drinking Water*, EPA/600/4-88/039 (December 1988) and Supplements.
- *Standard Methods for the Examination of Water and Wastewater*, on-line Edition (various years).
- 40 CFR Part 141, National Primary Drinking Water Regulations.
- Annual Book of ASTM Standards, Part 31, Water.
- *U. S. EPA Contract Laboratory Program National Functional Guidelines for Organic Data Review*, EPA-540/R-94/012 (February 1993).
- *U. S. EPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review*, EPA-540/R-94/013 (February 1994).

APPENDIX L – Data Quality Objectives

Contact the laboratory for the current table

Appendix E Laboratory Detection Limits

ALS Environmental Detection Limits versus NY DER-10 Soil Residential Limits

Appendix E
ALS Environmental Soil Detection Limits versus NY DER-10 Residential Soil Standards
Complete Demolition of DFSP Verona
Verona, New York

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	DER-10 Residential Standard	UNITS
9012B	Cyanide, Total	57-12-5	Solid	0.17	0.30			27	mg/Kg
6010D	Arsenic	7440-38-2	Solid	0.7	1	1.5	2	16	mg/kg
6010D	Barium	7440-39-3	Solid	0.26	2	2	4	350	mg/kg
6010D	Beryllium	7440-41-7	Solid	0.029	0.3	0.25	0.5	14	mg/kg
6010D	Cadmium	7440-43-9	Solid	0.086	0.5	0.25	0.5	2.5	mg/kg
6010D	Chromium	7440-47-3	Solid	0.35	1	0.8	1	19	mg/kg
6010D	Copper	7440-50-8	Solid	0.24	2	1	2	270	mg/kg
6010D	Lead	7439-92-1	Solid	0.4	5	2.5	5	400	mg/kg
6010D	Manganese	7439-96-5	Solid	0.48	2	2.0	4	2000	mg/kg
6010D	Nickel	7440-02-0	Solid	0.66	4	2	4	130	mg/kg
6010D	Selenium	7782-49-2	Solid	0.54	1	1.1	2	4	mg/kg
6010D	Silver	7440-22-4	Solid	0.09	1	0.5	1	8.3	mg/kg
6010D	Zinc	7440-66-6	Solid	1.4	2	2.8	4	2200	mg/kg
7471B	Mercury	7439-97-6	Solid	0.0130	0.02	0.017	0.020	0.73	mg/kg
8081B-MW	4,4'-DDD	72-54-8	Solid	0.84	1.7	1.7	3.3	2600	ug/kg
8081B	4,4'-DDE	72-55-9	Solid	0.84	1.7	1.7	3.3	1800	ug/kg
8081B	4,4'-DDT	50-29-3	Solid	0.84	1.7	1.7	3.3	1700	ug/kg
8081B	ALDRIN	309-00-2	Solid	0.84	1.7	1.7	3.3	19	ug/kg
8081B	ALPHA-BHC	319-84-6	Solid	0.84	1.7	1.7	3.3	20	ug/kg
8081B	ALPHA-CHLORDANE	5103-71-9	Solid	0.84	1.7	1.7	3.3	910	ug/kg
8081B	BETA-BHC	319-85-7	Solid	0.84	1.7	1.7	3.3	72	ug/kg
8081B	DELTA-BHC	319-86-8	Solid	0.84	1.7	1.7	3.3	250	ug/kg
8081B	DIELDRIN	60-57-1	Solid	0.84	1.7	1.7	3.3	39	ug/kg
8081B	ENDOSULFAN I	959-98-8	Solid	0.84	1.7	1.7	3.3	4800	ug/kg
8081B	ENDOSULFAN II	33213-65-9	Solid	0.84	1.7	1.7	3.3	4800	ug/kg
8081B	ENDOSULFAN SULFATE	1031-07-8	Solid	0.84	1.7	1.7	3.3	4800	ug/kg
8081B	ENDRIN	72-20-8	Solid	0.84	1.7	1.7	3.3	60	ug/kg
8081B	GAMMA-BHC (LINDANE)	58-89-9	Solid	0.84	1.7	1.7	3.3	100	ug/kg
8081B	HEPTACHLOR	76-44-8	Solid	0.84	1.7	1.7	3.3	380	ug/kg
8082A/3546	PCB 1016	12674-11-2	Solid	17	33	33	67	1000	ug/kg
8082A/3546	PCB 1221	11104-28-2	Solid	26	67	33	67	1000	ug/kg
8082A/3546	PCB 1232	11141-16-5	Solid	19	33	33	67	1000	ug/kg
8082A/3546	PCB 1242	53469-21-9	Solid	17	33	33	67	1000	ug/kg
8082A/3546	PCB 1248	12672-29-6	Solid	18	33	33	67	1000	ug/kg
8082A/3546	PCB 1254	11097-69-1	Solid	17	33	33	67	1000	ug/kg
8082A/3546	PCB 1260	11096-82-5	Solid	17	33	33	67	1000	ug/kg
8082A/3546	PCB 1262	37324-23-5	Solid	17	33	33	67	1000	ug/kg
8082A/3546	PCB 1268	11100-14-4	Solid	17	33	33	67	1000	ug/kg
8082A/3541	PCB 1016	12674-11-2	Solid	17	33	25	33	1000	ug/kg
8082A/3541	PCB 1221	11104-28-2	Solid	26	67	30	33	1000	ug/kg
8082A/3541	PCB 1232	11141-16-5	Solid	19	33	25	33	1000	ug/kg
8082A/3541	PCB 1242	53469-21-9	Solid	17	33	25	33	1000	ug/kg

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Complete Demolition of DFSP Verona
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8082A/3541	PCB 1248	12672-29-6	Solid	18	33	25	33	1000	ug/kg
8082A/3541	PCB 1254	11097-69-1	Solid	17	33	25	33	1000	ug/kg
8082A/3541	PCB 1260	11096-82-5	Solid	17	33	25	33	1000	ug/kg
8082A/3541	PCB 1262	37324-23-5	Solid	17	33	25	33	1000	ug/kg
8082A/3541	PCB 1268	11100-14-4	Solid	17	33	25	33	1000	ug/kg
8151A	2,4,5-TP (SILVEX)	93-72-1	Solid	4.5	10	10.0	20	3800	ug/kg
8151A	PENTACHLOROPHENOL	87-86-5	Solid	6.3	10	10.0	20	800	ug/kg
8260D	1,1,1-TRICHLOROETHANE	71-55-6	Solid	0.2	5.0	2.5	5	680	ug/kg
8260D	1,1-DICHLOROETHANE	75-34-3	Solid	0.2	5.0	2.5	5	270	ug/kg
8260D	1,1-DICHLOROETHENE	75-35-4	Solid	0.2	5.0	2.5	5	330	ug/kg
8260D	1,2,4-TRIMETHYLBENZENE	95-63-6	Solid	0.2	5.0	2.5	5	3600	ug/kg
8260D	1,2-DICHLOROBENZENE	95-50-1	Solid	0.2	5.0	2.5	5	1100	ug/kg
8260D	1,2-DICHLOROETHANE	107-06-2	Solid	0.2	5.0	2.5	5	20	ug/kg
8260D	1,3,5-TRIMETHYLBENZENE	108-67-8	Solid	0.2	5.0	2.5	5	8400	ug/kg
8260D	1,3-DICHLOROBENZENE	541-73-1	Solid	0.2	5.0	2.5	5	2400	ug/kg
8260D	1,4-DICHLOROBENZENE	106-46-7	Solid	0.22	5.0	2.5	5	1800	ug/kg
8260D	1,4-DIOXANE	123-91-1	Solid	20	100	40	100	100	ug/kg
8260D	2-BUTANONE (MEK)	78-93-3	Solid	2	5.0	4.0	5	120	ug/kg
8260D	ACETONE	67-64-1	Solid	4.7 or 15	25.0	30.0	60	50	ug/kg
8260D	BENZENE	71-43-2	Solid	0.2	5.0	2.5	5	60	ug/kg
8260D	CARBON TETRACHLORIDE	56-23-5	Solid	0.26	5.0	2.5	5	760	ug/kg
8260D	CHLOROBENZENE	108-90-7	Solid	0.2	5.0	2.5	5	1100	ug/kg
8260D	CHLOROFORM	67-66-3	Solid	0.35	5.0	2.5	5	370	ug/kg
8260D	CIS-1,2-DICHLOROETHENE	156-59-2	Solid	0.2	5.0	2.5	5	250	ug/kg
8260D	DICHLOROMETHANE	75-09-2	Solid	2.8	5.0	5.6	10	50	ug/kg
8260D	ETHYLBENZENE	100-41-4	Solid	0.2 or 1	5.0	2.5	5	1000	ug/kg
8260D	METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	Solid	0.2	5.0	2.5	5	930	ug/kg
8260D	N-BUTYLBENZENE	104-51-8	Solid	0.2	5.0	2.5	5	12000	ug/kg
8260D	N-PROPYLBENZENE	103-65-1	Solid	0.2	5.0	2.5	5	3900	ug/kg
8260D	SEC-BUTYLBENZENE	135-98-8	Solid	0.2	5.0	2.5	5	11000	ug/kg
8260D	TERT-BUTYLBENZENE	98-06-6	Solid	0.2	5.0	2.5	5	5900	ug/kg
8260D	TETRACHLOROETHENE	127-18-4	Solid	0.23	5.0	2.5	5	1300	ug/kg
8260D	TOLUENE	108-88-3	Solid	0.2 or 2	5.0	4.0	5	700	ug/kg
8260D	TRANS-1,2-DICHLOROETHENE	156-60-5	Solid	0.2	5.0	2.5	5	190	ug/kg
8260D	TRICHLOROETHENE	79-01-6	Solid	0.22	5.0	2.5	5	470	ug/kg
8260D	VINYL CHLORIDE	75-01-4	Solid	0.46	5.0	2.5	5	20	ug/kg
8260D	XYLENE, TOTAL	1330-20-7	Solid	0.52	15.0	7.5	15	1600	ug/kg
8270E-MW	1,2-DICHLOROBENZENE	95-50-1	Solid	57	330	167	330	1100	ug/kg
8270E-MW	1,3-DICHLOROBENZENE	541-73-1	Solid	52	330	167	330	2400	ug/kg
8270E-MW	1,4-DICHLOROBENZENE	106-46-7	Solid	55	330	167	330	1800	ug/kg
8270E-MW	1,4-DIOXANE	123-91-1	Solid	32	67			100	ug/kg
8270E-MW	2-METHYLPHENOL	95-48-7	Solid	69	330	167	330	330	ug/kg
8270E-MW	3+4-METHYLPHENOL	106-44-5 + 108-39-4	Solid	68	330	167	330	330	ug/kg
8270E-MW	ACENAPHTHENE	83-32-9	Solid	63	330	167	330	98000	ug/kg

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8270E-MW	ACENAPHTHYLENE	208-96-8	Solid	67	330	167	330	100000	ug/kg
8270E-MW	ANTHRACENE	120-12-7	Solid	55	330	167	330	100000	ug/kg
8270E-MW	BENZO(A)ANTHRACENE	56-55-3	Solid	49	330	167	330	1000	ug/kg
8270E-MW	BENZO(A)PYRENE	50-32-8	Solid	88	330	167	330	1000	ug/kg
8270E-MW	BENZO(B)FLUORANTHENE	205-99-2	Solid	55	330	167	330	1000	ug/kg
8270E-MW	BENZO(G,H,I)PERYLENE	191-24-2	Solid	76	330	167	330	100000	ug/kg
8270E-MW	BENZO(K)FLUORANTHENE	207-08-9	Solid	54	330	167	330	1000	ug/kg
8270E-MW	CHRYSENE	218-01-9	Solid	49	330	167	330	1000	ug/kg
8270E-MW	DIBENZO(A,H)ANTHRACENE	53-70-3	Solid	72	330	167	330	330	ug/kg
8270E-MW	DIBENZOFURAN	132-64-9	Solid	60	330	167	330	14000	ug/kg
8270E-MW	FLUORANTHENE	206-44-0	Solid	83	330	167	330	100000	ug/kg
8270E-MW	FLUORENE	86-73-7	Solid	62	330	167	330	100000	ug/kg
8270E-MW	HEXACHLOROBENZENE	118-74-1	Solid	79	330	167	330	330	ug/kg
8270E-MW	INDENO(1,2,3-CD)PYRENE	193-39-5	Solid	110	330	167	330	500	ug/kg
8270E-MW	NAPHTHALENE	91-20-3	Solid	62	330	167	330	12000	ug/kg
8270E-MW	PENTACHLOROPHENOL (PCP)	87-86-5	Solid	330	1700	833	1700	800	ug/kg
8270E-MW	PHENANTHRENE	85-01-8	Solid	47	330	167	330	100000	ug/kg
8270E-MW	PHENOL	108-95-2	Solid	67	330	167	330	330	ug/kg
8270E-MW	PYRENE	129-00-0	Solid	55	330	167	330	100000	ug/kg
8270D LL	1,2-DICHLOROBENZENE	95-50-1	Solid		33.0			1100	ug/kg
8270D LL	1,3-DICHLOROBENZENE	541-73-1	Solid		33.0			2400	ug/kg
8270D LL	1,4-DICHLOROBENZENE	106-46-7	Solid		33.0			1800	ug/kg
8270D LL	1,4-DIOXANE	123-91-1	Solid		67.0			100	ug/kg
8270E LL	ACENAPHTHENE	83-32-9	Solid	1.7	6.6	3.4	6.6	98000	ug/kg
8270E LL	ACENAPHTHYLENE	208-96-8	Solid	1.8	6.6	3.6	6.6	100000	ug/kg
8270E LL	ANTHRACENE	120-12-7	Solid	2.9	6.6	5.8	6.6	100000	ug/kg
8270E LL	BENZO(A)ANTHRACENE	56-55-3	Solid	2.1	6.6	4.2	6.6	1000	ug/kg
8270E LL	BENZO(A)PYRENE	50-32-8	Solid	2.7	6.6	5.4	6.6	1000	ug/kg
8270E LL	BENZO(B)FLUORANTHENE	205-99-2	Solid	2.3	6.6	4.6	6.6	1000	ug/kg
8270E LL	BENZO(G,H,I)PERYLENE	191-24-2	Solid	2.6	6.6	5.2	6.6	100000	ug/kg
8270E LL	BENZO(K)FLUORANTHENE	207-08-9	Solid	1.9	6.6	3.8	6.6	1000	ug/kg
8270E LL	CHRYSENE	218-01-9	Solid	1.7	6.6	3.4	6.6	1000	ug/kg
8270E LL	DIBENZO(A,H)ANTHRACENE	53-70-3	Solid	2.7	6.6	5.4	6.6	330	ug/kg
8270E LL	FLUORANTHENE	206-44-0	Solid	2.9	6.6	5.8	6.6	100000	ug/kg
8270E LL	FLUORENE	86-73-7	Solid	1.7	6.6	3.4	6.6	100000	ug/kg
8270E LL	HEXACHLOROBENZENE	118-74-1	Solid	2.4	6.6			330	ug/kg
8270E LL	INDENO(1,2,3-CD)PYRENE	193-39-5	Solid	2.9	6.6	5.8	6.6	500	ug/kg
8270E LL	NAPHTHALENE	91-20-3	Solid	2.3	6.6	4.6	6.6	12000	ug/kg
8270E LL	PENTACHLOROPHENOL	87-86-5	Solid		33.0			800	ug/kg
8270E LL	PHENANTHRENE	85-01-8	Solid	2.5	6.6	5.0	6.6	100000	ug/kg
8270E LL	PHENOL	108-95-2	Solid	7.1	33.0			330	ug/kg
8270E LL	PYRENE	129-00-0	Solid	2.5	6.6	5.0	6.6	100000	ug/kg

ALS Environmental All Detection Limits (non-PFAS Compounds)

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
SM 2320B-1997(2011)	Alkalinity, Bicarbonate		Water	NA	2.0			mg/L	80-120	NA	20
SM 2320B-1997(2011)	Alkalinity, Bicarbonate		Solid	NA	200			mg/kg	76-110	NA	20
SM 2320B-1997(2011)	Alkalinity, Carbonate		Water	NA	2.0			mg/L	80-120	NA	20
SM 2320B-1997(2011)	Alkalinity, Carbonate		Solid	NA	200			mg/kg	76-110	NA	20
SM 2320B-1997(2011)	Alkalinity, Total		Water	1.8	2.0	2.0	4.0	mg/L	80-120	NA	20
SM 2320B-1997(2011)	Alkalinity, Total		Solid	NA	200			mg/kg	76-110	NA	20
350.1 LL	Ammonia	7664-41-7	Water	0.006	0.010			mg/L	90-110	90-110	20
350.1	Ammonia	7664-41-7	Water	0.026	0.050	0.05	0.10	mg/L	90-110	90-110	20
350.1	Ammonia	7664-41-7	Solid	3.1	5.00			mg/kg	69-142	17-163	30
ASTM D482	Ash, Percent		Water	NA	0.10			%	61-114	NA	10
ASTM D482	Ash, Percent		Non-Aq	NA	0.10			%	61-114	NA	10
ASTM D482	Ash, Percent		Solid	NA	0.10			%	61-114	NA	10
SM 5210B-2016	Biological Oxygen Demand/CBOD		Water	NA	2.0			mg/L	85-115	NA	20
SM 5210B	Biological Oxygen Demand/CBPD		Solid	NA	200			mg/kg	85-115	NA	30
9056A	Bromide	24959-67-9	Water	0.34 (0.034)	1.0 (0.1)	0.05 (0.5)	0.1 (1)	mg/L	80-120	80-120	15
9056A	Bromide	24959-67-9	Solid	2.7	10			mg/Kg	80-120	54-121	15
300.0	Bromide	24959-67-9	Water	0.34 (0.034)	1.0 (0.1)	0.05 (0.5)	0.1 (1)	mg/L	90-110	90-110	20
26A	Bromide (as HBr)	24959-67-9	Water	0.05	0.10			mg/L	85-115	85-115	20
HACH 8000	Chemical Oxygen Demand-HL		Water	NA	50			mg/L	90-110	90-110	20
HACH 8000	Chemical Oxygen Demand-LL		Water	3.8	5.0	5.00	10.00	mg/L	90-110	90-110	20
SM 5220B Modified	Chemical Oxygen Demand		Solid	162	200			mg/Kg	50-143	10-127	30
9056A	Chloride	16887-00-6	Solid	12	30			mg/Kg	80-120	48-164	15
300.0	Chloride	16887-00-6	Water	0.41 (0.041)	2.0 (0.2)	0.1 (1.0)	0.2 (2.0)	mg/L	90-110	90-110	20
9056A	Chloride	16887-00-6	Water	0.41 (0.041)	2.0 (0.2)	0.1 (1.0)	0.2 (2.0)	mg/L	80-120	80-120	15
26A	Chloride (as HCl)	16887-00-6	Water	0.10	0.30			mg/L	85-115	79-122	20
SM 409A	Chlorine Demand		Water	NA	5.0			mg/L	NA	NA	20
SM 4500-Cl F-2000(2011)	Chlorine Residual (Free)		Water	NA	0.10			mg/L	70-130	70-130	20
SM 4500-Cl F-2000(2011)	Chlorine Residual (Total)		Water	NA	0.10			mg/L	70-130	70-130	20
SM 10200 H (fluor)	Chlorophyll a	479-61-8	Water	NA	0.4			ug/L	NA	NA	20
218.6 LL	Chromium, Hexavalent	18540-29-9	Water	0.01	0.02	0.015	0.020	ug/L	90-110	90-110	20
218.6	Chromium, Hexavalent	18540-29-9	Water	0.0019	0.01	0.005	0.01	**mg/L**	90-110	90-110	20
7199	Chromium, Hexavalent	18540-29-9	Water	0.0019	0.01	0.005	0.01	mg/L	85-115	10-170	20
3060/7199	Chromium, Hexavalent	18540-29-9	Solid	0.1	0.40	0.20	0.40	mg/Kg	80-120	75-125	20
7196A	Chromium, Hexavalent	18540-29-9	Water	0.0024	0.01			mg/L	80-120	85-115	20
SM 3500-Cr B-2009(2011)	Chromium, Hexavalent	18540-29-9	Water	0.0024	0.01			mg/L	80-120	42-157	20
SM 2120B-2001(2011)	Color (True or Apparent)		Water	NA	1.0			CU	NA	NA	±5 units
120.1	Conductivity		Water	NA	NA			umhos/cm	90-110	NA	20
9045D	Corrosivity		Water	NA	NA			SU	NA	NA	±0.10
9045D	Corrosivity		Non-Aq	NA	NA			SU	NA	NA	±0.10
9045D	Corrosivity		Solid	NA	NA			SU	NA	NA	±0.10
9012B	Cyanide, Residual	57-12-5	Solid	NA	0.5			mg/kg	0-10	NA	30
9012B	Cyanide, Residual		Water	NA	0.01			mg/L	0-10	NA	
Kelada-01	Cyanide, Total	57-12-5	Water	0.004	0.005	0.005	0.010	mg/L	90-110	90-110	20
335.4	Cyanide, Total	57-12-5	Water	0.00536	0.01	0.00536	0.010	mg/L	90-110	90-110	20
9012B	Cyanide, Total	57-12-5	Water	0.00536	0.01	0.00536	0.010	mg/L	85-115	77-119	20
9012B	Cyanide, Total	57-12-5	Solid	0.17	0.30			mg/Kg	85-115	10-159	30
SM 4500 CN E or N-2016	Cyanide, Total	57-12-5	Water	0.00536	0.01			mg/L	85-115	40-149	20
SM 4500 CN E	Cyanide, Weak Acid Dissociable	57-12-5	Water	0.007	0.01			mg/L	85-115	57-111	20
ASTM D1475 (Wt/Vol Cup)	Density/ Specific Gravity		Water	NA	NA			g/mL	0.05 units	NA	10
ASTM D1475 (Wt/Vol Cup)	Density/ Specific Gravity		Non-Aq	NA	NA			g/mL	0.05 units	NA	10
SM 3500-FE B	Ferrous Iron	15438-31-0	Water	0.021	0.10	0.05	0.10	mg/L	67-129	11-180	20
SM 3500-FE B	Ferrous Iron	15438-31-0	Solid	NA	10			mg/kg	67-129	11-180	30
1010B (Closed Cup)	Flash Point		Water	NA	NA			degree C	24.5-29.9 C	NA	10

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
1010B (Closed Cup)	Flash Point		Non-Aq	NA	NA			degree C	24.5-29.9 C	NA	10
300.0	Fluoride	16984-48-8	Water	0.0097	0.10	0.05	0.10	mg/L	90-110	90-110	20
9056A	Fluoride	16984-48-8	Water	0.0097	0.10	0.05	0.10	mg/L	80-120	80-120	15
9056A	Fluoride	16984-48-8	Solid	2	20			mg/Kg	80-120	50-148	15
26A	Fluoride (as HF)	16984-48-8	Water	NA	0.10			mg/L	80-121	10-187	20
1311/89-9	Glycols, TCLP		Solid	NA	1.0			mg/L	80-120	52-110	20
SM 2340B-1997(2011)	Hardness, Total Calculation		Water	NA	6.62			mg/L	NA	NA	20
SOP	Hydrogen Peroxide	7722-84-1	Water		1			mg/L	75-126	75-125	20
300.0	Nitrate as N	14797-55-8	Water	0.19 (0.019)	1.0 (0.1)	0.5 (0.05)	1.0 (0.1)	mg/L	90-110	90-110	20
9056A	Nitrate as N	14797-55-8	Water	0.19 (0.019)	1.0 (0.1)	0.5 (0.05)	1.0 (0.1)	mg/L	80-120	80-120	15
9056A	Nitrate as N	14797-55-8	Solid	3	10			mg/Kg	80-120	45-150	15
353.2Calc	Nitrate as N	14797-55-8	Water	NA	0.05			mg/L	90-110	90-110	20
353.2Calc	Nitrate as N	14797-55-8	Solid	NA	5.0			mg/Kg	90-110	51-137	30
26A (DI)	Nitrate as N	14797-55-8	Water	0.05	0.10			mg/L	85-115	81-134	30
353.2	Nitrate/Nitrite as N		Water	0.0015	0.05			mg/L	90-110	90-110	20
353.2 LL	Nitrate/Nitrite as N		Water	0.0015	0.002			mg/L	90-110	90-110	20
300.0	Nitrite as N	14797-65-0	Water	0.14 (0.014)	1.0 (0.1)	0.5 (0.05)	1.0 (0.1)	mg/L	90-110	90-110	20
353.2	Nitrite as N	14797-65-0	Water	0.007	0.01			mg/L	90-110	90-110	20
9056A	Nitrite as N	14797-65-0	Water	0.14 (0.014)	1.0 (0.1)	0.5 (0.05)	1.0 (0.1)	mg/L	80-120	80-120	15
9056A	Nitrite as N	14797-65-0	Solid	1.8	10			mg/Kg	80-120	55-134	15
351.2	Nitrogen, Total Kjeldahl	7727-37-9	Water	0.193	0.20	0.25	0.50	mg/L	90-110	90-110	20
351.2 LL	Nitrogen, Total Kjeldahl	7727-37-9	Water	0.098	0.10			mg/L	90-110	90-110	20
351.2 Modified	Nitrogen, Total Kjeldahl	7727-37-9	Non-Aq	21	30			mg/Kg	30-158	30-158	30
351.2 Modified	Nitrogen, Total Kjeldahl	7727-37-9	Solid	21	30			mg/Kg	64-126	10-200	30
1664A (SGT-HEM)	Oil and Grease, Nonpolar (Total Petroleum Hydrocarbons)		Water	1.6	5.0			mg/L	64-132	64-132	34
1664A (HEM)	Oil and Grease, Total		Water	1.6	5.0			mg/L	78-114	78-114	18
365.1	Orthophosphate	14265-44-2	Water	0.0049	0.01			mg/L	90-110	90-110	20
365.1 LL	Orthophosphate	14265-44-2	Water	0.0049	0.005			mg/L	90-110	90-110	20
HACH 10360	Oxygen, Dissolved	7782-44-7	Water	NA	0.20			mg/L	NA	NA	20
9095B	Paint Filter test		Solid	NA	NA			%	NA	NA	30
ASTM E203	Percent Water (Water Content)		Water	NA	0.10			%	90-110	NA	20
ASTM E203	Percent Water (Water Content)		Non-Aq	NA	0.10			%	90-110	NA	20
ASTM E203	Percent Water (Water Content)		Solid	NA	0.10			%	90-110	NA	20
9040C	pH		Water	NA	NA			SU	NA	NA	±0.10
9040C	pH		non-Aq	NA	NA			SU	NA	NA	±0.10
9045D	pH		Solid	NA	NA			SU	NA	NA	±0.10
SM 4500-H+ B-2000(2011)	pH		Water	NA	NA			SU	NA	NA	±0.10
420.4	Phenolics, Total (in-line distillation)	108-95-2	Water	0.0029	0.005	0.0035	0.005	mg/L	90-110	90-110	20
420.4 LL	Phenolics, Total (in-line distillation)	108-95-2	Water	0.0017	0.002			mg/L	90-110	90-110	20
9066	Phenolics, Total	108-95-2	Water	0.0029	0.005	0.0035	0.005	mg/L	85-115	49-137	20
9066 LL	Phenolics, Total	108-95-2	Water	0.0017	0.002			mg/L	85-115	49-137	20
9066	Phenolics, Total	108-95-2	Non-Aq	0.24	0.40			mg/Kg	72-113	72-113	30
9066	Phenolics, Total	108-95-2	Solid	0.24	0.40			mg/kg	59-128	72-113	30
365.1	Phosphorus, Total	7723-14-0	Water	0.013	0.05			mg/L	90-110	90-110	20
365.1 Modified	Phosphorus, Total	7723-14-0	Non-Aq	2.1	10.0			mg/Kg	83-111	10-113	30
365.1 Modified	Phosphorus, Total	7723-14-0	Solid	2.1	10.0			mg/kg	83-111	10-113	30
365.1 LL	Phosphorus, Total	7723-14-0	Water	0.0036	0.005			mg/L	90-110	90-110	20
SOP	REDOX (ORP)		Water	NA	NA			mV	NA	NA	20
SOP	REDOX (ORP)		Solid	NA	NA			mV	NA	NA	20
ALS SOP	Solids, Dry Weight Percent (DWPS)		Solid	NA	1.0			%	NA	NA	20
SM 2540G	Solids, Percent Volatile		Solid	NA	NA			%	NA	NA	30
SM 2540F	Solids, Settleable		Water	NA	0.10			mg/L	NA	NA	20
SM 2540B-2015	Solids, Total (TS)		Water	10	10			mg/L	90-110	NA	20
SM 2540B	Solids, Total (TS)		Non-Aq	NA	10			mg/kg	90-110	NA	20
SM 2540C-2015	Solids, Total Dissolved (TDS)		Water	9	10			mg/L	90-110	NA	10

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
SM 2540D-2015	Solids, Total Suspended (TSS)		Water	NA	1.0			mg/L	90-110	NA	10
SM 2540E-2015	Solids, Total Suspended Fixed		Water	NA	1.0			mg/L	NA	NA	10
SM 2540E-2015	Solids, Total Volatile (TVS)		Water	NA	10			mg/L	84-116	NA	10
SM 2540E-2015	Solids, Volatile Dissolved (VDS)		Water	NA	10			mg/L	80-120	NA	10
SM 2540E-2015	Solids, Volatile Suspended (VSS)		Water	NA	1.0			mg/L	NA	NA	10
300.0	Sulfate	14808-79-8	Water	0.39 (0.039)	2.0 (0.2)	0.1 (1)	0.2 (2)	mg/L	90-110	90-110	20
9056A	Sulfate	14808-79-8	Water	0.39 (0.039)	2.0 (0.2)	0.1 (1)	0.2 (2)	mg/L	80-120	80-120	15
9056A	Sulfate	14808-79-8	Solid	13	30			mg/Kg	80-120	53-154	15
26A	Sulfate (H_2SO_4)	14808-79-8	Water	0.1	0.2			mg/L	65-137	17-177	20
9030B/9034	Sulfide, Acid Soluble		Water	0.94	1.0	1	2	mg/L	10-125	10-109	20
9030B/9034	Sulfide, Acid Soluble		Solid/Non-Aq	14	20	20	40	mg/Kg	10-135	10-120	30
SM 4500-S2 F-2000(2011)	Sulfide, Total		Water	0.28	1.0	1	2	mg/L	67-143	56-147	20
SM 4500-SO32 B-2000(201	Sulfite	14265-45-3	Water	NA	2.0			mg/L	NA	NA	20
ALS SOP	Trimethylamine (TMA)	75-50-3	Water	0.066	0.10			mg/L	80-120	75-125	20
ALS SOP	TMAH	75-59-2	Water	0.048	0.10			mg/L	80-120	75-125	20
Lloyd Kahn	Total Inorganic Carbon		Solid	NA	300			mg/kg	NA	NA	30
9060A	Total Organic Carbon	7440-44-0	Water	0.45	1.0	0.50	1.00	mg/L	80-121	48-135	20
Lloyd Kahn	Total Organic Carbon	7440-44-0	Non-Aq	300	300			mg/Kg	75-127	27-162	30
Lloyd Kahn	Total Organic Carbon	7440-44-0	Solid	300	300	300	300	mg/Kg	75-127	27-162	30
SM 5310B-2014	Total Organic Carbon	7440-44-0	Water	0.45	1.0			mg/L	80-121	48-135	20
180.1	Turbidity		Water	0.06	0.10			NTU	NA	NA	10
SM 5910B	UV 254		Water	0.0045	NA			cm-1	NA	NA	20

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
1631E	Mercury	7439-97-6	Water	0.24	1.0	NA	NA	ng/L	77-128	71-125	24
200.7	Aluminum	7429-90-5	Water	39	100	200.00	400.00	ug/L	85-115	70-130	20
200.7	Antimony	7440-36-0	Water	15	60	30.00	40.00	ug/L	85-115	70-130	20
200.7	Arsenic	7440-38-2	Water	4.2	10	10.00	20.00	ug/L	85-115	70-130	20
200.7	Barium	7440-39-3	Water	4.3	20	20.00	40.00	ug/L	85-115	70-130	20
200.7	Beryllium	7440-41-7	Water	0.14	3	2.50	5.00	ug/L	85-115	70-130	20
200.7	Boron	7440-42-8	Water	19	200	200.00	400.00	ug/L	85-115	70-130	20
200.7	Cadmium	7440-43-9	Water	0.61	5	2.50	5.00	ug/L	85-115	70-130	20
200.7	Calcium	7440-70-2	Water	110	1000	500.00	1000.00	ug/L	85-115	70-130	20
200.7	Chromium	7440-47-3	Water	0.91	10	5.00	10.00	ug/L	85-115	70-130	20
200.7	Cobalt	7440-48-4	Water	0.6	50	25.00	50.00	ug/L	85-115	70-130	20
200.7	Copper	7440-50-8	Water	3.4	20	10.00	20.00	ug/L	85-115	70-130	20
200.7	Gallium	7440-55-3	Water	9.5	200	NA	NA	ug/L	85-115	70-130	20
200.7	Germanium	7440-56-4	Water	14	100	NA	NA	ug/L	85-115	70-130	20
200.7	Gold	7440-57-5	Water	5	50	NA	NA	ug/L	85-115	70-130	20
200.7	Hafnium	7440-58-6	Water	12	100	NA	NA	ug/L	85-115	70-130	20
200.7	Indium	7440-74-6	Water	11	100	NA	NA	ug/L	85-115	70-130	20
200.7	Iron	7439-89-6	Water	20	100	100.00	200.00	ug/L	85-115	70-130	20
200.7	Lead	7439-92-1	Water	2.8	5	5.00	10.00	ug/L	85-115	70-130	20
200.7	Lithium	7439-93-2	Water	29	100	NA	NA	ug/L	85-115	70-130	20
200.7	Magnesium	7439-95-4	Water	68	1000	500.00	1000.00	ug/L	85-115	70-130	20
200.7	Manganese	7439-96-5	Water	1.7	10	10.00	20.00	ug/L	85-115	70-130	20
200.7	Molybdenum	7439-98-7	Water	8.8	25	12.50	25.00	ug/L	85-115	70-130	20
200.7	Nickel	7440-02-0	Water	2.1	40	20.00	40.00	ug/L	85-115	70-130	20
200.7	Palladium	7440-05-3	Water	2.8	100	NA	NA	ug/L	85-115	70-130	20
200.7	Platinum	7440-06-4	Water	7.4	100	NA	NA	ug/L	85-115	70-130	20
200.7	Potassium	7440-09-7	Water	180	2000	1000.00	2000.00	ug/L	85-115	70-130	20
200.7	Rhenium	7440-15-5	Water	3.6	100	NA	NA	ug/L	85-115	70-130	20
200.7	Rutheniuim	7440-18-8	Water	2.1	100	NA	NA	ug/L	85-115	70-130	20
200.7	Selenium	7782-49-2	Water	7	10	10.00	20.00	ug/L	85-115	70-130	20
200.7	Silicon	7440-21-3	Water	43	1000	NA	NA	ug/L	85-115	70-130	20
200.7	Silver	7440-22-4	Water	0.78	10	5.00	10.00	ug/L	85-115	70-130	20
200.7	Sodium	7440-23-5	Water	139	1000	500.00	1000.00	ug/L	85-115	70-130	20
200.7	Strontium	7440-24-6	Water	2	100	50.00	100.00	ug/L	85-115	70-130	20
200.7	Tantalum	7440-25-7	Water	6.1	100	NA	NA	ug/L	85-115	70-130	20
200.7	Thallium	7440-28-0	Water	6.5	10	10.00	20.00	ug/L	85-115	70-130	20
200.7	Tin	7440-31-5	Water	46	500	250.00	500.00	ug/L	85-115	70-130	20
200.7	Titanium	7440-32-6	Water	2.5	50	25.00	50.00	ug/L	85-115	70-130	20
200.7	Tungsten	7440-33-7	Water	29	100	NA	NA	ug/L	85-115	70-130	20
200.7	Vanadium	7440-62-2	Water	0.71	50	25.00	50.00	ug/L	85-115	70-130	20
200.7	Zinc	7440-66-6	Water	6.3	20	20.00	40.00	ug/L	85-115	70-130	20

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
200.8	Aluminum	7429-90-5	Water	7.6	10	10	20	ug/L	85-115	70-130	20
200.8	Antimony	7440-36-0	Water	0.17	1	1	2	ug/L	85-115	70-130	20
200.8	Arsenic	7440-38-2	Water	0.32	1	0.50	1	ug/L	85-115	70-130	20
200.8	Barium	7440-39-3	Water	0.27	1	1.00	2	ug/L	85-115	70-130	20
200.8	Beryllium	7440-41-7	Water	0.078	1	0.50	1	ug/L	85-115	70-130	20
200.8	Cadmium	7440-43-9	Water	0.16	1	0.50	1	ug/L	85-115	70-130	20
200.8	Chromium	7440-47-3	Water	0.56	2	2.00	4	ug/L	85-115	70-130	20
200.8	Cobalt	7440-48-4	Water	0.022	1	0.50	1	ug/L	85-115	70-130	20
200.8	Copper	7440-50-8	Water	0.66	1	1.00	2	ug/L	85-115	70-130	20
200.8	Copper	7440-50-8	DW	0.16	1	NA	NA	ug/L	85-115	70-130	20
200.8	Lead	7439-92-1	Water	0.19	1	1.00	2	ug/L	85-115	70-130	20
200.8	Lead	7439-92-1	DW	0.038	1	NA	NA	ug/L	85-115	70-130	20
200.8	Lithium	7439-93-2	Water	0.59	1	1.00		ug/L	85-115	70-130	20
200.8	Manganese	7439-96-5	Water	0.61	1	1.00	2	ug/L	85-115	70-130	20
200.8	Molybdenum	7439-98-7	Water	0.29	1	1.00	2	ug/L	85-115	70-130	20
200.8	Nickel	7440-02-0	Water	0.46	1	1.00	2	ug/L	85-115	70-130	20
200.8	Palladium	7440-05-3	Water	0.131	1			ug/L	85-115	70-130	20
200.8	Platinum	7440-06-4	Water	0.18	1			ug/L	85-115	70-130	20
200.8	Selenium	7782-49-2	Water	0.6	2	1.00	2	ug/L	85-115	70-130	20
200.8	Silver	7440-22-4	Water	0.35	1	0.50	1	ug/L	85-115	70-130	20
200.8	Strontium	7440-24-6	Water	0.193	1			ug/L	85-115	70-130	20
200.8	Thallium	7440-28-0	Water	0.031	1	0.50	1	ug/L	85-115	70-130	20
200.8	Uranium	7440-61-1	Water	0.034	1	NA	NA	ug/L	85-115	70-130	20
200.8	Vanadium	7440-62-2	Water	0.32	2	2	4	ug/L	85-115	70-130	20
200.8	Zinc	7440-66-6	Water	2.5	5	5	10	ug/L	85-115	70-130	20
245.1	Mercury	7439-97-6	Water	0.077	0.200	0.10	0.20	ug/L	85-115	70-130	20
6010D	Aluminum	7429-90-5	Solid	2	20	24	50	mg/kg	80-120	75-125	20
6010D	Antimony	7440-36-0	Solid	1.4	6	3	6	mg/kg	80-120	75-125	20
6010D	Arsenic	7440-38-2	Solid	0.7	1	1.5	2	mg/kg	80-120	75-125	20
6010D	Barium	7440-39-3	Solid	0.26	2	2	4	mg/kg	80-120	75-125	20
6010D	Beryllium	7440-41-7	Solid	0.029	0.3	0.25	0.5	mg/kg	80-120	75-125	20
6010D	Boron	7440-42-8	Solid	1.5	20	10	20	mg/kg	80-120	75-125	20
6010D	Cadmium	7440-43-9	Solid	0.086	0.5	0.25	0.5	mg/kg	80-120	75-125	20
6010D	Calcium	7440-70-2	Solid	32	100	70	100	mg/kg	80-120	75-125	20
6010D	Chromium	7440-47-3	Solid	0.35	1	0.8	1	mg/kg	80-120	75-125	20
6010D	Cobalt	7440-48-4	Solid	0.083	5	2.5	5	mg/kg	80-120	75-125	20
6010D	Copper	7440-50-8	Solid	0.24	2	1	2	mg/kg	80-120	75-125	20
6010D	Iron	7439-89-6	Solid	13	20	26	40	mg/kg	80-120	75-125	20
6010D	Lead	7439-92-1	Solid	0.4	5	2.5	5	mg/kg	80-120	75-125	20
6010D	Lithium	7439-93-2	Solid	13	20	done		mg/kg	80-120	75-125	20
6010D	Magnesium	7439-95-4	Solid	13	100	50	100	mg/kg	80-120	75-125	20
6010D	Manganese	7439-96-5	Solid	0.48	2	2.0	4	mg/kg	80-120	75-125	20
6010D	Molybdenum	7439-98-7	Solid	0.55	2.5	1.25	2.5	mg/kg	80-120	75-125	20
6010D	Nickel	7440-02-0	Solid	0.66	4	2	4	mg/kg	80-120	75-125	20
6010D	Potassium	7440-09-7	Solid	50	200	100	200	mg/kg	80-120	75-125	20
6010D	Selenium	7782-49-2	Solid	0.54	1	1.1	2	mg/kg	80-120	75-125	20
6010D	Silicon	7440-21-3	Solid	38	100	NA	NA	mg/kg	80-120	75-125	20
6010D	Silver	7440-22-4	Solid	0.09	1	0.5	1	mg/kg	80-120	75-125	20
6010D	Sodium	7440-23-5	Solid	19	100	100	200	mg/kg	80-120	75-125	20
6010D	Strontium	7440-24-6	Solid	0.11	10	5	10	mg/kg	80-120	75-125	20
6010D	Thallium	7440-28-0	Solid	0.65	1	1.4	2	mg/kg	80-120	75-125	20
6010D	Tin	7440-31-5	Solid	1.9	50	25	50	mg/kg	80-120	75-125	20
6010D	Titanium	7440-32-6	Solid	0.4	5	2.5	5	mg/kg	80-120	75-125	20
6010D	Vanadium	7440-62-2	Solid	0.069	5	2.5	5	mg/kg	80-120	75-125	20
6010D	Zinc	7440-66-6	Solid	1.4	2	2.8	4	mg/kg	80-120	75-125	20

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
6010D	Aluminum	7429-90-5	Water	23	100	200	400	ug/L	80-120	75-125	20
6010D	Antimony	7440-36-0	Water	27	60	30	60	ug/L	80-120	75-125	20
6010D	Arsenic	7440-38-2	Water	5.5	10	10	20	ug/L	80-120	75-125	20
6010D	Barium	7440-39-3	Water	3	20	20	40	ug/L	80-120	75-125	20
6010D	Beryllium	7440-41-7	Water	0.13	3	2.5	5	ug/L	80-120	75-125	20
6010D	Boron	7440-42-8	Water	12	200	200	400	ug/L	80-120	75-125	20
6010D	Cadmium	7440-43-9	Water	0.35	5	2.5	5	ug/L	80-120	75-125	20
6010D	Calcium	7440-70-2	Water	220	1000	500	1000	ug/L	80-120	75-125	20
6010D	Chromium	7440-47-3	Water	1.4	10	5	10	ug/L	80-120	75-125	20
6010D	Cobalt	7440-48-4	Water	0.89	50	25	50	ug/L	80-120	75-125	20
6010D	Copper	7440-50-8	Water	3.9	20	10	20	ug/L	80-120	75-125	20
6010D	Germanium	7440-56-4	Water		100	NA	NA	ug/L	80-120	75-125	20
6010D	Iron	7439-89-6	Water	61	100	100	200	ug/L	80-120	75-125	20
6010D	Lead	7439-92-1	Water	3.2	50	5.0	10	ug/L	80-120	75-125	20
6010D	Lithium	7439-93-2	Water	41	100			ug/L	80-120	75-125	20
6010D	Magnesium	7439-95-4	Water	29	1000	500	1000	ug/L	80-120	75-125	20
6010D	Manganese	7439-96-5	Water	3.7	10	10	20	ug/L	80-120	75-125	20
6010D	Molybdenum	7439-98-7	Water	2.9	25	12.5	25	ug/L	80-120	75-125	20
6010D	Nickel	7440-02-0	Water	2.6	40	20	40	ug/L	80-120	75-125	20
6010D	Potassium	7440-09-7	Water	380	2000	1000	2000	ug/L	80-120	75-125	20
6010D	Selenium	7782-49-2	Water	6.4	10	10	20	ug/L	80-120	75-125	20
6010D	Silicon	7440-21-3	Water	363	1000	NA	NA	ug/L	80-120	75-125	20
6010D	Silver	7440-22-4	Water	0.57	10	5	10	ug/L	80-120	75-125	20
6010D	Sodium	7440-23-5	Water	272	1000	500	1000	ug/L	80-120	75-125	20
6010D	Strontium	7440-24-6	Water	1.8	100	50	100	ug/L	80-120	75-125	20
6010D	Thallium	7440-28-0	Water	7.6	10	10	20	ug/L	80-120	75-125	20
6010D	Tin	7440-31-5	Water	8	500	250	500	ug/L	80-120	75-125	20
6010D	Titanium	7440-32-6	Water	6	50	25	50	ug/L	80-120	75-125	20
6010D	Vanadium	7440-62-2	Water	0.67	50	25	50	ug/L	80-120	75-125	20
6010D	Zinc	7440-66-6	Water	2.4	20	20	40	ug/L	80-120	75-125	20

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
1311/6010D (TCLP)	Arsenic	7440-38-2	Solid	NA	0.500	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Barium	7440-39-3	Solid	NA	1.000	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Beryllium	7440-41-7	Solid	NA	0.005	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Cadmium	7440-43-9	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Calcium	7440-70-2	Solid	NA	1.000	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Chromium	7440-47-3	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Copper	7440-50-8	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Lead	7439-92-1	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Molybdenum	7439-98-7	Solid	NA	0.050	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Nickel	7440-02-0	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Selenium	7782-49-2	Solid	NA	0.500	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Silver	7440-22-4	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Thallium	7440-28-0	Solid	NA	0.010	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Vanadium	7440-62-2	Solid	NA	0.050	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Zinc	7440-66-6	Solid	NA	0.100	NA	NA	mg/L	80-120	75-125	20
1311/6010D (TCLP)	Mercury	7439-97-6	Solid	NA	0.0003	NA	NA	mg/L	80-120	75-125	20
6020B	Aluminum	7429-90-5	Water	7.6	10	10.0	20	ug/L	80-120	75-125	20
6020B	Antimony	7440-36-0	Water	0.17	1	1.0	2	ug/L	80-120	75-125	20
6020B	Arsenic	7440-38-2	Water	0.32	1	0.5	1	ug/L	80-120	75-125	20
6020B	Barium	7440-39-3	Water	0.27	1	1.0	2	ug/L	80-120	75-125	20
6020B	Beryllium	7440-41-7	Water	0.078	1	0.5	1	ug/L	80-120	75-125	20
6020B	Cadmium	7440-43-9	Water	0.16	1	0.5	1	ug/L	80-120	75-125	20
6020B	Chromium	7440-47-3	Water	0.56	2	2	4	ug/L	80-120	75-125	20
6020B	Cobalt	7440-48-4	Water	0.022	1	0.5	1	ug/L	80-120	75-125	20
6020B	Copper	7440-50-8	Water	0.66	1	1.0	2	ug/L	80-120	75-125	20
6020B	Lead	7439-92-1	Water	0.19	1	1.0	2	ug/L	80-120	75-125	20
6020B	Lithium	7439-93-2	Water	0.586	1			ug/L	80-120	75-125	20
6020B	Manganese	7439-96-5	Water	0.61	1	1.0	2	ug/L	80-120	75-125	20
6020B	Molybdenum	7439-98-7	Water	0.29	1	1.0	2	ug/L	80-120	75-125	20
6020B	Nickel	7440-02-0	Water	0.46	1	1.0	2	ug/L	80-120	75-125	20
6020B	Palladium	7440-05-3	Water	0.131	1			ug/L	80-120	75-125	20
6020B	Platinum	7440-06-4	Water	0.18	1			ug/L	80-120	75-125	20
6020B	Selenium	7782-49-2	Water	0.6	2	1.0	2	ug/L	80-120	75-125	20
6020B	Silver	7440-22-4	Water	0.35	1	0.5	1	ug/L	80-120	75-125	20
6020B	Strontium	7440-24-6	Water	0.193	1			ug/L	80-120	75-125	20
6020B	Thallium	7440-28-0	Water	0.031	1	0.5	1	ug/L	80-120	75-125	20
6020B	Tungsten	7440-33-7	Water	0.23	1			ug/L	80-120	75-125	20
6020B	Uranium	7440-61-1	Water	0.034	1	0.5	1	ug/L	80-120	75-125	20
6020B	Vanadium	7440-62-2	Water	0.32	2	2	4	ug/L	80-120	75-125	20
6020B	Zinc	7440-66-6	Water	2.5	5	5.0	10	ug/L	80-120	75-125	20
7470A	Mercury	7439-97-6	Water	0.077	0.2	0.10	0.20	ug/L	80-120	75-125	20
7471B	Mercury	7439-97-6	Solid	0.0130	0.02	0.017	0.020	mg/kg	80-120	80-120	20

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
522	1,4-DIOXANE	123-91-1	Water	0.02	0.04			ug/L	70-130	70-130	30
522-SURR	1,4-DIOXANE-D8	17647-74-4	Water	NA	NA			%	70-130	70-130	NA
524.2	1,1,1,2-TETRACHLOROETHANE	630-20-6	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,1,1-TRICHLOROETHANE	71-55-6	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,1,2,2-TETRACHLOROETHANE	79-34-5	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,1,2-TRICHLOROETHANE	79-00-5	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,1,2-TRICHLOROTRIFLUOROETHANE	76-13-1	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,1-DICHLOROETHANE	75-34-3	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,1-DICHLOROETHENE	75-35-4	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,1-DICHLOROPROPENE	563-58-6	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,2,3-TRICHLOROBENZENE	87-61-6	DW	0.22	0.5			ug/L	70-130	70-130	20
524.2	1,2,3-TRICHLOROPROPANE	96-18-4	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,2,4-TRICHLOROBENZENE	120-82-1	DW	0.24	0.5			ug/L	70-130	70-130	20
524.2	1,2,4-TRIMETHYLBENZENE	95-63-6	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE (CFC123a	354-23-4	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,2-DICHLOROBENZENE	95-50-1	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,2-DICHLOROETHANE	107-06-2	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,2-DICHLOROPROPANE	78-87-5	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,3,5-TRIMETHYLBENZENE	108-67-8	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,3-DICHLOROBENZENE	541-73-1	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,3-DICHLOROPROPANE	142-28-9	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	1,4-DICHLOROBENZENE	106-46-7	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	2,2-DICHLOROPROPANE	594-20-7	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	2-BUTANONE (MEK)	78-93-3	DW	2.7	5.0			ug/L	70-130	70-130	20
524.2	2-CHLOROTOLUENE	95-49-8	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	2-HEXANONE	591-78-6	DW	0.57	5.0			ug/L	70-130	70-130	20
524.2	4-CHLOROTOLUENE	106-43-4	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	4-METHYL-2-PENTANONE (MIBK)	108-10-1	DW	0.41	5.0			ug/L	70-130	70-130	20
524.2	ACETONE	67-64-1	DW	2.03	5.0			ug/L	70-130	70-130	20
524.2	BENZENE	71-43-2	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	BROMOBENZENE	108-86-1	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	BROMOCHLOROMETHANE	74-97-5	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	BROMODICHLOROMETHANE	75-27-4	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	BROMOFORM	75-25-2	DW	0.24	0.5			ug/L	70-130	70-130	20
524.2	BROMOMETHANE	74-83-9	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	CARBON TETRACHLORIDE	56-23-5	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	CHLOROBENZENE	108-90-7	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	CHLOROETHANE	75-00-3	DW	0.23	0.5			ug/L	70-130	70-130	20
524.2	CHLOROFORM	67-66-3	DW	0.44	0.5			ug/L	70-130	70-130	20
524.2	CHLOROMETHANE	74-87-3	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	CIS-1,2-DICHLOROETHENE	156-59-2	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	CIS-1,3-DICHLOROPROPENE	10061-01-5	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	DIBROMOCHLOROMETHANE	124-48-1	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	DIBROMOMETHANE	74-95-3	DW	0.33	0.5			ug/L	70-130	70-130	20
524.2	DICHLORODIFLUOROMETHANE	75-71-8	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	ETHYLBENZENE	100-41-4	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	HEXACHLOROBUTADIENE	87-68-3	DW	0.26	0.5			ug/L	70-130	70-130	20
524.2	ISOPROPYLBENZENE	98-82-8	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	M+P-XYLENE	179601-23-1	DW	0.48	1.0			ug/L	70-130	70-130	20
524.2	METHYLENE CHLORIDE	75-09-2	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	METHYL-TERT-BUTYL-ETHER	1634-04-4	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	NAPHTHALENE	91-20-3	DW	0.23	0.5			ug/L	70-130	70-130	20
524.2	N-BUTYLBENZENE	104-51-8	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	N-PROPYLBENZENE	103-65-1	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	O-XYLENE	95-47-6	DW	0.2	0.5			ug/L	70-130	70-130	20

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
524.2	P-ISOPROPYLTOLUENE	99-87-6	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	SEC-BUTYLBENZENE	135-98-8	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	STYRENE	100-42-5	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	TERT-BUTYLBENZENE	98-06-6	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	TETRACHLOROETHENE	127-18-4	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	TETRAHYDROFURAN (THF)	109-99-9	DW	0.49	5.0			ug/L	70-130	70-130	20
524.2	TOLUENE	108-88-3	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	TRANS-1,2-DICHLOROETHENE	156-60-5	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	TRANS-1,3-DICHLOROPROPENE	10061-02-6	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	TRICHLOROETHENE	79-01-6	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	TRICHLOROFLUOROMETHANE	75-69-4	DW	0.2	0.5			ug/L	70-130	70-130	20
524.2	VINYL CHLORIDE	75-01-4	DW	0.22	0.5			ug/L	70-130	70-130	20
524.2	1,2-DICHLOROBENZENE-D4-SURR	2199-69-1	DW	NA	NA			%	70-130	70-130	20
524.2	BROMOFLUOROBENZENE-SURR	460-00-4	DW	NA	NA			%	70-130	70-130	20
608.3	4,4'-DDD	72-54-8	Water	0.02	0.05	0.025	0.05	ug/L	31-141	31-141	39
608.3	4,4'-DDE	72-55-9	Water	0.02	0.05	0.025	0.05	ug/L	30-145	30-145	35
608.3	4,4'-DDT	50-29-3	Water	0.02	0.05	0.025	0.05	ug/L	25-160	25-160	42
608.3	ALDRIN	309-00-2	Water	0.02	0.05	0.025	0.05	ug/L	42-140	42-140	35
608.3	ALPHA-BHC	319-84-6	Water	0.02	0.05	0.025	0.05	ug/L	37-140	34-140	36
608.3	ALPHA-CHLORDANE	5103-71-9	Water	0.02	0.05	0.025	0.05	ug/L	45-140	45-140	35
608.3	BETA-BHC	319-85-7	Water	0.02	0.05	0.025	0.05	ug/L	17-147	17-147	44
608.3	CHLORDANE	57-74-9	Water	0.125	0.25	0.200	0.25	ug/L	28-143	28-143	30
608.3	DELTA-BHC	319-86-8	Water	0.02	0.05	0.025	0.05	ug/L	19-140	19-140	52
608.3	DIELDRIN	60-57-1	Water	0.02	0.05	0.025	0.05	ug/L	36-146	36-146	49
608.3	ENDOSULFAN I	959-98-8	Water	0.02	0.05	0.025	0.05	ug/L	45-153	45-153	28
608.3	ENDOSULFAN II	33213-65-9	Water	0.02	0.05	0.025	0.05	ug/L	10-202	10-202	53
608.3	ENDOSULFAN SULFATE	1031-07-8	Water	0.02	0.05	0.025	0.05	ug/L	26-144	26-144	38
608.3	ENDRIN	72-20-8	Water	0.02	0.05	0.025	0.05	ug/L	30-147	30-147	48
608.3	ENDRIN ALDEHYDE	7421-93-4	Water	0.02	0.05	0.025	0.05	ug/L	10-103	10-94	30
608.3	ENDRIN KETONE	53494-70-5	Water	0.02	0.05	0.025	0.05	ug/L	33-118	33-118	30
608.3	GAMMA-BHC (LINDANE)	58-89-9	Water	0.02	0.05	0.025	0.05	ug/L	32-140	32-140	39
608.3	GAMMA-CHLORDANE	5566-34-7	Water	0.02	0.05	0.025	0.05	ug/L	45-140	45-140	35
608.3	HEPTACHLOR	76-44-8	Water	0.02	0.05	0.025	0.05	ug/L	34-140	34-140	43
608.3	HEPTACHLOR EPOXIDE	1024-57-3	Water	0.02	0.05	0.025	0.05	ug/L	37-142	37-142	26
608.3	METHOXYCHLOR	72-43-5	Water	0.02	0.05	0.025	0.05	ug/L	27-131	27-131	30
608.3	PCB1016	12674-11-2	Water	0.5	1.0	0.50	1.00	ug/L	50-140	50-140	36
608.3	PCB1221	11104-28-2	Water	1.0	2.0	1.00	2.00	ug/L	15-178	15-178	48
608.3	PCB1232	11141-16-5	Water	0.5	1.0	0.50	1.00	ug/L	10-215	10-215	25

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
608.3	PCB1242	53469-21-9	Water	0.5	1.0	0.50	1.00	ug/L	39-150	39-150	29
608.3	PCB1248	12672-29-6	Water	0.5	1.0	0.50	1.00	ug/L	38-158	38-158	35
608.3	PCB1254	11097-69-1	Water	0.5	1.0	0.50	1.00	ug/L	29-140	29-140	45
608.3	PCB1260	11096-82-5	Water	0.5	1.0	0.50	1.00	ug/L	10-140	10-140	38
608.3	MIREX		Water	0.02	0.05			ug/L	33-113	33-113	30
608.3	TOXAPHENE	8001-35-2	Water	0.5	0.5	0.50	1.00	ug/L	41-140	41-140	41
608.3-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Water	NA	NA		0.20	%	10-110	10-110	NA
608.3-SURR	TETRACHLORO-META-XYLENE (TCMX)-SURR	877-09-8	Water	NA	NA		0.20	%	10-95	10-95	NA

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
624.1	1,1,1,2-TETRACHLOROETHANE	630-20-6	Water	0.2	1.0			ug/L	76-129	68-146	30
624.1	1,1,1-TRICHLOROETHANE	71-55-6	Water	0.2	1.0			ug/L	70-130	52-162	36
624.1	1,1,2,2-TETRACHLOROETHANE	79-34-5	Water	0.2	1.0			ug/L	60-140	46-157	61
624.1	1,1,2-TRICHLOROETHANE	79-00-5	Water	0.2	1.0			ug/L	70-130	52-150	45
624.1	1,1,2-TRICHLOROTRIFLUOROETHANE	76-13-1	Water	0.2	1.0			ug/L	67-124	50-147	30
624.1	1,1-DICHLOROETHANE	75-34-3	Water	0.2	1.0			ug/L	70-130	59-155	40
624.1	1,1-DICHLOROETHENE	75-35-4	Water	0.2	1.0			ug/L	50-150	1-234	32
624.1	1,1-DICHLOROPROPENE	563-58-6	Water	0.2	1.0			ug/L	76-118	76-118	30
624.1	1,2,3-TRICHLOROBENZENE	87-61-6	Water	0.25	1.0			ug/L	67-136	59-129	30
624.1	1,2,3-TRICHLOROPROPANE	96-18-4	Water	0.26	5.0			ug/L	75-118	75-122	30
624.1	1,2,4-TRICHLOROBENZENE	120-82-1	Water	0.34	1.0			ug/L	75-132	69-122	30
624.1	1,2,4-TRIMETHYLBENZENE	95-63-6	Water	0.2	1.0			ug/L	81-126	73-133	30
624.1	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	Water	0.45	1.0			ug/L	55-136	37-150	30
624.1	1,2-DIBROMOETHANE	106-93-4	Water	0.2	1.0			ug/L	82-127	67-127	30
624.1	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE (CFC123a	354-23-4	Water	0.2	1.0			ug/L	59-129	59-129	30
624.1	1,2-DICHLOROBENZENE	95-50-1	Water	0.2	1.0			ug/L	65-135	18-190	57
624.1	1,2-DICHLOROETHANE	107-06-2	Water	0.2	1.0			ug/L	70-130	49-155	49
624.1	1,2-DICHLOROETHENE, TOTAL	540-59-0	Water	0.35	2.0			ug/L	75-128	75-128	30
624.1	1,2-DICHLOROPROPANE	78-87-5	Water	0.2	1.0			ug/L	35-165	1-210	55
624.1	1,3,5-TRICHLOROBENZENE	108-70-3	Water	0.27	1.0			ug/L	67-130	67-130	30
624.1	1,3,5-TRIMETHYLBENZENE	108-67-8	Water	0.2	1.0			ug/L	81-128	81-131	30
624.1	1,3-DICHLOROBENZENE	541-73-1	Water	0.2	1.0			ug/L	70-130	59-156	43
624.1	1,4-DICHLOROBENZENE	106-46-7	Water	0.2	1.0			ug/L	65-135	18-190	57
624.1	1,4-DIOXANE	123-91-1	Water	13	40.0			ug/L	44-154	44-154	30
624.1	1-CHLORO-4-(TRIFLUOROMETHYL) BENZENE (=4-CHLOROBENZOTRIFLUORIDE)	98-56-6	Water	0.22	10.0			ug/L	70-129	48-148	30
624.1	2,2-DICHLORO-1,1,1-TRIFLUOROETHANE (CFC123)	306-83-2	Water	0.2	1.0			ug/L	61-144	61-144	30
624.1	2,2-DICHLOROPROPANE	594-20-7	Water	0.24	1.0			ug/L	61-139	46-138	30
624.1	2,3,6-TRICHLOROTOLUENE	2077-46-5	Water	0.9	5.0			ug/L	25-200	25-200	30
624.1	2,4,5-TRICHLOROTOLUENE	6639-30-1	Water	1.2	5.0			ug/L	24-190	24-190	30
624.1	2,4-,2,5-, and 2,6-DICHLOROTOLUENE COELUTION	CASID39497	Water	0.59	1.5			ug/L	47-145	47-145	30
624.1	2,4-DICHLOROBENZOTRIFLUORIDE	320-60-5	Water	0.49	1.0			ug/L	48-169	48-169	30
624.1	2,5-DICHLOROBENZOTRIFLUORIDE	320-50-3	Water	0.3	1.0			ug/L	67-131	64-131	30
624.1	2-BUTANONE (MEK)	78-93-3	Water	0.78	5.0			ug/L	61-137	61-137	30
624.1	2-CHLOROBENZOTRIFLUORIDE	88-16-4	Water	0.2	1.0			ug/L	47-164	47-164	30
624.1	2-CHLOROETHYLVINYL ETHER	110-75-8	Water	0.53	10.0			ug/L	1-225	1-305	71
624.1	2-CHLOROTOLUENE	95-49-8	Water	0.2	1.0			ug/L	79-124	79-126	30
624.1	2-HEXANONE	591-78-6	Water	0.2	5.0			ug/L	63-124	56-132	30
624.1	2-METHYL-1,3-DIOXOLANE	497-26-7	Water	1.5	5.0			ug/L	68-124	68-124	30
624.1	2-METHYL-1-PROPANOL (ISOBUTYL ALCOHOL)	78-83-1	Water	33	100.0			ug/L	51-143	51-143	30
624.1	2-METHYL-2-PROPANOL (TERT-BUTYL ALCOHOL)	75-65-0	Water	16	100.0			ug/L	49-141	49-141	30
624.1	2-PROPANOL	67-63-0	Water	3.4	20.0			ug/L	52-136	52-136	30
624.1	3,4- and 2,3-DICHLOROTOLUENE COELUTION	CASID39496	Water	0.62	1.0			ug/L	48-143	48-143	30
624.1	3,4-DICHLOROBENZOTRIFLUORIDE	328-84-7	Water	0.33	1.0			ug/L	47-175	47-175	30
624.1	3-CHLOROBENZOTRIFLUORIDE	98-15-7	Water	0.2	1.0			ug/L	49-179	49-179	30
624.1	3-CHLOROTOLUENE	108-41-8	Water	0.2	1.0			ug/L	49-170	49-170	30
624.1	4-CHLOROTOLUENE	106-43-4	Water	0.2	1.0			ug/L	79-125	72-132	30
624.1	4-ISOPROPYLTOLUENE	99-87-6	Water	0.2	1.0			ug/L	78-133	78-133	30
624.1	4-METHYL-2-PENTANONE (MIBK)	108-10-1	Water	0.2	5.0			ug/L	66-124	60-141	30
624.1	ACETONE	67-64-1	Water	2.1	5.0			ug/L	40-161	35-183	30
624.1	ACETONITRILE-ALLYL CHLORIDE COELUTION	75-05-8	Water	5.2	10.0			ug/L	46-154	46-154	30
624.1	ACROLEIN	107-02-8	Water	0.9	10.0			ug/L	60-140	40-160	60
624.1	ACRYLONITRILE	107-13-1	Water	0.9	10.0			ug/L	60-140	40-160	60
624.1	AMYLACETATE	628-63-7	Water	0.2	2.0			ug/L	37-129	37-129	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
624.1	BENZENE	71-43-2	Water	0.2	1.0			ug/L	65-135	37-151	61
624.1	BROMODICHLOROMETHANE	75-27-4	Water	0.2	1.0			ug/L	65-135	35-155	56
624.1	BROMOFORM	75-25-2	Water	0.25	1.0			ug/L	70-130	45-169	42
624.1	BROMOMETHANE	74-83-9	Water	0.7	1.0			ug/L	15-185	1-242	61
624.1	CARBON DISULFIDE	75-15-0	Water	0.42	10.0			ug/L	66-128	59-140	30
624.1	CARBON TETRACHLORIDE	56-23-5	Water	0.34	1.0			ug/L	70-130	70-140	41
624.1	CHLOROBENZENE	108-90-7	Water	0.2	1.0			ug/L	65-135	37-160	53
624.1	CHLOROETHANE	75-00-3	Water	0.23	1.0			ug/L	40-160	14-230	78
624.1	CHLORODIFLUOROMETHANE (CFC22)	75-45-6	Water	0.28	1.0			ug/L	70-130	50-150	30
624.1	CHLOROFORM	67-66-3	Water	0.24	1.0			ug/L	70-135	51-138	54
624.1	CHLOROMETHANE	74-87-3	Water	0.28	1.0			ug/L	1-205	1-273	60
624.1	CIS-1,2-DICHLOROETHENE	156-59-2	Water	0.23	1.0			ug/L	80-121	77-127	30
624.1	CIS-1,3-DICHLOROPROPENE	10061-01-5	Water	0.2	1.0			ug/L	25-175	1-227	58
624.1	CYCLOHEXANE	110-82-7	Water	0.26	1.0			ug/L	69-120	52-145	30
624.1	DIBROMOCHLOROMETHANE	124-48-1	Water	0.2	1.0			ug/L	70-135	53-149	50
624.1	DIBROMOMETHANE	74-95-3	Water	0.2	1.0			ug/L	80-118	77-119	30
624.1	DICHLORODIFLUOROMETHANE	75-71-8	Water	0.21	1.0			ug/L	59-155	49-154	30
624.1	DICHLOROMETHANE (METHYLENE CHLORIDE)	75-09-2	Water	0.65	1.0			ug/L	60-140	1-221	28
624.1	EPICHLOROHYDRIN	106-89-8	Water	1.1	5.0			ug/L	55-136	55-136	30
624.1	ETHYL ACETATE	141-78-6	Water	0.26	2.0			ug/L	57-127	18-138	30
624.1	ETHYLBENZENE	100-41-4	Water	0.2	1.0			ug/L	60-140	37-162	63
624.1	IODOMETHANE	74-88-4	Water	4.3	5.0			ug/L	18-160	18-160	30
624.1	ISOPROPYLACETATE	108-21-4	Water	0.2	2.0			ug/L	55-126	31-132	30
624.1	ISOPROPYLBENZENE	98-82-8	Water	0.2	1.0			ug/L	77-128	77-128	30
624.1	M+P XYLENE	179601-23-1	Water	0.53	2.0			ug/L	80-126	80-126	30
624.1	METHYL-TERT-BUTYL ETHER	1634-04-4	Water	0.2	1.0			ug/L	75-118	75-119	30
624.1	NAPHTHALENE	91-20-3	Water	0.24	5.0			ug/L	59-140	57-153	30
624.1	N-BUTYL ACETATE	123-86-4	Water	0.55	1.0			ug/L	71-129	61-139	30
624.1	N-BUTYLBENZENE	104-51-8	Water	0.2	1.0			ug/L	78-133	78-133	30
624.1	N-HEPTANE	142-82-5	Water	0.26	1.0			ug/L	57-134	47-141	30
624.1	N-PROPYLBENZENE	103-65-1	Water	0.2	1.0			ug/L	78-131	78-131	30
624.1	O-XYLENE	95-47-6	Water	0.2	1.0			ug/L	79-123	79-123	30
624.1	SEC-BUTYLBENZENE	135-98-8	Water	0.2	1.0			ug/L	75-129	75-129	30
624.1	STYRENE	100-42-5	Water	0.2	1.0			ug/L	80-124	74-136	30
624.1	TERT-BUTYLBENZENE	98-06-6	Water	0.2	1.0			ug/L	76-126	68-127	30
624.1	TETRACHLOROETHENE	127-18-4	Water	0.21	1.0			ug/L	70-130	64-148	39
624.1	TETRAHYDROFURAN	109-99-9	Water	1.7	10.0			ug/L	48-141	48-141	30
624.1	TOLUENE	108-88-3	Water	0.2	1.0			ug/L	70-130	47-150	41
624.1	TOTAL XYLENES	1330-20-7	Water	0.4	2.0			ug/L	78-121	78-121	30
624.1	TRANS-1,2-DICHLOROETHENE	156-60-5	Water	0.2	1.0			ug/L	70-130	54-156	45
624.1	TRANS-1,3-DICHLOROPROPENE	10061-02-6	Water	0.23	1.0			ug/L	50-150	17-183	86
624.1	TRANS-1,4-DICHLORO-2-BUTENE	110-57-6	Water	0.78	1.0			ug/L	39-137	27-155	30
624.1	TRICHLOROETHENE	79-01-6	Water	0.2	1.0			ug/L	65-135	70-157	48
624.1	TRICHLOROFLUOROMETHANE	75-69-4	Water	0.24	1.0			ug/L	50-150	17-181	84
624.1	VINYL CHLORIDE	75-01-4	Water	0.2	1.0			ug/L	5-195	1-251	66
624.1-SURR	1,2-DICHLOROETHANE-D4-SURR	17060-07-0	Water	NA	NA			%	73-125	73-125	NA
624.1-SURR	4-BROMOFLUOROBENZENE-SURR	460-00-4	Water	NA	NA			%	85-122	85-122	NA
624.1-SURR	TOLUENE-D8-SURR	2037-26-5	Water	NA	NA			%	87-121	87-121	NA
625.1	1,2,3,4-TETRACHLOROBENZENE	634-66-2	Water	1.5				ug/L	25-127	25-127	30
625.1	1,2,3,5/1,2,4,5-TETRACHLOROBENZENE	CASID39648	Water	1.2				ug/L	15-132	15-132	30
625.1	1,2,4-TRICHLOROBENZENE	120-82-1	Water	1.2	5.0	5.0	10.0	ug/L	44-142	44-142	50
625.1	1,2-DIPHENYLHYDRAZINE	122-66-7	Water	1.4	5.0	5.0	10.0	ug/L	51-110	51-110	30
625.1	1,4-DIOXANE	123-91-1	Water	2.8	5.0			ug/L	26-62	26-62	30
625.1	1-METHYL-2-PYRROLIDINONE	872-50-4	Water	1	20.0			ug/L	10-76	10-76	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
625.1	1-METHYLNAPHTHALENE	90-12-0	Water	1.5	5.0	5.0	10.0	ug/L	43-103	43-103	30
625.1	2,2'-OXYBIS(1-CHLOROPROPANE) (Bis(1-chloroisopropyl)ether)	108-60-1	Water	1.4	5.0	5.0	10.0	ug/L	36-166	36-166	76
625.1	2,3,4-TRICHLOROPHENOL	15950-66-0	Water	1.1				ug/L	30-130	30-130	30
625.1	2,3,5-TRICHLOROPHENOL	933-78-8	Water	1.4				ug/L	30-130	30-130	30
625.1	2,3,6-TRICHLOROPHENOL	933-75-5	Water	1				ug/L	30-130	30-130	30
625.1	2,4,5-TRICHLOROPHENOL	95-95-4	Water	1.1	5.0	5.0	10.0	ug/L	48-134	48-134	30
625.1	2,4,6-TRICHLOROPHENOL	88-06-2	Water	1.4	5.0	5.0	10.0	ug/L	37-144	37-144	58
625.1	2,4-DICHLOROPHENOL	120-83-2	Water	1.3	5.0	5.0	10.0	ug/L	39-135	39-135	50
625.1	2,4-DIMETHYLPHENOL	105-67-9	Water	1.4	5.0	5.0	10.0	ug/L	32-120	32-120	58
625.1	2,4-DINITROPHENOL	51-28-5	Water	20	50.0	25.0	50.0	ug/L	1-191	1-191	132
625.1	2,4-DINITROTOLUENE	121-14-2	Water	2.4	5.0	5.0	10.0	ug/L	39-139	39-139	42
625.1	2,4-DI-T-PENTYLPHENOL	120-95-6	Water	1	5.0			ug/L	57-128	57-128	30
625.1	2,5-DICHLOROPHENOL	538-78-8	Water	1				ug/L	30-130	30-130	30
625.1	2,6-DICHLOROPHENOL	87-65-0	Water	1.2	10.0	5.0	10.0	ug/L	44-138	44-138	30
625.1	2,6-DINITROTOLUENE	606-20-2	Water	3.1	5.0	5.0	10.0	ug/L	50-158	50-158	48
625.1	2-CHLORONAPHTHALENE	91-58-7	Water	1.4	5.0	5.0	10.0	ug/L	60-120	60-120	24
625.1	2-CHLOROPHENOL	95-57-8	Water	1.1	5.0	5.0	10.0	ug/L	23-134	23-134	61
625.1	2-METHYLNAPHTHALENE	91-57-6	Water	1.3	5.0	5.0	10.0	ug/L	34-105	34-105	30
625.1	2-METHYLPHENOL	95-48-7	Water	1	5.0	5.0	10.0	ug/L	40-99	40-99	30
625.1	2-NITROANILINE	88-74-4	Water	1.4	5.0	25.0	50.0	ug/L	52-133	52-133	30
625.1	2-NITROPHENOL	88-75-5	Water	1.5	5.0	5.0	10.0	ug/L	29-182	29-182	55
625.1	2-PHENOXYETHANOL	122-99-6	Water	1	5.0			ug/L	48-117	48-117	30
625.1	3,3'-DICHLOROBENZIDINE	91-94-1	Water	2.7	5.0	5.0	10.0	ug/L	1-262	1-262	108
625.1	3,4-DICHLOROPHENOL	95-77-2	Water	2.5				ug/L	30-130	30-130	30
625.1	3,5-DICHLOROPHENOL	591-35-5	Water	1.6				ug/L	30-130	30-130	30
625.1	3+4 CHLOROPHENOL COELUTION	CASID30205	Water	1.5				ug/L	30-130	30-130	30
625.1	3+4-METHYLPHENOL (M,P-CRESOL)	106-44-5 + 108	Water	2.8	5.0	10.0	20.0	ug/L	40-92	40-92	30
625.1	3-NITROANILINE	99-09-2	Water	2.8	5.0	25.0	50.0	ug/L	42-111	42-111	30
625.1	4,4-Butylide(6-TERT-BUTYL-3-CRESOL) (SANTOWHI	85-60-9	Water	3.5	5.0			ug/L	15-149	15-149	30
625.1	4,6-DINITRO-2-METHYLPHENOL	534-52-1	Water	8.7	50.0	25.0	50.0	ug/L	1-181	1-181	203
625.1	4-BROMOPHENYL-PHENYLETHER	101-55-3	Water	1.7	5.0	5.0	10.0	ug/L	53-127	53-127	43
625.1	4-CHLORO-3,5-DIMETHYLPHENOL	88-04-0	Water	1	5.0			ug/L	58-119	58-119	30
625.1	4-CHLORO-3-METHYLPHENOL	59-50-7	Water	1.1	5.0	5.0	10.0	ug/L	22-147	22-147	73
625.1	4-CHLOROANILINE	106-47-8	Water	2.6	5.0	5.0	10.0	ug/L	44-109	44-109	30
625.1	4-CHLOROPHENYL-PHENYLETHER	7005-72-3	Water	1.5	5.0	5.0	10.0	ug/L	25-158	25-158	61
625.1	4-NITROANILINE	100-01-6	Water	1.4	5.0	5.0	10.0	ug/L	54-133	54-133	30
625.1	4-NITROPHENOL	100-02-7	Water	6.4	50.0	25.0	50.0	ug/L	1-132	1-132	131
625.1	ACENAPHTHENE	83-32-9	Water	1.4	5.0	5.0	10.0	ug/L	47-145	47-145	48
625.1	ACENAPHTHYLENE	208-96-8	Water	1.4	5.0	5.0	10.0	ug/L	33-145	33-145	74
625.1	ACETOPHENONE	98-86-2	Water	1.3	5.0	10.0	20.0	ug/L	46-114	46-114	30
625.1	ALPHA-TERPINEOL, TOTAL	98-55-5	Water	2.4	10.0			ug/L	64-145	64-145	30
625.1	ANILINE	62-53-3	Water	3.1	5.0			ug/L	32-100	32-100	30
625.1	ANTHRACENE	120-12-7	Water	1.3	5.0	5.0	10.0	ug/L	27-133	27-133	66
625.1	ATRAZINE	1912-24-9	Water	2.1	5.0	10.0	20.0	ug/L	61-164	61-164	30
625.1	BENZIDINE	92-87-5	Water	13	100.0	50.0	100.0	ug/L	10-99	10-99	30
625.1	BENZALDEHYDE	100-52-7	Water	1	5.0			ug/L	21-119	21-119	30
625.1	BENZO(A)ANTHRACENE	56-55-3	Water	1.6	5.0	5.0	10.0	ug/L	33-143	33-143	53
625.1	BENZO(A)PYRENE	50-32-8	Water	1.2	5.0	5.0	10.0	ug/L	17-163	17-163	72
625.1	BENZO(B)FLUORANTHENE	205-99-2	Water	1.2	5.0	5.0	10.0	ug/L	24-159	24-159	71
625.1	BENZO(G,H,I)PERYLENE	191-24-2	Water	1	5.0	5.0	10.0	ug/L	1-200	1-200	97
625.1	BENZO(K)FLUORANTHENE	207-08-9	Water	1.3	5.0	5.0	10.0	ug/L	11-162	11-162	63
625.1	BENZOIC ACID	65-85-0	Water	36	50.0	50.0	100.0	ug/L	10-94	10-94	30
625.1	BENZYL ALCOHOL	100-51-6	Water	1.6	5.0	5.0	10.0	ug/L	31-109	31-109	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
625.1	BIPHENYL	92-52-4	Water	1.4	5.0	5.0	10.0	ug/L	39-106	39-106	30
625.1	BIS(1-CHLOROISOPROPYL) ETHER	108-60-1	Water	1.4	5.0	5.0	10.0	ug/L	36-166	36-166	76
625.1	BIS(-2-CHLOROETHOXY)METHANE	111-91-1	Water	1.9	5.0	5.0	10.0	ug/L	33-184	33-184	54
625.1	BIS(2-CHLOROETHYL)ETHER	111-44-4	Water	1.3	5.0	5.0	10.0	ug/L	12-158	12-158	108
625.1	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	Water	2.3	10.0	10.0	20.0	ug/L	8-158	8-158	82
625.1	BUTYL BENZYL PHTHALATE	85-68-7	Water	2.9	5.0	5.0	10.0	ug/L	1-152	1-152	60
625.1	CARBAZOLE	86-74-8	Water	1.6	5.0	5.0	10.0	ug/L	56-139	56-139	30
625.1	CHRYSENE	218-01-9	Water	1.2	5.0	5.0	10.0	ug/L	17-168	17-168	87
625.1	DIBENZO(A,H)ANTHRACENE	53-70-3	Water	1.1	5.0	5.0	10.0	ug/L	1-200	1-200	126
625.1	DIBENZOFURAN	132-64-9	Water	1.4	5.0	5.0	10.0	ug/L	55-110	55-110	30
625.1	DIETHYLPHTHALATE	84-66-2	Water	1.1	5.0	5.0	10.0	ug/L	1-120	1-120	100
625.1	DIMETHYL PHTHALATE	131-11-3	Water	1.3	5.0	5.0	10.0	ug/L	1-120	1-120	183
625.1	DIMETHYLTEREPHTHALATE	120-61-6	Water	1	5.0	5.0	10.0	ug/L	60-125	60-125	30
625.1	DI-N-BUTYLPHTHALATE	84-74-2	Water	1.7	5.0	5.0	10.0	ug/L	1-120	1-120	47
625.1	DI-N-OCTYL PHTHALATE	117-84-0	Water	3.3	5.0	5.0	10.0	ug/L	4-146	4-146	69
625.1	ETHYL ACRYLATE	140-88-5	Water	1	5.0			ug/L	15-87	15-87	30
625.1	FLUORANTHENE	206-44-0	Water	1.5	5.0	5.0	10.0	ug/L	26-137	26-137	66
625.1	FLUORENE	86-73-7	Water	1.3	5.0	5.0	10.0	ug/L	59-121	59-121	38
625.1	HEXACHLOROBENZENE	118-74-1	Water	1.6	5.0	5.0	10.0	ug/L	1-152	1-152	55
625.1	HEXACHLOROBUTADIENE	87-68-3	Water	2.2	5.0	5.0	10.0	ug/L	24-120	24-120	62
625.1	HEXACHLOROCYCLOPENTADIENE	77-47-4	Water	2.2	5.0	5.0	10.0	ug/L	10-99	10-103	30
625.1	HEXACHLOROETHANE	67-72-1	Water	1.1	5.0	5.0	10.0	ug/L	40-120	40-120	52
625.1	INDENO(1,2,3-CD)PYRENE	193-39-5	Water	1.8	5.0	5.0	10.0	ug/L	1-171	1-171	99
625.1	ISOPHORONE	78-59-1	Water	1.4	5.0	5.0	10.0	ug/L	21-196	21-196	93
625.1	N,N-DIMETHYLANILINE	121-69-7	Water	1	20.0			ug/L	27-118	27-118	30
625.1	N,N-DIMETHYLFORMAMIDE	68-12-2	Water	3.2	5.0			ug/L	5-26	5-26	30
625.1	NAPHTHALENE	91-20-3	Water	1.1	5.0	5.0	10.0	ug/L	21-133	21-133	65
625.1	NITROBENZENE	98-95-3	Water	1.5	5.0	5.0	10.0	ug/L	35-180	35-180	62
625.1	N-NITROSODIMETHYLAMINE	62-75-9	Water	1	5.0	5.0	10.0	ug/L	31-70	20-80	30
625.1	N-NITROSO-DI-N-PROPYLAMINE	621-64-7	Water	1.2	5.0	5.0	10.0	ug/L	1-200	1-200	87
625.1	N-NITROSODIPHENYLAMINE	86-30-6	Water	2.7	5.0	5.0	10.0	ug/L	45-123	43-127	30
625.1	OCTACHLOROCYCLOPENTENE	706-78-5	Water	3.2				ug/L	37-139	25-144	30
625.1	PENTACHLOROBENZENE	608-93-5	Water	1.4				ug/L	38-127	38-127	30
625.1	PENTACHLOROPHENOL	87-86-5	Water	24	50.0	25.0	50.0	ug/L	14-176	14-176	86
625.1	PHENANTHRENE	85-01-8	Water	1.4	5.0	5.0	10.0	ug/L	54-120	54-120	39
625.1	PHENOL	108-95-2	Water	1	5.0	5.0	10.0	ug/L	5-120	5-120	64
625.1	PYRENE	129-00-0	Water	1.5	5.0	5.0	10.0	ug/L	52-120	52-120	49
625.1	PYRIDINE	110-86-1	Water	1	5.0			ug/L	10-123	10-123	30
625.1	TRIPHENYL PHOSPHATE	115-86-6	Water	3.6	20.0			ug/L	39-122	58-142	30
625.1-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Water	NA	NA			%	35-141	35-141	NA
625.1-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Water	NA	NA			%	31-118	31-118	NA
625.1-SURR	2-FLUOROPHENOL-SURR	367-12-4	Water	NA	NA			%	16-75	10-105	NA
625.1-SURR	NITROBENZENE-d5-SURR	4165-60-0	Water	NA	NA			%	31-110	31-110	NA
625.1-SURR	PHENOL-d6-SURR	13127-88-3	Water	NA	NA			%	11-56	10-107	NA
625.1-SURR	TERPHENYL-d14-SURR	1718-51-0	Water	NA	NA			%	10-165	10-165	NA
625.1 LL	**see 8270D LL for compounds, MRLs, and SURR. LCS/MS same as 625.**			NA							
8015C DRO	DIESEL RANGE ORGANICS C10-C28	68334-30-5	Water	75	100			ug/L	31-99	10-120	30
8015C ORO	OIL RANGE ORGANICS C28-C40	NA	Water	75	100			ug/L	NA	50-150	30
8015C DRO-SURR	O-TERPHENYL-SURR	84-15-1	Water	NA	NA			%	30-132	30-132	NA
8015C DRO	DIESEL RANGE ORGANICS C10-C28	68334-30-5	Solid	32000	40000			ug/kg	29-124	10-200	50
8015C ORO	OIL RANGE ORGANICS C28-C40	NA	Solid	32000	40000			ug/kg	NA	50-150	50
8015C DRO-SURR	O-TERPHENYL-SURR	84-15-1	Solid	NA	NA			%	22-159	22-159	NA
8015C DRO	DIESEL RANGE ORGANICS C10-C28	68334-30-5	Non-Aq	NA	100			mg/kg	50-150	41-113	50
8015C ORO	OIL RANGE ORGANICS C28-C40	NA	Non-Aq	NA	100			mg/kg	NA	50-150	50

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8015C DRO-SURR	O-TERPHENYL-SURR	84-15-1	Non-Aq	NA	NA			%	55-116	55-116	NA
8015C GRO	GASOLINE RANGE ORGANICS C6-C10	8006-61-9	Water	29	100			ug/L	46-131	46-131	30
8015C GRO-SURR	O-TERPHENYL-SURR	84-15-1	Water	NA	NA			%	70-130	70-130	NA
8015C GRO	GASOLINE RANGE ORGANICS C6-C10	8006-61-9	Solid	86	100			ug/kg	17-173	17-173	50
8015C GRO-SURR	O-TERPHENYL-SURR	84-15-1	Solid	NA	NA			%	70-130	70-130	NA
8015C GLY	ETHYLENE GLYCOL	107-21-1	Water	4920	5000			ug/L	58-125	50-137	30
8015C GLY	PROPYLENE GLYCOL	57-55-6	Water	4800	5000			ug/L	NA	61-130	30
8015C GLY-SURR	CYCLOHEXANOL-SURR	108-93-0	Water	NA	NA			%	59-134	59-134	NA
8015C GLY	ETHYLENE GLYCOL	107-21-1	Non-Aq	49000	50000			ug/kg	58-125	55-115	30
8015C GLY	PROPYLENE GLYCOL	57-55-6	Non-Aq	47000	50000			ug/kg	66-121	64-120	30
8015C GLY-SURR	CYCLOHEXANOL-SURR	108-93-0	Non-Aq	NA	NA			%	59-134	59-134	NA
8015C Alc	1,4-DIOXANE	123-91-1	Water	930	1000			ug/L	70-104	63-151	30
8015C Alc	1-BUTANOL (N-BUTANOL)	71-36-3	Water	380	1000			ug/L	78-119	64-149	30
8015C Alc	2-ETHOXYETHANOL (CELLOSOLVE)	110-80-5	Water	410	1000			ug/L	49-154	60-157	30
8015C Alc	2-METHOXYETHANOL (METHYL CELLOSOLVE)	109-86-4	Water	390	1000			ug/L	53-143	48-159	30
8015C Alc	2-METHYL-1-PROPANOL (ISOBUTLYL ALCOHOL)	78-83-1	Water	270	1000			ug/L	83-116	62-149	30
8015C Alc	2-PROPANOL (ISOPROPANOL)	67-63-0	Water	440	1000			ug/L	77-124	64-151	30
8015C Alc	DIISOPROPYL ETHER	108-20-3	Water	810	1000			ug/L	38-133	10-198	30
8015C Alc	ETHANOL	64-17-5	Water	470	1000			ug/L	71-128	57-152	30
8015C Alc	ETHYL ACETATE	141-78-6	Water	700	1000			ug/L	76-126	48-155	30
8015C Alc	METHANOL	67-56-1	Water	940	1000			ug/L	67-133	56-157	30
8015C Alc	PYRIDINE	110-86-1	Water	550	1000			ug/L	77-122	62-149	30
8015C Alc	2-HEXANONE-OPTIONAL SURR	591-78-6	Water	NA	NA			%	85-121	85-121	NA

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8015C SVO	1-BUTANOL (N-BUTANOL)	71-36-3	Non-Aq	6.8 (68)	10 (100)			mg/kg	72-134	72-134	30
8015C SVO	1-METHOXY-2-PROPANOL	107-98-2	Non-Aq	8.2 (82)	10 (100)			mg/kg	50-150	50-150	30
8015C SVO	1-METHOXY-2-PROPYL ACEATE (PGMEA)	108-65-6	Non-Aq	4.7 (47)	10 (100)			mg/kg	74-118	74-118	30
8015C SVO	1-METHYL-2-PYRROLIDINONE (NMP)	872-50-4	Non-Aq	7.4 (74)	10 (100)			mg/kg	70-136	50-138	30
8015C SVO	2-ETHOXYETHYL ACETATE	99--	Non-Aq	5.7 (57)	10 (100)			mg/kg	75-118	75-118	30
8015C SVO	2-METHOXYETHANOL (METHYL CELLOSOLVE)	109-86-4	Non-Aq	7.2 (72)	10 (100)			mg/kg	57-130	57-130	30
8015C SVO	2-METHOXYETHYL ACETATE (METHYL CELLOSOL	110-49-6	Non-Aq	6 (60)	10 (100)			mg/kg	72-119	72-119	30
8015C SVO	2-PROPANOL	67-63-0	Non-Aq	7.8 (78)	10 (100)			mg/kg	68-124	68-124	30
8015C SVO	CYCLOHEXANONE	108-94-1	Non-Aq	5.6 (56)	10 (100)			mg/kg	50-150	50-150	30
8015C SVO	ETHYL 2-HYDROXYPROPIONATE (ETHYL LACTATE	97-64-3	Non-Aq	7.6 (76)	10 (100)			mg/kg	52-132	52-132	30
8015C SVO	GAMMA-BUTYROLACTONE	96-48-0	Non-Aq	7.4 (74)	10 (100)			mg/kg	47-138	47-138	30
8015C SVO	METHANOL	67-56-1	Non-Aq	8.9 (89)	10 (100)			mg/kg	56-142	56-142	30
8015C SVO	N-BUTYL ACETATE	123-86-4	Non-Aq	7.4 (74)	10 (100)			mg/kg	40-150	40-150	30
8015C SVO	PHENOL	108-95-2	Non-Aq	6.4 (64)	10 (100)			mg/kg	64-131	64-131	30
8015C SVO	2-HEXANONE-OPTIONAL SURR	591-78-6	Non-Aq	NA	NA			%	80-120	80-120	NA
8081B	4,4'-DDD	72-54-8	Water	0.02	0.05	0.025	0.050	ug/L	38-116	38-157	30
8081B	4,4'-DDE	72-55-9	Water	0.02	0.05	0.025	0.050	ug/L	40-107	10-200	30
8081B	4,4'-DDT	50-29-3	Water	0.02	0.05	0.025	0.050	ug/L	41-121	19-154	30
8081B	ALDRIN	309-00-2	Water	0.02	0.05	0.025	0.050	ug/L	27-85	26-149	30
8081B	ALPHA-BHC	319-84-6	Water	0.02	0.05	0.025	0.050	ug/L	39-107	27-154	30
8081B	ALPHA-CHLORDANE	5103-71-9	Water	0.02	0.05	0.025	0.050	ug/L	44-107	35-160	30
8081B	BETA-BHC	319-85-7	Water	0.02	0.05	0.025	0.050	ug/L	47-110	32-184	30
8081B	CHLORDANE, TECHNICAL	57-74-9	Water	0.13	0.25	0.200	0.250	ug/L	28-143	28-143	30
8081B	DELTA-BHC	319-86-8	Water	0.02	0.05	0.025	0.050	ug/L	43-109	10-182	30
8081B	DIELDRIN	60-57-1	Water	0.02	0.05	0.025	0.050	ug/L	45-112	41-164	30
8081B	ENDOSULFAN I	959-98-8	Water	0.02	0.05	0.025	0.050	ug/L	44-111	47-149	30
8081B	ENDOSULFAN II	33213-65-9	Water	0.02	0.05	0.025	0.050	ug/L	44-114	51-148	30
8081B	ENDOSULFAN SULFATE	1031-07-8	Water	0.02	0.05	0.025	0.050	ug/L	38-119	10-170	30
8081B	ENDRIN	72-20-8	Water	0.02	0.05	0.025	0.050	ug/L	47-116	48-165	30
8081B	ENDRIN ALDEHYDE	7421-93-4	Water	0.02	0.05	0.025	0.050	ug/L	10-134	10-94	30
8081B	ENDRIN KETONE	53494-70-5	Water	0.02	0.05	0.025	0.050	ug/L	44-120	48-162	30
8081B	GAMMA-BHC (LINDANE)	58-89-9	Water	0.02	0.05	0.025	0.050	ug/L	41-105	43-164	30
8081B	GAMMA-CHLORDANE	5566-34-7	Water	0.02	0.05	0.025	0.050	ug/L	41-107	35-165	30
8081B	HEPTACHLOR	76-44-8	Water	0.02	0.05	0.025	0.050	ug/L	33-99	29-168	30
8081B	HEPTACHLOR EPOXIDE	1024-57-3	Water	0.02	0.05	0.025	0.050	ug/L	46-111	29-180	30
8081B	METHOXYCHLOR	72-43-5	Water	0.02	0.05	0.025	0.050	ug/L	29-138	38-162	30
8081B	MIREX	2385-85-5	Water	0.02	0.05			ug/L	42-115	10-200	30
8081B	TOXAPHENE	8001-35-2	Water	0.5	0.5	0.500	1.0	ug/L	19-147	46-130	30
8081B-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Water	NA	NA	0.050	0.100	ug/L	10-111	10-111	NA
8081B-SURR	TETRACHLORO-META-XYLENE (TCMX)-SURR	877-09-8	Water	NA	NA	0.05	0.10	ug/L	10-101	10-101	NA

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8081B-MW	4,4'-DDD	72-54-8	Solid	0.84	1.7	1.7	3.3	ug/kg	48-121	10-165	30
8081B	4,4'-DDE	72-55-9	Solid	0.84	1.7	1.7	3.3	ug/kg	51-119	10-200	30
8081B	4,4'-DDT	50-29-3	Solid	0.84	1.7	1.7	3.3	ug/kg	51-126	10-200	30
8081B	ALDRIN	309-00-2	Solid	0.84	1.7	1.7	3.3	ug/kg	45-109	10-171	30
8081B	ALPHA-BHC	319-84-6	Solid	0.84	1.7	1.7	3.3	ug/kg	44-109	10-149	30
8081B	ALPHA-CHLORDANE	5103-71-9	Solid	0.84	1.7	1.7	3.3	ug/kg	52-114	10-175	30
8081B	BETA-BHC	319-85-7	Solid	0.84	1.7	1.7	3.3	ug/kg	49-119	10-162	30
8081B	CHLORDANE, TECHNICAL	57-74-9	Solid	4.2	8.3	8.3	17.0	ug/kg	41-159	40-145	30
8081B	DELTA-BHC	319-86-8	Solid	0.84	1.7	1.7	3.3	ug/kg	49-113	10-157	30
8081B	DIELDRIN	60-57-1	Solid	0.84	1.7	1.7	3.3	ug/kg	56-111	10-200	30
8081B	ENDOSULFAN I	959-98-8	Solid	0.84	1.7	1.7	3.3	ug/kg	54-109	10-174	30
8081B	ENDOSULFAN II	33213-65-9	Solid	0.84	1.7	1.7	3.3	ug/kg	50-116	10-185	30
8081B	ENDOSULFAN SULFATE	1031-07-8	Solid	0.84	1.7	1.7	3.3	ug/kg	55-115	10-155	30
8081B	ENDRIN	72-20-8	Solid	0.84	1.7	1.7	3.3	ug/kg	49-124	10-200	30
8081B	ENDRIN ALDEHYDE	7421-93-4	Solid	0.84	1.7	1.7	3.3	ug/kg	21-139	10-148	30
8081B	ENDRIN KETONE	53494-70-5	Solid	0.84	1.7	1.7	3.3	ug/kg	50-124	10-197	30
8081B	GAMMA-BHC (LINDANE)	58-89-9	Solid	0.84	1.7	1.7	3.3	ug/kg	43-112	10-170	30
8081B	GAMMA-CHLORDANE	5566-34-7	Solid	0.84	1.7	1.7	3.3	ug/kg	51-117	10-176	30
8081B	HEPTACHLOR	76-44-8	Solid	0.84	1.7	1.7	3.3	ug/kg	43-115	12-160	30
8081B	HEPTACHLOR EPOXIDE	1024-57-3	Solid	0.84	1.7	1.7	3.3	ug/kg	53-113	10-180	30
8081B	METHOXYCHLOR	72-43-5	Solid	0.84	1.7	1.7	3.3	ug/kg	47-141	10-200	30
8081B	MIREX	2385-85-5	Solid	0.84	1.7			ug/kg	47-138	10-200	30
8081B	TOXAPHENE	8001-35-2	Solid	19	33	33	33	ug/kg	52-150	33-122	30
8081B-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Solid	NA	NA	1.67	3.33	ug/kg	10-159	10-159	NA
8081B-SURR	TETRACHLORO-META-XYLENE (TCMX)-SURR	877-09-8	Solid	NA	NA	1.670	3.330	ug/kg	10-132	10-132	NA
The reporting limits presented are based on the use of 15g of sample and 100% solids. The reporting limits will be higher if the sample contains moisture and if the lab uses less than 15g. It is often necessary to use less than 15g due to overheating produced when the sample matrix is exposed to the microwave energy.											
1311/8081B (TCLP)	4,4'-DDE	72-55-9	Solid	NA	1			ug/L	same as water	ame as water	30
1311/8081B (TCLP)	4,4'-DDT	50-29-3	Solid	NA	1			ug/L			30
1311/8081B (TCLP)	ALPHA-BHC	319-84-6	Solid	NA	0.5			ug/L			30
1311/8081B (TCLP)	BETA-BHC	319-85-7	Solid	NA	0.5			ug/L			30
1311/8081B (TCLP)	CHLORDANE	57-74-9	Solid	NA	2.5			ug/L			30
1311/8081B (TCLP)	ENDRIN	72-20-8	Solid	NA	1			ug/L			30
1311/8081B (TCLP)	GAMMA-BHC (LINDANE)	58-89-9	Solid	NA	0.5			ug/L			30
1311/8081B (TCLP)	HEPTACHLOR	76-44-8	Solid	NA	0.5			ug/L			30
1311/8081B (TCLP)	HEPTACHLOR EPOXIDE	1024-57-3	Solid	NA	0.5			ug/L			30
1311/8081B (TCLP)	METHOXYCHLOR	72-43-5	Solid	NA	0.5			ug/L			30
1311/8081B (TCLP)	TOXAPHENE	8001-35-2	Solid	NA	10			ug/L			30
1311/8081B-SURR	DECACHLOROBIPHENYL (DCB) -SURR	2051-24-3	Solid	NA	NA			%			NA
1311/8081B-SURR	TETRACHLORO-META-XYLENE (TCMX)-SURR	877-09-8	Solid	NA	NA			%			NA

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8082A	PCB 1016	12674-11-2	Water	0.5	1.0	0.50	1.0	ug/L	35-131	32-142	30
8082A	PCB 1221	11104-28-2	Water	1	2.0	1.0	2.0	ug/L	45-125	45-125	30
8082A	PCB 1232	11141-16-5	Water	0.5	1.0	0.50	1.0	ug/L	64-133	50-150	30
8082A	PCB 1242	53469-21-9	Water	0.5	1.0	0.50	1.0	ug/L	67-132	65-118	30
8082A	PCB 1248	12672-29-6	Water	0.5	1.0	0.50	1.0	ug/L	75-135	56-119	30
8082A	PCB 1254	11097-69-1	Water	0.5	1.0	0.50	1.0	ug/L	55-154	55-154	30
8082A	PCB 1260	11096-82-5	Water	0.5	1.0	0.50	1.0	ug/L	37-141	28-142	30
8082A	PCB 1262	37324-23-5	Water	0.5	1.0	0.50	1.0	ug/L	70-130	50-150	30
8082A	PCB 1268	11100-14-4	Water	0.5	1.0	0.50	1.0	ug/L	56-156	56-156	30
8082A-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Water	NA	NA	0.05	0.10	ug/L	10-118	10-118	NA
8082A-SURR	TETRACHLORO-META-XYLENE (TCMX)-SURR	877-09-8	Water	NA	NA	0.05	0.10	ug/L	10-103	10-103	NA
8082A LL	PCB 1016	12674-11-2	Water	0.025	0.05			ug/L	24-119	13-146	30
8082A LL	PCB 1221	11104-28-2	Water	0.025	0.05			ug/L	70-130	50-150	30
8082A LL	PCB 1232	11141-16-5	Water	0.025	0.05			ug/L	70-130	50-150	30
8082A LL	PCB 1242	53469-21-9	Water	0.025	0.05			ug/L	65-118	65-118	30
8082A LL	PCB 1248	12672-29-6	Water	0.025	0.05			ug/L	56-119	56-119	30
8082A LL	PCB 1254	11097-69-1	Water	0.025	0.05			ug/L	60-143	60-143	30
8082A LL	PCB 1260	11096-82-5	Water	0.025	0.05			ug/L	23-115	10-135	30
8082A LL	PCB 1262	37324-23-5	Water	0.025	0.05			ug/L	70-130	50-150	30
8082A LL	PCB 1268	11100-14-4	Water	0.025	0.05			ug/L	70-130	50-150	30
8082A-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Water	NA	NA			%	10-125	10-125	NA
8082A-SURR	TETRACHLORO-META-XYLENE (TCMX)-SURR	877-09-8	Water	NA	NA			%	18-126	18-126	NA
8082A/3546	PCB 1016	12674-11-2	Solid	17	33	33	67	ug/kg	34-141	26-137	30
8082A/3546	PCB 1221	11104-28-2	Solid	26	67	33	67	ug/kg	25-137	25-137	30
8082A/3546	PCB 1232	11141-16-5	Solid	19	33	33	67	ug/kg	56-164	56-164	30
8082A/3546	PCB 1242	53469-21-9	Solid	17	33	33	67	ug/kg	41-141	41-141	30
8082A/3546	PCB 1248	12672-29-6	Solid	18	33	33	67	ug/kg	76-126	76-126	30
8082A/3546	PCB 1254	11097-69-1	Solid	17	33	33	67	ug/kg	58-139	58-139	30
8082A/3546	PCB 1260	11096-82-5	Solid	17	33	33	67	ug/kg	30-158	30-156	30
8082A/3546	PCB 1262	37324-23-5	Solid	17	33	33	67	ug/kg	58-137	58-137	30
8082A/3546	PCB 1268	11100-14-4	Solid	17	33	33	67	ug/kg	63-120	63-120	30
8082A-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Solid	NA	NA	1.67	3.33	ug/kg	10-138	10-138	NA
8082A-SURR	TETRACHLORO-META-XYLENE (TCMX)-SURR	877-09-8	Solid	NA	NA	1.67	3.33	ug/kg	11-122	11-122	NA
The reporting limits presented are based on the use of 15g of sample and 100% solids. The reporting limits will be higher if the sample contains moisture and if the lab uses less than 15g. It is often necessary to use less than 15g due to overheating produced when the sample matrix is exposed to the microwave energy.											
8082A/3541	PCB 1016	12674-11-2	Solid	17	33	25	33	ug/kg	23-111	26-137	30
8082A/3541	PCB 1221	11104-28-2	Solid	26	67	30	33	ug/kg	25-137	25-137	30
8082A/3541	PCB 1232	11141-16-5	Solid	19	33	25	33	ug/kg	56-164	56-164	30
8082A/3541	PCB 1242	53469-21-9	Solid	17	33	25	33	ug/kg	41-141	41-141	30
8082A/3541	PCB 1248	12672-29-6	Solid	18	33	25	33	ug/kg	76-126	76-126	30
8082A/3541	PCB 1254	11097-69-1	Solid	17	33	25	33	ug/kg	58-139	58-139	30
8082A/3541	PCB 1260	11096-82-5	Solid	17	33	25	33	ug/kg	21-121	30-156	30
8082A/3541	PCB 1262	37324-23-5	Solid	17	33	25	33	ug/kg	58-137	58-137	30
8082A/3541	PCB 1268	11100-14-4	Solid	17	33	25	33	ug/kg	63-120	63-120	30
8082A-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Solid	NA	NA	1.67	3.33	ug/kg	10-120	10-120	NA
8082A-SURR	TETRACHLORO-META-XYLENE (TCMX)-SURR	877-09-8	Solid	NA	NA	1.67	3.33	ug/kg	10-109	10-109	NA

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8082A	PCB 1016	12674-11-2	Non-Aq	500	2000			ug/kg	47-159	40-140	30
8082A	PCB 1221	11104-28-2	Non-Aq	500	4000			ug/kg	70-130	50-150	30
8082A	PCB 1232	11141-16-5	Non-Aq	500	2000			ug/kg	70-130	50-150	30
8082A	PCB 1242	53469-21-9	Non-Aq	500	2000			ug/kg	70-130	50-150	30
8082A	PCB 1248	12672-29-6	Non-Aq	500	2000			ug/kg	74-133	33-154	30
8082A	PCB 1254	11097-69-1	Non-Aq	500	2000			ug/kg	32-159	32-159	30
8082A	PCB 1260	11096-82-5	Non-Aq	500	2000			ug/kg	46-151	24-160	30
8082A	PCB 1268	11100-14-4	Non-Aq	500	2000			ug/kg	70-130	50-150	30
8082A-SURR	DECACHLOROBIPHENYL (DCB)-SURR	2051-24-3	Non-Aq	NA	NA			%	44-154	44-131	NA
8082A-SURR	TETRACHLORO-META-XYLENE (TCMX)-SURR	877-09-8	Non-Aq	NA	NA			%	42-143	33-139	NA
8151A	2,4,5-T	93-76-5	Water	0.38	0.5	0.50	1	ug/L	11-143	21-125	30
8151A	2,4,5-TP (SILVEX)	93-72-1	Water	0.33	0.5	0.50	1	ug/L	13-124	21-120	30
8151A	2,4-D	94-75-7	Water	0.35	0.5	0.50	1	ug/L	10-151	26-154	30
8151A	DICAMBA	1918-00-9	Water	0.3	0.5	0.50	1	ug/L	13-123	22-125	30
8151A	DINOSEB	88-85-7	Water	0.21	0.5	0.50	1	ug/L	10-103	10-152	30
8151A	PENTACHLOROPHENOL	87-86-5	Water	0.36	0.5	0.50	1	ug/L	20-116	10-117	30
8151A-SURR	DCAA-SURR	19719-28-9	Water	NA	NA	0.25	0.50	ug/L	10-136	10-136	NA
8151A	2,4,5-T	93-76-5	Solid	5	10	10.0	20	ug/kg	19-127	19-127	30
8151A	2,4,5-TP (SILVEX)	93-72-1	Solid	4.5	10	10.0	20	ug/kg	18-122	11-133	30
8151A	2,4-D	94-75-7	Solid	6.5	10	10	20	ug/kg	31-119	24-165	30
8151A	DICAMBA	1918-00-9	Solid	8.2	10	10.0	20	ug/kg	26-128	10-136	30
8151A	PENTACHLOROPHENOL	87-86-5	Solid	6.3	10	10.0	20	ug/kg	11-74	10-103	30
8151A-SURR	DCAA-SURR	19719-28-9	Solid	NA	NA	5.00	10.00	ug/kg	10-151	10-151	NA
1311/8151A (TCLP)	2,4,5-TP (SILVEX)	93-72-1	Solid	NA	5.0			ug/L		same as water	30
1311/8151A (TCLP)	2,4-D	94-75-7	Solid	NA	5.0			ug/L			30
1311/8151A (TCLP)	PENTACHLOROPHENOL	87-86-5	Solid	NA	10			ug/L			30
1311/8151A-SURR	DCAA-SURR	19719-28-9	Solid	NA	NA			%			NA

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8260D	1,1,1,2-TETRACHLOROETHANE	630-20-6	Water	0.2	1.0	1	5	ug/L	76-129	68-146	30
8260D	1,1,1-TRICHLOROETHANE	71-55-6	Water	0.2	1.0	1	5	ug/L	75-125	74-127	30
8260D	1,1,2,2-TETRACHLOROETHANE	79-34-5	Water	0.2	1.0	1	5	ug/L	78-126	72-122	30
8260D	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	76-13-1	Water	0.2	1.0	1	5	ug/L	67-124	50-147	30
8260D	1,1,2-TRICHLOROETHANE	79-00-5	Water	0.2	1.0	1	5	ug/L	82-121	82-121	30
8260D	1,1-DICHLOROETHANE	75-34-3	Water	0.2	1.0	1	5	ug/L	80-124	74-132	30
8260D	1,1-DICHLOROETHENE	75-35-4	Water	0.2	1.0	1	5	ug/L	69-142	71-118	30
8260D	1,1-DICHLOROPROPENE	563-58-6	Water	0.2	1.0	1	5	ug/L	76-118	76-118	30
8260D	1,2,3-TRICHLOROBENZENE	87-61-6	Water	0.25	1.0	1	5	ug/L	67-136	59-129	30
8260D	1,2,3-TRICHLOROPROPANE	96-18-4	Water	0.26	1.0	1	5	ug/L	75-118	75-122	30
8260D	1,2,4-TRICHLOROBENZENE	120-82-1	Water	0.34	1.0	1	5	ug/L	75-132	69-122	30
8260D	1,2,4-TRIMETHYLBENZENE	95-63-6	Water	0.2	1.0	1	5	ug/L	81-126	73-133	30
8260D	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	Water	0.45	2.0	1	5	ug/L	55-136	37-150	30
8260D	1,2-DIBROMOETHANE	106-93-4	Water	0.2	1.0	1	5	ug/L	82-127	67-127	30
8260D	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE (FREON 123A)	354-23-4	Water	0.2	1.0			ug/L	59-129	67-156	30
8260D	1,2-DICHLOROBENZENE	95-50-1	Water	0.2	1.0	1	5	ug/L	80-119	77-120	30
8260D	1,2-DICHLOROETHANE	107-06-2	Water	0.2	1.0	1	5	ug/L	71-127	68-130	30
8260D	1,2-DICHLOROETHENE, TOTAL	540-59-0	Water	0.35	2.0	2	10	ug/L	75-128	75-128	30
8260D	1,2-DICHLOROPROPANE	78-87-5	Water	0.2	1.0	1	5	ug/L	80-119	79-124	30
8260D	1,3,5-TRICHLOROBENZENE	108-70-3	Water	0.27	1.0	1	5	ug/L	67-130	67-130	30
8260D	1,3,5-TRIMETHYLBENZENE	108-67-8	Water	0.2	1.0	1	5	ug/L	81-128	81-131	30
8260D	1,3-DICHLOROBENZENE	541-73-1	Water	0.2	1.0	1	5	ug/L	83-121	83-121	30
8260D	1,3-DICHLOROPROPANE	142-28-9	Water	0.2	1.0	1	5	ug/L	83-119	79-117	30
8260D	1,4-DICHLOROBENZENE	106-46-7	Water	0.2	1.0	1	5	ug/L	79-119	82-120	30
8260D	1,4-DIOXANE	123-91-1	Water	13	100	20	100	ug/L	44-154	44-154	30
8260D	1-BUTANOL (N-BUTANOL)	71-36-3	Water	55	100			ug/L	48-148	48-148	30
8260D	1-CHLORO-4-(TRIFLUOROMETHYL) BENZENE (=4-CHLOROBENZOFLUORIDE)	98-56-6	Water	0.22	1			ug/L	70-129	48-148	30
8260D	2,2-DICHLORO-1,1,1-TRIFLUOROETHANE (FREON 123)	306-83-2	Water	0.2	1.0			ug/L	61-144	79-128	30
8260D	2,2-DICHLOROPROPANE	594-20-7	Water	0.24	1.0	1	5	ug/L	61-139	46-138	30
8260D	2,3,6-TRICHLOROTOLUENE	2077-46-5	Water	0.9	5.0			ug/L	25-200	25-200	30
8260D	2,4,5-TRICHLOROTOLUENE	6639-30-1	Water	1.11	5.0			ug/L	24-190	24-190	30
8260D	2,4-, 2,5-, and 2,6-DICHLOROTOLUENE COELUTION	CASID39497	Water	0.59	1.5			ug/L	47-145	47-145	30
8260D	2,4-DICHLOROBENZOTRIFLUORIDE	320-60-5	Water	0.49	1.0			ug/L	48-169	48-169	30
8260D	2,5-DICHLOROBENZOTRIFLUORIDE	320-50-3	Water	0.3	1.0			ug/L	67-131	64-131	30
8260D	2-BUTANONE (MEK)	78-93-3	Water	0.78	5.0	1	5	ug/L	61-137	61-137	30
8260D	2-CHLORO-1,3-BUTADIENE (CHLOROPRENE)	126-99-8	Water	0.2	1.0	1	5	ug/L	68-139	68-139	30
8260D	2-CHLOROBENZOTRIFLUORIDE	88-16-4	Water	0.2	1.0			ug/L	47-164	47-164	30
8260D	2-CHLOROETHYLVINYL ETHER	110-75-8	Water	0.53	1.0	1	5	ug/L	19-162	19-162	30
8260D	2-CHLOROTOLUENE	95-49-8	Water	0.2	1.0	1	5	ug/L	79-124	79-126	30
8260D	2-HEXANONE	591-78-6	Water	0.2	5.0	1	5	ug/L	63-124	56-132	30
8260D	2-METHYL-1-PROPANOL (ISOBUTLYL ALC)	78-83-1	Water	33	40	50	100	ug/L	51-143	51-143	30
8260D	2-METHYL-2-PROPANOL (TERTBUTYL ALC)	75-65-0	Water	16	40	20	100	ug/L	49-141	49-141	30
8260D	2-PROPANOL	67-63-0	Water	22	40			ug/L	52-136	52-136	30
8260D	3,4- and 2,3-DICHLOROTOLUENE COELUTION	CASID39496	Water	0.62	1			ug/L	48-143	48-143	30
8260D	3,4-DICHLOROBENZOTRIFLUORIDE	328-84-7	Water	0.33	1			ug/L	47-175	47-175	30
8260D	3-CHLOROBENZOTRIFLUORIDE	98-15-7	Water	0.2	1.0			ug/L	49-179	49-179	30
8260D	3-CHLOROTOLUENE	108-41-8	Water	0.2	1.0			ug/L	49-170	49-170	30
8260D	4-CHLOROTOLUENE	106-43-4	Water	0.2	1.0	1	5	ug/L	79-125	72-132	30
8260D	4-ISOPROPYLTOLUENE	99-87-6	Water	0.2	1.0	1	5	ug/L	78-133	78-133	30
8260D	4-METHYL-2-PENTANONE (MIBK)	108-10-1	Water	0.2	5.0	1	5	ug/L	66-124	60-141	30
8260D	ACETONE	67-64-1	Water	5	5.0	5	20	ug/L	40-161	35-183	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8260D	ACETONITRILE-ALLYL CHLORIDE COELUTION	75-05-8/107-05	Water	5.2	10	10	25	ug/L	46-154	46-154	30
8260D	ACROLEIN	107-02-8	Water	0.9	10	5	25	ug/L	13-165	13-165	30
8260D	ACRYLONITRILE	107-13-1	Water	0.9	10	5	25	ug/L	71-130	69-131	30
8260D	BENZENE	71-43-2	Water	0.2	1.0	1	5	ug/L	79-119	76-129	30
8260D	BROMOBENZENE	108-86-1	Water	0.2	1.0	1	5	ug/L	79-121	79-121	30
8260D	BROMOCHLOROMETHANE	74-97-5	Water	0.2	1.0	1	5	ug/L	81-126	80-122	30
8260D	BROMODICHLOROMETHANE	75-27-4	Water	0.2	1.0	1	5	ug/L	81-123	78-133	30
8260D	BROMOFORM	75-25-2	Water	0.25	1.0	1	5	ug/L	65-146	58-133	30
8260D	BROMOMETHANE	74-83-9	Water	0.7	1.0	1	5	ug/L	42-166	10-184	30
8260D	CARBON DISULFIDE	75-15-0	Water	0.42	1.0	1	5	ug/L	66-128	59-140	30
8260D	CARBON TETRACHLORIDE	56-23-5	Water	0.34	1.0	1	5	ug/L	70-127	65-135	30
8260D	CHLOROBENZENE	108-90-7	Water	0.2	1.0	1	5	ug/L	81-120	76-125	30
8260D	CHLOROETHANE	75-00-3	Water	0.23	1.0	1	5	ug/L	62-131	58-146	30
8260D	CHLOROFORM	67-66-3	Water	0.51	1.0	1	5	ug/L	79-120	75-130	30
8260D	CHLOROMETHANE	74-87-3	Water	0.8	1.0	1	5	ug/L	72-179	55-160	30
8260D	CIS-1,2-DICHLOROETHENE	156-59-2	Water	0.23	1.0	1	5	ug/L	80-121	77-127	30
8260D	CIS-1,3-DICHLOROPROPENE	10061-01-5	Water	0.2	1.0	1	5	ug/L	77-122	52-134	30
8260D	CYCLOHEXANE	110-82-7	Water	0.6	1.0	1	5	ug/L	69-120	52-145	30
8260D	CYCLOHEXANONE	108-94-1	Water	4.6	20	20	100	ug/L	10-47	10-123	30
8260D	DIBROMOCHLOROMETHANE	124-48-1	Water	0.2	1.0	1	5	ug/L	72-128	72-128	30
8260D	DIBROMOMETHANE	74-95-3	Water	0.2	1.0	1	5	ug/L	80-118	77-119	30
8260D	DICHLORODIFLUOROMETHANE (FREON 12)	75-71-8	Water	0.21	1.0	1	5	ug/L	59-155	49-154	30
8260D	DICHLOROFLUOROMETHANE (FREON 21)	75-43-4	Water	0.2	1.0	1	5	ug/L	72-130	71-140	30
8260D	DICHLOROMETHANE	75-09-2	Water	0.65	1.0	1	5	ug/L	73-122	73-122	30
8260D	DIETHYL ETHER	60-29-7	Water	0.2	1.0	1	5	ug/L	79-127	78-127	30
8260D	DIISOPROPYL ETHER (DIPE)	108-20-3	Water	0.2	1.0	1	5	ug/L	71-134	63-147	30
8260D	ETHYL METHACRYLATE	97-63-2	Water	0.2	2.0	1	5	ug/L	68-132	63-138	30
8260D	ETBE	637-92-3	Water	0.2	1.0	1	5	ug/L	40-128	40-128	30
8260D	ETHYLBENZENE	100-41-4	Water	0.2	1.0	1	5	ug/L	76-120	72-134	30
8260D	HEXACHLOROBUTADIENE	87-68-3	Water	0.33	2.0	1	5	ug/L	54-172	54-172	30
8260D	IODOMETHANE	74-88-4	Water	4.3	5.0	5	10	ug/L	18-160	18-160	30
8260D	ISOPROPYLBENZENE	98-82-8	Water	0.2	1.0	1	5	ug/L	77-128	77-128	30
8260D	M+P-XYLENE	179601-23-1	Water	0.53	2.0	2	10	ug/L	80-126	80-126	30
8260D	METHACRYLONITRILE	126-98-7	Water	0.52	2.0	1	5	ug/L	68-123	67-131	30
8260D	METHYL ACETATE	79-20-9	Water	0.87	2.0	1	5	ug/L	61-133	26-121	30
8260D	METHYL METHACRYLATE	80-62-6	Water	0.51	2.0	1	5	ug/L	68-129	64-129	30
8260D	METHYLCYCLOHEXANE	108-87-2	Water	0.2	1.0	1	5	ug/L	51-129	45-146	30
8260D	METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	Water	0.2	1.0	1	5	ug/L	75-118	75-119	30
8260D	NAPTHALENE	91-20-3	Water	0.55	1.0	1	5	ug/L	59-140	57-153	30
8260D	N-BUTYLACETATE	123-86-4	Water	0.2	1.0			ug/L	71-129	61-139	30
8260D	N-BUTYLBENZENE	104-51-8	Water	0.2	1.0	1	5	ug/L	78-133	78-133	30
8260D	N-HEPTANE	142-82-5	Water	0.26	1.0			ug/L	57-134	47-141	30
8260D	N-PROPYLBENZENE	103-65-1	Water	0.2	1.0	1	5	ug/L	78-131	78-131	30
8260D	O-XYLENE	95-47-6	Water	0.2	1.0	1	5	ug/L	79-123	79-123	30
8260D	PROPIONITRILE	107-12-0	Water	3	5.0	5	25	ug/L	69-126	66-129	30
8260D	SEC-BUTYLBENZENE	135-98-8	Water	0.2	1.0	1	5	ug/L	75-129	75-129	30
8260D	STYRENE	100-42-5	Water	0.2	1.0	1	5	ug/L	80-124	74-136	30
8260D	TAME	994-05-8	Water	0.2	1.0	1	5	ug/L	69-123	58-131	30
8260D	TERT-BUTYLBENZENE	98-06-6	Water	0.2	1.0	1	5	ug/L	76-126	68-127	30
8260D	TETRACHLOROETHENE	127-18-4	Water	0.21	1.0	1	5	ug/L	72-125	72-125	30
8260D	TETRAHYDROFURAN	109-99-9	Water	1.7	2.0	3	5	ug/L	48-141	48-141	30
8260D	TOLUENE	108-88-3	Water	0.2	1.0	1	5	ug/L	79-119	79-119	30
8260D	TRANS-1,2-DICHLOROETHENE	156-60-5	Water	0.2	1.0	1	5	ug/L	73-118	73-118	30
8260D	TRANS-1,3-DICHLOROPROPENE	10061-02-6	Water	0.23	1.0	1	5	ug/L	71-133	71-133	30
8260D	TRANS-1,4-DICHLORO-2-BUTENE	110-57-6	Water	0.78	1.0	1	5	ug/L	39-137	27-155	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8260D	TRICHLOROETHENE	79-01-6	Water	0.2	1.0	1	5	ug/L	74-122	74-122	30
8260D	TRICHLOROFLUOROMETHANE (FREON 11)	75-69-4	Water	0.24	1.0	1	5	ug/L	71-136	71-136	30
8260D	VINYL ACETATE	108-05-4	Water	1.1	2.0	2	5	ug/L	52-174	48-172	30
8260D	VINYL CHLORIDE	75-01-4	Water	0.2	1.0	1	5	ug/L	74-159	74-159	30
8260D	XYLENES, TOTAL	1330-20-7	Water	0.23	3.0	3	15	ug/L	78-121	78-121	30
8260D-SURR	1,2-DICHLOROETHANE-D4-SURR	17060-07-0	Water	NA	NA			%	73-125	73-125	NA
8260D-SURR	4-BROMOFLUOROBENZENE-SURR	460-00-4	Water	NA	NA			%	85-122	85-122	NA
8260D-SURR	DIBROMOFLUOROMETHANE-SURR	1868-53-7	Water	NA	NA			%	80-116	80-116	NA
8260D-SURR	TOLUENE-D8-SURR	2037-26-5	Water	NA	NA			%	87-121	87-121	NA
8260D	1,1,1,2-TETRACHLOROETHANE	630-20-6	Solid	0.2	5.0	2.5	5	ug/kg	69-127	41-124	30
8260D	1,1,1-TRICHLOROETHANE	71-55-6	Solid	0.2	5.0	2.5	5	ug/kg	68-123	44-124	30
8260D	1,1,2,2-TETRACHLOROETHANE	79-34-5	Solid	0.2	5.0	2.5	5	ug/kg	78-121	41-155	30
8260D	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	76-13-1	Solid	0.2	5.0	2.5	5	ug/kg	54-121	40-117	30
8260D	1,1,2-TRICHLOROETHANE	79-00-5	Solid	0.2	5.0	2.5	5	ug/kg	84-117	48-124	30
8260D	1,1-DICHLOROETHANE	75-34-3	Solid	0.2	5.0	2.5	5	ug/kg	76-123	41-138	30
8260D	1,1-DICHLOROETHENE	75-35-4	Solid	0.2	5.0	2.5	5	ug/kg	67-147	46-124	30
8260D	1,1-DICHLOROPROPENE	563-58-6	Solid	0.2	5.0	2.5	5	ug/kg	66-119	33-131	30
8260D	1,2,3-TRICHLOROBENZENE	87-61-6	Solid	0.88	5.0	2.5	5	ug/kg	60-128	10-169	30
8260D	1,2,3-TRICHLOROPROPANE	96-18-4	Solid	0.2	5.0	2.5	5	ug/kg	78-115	39-160	30
8260D	1,2,4-TRICHLOROBENZENE	120-82-1	Solid	0.52	5.0	2.5	5	ug/kg	62-130	10-169	30
8260D	1,2,4-TRIMETHYLBENZENE	95-63-6	Solid	0.2	5.0	2.5	5	ug/kg	67-121	15-141	30
8260D	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	Solid	0.5	5.0	2.5	5	ug/kg	54-135	30-136	30
8260D	1,2-DIBROMOETHANE	106-93-4	Solid	0.2	5.0	2.5	5	ug/kg	77-117	38-129	30
8260D	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE (FREON 123A)	354-23-4	Solid	0.22	5.0			ug/kg	76-135	64-144	30
8260D	1,2-DICHLOROBENZENE	95-50-1	Solid	0.2	5.0	2.5	5	ug/kg	75-116	11-152	30
8260D	1,2-DICHLOROETHANE	107-06-2	Solid	0.2	5.0	2.5	5	ug/kg	74-116	49-119	30
8260D	1,2-DICHLOROETHENE, TOTAL	540-59-0	Solid	0.4	10	5.0	10	ug/kg	77-119	51-125	30
8260D	1,2-DICHLOROPROPANE	78-87-5	Solid	0.2	5.0	2.5	5	ug/kg	79-112	60-126	30
8260D	1,3,5-TRICHLOROBENZENE	108-70-3	Solid	0.31	5.0	2.5	5	ug/kg	74-117	10-162	30
8260D	1,3,5-TRIMETHYLBENZENE	108-67-8	Solid	0.2	5.0	2.5	5	ug/kg	66-122	21-148	30
8260D	1,3-DICHLOROBENZENE	541-73-1	Solid	0.2	5.0	2.5	5	ug/kg	72-118	13-151	30
8260D	1,3-DICHLOROPROPANE	142-28-9	Solid	0.2	5.0	2.5	5	ug/kg	82-111	54-128	30
8260D	1,4-DICHLOROBENZENE	106-46-7	Solid	0.22	5.0	2.5	5	ug/kg	72-117	10-151	30
8260D	1,4-DIOXANE	123-91-1	Solid	20	100	40	100	ug/kg	59-147	49-188	30
8260D	1-BUTANOL (N-BUTANOL)	71-36-3	Solid	28	250			ug/kg	10-144	10-177	30
8260D	2,2-DICHLORO-1,1,1-TRIFLUOROETHANE (FREON 123)	306-83-2	Solid	0.27	5.0			ug/kg	73-127	55-129	30
8260D	2,2-DICHLOROPROPANE	594-20-7	Solid	0.2	5.0	2.5	5	ug/kg	53-131	27-130	30
8260D	2-BUTANONE (MEK)	78-93-3	Solid	2	5.0	4.0	5	ug/kg	67-129	13-176	30
8260D	2-CHLORO-1,3-BUTADIENE	126-99-8	Solid	0.2	5.0	2.5	5	ug/kg	57-147	57-147	30
8260D	2-CHLOROETHYLVINYL ETHER	110-75-8	Solid	0.46	5.0	2.5	5	ug/kg	10-167	10-167	30
8260D	2-CHLOROTOLUENE	95-49-8	Solid	0.2	5.0	2.5	5	ug/kg	70-120	28-138	30
8260D	2-HEXANONE	591-78-6	Solid	1.8	5.0	2.5	5	ug/kg	68-118	12-163	30
8260D	2-METHYL-1-PROPANOL (ISOBUTLYL ALC)	78-83-1	Solid	17	100	50	100	ug/kg	35-135	10-159	30
8260D	2-METHYL-2-PROPANOL (TERTBUTYL ALC)	75-65-0	Solid	15	100	50	100	ug/kg	27-134	10-167	30
8260D	2-PROPANOL	67-63-0	Solid	17	100			ug/kg	43-141	10-179	30
8260D	4-CHLOROTOLUENE	106-43-4	Solid	0.2	5.0	2.5	5	ug/kg	72-120	22-135	30
8260D	4-ISOPROPYLTOLUENE	99-87-6	Solid	0.2	5.0	2.5	5	ug/kg	58-128	11-141	30
8260D	4-METHYL-2-PENTANONE (MIBK)	108-10-1	Solid	0.23	5.0	2.5	5	ug/kg	64-123	38-148	30
8260D	ACETONE	67-64-1	Solid	4.7 or 15	25.0	30.0	60	ug/kg	32-154	11-183	30
8260D	ACETONITRILE-ALLYL CHLORIDE COELUTION	75-05-8	Solid	11	5or25	22.0	25	ug/kg	36-158	29-400	30
8260D	ACROLEIN	107-02-8	Solid	1.2	25	12.5	25	ug/kg	30-147	10-164	30
8260D	ACRYLONITRILE	107-13-1	Solid	0.89	25	12.5	25	ug/kg	71-124	33-152	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8260D	BENZENE	71-43-2	Solid	0.2	5.0	2.5	5	ug/kg	77-114	51-123	30
8260D	BROMOBENZENE	108-86-1	Solid	0.2	5.0	2.5	5	ug/kg	78-116	16-166	30
8260D	BROMOCHLOROMETHANE	74-97-5	Solid	0.2	5.0	2.5	5	ug/kg	78-117	46-129	30
8260D	BROMODICHLOROMETHANE	75-27-4	Solid	0.2	5.0	2.5	5	ug/kg	72-118	39-122	30
8260D	BROMOFORM	75-25-2	Solid	0.5	5.0	2.5	5	ug/kg	55-134	16-135	30
8260D	BROMOMETHANE	74-83-9	Solid	2.2	5.0	2.5	5	ug/kg	10-150	10-150	30
8260D	CARBON DISULFIDE	75-15-0	Solid	0.29	5.0	2.5	5	ug/kg	44-139	44-139	30
8260D	CARBON TETRACHLORIDE	56-23-5	Solid	0.26	5.0	2.5	5	ug/kg	51-123	46-137	30
8260D	CHLOROBENZENE	108-90-7	Solid	0.2	5.0	2.5	5	ug/kg	79-115	25-129	30
8260D	CHLOROETHANE	75-00-3	Solid	0.41	5.0	2.5	5	ug/kg	10-140	10-166	30
8260D	CHLOROFORM	67-66-3	Solid	0.35	5.0	2.5	5	ug/kg	76-115	55-118	30
8260D	CHLOROMETHANE	74-87-3	Solid	1.4	5.0	2.8	5	ug/kg	63-189	10-139	30
8260D	CIS-1,2-DICHLOROETHENE	156-59-2	Solid	0.2	5.0	2.5	5	ug/kg	79-113	42-129	30
8260D	CIS-1,3-DICHLOROPROPENE	10061-01-5	Solid	0.2	5.0	2.5	5	ug/kg	66-117	14-139	30
8260D	CYCLOHEXANE	110-82-7	Solid	0.26	5.0	2.5	5	ug/kg	67-122	28-126	30
8260D	CYCLOHEXANONE	108-94-1	Solid	10	100	50	100	ug/kg	46-121	10-193	30
8260D	DIBROMOCHLOROMETHANE	124-48-1	Solid	0.2	5.0	2.5	5	ug/kg	68-121	36-125	30
8260D	DIBROMOMETHANE	74-95-3	Solid	0.2	5.0	2.5	5	ug/kg	76-110	29-115	30
8260D	DICHLORODIFLUOROMETHANE (FREON 12)	75-71-8	Solid	0.33	5.0	2.5	5	ug/kg	51-144	51-144	30
8260D	DICHLOROFLUOROMETHANE (FREON 21)	75-43-4	Solid	0.21	5.0			ug/kg	66-145	60-148	30
8260D	DICHLOROMETHANE	75-09-2	Solid	2.8	5.0	5.6	10	ug/kg	72-118	49-125	30
8260D	DIETHYL ETHER	60-29-7	Solid	0.25	5.0	2.5	5	ug/kg	78-127	64-133	30
8260D	DIISOPROPYL ETHER	108-20-3	Solid	0.2	5.0	2.5	5	ug/kg	66-124	52-133	30
8260D	ETBE	637-92-3	Solid	0.2	5.0	2.5	5	ug/kg	63-120	46-155	30
8260D	ETHYL METHACRYLATE	97-63-2	Solid	0.2	5.0	2.5	5	ug/kg	58-106	10-200	30
8260D	ETHYLBENZENE	100-41-4	Solid	0.2 or 1	5.0	2.5	5	ug/kg	64-118	23-132	30
8260D	HEXACHLOROBUTADIENE	87-68-3	Solid	0.47	5.0	2.5	5	ug/kg	33-143	10-159	30
8260D	IODOMETHANE	74-88-4	Solid	5.2	10	11.0	20	ug/kg	34-130	10-165	30
8260D	ISOPROPYLBENZENE	98-82-8	Solid	0.2	5.0	2.5	5	ug/kg	60-123	18-133	30
8260D	M+P-XYLENE	179601-23-1	Solid	0.37	10	5.0	10	ug/kg	68-118	20-135	30
8260D	METHACRYLONITRILE	126-98-7	Solid	0.23	5.0	2.5	5	ug/kg	70-118	24-152	30
8260D	METHYL ACETATE	79-20-9	Solid	2.5	5.0	2.5	5	ug/kg	31-122	10-200	30
8260D	METHYL METHACRYLATE	80-62-6	Solid	0.2	5.0	2.5	5	ug/kg	67-120	27-162	30
8260D	METHYLCYCLOHEXANE	108-87-2	Solid	0.31	5.0	2.5	5	ug/kg	70-124	12-134	30
8260D	METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	Solid	0.2	5.0	2.5	5	ug/kg	76-118	62-130	30
8260D	NAPTHALENE	91-20-3	Solid	0.99	5.0	2.5	5	ug/kg	68-127	10-188	30
8260D	N-BUTYLACETATE	123-86-4	Solid	0.48	5.0			ug/kg	62-118	10-200	30
8260D	N-BUTYLBENZENE	104-51-8	Solid	0.2	5.0	2.5	5	ug/kg	54-131	10-168	30
8260D	N-HEPTANE	142-82-5	Solid	0.65	5.0			ug/kg	39-146	10-155	30
8260D	N-PROPYLBENZENE	103-65-1	Solid	0.2	5.0	2.5	5	ug/kg	59-126	20-139	30
8260D	O-XYLENE	95-47-6	Solid	0.24	5.0	2.5	5	ug/kg	71-116	26-137	30
8260D	PROPIONITRILE	107-12-0	Solid	1.2	25	12.5	25	ug/kg	68-126	39-158	30
8260D	SEC-BUTYLBENZENE	135-98-8	Solid	0.2	5.0	2.5	5	ug/kg	54-128	11-140	30
8260D	STYRENE	100-42-5	Solid	0.2 or 1	5.0	2.5	5	ug/kg	74-117	15-160	30
8260D	TAME	994-05-8	Solid	0.2	5.0	2.5	5	ug/kg	64-121	46-126	30
8260D	TERT-BUTYLBENZENE	98-06-6	Solid	0.2	5.0	2.5	5	ug/kg	58-123	19-148	30
8260D	TETRA HYDROFURAN	109-99-9	Solid	3.4 or 15	5 or 15	30.0	5	ug/kg	63-126	56-146	30
8260D	TETRACHLOROETHENE	127-18-4	Solid	0.23	5.0	2.5	5	ug/kg	58-124	21-137	30
8260D	TOLUENE	108-88-3	Solid	0.2 or 2	5.0	4.0	5	ug/kg	72-116	11-152	30
8260D	TRANS-1,2-DICHLOROETHENE	156-60-5	Solid	0.2	5.0	2.5	5	ug/kg	73-114	34-128	30
8260D	TRANS-1,3-DICHLOROPROPENE	10061-02-6	Solid	0.2	5.0	2.5	5	ug/kg	57-135	17-155	30
8260D	TRANS-1,4-DICHLORO-2-BUTENE	110-57-6	Solid	0.67	5.0	2.5	5	ug/kg	35-149	10-162	30
8260D	TRICHLOROETHENE	79-01-6	Solid	0.22	5.0	2.5	5	ug/kg	69-118	23-140	30
8260D	TRICHLOROFLUOROMETHANE (FREON 11)	75-69-4	Solid	0.26	5.0	2.5	5	ug/kg	52-127	47-129	30
8260D	VINYL ACETATE	108-05-4	Solid	0.78	10	5.0	10	ug/kg	47-159	10-159	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8260D	VINYL CHLORIDE	75-01-4	Solid	0.46	5.0	2.5	5	ug/kg	59-153	59-153	30
8260D	XYLENE, TOTAL	1330-20-7	Solid	0.52	15.0	7.5	15	ug/kg	70-117	23-136	30
8260D-SURR	1,2-DICHLOROETHANE-D4-SURR	17060-07-0	Solid	NA	NA			%	67-128	67-128	NA
8260D-SURR	4-BROMOFLUOROBENZENE-SURR	460-00-4	Solid	NA	NA			%	31-154	31-154	NA
8260D-SURR	DIBROMOFLUOROMETHANE-SURR	1868-53-7	Solid	NA	NA			%	63-138	63-138	NA
8260D-SURR	TOLUENE-D8-SURR	2037-26-5	Solid	NA	NA			%	66-138	66-138	NA
8260D (MeOH)	1,1,1,2-TETRACHLOROETHANE	630-20-6	Non-Aq	water MDL*100	500	250	500	ug/kg	same as soil	same as soil	30
8260D (MeOH)	1,1,1-TRICHLOROETHANE	71-55-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,1,2,2-TETRACHLOROETHANE	79-34-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,1,2-TRICHLORO-1,2,2-TRIFLUOROETHANE (FREON 113)	76-13-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,1,2-TRICHLOROETHANE	79-00-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,1-DICHLOROETHANE	75-34-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,1-DICHLOROETHENE	75-35-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,1-DICHLOROPROPENE	563-58-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,2,3-TRICHLOROBENZENE	87-61-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,2,3-TRICHLOROPROPANE	96-18-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,2,4-TRICHLOROBENZENE	120-82-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,2,4-TRIMETHYLBENZENE	95-63-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,2-DIBROMO-3-CHLOROPROPANE	96-12-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,2-DIBROMOETHANE	106-93-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,2-DICHLORO-1,1,2-TRIFLUOROETHANE (FREON 123A)	354-23-4	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	1,2-DICHLOROBENZENE	95-50-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,2-DICHLOROETHANE	107-06-2	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,2-DICHLOROETHENE, TOTAL	540-59-0	Non-Aq	water MDL*100	500	500	1000	ug/kg			30
8260D (MeOH)	1,2-DICHLOROPROPANE	78-87-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,3,5-TRIMETHYLBENZENE	108-67-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,3-DICHLOROBENZENE	541-73-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,3-DICHLOROPROPANE	142-28-9	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,4-DICHLOROBENZENE	106-46-7	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	1,4-DIOXANE	123-91-1	Non-Aq	water MDL*100	10000			ug/kg			30
8260D (MeOH)	1-BUTANOL (N-BUTANOL)	71-36-3	Non-Aq	water MDL*100	250			ug/kg			30
8260D (MeOH)	2,2-DICHLORO-1,1,1-TRIFLUOROETHANE (FREON 123)	306-83-2	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	2,2-DICHLOROPROPANE	594-20-7	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	2-BROMO-2-CHLORO-1,1,1-TRIFLUOROETHANE (H/	151-67-7	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	2-BUTANONE (MEK)	78-93-3	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260D (MeOH)	2-CHLORO-1,3-BUTADIENE	126-99-8	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	2-CHLOROETHYLVINYL ETHER	110-75-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	2-CHLOROTOLUENE	95-49-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	2-HEXANONE	591-78-6	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260D (MeOH)	2-METHYL-1-PROPANOL (ISOBUTYL ALCOHOL)	78-83-1	Non-Aq	water MDL*100	10000			ug/kg			30
8260D (MeOH)	2-METHYL-2-PROPANOL (TERT-BUTYL ALCOHOL)	75-65-0	Non-Aq	water MDL*100	10000			ug/kg			30
8260D (MeOH)	2-NITROPROPANE	79-46-9	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	2-PROPANOL	67-63-0	Non-Aq	water MDL*100	10000			ug/kg			30
8260D (MeOH)	4-CHLOROTOLUENE	106-43-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	4-ISOPROPYLTOLUENE	99-87-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	4-METHYL-2-PENTANONE (MIBK)	108-10-1	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260D (MeOH)	ACETONE	67-64-1	Non-Aq	2500	2500	3000	6000	ug/kg			30
8260D (MeOH)	ACETONITRILE- ALLYL CHLORIDE COELUTION	75-05-8/107-05	Non-Aq	water MDL*100	10000			ug/kg			30
8260D (MeOH)	ACROLEIN	107-02-8	Non-Aq	water MDL*100	10000			ug/kg			30
8260D (MeOH)	ACRYLONITRILE	107-13-1	Non-Aq	water MDL*100	10000			ug/kg			30
8260D (MeOH)	BENZENE	71-43-2	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	BROMOBENZENE	108-86-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8260D (MeOH)	BROMOCHLOROMETHANE	74-97-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	BROMODICHLOROMETHANE	75-27-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	BROMOFORM	75-25-2	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	BROMOMETHANE	74-83-9	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	CARBON DISULFIDE	75-15-0	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260D (MeOH)	CARBON TETRACHLORIDE	56-23-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	CHLOROBENZENE	108-90-7	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	CHLOROETHANE	75-00-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	CHLOROFORM	67-66-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	CHLOROMETHANE	74-87-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	CIS-1,2-DICHLOROETHENE	156-59-2	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	CIS-1,3-DICHLOROPROPENE	10061-01-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	CYCLOHEXANE	110-82-7	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260D (MeOH)	CYCLOHEXANONE	108-94-1	Non-Aq	water MDL*100	10000			ug/kg			30
8260D (MeOH)	DIBROMOCHLOROMETHANE	124-48-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	DIBROMOMETHANE	74-95-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	DICHLORODIFLUOROMETHANE (FREON 12)	75-71-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	DICHLOROFLUOROMETHANE (FREON 21)	75-43-4	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	DICHLOROMETHANE	75-09-2	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	DIETHYL ETHER	60-29-7	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	DIISOPROPYL ETHER	108-20-3	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	ETHYL METHACRYLATE	97-63-2	Non-Aq	water MDL*100	1000			ug/kg			30
8260D (MeOH)	ETHYL TERT-BUTYL ETHER (ETBE)	637-92-3	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	ETHYLBENZENE	100-41-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	HEXACHLOROBUTADIENE	87-68-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	IODOMETHANE	74-88-4	Non-Aq	water MDL*100	1000			ug/kg			30
8260D (MeOH)	ISOPROPYLBENZENE	98-82-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	M+P-XYLENE	179601-23-1	Non-Aq	water MDL*100	500	500	1000	ug/kg			30
8260D (MeOH)	METHACRYLONITRILE	126-98-7	Non-Aq	water MDL*100	2500			ug/kg			30
8260D (MeOH)	METHYL ACETATE	79-20-9	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260D (MeOH)	METHYL METHACRYLATE	80-62-6	Non-Aq	water MDL*100	1000			ug/kg			30
8260D (MeOH)	METHYLCYCLOHEXANE	108-87-2	Non-Aq	water MDL*100	1000	250	500	ug/kg			30
8260D (MeOH)	METHYL-TERT-BUTYL ETHER (MTBE)	1634-04-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	NAPTHALENE	91-20-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	N-BUTYLACETATE	123-86-4	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	N-BUTYLBENZENE	104-51-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	N-HEPTANE	142-82-5	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	N-PROPYLBENZENE	103-65-1	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	O-XYLENE	95-47-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	PROPIONITRILE	107-12-0	Non-Aq	water MDL*100	10000			ug/kg			30
8260D (MeOH)	SEC-BUTYLBENZENE	135-98-8	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	STYRENE	100-42-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	TAME	994-05-8	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	TERT-BUTYLBENZENE	98-06-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	TETRACHLOROETHENE	127-18-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	TETRAHYDROFURAN	109-99-9	Non-Aq	1500	1500			ug/kg			30
8260D (MeOH)	TOLUENE	108-88-3	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	TRANS-1,2-DICHLOROETHENE	156-60-5	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	TRANS-1,3-DICHLOROPROPENE	10061-02-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	TRANS-1,4-DICHLORO-2-BUTENE	110-57-6	Non-Aq	water MDL*100	500			ug/kg			30
8260D (MeOH)	TRICHLOROETHENE	79-01-6	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	TRICHLOROFLUOROMETHANE (FREON 11)	75-69-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	VINYL ACETATE	108-05-4	Non-Aq	water MDL*100	1000			ug/kg			30
8260D (MeOH)	VINYL CHLORIDE	75-01-4	Non-Aq	water MDL*100	500	250	500	ug/kg			30
8260D (MeOH)	XYLENES, TOTAL	1330-20-7	Non-Aq	water MDL*100	1000	750	1500	ug/kg			30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8260D (MeOH)-SURR	1,2-DICHLOROETHANE-D4-SURR	17060-07-0	Non-Aq	NA	NA			%			NA
8260D (MeOH)-SURR	4-BROMOFLUOROBENZENE-SURR	460-00-4	Non-Aq	NA	NA			%			NA
8260D (MeOH)-SURR	DIBROMOFLUOROMETHANE-SURR	1868-53-7	Non-Aq	NA	NA			%			NA
8260D (MeOH)-SURR	TOLUENE-D8-SURR	2037-26-5	Non-Aq	NA	NA			%			NA

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
1311/8260D (TCLP)	1,1-DICHLOROETHENE (1,1-DCE)	75-35-4	Solid	NA	50 (5.0)			ug/L	same as water	ame as water	30
1311/8260D (TCLP)	1,2-DICHLOROETHANE	107-06-2	Solid	NA	50 (5.0)			ug/L			30
1311/8260D (TCLP)	1,4-DICHLOROBENZENE	106-46-7	Solid	NA	50 (5.0)			ug/L			30
1311/8260D (TCLP)	2-BUTANONE (MEK)	78-93-3	Solid	NA	100 (10)			ug/L			30
1311/8260D (TCLP)	4-METHYL-2-PENTANONE (MIBK)	108-10-1	Solid	NA	100 (10)			ug/L			30
1311/8260D (TCLP)	BENZENE	71-43-2	Solid	NA	50 (5.0)			ug/L			30
1311/8260D (TCLP)	CARBON TETRACHLORIDE	56-23-5	Solid	NA	50 (5.0)			ug/L			30
1311/8260D (TCLP)	CHLOROBENZENE	108-90-7	Solid	NA	50 (5.0)			ug/L			30
1311/8260D (TCLP)	CHLOROFORM	67-66-3	Solid	NA	50 (5.0)			ug/L			30
1311/8260D (TCLP)	HEXACHLOROBUTADIENE	87-68-3	Solid	NA	50 (5.0)			ug/L			30
1311/8260D (TCLP)	TETRACHLOROETHENE (PCE)	127-18-4	Solid	NA	50 (5.0)			ug/L			30
1311/8260D (TCLP)	TRICHLOROETHENE (TCE)	79-01-6	Solid	NA	50 (5.0)			ug/L			30
1311/8260D (TCLP)	VINYL CHLORIDE	75-01-4	Solid	NA	50 (5.0)			ug/L			30
1311/8260D-SURR	1,2-DICHLOROETHANE-D4-SURR	17060-07-0	Solid	NA	NA			%			NA
1311/8260D-SURR	4-BROMOFLUOROBENZENE-SURR	460-00-4	Solid	NA	NA			%			NA
1311/8260D-SURR	DIBROMOFLUOROMETHANE-SURR	1868-53-7	Solid	NA	NA			%			NA
1311/8260D-SURR	TOLUENE-D8-SURR	2037-26-5	Solid	NA	NA			%			NA
8270E/SPE	1,4-DIOXANE	123-91-1	Water	0.035	0.04	0.027	0.04	ug/L	58-124	33-146	30
8270E/SPE -SURR	1,4-DIOXANE-D8	17647-74-4	Water	NA	NA	100		%	64-124	64-124	30
8270E	1,2,3,4-TETRACHLOROBENZENE	634-66-2	Water	1.5	5			ug/L	17-120	25-127	30
8270E	1,2,4,5-TETRACHLOROBENZENE	95-94-3	Water	1.2	10	5	10	ug/L	10-116	15-132	30
8270E	1,2,4-TRICHLOROBENZENE	120-82-1	Water	1.2	10	5	10	ug/L	26-85	10-127	30
8270E	1,2-DICHLOROBENZENE	95-50-1	Water	1.2	10	5	10	ug/L	20-85	17-105	30
8270E	1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	122-66-7	Water	1.4	10	5	10	ug/L	54-122	32-116	30
8270E	1,3,5-TRINITROBENZENE	99-35-4	Water	4.4	10			ug/L	37-199	37-199	30
8270E	1,3-DICHLOROBENZENE	541-73-1	Water	1.1	10	5	10	ug/L	18-83	21-99	30
8270E	1,3-DINITROBENZENE	99-65-0	Water	1.8	10			ug/L	60-126	36-139	30
8270E	1,4-DICHLOROBENZENE	106-46-7	Water	1.2	10	5	10	ug/L	18-82	10-124	30
8270E	1,4-NAPHTHOQUINONE	130-15-4	Water	3.6	50			ug/L	44-143	10-155	30
8270E	1-METHYL-2-PYRROLIDINONE	872-50-4	Water	1	10			ug/L	10-72	10-76	30
8270E	1-METHYLNAPHTHALENE	90-12-0	Water	1.5	10	5	10	ug/L	37-95	41-112	30
8270E	1-NAPHTHYLAMINE	134-32-7	Water	5.2	10			ug/L	26-130	10-125	30
8270E	2,3,4,6-TETRACHLOROPHENOL	58-90-2	Water	2.7	10	5	10	ug/L	55-126	42-136	30
8270E	2,3,4-TRICHLOROPHENOL	15950-66-0	Water	1.1	5				30-130		
8270E	2,3,5-TRICHLOROPHENOL	933-78-8	Water	1.4	5				30-130		
8270E	2,3,6-TRICHLOROPHENOL	933-75-5	Water	1	5				30-130		
8270E	2,4,5-TRICHLOROPHENOL	95-95-4	Water	1.1	10	5	10	ug/L	55-114	48-134	30
8270E	2,4,6-TRICHLOROPHENOL	88-06-2	Water	1.4	10	5	10	ug/L	49-103	44-135	30
8270E	2,4-DICHLOROPHENOL	120-83-2	Water	1.3	10	5	10	ug/L	43-101	40-130	30
8270E	2,4-DIMETHYLPHENOL	105-67-9	Water	4.3	10	5	10	ug/L	45-98	42-121	30
8270E	2,4-DINITROPHENOL	51-28-5	Water	20	50	25	50	ug/L	14-129	21-168	30
8270E	2,4-DINITROTOLUENE	121-14-2	Water	2.4	10	5	10	ug/L	58-124	37-143	30
8270E	2,5-DICHLOROPHENOL	538-78-8	Water	1	5				24-121		
8270E	2,6-DICHLOROPHENOL	87-65-0	Water	1.2	10	5	10	ug/L	27-102	44-138	30
8270E	2,6-DINITROTOLUENE	606-20-2	Water	1.4	10	5	10	ug/L	62-126	39-136	30
8270E	2-ACETYLAMINOFLUORENE	53-96-3	Water	4.1	10			ug/L	31-136	47-143	30
8270E	2-CHLORONAPHTHALENE	91-58-7	Water	1.4	10	5	10	ug/L	38-97	40-108	30
8270E	2-CHLOROPHENOL	95-57-8	Water	1.1	10	5	10	ug/L	33-93	37-112	30
8270E	2-METHYL-5-NITROANILINE (5-NITRO-O-TOLUIDINE)	99-55-8	Water	1.9	10			ug/L	31-119	43-150	30
8270E	2-METHYLNAPHTHALENE	91-57-6	Water	1.3	10	5	10	ug/L	35-94	34-102	30
8270E	2-METHYLPHENOL	95-48-7	Water	1	10	5	10	ug/L	41-97	37-102	30
8270E	2-NAPHTHYLAMINE	91-59-8	Water	3.6	10			ug/L	30-134	10-100	30
8270E	2-NITROANILINE	88-74-4	Water	1.4	10	5	10	ug/L	56-122	40-136	30
8270E	2-NITROPHENOL	88-75-5	Water	1.5	10	5	10	ug/L	36-101	27-143	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8270E	2-PICOLINE	109-06-8	Water	13	50			ug/L	10-84	10-98	30
8270E	3,4-DICHLOROPHENOL	95-77-2	Water	1.1	5				48-117		
8270E	3,3'-DICHLOROBENZIDINE	91-94-1	Water	2.7	10	5	10	ug/L	37-130	11-131	30
8270E	3,3'-DIMETHYLBENZIDINE	119-93-7	Water	18	50			ug/L	10-101	10-79	30
8270E	3+4-CHLOROPHENOL		Water	8.1	10				22-109		
8270E	3+4-METHYLPHENOL	106-44-5 + 108	Water	1.2	10	5	10	ug/L	40-92	30-95	30
8270E	3,5-DICHLOROPHENOL	591-35-5	Water	1.6	5				37-124		
8270E	3-METHYLCHOLANTHRENE	56-49-5	Water	1.5	10			ug/L	15-145	35-118	30
8270E	3-NITROANILINE	99-09-2	Water	2.8	10	5	10	ug/L	52-115	19-117	30
8270E	4,6-DINITRO-2-METHYLPHENOL	534-52-1	Water	8.7	50	25	50	ug/L	31-119	25-154	30
8270E	4-AMINOBIPHENYL	92-67-1	Water	2.7	10			ug/L	34-139	10-119	30
8270E	4-BROMOPHENYL-PHENYLETHER	101-55-3	Water	1.7	10	5	10	ug/L	54-123	39-115	30
8270E	4-CHLORO-3-METHYLPHENOL	59-50-7	Water	1.1	10	5	10	ug/L	52-104	41-126	30
8270E	4-CHLOROANILINE	106-47-8	Water	2.6	10	5	10	ug/L	43-113	19-111	30
8270E	4-CHLOROPHENYL-PHENYLETHER	7005-72-3	Water	1.5	10	5	10	ug/L	52-113	41-111	30
8270E	4-NITROANILINE	100-01-6	Water	1.4	10	5	10	ug/L	54-118	18-143	30
8270E	4-NITROPHENOL	100-02-7	Water	6.4	50	25	50	ug/L	16-64	10-126	30
8270E	4-NITROQUINOLINE-1-OXIDE	56-57-5	Water	17	50			ug/L	10-114	10-175	30
8270E	7,12-DIMETHYLBENZ(a)ANTHRACENE	57-97-6	Water	16	50			ug/L	11-130	10-153	30
8270E	aa-DIMETHYLPHENETHYLAMINE	122-09-8	Water		50			ug/L	40-150	40-150	30
8270E	ACENAPHTHENE	83-32-9	Water	1.4	10	5	10	ug/L	46-103	43-117	30
8270E	ACENAPHTHYLENE	208-96-8	Water	1.4	10	5	10	ug/L	51-114	45-119	30
8270E	ACETOPHENONE	98-86-2	Water	1.3	10	5	10	ug/L	39-99	40-113	30
8270E	alpha-TERPINEOL	98-55-5	Water	2.4	10			ug/L	66-143	41-127	30
8270E	ANILINE	62-53-3	Water	3.1	10			ug/L	15-104	11-101	30
8270E	ANTHRACENE	120-12-7	Water	1.3	10	5	10	ug/L	61-115	45-127	30
8270E	ARAMITE	140-57-8	Water	5.2	10			ug/L	58-200	10-191	30
8270E	ATRAZINE	1912-24-9	Water	2.1	10	5	10	ug/L	51-145	50-165	30
8270E	BENZALDEHYDE	100-52-7	Water	1	10	5	10	ug/L	17-120	32-133	30
8270E	BENZIDINE	92-87-5	Water	100	100	100	200	ug/L	10-135	10-146	30
8270E	BENZO(A)ANTHRACENE	56-55-3	Water	1.6	10	5	10	ug/L	60-110	46-126	30
8270E	BENZO(A)PYRENE	50-32-8	Water	1.2	10	5	10	ug/L	68-137	44-114	30
8270E	BENZO(B)FLUORANTHENE	205-99-2	Water	1.2	10	5	10	ug/L	59-114	41-127	30
8270E	BENZO(G,H,I)PERYLENE	191-24-2	Water	2.1	10	5	10	ug/L	60-123	50-143	30
8270E	BENZO(K)FLUORANTHENE	207-08-9	Water	1.3	10	5	10	ug/L	62-122	46-139	30
8270E	BENZOIC ACID	65-85-0	Water	36	50	50	100	ug/L	10-110	10-94	30
8270E	BENZYL ALCOHOL	100-51-6	Water	1.6	10	5	10	ug/L	46-106	31-109	30
8270E	BIPHENYL	92-52-4	Water	1.4	10	5	10	ug/L	29-93	10-126	30
8270E	BIS(1-CHLOROISOPROPYL)ETHER	108-60-1	Water	1.4	10	5	10	ug/L	32-104	21-126	30
8270E	BIS(-2-CHLOROETHOXY)METHANE	111-91-1	Water	1.9	10	5	10	ug/L	55-126	41-118	30
8270E	BIS(2-CHLOROETHYL)ETHER	111-44-4	Water	1.3	10	5	10	ug/L	36-101	33-108	30
8270E	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	Water	4.3	10	10	20	ug/L	51-132	41-132	30
8270E	BUTYL BENZYL PHTHALATE	85-68-7	Water	2.9	10	5	10	ug/L	54-122	41-148	30
8270E	CAPROLACTAM	105-60-2	Water	5.4	10	5.4	10	ug/L	13-50	10-48	30
8270E	CARBAZOLE	86-74-8	Water	1.6	10	5	10	ug/L	64-133	39-144	30
8270E	CHLOROBENZILATE	510-15-6	Water	3.4	10			ug/L	16-147	43-143	30
8270E	CHRYSENE	218-01-9	Water	1.2	10	5	10	ug/L	61-116	47-126	30
8270E	DIALLATE	2303-16-4	Water	2	10			ug/L	20-116	35-159	30
8270E	DIBENZO(A,H)ANTHRACENE	53-70-3	Water	1.1	10	5	10	ug/L	34-140	43-136	30
8270E	DIBENZOFURAN	132-64-9	Water	1.4	10	5	10	ug/L	50-107	46-119	30
8270E	DIETHYLPHTHALATE	84-66-2	Water	1.1	10	5	10	ug/L	57-113	36-122	30
8270E	DIMETHOATE	60-51-5	Water	1.8	10			ug/L	31-142	50-155	30
8270E	DIMETHYL PHTHALATE	131-11-3	Water	1.3	10	5	10	ug/L	64-114	33-123	30
8270E	DI-N-BUTYL PHTHALATE	84-74-2	Water	1.7	10	5	10	ug/L	61-147	43-130	30
8270E	DI-N-OCTYL PHTHALATE	117-84-0	Water	3.3	10	5	10	ug/L	43-139	40-139	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8270E	DINOSEB	88-85-7	Water	18	50			ug/L	21-128	62-143	30
8270E	DIPHENYLAMINE	122-39-4	Water	2.7	10			ug/L	66-126	40-150	30
8270E	DISULFOTON	298-04-4	Water	3	10			ug/L	26-132	34-141	30
8270E	ETHYL METHANESULFONATE	62-50-0	Water	1.1	10			ug/L	27-99	28-118	30
8270E	FAMPHUR	52-85-7	Water	5.4	10			ug/L	34-180	45-190	30
8270E	FLUORANTHENE	206-44-0	Water	1.5	10	5	10	ug/L	58-129	43-135	30
8270E	FLUORENE	86-73-7	Water	1.3	10	5	10	ug/L	54-111	43-113	30
8270E	HEXACHLOROBENZENE	118-74-1	Water	1.6	10	5	10	ug/L	54-122	42-125	30
8270E	HEXACHLOROBUTADIENE	87-68-3	Water	2.2	10	5	10	ug/L	25-89	10-111	30
8270E	HEXACHLOROCYCLOPENTADIENE	77-47-4	Water	2.1	10	5	10	ug/L	10-71	10-103	30
8270E	HEXACHLOROETHANE	67-72-1	Water	1.1	10	5	10	ug/L	16-81	12-101	30
8270E	HEXACHLOROPROPENE	1888-71-7	Water	1	10			ug/L	10-82	27-114	30
8270E	INDENO(1,2,3-CD)PYRENE	193-39-5	Water	1.8	10	5	10	ug/L	54-119	49-140	30
8270E	ISODRIN	465-73-6	Water	1.5	10			ug/L	16-155	60-119	30
8270E	ISOPHORONE	78-59-1	Water	1.4	10	5	10	ug/L	51-108	40-111	30
8270E	ISOSAFROLE	120-58-1	Water	1.7	10			ug/L	23-113	37-126	30
8270E	KEPONE	143-50-0	Water	31	50			ug/L	10-145	10-157	30
8270E	METHAPYRILENE	91-80-5	Water	44	50			ug/L	10-118	10-118	30
8270E	METHYL METHANESULFONATE	66-27-3	Water	2.4	10			ug/L	26-106	10-101	30
8270E	METHYL PARATHION	298-00-0	Water	3.5	10			ug/L	18-181	49-159	30
8270E	NAPHTHALENE	91-20-3	Water	1.2	10	5	10	ug/L	32-91	37-108	30
8270E	NITROBENZENE	98-95-3	Water	1.5	10	5	10	ug/L	39-100	35-112	30
8270E	N-NITROSODIETHYLAMINE	55-18-5	Water	1.4	10			ug/L	24-97	40-123	30
8270E	N-NITROSODIMETHYLAMINE	62-75-9	Water	1	10	5	10	ug/L	19-81	20-80	30
8270E	N-NITROSODI-N-BUTYLAMINE	924-16-3	Water	2.1	10			ug/L	28-106	40-130	30
8270E	N-NITROSO-DI-N-PROPYLAMINE	621-64-7	Water	1.2	10	5	10	ug/L	44-101	35-108	30
8270E	N-NITROSODIPHENYLAMINE	86-30-6	Water	6.3	10	6.3	10	ug/L	65-126	43-127	30
8270E	N-NITROSOMETHYLETHYLAMINE	10595-95-6	Water	2.6	10			ug/L	21-94	43-120	30
8270E	N-NITROSOMORPHOLINE	59-89-2	Water	1.4	10			ug/L	38-86	40-127	30
8270E	N-NITROSOPIPERIDINE	100-75-4	Water	1.4	10			ug/L	26-106	40-127	30
8270E	N-NITROSOPYRROLIDINE	930-55-2	Water	1	10			ug/L	30-97	47-123	30
8270E	OCTACHLOROCYCLOPENTENE	706-78-5	Water	3.2	5			ug/L	37-139	25-144	30
8270E	ooo-TRIETHYL PHOSPHOROTHIOATE	126-68-1	Water	1.4	10			ug/L	38-123	38-123	30
8270E	o-TOLUIDINE	95-53-4	Water	3	10			ug/L	22-104	38-129	30
8270E	PARATHION (ETHYL)	56-38-2	Water	3.5	10			ug/L	10-162	43-149	30
8270E	p-DIMETHYLAMINOAZOBENZENE	60-11-7	Water	3.2	10			ug/L	17-144	42-129	30
8270E	PENTACHLOROBENZENE	608-93-5	Water	1.4	10			ug/L	19-128	38-127	30
8270E	PENTACHLOROETHANE	76-01-7	Water	1.2	10			ug/L	12-75	26-96	30
8270E	PENTACHLORONITROBENZENE (PCNB)	82-68-8	Water	1.5	10			ug/L	15-154	47-151	30
8270E	PENTACHLOROPHENOL (PCP)	87-86-5	Water	9.7	50	25	50	ug/L	11-154	29-164	30
8270E	PHENACETIN	62-44-2	Water	1.5	10			ug/L	29-122	38-165	30
8270E	PHENANTHRENE	85-01-8	Water	1.4	10	5	10	ug/L	60-111	46-123	30
8270E	PHENOL	108-95-2	Water	1	10	5	10	ug/L	10-67	10-113	30
8270E	PHORATE	298-02-2	Water	1.4	10			ug/L	22-128	40-124	30
8270E	p-PHENYLENEDIAMINE	106-50-3	Water	IND	50			ug/L		40-150	30
8270E	PRONAMIDE	23950-58-5	Water	1.8	10			ug/L	32-127	38-167	30
8270E	PYRENE	129-00-0	Water	1.5	10	5	10	ug/L	62-111	44-129	30
8270E	PYRIDINE	110-86-1	Water	1	10			ug/L	10-86	10-123	30
8270E	SAFROLE	94-59-7	Water	1.3	10			ug/L	22-113	36-122	30
8270E	SULFOTEPP	3689-24-5	Water	1.3	10			ug/L	36-144	41-152	30
8270E	THIONAZIN	297-97-2	Water	1.6	10			ug/L	29-122	47-142	30
8270E-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Water	NA	NA	10.00	20.00	ug/L	31-133	35-141	NA
8270E-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Water	NA	NA	5.00	10.00	ug/L	25-99	31-118	NA
8270E-SURR	2-FLUOROPHENOL-SURR	367-12-4	Water	NA	NA	10.00	20.00	ug/L	15-72	10-70	NA
8270E-SURR	NITROBENZENE-D5-SURR	4165-60-0	Water	NA	NA	5.00	10.00	ug/L	22-104	31-110	NA

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8270E-SURR	PHENOL-D6-SURR	13127-88-3	Water	NA	NA	10.00	20.00	ug/L	10-55	10-107	NA
8270E-SURR	TERPHENYL-D14 -SURR	1718-51-0	Water	NA	NA	5.00	10.00	ug/L	10-143	10-165	NA
8270E-MW	1,2,4,5-TETRACHLOROBENZENE	95-94-3	Solid	74	330	330	670	ug/kg	20-126	10-115	30
8270E-MW	1,2,4-TRICHLOROBENZENE	120-82-1	Solid	53	330	167	330	ug/kg	22-90	11-89	30
8270E-MW	1,2-DICHLOROBENZENE	95-50-1	Solid	57	330	167	330	ug/kg	17-86	14-77	30
8270E-MW	1,2-DIPHENYLHYDRAZINE (AZOBENZENE)	122-66-7	Solid	160	330	167	330	ug/kg	36-112	10-101	30
8270E-MW	1,3,5-TRINITROBENZENE	99-35-4	Solid	84	330			ug/kg	61-134	NA	30
8270E-MW	1,3-DICHLOROBENZENE	541-73-1	Solid	52	330	167	330	ug/kg	16-84	10-75	30
8270E-MW	1,3-DINITROBENZINE	99-65-0	Solid	79	330			ug/kg	46-131	21-141	30
8270E-MW	1,4-DICHLOROBENZENE	106-46-7	Solid	55	330	167	330	ug/kg	16-83	10-84	30
8270E-MW	1,4-DIOXANE	123-91-1	Solid	32	67			ug/kg	10-58		30
8270E-MW	1,4-NAPHTHOQUINONE	130-15-4	Solid	91	1700			ug/kg		NA	30
8270E-MW	1,4-PHENYLENEDIAMINE	106-50-3	Solid	1700	1700			ug/kg		40-150	30
8270E-MW	1-METHYL-2-PYRROLIDINONE	872-50-4	Solid	82	330			ug/kg	31-121	23-141	30
8270E-MW	1-METHYLNAPHTHALENE	90-12-0	Solid	61	330	167	330	ug/kg	29-100	10-93	30
8270E-MW	1-NAPHTHYLAMINE	134-32-7	Solid	120	330			ug/kg		NA	30
8270E-MW	2,3,4,6-TETRACHLOROPHENOL	58-90-2	Solid	120	330	167	330	ug/kg	42-117	10-123	30
8270E-MW	2,4,5-TRICHLOROPHENOL	95-95-4	Solid	82	330	330	670	ug/kg	40-114	12-109	30
8270E-MW	2,4,6-TRICHLOROPHENOL	88-06-2	Solid	74	330	167	330	ug/kg	33-108	13-149	30
8270E-MW	2,4-DICHLOROPHENOL	120-83-2	Solid	64	330	167	330	ug/kg	30-103	16-98	30
8270E-MW	2,4-DIMETHYLPHENOL	105-67-9	Solid	59	330	167	330	ug/kg	32-100	10-98	30
8270E-MW	2,4-DINITROPHENOL	51-28-5	Solid	540	1700	833	1700	ug/kg	10-97	10-129	30
8270E-MW	2,4-DINITROTOLUENE	121-14-2	Solid	130	330	167	330	ug/kg	53-120	10-124	30
8270E-MW	2,6-DICHLOROPHENOL	87-65-0	Solid	64	330	167	330	ug/kg	43-106	40-150	30
8270E-MW	2,6-DINITROTOLUENE	606-20-2	Solid	72	330	167	330	ug/kg	48-119	13-112	30
8270E-MW	2-ACETYLAMINOFLUORENE	53-96-3	Solid	95	330			ug/kg		NA	30
8270E-MW	2-CHLORONAPHTHALENE	91-58-7	Solid	66	330	167	330	ug/kg	33-103	10-94	30
8270E-MW	2-CHLOROPHENOL	95-57-8	Solid	55	330	167	330	ug/kg	26-90	14-99	30
8270E-MW	2-METHYL-5-NITROANILINE(5-NITRO-O-	99-55-8	Solid	140	330			ug/kg	43-109	40-150	30
8270E-MW	2-METHYLNAPHTHALENE	91-57-6	Solid	116	330	167	330	ug/kg	29-99	10-90	30
8270E-MW	2-METHYLPHENOL	95-48-7	Solid	69	330	167	330	ug/kg	33-99	10-86	30
8270E-MW	2-NAPHTHYLAMINE	91-59-8	Solid	150	330			ug/kg		NA	30
8270E-MW	2-NITROANILINE	88-74-4	Solid	78	330	833	1700	ug/kg	41-119	10-109	30
8270E-MW	2-NITROPHENOL	88-75-5	Solid	77	330	167	330	ug/kg	24-98	10-90	30
8270E-MW	2-PICOLINE	109-06-8	Solid	64	330			ug/kg		NA	30
8270E-MW	3,3'-DICHLOROBENZIDINE	91-94-1	Solid	120	330	167	330	ug/kg	20-127	NA	30
8270E-MW	3,3'-DIMETHYLBENZIDINE	119-93-7	Solid	213	1700			ug/kg	10-58	10-95	30
8270E-MW	3+4-METHYLPHENOL	106-44-5 + 108-39-4	Solid	68	330	167	330	ug/kg	32-100	11-101	30
8270E-MW	3-METHYLCHOLANTHRENE	56-49-5	Solid	94	330			ug/kg		NA	30
8270E-MW	3-NITROANILINE	99-09-2	Solid	67	330	833	1700	ug/kg	29-105	10-104	30
8270E-MW	4,6-DINITRO-2-METHYLPHENOL	534-52-1	Solid	190	1700	833	1700	ug/kg	20-105	10-123	30
8270E-MW	4-AMINOBIPHENYL	92-67-1	Solid	130	330			ug/kg		NA	30
8270E-MW	4-BROMOPHENYL-PHENYLETHER	101-55-3	Solid	87	330	167	330	ug/kg	37-116	10-99	30
8270E-MW	4-CHLORO-3-METHYLPHENOL	59-50-7	Solid	67	330	167	330	ug/kg	40-116	10-108	30
8270E-MW	4-CHLOROANILINE	106-47-8	Solid	120	330	167	330	ug/kg	10-87	10-91	30
8270E-MW	4-CHLOROPHENYL-PHENYLETHER	7005-72-3	Solid	71	330	167	330	ug/kg	42-111	10-95	30
8270E-MW	4-NITROANILINE	100-01-6	Solid	71	330	833	1700	ug/kg	43-120	10-137	30
8270E-MW	4-NITROPHENOL	100-02-7	Solid	170	1700	833	1700	ug/kg	34-116	10-130	30
8270E-MW	4-NITROQUINOLINE-1-OXIDE	56-57-5	Solid	630	1700			ug/kg		NA	30
8270E-MW	7,12-DIMETHYLBENZ(a)ANTHRACENE	57-97-6	Solid	140	330			ug/kg		NA	30
8270E-MW	aa-DIMETHYLPHENETHYLAMINE	122-09-8	Solid	1700	1700			ug/kg		NA	30
8270E-MW	ACENAPHTHENE	83-32-9	Solid	63	330	167	330	ug/kg	41-110	10-100	30
8270E-MW	ACENAPHTHYLENE	208-96-8	Solid	67	330	167	330	ug/kg	44-122	10-102	30
8270E-MW	ACETOPHENONE	98-86-2	Solid	95	330	500	1000	ug/kg	23-87	12-99	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8270E-MW	ANILINE	62-53-3	Solid	74	330			ug/kg	21-82	10-94	30
8270E-MW	ANTHRACENE	120-12-7	Solid	55	330	167	330	ug/kg	41-123	10-129	30
8270E-MW	ARAMITE	140-57-8	Solid	319	1700			ug/kg		NA	30
8270E-MW	ATRAZINE	1912-24-9	Solid	98	330	333	667	ug/kg		NA	30
8270E-MW	BENZALDEHYDE	100-52-7	Solid	180	330	167	333	ug/kg		NA	30
8270E-MW	BENZIDINE	92-87-5	Solid	420	3300	1670	3300	ug/kg	10-75	10-130	30
8270E-MW	BENZO(A)ANTHRACENE	56-55-3	Solid	49	330	167	330	ug/kg	44-116	10-122	30
8270E-MW	BENZO(A)PYRENE	50-32-8	Solid	88	330	167	330	ug/kg	56-146	10-122	30
8270E-MW	BENZO(B)FLUORANTHENE	205-99-2	Solid	55	330	167	330	ug/kg	47-120	10-112	30
8270E-MW	BENZO(G,H,I)PERYLENE	191-24-2	Solid	76	330	167	330	ug/kg	41-129	10-136	30
8270E-MW	BENZO(K)FLUORANTHENE	207-08-9	Solid	54	330	167	330	ug/kg	49-124	10-112	30
8270E-MW	BENZOIC ACID	65-85-0	Solid	520	1700	833	1700	ug/kg	10-126	10-142	30
8270E-MW	BENZYL ALCOHOL	100-51-6	Solid	55	330	333	667	ug/kg	31-115	10-101	30
8270E-MW	BIPHENYL	92-52-4	Solid	98	330	167	330	ug/kg	24-112	10-99	30
8270E-MW	BIS(1-CHLOROISOPROPYL)ETHER (2,2-OXYBIS(1-CHLOROPROPANE)	108-60-1	Solid	68	330	167	330	ug/kg	22-99	10-87	30
8270E-MW	BIS(2-CHLOROETHOXY)METHANE	111-91-1	Solid	81	330	167	330	ug/kg	38-119	16-93	30
8270E-MW	BIS(2-CHLOROETHYL)ETHER	111-44-4	Solid	65	330	167	330	ug/kg	23-94	10-79	30
8270E-MW	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	Solid	61	500	833	1700	ug/kg	38-139	10-116	30
8270E-MW	BUTYL BENZYL PHTHALATE	85-68-7	Solid	96	330	167	330	ug/kg	40-134	10-128	30
8270E-MW	CAPROLACTAM	105-60-2	Solid	73	330	167	330	ug/kg	21-128	10-112	30
8270E-MW	CARBAZOLE	86-74-8	Solid	54	330	167	330	ug/kg	42-131	10-138	30
8270E-MW	CHLOROBENZILATE	510-15-6	Solid	71	330			ug/kg		NA	30
8270E-MW	CHRYSENE	218-01-9	Solid	49	330	167	330	ug/kg	44-119	10-113	30
8270E-MW	DIALLATE	2303-16-4	Solid	103	330			ug/kg		NA	30
8270E-MW	DIBENZO(A,H)ANTHRACENE	53-70-3	Solid	72	330	167	330	ug/kg	18-146	10-130	30
8270E-MW	DIBENZOFURAN	132-64-9	Solid	60	330	167	330	ug/kg	43-113	10-102	30
8270E-MW	DIETHYL PHTHALATE	84-66-2	Solid	59	330	330	667	ug/kg	43-118	10-101	30
8270E-MW	DIMETHOATE	60-51-5	Solid	140	330			ug/kg		NA	30
8270E-MW	DIMETHYL PHTHALATE	131-11-3	Solid	63	330	167	330	ug/kg	40-118	10-113	30
8270E-MW	DI-N-BUTYLPHTHALATE	84-74-2	Solid	54	330	167	330	ug/kg	42-141	10-119	30
8270E-MW	DI-N-OCTYL PHTHALATE	117-84-0	Solid	120	330	167	330	ug/kg	38-143	10-121	30
8270E-MW	DINOSEB	88-85-7	Solid	320	1700			ug/kg	14-140	NA	30
8270E-MW	DIPHENYLAMINE	122-39-4	Solid	210	330			ug/kg	44-128	21-89	30
8270E-MW	DISULFOTON	298-04-4	Solid	150	330			ug/kg		NA	30
8270E-MW	ETHYL METHANESULFONATE	62-50-0	Solid	91	330			ug/kg		NA	30
8270E-MW	FAMPHUR	52-85-7	Solid	91	333						
8270E-MW	FLUORANTHENE	206-44-0	Solid	83	330	167	330	ug/kg	39-128	10-125	30
8270E-MW	FLUORENE	86-73-7	Solid	62	330	167	330	ug/kg	40-117	10-109	30
8270E-MW	HEXACHLOROBENZENE	118-74-1	Solid	79	330	167	330	ug/kg	35-122	10-106	30
8270E-MW	HEXACHLOROBUTADIENE	87-68-3	Solid	116	330	167	330	ug/kg	28-96	10-142	30
8270E-MW	HEXACHLOROCYCLOPENTADIENE	77-47-4	Solid	110	330	167	330	ug/kg	10-111	10-133	30
8270E-MW	HEXACHLOROETHANE	67-72-1	Solid	62	330	167	330	ug/kg	18-85	10-129	30
8270E-MW	HEXACHLOROPROPENE	1888-71-7	Solid	59	330			ug/kg		NA	30
8270E-MW	INDENO(1,2,3-CD)PYRENE	193-39-5	Solid	110	330	167	330	ug/kg	43-129	10-124	30
8270E-MW	ISODRIN	465-73-6	Solid	58	330			ug/kg		NA	30
8270E-MW	ISOPHORONE	78-59-1	Solid	69	330	167	330	ug/kg	39-104	NA	30
8270E-MW	ISOSAFROLE	120-58-1	Solid	110	330			ug/kg		NA	30
8270E-MW	KEPONE	143-50-0	Solid	209	333			ug/kg			
8270E-MW	METHAPYRILENE	91-80-5	Solid	311	1700			ug/kg		NA	30
8270E-MW	METHYL METHANESULFONATE	66-27-3	Solid	72	330			ug/kg		NA	30
8270E-MW	METHYL PARATHION	298-00-0	Solid	115	330			ug/kg		NA	30
8270E-MW	NAPHTHALENE	91-20-3	Solid	62	330	167	330	ug/kg	31-93	10-89	30
8270E-MW	NITROBENZENE	98-95-3	Solid	59	330	167	330	ug/kg	31-99	10-77	30
8270E-MW	N-NITROSODIETHYLAMINE	55-18-5	Solid	52	330	167	330	ug/kg		NA	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8270E-MW	N-NITROSODIMETHYLAMINE	62-75-9	Solid	76	330	167	330	ug/kg	21-81	10-67	30
8270E-MW	N-NITROSODI-N-BUTYLAMINE	924-16-3	Solid	89	330			ug/kg		NA	30
8270E-MW	N-NITROSO-DI-N-PROPYLAMINE	621-64-7	Solid	110	330	167	330	ug/kg	30-98	10-76	30
8270E-MW	N-NITROSODIPHENYLAMINE	86-30-6	Solid	206	330	330	670	ug/kg	43-130	16-178	30
8270E-MW	N-NITROSOMETHYLETHYLAMINE	10595-95-6	Solid	237	330			ug/kg		NA	30
8270E-MW	N-NITROSOMORPHOLINE	59-89-2	Solid	120	330			ug/kg		NA	30
8270E-MW	N-NITROSOPIPERIDINE	100-75-4	Solid	120	330			ug/kg		NA	30
8270E-MW	N-NITROSOPYRROLIDINE	930-55-2	Solid	86	330			ug/kg		NA	30
8270E-MW	ooo-TRIETHYL PHOSPHOROTHIOATE	126-68-1	Solid	87	330			ug/kg		NA	30
8270E-MW	o-TOLUIDINE	95-53-4	Solid	69	330			ug/kg		NA	30
8270E-MW	PARATHION (ETHYL)	56-38-2	Solid	96	330			ug/kg		NA	30
8270E-MW	p-DIMETHYLAMINOAZOBENZENE	60-11-7	Solid	130	330			ug/kg		NA	30
8270E-MW	PENTACHLOROBENZENE	608-93-5	Solid	58	330			ug/kg	42-122	NA	30
8270E-MW	PENTACHLOROETHANE	76-01-7	Solid	67	330			ug/kg		NA	30
8270E-MW	PENTACHLORONITROBENZENE (PCNB)	82-68-8	Solid	59	330			ug/kg		NA	30
8270E-MW	PENTACHLOROPHENOL (PCP)	87-86-5	Solid	330	1700	833	1700	ug/kg	36-138	10-118	30
8270E-MW	PHENACETIN	62-44-2	Solid	120	330			ug/kg		NA	30
8270E-MW	PHENANTHRENE	85-01-8	Solid	47	330	167	330	ug/kg	39-120	10-137	30
8270E-MW	PHENOL	108-95-2	Solid	67	330	167	330	ug/kg	31-100	10-144	30
8270E-MW	PHORATE	298-02-2	Solid	110	330			ug/kg		NA	30
8270E-MW	PRONAMIDE	23950-58-5	Solid	53	330			ug/kg		NA	30
8270E-MW	PYRENE	129-00-0	Solid	55	330	167	330	ug/kg	45-125	10-118	30
8270E-MW	PYRIDINE	110-86-1	Solid	45	330			ug/kg	12-80	10-120	30
8270E-MW	SAFROLE	94-59-7	Solid	67	330			ug/kg		NA	30
8270E-MW	SULFOTEPP	3689-24-5	Solid	71	330			ug/kg		NA	30
8270E-MW	THIONAZIN	297-97-2	Solid	95	330			ug/kg		NA	30
8270E-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Solid	NA	NA	333.00	667.00	ug/kg	18-123	18-123	NA
8270E-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Solid	NA	NA	167.00	333.00	ug/kg	18-104	18-104	NA
8270E-SURR	2-FLUOROPHENOL-SURR	367-12-4	Solid	NA	NA	333.00	667.00	ug/kg	13-96	13-96	NA
8270E-SURR	NITROBENZENE-D5-SURR	4165-60-0	Solid	NA	NA	167.00	333.00	ug/kg	12-98	12-98	NA
8270E-SURR	PHENOL-D6-SURR	13127-88-3	Solid	NA	NA	333.00	667.00	ug/kg	16-95	16-95	NA
8270E-SURR	TERPHENYL-D14-SURR	1718-51-0	Solid	NA	NA	167.00	333.00	ug/kg	26-134	26-134	NA
The reporting limits presented are based on the use of 15g of sample and 100% solids. The reporting limits will be higher if the sample contains moisture and if the lab uses less than 15g. It is often necessary to use less than 15g due to overheating produced when the sample matrix is exposed to the microwave energy.											
8270E	1,2,4,5-TETRACHLOROBENZENE	95-94-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	1,2,4-TRICHLOROBENZENE	120-82-1	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	1,2-DICHLOROBENZENE	95-50-1	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	1,2-DIPHENYLHYDRAZINE	122-66-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	1,3,5-TRINITROBENZENE	99-35-4	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	1,3-DICHLOROBENZENE	541-73-1	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	1,3-DINITROBENZINE	99-65-0	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	1,4-DICHLOROBENZENE	106-46-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	1,4-NAPHTHOQUINONE	130-15-4	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	1-METHYL-2-PYRROLIDINONE	872-50-4	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	1-METHYLNAPHTHALENE	90-12-0	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	1-NAPHTHYLAMINE	134-32-7	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	2,3,4,6-TETRACHLOROPHENOL	58-90-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2,4,5-TRICHLOROPHENOL	95-95-4	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2,4,6-TRICHLOROPHENOL	88-06-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2,4-DICHLOROPHENOL	120-83-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2,4-DIMETHYLPHENOL	105-67-9	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2,4-DINITROPHENOL	51-28-5	Non-Aq	er MDL * 10000	500000			ug/kg	10-180	10-180	30
8270E	2,4-DINITROTOLUENE	121-14-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-161	50-161	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8270E	2,6-DICHLOROPHENOL	87-65-0	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2,6-DINITROTOLUENE	606-20-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2-ACETYLAMINOFLUORENE	53-96-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2-CHLORONAPHTHALENE	91-58-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2-CHLOROPHENOL	95-57-8	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2-METHYL-5-NITROANILINE(5-NITRO-O-	99-55-8	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2-METHYLNAPHTHALENE	91-57-6	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2-METHYLPHENOL	95-48-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2-NAPHTHYLAMINE	91-59-8	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	2-NITROANILINE	88-74-4	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	2-NITROPHENOL	88-75-5	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	2-PICOLINE	109-06-8	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	3,3'-DICHLOROBENZIDINE	91-94-1	Non-Aq	er MDL * 10000	100000			ug/kg	10-161	10-161	30
8270E	3,3'-DIMETHYLBENZIDINE	119-93-7	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	3+4-METHYLPHENOL	106-44-5 + 108	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	3-METHYLCHOLANTHRENE	56-49-5	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	3-NITROANILINE	99-09-2	Non-Aq	er MDL * 10000	500000			ug/kg	10-138	10-138	30
8270E	4,6-DINITRO-2-METHYLPHENOL	534-52-1	Non-Aq	er MDL * 10000	500000			ug/kg	10-163	10-163	30
8270E	4-AMINOBIPHENYL	92-67-1	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	4-BROMOPHENYL-PHENYLETHER	101-55-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	4-CHLORO-3-METHYLPHENOL	59-50-7	Non-Aq	er MDL * 10000	100000			ug/kg	39-168	39-168	30
8270E	4-CHLOROANILINE	106-47-8	Non-Aq	er MDL * 10000	100000			ug/kg	10-86	10-86	30
8270E	4-CHLOROPHENYL-PHENYLETHER	7005-72-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	4-NITROANILINE	100-01-6	Non-Aq	er MDL * 10000	500000			ug/kg	10-172	10-172	30
8270E	4-NITROPHENOL	100-02-7	Non-Aq	er MDL * 10000	500000			ug/kg	28-164	28-164	30
8270E	4-NITROQUINOLINE-1-OXIDE	56-57-5	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	7,12-DIMETHYLBENZ(a)ANTHRACENE	57-97-6	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	aa-DIMETHYLPHENETHYLAMINE	122-09-8	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	ACENAPHTHENE	83-32-9	Non-Aq	er MDL * 10000	100000			ug/kg	30-175	30-175	30
8270E	ACENAPHTHYLENE	208-96-8	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	ACETOPHENONE	98-86-2	Non-Aq	er MDL * 10000	100000			ug/kg	13-166	13-166	30
8270E	alpha-TERPINEOL	98-55-5	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	ANILINE	62-53-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	ANTHRACENE	120-12-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	ARAMITE	140-57-8	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	ATRAZINE	1912-24-9	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BENZALDEHYDE	100-52-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BENZIDINE	92-87-5	Non-Aq	er MDL * 10000	1000000			ug/kg	50-150	50-150	30
8270E	BENZO(A)ANTHRACENE	56-55-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BENZO(A)PYRENE	50-32-8	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BENZO(B)FLUORANTHENE	205-99-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BENZO(G,H,I)PERYLENE	191-24-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BENZO(K)FLUORANTHENE	207-08-9	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BENZOIC ACID	65-85-0	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	BENZYL ALCOHOL	100-51-6	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BIPHENYL	92-52-4	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BIS(1-CHLOROISOPROPYL)ETHER (2,2-OXYBIS(1-CHLOROPROPANE)	108-60-1	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BIS(2-CHLOROETHOXY)METHANE	111-91-1	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BIS(2-CHLOROETHYL)ETHER	111-44-4	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	BUTYL BENZYL PHTHALATE	85-68-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	CAPROLACTAM	105-60-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	CARBAZOLE	86-74-8	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	CHLOROBENZILATE	510-15-6	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8270E	CHRYSENE	218-01-9	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	DIALLATE	2303-16-4	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	DIBENZO(A,H)ANTHRACENE	53-70-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	DIBENZOFURAN	132-64-9	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	DIETHYL PHTHALATE	84-66-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	DIMETHOATE	60-51-5	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	DIMETHYL PHTHALATE	131-11-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	DI-N-BUTYLPHTHALATE	84-74-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	DI-N-OCTYL PHTHALATE	117-84-0	Non-Aq	er MDL * 10000	100000			ug/kg	23-182	23-182	30
8270E	DINOSEB	88-85-7	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	DIPHENYLAMINE	122-39-4	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	DISULFOTON	298-04-4	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	ETHYL METHANESULFONATE	62-50-0	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	ETHYL PARATHION	56-38-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	FLUORANTHENE	206-44-0	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	FLUORENE	86-73-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	HEXACHLOROBENZENE	118-74-1	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	HEXACHLOROBUTADIENE	87-68-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	HEXACHLOROCYCLOPENTADIENE	77-47-4	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	HEXACHLOROETHANE	67-72-1	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	HEXACHLOROPHENE	70-30-4	Non-Aq	er MDL * 10000	5000000			ug/kg	50-150	50-150	30
8270E	HEXACHLOROPROPENE	1888-71-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	INDENO(1,2,3-CD)PYRENE	193-39-5	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	ISODRIN	465-73-6	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	ISOPHORONE	78-59-1	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	ISOSAFROLE	120-58-1	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	METHAPYRILENE	91-80-5	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	METHYL METHANESULFONATE	66-27-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	METHYL PARATHION	298-00-0	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	NAPHTHALENE	91-20-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	NITROBENZENE	98-95-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	N-NITROSODIETHYLAMINE	55-18-5	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	N-NITROSODIMETHYLAMINE	62-75-9	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	N-NITROSODI-N-BUTYLAMINE	924-16-3	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	N-NITROSO-DI-N-PROPYLAMINE	621-64-7	Non-Aq	er MDL * 10000	100000			ug/kg	47-145	47-145	30
8270E	N-NITROSODIPHENYLAMINE	86-30-6	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	N-NITROSOMETHYLETHYLAMINE	10595-95-6	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	N-NITROSOMORPHOLINE	59-89-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	N-NITROSOPIPERIDINE	100-75-4	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	N-NITROSOPYRROLIDINE	930-55-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	ooo-TRIETHYL PHOSPHOROTHIOATE	126-68-1	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	o-TOLUIDINE	95-53-4	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	p-DIMETHYLAMINOAZOBENZENE	60-11-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	PENTACHLOROBENZENE	608-93-5	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	PENTACHLOROETHANE	76-01-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	PENTACHLORONITROBENZENE (PCNB)	82-68-8	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	PENTACHLOROPHENOL (PCP)	87-86-5	Non-Aq	er MDL * 10000	500000			ug/kg	10-164	10-164	30
8270E	PHENACETIN	62-44-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	PHENANTHRENE	85-01-8	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	PHENOL	108-95-2	Non-Aq	er MDL * 10000	100000			ug/kg	16-157	16-157	30
8270E	PHORATE	298-02-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	PRONAMIDE	23950-58-5	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	PYRENE	129-00-0	Non-Aq	er MDL * 10000	100000			ug/kg	49-172	49-172	30
8270E	PYRIDINE	110-86-1	Non-Aq	er MDL * 10000	500000			ug/kg	50-150	50-150	30
8270E	SAFROLE	94-59-7	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8270E	SULFOTEPP	3689-24-5	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E	THIONAZIN	297-97-2	Non-Aq	er MDL * 10000	100000			ug/kg	50-150	50-150	30
8270E-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Non-Aq	NA	NA			%	10-180	10-180	NA
8270E-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Non-Aq	NA	NA			%	49-157	49-157	NA
8270E-SURR	2-FLUOROPHENOL-SURR	367-12-4	Non-Aq	NA	NA			%	59-113	59-113	NA
8270E-SURR	NITROBENZENE-D5-SURR	4165-60-0	Non-Aq	NA	NA			%	66-143	66-143	NA
8270E-SURR	PHENOL-D6-SURR	13127-88-3	Non-Aq	NA	NA			%	35-125	35-125	NA
8270E-SURR	TERPHENYL-D14-SURR	1718-51-0	Non-Aq	NA	NA			%	72-172	72-172	NA
8270E LL	1,2,4,5-TETRACHLOROBENZENE	95-94-3	Water	0.18	1.0			ug/L	25-123	50-150	30
8270E LL	1,2,4-TRICHLOROBENZENE	120-82-1	Water	0.36	1.0			ug/L	35-101	35-101	30
8270E LL	1,2-DICHLOROBENZENE	95-50-1	Water	0.18	1.0			ug/L	47-100	45-107	30
8270E LL	1,3-DICHLOROBENZENE	541-73-1	Water	0.16	1.0			ug/L	43-97	41-101	30
8270E LL	1,4-DIBROMOBENZENE	106-37-6	Water		0.4			ug/L	40-140	40-140	30
8270E LL	1,4-DICHLOROBENZENE	106-46-7	Water	0.17	1.0			ug/L	46-96	45-101	30
8270E LL	1,4-DIOXANE	123-91-1	Water	0.21	1.0			ug/L	21-68	21-68	30
8270E LL	1-BROMOHEXANE	111-25-1	Water		0.4			ug/L	40-140	40-140	30
8270E LL	1-METHYLNAPHTHALENE	90-12-0	Water	0.11	0.2	0.11	0.20	ug/L	48-123	47-128	30
8270E LL	2,4,5-TRICHLOROPHENOL	95-95-4	Water	0.22	1.0			ug/L	42-132	42-132	30
8270E LL	2,4,6-TRICHLOROPHENOL	88-06-2	Water	0.34	1.0			ug/L	45-128	45-128	30
8270E LL	2,4-DICHLOROPHENOL	120-83-2	Water	0.48	1.0			ug/L	44-124	44-124	30
8270E LL	2,4-DIMETHYLPHENOL	105-67-9	Water	0.58	1.0			ug/L	32-124	10-191	30
8270E LL	2,4-DINITROPHENOL	51-28-5	Water	0.67	5.0			ug/L	10-156	10-156	30
8270E LL	2,4-DINITROTOLUENE	121-14-2	Water	0.24	1.0			ug/L	59-152	59-152	30
8270E LL	2,6-DINITROTOLUENE	606-20-2	Water	0.28	1.0			ug/L	59-152	46-165	30
8270E LL	2-CHLORONAPHTHALENE	91-58-7	Water	0.38	1.0			ug/L	44-106	39-131	30
8270E LL	2-CHLOROPHENOL	95-57-8	Water	0.18	1.0			ug/L	38-108	38-108	30
8270E LL	2-METHYLNAPHTHALENE	91-57-6	Water	0.11	0.20	0.11	0.20	ug/L	45-112	45-112	30
8270E LL	2-METHYLPHENOL	95-48-7	Water	0.64	1.0			ug/L	44-110	34-111	30
8270E LL	2-NITROANILINE	88-74-4	Water	0.24	1.0			ug/L	61-171	10-200	30
8270E LL	2-NITROPHENOL	88-75-5	Water	0.2	1.0			ug/L	53-125	30-150	30
8270E LL	3,3-DICHLOROBENZIDINE	91-94-1	Water	0.47	1.0			ug/L	40-140	40-140	30
8270E LL	3+4 METHYLPHENOL	106-44-5 + 108	Water	0.58	1.0			ug/L	35-106	28-106	30
8270E LL	3-NITROANILINE	99-09-2	Water	0.19	1.0			ug/L	40-140	40-140	30
8270E LL	4,6-DINITRO-2-METHYLPHENOL	534-52-1	Water	0.48	5.0			ug/L	30-144	30-144	30
8270E LL	4-BROMOCHLOROBENZENE	106-39-8	Water		0.4			ug/L	40-140	40-140	30
8270E LL	4-BROMOPHENYL-PHENYLETHER	101-55-3	Water	0.21	1.0			ug/L	56-129	56-129	30
8270E LL	4-CHLORO-3-METHYLPHENOL	59-50-7	Water	0.77	1.0			ug/L	50-120	16-171	30
8270E LL	4-CHLOROANILINE	106-47-8	Water	0.62	1.0			ug/L	40-140	40-140	30
8270E LL	4-CHLOROPHENYL-PHENYLETHER	7005-72-3	Water	0.32	1.0			ug/L	58-129	45-147	30
8270E LL	4-NITROANILINE	100-01-6	Water	0.25	1.0			ug/L	40-140	40-140	30
8270E LL	4-NITROPHENOL	100-02-7	Water	0.53	5.0			ug/L	10-82	10-86	30
8270E LL	ACENAPHTHENE	83-32-9	Water	0.096	0.20	0.10	0.20	ug/L	48-118	24-158	30
8270E LL	ACENAPHTHYLENE	208-96-8	Water	0.093	0.20	0.10	0.20	ug/L	48-121	41-140	30
8270E LL	ACETOPHENONE	98-86-2	Water	0.35	1.00			ug/L	40-140	40-140	30
8270E LL	ANTHRACENE	120-12-7	Water	0.11	0.20	0.11	0.20	ug/L	52-124	27-150	30
8270E LL	ATRAZINE	1912-24-9	Water	0.19	1.00			ug/L	40-140	40-140	30
8270E LL	BENZALDEHYDE	100-52-7	Water	0.18	1.00			ug/L	46-200	40-140	30
8270E LL	BENZO(A)ANTHRACENE	56-55-3	Water	0.07	0.20	0.10	0.20	ug/L	54-120	36-140	30
8270E LL	BENZO(A)PYRENE	50-32-8	Water	0.073	0.20	0.10	0.20	ug/L	57-124	10-154	30
8270E LL	BENZO(B)FLUORANTHENE	205-99-2	Water	0.068	0.20	0.10	0.20	ug/L	57-117	30-151	30
8270E LL	BENZO(G,H,I)PERYLENE	191-24-2	Water	0.072	0.20	0.10	0.20	ug/L	47-154	10-174	30
8270E LL	BENZO(K)FLUORANTHENE	207-08-9	Water	0.069	0.20	0.10	0.20	ug/L	59-123	18-145	30
8270E LL	BIPHENYL	92-52-4	Water	0.22	1.00			ug/L	40-140	40-140	30
8270E LL	BIS(1-CHLOROISOPROPYL)ETHER	108-60-1	Water	0.27	1.00			ug/L	39-151	54-122	30
8270E LL	BIS(2-CHLOROETHOXY)METHANE	111-91-1	Water	0.63	1.00			ug/L	38-141	43-115	30

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8270E LL	BIS(2-CHLOROETHYL)ETHER	111-44-4	Water	0.17	1.00			ug/L	42-115	42-115	30
8270E LL	BIS(2-ETHYLHEXYL)PHTHALATE	117-81-7	Water	0.2	5.0			ug/L	23-173	10-162	30
8270E LL	BUTYL BENZYL PHTHALATE	85-68-7	Water	0.17	5.0			ug/L	10-159	10-159	30
8270E LL	CAPROLACTAM	105-60-2	Water	0.6	1.0			ug/L	10-42	10-42	30
8270E LL	CARBAZOLE	86-74-8	Water	0.19	1.0			ug/L	39-147	10-162	30
8270E LL	CHRYSENE	218-01-9	Water	0.08	0.20	0.10	0.20	ug/L	58-124	39-141	30
8270E LL	DIBENZO(A,H)ANTHRACENE	53-70-3	Water	0.09	0.20	0.10	0.20	ug/L	43-147	10-173	30
8270E LL	DIBENZOFURAN	132-64-9	Water	0.12	0.20	0.12	0.20	ug/L	49-117	39-137	30
8270E LL	DIETHYL PHTHALATE	84-66-2	Water	0.43	5.0			ug/L	10-133	10-133	30
8270E LL	DIMETHYL PHTHALATE	131-11-3	Water	0.17	5.0			ug/L	10-157	10-157	30
8270E LL	DI-N-BUTYL PHTHALATE	84-74-2	Water	0.63	5.0			ug/L	22-126	22-126	30
8270E LL	DI-N-OCTYL PHTHALATE	117-84-0	Water	0.15	5.0			ug/L	48-134	10-166	30
8270E LL	FLUORANTHENE	206-44-0	Water	0.11	0.20	0.11	0.20	ug/L	50-117	45-154	30
8270E LL	FLUORENE	86-73-7	Water	0.089	0.20	0.10	0.20	ug/L	47-107	33-152	30
8270E LL	HEXACHLOROBENZENE	118-74-1	Water	0.13	0.20			ug/L	49-118	44-143	30
8270E LL	HEXACHLOROBUTADIENE	87-68-3	Water	0.17	1.0			ug/L	34-107	34-107	30
8270E LL	HEXACHLOROCYCLOPENTADIENE	77-47-4	Water	0.5	1.0			ug/L	10-97	10-163	30
8270E LL	HEXACHLOROETHANE	67-72-1	Water	0.19	1.0			ug/L	28-96	28-96	30
8270E LL	INDENO(1,2,3-CD)PYRENE	193-39-5	Water	0.07	0.20	0.10	0.20	ug/L	55-129	10-167	30
8270E LL	ISOPHORONE	78-59-1	Water	0.45	1.0			ug/L	57-130	57-130	30
8270E LL	NAPHTHALENE	91-20-3	Water	0.12	0.20	0.12	0.20	ug/L	37-114	30-133	30
8270E LL	NITROBENZENE	98-95-3	Water	0.1	0.20	0.10	0.20	ug/L	37-122	26-155	30
8270E LL	N-NITROSODI-N-PROPYLAMINE	621-64-7	Water	0.46	1.00			ug/L	40-140	40-140	30
8270E LL	N-NITROSODIPHENYLAMINE	86-30-6	Water	1.1	5.00			ug/L	40-140	40-140	30
8270E LL	PENTACHLOROPHENOL	87-86-5	Water	1.8	5.0			ug/L	10-139	10-139	30
8270E LL	PHENANTHRENE	85-01-8	Water	0.13	0.20	0.13	0.20	ug/L	54-116	29-170	30
8270E LL	PHENOL	108-95-2	Water	0.099	1.0			ug/L	12-51	10-73	30
8270E LL	PYRENE	129-00-0	Water	0.13	0.20	0.13	0.20	ug/L	56-123	40-166	30
8270E LL	PYRIDINE	110-86-1	Water	0.26	2.50			ug/L	10-84	10-84	30
8270E LL-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Water	NA	NA	0.20	0.40	ug/L	37-117	37-117	NA
8270E LL-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Water	NA	NA	0.10	0.20	ug/L	27-133	27-133	NA
8270E LL-SURR	2-FLUOROPHENOL-SURR	321-60-8	Water	NA	NA	0.20	0.40	ug/L	10-104	10-104	NA
8270E LL-SURR	NITROBENZENE-D5-SURR	4165-60-0	Water	NA	NA	0.10	0.20	ug/L	31-167	31-167	NA
8270E LL-SURR	PHENOL-D6-SURR	13127-88-3	Water	NA	NA	0.20	0.40	ug/L	10-83	10-83	NA
8270E LL-SURR	P-TERPHENYL-SURR	1718-51-0	Water	NA	NA	0.10	0.20	ug/L	25-151	25-151	NA
8270E LL	2-METHYLNAPHTHALENE	91-57-6	Solid	1.9	6.6	3.8	6.6	ug/kg	13-116	10-128	30
8270E LL	ACENAPHTHENE	83-32-9	Solid	1.7	6.6	3.4	6.6	ug/kg	17-115	10-126	30
8270E LL	ACENAPHTHYLENE	208-96-8	Solid	1.8	6.6	3.6	6.6	ug/kg	15-123	10-132	30
8270E LL	ANTHRACENE	120-12-7	Solid	2.9	6.6	5.8	6.6	ug/kg	37-117	10-129	30
8270E LL	BENZO(A)ANTHRACENE	56-55-3	Solid	2.1	6.6	4.2	6.6	ug/kg	39-105	10-120	30
8270E LL	BENZO(A)PYRENE	50-32-8	Solid	2.7	6.6	5.4	6.6	ug/kg	38-130	10-141	30
8270E LL	BENZO(B)FLUORANTHENE	205-99-2	Solid	2.3	6.6	4.6	6.6	ug/kg	36-120	10-132	30
8270E LL	BENZO(G,H,I)PERYLENE	191-24-2	Solid	2.6	6.6	5.2	6.6	ug/kg	36-140	10-149	30
8270E LL	BENZO(K)FLUORANTHENE	207-08-9	Solid	1.9	6.6	3.8	6.6	ug/kg	40-125	10-137	30
8270E LL	CHRYSENE	218-01-9	Solid	1.7	6.6	3.4	6.6	ug/kg	40-120	10-135	30
8270E LL	DIBENZO(A,H)ANTHRACENE	53-70-3	Solid	2.7	6.6	5.4	6.6	ug/kg	22-146	10-145	30
8270E LL	FLUORANTHENE	206-44-0	Solid	2.9	6.6	5.8	6.6	ug/kg	41-110	10-129	30
8270E LL	FLUORENE	86-73-7	Solid	1.7	6.6	3.4	6.6	ug/kg	25-106	10-116	30
8270E LL	INDENO(1,2,3-CD)PYRENE	193-39-5	Solid	2.9	6.6	5.8	6.6	ug/kg	41-137	10-154	30
8270E LL	NAPHTHALENE	91-20-3	Solid	2.3	6.6	4.6	6.6	ug/kg	10-115	10-128	30
8270E LL	PHENANTHRENE	85-01-8	Solid	2.5	6.6	5.0	6.6	ug/kg	37-112	10-130	30
8270E LL	PYRENE	129-00-0	Solid	2.5	6.6	5.0	6.6	ug/kg	33-124	10-140	30
8270E LL-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Solid	NA	NA			ug/kg	19-107	19-107	NA
8270E LL-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Solid	NA	NA			ug/kg	10-115	10-115	NA
8270E LL-SURR	2-FLUOROPHENOL-SURR	321-60-8	Solid	NA	NA			ug/kg	10-97	10-97	NA

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8270E LL-SURR	NITROBENZENE-D5-SURR	4165-60-0	Solid	NA	NA		6.67	ug/kg	10-130	10-130	NA
8270E LL-SURR	PHENOL-D6-SURR	13127-88-3	Solid	NA	NA			ug/kg	17-135	17-135	NA
8270E LL-SURR	P-TERPHENYL-D14-SURR	1718-51-0	Solid	NA	NA		6.67	ug/kg	10-130	10-130	NA
1311/8270E (TCLP)	1,4-DICHLOROBENZENE	106-46-7	Solid/Non-Ac	NA	100			ug/L	same as water	ame as water	30
1311/8270E (TCLP)	2,4,5-TRICHLOROPHENOL	95-95-4	Solid/Non-Ac	NA	100			ug/L			30
1311/8270E (TCLP)	2,4,6-TRICHLOROPHENOL	88-06-2	Solid/Non-Ac	NA	100			ug/L			30
1311/8270E (TCLP)	2,4-DINITROTOLUENE	121-14-2	Solid/Non-Ac	NA	100			ug/L			30
1311/8270E (TCLP)	2-METHYLPHENOL	95-48-7	Solid/Non-Ac	NA	100			ug/L			30
1311/8270E (TCLP)	3+4 METHYLPHENOL	106-44-5 + 108	Solid/Non-Ac	NA	100			ug/L			30
1311/8270E (TCLP)	HEXACHLOROBENZENE	118-74-1	Solid/Non-Ac	NA	100			ug/L			30
1311/8270E (TCLP)	HEXACHLOROBUTADIENE	87-68-3	Solid/Non-Ac	NA	100			ug/L			30
1311/8270E (TCLP)	HEXACHLOROETHANE	67-72-1	Solid/Non-Ac	NA	100			ug/L			30
1311/8270E (TCLP)	NITROBENZENE	98-95-3	Solid/Non-Ac	NA	100			ug/L			30
1311/8270E (TCLP)	PENTACHLOROPHENOL	87-86-5	Solid/Non-Ac	NA	500			ug/L			30
1311/8270E (TCLP)	PYRIDINE	110-86-1	Solid/Non-Ac	NA	500			ug/L			30
1311/8270E-SURR	2,4,6-TRIBROMOPHENOL-SURR	118-79-6	Solid/Non-Ac	NA	NA			%			NA
1311/8270E-SURR	2-FLUOROBIPHENYL-SURR	321-60-8	Solid/Non-Ac	NA	NA			%			NA
1311/8270E-SURR	2-FLUOROPHENOL-SURR	367-12-4	Solid/Non-Ac	NA	NA			%			NA
1311/8270E-SURR	NITROBENZENE-D5-SURR	4165-60-0	Solid/Non-Ac	NA	NA			%			NA
1311/8270E-SURR	PHENOL-D6-SURR	13127-88-3	Solid/Non-Ac	NA	NA			%			NA
1311/8270E-SURR	TERPHENYL-D14-SURR	1718-51-0	Solid/Non-Ac	NA	NA			%			NA

METHOD	ANALYTE	CAS No.	MATRIX	MDL	MRL	LOD	LOQ	UNITS	LCS	MS	% RPD)
8315A	FORMALDEHYDE	50-00-0	Water	18	20.0			ug/L	70-134	41-160	30
HPLC-B	2-CHLOROBENZOIC ACID (o-chlorobenzoic acid)	118-91-2	Water	on HPLC06 yet	0.03			mg/L	70-130	79-113	30
HPLC-B	3-CHLOROBENZOIC ACID (m-chlorobenzoic acid)	535-80-8	Water	on HPLC06 yet	0.03			mg/L	70-130	73-121	30
HPLC-B	4-CHLOROBENZOIC ACID (p-chlorobenzoic acid)	74-11-3	Water	on HPLC06 yet	0.03			mg/L	70-130	63-130	30
HPLC-B	BENZOIC ACID	65-85-0	Water	on HPLC06 yet	0.10			mg/L	70-130	69-131	30
HPLC-B	CHLORENDIC ACID	115-28-6	Water	on HPLC06 yet	0.25			mg/L	70-130	39-174	30
HPLC-VFA	2-OXOPROPANOIC ACID (PYRUVIC)	127-17-3	Water	0.19	0.5	0.20	0.5	mg/L	73-122	39-130	30
HPLC-VFA	ACETIC ACID	64-19-7	Water	0.56	1.0	2.0	4.0	mg/L	80-130	10-179	30
HPLC-VFA	BUTYRIC ACID	107-92-6	Water	5	10.0	5.0	10.0	mg/L	86-128	39-161	30
HPLC-VFA	FORMIC ACID	64-18-6	Water	0.42	1.0	1.0	2.0	mg/L	81-114	69-119	30
HPLC-VFA	LACTIC ACID	50-12-5	Water	0.41	1.0	1.0	2.0	mg/L	75-125	48-147	30
HPLC-VFA	PROPIONIC ACID	79-09-4	Water	1.1	2.0	2.0	4.0	mg/L	63-153	49-162	30
HPLC HQ LL	HYDROQUINONE	123-31-9	Water	NA	5.0			ug/l	56-133	63-133	20
METHOD 18	1-METHOXY-2-PROPANOL (PGMME)	107-98-2	Air	NA	0.0046			mg	75-125	70-130	30
METHOD 18	1-METHOXY-2-PROPYLACETATE	108-65-6	Air	NA	0.0048			mg	75-125	70-130	30
METHOD 18	1-METHYL-2-PYRROLIDINONE (NMP)	872-50-4	Air	NA	0.0052			mg	75-125	70-130	30
METHOD 18	2-HEPTANONE	110-43-0	Air	NA	0.0041			mg	75-125	70-130	30
METHOD 18	2-PROPANOL	67-63-0	Air	NA	0.0039			mg	75-125	70-130	30
METHOD 18	3-METHOXY-3-METHYL-1-BUTANOL	56539-66-3	Air	NA	0.0046			mg	75-125	70-130	30
METHOD 18	4-METHYL-2-PENTANONE	108-10-1	Air	NA	0.004			mg	75-125	70-130	30
METHOD 18	CYCLOHEXANONE	108-94-1	Air	NA	0.0047			mg	75-125	70-130	30
METHOD 18	DIMETHYL SULFOXIDE (DMSO)	67-68-5	Air	NA	0.0055			mg	75-125	70-130	30
METHOD 18	ETHYLENE GLYCOL	107-21-1	Air	NA	0.011			mg	75-125	70-130	30
METHOD 18	ETHYL 3-ETHOXYPROPIONATE (EEP)	763-69-9	Air	NA	0.0048			mg	75-125	70-130	30
METHOD 18	ETHYL2-HYDROXYPROPIONATE	97-64-3	Air	NA	0.0052			mg	75-125	70-130	30
METHOD 18	GAMMA-BUTYROLACTONE (GBL)	96-48-0	Air	NA	0.0057			mg	75-125	70-130	30
METHOD 18	N-BUTYL ACETATE	123-86-4	Air	NA	0.0044			mg	75-125	70-130	30
METHOD 18	PROPYLENE GLYCOL	57-55-6	Air	NA	0.01			mg	75-125	70-130	30
RSK-175MOD	ACETYLENE	74-86-2	Water	1.8	10			ug/L	85-115		20
RSK-175MOD	ETHANE	74-84-0	Water	0.85	5			ug/L	85-115		20
RSK-175MOD	ETHENE	74-85-1	Water	1.2	5			ug/L	85-115		20
RSK-175MOD	METHANE	74-82-8	Water	3	5			ug/L	85-115		20
RSK-175MOD	PROPANE	74-98-6	Water	0.87	5			ug/L	85-115		20

ALS Environmental PFAS Detection Limits

PFAS-- Reference Limits and Evaluation Table

Analytical Group: ALS Environmental
Matrix: Water/Soil

METHOD	MATRIX	CASNUMBER	ANALYTENAME	LOQ	MDL	LOD	Units
1633	Liquid	375-73-5	Perfluorobutane sulfonic acid (PFBS)	5.0	0.85	2	ng/L
1633	Liquid	2706-91-4	Perfluoropentane sulfonic acid (PFPeS)	5.0	0.68	2	ng/L
1633	Liquid	355-46-4	Perfluorohexane sulfonic acid (PFHxS)	5.0	0.61	2	ng/L
1633	Liquid	375-92-8	Perfluoroheptane sulfonic acid (PFHpS)	5.0	0.64	2	ng/L
1633	Liquid	1763-23-1	Perfluorooctane sulfonic acid (PFOS)	5.0	0.55	2	ng/L
1633	Liquid	68259-12-1	Perfluorononane sulfonic acid (PFNS)	5.0	0.55	2	ng/L
1633	Liquid	335-77-3	Perfluorodecane sulfonic acid (PFDS)	5.0	0.62	2	ng/L
1633	Liquid	79780-39-5	Perfluorododecane sulfonic acid (PFDoS)	5.0	0.58	2	ng/L
1633	Liquid	375-22-4	Perfluorobutanoic acid (PFBA)	5.0	1.9	4	ng/L
1633	Liquid	2706-90-3	Perfluoropentanoic acid (PFPeA)	5.0	0.61	2	ng/L
1633	Liquid	307-24-4	Perfluorohexanoic acid (PFHxA)	5.0	2	4	ng/L
1633	Liquid	375-85-9	Perfluoroheptanoic acid (PFHpA)	5.0	0.84	2	ng/L
1633	Liquid	335-67-1	Perfluorooctanoic acid (PFOA)	5.0	0.71	2	ng/L
1633	Liquid	375-95-1	Perfluorononanoic acid (PFNA)	5.0	1.1	4	ng/L
1633	Liquid	335-76-2	Perfluorodecanoic acid (PFDA)	5.0	1.1	4	ng/L
1633	Liquid	2058-94-8	Perfluoroundecanoic acid (PFUnDA)	5.0	0.56	2	ng/L
1633	Liquid	307-55-1	Perfluorododecanoic acid (PFDOA)	5.0	1.3	4	ng/L
1633	Liquid	72629-94-8	Perfluorotridecanoic acid (PFTrDA)	5.0	1.6	4	ng/L
1633	Liquid	376-06-7	Perfluorotetradecanoic acid (PFTDA)	5.0	1.5	4	ng/L
1633	Liquid	67905-19-5	Perfluorohexadecanoic acid (PFHXDA)	5.0	1.1	4	ng/L
1633	Liquid	16517-11-6	Perfluorooctadecanoic acid (PFODA)	5.0	1.2	4	ng/L
1633	Liquid	754-91-6	Perfluorooctane sulfonamide (PFOSAm)	5.0	0.61	2	ng/L
1633	Liquid	31506-32-8	N-Methylperfluorooctane sulfonamide (MeFOSA)	5.0	1.2	4	ng/L
1633	Liquid	4151-50-2	N-Ethylperfluorooctane sulfonamide (EtFOSAm)	5.0	0.52	2	ng/L
1633	Liquid	24448-09-7	N-Methylperfluorooctane sulfonamido ethanol (MeFOS	5.0	0.84	2	ng/L
1633	Liquid	1691-99-2	N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)	5.0	0.52	2	ng/L
1633	Liquid	2355-31-9	N-Methylperfluorooctane sulfonamido acetic acid (NMe	5.0	2	4	ng/L
1633	Liquid	2991-50-6	N-Ethylperfluorooctane sulfonamido acetic acid (NEtF	5.0	1.2	4	ng/L
1633	Liquid	757124-72-4	1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS	5.0	1.6	4	ng/L
1633	Liquid	27619-97-2	1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS	5.0	1.6	4	ng/L
1633	Liquid	39108-34-4	1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS	5.0	2	4	ng/L
1633	Liquid	120226-60-0	1H, 1H, 2H, 2H-perfluorododecane sulfonic acid (10:2	5.0	0.99	2	ng/L
1633	Liquid	356-02-5	4,4,5,5,6,6,6-Heptafluorohexanoic acid (3:3 FTCA)	200	8.4	20	ng/L
1633	Liquid	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)	200	3.9	20	ng/L
1633	Liquid	812-70-4	2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA)	200	6.6	20	ng/L
1633	Liquid	113507-82-7	Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)	5.0	0.5	2	ng/L
1633	Liquid	756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (	5.0	0.5	2	ng/L
1633	Liquid	763051-92-9	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	5.0	0.5	2	ng/L
1633	Liquid	377-73-1	Perfluoro-3-methoxypropanoic acid (PFMPA)	5.0	0.5	2	ng/L
1633	Liquid	863090-89-5	Perfluoro-4-methoxybutanoic acid (PFMBA)	5.0	0.5	2	ng/L
1633	Liquid	13252-13-6	Hexafluoropropyleneoxide dimer acid (HFPO-DA) (Ger	5.0	0.94	2	ng/L
1633	Liquid	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	5.0	0.88	2	ng/L
1633	Liquid	919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	5.0	0.83	2	ng/L

PFAS-- Reference Limits and Evaluation Table

Analytical Group: ALS Environmental
Matrix: Water/Soil

METHOD	MATRIX	CASNUMBER	ANALYTENAME	LOQ	MDL	LOD	Units
1633	Solid	375-73-5	Perfluorobutane sulfonic acid (PFBS)	0.5	0.054	0.2	ng/g
1633	Solid	2706-91-4	Perfluoropentane sulfonic acid (PFPeS)	0.5	0.063	0.2	ng/g
1633	Solid	355-46-4	Perfluorohexane sulfonic acid (PFHxS)	0.5	0.082	0.2	ng/g
1633	Solid	375-92-8	Perfluoroheptane sulfonic acid (PFHpS)	0.5	0.061	0.2	ng/g
1633	Solid	1763-23-1	Perfluorooctane sulfonic acid (PFOS)	0.5	0.11	0.4	ng/g
1633	Solid	68259-12-1	Perfluorononane sulfonic acid (PFNS)	0.5	0.066	0.2	ng/g
1633	Solid	335-77-3	Perfluorodecane sulfonic acid (PFDS)	0.5	0.07	0.2	ng/g
1633	Solid	79780-39-5	Perfluorododecane sulfonic acid (PFDoS)	0.5	0.13	0.4	ng/g
1633	Solid	375-22-4	Perfluorobutanoic acid (PFBA)	0.5	0.05	0.2	ng/g
1633	Solid	2706-90-3	Perfluoropentanoic acid (PFPeA)	0.5	0.061	0.2	ng/g
1633	Solid	307-24-4	Perfluorohexanoic acid (PFHxA)	0.5	0.082	0.2	ng/g
1633	Solid	375-85-9	Perfluoroheptanoic acid (PFHpA)	0.5	0.089	0.2	ng/g
1633	Solid	335-67-1	Perfluorooctanoic acid (PFOA)	0.5	0.11	0.4	ng/g
1633	Solid	375-95-1	Perfluorononanoic acid (PFNA)	0.5	0.1	0.4	ng/g
1633	Solid	335-76-2	Perfluorodecanoic acid (PFDA)	0.5	0.077	0.2	ng/g
1633	Solid	2058-94-8	Perfluoroundecanoic acid (PFUnDA)	0.5	0.19	0.4	ng/g
1633	Solid	307-55-1	Perfluorododecanoic acid (PFDOA)	0.5	0.097	0.2	ng/g
1633	Solid	72629-94-8	Perfluorotridecanoic acid (PFTrDA)	0.5	0.099	0.2	ng/g
1633	Solid	376-06-7	Perfluorotetradecanoic acid (PFTDA)	0.5	0.14	0.4	ng/g
1633	Solid	67905-19-5	Perfluorohexadecanoic acid (PFHXDA)	0.5	0.17	0.4	ng/g
1633	Solid	16517-11-6	Perfluorooctadecanoic acid (PFODA)	0.5	0.074	0.4	ng/g
1633	Solid	754-91-6	Perfluorooctane sulfonamide (PFOSAm)	0.5	0.05	0.2	ng/g
1633	Solid	31506-32-8	N-Methylperfluorooctane sulfonamide (MeFOSA)	0.5	0.05	0.2	ng/g
1633	Solid	4151-50-2	N-Ethylperfluorooctane sulfonamide (EtFOSAm)	0.5	0.05	0.2	ng/g
1633	Solid	24448-09-7	N-Methylperfluorooctane sulfonamido ethanol (MeFOS	0.5	0.079	0.2	ng/g
1633	Solid	1691-99-2	N-Ethylperfluorooctane sulfonamido ethanol (EtFOSE)	0.5	0.063	0.2	ng/g
1633	Solid	2355-31-9	N-Methylperfluorooctane sulfonamido acetic acid (NMe	0.5	0.13	0.4	ng/g
1633	Solid	2991-50-6	N-Ethylperfluorooctane sulfonamido acetic acid (NEtF	0.5	0.091	0.2	ng/g
1633	Solid	757124-72-4	1H, 1H, 2H, 2H-Perfluorohexanesulfonic acid (4:2 FTS	0.5	0.071	0.2	ng/g
1633	Solid	27619-97-2	1H, 1H, 2H, 2H-Perfluorooctanesulfonic acid (6:2 FTS	0.5	0.051	0.2	ng/g
1633	Solid	39108-34-4	1H, 1H, 2H, 2H-Perfluorodecanesulfonic acid (8:2 FTS	0.5	0.092	0.2	ng/g
1633	Solid	120226-60-0	1H, 1H, 2H, 2H-perfluorododecane sulfonic acid (10:2	0.5	0.17	0.4	ng/g
1633	Solid	356-02-5	4,4,5,5,6,6,6-Heptafluorohexanoic acid (3:3 FTCA)	15	0.25	1	ng/g
1633	Solid	914637-49-3	2H,2H,3H,3H-Perfluorooctanoic acid (5:3 FTCA)	15	0.25	1	ng/g
1633	Solid	812-70-4	2H,2H,3H,3H-Perfluorodecanoic acid (7:3 FTCA)	15	0.27	1	ng/g
1633	Solid	113507-82-7	Perfluoro(2-ethoxyethane) sulfonic acid (PFEESA)	0.5	0.051	0.2	ng/g
1633	Solid	756426-58-1	9-Chlorohexadecafluoro-3-oxanonane-1-sulfonic acid (	0.5	0.05	0.2	ng/g
1633	Solid	763051-92-9	11-Chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	0.5	0.051	0.2	ng/g
1633	Solid	377-73-1	Perfluoro-3-methoxypropanoic acid (PFMPA)	0.5	0.097	0.2	ng/g
1633	Solid	863090-89-5	Perfluoro-4-methoxybutanoic acid (PFMBA)	0.5	0.057	0.2	ng/g
1633	Solid	13252-13-6	Hexafluoropropyleneoxide dimer acid (HFPO-DA) (Ger	0.5	0.08	0.2	ng/g
1633	Solid	151772-58-6	Nonafluoro-3,6-dioxaheptanoic acid (NFDHA)	0.5	0.072	0.2	ng/g
1633	Solid	919005-14-4	4,8-Dioxa-3H-perfluorononanoic acid (DONA)	0.5	0.05	0.2	ng/g

Adirondack Environmental PCB Detection Limits

Appendix E - PCB Detection Limits
Adirondack Environmental Services
Albany, New York

	Analyte	PQL		
SOIL	**Aroclor 1268**	33	µg/Kg	ppb
	Aroclor 1262	33	µg/Kg	
	Aroclor 1260	33	µg/Kg	
	Aroclor 1254	33	µg/Kg	
	Aroclor 1248	33	µg/Kg	
	Aroclor 1242	33	µg/Kg	
	Aroclor 1232	33	µg/Kg	
	Aroclor 1221	33	µg/Kg	
	Aroclor 1016	33	µg/Kg	
	Analyte	**PQL**		
SOLID WASTE	**Aroclor 1268**	1	µg/g	ppm
	Aroclor 1262	1	µg/g	
	Aroclor 1260	1	µg/g	
	Aroclor 1254	1	µg/g	
	Aroclor 1248	1	µg/g	
	Aroclor 1242	1	µg/g	
	Aroclor 1232	1	µg/g	
	Aroclor 1221	1	µg/g	
	Aroclor 1016	1	µg/g	