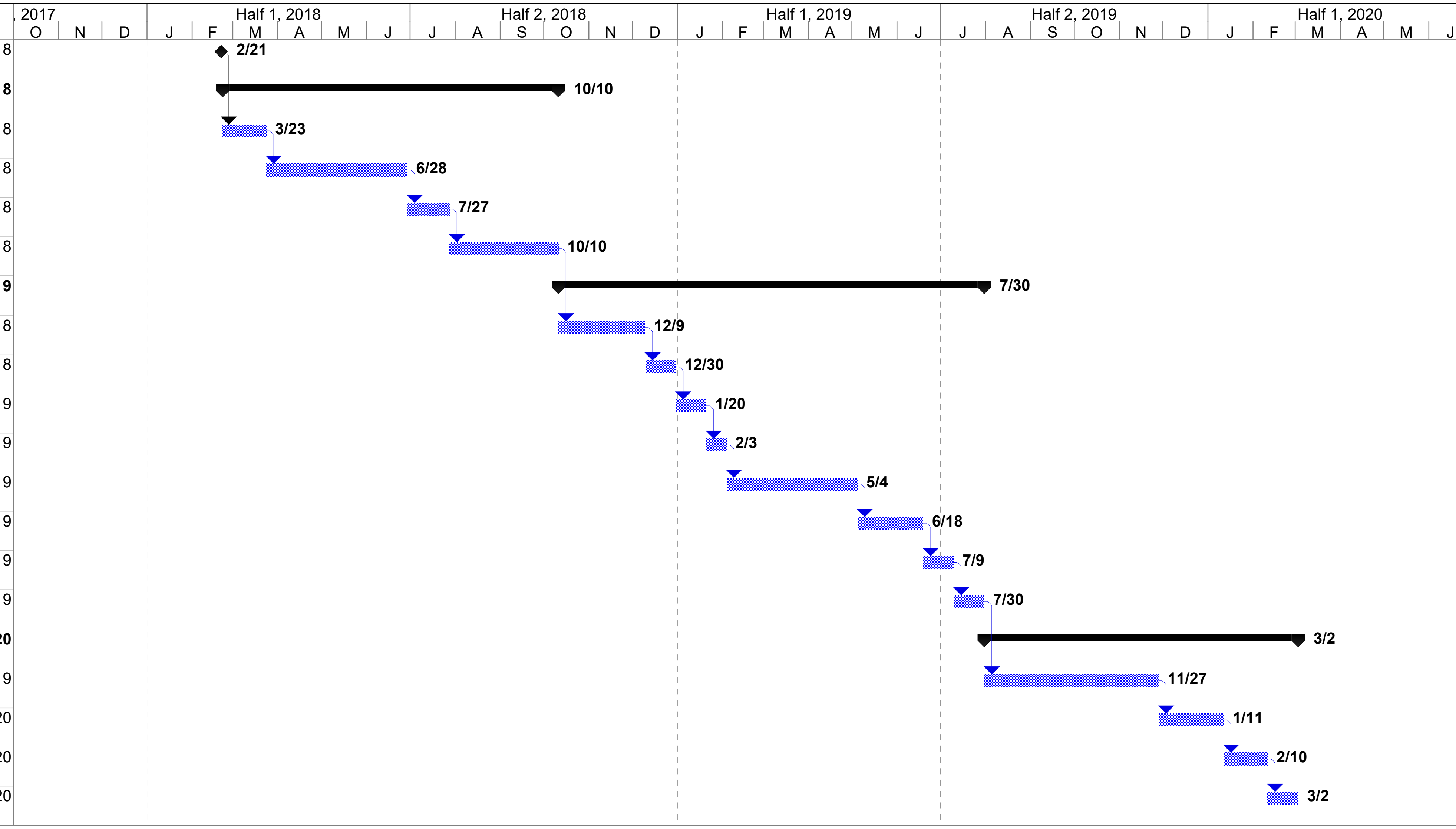
FIGURE 5.1 - REMEDIAL DESIGN SCHEDULE

5th Street Yard, Elmira, New York

ID	Task Name	Task Duration (Calendar Days)	Start	Finish
1	BROWNFIELD CLEANUP AGREEMENT	0 days	Wed 2/21/18	Wed 2/21/18
2	**PRE-DESIGN INVESTIGATION (PDI) Work Plan**	**231 days**	**Thu 2/22/18**	**Wed 10/10/18**
3	Prepare PDI Work Plan	30 days	Thu 2/22/18	Fri 3/23/18
4	NYSDEC Review and Comment	97 days	Sat 3/24/18	Thu 6/28/18
5	Revise PDI Work Plan	29 days	Fri 6/29/18	Fri 7/27/18
6	NYSDEC Review and Approval	75 days	Sat 7/28/18	Wed 10/10/18
7	**PRE-DESIGN INVESTIGATION**	**293 days**	**Thu 10/11/18**	**Tue 7/30/19**
8	Field Preparaton and Planning	60 days	Thu 10/11/18	Sun 12/9/18
9	Field Investigations	21 days	Mon 12/10/18	Sun 12/30/18
10	Laboratory Analysis	21 days	Mon 12/31/18	Sun 1/20/19
11	Data Management, Evaluation, Usability Report	14 days	Mon 1/21/19	Sun 2/3/19
12	Prepare Data Summary Report	90 days	Mon 2/4/19	Sat 5/4/19
13	NYSDEC Review and Comment	45 days	Sun 5/5/19	Tue 6/18/19
14	Revise Data Summary Report	21 days	Wed 6/19/19	Tue 7/9/19
15	NYSDEC Review and Approval	21 days	Wed 7/10/19	Tue 7/30/19
16	**Remedial Action Work Plan (RAWP)**	**216 days**	**Wed 7/31/19**	**Mon 3/2/20**
17	Prepare RAWP	120 days	Wed 7/31/19	Wed 11/27/19
18	NYSEC Review and Comment	45 days	Thu 11/28/19	Sat 1/11/20
19	Revise RAWP	30 days	Sun 1/12/20	Mon 2/10/20
20	NYSEC Review and Approval	21 days	Tue 2/11/20	Mon 3/2/20



Project: Elmira 5th Street Yard

Task	Rolled Up Progress	Inactive Task	Manual Summary Rollup	Deadline
Milestone	Split	Inactive Milestone	Manual Summary	
Summary	External Tasks	Inactive Summary	Start-only	
Rolled Up Task	Project Summary	Manual Task	Finish-only	
Rolled Up Milestone	Group By Summary	Duration-only	Progress	

NEW YORK STATE DEPARTMENT OF ENVIRONMENTAL CONSERVATION

Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road, Avon, NY 14414-9516
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Via E-mail

September 27, 2018

Mr. Scott Pittenger, Regional Manager Environmental Remediation
Norfolk Southern Corporation
1200 Peachtree St, NE – Box 13
Atlanta, GA 30309

Re: Pre-Design Investigation Work Plan
Pennsylvania Lines LLC, Elmira 5th Street Yard Site #c808050
Elmira, Chemung County

Dear Mr. Pittenger:

The New York State Department of Environmental Conservation (NYSDEC) and the New York State Department of Health (NYSDOH) have completed the review and approve "Pre-Design Investigation Work Plan" for the Pennsylvania Lines LLC, 5th Street Yard Site #c808050, dated March 2018, revised July 27, 2018.

Please have a copy of the work plan, including this letter placed in the document repository for the site (hard copy and electronic format).

As a reminder, all final documents and reports should be compiled into one single electronic format file that is submitted or transferable to the Department (file share, email or compact computer discs (CDs)). The electronic document file format should be Adobe® Acrobat® Portable Document Format (PDF) file and must be searchable. Effective immediately, all data submitted to the DER must be in the DEC-approved Electronic Data Deliverable (EDD). Moreover, new data must be submitted on a continuous basis immediately after data validation occurs but in no event more than 90 days after the data has been submitted to the remedial party or its consultant(s). In other words, data is not to be held and submitted with the related reports.

Please contact me at (585) 226-5480 if you have any questions regarding this letter.

Sincerely,

Timothy Schneider, P.E.
Professional Engineer 1

A. Gray
T. Fucillo
B. Schilling
M. Cruden
D. Harkawik
J. Kenny / J. Deming

Beech and Bonaparte
engineering p.c.

an affiliate of Geosyntec Consultants

PRE-DESIGN INVESTIGATION WORK PLAN

PENNSYLVANIA LINES LLC, ELMIRA 5TH STREET YARD SITE
152 EAST 5TH STREET
CITY OF ELMIRA, CHEMUNG COUNTY, NY
NYSDEC PROJECT C808050

Prepared for
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

Prepared by
Beech and Bonaparte Engineering, PC
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10211 Wincopin Circle, 4th Floor
Columbia, Maryland 21044

Geosyntec Project Number: MR1502
Geosyntec Document Number: MD18049-1
NS Project Number: ENVREM-3

27 July 2018
Revision No. 1

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1. INTRODUCTION

1.1 Overview and Purpose

On behalf of Norfolk Southern Railway Company (NSRC), Beech and Bonaparte Engineering, PC, a wholly-owned New York State licensed engineering affiliate of Geosyntec Consultants, (together, Geosyntec) has prepared this Pre-Design Investigation (PDI) Work Plan for the Pennsylvania Lines LLC, Elmira 5th Street Yard ("the Site") (NYSDEC Site No. C808050) located in Elmira, Chemung County, New York. NSRC entered into a Brownfield Cleanup Agreement (BCA) with the New York State Department of Environmental Conservation (NYSDEC) on 21 February 2018 (the effective date) (NYSDEC, 2018). This PDI Work Plan was prepared in accordance with Appendix A.II of the BCA, which requires submittal of a work plan no later than 30 days after the BCA effective date. Specifically, this PDI Work Plan describes the scope of work for a field investigation that will collect the information necessary to effectively design the Selected Remedy in the Decision Document (NYSDEC, 2016) and to prepare a Remedial Action Work Plan (RAWP).

This PDI Work Plan is supported by other work plans that detail the methods and procedures that will be used to complete the PDI work so that it will be: (i) consistent with the objectives of Selected Remedy; (ii) performed in a manner that is protective of Site workers, surrounding community, and the environment; and (iii) in compliance with applicable federal, state, and local requirements. A brief summary of the supporting project plans is presented below:

- Appendix A – The Field Sampling Plan (FSP)/Quality Assurance Project Plan (QAPP) describes the methods and procedures and quality assurance (QA) measures that will be used to collect field data of sufficient quality and quantity necessary to design the Selected Remedy.

- Appendix B – The Health and Safety Plan (HASP) identifies the anticipated health and safety (H&S) hazards and presents procedures and equipment required for worker protection while performing PDI field investigation activities.

1.2 Report Organization

The remainder of this report is organized into the following sections:

Section 2 – presents a description of the Site and summarizes the Site history, geology and hydrogeology, and environmental assessment results;

Section 3 – describes the Selected Remedy that will address environmental impacts at the Site, and the design approach to completing the remedial design;

Section 4 – presents the planned PDI field activities;

Section 5 – summarizes the PDI schedule and anticipated deliverables; and

Section 6 – presents references cited in this document.

2. SITE BACKGROUND

2.1 Introduction

Descriptions of the Site including the setting and land use, history, geology and hydrogeology, and environmental impacts are presented in this section. The information presented herein was previously detailed in the approved *Remedial Investigation/Remedial Alternatives Report* (RI/RAR) (Gannett Fleming, 2013) and the Decision Document (NYSDEC, 2016).

2.2 Site Setting and Land Use

The Site is located at 152 East Fifth Street in Elmira, New York on Tax Parcel 89.15-4-1.11. The Site consists of an approximate 13-acre property that is currently inactive, vacant, and secured with a locked fence. The Site is bounded by Clemens Center Parkway to the east, and East Fifth Street, and East Second Street to the north and south, respectively. The western property line runs parallel to elevated railroad tracks operated by NSRC. Booth Electric Supply is located along the south-southeast property boundary, and Bouille Electric is located along the north-northeast property boundary. Land use surrounding the Site is primarily industrial/commercial. The Site location and surrounding vicinity are shown on **Figures 2.1 and 2.2**, respectively

2.3 Site History

Railway operations were reportedly established at the Site as early as 1850 and continued until about the mid-1970s. The Site was conveyed to Consolidated Rail Corporation (Conrail) from the Erie Lackawanna effective 1 April 1976, pursuant to the Regional Rail Reorganization Act of 1973. The Site was conveyed to Pennsylvania Lines LLC (PRR), effective 1 June 1999. On 27 August 2004, PRR was merged into NSRC.

Preliminary investigations were conducted at the Site in 1996-97 and discovered the presence of underground storage tanks (USTs), buried drums, solid wastes including railroad ties, scrap metal, tires, electrical components and switches. A 2001 cleanup effort at the Site included excavation and removal for appropriate disposal of: two USTs with 63 gallons of heating oil and 330 tons of petroleum-impacted soil; two intact drums containing liquids exceeding hazardous waste threshold for lead; and a large quantity of scrap metal.

On 27 December 2001, PRR, Conrail, and NYSDEC entered into an agreement to investigate and remediate the Site under the Voluntary Cleanup Program (VCP) (Site No. V00446). Results of subsequent Site investigations, a human-health exposure assessment, and proposed remedy to address Site contamination above remedial goals were presented in the approved RI/RAR (Gannett Fleming, 2013). NYSDEC subsequently issued a Decision Document (NYSDEC, 2016) identifying the Selected Remedy.

Due to NYSDEC's termination of the VCP (NYSDEC, 2017), the Site was entered into the Brownfield Cleanup Program under the BCA (NYSDEC, 2018), which became effective on 21 February 2018.

2.4 Geology and Hydrogeology

The Site is located in the Appalachian Uplands Physiographic Province where local topographic features result from glacial and fluvial processes with a complex erosional history and deposited accumulations of till. Overburden in the area consists of glacio-fluvial deposits varying in thickness from 6 to 60 feet. Siltstone and shale of the West Falls group underlie the glacio-fluvial deposits, but these geologic features were not encountered during previous Site investigations. Mapping of surficial geology indicates that the native soil is well rounded and stratified, coarse to fine gravel with sand.

Previous investigations at the Site identified two stratigraphic layers: fill and underlying native soil. The fill was dark gray to brown and contained cinders, fine gravel, coal fragments, brick, concrete, wood, and miscellaneous metallic items. The underlying native soil consisted of brown sand, gravel, and silt ranging from dense to very dense. The particle sizes in the soil increased with depth.

Groundwater beneath the Site occurs at depths ranging from approximately 16 to 29 feet below ground surface (bgs). Water level elevations in Site wells have indicated that the shallow groundwater flow direction is generally to the east-southeast with a saturated thickness of approximately 40 feet.

2.5 Environmental Assessment Summary

2.5.1 Introduction

This section summarizes environmental media impacts identified during previous Site investigations. A detailed discussion on the nature and extent of contamination at the Site was presented in the RI/RAR (Gannett Fleming, 2013)

2.5.2 Onsite Soil

Volatile organic compounds (VOCs) were not found in soil at concentrations above the protection of groundwater soil cleanup objectives (SCOs). The Site related contaminants of concern (COCs) in soil include arsenic, polychlorinated biphenyls (PCBs), benzo(a)pyrene, and mercury in surface soils down to 1 foot bgs. Mercury concentrations exceeding SCOs were also detected in subsurface soils down to 6 feet bgs in an isolated area in the central portion of the Site. Arsenic concentrations ranged from non-detect to 1,130 parts per million (ppm). For comparison purposes, the New York Codes, Rules and Regulations (NYCCR) Part 375 restricted industrial (RI) SCO for arsenic is 16 ppm. PCB concentrations ranged from non-detect to 36.8 ppm (RI SCO 25 ppm). Benzo(a)pyrene concentrations ranged from non-detect to 3.3 ppm (RI SCO 1.1 ppm), and mercury concentrations ranged from non-detect to 330 ppm (RI SCO 5.7 ppm). Groundwater impacts related to Site soil COCs were not identified.

2.5.3 Offsite Soil

Arsenic and PCB contaminated surface soil was identified in a small unpaved area used for equipment and commercial materials storage on the adjoining Bouille Electric property. Arsenic concentrations ranged from 6.0 to 36.9 ppm and PCBs from non-detect to 1.7 ppm in this area. Unrestricted SCOs for arsenic and PCBs are 13 and 0.1 ppm, respectively. NYSDEC reviewed records for Bouille Electric, which revealed that the detected PCBs in this area may be related to Bouille Electric operations. Because of those findings, PCB-contaminated soil at the Bouille Electric property was not considered to be related to the Site.

2.5.4 Shallow Groundwater

The COCs in Site groundwater are tetrachloroethene (PCE) and trichloroethene (TCE). PCE concentrations ranged from non-detect to 77 parts per billion (ppb). TCE concentrations ranged from non-detect to 8 ppb. Based on analytical data to date, a low-concentration groundwater contamination plume originates onsite and extends to the eastern property line. PCE and TCE concentrations were below the Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards in an offsite well (MW-100) located on the east side of Clemens Center Parkway

2.5.5 Soil Vapor

No buildings are present onsite to complete the vapor intrusion pathway. A vapor intrusion investigation was completed offsite at the Bouille Electric property; however, the data did not indicate the need for actions related to vapor intrusion in that area.

3. SELECTED REMEDY

3.1 Introduction

Details on remedial alternatives evaluated for the Site were presented in the RI/RAR (Gannett Fleming, 2013). The alternatives selected by NYSDEC (i.e., Selected Remedy) for the Site were presented in the Decision Document (NYSDEC, 2016). The Selected Remedy includes the following elements:

- Preparation of a Remedial Design to provide the details necessary for construction, operation, maintenance, and monitoring of the Selected Remedy;
- Excavation and offsite disposal of soils in isolated areas identified in the RI/RAR where constituent concentrations were above remedial goals;
- Construction of a soil cover system over areas where constituent concentrations exceed remedial goals for surface soil (i.e., 0 to 1 foot bgs);
- Restricted Site access, which specifies that the existing locked fence remain in place to protect the public from potential exposures to surface soil contamination until construction of the final cover system is complete;
- Institutional controls to restrict future property use and Site groundwater use; and
- Preparation and implementation of a Site Management Plan (SMP) that includes:
    - an Institutional and Engineering Control Plan (IECP) to specify the plan for monitoring, maintaining, and reporting on the effectiveness of institutional and engineering controls; and
    - a Monitoring Plan to assess the performance and effectiveness of the remedy to achieve groundwater and vapor intrusion remedy goals.

A summary of the Selected Remedy elements, including the remedial action objectives (RAOs), and a brief description of the design approach for each element, are presented in the sections below.

3.2 Remedial Action Objectives

As detailed in the Decision Document (NYSDEC, 2016), RAOs were developed to protect human health and environment based on the Site's contemplated future use as commercial or industrial property. Specific objectives of the remedial action include:

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

- Prevent migration of contaminants that would result in groundwater or surface water contamination.
- Mitigate impacts to public health resulting from existing, or the potential for, soil vapor intrusion into buildings at the Site.

Cleanup levels for soil and groundwater were developed for the Selected Remedy and are presented in the sections below describing each remedy element.

3.3 Remedial Design

To present the details necessary for the construction, operation and maintenance (O&M), and monitoring of the Selected Remedy, a RAWP will be prepared in accordance with Section 5.3 of the *DER-10 Technical Guidance for Site Investigation and Remediation* (DER-10) (NYSDEC, 2010). The RAWP will be prepared following completion of the PDI work presented in Section 4. The PDI is intended to collect the supplemental information necessary to effectively design the remedy. The RAWP will present the PDI results and full design specifications of the remedy.

3.4 Excavation

The Selected Remedy requires excavation and offsite disposal of soil from eight remedial areas (RAs) where concentrations of arsenic, mercury, and/or PCBs were detected above soil cleanup objectives (SCOs). The location of each RA is illustrated on **Figure 3.1**. Seven of the RAs are located onsite, and one is located offsite on the Bouille Electric property. Proposed excavation details for each RA, including the COCs for each area, are summarized in **Table 3.1**.

The SCOs for the RAs are as follows:

Onsite Soils

- Arsenic: 300 ppm - Site-specific cleanup level derived from leaching tests
- Mercury: 5.7 ppm - NYSDEC 6 NYCRR Part 375.6.8(b) restricted industrial use SCO
- Total PCBs: 25 ppm - NYSDEC 6 NYCRR Part 375.6.8(b) restricted industrial use SCO

Offsite Soils

- Arsenic: 13 ppm - NYSDEC 6 NYCRR Part 375.6.8(a) unrestricted use SCO

To design the lateral and vertical extent of each excavation, pre-excavation confirmation soil samples will be collected at each RA during the PDI (see Section 4). Those data will be used to confirm SCO attainment prior to excavation, rather than post-excavation confirmation samples. This strategy will define the limits of excavation prior to mobilization and will prevent multiple rounds of sampling and additional excavation that can often occur when demonstrating SCO attainment with post-excavation samples. The pre-excavation confirmation sample results will be compared to the SCOs to evaluate if attainment can be demonstrated in accordance with Section 5.4(b).2 of the DER-10 Guidance (NYSDEC, 2010). If attainment cannot be demonstrated, additional data collection will be required prior to, or during the remedial action.

During the remedial action, each RA will be regraded with soil from the surrounding area to establish a subgrade for installation of the cover system (see Section 3.5) or, backfilled with clean fill meeting the requirements of 6 NYCRR Part 375-6.7(d).

3.5 Cover System

A cover system consisting of either structures (e.g., buildings, pavement, and sidewalks) or a 1-foot thick soil cover will be installed over areas with residual arsenic and benzo(a)pyrene contamination in surface soils. The cover system will render the Site able to meet the restricted commercial/industrial use SCOs for arsenic (16 ppm) and benzo(a)pyrene (1.1 ppm) specified in 6 NYCRR Part 375.6.8(b). The cover system will serve as an engineering control to physically prevent human contact or exposure to impacted surface soils, while allowing the Site to be used for future commercial or industrial uses. Given the lack of development opportunities identified for the property, the cover system is expected to consist of a 1-foot thick soil cover over the entire site. The soil cover will be placed over a demarcation layer with the upper six inches of soil of sufficient quality to maintain a vegetation layer. Any fill material brought onto the Site will meet the requirements for the identified site use set forth in 6 NYCRR Part 375.6.7(d)

Additional field data collection activities are not planned for designing the cover system. Because the cover system is expected to be installed over the entire Site, sampling of existing soils for the purposes of using existing soil for the final soil cover will not be performed. The grading plan for the cover system will be developed based on the 1-foot topographic contours mapped during the 2003 land survey.

3.6 Restricted Site Access

Unauthorized access to the Site is restricted by a continuous chain-linked perimeter fence with locked gates. Authorized Site access is subject to NSRC's Health and Safety protocols, which require appropriate precautionary training and personal protective equipment. As a result, no completed exposure pathways are expected at the Site. Site access restrictions are intended to remain in place as a component of the Selected Remedy until the remedy is complete.

3.7 Institutional Controls

Following remedy construction, Institutional Controls (ICs) will be established in the form of an Environmental Easement (EE) to protect the engineering controls and limit future property and groundwater use at the Site. The EE will:

- allow the remedy to achieve the equivalent of a Track 4 restricted commercial or industrial cleanup at a minimum;
- require the remedial party or site owner to complete and submit to NYSDEC a periodic certification of institutional and engineering controls consistent with Part 375-1.8(h)(3);
- allow the use and development of the controlled property for restricted commercial or industrial use as defined by Part 375-1.8(g), although land use is subject to local zoning laws;

- restrict the use of groundwater as a source of potable or process water, without necessary water quality treatment as determined by the New York State Department of Health (NYSDOH) or County DOH; and
- require compliance with the NYSDEC approved SMP (see Section 3.8).

3.8 Site Management Plan

A SMP will be prepared to manage property re-use where contamination will remain in place. The SMP will include an Institutional and Engineering Control Plan (IECP) and a Monitoring Plan. The ICEP will identify the ICs and engineering controls for the Site and detail the steps and media-specific requirements necessary to monitor, enforce, and report on IC and engineering control effectiveness. The Monitoring Plan will include: (i) the plan for monitoring groundwater quality to assess the performance and effectiveness of the Selected Remedy at achieving NYSDEC TOGS 1.1.1. Ambient Water Quality Standards (RAOs for groundwater quality at the Site); and (ii) the plan for vapor intrusion monitoring for future Site buildings, if any. The plan for monitoring groundwater quality will be developed from available historical Site data and the baseline groundwater quality assessment completed during the PDI as described in Section 4.

4. PRE-DESIGN INVESTIGATION

4.1 Introduction

This section describes the PDI that will be conducted to fill data gaps relevant to the design of the Selected Remedy for the Site. The proposed PDI components, purpose for data collection, and description of the work are summarized on **Table 4.1**. The PDI will consist of a soil investigation to collect pre-excavation confirmation and waste characterization soil samples, and a baseline groundwater quality assessment. Specific methods and procedures that will be used to complete the PDI are provided in the FSP/QAPP in **Appendix A**.

4.2 Soil Investigation

4.2.1 Pre-Excavation Confirmation Sampling

Pre-excavation confirmation soil samples, rather than post-excavation samples, will be collected at each RA to confirm SCO attainment prior to excavation. Soil samples will be collected around the perimeter (sidewall) and beneath (base) each of the eight proposed RAs as shown on **Figures 4.1 through 4.3** and analyzed for the COCs specific to each area. The sample collection and analytical program for each RA is summarized in **Table 4.2**. The sample location and frequency are consistent with Section 5.4(b)5 of NYSDEC's DER-10 Guidance, which requires samples every 30 linear feet along each sidewall and every 900 square feet of excavation bottom.

Except for RA-7, existing data indicate that contaminants are confined to surface soils occurring above 1-foot bgs. Therefore, except for RA-7, sidewall samples will be collected from 0-1 foot bgs and submitted for analysis. Base samples will be collected from 1-2 feet bgs and submitted for analysis.

Existing data for RA-7 indicate that mercury concentrations above the SCO occur in surface soil (0-1 foot bgs) across the RA, as well as in subsurface soil from 2-4 feet bgs in the northern portion and 4-6 feet bgs in the southern portion of the RA. Therefore, to bias samples to the highest concentration depth intervals, sidewall samples will be collected and analyzed from 0-1 foot bgs around the entire excavation, and from 2-4 feet bgs in the northern portion and 4-6 feet bgs in the southern portion of the RA. Similarly, base samples will be collected and analyzed from 4-5 feet bgs in the northern portion and 6-7 feet bgs in the southern portion of the RA. In addition, deeper (contingent) samples will be preemptively collected at each location and placed on hold at the laboratory pending the primary confirmation sample results. The deeper sample will be analyzed if the mercury concentration in the primary sample is detected above the SCO.

Sample intervals for sidewall and base borings will be consistent with the predetermined depth intervals described above and presented in **Table 4.2**, unless potential higher contaminant concentrations are suspected at a particular depth interval in a sidewall boring based on obvious visual, olfactory, or screening cues observed by field staff. In that case, sidewall soil samples will be biased to the depth interval with suspected higher contaminant concentrations. If a contaminant specific bias is determined, then additional samples may be required during remedial excavation.

Pre-excavation confirmation soil samples will be collected by advancing a continuous soil core to the desired depth using either Direct Push Technology (DPT) or hand augering methods, depending on access to the boring location by the DPT equipment. Soil cores will be visually logged for soil type, and inspected for staining, debris or other evidence of anthropogenic materials. Soil samples will be collected for laboratory analysis only if sample recovery from a DPT boring is 50% or greater. If sample recovery is less than 50%, the boring will be offset to an alternate location within one foot and reinstalled to obtain a sample with recovery of 50% or greater. Following visual characterization, samples will be collected from the desired interval, homogenized, and handled as described in the FSP/QAPP (**Appendix A**). Samples will be submitted to Eurofins Lancaster Laboratories, Inc. (Lancaster) for arsenic, mercury, and/or PCB analysis as summarized on **Table 4.2**. Following completion of each soil boring, the boring will be backfilled with bentonite chips. Between boring locations, reusable equipment will be decontaminated prior to borehole advancement at the next location as described in the FSP/QAPP.

4.2.2 Waste Characterization Sampling

To assess offsite disposal options for soil that will be excavated from each RA, waste characterization soil samples will be collected and submitted for analysis of toxicity characteristic leaching procedure (TCLP) metals and total PCB analysis as summarized on **Table 4.3**. Those samples will be collected from borings installed for excavation base confirmation sample collection under Section 4.2.1. The base confirmation sample borings are located in the central portion of the RA, and therefore likely representative of the material that will be excavated. For smaller RAs with only one base confirmation boring, an individual sample will be submitted to Lancaster for analysis. For larger RAs (i.e., RA-3, RA-4, RA-7), the individual samples specified in **Table 4.3** will be composited and submitted to Lancaster for analysis.

Sample handling and analytical methods that will be used are presented in the FSP/QAPP (**Appendix A**).

4.3 Groundwater Assessment

A groundwater assessment will be completed to confirm the RI/RAR groundwater sampling results and assess current groundwater conditions at the Site. The sampling results will be used to: (i) establish baseline constituent concentrations prior to remedy implementation; (ii) design the post-construction groundwater monitoring program; and (iii) support the decommissioning of monitoring wells that are no longer necessary. The groundwater assessment will include a well inspection, water level elevation survey, and groundwater sample collection event as described below.

Prior to groundwater sampling, the monitoring wells shown on **Figure 3.1** will be located and visually inspected for integrity. The depth to water level in each well will be measured from a reference point on the inner well casing to the nearest 0.01-feet using a clean electronic water level monitoring meter. Water level measurements will be used to develop a potentiometric surface map of the water table aquifer to evaluate groundwater flow direction and gradients.

Groundwater samples will be collected from monitoring wells using low-flow sampling techniques and equipment as described in the FSP/QAPP. A submersible pump (e.g., centrifugal or bladder) with disposable polyethylene (PE) tubing will be used for purging and sample collection. Once purging is complete (i.e., water quality parameters meet stabilization criteria), groundwater samples will be collected into certified pre-cleaned, pre-preserved bottles by disconnecting the tubing from the flow-through cell. Samples will be collected in the following order: VOCs, PCBs, and metals. Samples for metals analysis will be collected for dissolved analysis by field-filtering with a 0.45-micron field filter prior to preservation with nitric acid. Collected samples will be labeled and handled as described in the FSP/QAPP, and submitted to Lancaster for analysis. Target constituents, which are the same as those analyzed during the RI/RAR, are listed in **Table 4.4** for each location.

Between monitoring well locations, all reusable equipment will be cleaned prior to sample collection as described in the FSP/QAPP.

4.4 Quality Assurance

Sample handling, including sample custody and sample control, will be conducted in accordance with the FSP/QAPP. Table A.3 of the FSP/QAPP lists analytical methods, containers, preservatives, and holding times for solid and water analyses. Quality control samples, including field duplicates, matrix spike/matrix spike duplicates, trip blanks, and equipment blanks, will be collected at the frequencies specified in Table A.4 of the FSP/QAPP.

4.5 IDM Management

Investigation-derived materials (IDM) will be generated by the soil investigation and groundwater assessment activities. Solid IDM that will be generated will include disposable personal protection equipment (PPE), disposable sampling equipment, and soil drill cuttings. Liquid IDM that will be generated will consist of purge groundwater from sampling of monitoring wells and water generated during decontamination of field equipment. Solid and liquid IDM will be stored in onsite 55-gallon drums for waste characterization (if necessary) and appropriate offsite disposal as outlined in the FSP/QAPP.

4.6 Health and Safety

4.6.1 Site Worker Protection

A Site-specific HASP, which has been developed to protect Site worker health and safety during implementation of the proposed PDI activities, is provided as **Appendix B**.

4.6.2 Community Protection

Given the relatively low contaminant concentrations previously detected at the Site and limited scope of intrusive activities planned during the PDI, the risk of the PDI work causing offsite migration of airborne contaminants at concentrations that would be hazardous to community health and safety is low. Nevertheless, in accordance with Section 1.9 of the DER-10 Guidance (NYSDEC, 2010), a community air monitoring program (CAMP) will be implemented during all ground intrusive activities (e.g., soil and groundwater sampling) as follows:

Soil Sampling

Continuous dust monitoring will be conducted in the work area during PDI soil sampling. The monitoring equipment will provide real-time readings and measure particulate matter smaller than 10 microns (i.e., PM-10) and have the capability of integrating measurements over a period of 15 minutes (or less) for comparison to the airborne particulate action level. If the PM-10 particulate level is greater than 100 micrograms per cubic meter ($\mu g/m^3$) for a 15-minute period, work will be stopped, and dust concentrations will be measured upwind of the work area. If the work area concentration is less than 100 $\mu g/m^3$ above the upwind area concentration, work will continue. If the work area concentration is more than 100 $\mu g/m^3$ above the upwind area concentration, or airborne dust is observed leaving the work area, then dust suppression techniques (e.g., wetting) will be employed and the work continued. If dust suppression techniques do not control work area dust emissions within 150 $\mu g/m^3$ of upwind concentrations, then the work will be re-evaluated and changes initiated to reduce levels to less than 150 $\mu g/m^3$ of upwind, including stoppage of work, if necessary.

In addition to dust, total VOC concentrations will be monitored in worker breathing space with a photoionization detector (PID) equipped with a 10.6 electron volt (eV) lamp during soil sampling activities. If total VOCs are consistently (1 minute duration) detected above 5 ppm in the work area, VOC concentrations will be assessed upwind of the work area. If work area concentrations are 5 ppm or more above upwind concentrations, work will be stopped and the need for worker respiratory protection and community protective measures will be evaluated before continuing.

Groundwater Sampling

Upon opening a groundwater monitoring well, the well headspace will be screened for the presence of total VOCs with a PID equipped with a 10.6 eV lamp. If the headspace reading is above 5 ppm, the PID will be used to monitor worker breathing space. If total VOCs are consistently (1 minute duration) detected above 5 ppm in the work area, VOC concentrations will be assessed upwind of the work area. If work area concentrations are 5 ppm or more above upwind concentrations, work will be stopped and the need for worker respiratory protection and community protective measures will be evaluated before continuing.

5. SCHEDULE AND DELIVERABLES

5.1 Schedule

The soil investigation and groundwater assessment activities presented herein will be initiated within 60 days of receiving NYSDEC's written approval of this PDI Work Plan. Once initiated, the work is expected to be completed within 3 weeks.

A project schedule is provided as **Figure 5.1**. The schedule is dependent upon a number of factors including the time required by the agencies to review deliverables, field conditions that might inhibit performance of field activities, the need for supplemental investigation activities, or other unforeseen circumstances that are beyond the control of NSRC. The schedule will be updated from time-to-time to reflect actual progress and modified dates for future activities.

5.2 Deliverables

In accordance with Section XI of the BCA, a monthly progress report will be submitted to NYSDEC by the 10th day of each month commencing with the month subsequent to the approval of this PDI Work Plan. The progress reports will address the minimum requirements outlined in Section XI of the BCA.

NSRC will provide NYSDEC and NYSDOH with a data summary report within 90 days of receipt and validation of all data collected as part of this PDI Work Plan. Based on the results, the data summary report may recommend additional phases of the PDI to demonstrate SCO attainment, or development of the RAWP, as appropriate.

The RAWP will be prepared and submitted to NYSDEC for review and approval within 120 days of NYSDEC approving the data summary report.

In accordance with Section IV of the BCA, one hard copy and one electronic copy of the data summary report and RAWP will be provided to Mr. Tim Schneider, P.E. at NYSDEC. Electronic copies will be submitted to Justin Deming (Region Chief) and Julia Kenney (Project Manager) at the NYSDOH and Mr. Dennis Harkawik, Esq. (NYSDEC General Counsel).

6. REFERENCES

Gannett Fleming, Inc., 2013, Final Remedial Investigation/Remedial Alternatives Report, 5th Street Yard, Elmira, New York (NYSDEC Site # V00446), December 2013.

NYSDEC, 2010, DER-10 / Technical Guidance for Site Investigation and Remediation, DEC Program Policy, New York State Department of Environmental Conservation, May 2, 2017.

NYSDEC, 2016, Decision Document for Pennsylvania Lines, LLC, Elmira 5th Street Yard Site (NYSDEC Site # V00446), City of Elmira, Chemung County, December 30, 2016.

NYSDEC, 2017, Important Notice Regarding Termination of New York State's Voluntary Cleanup Program (NYSDEC Site # V00446), Pennsylvania Lines, LLC, Elmira 5th Street Yard Site, May 5, 2017.

NYSDEC, 2018, Brownfield Cleanup Agreement for the Pennsylvania Lines, LLC, Elmira 5th Street Yard Site (NYSDEC Project # C808050), City of Elmira, Chemung County, February 21, 2018.

TABLES

TABLE 3.1
REMEDIAL AREA - PRELMINARY EXCAVATION DETAILS

Pre-Design Investigation
Elmira 5th Street Yard
Elmira, New York

Remedial Area	Proposed Excavation Details				COCs
	Area (ft^2)	Perimeter (ft)	Depth (ft bgs)	Estimated Volume (yd^3)*	
RA-1	400	80	1	15	Mercury
RA-2	400	80	1	15	Mercury
RA-3 (Offsite)	2,700	240	1	100	Arsenic
RA-4	3,500	240	1	130	Arsenic, PCBs
RA-5	900	120	1	33	Arsenic
RA-6	625	100	1	23	Arsenic
RA-7	13,100	120	4 to 6	2,911	Mercury
RA-8	900	540	1	33	Arsenic, Mercury

Notes:
COCs - contaminants of concern
ft - feet
ft^2 - square feet
ft bgs - feet below ground surface
yd^3 - cubic yards
* Volume estimated based on area and depth values.

TABLE 4.1
PRE-DESIGN INVESTIGATION SUMMARY

Pre-Design Investigation
Elmira 5th Street Yard
Elmira, New York

Pre-Design Investigation Component	Proposed Work Description and Purpose	Proposed Work Details
Pre-Excavation Confirmation Sampling	Pre-excavation confirmation soil samples will be collected for chemical analysis at each excavation area identified in the Decision Document. The analytical data will be used to confirm attainment of remedial objectives by the proposed excavation, rather than post-excavation samples.	Soil samples will be analyzed for the constituent(s) of concern around and beneath each excavaton area as shown on **Figure 4.1 through 4.3**. The sample frequency is consistent with Section 5.4(b)5 of NYSDEC's DER-10 Guidance (i.e., every 30 liner feet along each sidewall and every 900 square feet of excavation bottom). Soil samples will be collected and submitted for constituent analyses as summarized on **Table 4.2**.
Waste Characterization Sampling	Waste characterization sampling will be completed to assess off-site disposal options for proposed excavated soil.	Soil sample(s) will be collected from the central portion of each excavation, composited (if more than one sample), and submitted for analysis as summarized on **Table 4.3**.
Groundwater Assessment	Groundwater elevation levels and water quality samples will be collected from Site monitoring wells to confirm historical results and assess current groundwater conditions. The data will be used to design the post-construction groundwater monitoring program and support the decommissioning of monitoring wells that are no longer necessary.	Groundwater quality samples will be collected from each monitoring well and analyzed for constituents as summarized on **Table 4.4**.

Notes:
The laboratory analytical program for groundwater and soil are summarized on Tables 4.2 to 4.4

TABLE 4.2
PRE-EXCAVATION CONFIRMATION SAMPLE SUMMARY

Pre-Design Investigation
Elmira 5th Street Yard
Elmira, New York

Remedial Area	Estimated Excavation Depth (ft bgs)	COCs	Pre-Excavation Confirmation Samples					
			Sample Location	Type	Depth Interval (ft bgs)	Constituent Analyzed		
						Arsenic	Mercury	PCBs
RA-1	1	Mercury	RA-1-01 to RA-1-04	Sidewall	0-1		X	
			RA-1-05	Base	1-2		X	
RA-2	1	Mercury	RA-2-01 to RA-2-04	Sidewall	0-1		X	
			RA-2-05	Base	1-2		X	
RA-3 (Offsite)	1	Arsenic	RA-3-01 to RA-3-07	Sidewall	0-1	X		
			RA-3-08 to RA-3-10	Base	1-2	X		
RA-4	1	Arsenic, PCBs	RA-4-01 to RA-4-07	Sidewall	0-1	X		X
			RA-4-08 to RA-4-10	Base	1-2	X		X
RA-5	1	Arsenic	RA-5-01 to RA-5-04	Sidewall	0-1	X		
			RA-5-05	Base	1-2	X		
RA-6	1	Arsenic	RA-6-01 to RA-6-04	Sidewall	0-1	X		
			RA-6-05	Base	1-2	X		
RA-7	4 to 6	Mercury	RA-7-01 to RA-7-21	Sidewall	0-1		X	
RA-7 (Northern Portion)	4	Mercury	RA-7-01 to RA-7-04 and RA-7-15 to RA-7-21	Sidewall	2-4		X	
			RA-7-01 to RA-7-04 and RA-7-15 to RA-7-21	Sidewall	4-6		Hold	
			RA-7-22 to RA-7-25 and RA-7-33 to RA-7-36	Base	4-5		X	
			RA-7-22 to RA-7-25 and RA-7-33 to RA-7-36	Base	6-7		Hold	

TABLE 4.2
PRE-EXCAVATION CONFIRMATION SAMPLE SUMMARY

Pre-Design Investigation
Elmira 5th Street Yard
Elmira, New York

Remedial Area	Estimated Excavation Depth (ft bgs)	COCs	Pre-Excavation Confirmation Samples					
			Sample Location	Type	Depth Interval (ft bgs)	Constituent Analyzed		
						Arsenic	Mercury	PCBs
RA-7 (Southern Portion)	6	Mercury	RA-7-05 to RA-7-14	Sidewall	4-6		X	
			RA-7-05 to RA-7-14	Sidewall	6-8		Hold	
			RA-7-26 to RA-7-32	Base	6-7		X	
			RA-7-26 to RA-7-32	Base	8-9		Hold	
RA-8	1	Arsenic, Mercury	RA-8-01 to RA8-04	Sidewall	0-1	X	X	
			RA-8-05	Base	1-2	X	X	

Notes:
COCs - contaminants of concern
ft - feet
ft^2 - square feet
ft bgs - feet below ground surface
yd^3 - cubic yards
PCBs - polychlorinated biphenyls, PCB suite listed in the FSP/QAPP.
X - Sample will be submitted for analysis
Hold - Sample will be collected and held at the laboratory pending the analtyical results of adjacent samples. If adajcent samples are above the cleanup level, held samples will be analzyed.

TABLE 4.3
WASTE CHARACTERIZATION SAMPLE SUMMARY

Pre-Design Investigation
Elmira 5th Street Yard
Elmira, New York

Remedial Area	Sample Location	Depth Interval (ft bgs)	Sample Type	Waste Characterization Analyses	
				TCLP Metals	PCBs
RA-1	RA-1-05	0-1	Individual	X	X
RA-2	RA-2-05	0-1	Individual	X	X
RA-3	RA-3-08	0-1	Composite	X	X
	RA-3-09	0-1			
	RA-3-10	0-1			
RA-4	RA-4-08	0-1	Composite	X	X
	RA-4-09	0-1			
	RA-4-10	0-1			
	RA-4-11	0-1			
RA-5	RA-5-05	0-1	Individual	X	X
RA-6	RA-6-05	0-1	Individual	X	X
RA-7 (Northern Portion)	RA-7-22	0-2	Composite	X	X
	RA-7-23	2-4			
	RA-7-24	0-2			
	RA-7-25	2-4			
	RA-7-26	4-6	Composite	X	X
	RA-7-27	0-2			
	RA-7-28	2-4			
	RA-7-29	4-6			
RA-7 (Southern Portion)	RA-7-30	0-2	Composite	X	X
	RA-7-31	2-4			
	RA-7-32	4-6			
	RA-7-33	0-2	Composite	X	X
	RA-7-34	2-4			
	RA-7-35	0-2			
	RA-7-36	2-4			
RA-8	RA-8-05	0-1	Individual	X	X

Notes:
ft bgs - feet below ground surface
PCBs - polychlorinated biphenyls
TCLP - toxicity characteristic leaching procedure

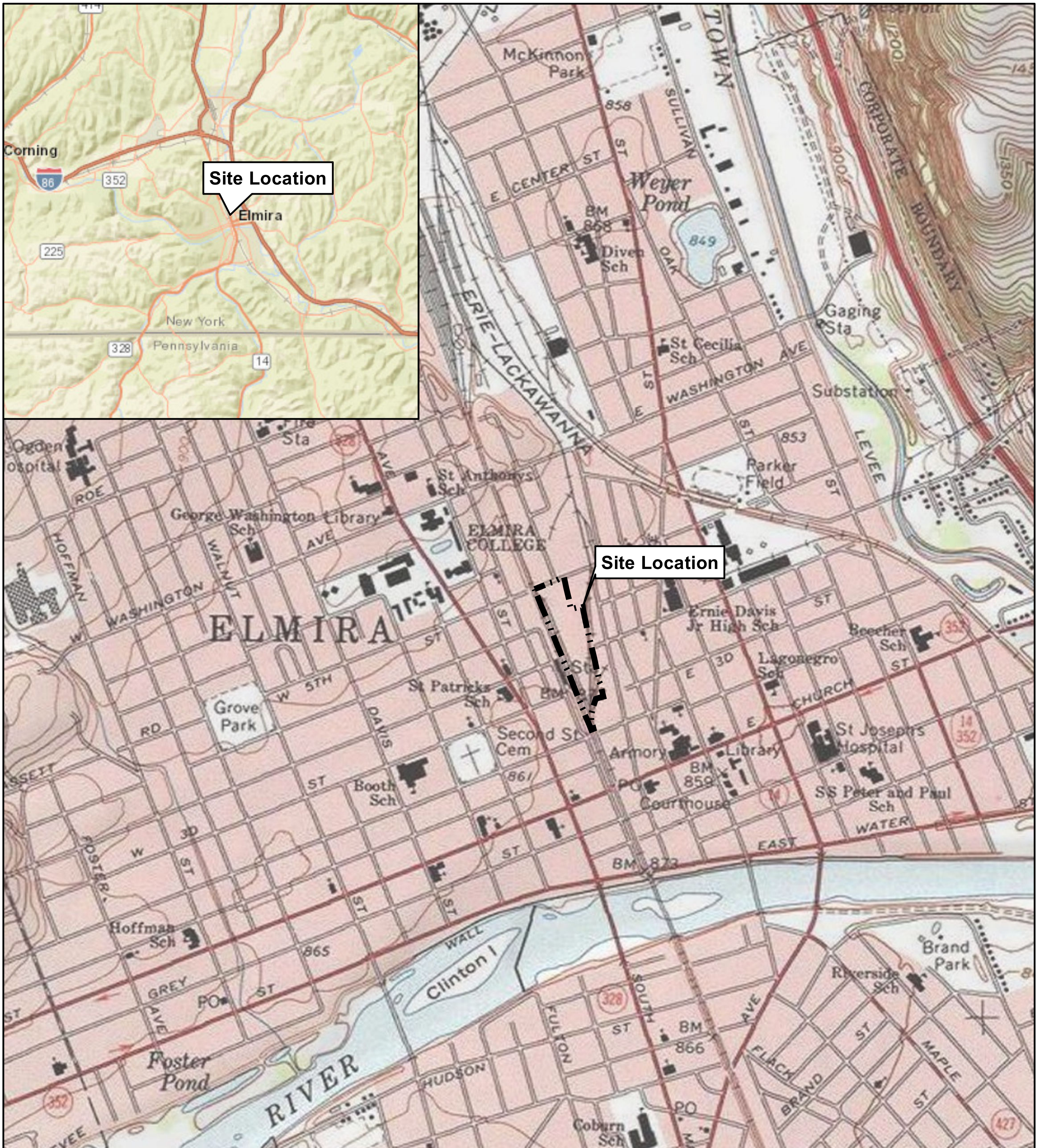
TABLE 4.4
GROUNDWATER SAMPLE SUMMARY

Pre-Design Investigation
Elmira 5th Street Yard
Elmira, New York

Monitoring Well Location	Approximate Well Depth (ft btoc)	Monitored Constituents*		
		VOCs	Dissovled Metals	PCBs
MW-1	27.5	X	X	X
MW-2	28.3	X	X	X
MW-3	28.3	X	X	X
MW-4	28.3	X	X	X
MW-5	29.4	X	X	X
MW-6	31	X	X	X
MW-7	36	X	X	X
MW-8	22.1	X	X	X
MW-9	30.8	X	X	X
MW-10	28.6	X	X	X
MW-11	25.8	X	X	X
MW-12	27.2	X	X	X
MW-13	27.8	X	X	X
MW-14	34.3	X	X	X
MW-15	35.6	X	X	X
MW-16	25.1	X	X	X
MW-17	26.6	X	X	X
MW-100	27.1	X	X	X

Notes:
ft btoc - feet below top of casing
PCBs - polychlorinated biphenyls
VOCs - volatile organic compounds
* The analtyical suite for each constituent group is presented in the FSP/QAPP.

FIGURES



Legend

Site Boundary

N

Sources: Esri, HERE, DeLorme, USGS, Intermap,

0 2,000 Feet

Site Location Map

5th Street Yard
Elmira, New York

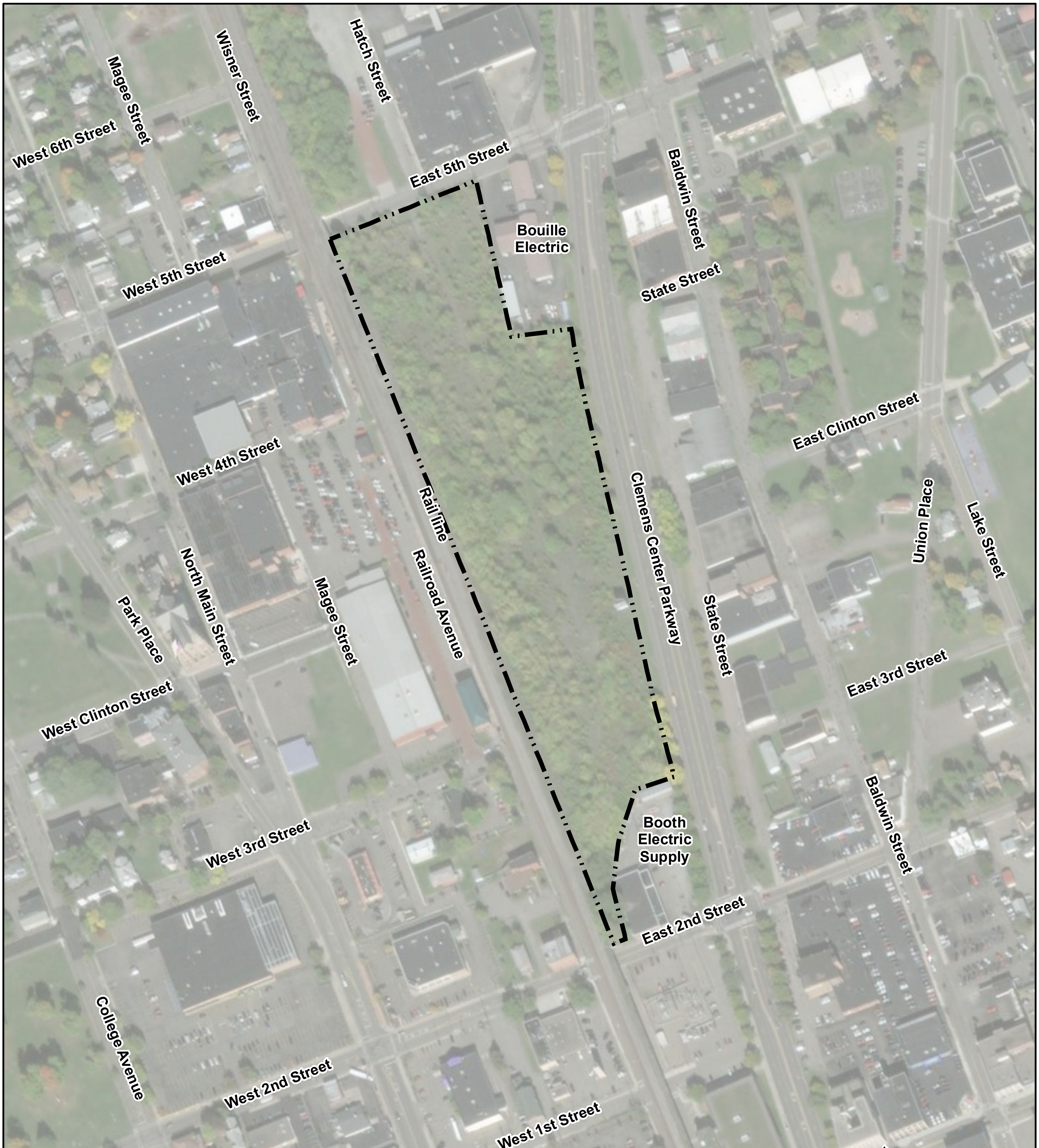
Geosyntec consultants

Columbia, Maryland

July 2018

Figure 2.1

P:\GIS\Fifth Street Yard\Report 2 - PDI Work Plan\Figure 2.1_Site Location Map.mxd 3/8/2018 1:06:08 PM



Legend

Site Boundary

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Site Vicinity Map

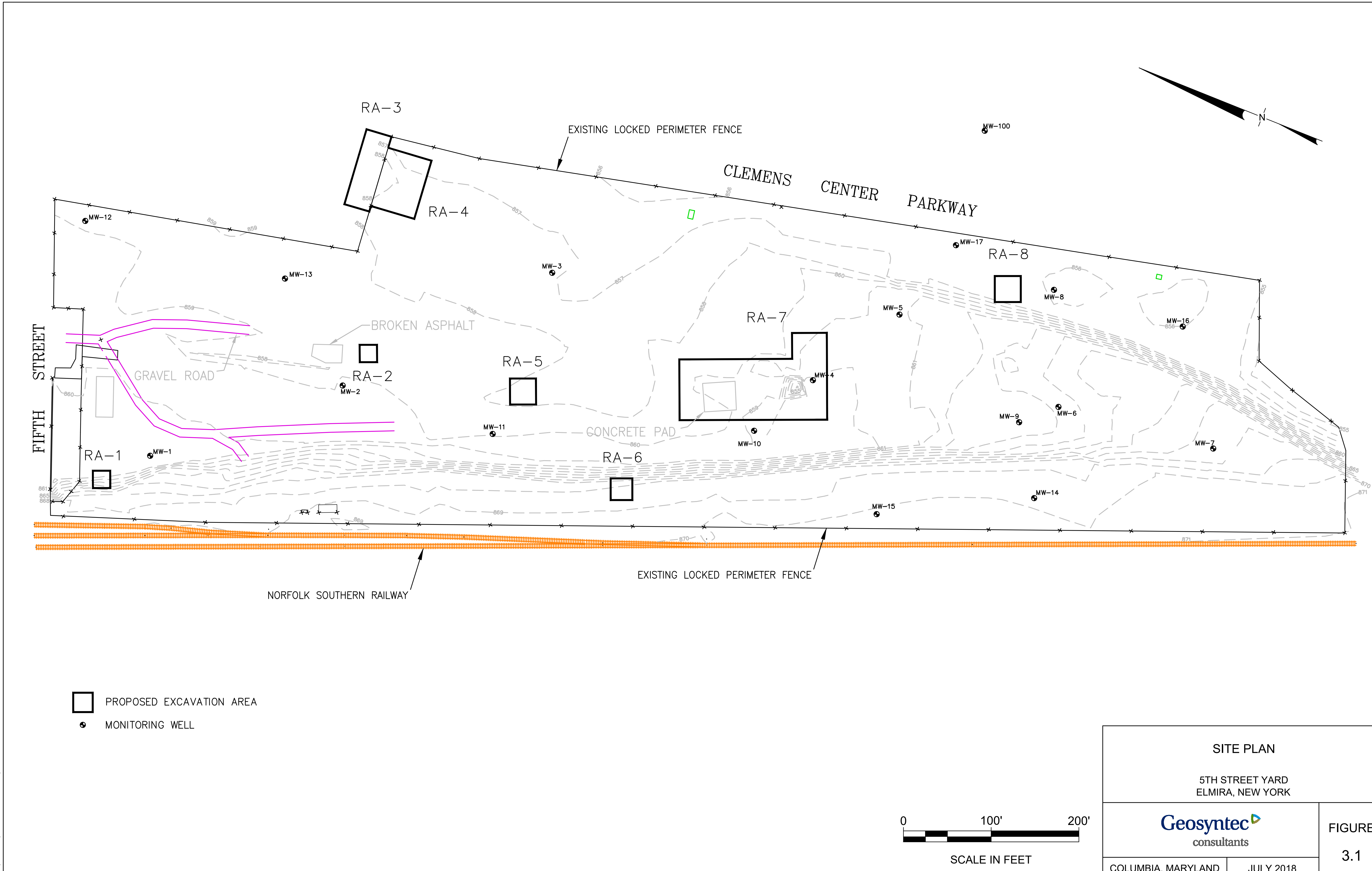
5th Street Yard
Elmira, New York

Geosyntec consultants

Columbia, Maryland | July 2018

Figure 2.2

P:\GIS\Fifth Street Yard\Report 2 - PDI Work Plan\Figure 2.2_Site Vicinity Map.mxd 3/8/2018 1:08:53 PM



SITE PLAN

5TH STREET YARD
ELMIRA, NEW YORK

Geosyntec consultants

COLUMBIA, MARYLAND | JULY 2018

FIGURE 3.1

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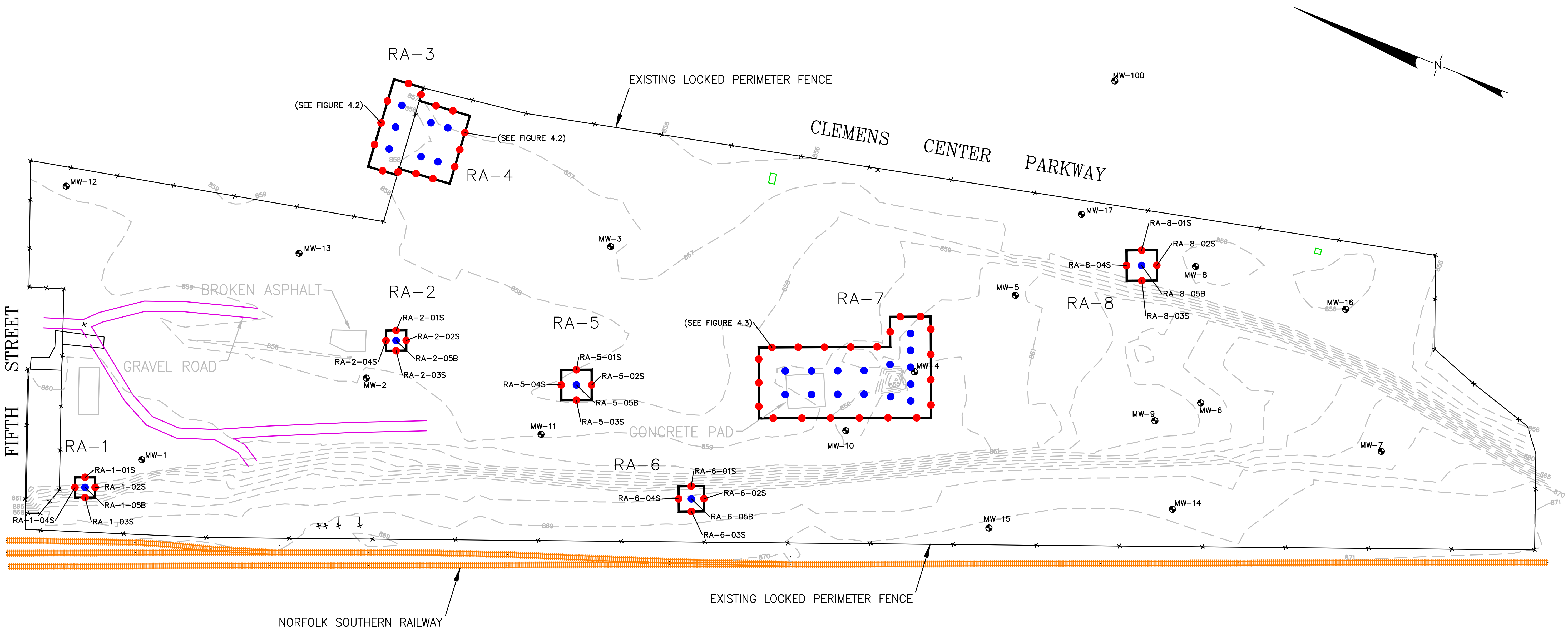


PROPOSED EXCAVATION AREA

SIDEWALL SAMPLE

BASE SAMPLE

MONITORING WELL

0 100' 200'

SCALE IN FEET

P:\CADD\1502-ELMIRA\1502F02

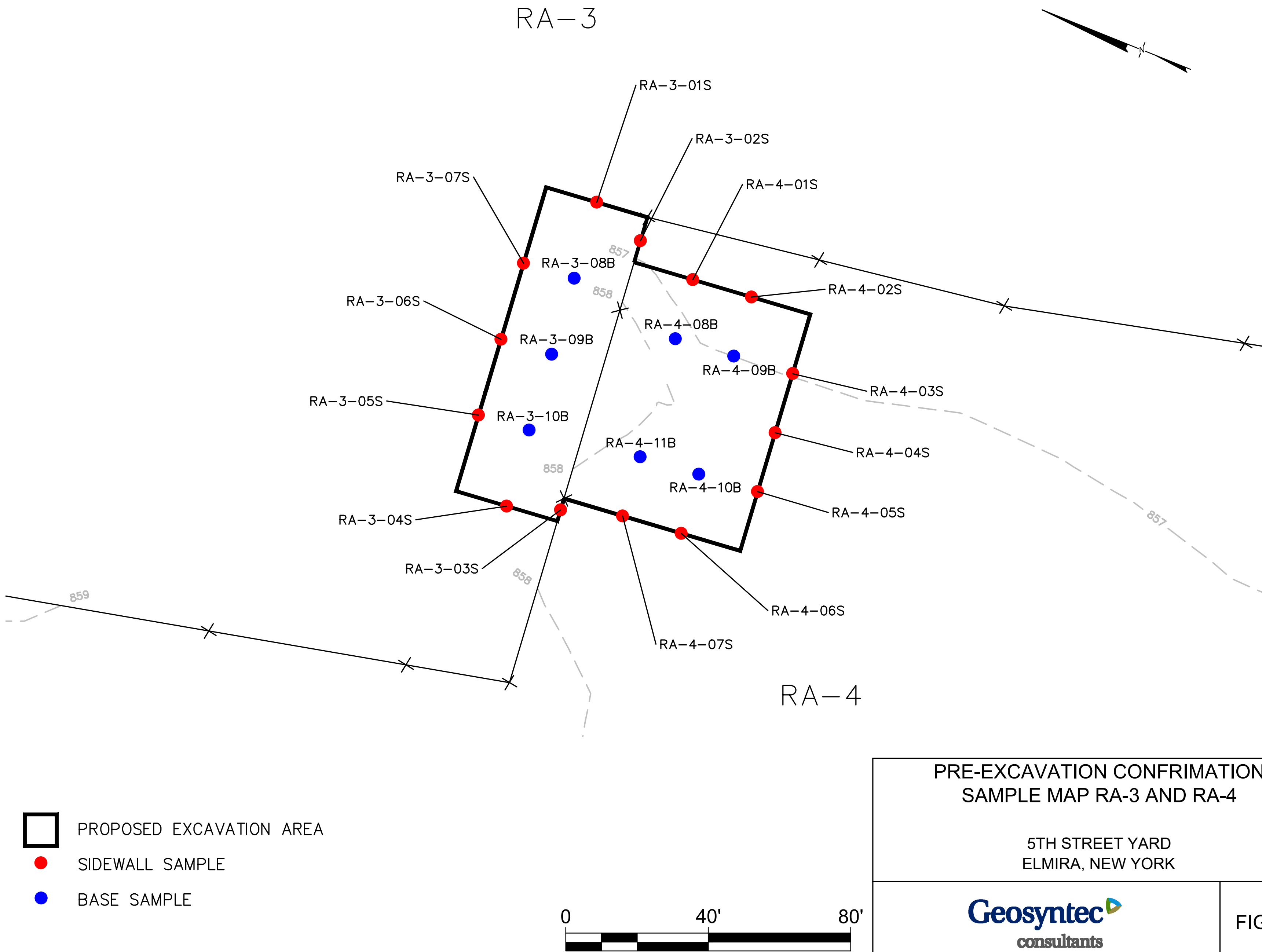
PRE-EXCAVATION CONFIRMATION SAMPLE MAP

5TH STREET YARD
ELMIRA, NEW YORK

Geosyntec consultants

COLUMBIA, MARYLAND | JULY 2018

FIGURE 4.1



PROPOSED EXCAVATION AREA
SIDEWALL SAMPLE
BASE SAMPLE

PRE-EXCAVATION CONFRIMATION
SAMPLE MAP RA-3 AND RA-4

5TH STREET YARD
ELMIRA, NEW YORK

Geosyntec consultants

FIGURE 4.2

COLUMBIA, MARYLAND | JULY 2018

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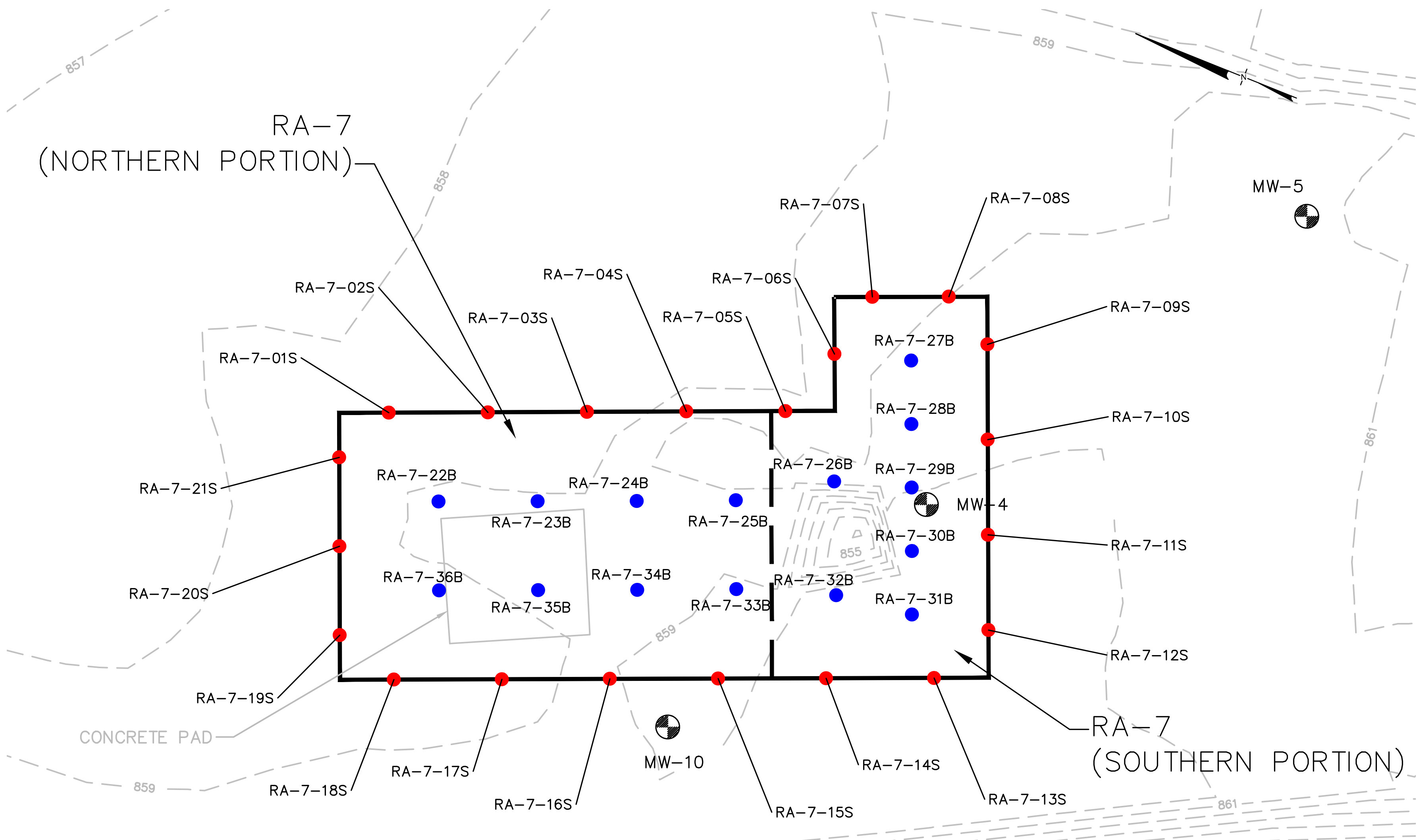

PROPOSED EXCAVATION AREA

SIDEWALL SAMPLE

BASE SAMPLE

MONITORING WELL

0 40' 80'

SCALE IN FEET

PRE-EXCAVATION CONFIRMATION
SAMPLE MAP RA-7

5TH STREET YARD
ELMIRA, NEW YORK

Geosyntec consultants

FIGURE

4.3

COLUMBIA, MARYLAND | JULY 2018

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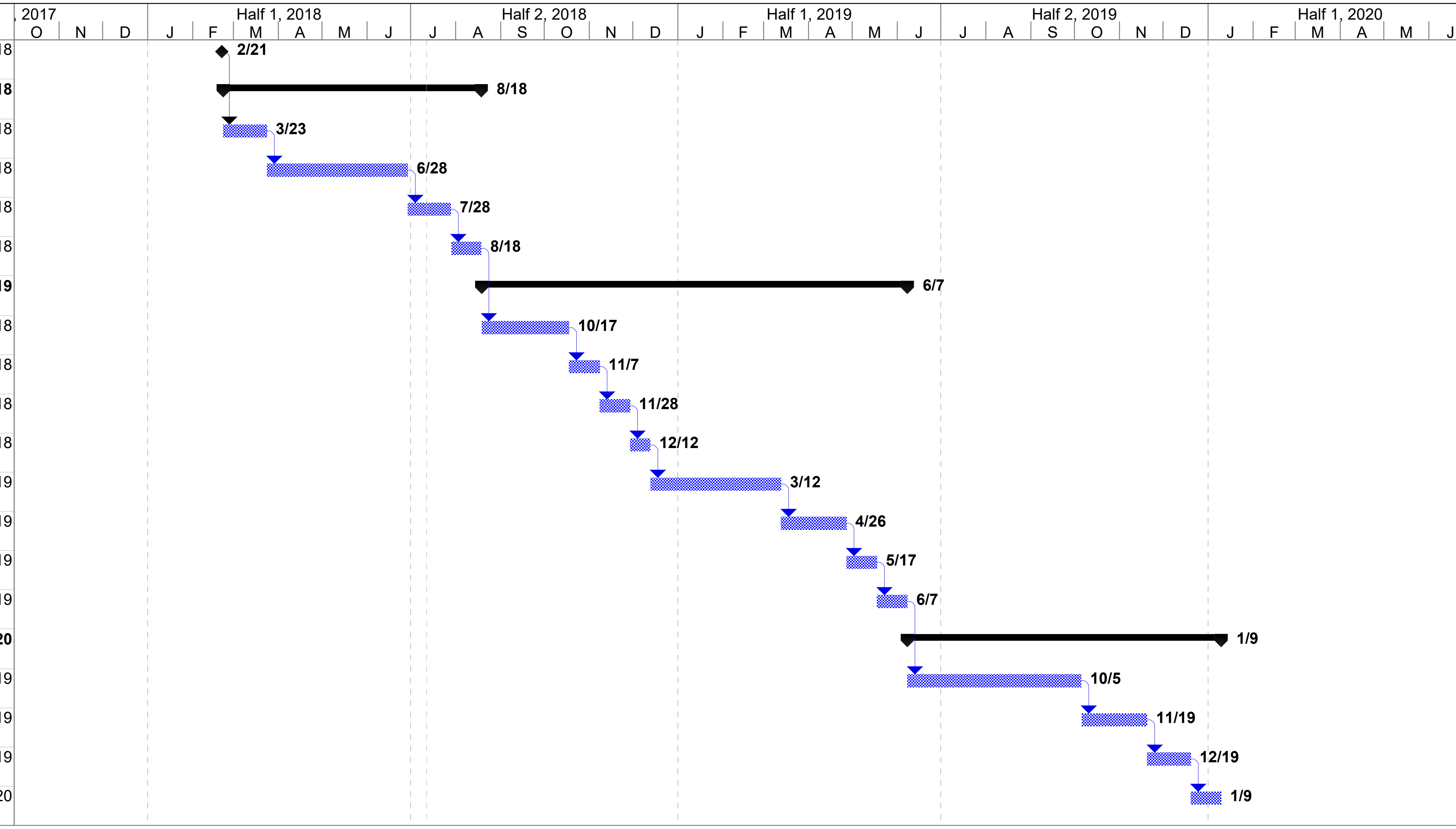
FIGURE 5.1 - REMEDIAL DESIGN SCHEDULE

5th Street Yard, Elmira, New York

ID	Task Name	Task Duration (Calendar Days)	Start	Finish
1	BROWNFIELD CLEANUP AGREEMENT	0 days	Wed 2/21/18	Wed 2/21/18
2	**PRE-DESIGN INVESTIGATION (PDI) Work Plan**	**178 days**	**Thu 2/22/18**	**Sat 8/18/18**
3	Prepare PDI Work Plan	30 days	Thu 2/22/18	Fri 3/23/18
4	NYSDEC Review and Comment	97 days	Sat 3/24/18	Thu 6/28/18
5	Revise PDI Work Plan	30 days	Fri 6/29/18	Sat 7/28/18
6	NYSDEC Review and Approval	21 days	Sun 7/29/18	Sat 8/18/18
7	**PRE-DESIGN INVESTIGATION**	**293 days**	**Sun 8/19/18**	**Fri 6/7/19**
8	Field Preparaton and Planning	60 days	Sun 8/19/18	Wed 10/17/18
9	Field Investigations	21 days	Thu 10/18/18	Wed 11/7/18
10	Laboratory Analysis	21 days	Thu 11/8/18	Wed 11/28/18
11	Data Management, Evaluation, Usuability Report	14 days	Thu 11/29/18	Wed 12/12/18
12	Prepare Data Summary Report	90 days	Thu 12/13/18	Tue 3/12/19
13	NYSDEC Review and Comment	45 days	Wed 3/13/19	Fri 4/26/19
14	Revise Data Summary Report	21 days	Sat 4/27/19	Fri 5/17/19
15	NYSDEC Review and Approval	21 days	Sat 5/18/19	Fri 6/7/19
16	**Remedial Action Work Plan (RAWP)**	**216 days**	**Sat 6/8/19**	**Thu 1/9/20**
17	Prepare RAWP	120 days	Sat 6/8/19	Sat 10/5/19
18	NYSEC Review and Comment	45 days	Sun 10/6/19	Tue 11/19/19
19	Revise RAWP	30 days	Wed 11/20/19	Thu 12/19/19
20	NYSEC Review and Approval	21 days	Fri 12/20/19	Thu 1/9/20



Project: Elmira 5th Street Yard

Task		Rolled Up Progress		Inactive Task		Manual Summary Rollup		Deadline	
Milestone		Split		Inactive Milestone		Manual Summary			
Summary		External Tasks		Inactive Summary		Start-only			
Rolled Up Task		Project Summary		Manual Task		Finish-only			
Rolled Up Milestone		Group By Summary		Duration-only		Progress			

APPENDIX A

Field Sampling Plan/ Quality Assurance Project Plan

FIELD SAMPLING PLAN/
QUALITY ASSURANCE PROJECT PLAN

PENNSYLVANIA LINES LLC, ELMIRA 5TH STREET YARD SITE
152 EAST 5TH STREET
CITY OF ELMIRA, CHEMUNG COUNTY, NY
NYSDEC PROJECT C808050

Prepared for
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

Prepared by
Geosyntec Consultants, Inc. and Its Affiliate
Beech and Bonaparte Engineering, PC
10211 Wincopin Circle, 4th Floor
Columbia, Maryland 21044

Geosyntec Project Number: MR1502
Geosyntec Document Number: MD18049
NS Project Number: ENVREM-3

March 2018

Geosyntec
consultants

FIELD SAMPLING PLAN (FSP)/
QUALITY ASSURANCE PROJECT PLAN (QAPP)
PRE-DESIGN INVESTIGATION WORK PLAN
PENNSYLVANIA LINES LLC, ELMIRA 5TH STREET YARD SITE
NYSDEC PROJECT C808050

Geosyntec Consultants, Inc. and Its Affiliate
Beech and Bonaparte Engineering, PC
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Columbia, Maryland 21044

Prepared by: ____________________ Date: 03/22/2018

Stephanie Jones – Geosyntec Senior Staff Engineer

Reviewed by: ____________________ Date: 03/22/2018

Adam Gray – Geosyntec Project Manager

Reviewed by: ____________________ Date: 03/22/2018

James Wang– Geosyntec Principal

Approved by: ____________________ Date: 03/22/2018

Julia K. Caprio – Geosyntec Quality Assurance Officer

TABLE OF CONTENTS

LIST OF TABLES

LIST OF APPENDICES

ABBREVIATIONS AND ACRONYMS

°C	degrees Celsius
CFR	Code of Federal Regulations
CLP	EPA Contract Laboratory Program
COC	chain-of-custody
COPCs	constituent of potential concern
CSM	conceptual site model
DO	dissolved oxygen
DOT	Department of Transportation
DPT	direct push technology
DQO	data quality objectives
DUSR	data usability summary report
EDD	electronic data deliverable
EIMS	environmental information management system
EM	electromagnetic
ft	feet
ft bgs	feet below ground surface
FSP	Field Sampling Plan
GPR	ground-penetrating radar
HASP	health and safety plan
ID	identification
IDM	investigation derived material
in Hg	inches of mercury
LCD	laboratory control duplicate
LCS	laboratory control sample
LPM	laboratory project manager
MDL	method detection limit
MS	matrix spike
MSD	matrix spike duplicate
NAD 83	north america datum 1983
NAVD88	north america vertical datum 1988
NIST	National Institute for Standards and Testing
NTU	nephelometric turbidity unit
NYSDEC	New York State Department of Environmental Conservation
ORP	oxidation-reduction potential
PARCC	precision, accuracy, representativeness, comparability, and completeness
PCBs	polychlorinated biphenyls
PPE	personal protective equipment
RL	reporting limit
TAL	target analyte list
TCL	target compound list

QA	quality assurance
QAO	Quality Assurance Officer
QAPP	Quality Assurance Project Plan
QC	quality control
RA	Remedial Area
RPD	relative percent difference
SOPs	Standard Operating Procedures
SPT	standard penetration testing
USEPA	United States Environmental Protection Agency
VOA	volatile organic analysis
VOC	volatile organic compound
%	percent
$\mu g/m^3$	micrograms per cubic meter

1. INTRODUCTION

On behalf of Norfolk Southern Railway Company, Geosyntec Consultants, Inc. and its New York affiliate Beech and Bonaparte Engineering, P.C. (together, Geosyntec) has prepared this Field Sampling Plan (FSP)/Quality Assurance Project Plan (QAPP) for the for the Pennsylvania Lines LLC, Elmira 5th Street Yard (the Site) in Elmira, New York. This FSP/QAPP was prepared as a component (i.e. **Appendix A**) of the Pre-Design Investigation (PDI) Work Plan, which was prepared to describe the field investigation that will be conducted to collect the information necessary to effectively design the Selected Remedy in the Decision Document (NYSDEC, 2016) and prepare a Remedial Action Work Plan (RAWP). Specifically, this FSP/QAPP was prepared to describe the methods and procedures and present the quality assurance/quality control (QA/QC) measures that will be followed during execution of the PDI.

This FSP/QAPP was developed using the guidelines presented in United States Environmental Protection Agency (USEPA), *Requirements for Quality Assurance Project Plans, EPA Quality Assurance/R-5* (USEPA, 2001) and the guidance presented in the New York State Department of Environmental Conservation (NYSDEC) DER-10 *Technical Guidance for Site Investigation and Remediation* (NYSDEC, 2010).

The project FSP/QAPP will be required reading for members of the project team participating in PDI activities, will be in the possession of the field teams during field activities, and will be distributed to laboratories performing analytical work associated with the PDI. This document has been developed so that data acquired during the PDI are thoroughly documented, verifiable, and defensible, and that the quality of the data meets requirements for its intended use. Project QA objectives and QC requirements have been used to develop the data quality objectives (DQOs) described in the following sections for acquiring valid usable data. Criteria for data quality were established in terms of the precision, accuracy, representativeness, comparability, completeness, and sensitivity (PARCCS) parameters.

1.1 Project Objectives/Problem Definition

This FSP/QAPP pertains to soil investigation and groundwater assessment activities described in the PDI Work Plan. The general purpose of the PDI Work Plan is to collect the field data that are necessary to effectively design the Site's Selected Remedy. The specific objectives of the PDI Work Plan include the following:

- Confirm that the proposed excavations at each Remedial Area (RA) will remove soil with constituent of concern (COC) concentrations above remedial action objectives (RAOs);
- Assess offsite disposal options for soil that will be excavated from each RA;
- Confirm historical groundwater results and assess current groundwater quality conditions to establish baseline groundwater quality prior to remedy implementation;

- Identify groundwater monitoring wells that are no longer necessary and can be decommissioned; and
- Design the post-construction groundwater monitoring program.

1.2 Project Organization

The primary project team assembled to oversee, direct and complete the investigation activities at the Site consists of personnel from Geosyntec. Geosyntec will be responsible for development of the project technical direction, and supervision and implementation of investigation activities including oversight of subcontractors, data management, and data quality assessment. The project team and corresponding projects roles are summarized below:

- Regional Environmental Remediation Manager, Scott Pittenger, NSRC. Mr. Pittenger is primarily responsible for the project direction and decisions concerning technical issues and strategies, budget and schedule.
- Project Director, Paul Botek, P.G., Geosyntec. Mr. Botek is responsible for the overall quality of the project and ensuring all assignments are appropriately staffed and resourced for successful completion. He will provide strategic direction to the project team as well as oversight and guidance during project execution.
- Project Manager, Adam Gray, Geosyntec. Mr. Gray is responsible for assigning and managing the resources applied to the project, coordinating staff and work activities, reviewing quality and performance for each task, and ensuring that the technical, financial, and scheduling aspects of the project meet the project objectives.
- Field Activities Manager and Health and Safety Officer, Stephanie Jones, Geosyntec. Ms. Jones has the overall responsibility for completing field activities in accordance with the PDI Work Plan and FSP/QAPP and is the communication link between the Geosyntec Project Manager and the field team. She will also be responsible for safely implementing field activities and ensuring that they comply with the Site Health and Safety Plan (HASP).
- Database Manager, R. Dylan Walker, Geosyntec. Mr. Walker has responsibility for maintaining the project database, archiving project data files, uploading laboratory electronic data deliverables (EDDs) and data qualifiers into the project database, and data transmittal to regulating agencies.
- Quality Assurance Officer (QAO), Julia Caprio Geosyntec. Ms. Caprio will have the overall responsibility for QA. Ms. Caprio or her designee will communicate directly to the Geosyntec Project Manager and Laboratory Manager on matters pertaining to QA, data validation, and laboratory analyses.
- Analytical Laboratory, Eurofins Lancaster Laboratory, Inc (Lancaster). Lancaster, a National Environmental Laboratory Accreditation Program (NELAP) certified laboratory, will be responsible for solid and water sample analyses for the project. The laboratory will ultimately be responsible for the data produced and will ensure that laboratory data are

generated in compliance with this FSP/QAPP, NYSDEC Analytical Services Protocols, internal laboratory procedures, NSRC technical specifications manual for contract laboratories (Environmental Standards, Inc., 2013a), and other applicable guidance.

- Subcontractors. Geosyntec will procure various subcontractors to implement the PDI Work Plan scope of work. The subcontractors will include a subsurface utility locator/clearer (as necessary), land surveyor, and driller. The subcontractors are responsible for conducting the work in accordance with the project plans, contractual agreements and for communicating any issues concerning the budget, schedule, or achievement of the technical specifications to the Geosyntec Field Team Leader.

Resumes for the Geosyntec Project Director, Project Manager, QAO, Field Activities Manager are identified above are provided for reference in **Appendix A.1**. Resumes of additional personnel are available upon request.

1.3 QAPP Revision or Amendment

It is expected that the procedures outlined in this FSP/QAPP will be followed. However, site conditions and information collected during field activities may indicate that a proposed procedure or method should be altered in order to meet the data quality objectives (DQOs). Documentation for deviations will include the following:

- the change from the planned method or procedure;
- the rationale for the change including adverse field conditions responsible for the modification, field screening data/observations that led to the decision, and any other reason for the modification;
- a description of the revised procedure or method including a description of the data that will be collected; and
- a description of how, if at all, the modification will impact or modify future data collection during the pre-design investigation.

Documentation of variances will be provided to the Project Manager at the end of each day for review and filing. The above information will be documented in the next scheduled submittal to NYSDEC to identify the modification and the rationale for implementing the change.

2. DATA QUALITY OBJECTIVES AND CRITERIA

DQOs are qualitative and quantitative statements that clarify the project objectives, specify the most appropriate type of data for the project decisions, determine the most appropriate conditions from which to collect data, and specify tolerable limits on decision errors. The DQO process is a series of planning steps based on scientific methods that are designed to ensure that the type, quantity, and quality of environmental data used for decision-making are appropriate for the intended application. In addition to the project objectives, the DQOs specify data collection boundaries and limitations, the most appropriate type of data to collect, and the level of decision error that will be acceptable for the decision. This section describes the outcome of the DQO process for data collection activities to be conducted at the Site.

2.1 Data Quality Objectives for Measurement Data

The overall quality objective of the project is to provide valid data of known and documented quality from environmental media (soil and groundwater) that will be used to design the Selected Remedy for the Site.

Section 4 of the PDI Work Plan details the scope of work that will be performed to effectively design the Selected Remedy. The scope of work includes: i) pre-excavation confirmation soil sampling; ii) waste characterization soil sampling; and iii) a groundwater assessment.

For the soil investigation, laboratory generated soil sample analytical results will be used to i) confirm that the excavations will remove soil with COC concentrations above soil cleanup objectives; and ii) evaluate hazardous characteristics of soil to assess off-site disposal options.

During the groundwater assessment, laboratory generated groundwater sample analytical results will be used to assess current groundwater conditions at the Site and to confirm historical concentrations of COCs. In addition, the following field activities will generate supporting data:

- Visual inspection and documentation of observed conditions (well integrity, and water level measurements); and
- Field analytical analysis of groundwater quality parameters (pH, specific conductance, oxidation reduction potential [ORP], dissolved oxygen [DO], and turbidity) during monitoring well purging.

Data from laboratory and field analyses will be used to design the post-construction groundwater monitoring program and support the decommissioning of monitoring wells that are no longer needed.

2.2 Project Quality Assurance/Quality Control Objectives

Data from laboratory analysis of field samples will serve as the primary basis for reaching final conclusions from the PDI. These data will be generated using standard analytical methods and will be assessed against the PARCCS parameters, as described in the following sections, verify data usability and its suitability for meeting the DQOs described in the PDI Workplan and supported by this FSP/QAPP. The QC criteria are defined in this section, along with analytical methods and project-required reporting limits.

2.2.1 Precision

Precision refers to the reproducibility or degree of agreement among replicate measurements of a single analyte. The closer the numerical values of the measurements, the more precise the measurement. Poor precision stems from random errors (i.e., mechanisms which can cause both high and low measurement errors at random). Precision of replicate analyses is usually stated in terms of standard deviation, but other estimates, such as the coefficient of variation (relative standard deviation), range (maximum value minus minimum values), and relative range are common, and may be used pending review of the data. Additionally, for the assessment of precision of duplicate analyses, relative percent difference (RPD) is calculated as the precision measurement value.

For the purposes of this FSP/QAPP, precision will be determined through the collection of field duplicates and the analysis of laboratory duplicates, matrix spike (MS)/matrix spike duplicate (MSD) pairs and laboratory control sample (LCS)/laboratory control sample duplicate (LCSD) pairs for the work performed at the Site. The overall precision of measurement data is a mixture of sampling and analytical factors. Sampling precision will be measured through the laboratory analysis of field duplicate samples. Laboratory precision will be measured through the analysis of laboratory duplicates, MS/MSD and LCS/LCSD pairs.

Precision will be determined and expressed as the RPD between duplicate sample results, computed as follows:

$$RPD = \frac{X_1 - X_2}{\left(X_1 + X_2\right)/2} \times 100$$

where X_1 and X_2 are reported concentrations for each replicate sample and subtracted differences represent absolute values. For field duplicates, the precision goals for this project are as follows:

(i) RPD = 40% for solid samples; and

(ii) RPD = 20% for VOC, PCB, and dissolved metals liquid samples.

RPD values are shown in **Tables A.1 and A.2** for MS/MSD and LCS/LCSD results for solid and aqueous matrices. For laboratory duplicate analysis, the default laboratory RPD goals will be used. Precision requirements for field measurements are provided in **Table A.3**.

2.2.2 Accuracy

Accuracy refers to the degree of difference between measured or calculated values and the true value. The closer the numerical value of the measurement comes to the true value, or actual concentration, the more accurate the measurement. The converse of accuracy is bias, in which a systematic mechanism tends to consistently introduce errors in one direction or the other. Bias in environmental sampling can occur in one of three ways; these mechanisms and their associated diagnostic and management methods are as follows:

- High bias, which can stem from cross-contamination of sampling, packaging, or analytical equipment and materials. Cross-contamination is monitored through blank samples, such as equipment blanks, field blanks, trip blanks, filter blanks, and method blanks. These samples assess the potential for cross-contamination from, respectively, sampling equipment, ambient conditions, packaging and shipping procedures, field filters, and laboratory equipment. Data validation protocols described in Section 5 present a structured approach for data qualification based on blank samples.

- Low bias, which can stem from the dispersion and degradation of target analytes; an example is the volatilization of chlorinated solvents during field sampling. The effects of these mechanisms are difficult to quantify. Sampling accuracy can be maximized, however, by the adoption and adherence to a strict field QA program. Specifically, sampling procedures will be performed following standard protocols described in Section 3; for example, eliminating headspace in sampling vials for Volatile Organic Compounds (VOCs) will reduce the potential for dispersion of VOCs during sampling. Through regular review of field procedures, deficiencies will be documented and corrected in a timely manner.

- High or low bias, due to poor recoveries, poor calibration, or other system control problems. The effects of these mechanisms on analytical accuracy may be expressed as the percent recovery of an analyte that has been added to the environmental sample at a known concentration before analysis. Analytical accuracy and bias in the laboratory will be determined through the analysis of method blanks, LCSs and MS/MSDs. As with blank samples, data validation protocols provide a structured formula for data qualification based on erroneously high or low analyte recoveries.

Accuracy, when potentially affected by high or low recoveries as described in the third bullet above, is presented as percent recovery (%R), defined as:

$$LCS\ \%\ R = \frac{Spiked\ Sample\ Concentration}{True\ Value} \text{ x } 100$$

$$MS/MSD\ \%\ R = \frac{Spiked\ Sample\ Concentration - Sample\ Concentration}{Spike\ Concentration} \times 100$$

Laboratory control limits will be used to evaluate accuracy and are shown in **Tables A.1 and A.2** for solid and water matrices. Accuracy goals for field measurements are provided on **Table A.3**.

2.2.3 Representativeness

Representativeness qualitatively expresses the degree to which the sample collection and analytical protocols adequately reflect the environmental conditions present at the sampling location. Representativeness is ensured by collecting sufficient numbers of samples of an environmental medium, properly chosen with respect to place and time. The pre-excavation confirmation sampling and waste characterization sampling configuration is expected to provide data representative of the soil conditions at the eight RAs. The groundwater sampling network is expected to provide data representative of the groundwater conditions at the Site. Representativeness in the laboratory is ensured by using the proper analytical procedures, attaining the quantitative DQOs, and meeting sample holding times.

2.2.4 Comparability

Comparability expresses the confidence with which one data set can be compared to another data set measuring the same property. Comparability is ensured through the use of established and approved analytical methods, consistency in the basis of analysis (e.g., wet weight, volume, etc.), consistency in reporting units, and analysis of standard reference materials. By using standard sampling and analytical procedures, data sets will be comparable.

2.2.5 Completeness

Completeness is defined as the percentage of measurements made which are judged to be valid measurements. The completeness goal is essentially the same for all data uses in that sufficient amounts of valid data are to be generated.

There are limited historical data on the completeness achieved by individual methods. However, the USEPA Contract Laboratory Program (CLP) data have been found to be 80 to 85 percent complete on a nationwide basis.

The percent completeness for each set of samples will be calculated as follows:

$$\%\ Completeness = \frac{Valid\ Data}{Total\ Data\ Planned} \times 100$$

The QA objective for completeness for all parameters will be 90 percent.

2.2.6 Sensitivity and Reference Limits

Sensitivity is the capability of a test or instrument to discriminate between measurement responses representing different levels (e.g., concentrations) or a variable interest. Reference limits for analyses conducted by the certified laboratory include method detection limits (MDLs) and reporting limits (RLs).

MDL is a statistically determined concentration. It is the minimum concentration of a substance (analyte) that can be measured and reported with 99 percent (%) confidence that the analyte concentration is greater than zero as determined from the analysis of a sample in a given matrix containing the analyte. The MDL is generally lower than the concentration at which the laboratory can quantitatively report. Accordingly, sample results greater than the MDL but less than the RL will be laboratory qualified as "estimated."

RL is the minimum concentration of an analyte or category of analytes in a specific matrix that can be identified and quantified within specified limits of precision and bias during routine analytical operating conditions. The RLs for all analytes are typically at concentration levels that exceed the calculated MDLs by a factor of 3 to 10 and are within the method calibration range. Frequently, RLs for specific samples are adjusted for dilution, changes to sample volume/size and extract/digestate volumes, percentage solids, and cleanup procedures.

The MDLs and RLs for this project for both solid and aqueous sample matrices are presented in **Tables A.1 and A.2**, respectively. Sample results for this project will be reported to the MDLs, which are below the performance standard for each analyte.

2.2.7 Analytical Methods

In accordance with the *Norfolk Southern Railway Company Environmental Contract Laboratory Program User Manual* (Environmental Standards, Inc., 2013), Eurofins Lancaster Laboratory is the analytical laboratory selected to analyze soil and groundwater samples for this project. The laboratory is certified by New York State through the National Environmental Laboratory Accreditation Program (NELAP) for all of the analytical methods required for the project. Laboratory analytical methods used to analyze field samples may include the following analyses:

- Polychlorinated Biphenyls (PCBs) – method 8082A for solid samples and Low-Level 8082A for water samples;
- Target Analyte List (TAL) Metals – methods 6010C and 7471B for solid and water samples; and
- Target Compound List (TCL) VOCs – 8260C for water samples.

3. DATA GENERATION AND ACQUISITION

3.1 Overview

This section describes the sampling strategies and field procedures that will be implemented to support the PDI to provide data required to meet the DQOs described in Section 2. Environmental measurements to be obtained during implementation of the PDI WP include the following:

- Soil logging observations conducted during soil sampling via hand methods (e.g., hand auger or trowel) or direct push technology (DPT);
- water level data and integrity inspections from Site monitoring wells;
- field analysis of groundwater quality parameters (pH, specific conductance, ORP, DO, and turbidity) during monitoring well purging.
- data from laboratory analysis of samples of the following media:
    - soil samples from remedial areas for pre-excavation confirmation sampling and waste characterization; and
    - groundwater samples from existing groundwater monitoring wells.

In addition, the following activities will be conducted in support of the PDI:

- work necessary for clearing planned sampling locations for underground utilities and structures;
- land surveying to obtain sample location coordinates and elevations;
- decontaminating of field equipment; and
- sampling (if necessary) and managing investigative derived materials (IDM).

The strategy and procedure for each of these items are addressed in the following sections. In addition, analytical parameters, field and laboratory QC strategies, equipment testing, inspection, and maintenance, inspection and acceptance of supplies and consumables, and non-direct measurements are also discussed in the following sections.

3.2 Special Training and Certification

3.2.1 Health and Safety Training

All field activities will be performed by individuals with appropriate training (i.e., Code of Federal Regulations [CFR] 1910.120) and in accordance with the site-specific HASP). Before field activities commence, the site-specific HASP (**Appendix B**) shall be reviewed and signed by all Geosyntec personnel conducting field work.

3.2.2 Subcontractor Training

All subcontractors performing work during the investigation will be required to conduct all activities in accordance with applicable health and safety regulations (e.g., CFR 1910.120) and site-specific requirements. A copy of the HASP will be provided to each subcontractor. However, subcontractors will be responsible for the health and safety of their personnel while working at the Site. Each day before work commences, a tailgate health and safety meeting shall be conducted by the contractor field team lead.

3.3 Sampling Process Design

The basis for the development of the PDI scope of work is described in the Work Plan and subsequent addenda (if any). Laboratory analyses of soil and groundwater samples will serve as the primary source of data to support the completion of the investigation. Field observations and analysis will be used to collect supplemental information for the remedial design and to direct the collection of samples for laboratory analysis.

3.4 Field Methods and Procedures for Data Collection

This section describes the procedures that will be implemented to collect data during implementation of the Work Plan. It includes a description of the procedures for field collection, analysis, and handling of soil and groundwater samples. Field activities will be carried out in accordance with this FSP/QAPP and the project HASP.

3.4.1 Soil Sampling

Soil samples will be collected using either hand methods (e.g., hand auger or trowel) or DPT. The sampling method will be selected depending on access to the boring location by the DPT equipment, and the desired sampling depth intervals. Between sampling locations, reusable equipment will be decontaminated prior to sample collection to prevent cross-contamination of samples. For DPT boreholes, a continuous soil core will be advanced from ground surface to the target sample interval. Alternatively, the borehole will be advanced using hand methods until the desired sample depth is reached.

Specific procedures for planned soil sampling activities via hand methods are provided below.

- Obtain appropriate laboratory prepared sample containers prior to sampling and don appropriate level of Health and Safety according to the approved HASP.
- Mobilize to sampling location.
- Conduct air monitoring as outlined in the HASP and in Section 4.6 of the PDI Work Plan.
- Using a hand auger, trowel, or other appropriate hand tool, excavate a hole in the soil to the desired sampling depth interval(s).

- A geologist or his designee will be responsible for geologic logging of soil, to maintain consistency. Soil will be visually inspected to record details of the color, texture, moisture, density, cohesion, plasticity and any indication of staining or obvious odor, and digital photographs will be taken.
- Place soil sample in a mixing container (decontaminated stainless-steel bowl or sealable plastic bag) and homogenize the sample with decontaminated stainless-steel spoons or other appropriate mixing device.
- Once homogenized, place soil in laboratory provided sample containers for shipment to and analysis at the laboratory.
- Follow the sample handling and labeling procedures outlined in Section 3.7 and 3.8 of this document.
- Abandon open borehole with bentonite chips to the ground surface.
- Mark location with a labeled stake, flag, or other appropriate marker for surveying, if necessary.
- Complete field forms and enter sampling and location information in the bound field book as outlined in Sections 3.8.5 and 3.8.6 in this document.
- Decontaminate sampling equipment as outlined in Section 3.5.5.
- Manage IDM as outlined in Section 3.5.3.

Specific procedures soil sampling activities via DPT are provided below.

- Obtain appropriate laboratory prepared sample containers prior to sampling and don appropriate level of Health and Safety according to the approved HASP.
- Mobilize DPT rig to the sampling location.
- Conduct air monitoring as outlined in the HASP and in Section 4.6 of the PDI Work Plan.
- Drive the decontaminated soil probe to the desired terminal depth, collecting soil cores into the acetate liner placed within the core barrel sampler. Remove soil core barrel and associated rod from borehole and remove soil sample within acetate liner. The acetate liner will be cut with a utility knife to observe, log, and record lithology.
- A geologist or his designee will be responsible for geologic logging of soil cores, to maintain consistency. Soil cores will be visually inspected to record details of the color, texture, moisture, density, cohesion, plasticity and any indication of staining or obvious odor, and digital photographs will be taken.
- Divide the soil core into the desired sample depth segments.
- Place soil sample in a mixing container (decontaminated stainless-steel bowl or sealable plastic bag) and homogenize the sample with decontaminated stainless-steel spoons or

other appropriate mixing device. Composites samples for waste characterization will be combined on an approximate equal volume basis and homogenized.

- Once homogenized, place soil in laboratory provided sample containers for shipment to and analysis at the laboratory.
- Follow the sample handling and labeling procedures outlined in Section 3.7 and 3.8 of this document.
- To collect soil samples below the first interval, place a decontaminated soil collection barrel and cutting shoe with a new acetate liner in the open bore-hole and drive probe to collect the next soil interval.
- These steps are repeated until the desired maximum sample depth is reached or probe refusal is reached (point where probe will not penetrate soils due to obstruction and/or hard material).
- Abandon open borehole with bentonite chips to the ground surface.
- Mark location with a labeled stake, flag, or other appropriate marker for surveying, if necessary.
- Complete field forms and enter sampling and location information in the bound field book as outlined in Section 3.8.5 in this document.
- Decontaminate sampling equipment as outlined in Section 3.5.5.
- Manage IDM as outlined in Section 3.5.3.

3.4.2 Monitoring Well Inspection and Synoptic Water Level Measurements

The specific procedures to be used to complete well inspections and synoptic water level measurement at each well are presented below:

- Navigate to the monitoring well location and locate the monitoring well.
- Conduct air monitoring as outlined in the HASP and in Section 4.6 of the PDI Work Plan.
- Once located, open the well casing and note the condition of the well casing, concrete pad, and overall condition of the monitoring well. Take a photograph of the monitoring well.
- Determine the location of the surveyed elevation mark. For monitoring wells, general markings include either a notch in the riser pipe or a permanent ink (generally black ink) mark on the riser pipe. If no mark is present, the measurement will be taken from the highest point on the casing, or from the northern side if the casing is level.
- Obtain a water level measurement from the surveyed elevation mark by lowering the water level probe down the well until the audible sound of the unit is detected or the light on an electronic sounder illuminates indicating that the probe is below the water. The precise

measurement should be determined (to nearest 0.01 feet) by repeatedly raising and lowering the tape to converge on the exact measurement.

- Measure the depth to the bottom of the well by continuing to lower the water level probe down the well until slack is noted in the tape. The precise measurement should be determined (to nearest 0.1 feet) by repeatedly raising and lowering the tape to converge on the exact measurement. It should be noted, based on the response and feeling of the water tape during repeated measurements, whether the well has a soft or hard bottom.
- Record the water level and depth to bottom measurement as well as the location identification number, date, time, and weather conditions in the field logbook and/or field form.
- Decontaminate the water level probe as discussed in Section 3.5.5. Generally, only that portion of the tape that enters the water table needs to be decontaminated.

3.4.3 Low-Flow Groundwater Sampling

Samples will be collected from existing groundwater monitoring wells identified in the Work Plan using low-flow sampling protocols. Purging of the groundwater will be performed at relatively low flow rates (between 0.1 and 0.5 liters per minute) in order to minimize drawdown of the surrounding water table and minimize stress on the formation. Water purged from the wells will be monitored for the following water quality field parameters: temperature, pH, specific conductivity, DO, ORP, and turbidity to document changes in water quality. Samples will be collected when three consecutive readings indicate stability in the field parameters. The procedures to be followed during groundwater sampling are:

- Obtain appropriate laboratory prepared sample containers prior to sampling and don appropriate level of PPE as described in the HASP.
- Conduct air monitoring as outlined in the HASP and in Section 4.6 of the PDI Work Plan.
- Obtain a depth to water measurement with a water level meter.
- Install either a decontaminated bladder pump (with a disposable bladder) or submersible pump with clean polyethylene tubing to purge the wells. The pump should be set to the midpoint of the screen interval if the screen is submerged, or midpoint of the water column if the water level is in the screened interval. Attach pump discharge tubing to the flow through cell.
- Operate the pump at a low flow rate (between 0.1 and 0.5 liters per minute). Use a graduated cylinder or other graduated container to measure the flow rate. Adjust pump settings to achieve desired flow rate that also minimizes drawdown of the initial water level (i.e., <0.3 feet [ft] of the initial water level).
- Purge water and other IDM generated during groundwater sampling will be managed as outlined in Section 3.5.3.

- Water quality field parameters will be recorded every three to five minutes from a calibrated water quality meter (see below). At least one flow through cell and tubing volume will be purged between readings. Additionally, color, clarity and any noticeable odors will be documented. Water will continue to be purged from the wells until the drawdown of water level has stabilized and three consecutive measurements have stabilized according to the following criteria:

    - pH, ± 0.1 unit;
    - temperature, ± 10%;
    - specific conductivity, ±3%;
    - ORP, ± 10 millivolts
    - DO, ± 10% or less than 0.5 milligrams per liter; and
    - turbidity, ± 10% or less than 10 nephelometric turbidity units (NTUs)

- Upon reaching stabilization criteria, fill laboratory-provided sample containers (with the appropriate type and volume of preservative) directly from the sample pump discharge tube while maintaining the approximate flow rate established during purging. The pump flow rate may be reduced during VOC sample collection to prevent a cascading effect and splashing of preservatives from bottleware.

- VOC samples shall be collected first. The samples will be collected in 40-mL glass vials with no head space. Carefully, but quickly, slip the cap with the septum onto the vial with the Teflon™ face of the septum towards the water. Tighten the cap securely, invert the vial and tap the cap to assure that there are no air bubbles inside. If bubbles are present, open vial, add a few more drops of sample water and reseal. Following VOC sampling, sample bottles will be filled for the other desired analytes. Care should be taken such that the tubing is not allowed to touch the sample bottle.

- Check to make sure the caps are tight and then place on ice immediately.

- PCB and dissolved metals samples will be collected after VOC samples. Those samples will be collected in laboratory supplied sample bottles. Samples for dissolved metals will be filtered in the field using a dedicated 0.45-micron field-filter prior to preservation with nitric acid.

- Follow the sample handling and labeling procedures outlined in Section 3.7 and 3.8 of this document.

- Complete field forms and enter sampling information in the bound field book as outlined in Sections 3.8.5 and 3.8.6 in this document.

- Decontaminate sampling equipment as outlined in Section 3.5.5.

3.5 Field Methods and Procedures for Other Project and Support Activities

3.5.1 Utility Location Procedures

The work area will be cleared of underground public utilities by opening a utility clearance ticket with Dig Safely New York by calling 811 at least two (2) full business days prior to the initiation of drilling or excavations. If drilling or excavation activities will extend beyond the initial clearance period, the ticket will be extended or reopened so that those activities continue to be covered. Boring or excavation work will not commence unless all notified utilities have cleared and/or marked public utilities within the work area. No mechanized equipment will be used within 3 feet of marked utilities.

In addition, a private utility locator will be contracted to clear work areas of underground utilities, structures, or debris that may affect the investigation, or may present a health and safety or property damage risks. The location of the utility will be marked on the ground using color-coded surveyor paint. If a utility is identified within 3 feet of a proposed sampling/drilling location, the sampling/drilling point will be moved, and the clearance procedures repeated.

3.5.2 Land Survey Procedures

Prior to installation, proposed soil sample locations will be located by a New York State registered land surveyor. Following sample collection, the location will be resurveyed if the location is more than one-foot away from the location marked by the surveyor. Horizontal data will be in reference to North American Datum 1983 (NAD83) New York State Plane. Vertical data will be reported in reference to the North American Vertical Datum 1988 (NAVD88). Surveyed locations will be accurate to plus or minus 0.1 foot vertically and plus or minus 0.5 foot horizontally.

3.5.3 Management of Investigation-Derived Materials

IDM generated during the PDI activities will include disposable PPE, disposable sampling equipment, soil boring cuttings, decontamination water, and purge water. PPE, disposable sampling equipment, and soil boring cuttings will be collected and placed in 55-gallon Department of Transportation (DOT)-approved drums for characterization (if necessary) and offsite disposal. Liquid IDM (decontamination water and purge water) will be collected and stored in 55-gallon drums for waste characterization (if necessary) and off-site disposal.

Each container shall be clearly labeled with the following information:

- Generator Name and Address;
- Site Name and Location;
- Date; and
- Contents.

3.5.4 Field Instrument Calibration and Operation

All instruments and equipment used during sampling and field analysis (e.g. water quality parameters) will be operated, calibrated, and maintained according to the manufacturer's guidelines and recommendations. Operation, calibration, and maintenance will be performed by trained personnel on a daily basis in accordance with the QA objectives for field measurements provided in **Table A.3**. Calibration will be performed at the beginning and end of each sampling day. If instruments appear to be reading incorrectly, additional calibration may be required. Maintenance and calibration information will be documented and will be stored in the project file.

Appropriate corrective actions will be taken if a field instrument fails the instrument-specific calibration QC criteria. Corrective action steps will be as follows:

- Check for all proper adjustments for ambient conditions such as temperature;
- Check the batteries and visually inspect the sensors for damage to membranes;
- If needed replace the batteries and/or membranes with spares provided by the instrument manufacturer or rental company;
- Recalibrate the instrument;
- If the instrument recalibration fails, call the instrument manufacturer or rental company technical support for assistance;
- If the problem persists, send the instrument for service;
- If the instrument is a rental, contact the rental office for immediate replacement of the instrument; and
- If practicable, keep a backup instrument on site.

3.5.5 Field Equipment Decontamination

Decontamination of non-dedicated and non-disposable sampling equipment will be performed prior to sampling and between sampling locations to prevent the introduction of extraneous material into samples and to prevent cross-contamination between sample locations. All sampling equipment will be decontaminated as described below. Decontamination water will be collected and managed as outlined in Section 3.5.3.

3.5.5.1 Decontamination of Soil Sampling Equipment

This procedure applies to equipment used in the collection of environmental soil samples submitted for organic and inorganic constituent analysis. Examples of relevant items of equipment include DPT shoes, trowels, scoops/spoons, and other small items. Decontamination is to be performed before sampling events and between sampling points.

- Place three wash basins in an established decontamination area that has a low permeability liner (e.g., polyethylene) and secondary containment. A low-permeability liner and secondary containment are not required if the decontamination area is located in an area that is scheduled for excavation or cover system installation. The decontamination area must be of sufficient size to allow placement of the bins in a line and provide an air-drying area for equipment.
- Fill the first wash basin with potable water. Add sufficient soap powder or solution to cause suds to form in the basin. Do not use an excessive amount of the soap or rinsing the soap off the equipment will be difficult. Periodic changing of the water is required.
- Using a clean coarse scrub brush, wash the sampling equipment in the soap solution in the first basin, removing all visible residues. Be sure to wash inside surfaces of equipment as well as the exterior surfaces. Allow excess soap to drain off the equipment when finished.
- Fill the second basin with potable water (first rinse) and rinse the equipment. A coarse scrub brush or pressure sprayer may be used to aid in the rinse, if necessary. Periodic changing of the water is required.
- Rinse the equipment with distilled/deionized water in the third basin. Periodic changing of the water is required.
- Allow the equipment to air-dry in a clean area or blot with chemical-free paper towels before reuse. Wrap the equipment in aluminum foil with the shiny side out if it will not be reused immediately.

3.5.5.2 Decontamination of Submersible Sampling Pumps

This procedure will be used to decontaminate bladder pumps or submersible pumps before and between groundwater sample collection points.

- Place three wash basins in an established decontamination area that has a low permeability liner (e.g., polyethylene) and secondary containment. A low-permeability liner and secondary containment are not required if the decontamination area is located in an area that is scheduled for excavation or cover system installation. The decontamination area must be of sufficient size to allow placement of the bins in a line and provide an air-drying area for equipment.
- Fill the first wash basin with potable water. Add sufficient soap powder or solution to cause suds to form in the basin. Do not use an excessive amount of the soap or rinsing the soap off the equipment will be difficult. Periodic changing of the water is required.
- Using a clean coarse scrub brush, wash the pump and power cord thoroughly in the soap solution in the first basin, removing all visible residues. While submersed in the soap solution, the pump should be turned on and a minimum of one gallon pumped through the system. Allow excess soap to drain off the equipment when finished.

- Fill the second basin with potable water and rinse the pump and power cord. While submersed, the pump should be turn on and a minimum of one gallon pumped through the system. Periodic changing of the water is required.
- Fill the third basin with distilled/deionized water and rinse the pump and power cord. While submersed, the pump should be turn on and a minimum of one gallon pumped through the system. Periodic changing of the water is required.
- Lay equipment on aluminum foil with the shiny side down and allow to dry or blot with chemical -free paper towels before reuse.
- Wrap the equipment in aluminum foil with the shiny side out if it will not be reused immediately.

3.5.5.3 Decontamination of Measuring Equipment

This procedure will be used to decontaminate measuring equipment, such as water level indicators before and between measuring points.

- Fill two clean basins or spray bottles with potable water.
- Add sufficient soap powder to one basin or spray bottle to form a thin layer of soap suds.
- Immerse the device in the soap containing basin and gently agitate. Scrub the device if is soiled. Periodic changing of the water is required. Alternatively, the equipment may be cleaned using a spray bottle containing a water/soap solution and wiped with a chemical free paper towel.
- Immerse the device in the basin containing the rinse water and gently agitate. Periodic changing of the water is required. Alternatively, the equipment may be cleaned using a spray bottle and wiped with a chemical free paper towel.

3.5.5.4 Decontamination of Large Equipment

Large equipment will be decontaminated, through dry decontamination, which will include physical removal of solids by brushing large equipment tires or tracks to remove potentially contaminated solids that originate from Site.

If thought necessary, wet decontamination of heavy equipment may be performed by steam cleaning or pressure washing and manual scrubbing on a temporary decontamination pad. The decontamination pad may include a membrane-lined and bermed area large enough to drive heavy equipment (e.g., drill rig, backhoe) onto with enough space to spread other equipment and to contain overspray. Usually a small sump is necessary to collect and contain rinsate (a pump is used to remove these wastes from the sump). A water supply and power source are also necessary to run steam cleaning and/or pressure washing equipment. Liquids generated during decontamination will be collected on a temporary decontamination pad and placed in a 55-gallon drum for offsite disposal.

3.6 Inspection/Acceptance of Supplies and Consumables

Supplies and consumables will be inspected and approved by the on-site project manager or field team leader for use. Those items not meeting project requirements should be returned immediately for replacement or refund.

Critical field supplies and consumables include the following:

- Sample bottleware;
- Decontamination fluids (e.g., liqinox/alconox, potable water, distilled water);
- Personal protective equipment (PPE); and
- General sampling consumables (e.g., ice, plastic bags, paper towels, aluminum foil, etc.).

For bottleware, the acceptance criteria will entail an inspection upon receipt to confirm that the bottles are new and undamaged, of appropriate size and material, and contain appropriate preservatives (e.g., HCl or HNO_3). For decontamination fluids, the field staff shall ensure that the fluids meet the necessary requirements for concentration and quality grade based on a review of supplier provided documentation or labeling as applicable.

3.7 Sample Handling Procedures

Many of the chemical constituents and physicochemical parameters that are to be measured or evaluated according to this FSP/QAPP are volatile or are not chemically stable, and therefore sample preservation is required. For these constituents, samples will be transferred in the field from the sampling equipment directly into the container that has been specifically prepared for that analysis or set of compatible parameters. All samples will be stored at $0 \leq 6$ degrees Celsius (˚C) from the time of collection to the time of analysis. Collected samples will be stored together with any MS/MSD, blind field duplicate, trip blank, and equipment blank samples collected during the sampling event on ice in a cooler. All samples will be stored together in an area known to be free of contamination.

3.7.1 Sample Containers and Preservatives

The laboratory will be responsible for supplying the proper containers to ensure sample integrity. The laboratory will provide new and/or pre-cleaned containers from an outside supplier. **Table A.4** details the bottle type, quantity, preservative and holding time for each parameter analyzed in soil and groundwater. Appropriately pre-preserved bottles will be provided by the laboratory as applicable to the analytical method. If sample preservation requires temperature control, then samples will be stored in iced coolers.

3.7.2 Sample Designation

Each separate sample will be identified using a sample label with a unique sample identifier (ID). The following presents the sample designation for soil and groundwater samples.

3.7.2.1 Soil Sample Designation

Soil sample identifier (ID) will use the following nomenclature:

Remedial Area#-Sample Location + Sample Type-Depth From-Depth To

where

Remedial Area#:	RA-#; numbered
Sample Location:	#; numbered
Sample Type:	Sidewall – S
	Base – B
	Waste characterization – WC
Depth From:	Upper depth of sample interval in feet
Depth To:	Lower depth of sample interval in feet

An example of identification of a soil sample collected along the sidewall at location 02S in Remedial Area 7 from a depth interval of 0-1 feet below ground surface (bgs): RA-7-02S-0-1.

Soil sample IDs for field duplicate samples will use the following nomenclature:

DUP- Sample Type - Date

where

Date:	YYYYMMDD
Sample Type:	Sidewall – S
	Base – B
	Waste characterization – WC

An example of identification of a field duplicate soil sample collected along the sidewall at location 02S in Remedial Area 7 from a depth interval of 0-1 feet below ground surface (bgs) on 20 January 2018: DUP-S-20180120. If more than one field duplicate soil sample of a specified sample type is collected on the same day, then the extensions “-1”, “-2”, etc. will be added to the sample IDs.

3.7.2.2 Groundwater Sample Designation

Groundwater sample IDs will use the following nomenclature:

Monitoring Well Location #

where

Monitoring Well Location #: MW-# (e.g., MW-1)

For blind duplicate groundwater samples, "DUP" will be used in lieu of the monitoring well location for the sample ID. If more than one field duplicate groundwater sample will be collected during the sampling event, then the extensions "-1", "-2", etc. will be added to the sample IDs.

3.7.3 Sample Labeling

Each separate sample will be identified using a sample label. The sampler will complete all information using waterproof ink with the following information:

- Sample ID in accordance with Section 3.7.3
- job name and identification number;
- date and time of sample collected;
- preservative;
- analytical method requested; and
- name of sampler.

A chain-of-custody (COC) should reflect the same information as the sample label and be kept with the samples at all times. Inconsistencies with other documents will be settled in favor of the COC unless the analytical laboratory is notified in writing from the field personnel, Project Manager or QAO.

3.7.4 Sample Packaging and Shipment

When all samples have been collected at the end of the day, samples will be retrieved from their storage location and packaged for shipment. The following procedures will be followed during sample packing.

- Place plastic bubble wrap matting or other suitable packing material over the base of each cooler or shipping container as needed.
- Insert a clean trash bag into the cooler to serve as a liner.

- Check that each sample container is sealed, labeled legibly, and is externally clean. Re-label and/or wipe bottles clean if necessary. If needed, clear tape should be placed over the labels to protect them and keep them from falling off the container. To protect each bottle from breakage during shipment, each glass sample bottle should be wrapped individually with bubble wrap and secured with tape or rubber bands. Alternate bottle protection procedures such as placing glass jars back in the cardboard shipping box in which they arrived, using cardboard dividers in the cooler, or placing in an appropriate foam holder may also be used. Bottles should be placed into the cooler in an upright single layer with approximately one inch of space between each bottle. Do not stack bottles or place them in the cooler lying on their sides. If plastic and glass sample containers are used, alternate the placement of each type of container within the cooler so that glass bottles are not placed side by side.
- Insert the cooler temperature blank supplied by the laboratory into each cooler (if any).
- Insert a Trip Blank into each cooler containing VOC samples.
- If space allows, place bagged ice in voids between sample containers. Other packing materials such as bubble wrap, and/or Styrofoam pellet packing material may be used as a substitute to fill voids between sample containers within each cooler to a level that meets the approximate top of the sample containers. Packing material may require tamping by hand to reduce the potential for settling.
- Bag cubed ice in heavy duty zipper-lock plastic bags, close the bags, and distribute the bagged ice in a layer over the top of the samples. Loose ice should not be used. Cold packs should be used only if the samples are chilled before being placed in the cooler.
- Add additional bubble wrap/Styrofoam pellets or other packing materials to fill the balance of the cooler or container, if necessary.
- Sign and date a custody seal as discussed in Section 3.8.3 and enter the custody seal numbers in the appropriate place on the COC form.
- Complete the COC form as discussed in Section 3.8.1. If shipping the samples involves use of a third party commercial carrier service, sign the COC record thereby relinquishing custody of the samples. Shippers should not be asked to sign COC records. If a laboratory courier is used, or if samples are transported to the laboratory by field personnel, the receiving party should accept custody and sign the COC records. Keep a copy of the COC for the project file. Place the original (with remaining copies) in a zipper-lock plastic bag and tape the bag to the inside lid of the cooler or shipping container.
- Close the lid of the cooler or the top of the shipping container.
- Place the custody seal across the cooler or container lid opening and overlap with transparent packaging tape.

- Packaging tape should be placed entirely around the sample shipment containers. A minimum of three full wraps of packaging tape will be placed on at least two places on the cooler/container.
- Place a shipping label on the outside of the shipping container that indicates the point of origin and destination.
- Repeat the above steps for each cooler or shipping container.

Following sample packing, the cooler/container containing the samples will be transported to the laboratory overnight via a package delivery service office or laboratory courier under executed chain of custody. The appropriate shipping form or air bill will be filled out and affixed to the cooler/container. Some courier services may use multi-package shipping forms where only one form needs to be filled out for all packages going to the same destination. If not, a separate shipping form should be used for each cooler/container. The receipt for package tracking purposes should be kept in the project files, in the event a package becomes lost.

3.8 Sample Custody and Documentation

An overriding consideration for data resulting from laboratory analyses is the ability to demonstrate that the data are legally defensible (i.e., that the samples were obtained from the locations stated and that they reached the laboratory without alteration). To accomplish this, evidence of collection, shipment, laboratory receipt, and laboratory custody until disposal will be documented through the COC record. A sample is considered to be in custody if the following applies to the sample:

- It is in actual possession or in view of the person who collected the samples;
- It is locked in a secure area;
- It is placed in an area restricted to authorized personnel; or
- It is placed in a container and secured with an official custody seal, such that the sample cannot be reached without breaking the seal.

Sample custody will be the responsibility of the field manager or on-site designee from the time of sample collection until the samples are accepted by the courier service for delivery to the laboratory. Thereafter, the laboratory performing the analysis will maintain custody.

3.8.1 Chain-of-Custody

COC records will be filled out for samples to establish the documentation necessary to trace sample possession from the time of collection. In addition to providing a custody exchange record for the samples, the COC record serves as a formal request for sample analyses. The COC record lists each sample and the individuals performing the sample collection, shipment, and receipt. The following information will be recorded on the COC record:

- Project name;
- Project location;
- Geosyntec project number;
- Geosyntec project manager;
- Geosyntec project manager contact information;
- Sample numbers;
- Date (of sample collection);
- Time (of sample collection to the nearest minute, military time);
- Sample type (composite or grab);
- Sample description (matrix);
- Number of sample containers;
- Analysis required;
- Project specific QC samples (e.g.MS/MSD)
- Remarks (including special instructions to the laboratory);
- Type of data deliverable;
- Preservative information;
- Date/time (of custody transfer);
- Laboratory name;
- Turnaround time required; and
- Sampler's signature.

The COC records will be completed, signed, and distributed as follows:

- one copy will be retained by the sample coordinator for inclusion in the project files; and
- the original will be sent to the analytical laboratory with the sample shipment as described in Section 3.7.4 of this document.

3.8.2 Field Sample Custody

The COC record will be the controlling document to ensure that sample custody is maintained. The COC record will be initiated in the field by sampling personnel when they collect a sample. Each time the sample custody is transferred, the former custodian will sign the COC in the "Relinquished By" line, and the new custodian will sign the COC in the "Received By" line. The date and time will accompany each signature.

Immediately after sample collection, each sample will be handled as described in Section 3.7 of this document.

3.8.3 Custody Seals

Custody seals are used to prevent unauthorized tampering with samples from the time of sample collection through the time of laboratory analysis. The seals will be signed and dated by sampling personnel and then placed on the shipping containers in such a way that they must be broken to open the containers. Seals will be affixed to the sample containers before the samples leave the custody of the sampling personnel. It is recommended that clear packing tape be placed over the custody seal to ensure that it is securely affixed to the shipping container. The laboratory will immediately notify Geosyntec personnel upon receipt in the event that the custody seal indicates that the container has been tampered with.

3.8.4 Laboratory Sample Custody and Documentation

The analytical laboratory named in this QAPP (Lancaster) has an established program for sample custody that is designed to ensure that each sample is accounted for at all times. The objectives of the laboratory's sample custody program include:

- Unique identification of all samples, as appropriate for the data required;
- Analysis of the correct samples, and traceability to the appropriate records;
- Preservation of sample characteristics;
- Protection of samples from loss or damage;
- Documentation of any sample alteration (e.g., filtration, preservation); and
- Establishing a record of sample integrity for legal purposes.

The laboratory’s Quality Management Plan (QMP) outlining the sample custody and documentation procedures is provided as **Appendix A.2**.

3.8.5 Field Documentation

Information pertinent to field sampling will be recorded in a permanently bound or electronic field logbook or field forms to maintain the integrity and traceability of samples. Detailed field data will be recorded on activity-specific field forms. Entries will be recorded in black indelible ink.

At a minimum, the logbook and/or corresponding field forms will contain the following information as applicable to the sample type collected:

- Project name and location (on the front page of the logbook);
- Signature of field sampler;
- Date and time of collection for each sample;
- Sample identification number;

- Sample location (sampling point);
- Weather (rain, sunny, approximate temperature, etc.);
- Requested analysis;
- If prudent, a drawing of or a copy of a map with the sample locations;
- Field analyses performed, including results, instrument checks, problems, and calibration records for field instruments;
- Descriptions of deviations from this FSP/QAPP;
- Problems encountered, and corrective action taken;
- Identification of field QC samples; and
- Any other events that may affect the samples.

Field documentation will be stored in the project files for future use or reference, if necessary.

3.8.6 Document Corrections

Changes or corrections on any project documentation will be made by crossing out the item with a single line. The person performing the correction must initial and date the correction. The original item, although erroneous, must remain legible. The new information will be written above the crossed-out item. Corrections will be written clearly and legibly.

4. QUALITY ASSURANCE/QUALITY CONTROL MEASURES

4.1 Field Quality Control

Field QC samples will be collected and analyzed to assess the precision and accuracy of groundwater and soil sampling activities. Field QC samples for this project will include field duplicates, MS/MSD, equipment rinsates, source blanks when necessary, temperature blanks, and trip blanks. **Table A.5** describes the field quality control samples per matrix and their frequencies.

4.1.1 Field Duplicates

Field duplicates are two samples (an original and a duplicate) of the same matrix, collected at the same time and location and using the same sampling techniques, to the extent practicable. Field duplicate samples are used to evaluate the precision of the overall sample collection process. Field duplicates will be collected at a frequency of 1 per 10 regular samples and will be analyzed for the full set of analyses used for the regular samples collected. Field duplicates receive unique sample identifications; therefore, the identities of the duplicate samples are "blind" to the analytical laboratory. Exact locations of duplicate samples and sample identifications will be recorded in the field logbook.

4.1.2 Matrix Spike/Matrix Spike Duplicate

The laboratory will analyze an MS/MSD for every 20 samples analyzed or for every analytical batch prepared, whichever is more frequent. Field personnel will collect triple the amount of the volume of the sample matrix for the designated MS/MSD sample. The MS/MSD sample will be used to determine the precision and accuracy of the sample preparation and analytical methods.

4.1.3 Equipment Rinsate Blank

Equipment rinsate blanks will be collected at a frequency of one per day for each matrix that non-disposable or non-dedicated sampling equipment is used. Equipment rinsate blanks are laboratory-certified clean water collected from the final rinse of the decontamination process. Equipment rinsate blanks will be collected from the sampling equipment, placed in appropriate containers supplied by the analytical laboratory, and analyzed for the full set of analyses used for the samples collected that day. Equipment rinsate blanks are used to evaluate the effectiveness of the decontamination procedure and the potential for cross-contamination during sampling events.

4.1.4 Trip Blanks

Trip blanks will be prepared by the laboratory in 40-mL volatile organic analysis (VOA) vials with analyte-free water. The trip blanks will be carried into the field, stored, and shipped to the laboratory along with the water samples. Trip blanks will be shipped with each cooler that contains groundwater samples to be analyzed for VOCs. Trip blanks are evaluated to determine whether

VOC cross-contamination between samples has occurred during storage and transportation. Trip blanks apply only to volatile organics in groundwater and must be free of headspace.

4.1.5 Temperature Blanks

Each cooler will be shipped with a temperature blank. A temperature blank is a sample container filled with tap water and stored in the cooler during sample collection and transportation. The laboratory will record the temperature of the temperature blank immediately upon receipt of the samples. If samples are received at the laboratory less than 8 hours after collection, they may not have had sufficient time to cool to the required $0 \leq 6$ ºC.

4.2 Laboratory Quality Control/Quality Assurance

4.2.1 Laboratory Qualifications

The analytical laboratory selected for soil and groundwater analyses for this project is Lancaster. Lancaster is certified by New York State through NELAP for the analytical methods required for the project. The QMP for Lancaster is provided as **Appendix A.2**.

4.2.2 Quality Control Samples

The laboratory has a QC program in place to ensure the reliability and validity of the analyses performed by the laboratory. All analytical procedures are documented in writing as Standard Operating Procedures (SOPs) and each SOP includes a QC section which addresses the minimum QC requirements for the procedures. The internal QC checks differ slightly for each individual procedure but in general the QC requirements include the following:

- Method blanks;
- Reagent/preparation blanks (inorganic parameters);
- Instruments blanks;
- MS/MSDs;
- Surrogate spikes;
- Laboratory duplicates;
- LCSs;
- Internal standards;
- Mass tuning;
- serial dilutions; and
- interference check samples.

4.2.3 Calibration

All instruments will be calibrated, and the calibration acceptance criteria met before samples are analyzed. Calibration standards will be prepared with National Institute for Standards and Testing (NIST)-traceable standards and analyzed according to method requirements. Initial calibration acceptance criteria documented in the laboratory SOPs will meet those of applicable guidance documents. The initial calibration will meet one of the following requirements:

- The lowest concentration of the calibration standard is less than or equal to the RL based on the final SOP specified volume of extract or sample; or
- For each target analyte, at least one of the calibration standards will be at or below the regulatory limit (action level) as defined by the DQOs.

Initial calibration will be verified, before samples are analyzed, with a second source standard prepared at the mid-point of the calibration curve as applicable to the analysis. Initial calibration verification will meet the acceptance criteria that are expressed in the laboratory SOPs.

Daily calibration verification will be conducted at the method-prescribed frequencies, and will meet the acceptance criteria of applicable method.

Calibration data (calibration tables, chromatograms, instrument printouts, and laboratory logbooks) will be clearly labeled to identify the source and preparation of the calibration standards, and, will therefore be traceable to the standard preparation records.

4.2.4 Preventive Maintenance

The primary objective of a preventive maintenance program is to help ensure the timely and effective completion of a measurement effort by minimizing the downtime of crucial analytical equipment caused by expected or unexpected component failure. In implementing this program, efforts are focused in three primary areas: maintenance responsibilities, maintenance schedules, and adequate inventory of critical spare parts and equipment.

Maintenance responsibilities for laboratory equipment are assigned to the respective laboratory managers. The laboratory managers then establish maintenance procedures and schedules for each major equipment item. These are contained in the maintenance logbooks assigned to each instrument.

The effectiveness of any maintenance program depends, to a large extent, on adherence to specific routine maintenance for each major equipment item. Other maintenance activities may also be identified as requiring attention on an as-needed basis. The manufacturer's recommendations or sample throughput provide the basis for the established maintenance schedules, and the manufacturers' service contracts provide primary maintenance for many major instruments (e.g., gas chromatography instruments, atomic absorption spectrometers, analytical balances, etc.). Maintenance activities for each instrument are documented in a maintenance log.

Along with a schedule for maintenance activities, an adequate inventory of spare parts is required to minimize equipment downtime. This inventory emphasizes those parts (and supplies) that are subject to frequent failure, have limited useful lifetimes, or cannot be obtained in a timely manner should failure occur.

The laboratory manager is responsible for maintaining an adequate inventory of necessary spare parts. Sufficient equipment will be on hand to continue analyses in the event that an instrument encounters problems. In addition to backup instrumentation, a supply of spare parts, such as fittings, septa, atomic absorption lamps, mirrors, diaphragms, graphite furnace tubes, and other ancillary equipment, will be maintained.

4.2.5 Training

The laboratory will have an established policy and procedure on training and documenting of the analyst's competency. Each staff member that performs sample preparation and/or analysis will demonstrate their proficiency through preparation and analysis of four LCSs demonstrating initial demonstration of competence (IDC). An analyst will be considered proficient if the acceptance criteria for method accuracy and precision are met. The laboratory will maintain all training records on file.

4.2.6 Supplies and Consumables

The laboratory will inspect supplies and consumables before their use in analysis. The materials specifications in the analytical methods will be used as a guideline for establishing the acceptance criteria for these materials. Purity of reagents will be monitored by analysis of solvent blanks. An inventory and storage system for materials and supplies will ensure use before manufacturers' expiration dates and storage under safe and chemically compatible conditions.

5. DATA MANAGEMENT, VALIDATION, AND USABILITY

5.1 Data Management

Data management operations include data recording, validation, transformation, transmittal, reduction, analysis, tracking, storage and retrieval.

Data will be managed by an ESdat® Database System powered by a Microsoft Access database®. Upon receipt from the laboratory, the analytical report and electronic data deliverable (EDD) will be entered into both the project's database and data validation tracking systems. The tracking system allows the data to be tracked from receipt, through validation, to data loading and storage. The database will be updated with validated data after validation of the laboratory data is complete.

The data will be considered final when data validation is complete and any required data qualifiers have been added to the database. Any changes made to the database after finalization will be documented, including a description of the change, date of change, person responsible, and reason for change.

Once all data quality checks are performed, the data will be exported to a variety of formats to meet project needs. Cross-tab tables showing concentrations by sample location will be prepared. Data can be accessed by a variety of mapping and visualization tools.

The project database will be maintained on a secure network drive which is backed up regularly. Access to the database will be limited to authorized and trained project personnel.

An EDD meeting the requirements of the NYSDEC EDD Manual (NYSDEC, 2013) will be submitted to NYSDEC so that the data can be uploaded to the NYSDEC Environmental Information Management System (EIMS). The EIMS uses the database software application EQuIS™ from EarthSoft® Inc. (EarthSoft).

5.2 Data Reduction, Review, Verification, and Validation

This section addresses the stages of data quality assessment by the laboratory, and by Geosyntec after data have been generated and received (i.e., data reduction, review, verification, and validation). It also sets procedures for evaluating the usability of data with respect to the DQOs set forth in Section 2. Data validation pertinent to this Site will be performed in general accordance with the following data validation guidance documents, where applicable:

- USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review, OLEM 9355.0-135, EPA-540-R-2017-001, January 2017
- USEPA, Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, OLEM 9355.0-136, EPA-540-R-2017-002, June 2017

- DER-10/Technical Guidance for Site Investigation and Remediation, NYSDEC May 3, 2010

5.2.1 Data Reduction

Raw analytical data generated in the laboratory are collected on printouts from the instruments and associated data system or are manually recorded into bound notebooks. Analysts review data as they are generated to determine that the instruments are performing within specifications. This review includes calibration checks, surrogate recoveries, blank checks, retention time reproducibility, and other QC checks as specified in the SOPs. If any problems are noted during the analytical run, corrective action is taken by the laboratory and documented. Each analytical run is reviewed by the group supervisor for completeness prior to interpretation and data reduction.

5.2.2 Data Review

Data review is an initial and relatively non-technical step of data assessment that primarily addresses issues of completeness and data handling integrity. In data review, the reviewer will ensure that all necessary reporting components have been included in laboratory reports, such as necessary fields (e.g., collection/analysis dates, units, etc.) as well as the presence of (but not implications of) QC data components (e.g., LCS records, surrogate results, etc.).

5.2.3 Data Verification

Data verification is a more technical process than data review in that the core technical aspects of data quality (e.g., precision, accuracy, etc.) are evaluated through a review of the results of QA/QC measures, such as LCSs and surrogates.

Following interpretation and data reduction by an analyst, data are transferred to the laboratory sample management system either by direct data upload from the analytical data system or manually. The data are reviewed by the group leader or another analyst and marked on the sample management system as being verified. The person performing the verification reviews all data including QC information prior to verifying the data. If data package deliverables have been requested, the laboratory will complete the appropriate forms summarizing the QC information and transfer copies of all raw data (e.g., instrument printouts, spectra, chromatograms, etc.) to the data packages group. This group will combine the information from the various analytical groups and the analytical reports from the laboratory sample management system into one package. This package is reviewed by the laboratory project manager (LPM) for conformance with SOPs and to ensure that all project QC goals have been met. Any analytical problems are discussed in the case narrative, which is also included with the data package deliverables.

5.2.4 Data Validation and Usability Determination

Following data verification by the laboratory, data validation will be coordinated and/or conducted by Geosyntec's QAO. Validation documentation will be stored in the project file. Data validation will be conducted on 100 percent of the laboratory data by an entity independent of the laboratory. This validation will be done on the hard copy (or pdf version) data with electronic data screening as a component of the validation.

While data verification is a technical process in which the data's adherence to core PARCCS elements is evaluated, it still does not answer the final question of the usability of the data and the implications of any departures from data expectations. The data validation process is designed to answer these questions through: (i) the assignment of data qualifiers based on the data validation results; and (ii) a case-by-case review of data quality issues with respect to project DQOs to render a final assessment of data usability.

5.3 Data Evaluation Roles and Responsibilities

The following components of data evaluation will be performed by certain entities as noted:

- data reduction will be performed by the analytical laboratory;
- data review will be performed both by the laboratory and by Geosyntec;
- data verification will be performed both by the laboratory and by Geosyntec; and
- data validation and usability determination will be performed by Geosyntec.

5.4 Data Reporting

The laboratory data package receipt schedules will be based on the laboratory standard turnaround time. The laboratory will provide hard copy data packages that consist of several components, as well as an EDD for each set of samples (i.e., each work order). The data package deliverables from the laboratory will be specific to each type of data collected but will consist of Level 4 data packages (referred as Category B by NYSDEC). The components of a Level 1 through Level 4 data package are as follows:

- Level 1– Signed cover sheet, narrative, data results, and copy of the chain-of-custody;
- Level 2 – Signed cover sheet, narrative, data results, QC sample results, copy of the chain-of-custody;
- Level 3 – Signed cover sheet, narrative, data results, raw data result information, QC sample results, raw data QC information, calibration and continuing calibration information; and
- Level 4, Full, or CLP-like – All of the above plus all raw data and supporting information for the data results.

The reporting scheme from collection of raw data through document storage is as follows:

- Raw data collected by laboratory technical personnel;

- Data reviewed/checked by laboratory supervisor;
- Data receive QA/QC review by LPM;
- Data deliverable undergoes data validation as per project requirements; validation qualifier codes are applied to the data (as applicable) and incorporated into the EDD (with follow-up QC check). The EDD is checked against the hardcopy results during the validation process. Minor errors are corrected in-house. Resubmittal of the hardcopy or the EDD may be required if major errors are observed; and
- If data are found to be incorrect, then corrective action procedures are implemented, and the data review process is reinitiated.

The validation process for laboratory data will include a review of laboratory QC results and comparison against USEPA validation limits and/or project specific criteria that could affect the quality of sample results. Specific QC components to be evaluated in the review include but are not limited to the following:

- Case narrative;
- Data completeness check;
- Holding times;
- Sample preservation;
- Blank results (instrument blanks, method blanks, field blanks, trip blanks, equipment blanks (as applicable);
- Surrogate recoveries;
- Internal standard recoveries (as applicable);
- Calibrations;
- Initial and Continuing calibration;
- Analytical run sequence;
- Chromatograms;
- Raw data files;
- Internal Standard and Retention Time Summary
- Instrument tune (as applicable);
- Serial dilution;
- Laboratory duplicates (as applicable);
- Matrix spike and matrix spike duplicate results;

- Field duplicates;
- Laboratory control sample results; and
- Other specific information as described in the most current NYSDEC ASP.

Based on validation results, qualifiers will be added to reported analytical results to indicate uncertainty or potential bias or interferences. Specific data qualifiers which will be applied to sample concentration include the following:

J - The results are considered estimated. The analyte was detected above the MDL, but the associated reported concentration is approximate and is considered estimated because it is below the RL, also referred to as reporting limit) or because there was a QC issue identified and associated with the analytical result.

R - The reported analyte concentration is rejected due to a serious deficiency with the associated quality control result(s). The presence or absence of the analyte cannot be confirmed.

U - The analyte was not detected above the MDL or RL as applicable.

UJ - The analyte was not detected above the MDL or RL as applicable. However, due to quality control results that did not meet acceptance criteria, the RL or MDL is uncertain and may not accurately represent the actual limit.

5.5 Data Usability and Reconciliation with Project Quality

The following sections describe the performance criteria and data usability for the investigation program. In general, if issues with data quality are found in the various data sets, they will be discussed with the project team including the laboratory and NYSDEC. A NYSDEC Data Usability Summary Report (DUSR) will be prepared to assess the usability of the data when compared to its intended use as established in the DQO statement. Data sets will be assessed with regard to the PARCCS parameters described below.

5.5.1 Precision

Field and laboratory duplicates have been incorporated into the program to assess the precision of the measurement system. If duplicate results indicate matrix heterogeneity greater than anticipated, qualifiers will be added to reported concentrations and a description of validation actions will be included in the DUSR.

5.5.2 Accuracy

Accuracy is a measure of how a concentration is in agreement with a reference concentration. Calibrations, matrix spikes, surrogate spikes, internal standards, and laboratory control sample results will be used to assess accuracy. The DUSR will identify non-compliant results and discuss the impact to reported results. Data qualifiers will be applied to sample concentrations based on a comparison of quality control results to laboratory or method specified performance criteria.

5.5.3 Representativeness

Sample representativeness will be assessed through an analysis of the blank results. The concentrations and frequencies of target analytes detected in blanks will provide an indication of data representativeness. The DUSR will describe issues concerning representativeness based on a review of these data. Qualifiers will be applied to data that not meet the specified laboratory or method criteria of these measurement parameters.

5.5.4 Comparability

Comparability between data sets will be made qualitatively and quantitatively to determine the extent to which different measurements of the same quantity will yield valid conclusions. Comparability performance will be assessed on the basis of duplicate results from samples of the same media collected from the same location at the same time compared against measurement performance criteria, as discussed in Section 2.

Field parameters can provide another means of assessing the comparability of data points within a data set. Parameters including pH, turbidity, and specific conductivity are generally similar among like samples, within certain limits. Should laboratory data appear anomalous, field parameters will be checked to assess the potential that a sample may not have been representative of general conditions for a particular location at a particular time.

5.5.5 Completeness

A data set for a specific medium will be considered complete if at least 90 percent of the results have all associated quality control results and are accepted a valid data to meet the Quality Objectives provided in this FSP/QAPP. The DUSR will include a discussion of the results obtained from the completeness review and recommend corrective action(s) as appropriate.

5.5.6 Sensitivity

Analytical sensitivity is readily evaluated by comparing method RLs and MDLs to measurement performance standards. Results of the comparison are used to evaluate the overall suitability of the selected methods to the analyte specific project performance goals. The MDL and RL for the analytes to be measured in solid and water samples are summarized in **Tables A.1 and A.2**, respectively. The DUSR will include a discussion of the results obtained from the sensitivity review and its impact (if any) on project objectives.

6. REFERENCES

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NYSDEC, 2010. DER-10 Technical Guidance for Site Investigation and Remediation. May 2010.

NYSDEC, 2013. NYSDEC Electronic Data Deliverable Manual. NYSDEC EDD Format v.3. April 2013.

USEPA, 1996. Test Methods for Evaluating Solid Waste, Physical/Chemical Methods. SW-846. December.

USEPA, 2001. Requirements for Quality Assurance Project Plans. EPA QA/R-5. March.

USEPA, Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Methods Data Review, OLEM 9355.0-135, EPA-540-R-2017-001. January 2017.

USEPA, Contract Laboratory Program National Functional Guidelines for Organic Superfund Methods Data Review, OLEM 9355.0-136, EPA-540-R-2017-002. June 2017.

TABLES

TABLE A.1
ANALYTICAL REFERENCE LIMITS AND SCREENING VALUES - SOLID SAMPLES

Quality Assurance Project Plan
Elmira 5th Street Yard
Elmira, New York

Analytical Group & Method	Analyte	CAS Number	Units	Performance Standard[1]:		Method Detection Limit[2]	Reporting Limit[2]	MS/MSD		LCS/LCSD		Laboratory Duplicate Maximum RPD[3]	Field Duplicate Maximum RPD
				Onsite	Offsite			Recovery[3]	Maximum RPD[3]	Recovery[3]	Maximum RPD[3]		
PCBs SW-846 8082A	Aroclor-1016	12674-11-2	µg/Kg	-	-	2	17	76-121	50	76-121	50	NA	40
	Aroclor-1221	11104-28-2	µg/Kg	-	-	2	17	NA	NA	NA	NA	NA	40
	Aroclor-1232	11141-16-5	µg/Kg	-	-	2	17	NA	NA	NA	NA	NA	40
	Aroclor-1242	53469-21-9	µg/Kg	-	-	2	17	NA	NA	NA	NA	NA	40
	Aroclor-1248	12672-29-6	µg/Kg	-	-	2	17	NA	NA	NA	NA	NA	40
	Aroclor-1254	11097-69-1	µg/Kg	-	-	2.6	17	NA	NA	NA	NA	NA	40
	Aroclor-1260	11096-82-5	µg/Kg	-	-	2.6	17	79-130	50	79-130	50	NA	40
	Total Arochlors	1336-36-3	µg/Kg	25,000	-	2	17	NA	NA	NA	NA	NA	40
Metals SW-846 6010C and 7471B	Arsenic	7440-38-2	mg/Kg	300	13	0.96	4	75-125	20	80-120	20	20	40
	Mercury	7439-97-6	mg/Kg	5.7	-	0.01	0.1	80-120	20	80-120	20	20	40

Notes:

(1) Performance Standard values are New York State Department of Environmental Conservation Restricted Residential Table 375-6.8(b) Restricted Use Soil Cleanup Objectives, December 2006, except for arsenic which is a site-specific value.

(2) The Analytical Reporting Limit and Method Detection Limit listed are those that can be routinely achieved by the analytical laboratory (Eurofins Lancaster Laboratories).

(3) Default laboratory Recovery and Relative Percent Difference goals.

- No performance standard established
CAS - Chemical Abstracts Service
MS/MSD - matrix spike/matrix spike duplicate
RPD - relative percent difference
PCB - polychlorinated biphenyl
µg/Kg - micrograms per kilogram
mg/Kg - milligrams per kilogram

TABLE A.2
ANALYTICAL REFERENCE LIMITS AND SCREENING VALUES - WATER SAMPLES

Quality Assurance Project Plan
Elmira 5th Street Yard
Elmira, New York

Analytical Group & Method	Analyte	CAS Number	Units	Performance Standard(1)	Method Detection Limit(2)	Reporting Limit(2)	MS/MSD		LCS/LCSD		Laboratory Duplicate Maximum RPD(3)	Field Duplicate Maximum RPD
							Recovery(3)	Maximum RPD(3)	Recovery(3)	Maximum RPD(3)		
VOCs SW-846 8260C	1,1,1-Trichloroethane	71-55-6	µg/L	5	0.1	0.5	78-126	30	78-126	30	NA	20
	1,1,2,2-Tetrachloroethane	79-34-5	µg/L	5	0.1	0.5	75-123	30	75-123	30	NA	20
	1,1,2-Trichloroethane	79-00-5	µg/L	1	0.1	0.5	80-120	30	80-120	30	NA	20
	1,1-Dichloroethane	75-34-3	µg/L	5	0.1	0.5	80-120	30	80-120	30	NA	20
	1,1-Dichloroethene	75-35-4	µg/L	5	0.1	0.5	80-124	30	80-124	30	NA	20
	1,2-Dichloroethane	107-06-2	µg/L	0.6	0.1	0.5	68-137	30	68-137	30	NA	20
	1,2-Dichloropropane	78-87-5	µg/L	1	0.1	0.5	80-120	30	80-120	30	NA	20
	2-Butanone (MEK)	78-93-3	µg/L	50	1.0	5.0	59-141	30	59-141	30	NA	20
	2-Hexanone	591-78-6	µg/L	50	1.0	5.0	61-143	30	61-143	30	NA	20
	4-Methyl-2-pentanone (MIBK)	108-10-1	µg/L	---	1.0	5.0	67-140	30	67-140	30	NA	20
	Acetone	67-64-1	µg/L	50	3.0	5.0	68-141	30	68-141	30	NA	20
	Benzene	71-43-2	µg/L	0.7	0.1	0.5	80-120	30	80-120	30	NA	20
	Bromodichloromethane	75-27-4	µg/L	50	0.1	0.5	80-125	30	80-125	30	NA	20
	Bromoform	75-25-2	µg/L	50	0.1	0.5	57-141	30	57-141	30	NA	20
	Bromomethane	74-83-9	µg/L	5	0.1	0.5	62-125	30	62-125	30	NA	20
	Carbon disulfide	75-15-0	µg/L	---	0.4	1.0	72-129	30	72-129	30	NA	20
	Carbon tetrachloride	56-23-5	µg/L	5	0.1	0.5	71-139	30	71-139	30	NA	20
	Chlorobenzene	108-90-7	µg/L	5	0.1	0.5	80-120	30	80-120	30	NA	20
	Chlorodibromomethane	75-00-3	µg/L		0.1	0.5	63-120	30	63-120	30	NA	20
	Chloroethane	67-66-3	µg/L	50	0.1	0.5	80-120	30	80-120	30	NA	20
	Chloroform	74-87-3	µg/L	7	0.2	0.5	47-120	30	47-120	30	NA	20
	Chloromethane	156-59-2	µg/L	5	0.1	0.5	80-120	30	80-120	30	NA	20
	cis-1,2-Dichloroethene	10061-01-5	µg/L	5	0.1	0.5	74-122	30	74-122	30	NA	20
	cis-1,3-Dichloropropene	124-48-1	µg/L	0.4*	0.1	0.5	73-135	30	73-135	30	NA	20
	Ethylbenzene	100-41-4	µg/L	5	0.1	0.5	80-120	30	80-120	30	NA	20
	Methylene Chloride	75-09-2	µg/L	5	0.2	0.5	80-120	30	80-120	30	NA	20
	Styrene	100-42-5	µg/L	5	0.1	0.5	80-120	30	80-120	30	NA	20
	Tetrachloroethene	127-18-4	µg/L	5	0.1	0.5	80-120	30	80-120	30	NA	20
	Toluene	108-88-3	µg/L	5	0.1	0.5	80-120	30	80-120	30	NA	20
	trans-1,2-Dichloroethene	156-60-5	µg/L	5	0.1	0.5	80-120	30	80-120	30	NA	20
	trans-1,3-Dichloropropene	10061-02-6	µg/L	0.4*	0.1	0.5	71-131	30	71-131	30	NA	20
	Trichloroethene	79-01-6	µg/L	5	0.1	0.5	80-120	30	80-120	30	NA	20
	Vinyl chloride	75-01-4	µg/L	2	0.1	0.5	56-120	30	56-120	30	NA	20
	Xylenes, Total	1330-20-7	µg/L	-	0.1	0.5	80-120	30	80-120	30	NA	20
PCBs SW-846 8082A Low-Level	Aroclor-1016	12674-11-2	µg/L	-	0.008	0.01	60-117	30	60-117	30	NA	20
	Aroclor-1221	11104-28-2	µg/L	-	0.008	0.01	NA	NA	NA	NA	NA	20
	Aroclor-1232	11141-16-5	µg/L	-	0.008	0.01	NA	NA	NA	NA	NA	20
	Aroclor-1242	53469-21-9	µg/L	-	0.008	0.01	NA	NA	NA	NA	NA	20
	Aroclor-1248	12672-29-6	µg/L	-	0.008	0.01	NA	NA	NA	NA	NA	20
	Aroclor-1254	11097-69-1	µg/L	-	0.005	0.01	NA	NA	NA	NA	NA	20
	Aroclor-1260	11096-82-5	µg/L	-	0.005	0.01	81-130	30	81-130	30	NA	20
	Total Arochlors	1336-36-3	µg/L	0.09	0.005	0.01	NA	NA	NA	NA	NA	20

TABLE A.2
ANALYTICAL REFERENCE LIMITS AND SCREENING VALUES - WATER SAMPLES

Quality Assurance Project Plan
Elmira 5th Street Yard
Elmira, New York

Analytical Group & Method	Analyte	CAS Number	Units	Performance Standard(1)	Method Detection Limit(2)	Reporting Limit(2)	MS/MSD		LCS/LCSD		Laboratory Duplicate Maximum RPD(3)	Field Duplicate Maximum RPD
							Recovery(3)	Maximum RPD(3)	Recovery(3)	Maximum RPD(3)		
Dissolved TAL Metals SW-846 6010C and 7470A	Aluminum	7429-90-5	mg/L	100	0.0894	0.4	75-125	20	80-120	20	20	20
	Antimony	7440-36-0	mg/L	3	0.0087	0.04	75-125	20	80-120	20	20	20
	Arsenic	7440-38-2	mg/L	25	0.0096	0.04	75-125	20	80-120	20	20	20
	Barium	7440-39-3	mg/L	1,000	0.00085	0.01	75-125	20	80-120	20	20	20
	Beryllium	7440-41-7	mg/L	3	0.002	0.01	75-125	20	80-120	20	20	20
	Cadmium	7440-43-9	mg/L	5	0.0018	0.01	75-125	20	80-120	20	20	20
	Calcium	7440-70-2	mg/L	---	0.06	0.4	75-125	20	80-120	20	20	20
	Chromium	7440-47-3	mg/L	50	0.0033	0.03	75-125	20	80-120	20	20	20
	Cobalt	7440-48-4	mg/L	---	0.0017	0.01	75-125	20	80-120	20	20	20
	Copper	7440-50-8	mg/L	200	0.004	0.02	75-125	20	80-120	20	20	20
	Iron	7439-89-6	mg/L	300	0.0805	0.4	75-125	20	80-120	20	20	20
	Lead	7439-92-1	mg/L	25	0.006	0.03	75-125	20	80-120	20	20	20
	Magnesium	7439-95-4	mg/L	35,000	0.0374	0.2	75-125	20	80-120	20	20	20
	Manganese	7439-96-5	mg/L	300	0.0016	0.01	75-125	20	80-120	20	20	20
	Mercury	7439-97-6	mg/L	0.0007	0.00005	0.0002	80-120	20	80-120	20	20	20
	Nickel	7440-02-0	mg/L	100	0.004	0.02	75-125	20	80-120	20	20	20
	Potassium	7440-09-7	mg/L	---	0.179	1	75-125	20	80-120	20	20	20
	Selenium	7782-49-2	mg/L	10	0.0093	0.04	75-125	20	80-120	20	20	20
	Silver	7440-22-4	mg/L	50	0.0024	0.01	75-125	20	80-120	20	20	20
	Sodium	7440-23-5	mg/L	---	0.321	2	75-125	20	80-120	20	20	20
	Thallium	7440-28-0	mg/L	0.5	0.0137	0.06	75-125	20	80-120	20	20	20
	Vanadium	7440-62-2	mg/L	---	0.0016	0.01	75-125	20	80-120	20	20	20
	Zinc	7440-66-6	mg/L	2,000	0.0065	0.04	75-125	20	80-120	20	20	20

Notes:

(1) Performance Standard values are Division of Technical and Opertional Guidance Series (1.1.1) June, 1998 Table 5 New York State Groundwater Effluent Limitations Maximum Allowable Concentrations.

(2) The Analytical Reporting Limit and Method Detection Limit listed are those that can be routinely achieved by the analytical laboratory (Eurofins Lancaster Laboratories).

(3) Default laboratory Recovery and Relative Percent Difference goals.

*-Applies to the sum of cis- and trans-1,3-dichloropropene

- No performance standard established

CAS - Chemical Abstracts Service

NA - Not Applicable

VOC - volatile organic compound

PCB - polychlorinated biphenyl

TABLE A.3
QUALITY ASSURANCE OBJECTIVES FOR FIELD MEASUREMENTS

Quality Assurance Project Plan
Elmira 5th Street Yard
Elmira, New York

Parameter	Equipment	Minimum Calibration Frequency	Precision (Calibration Criteria)	Accuracy (Stabilization Criteria)
Static Water Levels	Solinst 101 Water Level Meter or equivalent	Not Applicable	±0.01 ft	< 0.3 ft of the initial water level
Temperature	YSI-556 Multiparameter Water Quality Meter or equivalent	Daily - before and after use	0.1°C	±10%
Dissolved Oxygen (mg/L)	YSI-556 Multiparameter Water Quality Meter or equivalent	Daily - before and after use	0 to 20 mg/L: ±2% of the reading or 0.2mg/L whichever is greater 20 to 50 mg/L: ±6% of the reading	±10% or < 0.5 mg/L
Specific Conductivity	YSI-556 Multiparameter Water Quality Meter or equivalent	Daily - before and after use	±0.5% of reading; ±0.002 mS/cm	±3%
pH	YSI-556 Multiparameter Water Quality Meter or equivalent	Daily - before and after use	±0.2 units	±0.1 units
Oxidation Reduction Potential	YSI-556 Multiparameter Water Quality Meter or equivalent	Daily - before and after use	±20 mV	±10 mV
Turbidity	La Motte Turbidimeter or equivalent	Daily - before and after use	±10%	±10% or < 10 NTUs

Notes:
Field measurements will not be performed on soil
Specifications based on equipment manufacturer's
mg/L - milligram per liter
ft - feet
°C - degrees Celsius
cm - centimeter
mS/cm - millisiemens per centimeter
mV - millivolt
NTU-nephelometric turbidity unit

TABLE A.4
ANALYTICAL METHODS, CONTAINERS, PRESERVATIVES, AND HOLDING TIMES

Quality Assurance Project Plan
Elmira 5th Street Yard
Elmira, New York

Matrix	Analytical Group	Analytical Method	Containers (number, size, type)	Preservation Requirements (chemical, temperature, etc.)	Maximum Holding Time (preparation/analysis)
Solid	PCBs	SW-846 8082A	1-4 oz glass jar	Cool to 0≤6^{0}C	14 days to extract 1 year to analyze
	Arsenic	SW-846 6010C	1-4 oz. glass jar	Cool 0≤6^{0}C	180 days
	Mercury	SW-846 7471B			28 days
Water	VOCs	SW-846 8260C	3 X 40-mL glass VOA vials	HCl to pH<2, no headspace, cool to 0≤6^{0}C	14 days
	PCBs	SW-846 8082A Low-Level	2-250 mL amber glass	Cool to 0≤6^{0}C	7 days to extract 40 days to analyze
	Metals	SW-846 6010C	1-250 mL plastic	HNO3 to pH<2, Cool to 0≤6^{0}C	6 months
		SW-846 7470A			28 days

Notes:

SW-846 - USEPA "SW-846 Test Methods for Evaluating Solid Waste: Physical/Chemical Methods", April 1998, 5th edition.

ºC - Celcius	NA - Not Applicable
HCl – hydrochloric acid	VOA – volatile organic analyte
HNO3 - nitric acid	VOC – volatile organic compound
L – liter	^{0}C – degrees Celsius
mL – milliliters	oz. – ounce

TABLE A.5
SUMMARY OF FIELD QUALITY CONTROL SAMPLES

Quality Assurance Project Plan
Elmira 5th Street Yard
Elmira, New York

Parameter	Matrix	MS/MSD[1]	Field Duplicate	Equipment Rinsate Blanks[2]*	Trip Blank
PCBs	Solid	1 set/20 samples or less	1 per 10 samples or less	1 per day	NA
Arsenic & Mercury		1 set/20 samples or less	1 per 10 samples or less	1 per day	NA
TCL VOCs	Water	1 set/20 samples or less	1 per 10 samples or less	1 per day	1 per cooler containing VOC samples
PCBs		1 set/20 samples or less	1 per 10 samples or less	1 per day	NA
TAL Metals		1 set/20 samples or less	1 per 10 samples or less	1 per day	NA

Notes:

(1) Field personnel must collect triple volume to account for MS/MSD sample.

(2) No equipment blanks are required for disposable or dedicated field sampling equipment.

NA - Not Applicable

MS/MSD - Matrix Spike/Matrix Spike Duplicate

APPENDIX A.1 – GEOSYNTEC RESUMES

Geosyntec
consultants

PAUL J. BOTEK, P.G. **Soil and Groundwater investigation and remediation**
Groundwater monitoring

EDUCATION

Graduate Coursework in Geology, Towson University, Towson, Maryland, 2009-2010
B.S., Environmental Geosciences, minor- Chemistry, Indiana University of Pennsylvania, Indiana, Pennsylvania, 1996

REGISTRATIONS AND CERTIFICATIONS

Professional Geologist - Virginia, 001864
OSHA 40-Hour Hazardous Waste Operations and Emergency Response (HAZWOPER) – Site Worker and Supervisor

CAREER SUMMARY

Mr. Botek is a Principal environmental geologist with over 20 years of experience in the assessment and remediation of contaminated sites, solid waste management facility permitting and monitoring, and source water assessments. Mr. Botek currently manages the site assessment and remediation practice group in our Columbia, Maryland office, and he has served as Project Manager and Project Director on numerous projects under CERCLA, RCRA, voluntary clean-up programs, and state solid and hazardous waste programs. Mr. Botek also has extensive experience in the development and implementation of groundwater monitoring programs for waste disposal and remediation systems, and was a co-author of the chapter on *Groundwater Monitoring* in the *Handbook of Groundwater Engineering* (CRC Press, 2006).

EXPERIENCE

Chesterfield Power Station – Ballfield Area Ash Delineation, Chesterfield, Virginia. Project Director for a desktop remote sensing analysis and field-boring program to assess and delineate historical ash deposits at an active power generating facility.

68th Street Dump Superfund Site, *Rosedale, Maryland.* Project Manager for the Remedial Design to include capping three former landfills, NAPL removal, in-situ groundwater treatment, and groundwater collection and off-site treatment, enhancement of natural wetlands to facilitate passive treatment of groundwater discharges, and ecological/stream restoration with a total estimated projected cost of $50M+.

Confidential NJDEP Site Remediation Program Sites. Northern, New Jersey. Project Manager for the Remedial Design of on-site containment remedies (vertical barrier walls, hydraulic control and water treatment, and cover systems) at two waterfront sites in northern New Jersey with estimated construction costs of more than $30M.

Welsh Road Landfill Superfund Site, *Honey Brook, Pennsylvania.* Project Manager/Project Director for this CERCLA landfill closure project. The project included a focused feasibility study (FFS) and remedial design of an evapotranspiration (ET) cover system alternative in lieu of a conventional geosynthetic/soil cover system, which was approved via ROD-Amendment and the first of its kind in USEPA Region 3. Mr. Botek also managed construction and long-term environmental monitoring programs.

Coal Combustion Byproduct Landfill Groundwater Monitoring, Confidential Client, *Baltimore, Maryland.* Project Director for the groundwater monitoring programs under state permit and federal CCR rule requirements at this active CCB landfill.

Pennsylvania Act 2 Site Characterization and Remediation/RCRA Corrective Action, *Northwestern Pennsylvania*. Project Director for the investigation and remediation of this active foundry site. Work included regulatory and community relations support, site-wide investigation, remedy selection and design, permitting, construction management, and post construction groundwater monitoring for two contaminated soil and sediment containment areas. Mr. Botek has also managed the post-closure care, including groundwater monitoring, at the closed hazardous waste landfill since 2005.

New Jersey Brownfield Drum Disposal Site Remediation, *Burlington, New Jersey*. Project Manager for the pre-design investigation, remedial design, construction, operation and maintenance, and groundwater monitoring of a slurry wall and geomembrane cover system at this former drum disposal site.

RCRA Corrective Action Site, Confidential Chemical Manufacturing Site, *Baltimore, Maryland.* Project manager for a voluntary soil removal project at a waterfront, chemical manufacturing facility. Designed a stratified soil sampling program that supported characterization of four separate hazardous and non-hazardous waste streams, reducing hazardous waste generation and providing substantial cost savings.

Chlorinated Solvent Site Vapor Intrusion Assessments; Multiple Locations Project director/ technical contributor on multiple vapor intrusion assessments at large industrial buildings overlying historical chlorinated solvent releases at facilities located in New Jersey, Maryland, Iowa, and Ohio.

Supplemental RCRA Facility Investigation and RCRA Facility Closure, *Northern Virginia.* Project Manager for the pre-design investigations, design, permitting, and construction for the closure of the on-site Open Burn RCRA TSD at a former defense manufacturing facility. The work included closure plan and design, site investigations, excavation and off-site disposal of RCRA hazardous and non-hazardous soils and munitions and explosives of concern (MEC). .

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Columbia, Maryland, 1997 – Present
TEEM Environmental Services, Old Forge, Pennsylvania, 1996 – 1997

Geosyntec consultants

Julia Klens Caprio

Quality Assurance Manager
Analytical Data Specialist
Site Analytical Data Evaluation and Validation
QA Auditing
Environmental Biotechnology
Office Manager

EDUCATION

M.B.A. Quality Management, Upper Iowa University; 2009
M.A., Organizational Management, Tusculum College, Knoxville, Tennessee; 2002
B.A., Biology, Lock Haven University, Lock Haven, Pennsylvania; 1980

CERTIFICATION

ASQ Certified Quality Manager #13876
Certified Environmental Field Sampler #0414
Certified Radiochemistry Data Validator (Radiochemistry Society)
NQA-1 Lead Auditor

REPRESENTATIVE EXPERIENCE

Ms. Caprio is a Principal specializing in Quality Assurance as the Geosyntec Operational Quality Manager, located at the Geosyntec Knoxville office. She holds a B.A. degree in biology, a Master's Degree in Organizational Management and a Masters of Business Administration (MBA) degree in Quality Management. Ms. Caprio has more than 25 years of experience in the environmental field. Currently she specializes in program and project quality management, systematic planning, preparation and review of quality assurance program and/or project plans (QAPPs), quality assurance management plans (QMPs), field sampling plans, data verification, data evaluation, data validation, QA audits including laboratory audits and project on-site field audits, as well as NQA-1 project and nuclear supplier audits. Ms. Caprio leads an in-house data validation team and her data validation experience includes chemical, radiological and geotechnical parameters for media including but not limited to sediment, soil, groundwater, surface water, biota, soil vapor and air monitoring. Ms. Caprio also provides both in-house quality assurance training through the various office locations within Geosyntec and outside quality assurance training for clients that teaches the importance of proper documentation practices for collecting, handling, and analyzing defensible, traceable and transparent data of known quality. Ms. Caprio also has extensive technical experience which includes; natural attenuation of petroleum hydrocarbons and chlorinated solvents, bioventing, biosparging, land treatment, and treatability studies, bioremediation system design, technical support for project managers, and work plan development. She has more than 20 years of experience as an analytical chemist in environmental and biotechnology laboratories including laboratory management, data management, quality control/quality assurance, and supervision of wet chemistry, gas chromatography, and high-performance liquid chromatography departments. Her experience also includes methods development, design and execution of treatability studies involving biological treatment of hazardous wastes and mixed wastes.

Geosyntec consultants

Relevant assignments include the following:

Quality Management Plan, *Geosyntec Consultants.* Development and draft, as well as ongoing review, of the Geosyntec corporate Quality Management Plan (QMP) per the requirements of American National Standards Institute/American Society of Quality Control (ANSI/ASQC) E4-2004, "Quality Systems for Environmental Data and Technology Programs: Requirements with Guidance for Use," ANSI/ASQC, 2004 as well as other pertinent documents.

Nuclear Quality Assurance (NQA-1) Corporate Quality Management Program. Developed corporate program and provided corporate training for an engineering client for all office locations for the implementation of an Nuclear Quality Assurance (NQA-1) corporate quality management program. Developed and drafted the Geosyntec corporate NQA-1 QMP as well as the corresponding standard operating procedures necessary to have a fully developed and implementable NQA-1 program.

NQA-1 Audits. Perform NQA-1 audits under the leadership of an NQA-1 Lead Auditor against the criteria in ASME NQA -1 -1994 (parts provider) and ASME NQA -1 -2008 and 2009 Addendum because of its regulatory pedigree resulting from endorsement by NRC Regulatory Guide 1.28 in June 2010 (engineering/construction firm), July 2011, July 2012, July 2014, and July 2015. The 2011 and 2012 audits were conducted in Oak Ridge TN at AVISCO Corp. The July 2014 and 2015 audits were conducted in NUCOR Inc., in Lexington, South Carolina. Additionally, participation in two NQA-1 audits that were conducted in Kennesaw, Georgia of Geosyntec Consultants that were conducted in 2014 and 2015.

On-Site Waste Disposal Facility Project*, Portsmouth Gaseous Diffusion Plant, Piketon, Ohio.* Corporate Quality Assurance Manager for engineering design tasks for the On-Site Waste Disposal Facility project at the Portsmouth Gaseous Diffusion Plant in Piketon, Ohio. Responsible for the development of the in-house NQA-1 quality assurance program implemented by the engineering design group to support the project data quality objectives. The quality system included development of the quality assurance project plan and the relevant standard operating procedures necessary to successfully complete the project tasks. Ms. Caprio is also responsible for meeting with client auditors, providing response to comments and verifying the implementation of corrective actions as needed.

Gowanus Canal Superfund Site Remedial Design*, Brooklyn, New York.* Quality Assurance Manager for the Gowanus Canal Superfund Site Remedial Design, Brooklyn, New York. Responsible for the development and finalization of the UFP-QAPP and Field Sampling Plan (FSP) pertinent to project tasks to date.

Former Adak Naval Complex Project, *United States Department of the Navy Naval Facilities Engineering Command Northwest (NAVFAC NW), Adak, Alaska.* Quality Assurance Manager for the Investigation and Characterization Former Adak Naval Complex Project. Developed the Sampling and Analysis Plan (SAP) for the United States Department of the Navy Naval Facilities Engineering Command Northwest (NAVFAC NW) under the Environmental Multiple Award Contracts (EMAC) and under the regulatory oversight of the Alaska Department of Environmental Conservation. The SAP was specific to the investigation and characterization of the East Canal/Building T-1341. Also responsible for coordinating the data validation of the samples sent to the fixed base laboratory for analysis.

Terry Creek Sediment Site, *New Brunswick, Georgia.* Quality Assurance Manager. Responsible for the development and application of the QAPP as well as the validation of the data. This site is impacted with toxaphene; responsible for coordinating method development and comparison between Method 8276 (Parlar Method), Method 8081 (Technical Toxaphene) and Total Area Under the Curve (TAUC) with the involved analytical laboratories as well as interpretation of the data.

Ocean Cape Radio Relay System, *Uakutat, Alaska.* Developed the UFP-QAPP for the Ocean Cape Radio Relay System, Uakutat, Alaska. The UFP-QAPP was developed to detail the QA/QC processes and procedures implemented during the Removal Action of multiple areas of interest at the Ocean Cape Radio Relay Station Formerly Used Defense Site near Yukutat, Alaska. The project is under the supervision of the Army Corps of Engineers and under the regulatory oversight of the Alaska Department of Environmental Conservation.

Savannah River Site Project (NQA-1), *Savannah, Georgia.* Quality Assurance Manager for the Savannah River Site Project (NQA-1). Responsible for the overall implementation of all quality assurance practices for the project including: 1) on-site activities: drilling practices, sample collection, on-site project documentation, and on-site geotechnical testing/measurements 2) off site laboratory geotechnical testing, 3) engineering practices and procedures utilized for the project. Responsible for on-going audits for sub-tier contractors throughout the project, as well as audits of the project offices, both on-site and off-site.

QA Audits of full service commercial analytical laboratories as well as on-site mobile laboratories and project specific field audits. Responsible for the auditing to ensure compliance with good laboratory practices, EPA method specifications, laboratory QA program and implementation and project specific QA requirements.

QA Audit of NQA-1 certified engineering firm, AVISCO. This audit was performed under the supervision of a qualified lead auditor to assess AVISCO's NQA-1 program per the requirements of in ASME NQA -1 -2008 and 2009 Addendum. The purpose of the external audit was to evaluate the company's capability to develop and implement a quality assurance program that meets current nuclear industry quality assurance requirements. The scope of the audit was focused on an examination of AVISCO's documentation of their capabilities for doing work in the nuclear industry.

Naval Auxiliary Landing Field Site*, San Clemente Island, California.* Quality Assurance Manager responsible for preparation and implementation of the SAP (under Navy UFP-QAPP specifications) for the Naval Auxiliary Landing Field Site on San Clemente Island, CA. Also responsible for field and laboratory audits; as well as coordination of laboratory analyses and data validation.

Berry's Creek Study Area. Quality Assurance Manager for Berry's Creek Study Area – mega-sediment site, responsible for the preparation, final review and implementation of the UFP QAPP, New Jersey, EPA Region 2. Conducted field and laboratory audits against project requirements. Coordinated analytical method development for tests specific to sediment and tissue samples with intricate matrices with the laboratories. Also responsible for the Stage 4 and Stage 2B validation of 100% of project data.

Stormwater Management System Monitoring Project. Quality Assurance Manager responsible for preparation of the QAPP for the Town of Ocean Ridge, Stormwater Management System Monitoring project under Section 319 Nonpoint Source Grant.

Conchiglio Warehouse and Edwards Supply Site Remediation Project. Quality Assurance Manager responsible for the preparation of the QAPP for Conchiglio Warehouse and Edwards Supply Site remediation project, Ocala, Florida, EPA Region 4.

Mattheissen And Hegleler Zinc Company (Carus) Site Remediation Project, *EPA Region 5, LaSalle, Illinois.* Quality Assurance Manager responsible for the preparation and implementation of the QAPP for Mattheissen and Hegleler Zinc Company (Carus) Site remediation project, LaSalle, Illinois, EPA Region 5. Also responsible for the Tier III project data validation.

OMYA Site, *EPA Region 1, Florence, Vermont.* Quality Assurance Manager responsible for the preparation and implementation of the QAPP for the OMYA site, Florence, Vermont, EPA Region 1. Also responsible for the Tier III project data validation as well as review and assessment of historical analytical data.

Former Baskins Dry Cleaner, *Pinellas County, Florida*. Quality Assurance Manager responsible for the final review of the Former Baskins Dry Cleaner - Pinellas County Florida QAPP under the USEPA Quality Assurance guidance for Brownsfield Sites.

Asia Rare Earth Project. Laboratory Management Skills Training, QA/QC, Data Validation, Asia Rare Earth Project, GSM, Malaysia. GSM is a Geosyntec subsidiary that is providing remediation services at a former rare earth processing facility in Malaysia. The laboratory performs gross alpha/beta and gamma spectroscopy analyses.

BCX Tank Farm Project. Quality Assurance Manager for the BCX Tank Farm project, responsible for the preparation, final review, and implementation of the QAPP, validation and final data review, EPA Region 4.

Progress Energy Site*, EPA Region 4, Tampa, Florida.* Quality Assurance Manager responsible for the preparation of the Progress Energy Site QAPP, Tampa, Florida, EPA Region 4.

West Shore Landings Site*, EPA Region 4, Tampa, Florida.* Quality Assurance Manager responsible for the preparation of the West Shore Landings Site QAPP, Tampa, Florida, EPA Region 4.

Geosyntec EPA Region 5 Superfund Projects. Quality Assurance Manager.

Los Angeles Unified School District, *Los Angeles, California.* Data Validation and QAPP Review. Responsible for data validation, including data from both fixed base laboratory analysis and mobile laboratory data, and QAPP review for SRES #1, SRHS#12, SRHS#15, SRES#4, CHS#15, SRES #2, SR MS #6, CRHS#16, CRES#20, Gratts, Glassel Park, East LA High School #2 Area C, Area D, and 28th Street. Data deliverables included Level II and Level IV packages for inorganic and organic analyses.

Quality Assurance Officer and Geosyntec liaison for the South Western Division (SWDIV); U.S. Navy QAO. Responsible for final review and completion of Sampling Analytical Plans (SAPs) for projects performed for SWDIV. Responsible for project adherence to SAP over the duration of the project and for QA oversight of the project. All communication between the QAO for the Navy and Geosyntec project personnel are directed through the Geosyntec QAO.

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Quality Assurance Officer for remediation of a commercial Nitrogen Processing Plant site located in Dodge City, Kansas. Responsible for writing the Quality Assurance Project Plan (QAPP) for assuring the integrity of the QAPP. Includes the co-ordination all QA-specific activities. Responsible for on-going data validation and verification.

Moundsville Site, *Honeywell International, Moundsville, West Virginia.* Quality Assurance Officer for remediation for the Honeywell International Moundsville Site located in Moundsville, West Virginia. Responsible for writing the Quality Assurance Project Plan (QAPP) and the Sampling and Analysis Plan (SAP) and for assuring the integrity of the QAPP. Includes the co-ordination all QA-specific activities. Responsible for initial on-site QA training of the field sampling teams. Responsible for on-going data validation and verification.

GEMCOR Site, *Calipatria, California.* Data review and validation of NORM, lead, and arsenic, for the GEMCOR Site located in Calipatria, CA. Site historically produced geothermal brines resulting in elevated levels of normally occurring radioactive material (NORM) across the area of the site.

Environmental Laboratory Auditor. Perform full and analytical method specific audits of commercial laboratories

Data validation expertise including all media types, chemical and radiological parameters.

PROFESSIONAL HISTORY

Geosyntec Consultants, Quality Assurance Manager, Senior Project/Office Manager, Knoxville, Tennessee, 2002 – Present
Technical Consultant, Environmental Biotechnologies, Knoxville, Tennessee, 1998-2002
Laboratory Operations Manager, Technical Applications Group, Knoxville, Tennessee, 1997-1998
Laboratory Operations Manager, Biotechnology Applications Center, Knoxville, Tennessee, 1995-1997
ABB Environmental Services, Analytical Data Manager, Knoxville, Tennessee, 1995
Quanterra Environmental Service, Assistant Technical Director, Knoxville, Tennessee, 1994-1995
IT Corporation:

- Group Supervisor, HPLC and Water/Wastewater Departments, IT Analytical Services, Knoxville, Tennessee, 1988-1994
- Analytical Chemist, HPLC/GC, IT Analytical Services, Knoxville, Tennessee, 1985-1988
- Analytical Technologist, Technology Development Laboratory, Knoxville, Tennessee, 1984-1985

University of Tennessee, Research Technician, Environmental Toxicology, Knoxville, Tennessee, 1984
Supelco Inc., Senior Laboratory Technician, HPLC R&D Applications Department, Bellefonte, Pennsylvania, 1980-1984

CONTINUING EDUCATION

Neilson Field School Environmental Sampling Certification Course, Las Cruces, NM, February 2012
NQA-1 Lead Auditor Training, Atlanta, Georgia, November 2011
FLADaPT Training, Tallahassee, Florida. June 2009
Staged Electronic Data Deliverables (SEDD) 101 and Advanced SEDD training, Atlanta, GA. 2008.

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Advanced Radiochemistry Society Radiometric Data Validation and Certification Training, Knoxville, TN, 2008.
USEPA, Transforming DQOs to MQOs Training Course, Cleveland, OH. 2007
USEPA, Planning for Sampling Training Course, Cleveland, OH. 2007
Radiochemistry Society Radiometric Data Validation and Certification Training, Knoxville TN, 2007. (Certification completed February 2007)
USEPA Data Quality Assessment Training Course, Austin, TX 2006
USEPA Data Quality Objectives Training Course, Austin, TX 2006
ISO9001/2000 Lead Auditor Certification Training, Houston, TX 2004
USEPA Statistical Analysis of Site Data Course, Tampa, FL, 2004
USEPA Data Verification and Validation Course, New Orleans, LA, 2003
OSHA HAZWOPER Supervisor Training, Knoxville, Tennessee; 2002
USEPA Seminar on Monitored Natural Attenuation, Atlanta, GA., 1998
8 Hour Radiation Workers Training, Knoxville, Tennessee; 1997, 1998, 1999, 2000, 2001
40 Hour OSHA Training and 8 Hour refreshers, Knoxville, Tennessee; current
Air Shipping Dangerous Goods by IATA (DOT Function Specific) Training, 1995, 1997,1998
ITAS Radiation Workers Training, Knoxville, Tennessee; 1994
ITAS Human Resource Coordinator Training, Knoxville, Tennessee; 1994
Key Results Indicator Training, Knoxville, Tennessee; 1994
Total Quality Management Training, Knoxville, Tennessee; 1994
Perkin-Elmer Omega System Training, Kingsport, Tennessee; 1991
Spectra-Physics Short Course, Piscataway, New Jersey; 1981

PUBLICATIONS/PRESENTATIONS

J.K. Caprio. "Quality Assurance/Quality Control Considerations with Regard to the Use of Passive Sampling Devices/Materials" Proceedings of the 2016 NEMC Conference, August, 2016.

J. Caprio, D. Reible. "Assessment of the Production of Diffusive Gradient Thin Films (DGT) and Associated Quality Control Protocols in a University Laboratory Setting," Proceedings of the 2015 DGT Conference, San Sabastian, Spain, September, 2015.

J.K. Caprio, S. Compston, P. deHaven, D. Dunlap.. "Selective, Low Sample Mass Sampling to Support Remedial Investigation at a Large Sediment Site," Proceedings of the Eight International Conference on Remediation of Contaminated Sediments, February, 2015.

M. Vanderkooy, B. Wagner, J. Roberts, T. Krug, D. Himmelheber, A. Hughs, **J.K. Caprio**.. "Comparing Aroclor and Congener Analyses in Passive Samplers: Implications for Passive Sampling Programs," Proceedings of the Eighth International Conference on Remediation of Contaminated Sediments, February, 2015.

J.K. Caprio, D. Reible, M. Bruce. "Moving Passive Sampling for Mercury Monitoring in the Aquatic Environment from Research to Commercial Use," Proceedings of the 2014 International Conference on the Remediation of Chlorinates and Recalcitrant Compounds, May, 2014.

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J.K. Caprio, S. Compston, S. Hill, D. Dunlap.. "Selective, Low Sample Mass Invertebrate Sampling to Support Remedial Investigation with Potential COPC Bioaccumulation," Proceedings of the 2014 International Conference on the Remediation of Chlorinates and Recalcitrant Compounds, May, 2014.

J.K. Caprio, M. Vanderkooy, M. Bruce, R. Shocke, D, Reible.. "Moving from Research to Commercial Use of Passive Sampling for Mercury Monitoring in the Aquatic Environment," Proceedings of the 2013 DGT Conference, Lancaster, UK, July, 2013.

J.K. Caprio, S. Compston, S. Hill, D. Dunlap. "Selective, Low Sample Mass Invertebrate Sampling in Support of a Remedial Investigation with Potential Bioaccumulation of COPCs," Proceedings of the 2012 NEMC Conference, August, 2012.

J.K. Caprio. "Disposal Dilemma – How to Characterize Liquid Waste, When it is Treated as a Solid?" Proceedings from the 2012 Show of the South Conference. April, 2012.

J.K. Caprio, D. Adilman, M. Lodato. "Being Positive Your False Positives are False," Proceedings of the 2011 8th Annual DOD Environmental Data Quality Workshop, April 2011.

J.K. Caprio, M. Tyler, S. Hill. "Systematic Planning to Improve Data Quality at a Superfund Site in New Jersey," Proceedings of the Sixth International Conference on Remediation of Contaminated Sediments, March, 2011.

J.K. Caprio. "Common Laboratory Contaminants," Proceedings of the 2010 Industrial Expo, Georgia Association of Water Professionals, March, 2010.

J.K. Caprio. "Laboratory Auditing from a Consultants Perspective," Proceedings of the 2010 7th Annual DOD Environmental Monitoring Data Quality Workshop, April, 2010.

J.K. Caprio. "A Brief Discussion of Three Important Quality Management Concepts," Proceedings of the 2009 EPA Quality Management Conference, May, 2009.

J.K. Caprio. "Quality Management is not an Oxymoron!" Proceedings of the 2009 6th Annual DOD Environmental Monitoring Data Quality Workshop, April, 2009.

H. Kerfoot, **J. Caprio**. "Performance of EPA Method 8270 with Isotopic Dilution for 1,4-Dioxane in Groundwater Samples," Proceedings of the 42nd Western Regional Meeting (WRM) of the American Chemical Society, September, 2008.

J. K. Caprio. "Lessons Learned and Continuous Improvement During Implementation of the Uniform Federal Policy for Quality Assurance Project Plans (UFP-QAPP)," Proceedings of the 2008 5th Annual DOD Environmental Monitoring and Data Quality Workshop, April, 2008.

M. Lodato, **J. Klens Caprio**, D. Graves. "Accelerated Site Cleanup at Drycleaner Sites Using Multiple Remedial Technologies," in Proceedings of the 5th International Conference on the Remediation of Chlorinate and Recalcitrant Compounds, May, 2006.

J. Caprio. "Asking Appropriate Questions in Order to Assure Data Quality," in Proceedings of the 25th Annual Conference on Managing Environmental Quality Systems, April, 2006.

Geosyntec consultants

J. Klens, D. Graves, R. Rogers, J. Chytil and T. Streckfuss. "Coupled Permeable Reactive Barrier and Natural Attenuation Remediates Chlorinated Solvents," in Proceedings of the 3rd International Conference on the Remediation of Chlorinated and Recalcitrant Compounds, May, 2002.

Caprio, J. K. "The Applicability of the 9/80 Work Week in Today's Fast Paced Economy," Master's Thesis, 2002.

Klens, J., D. Pohlmann, S. Scarborough, and D. Graves. "The Effects of Permanganate Oxidation on Subsurface Microbial Populations," in Natural Attenuation of Environmental Contaminants, Eds. A. Leeson, M.E. Kelley, Il. S. Rifai, and V. S. Magar. Battelle Press, Columbus. OH. pp. 253-259, 2001.

Klens, J. L., J. R. Cochran, and D. Graves. "Sample Collection Technique for Laboratory Based Hydrogen Analysis in Groundwater," in Risk, Regulatory, and Monitoring Considerations: Remediation of Chlorinated and Recalcitrant Compounds, eds. G. B. Wickramanayake, A. R. Gavaskar, M. E. Kelley, and K. W. Nehring. Battelle Press, Columbus, OH. pp. 393-400, 2000.

W.D. Brady, **J. Klens,** and D.A. Graves. "Cost Effective Biological/Chemical Treatment of Ammonia/Ammonium Impacted Media. Proceedings of the Sixth International Symposium on In Situ and On-Site Bioremediation," San Diego California.

Brady, W. D., D. Graves, **J. Klens,** M. Eick. "Evaluation and Implementation of Natural Attenuation at Metals Impacted Sites," in: Natural Attenuation Considerations and Case Studies: Remediation of Chlorinated and Recalcitrant Compounds. Eds. G. B. Wickramanayake, A. R. Gavaskar, and M. E. Kelley. Battelle Press, Columbus, OH. pp. 209-215, 2000.

Brady,W. D., D. Graves, M.J. Eick, E. Lay, and **J Klens**. "Demonstrating Metal Irnmobilization/Attenuation Mechanisms in Soil: A Case Study," Proceedings from the 15th International Conference on Contaminated Soil and Groundwater. Amherst, Massachusetts. October, 1999.

Klens, J., G. Roberts, and D. Graves. "Rapid Qualification of Sites for Natural Attenuation Potential, Proceedings of the Fifth International In Situ and On-Site Bioremediation Symposium," Battelle Press, Columbus, Ohio, 1999.

J. Klens, M. Distefano, G. Dodson, A. Weigand, K. Ramanand, D. Graves. "Reductive Dehalogenation of Ethylene Dichloride in Groundwater". Presented at the First International Conference on Remediation of Chlorinated and Recalcitrant Compounds, Monterey California, May, 1998.

De, M.A., **J. Klens,** G. Gaillot, and D. Graves. "Field and Laboratory Evaluations of Natural Attenuation of Chlorinated Organics at a Complex Industrial Site," presented at the Symposium on Natural Attenuation of Chlorinated Organics in Groundwater, Dallas Texas, September 1996.

Geosyntec consultants

ADAM L. GRAY

site assessment and remediation
environmental compliance
hydrogeologic investigation and monitoring
geographic information systems

EDUCATION

M.S., Natural Resource Sciences, University of Maryland, College Park, Maryland, 2010
B.S., Environmental Science, West Virginia University, Morgantown, West Virginia, 2004
B.S., Agronomy, West Virginia University, Morgantown, West Virginia, 2004

REGISTRATIONS AND CERTIFICATIONS

OSHA Hazardous Waste Site Worker (40-Hour Certification)
OSHA Hazardous Waste Site Worker
RCRA Refresher Training
American Red Cross Adult CPR/AED and First Aid
Railway Worker Protection and e-Railsafe Training

CAREER SUMMARY

Mr. Gray is an environmental scientist with over 10 years of experience supporting and managing environmental site characterization, remediation, risk evaluation, and compliance projects in the Mid-Atlantic and Northeastern United States. Through his work to date he has gained experience managing, designing, implementing, and overseeing contaminant site assessments, pilot tests, and remediation in many different environmental media including soil, bedrock, sediment, groundwater, surface water, and soil gas on numerous large- and small-scale projects. His experience has allowed him to supervise and support many field teams and oversee subcontractors for a variety of purposes including soil and bedrock boring and monitoring well installation and sampling using a variety of techniques and remedial system construction. These experiences have also allowed him to contribute to and be the primary author for numerous proposals, work plans, and reports for projects regulated under CERCLA, RCRA, and various state regulatory programs in Maryland, New York, Ohio, Pennsylvania, and Virginia. With this experience, he is adept at coordinating with clients and managing changing and challenging scopes of work to ensure projects are completed within budgetary and schedule constraints that meet clients' requirements and expectations. Prior to joining Geosyntec, he was a graduate research assistant at the University of Maryland where his research focused on organic material amendments in constructed wetlands soils and corresponding effects on soil biogeochemistry and hydric soil morphology.

Confidential Railway Client, *New York, Pennsylvania, and Virginia.* Serves as PM and local portfolio manager for this large company national railway client at multiple investigation and cleanup sites in New York, Pennsylvania, and Virginia. He serves as PM for the remedial design of a soil excavation and capping project at a former railyard facility in western New York being completed under the New York Department of Environmental Conservation (NYSDEC) Brownfields Cleanup Program. At a challenging petroleum release site near Norfolk, Virginia, he led the soil and groundwater assessment and mitigation scoping, management, and reporting efforts for the project, which is expected to receive a no further action from the Virginia Department of Environmental Quality. At an underground storage tank site in New York, he coordinated and negotiated a no further action with the NYSDEC. At another site in New York, he led efforts to assess groundwater quality impacts at an uncapped historical landfill and supported a feasibility study assessing the cost and implementation of various capping options at the Site. He also managed a lead-impacted soil excavation conducted in Pennsylvania using PADEP Act 2 cleanup requirements. At the sites mentioned, as well as at multiple other sites in the client's portfolio, he has assisted in developing long-term environmental liability and accrual estimates for client financial planning and reporting.

68th Street Dump Superfund Site, *Maryland.* Serves as assistant PM for the pre-design investigation and remedial design of various Site remedies (soil cover system, groundwater extraction, biowall, excavation, enhanced wetlands, natural resource damages restoration, free-phase oil recovery, and deep-rooted vegetation) at this complex CERCLA site with multi-media impacts related to landfill leachate, volatile and semi-volatile organic compounds, metals, and free-phase oil. To date he has served as lead author on the remedial design work plan that included a field sampling plan, quality assurance project plan, health and safety plan, site management plan, institutional control implementation and assurance plan, and remedial design contingency plan. He is expected to continue to support the project by leading the pre-design investigation field work and making key contributions to the remedy design elements.

Cortese Landfill Superfund Site*, New York.* Currently serving as PM for the environmental monitoring program (groundwater, surface water, and landfill gas) at this complex CERCLA site impacted with various volatile and semi-volatile organic compounds including chlorinated solvents and petroleum hydrocarbons and is lead author for the Environmental Monitoring Report submitted annually to USEPA Region II. The site underwent a groundwater remedy transition from pump and treat to air sparging/soil vapor extraction (AS/SVE) for which Mr. Gray has made several key contributions including: (i) assisting with development of a pilot test work plan, field implementation, data analysis, and reporting; (ii) assisting with AS/SVE source are remedy design; and (iii) helping draft several key documents including Monitored Natural Attenuation Remedial Design for downgradient groundwater, Operation Maintenance and Monitoring Plan for source area groundwater and treatment system operations, and Report on Supplemental Monitoring Well Installation. He also contributed to the design an innovative groundwater remedy that incorporated VOC mass discharge in groundwater, in lieu of concentration-based remedial action objectives, as a remedy performance metric. Due to his extensive experience and conceptual site knowledge, it is expected that Mr. Gray will continue to support the project in a variety of ways.

RCRA Corrective Action, *Baltimore, Maryland.* Currently managing the RCRA Corrective Measures Implementation activities, which includes sediment, porewater, and groundwater monitoring, and associated annual reporting at this waterfront industrial facility. Served as assistant PM for a chlorinated solvent and metals removal action. His role included assisting in designing the removal actions, and drafting a work plan prescribing the excavation limits, sequence of work, in-situ pre-characterization of characteristically hazardous waste, waste management strategies, restoration and revegetation requirements, health and safety procedures, and other miscellaneous requirements. He also drafted the removal action final report, which presented the removal action results and documented construction activities.

Confidential Client, *Virginia.* Served as PM for investigation and remediation activities related to petroleum hydrocarbon releases at two of the client's facilities in Virginia. He has helped the client understand the Virginia regulatory framework and coordinated all investigation and remediation activities under guidance of the Virginia Oil Control Program. He was responsible for planning, coordinating, and implementing investigation and clean-up activities at both sites and authoring site characterization reports.

Pennsylvania Act 2 Remediation. Served as task manager for confirmatory sampling efforts and attainment demonstrations related to excavation and capping clean-up work at this metals-impacted foundry site located in northwest Pennsylvania. He was responsible for developing a confirmatory soil sampling program that meets Pennsylvania Act 2 requirements and managing all soil sample collection activities. Following sample collection, he compiled the sample results and performed statistical analysis to demonstrate contaminant attainment at each excavation.

Electronics Manufacturing Facility, *Virginia.* Assisted with several key documents for this active DOD contracted facility including a Current Conditions Report, RFI Work Plan, RFI Report, and an Interim Measures Proposal and Report. His specific report activities included the development of QAPP and HASP documents, creating figures and tables using ESRI ArcMap® and Microsoft Access® relational database, and other various support actions. Mr. Gray also assisted in several field implementation activities including delineation of a soil area heavily contaminated with VOCs using a mobile onsite lab for removal action design. He also supported a soil gas sampling using USEPA protocols for a vapor intrusion assessment and provided contractor oversight during the soil removal action.

Avtex Superfund Site, *Virginia*. Supervised the installation of soil borings, completed lithologic and geotechnical logging to support sludge basin capping, and compiled boring logs using the gINT software. He also developed and implemented a soil fertility sampling plan to determine soil nutrient concentrations for the revegetation of Site's non-time critical basins. He also prepared a submitted a summary report to USEPA containing the fertility results and recommendations on how to improve site soil fertility for the desired future land use.

Large RCRA Manufacturing Facility, *Confidential Client.* Was an integral team member and task manager for this comprehensive and complex RCRA site that is a 400-acre former rocket motor manufacturing facility. He generally served as the field team leader for various large environmental media (groundwater, surface water including NPDES, and soil) sampling events for the detection of volatile organic compounds (VOC), energetics, hydrocarbons, and metals. He gained significant experience implementing a hydrogeologic investigation at the fractured bedrock site, which included monitoring well drilling and installation oversight, packer testing, electronic borehole flowmeter, aquifer pump testing with pressure transducers, tracer testing, and various other borehole characterization activities. He also serviced on-site environmental remediation systems, excavated test pits to investigate subsurface geophysical anomalies, and other various field activities to support project needs. He helped to draft, review, and edit various site documents submitted to USEPA, which include site work plans, quality assurance project plan, health and safety plan, supplemental RCRA Facility Investigation (RFI) report, and an interim measures report. He also provided significant GIS support which included drafting maps and completing surface analyses using ESRI ArcMap® for site work plans and reports.

***Confidential Site**, Maryland.* Served as project manager for a chlorinated organics vapor intrusion assessment at a large electronics manufacturing facility. He assisted in designing the investigation plan and led the field investigation that included sub-slab vapor probe installation and sampling and indoor air sampling using USEPA compliant protocols. He authored an assessment report for client internal decision making.

Confidential Construction and Demolition Debris Landfill, *Maryland.* Serves as the lead scientist and project manager for groundwater monitoring, investigation, and assessment at this active CDD landfill with metals impacts in groundwater. During his time managing the project, he has led efforts to bring Site groundwater into compliance with MDE permit conditions and federal regulations. He supervised transitioning the Site from a detection groundwater monitoring program to an assessment groundwater monitoring program in accordance with 40 CFR 257. He has negotiated project requirements with the Maryland Department of the Environment (MDE) and was the principal presenter to MDE during meetings. He has directed the expansion of the site groundwater monitoring network and serves as principal investigator assessing the nature and extent of the metals contamination beneath the Site and evaluating potential alternative sources. He has also supervised the development of several site documents including a groundwater sampling and analysis plan, semi-annual groundwater monitoring reports, and other miscellaneous report deliverables submitted to MDE. It is anticipated that he will continue to lead future groundwater monitoring, assessment, remediation, and reporting efforts for the project, as necessary.

***Coal Combustion Residual (CCR) Landfill**, Maryland.* Designed, installed, and implemented a groundwater monitoring network and program compliant with both the Federal CCR Rule (40 CFR 257) and Maryland Department of Environment (MDE) permit requirements at an active CCR landfill in Maryland. He negotiated with MDE to achieve a monitoring network acceptable to both the client and MDE. He also provided extensive guidance to the client on CCR Rule requirements, compliance, and potential costs that were applicable to the Site. He prepared the Site's sampling and analysis program to meet both MDE and CCR Rule requirements and manages the Site's detection groundwater monitoring program and reporting efforts, including the CCR rule required groundwater monitoring network certification and detection monitoring statistical analysis certification reports.

County Landfill, *Dorchester County, Maryland.* Responsible for the hydrogeological assessment and associated Phase II Permit Application for the lateral expansion of a new municipal landfill. He designed the subsurface investigation program, presented the proposed scope of work to MDE, managed the field investigation activities that included geotechnical soil borings, monitoring well installation, and groundwater quality monitoring, and led the Phase II reporting efforts.

Newland Park Landfill, *Wicomico County, Maryland.* Serves as client manager and PM for several ongoing projects at this municipal solid waste landfill located on the Maryland eastern shore. He is responsible for the Site's comprehensive environmental monitoring program and for ensuring that environmental monitoring activities comply with requirements specified in 40 CFR 258 Subpart E as well as the Site's disposal permit issued by Maryland Department of the Environment (MDE). He coordinates implementation of all environmental monitoring activities, directs data analysis, and is responsible for delivering semi-annual groundwater and quarterly landfill gas (LFG) monitoring reports to MDE. He is also responsible for compliance with the Site's Part 70 Operating Permit that regulates air emissions from Site. Activities completed under the Part 70 Permit include semi-annual six-month compliance, annual compliance and emissions certification reporting, non-methane organic compound (NMOC) sampling, analysis, and reporting. He is also responsible for annual Greenhouse Gas Reporting via the USEPA web-based e-GGRT reporting system and has coordinated maintenance and repairs to the Site's landfill gas monitoring system.

PROFESSIONAL EXPERIENCE

Geosyntec Consultants, Columbia, Maryland, August 2007-present
University of Maryland, College Park, Maryland, Research Assistant, June 2004-August 2007
USDA-Forest Service, Elkins, West Virginia, June 2003-August 2003

REPRESENTATIVE PUBLICATIONS

10-01 Gray, A.L., 2010. Redoximorphic Features Induced by Organic Amendments and Simulated Wetland Hydrology. Masters Thesis, University of Maryland, College Park MD.

INVITED PRESENTATIONS

Gray, A.L. and M.C. Rabenhorst, 2006. Organic Matter Effects on New Redox Feature Formation Under Induced Hydric Soil Conditions. Soil Science Society of America Proceedings, Indianapolis IN.

Geosyntec
consultants

STEPHANIE N. JONES, EIT, MSCEE

coal combustion residuals
acid mine drainage
water resources

EDUCATION

M.S., Civil and Environmental Engineering, South Dakota School of Mines & Technology, Rapid City, South Dakota, 2014

B.S., Civil Engineering, San Diego State University, California State University, San Diego, California, 2012

REGISTRATIONS AND CERTIFICATIONS

Engineer in Training, National Council of Examiners for Engineering and Surveying, May 2012
OSHA Hazardous Waste Site Worker (40-Hour Certification)
DOT/Hazmat Employee with Packaging (49 CFR 172.704)
American Red Cross Adult CPR/AED and First Aid
Railway Worker Protection and e-Railsafe Training

CAREER SUMMARY

Since joining Geosyntec Consultants in March 2015, Ms. Jones has contributed to characterization, monitoring, and remedial action projects as related to the EPA's Final Rule for regulation of coal combustion residuals. Ms. Jones earned a M.S. in Civil and Environmental Engineering from the South Dakota School of Mines & Technology. Her master's research focused on analysis of recycled materials for environmental remediation, leading laboratory and geochemical modeling efforts to evaluate potential applications of recycled concrete aggregate and fly ash for acid mine drainage remediation. Ms. Jones has also conducted research that utilized bacterial source tracking to model and predict the performance of watershed protection measures in Pennington County, South Dakota.

PROJECT EXPERIENCE

Coal Combustion Residuals Landfills, *Maryland* – Provided construction oversite during implementation of stormwater management plan. Prepared health and safety plan and task hazard analyses in preparation for work plan implementation. Implemented surface water portion of work plan including installation of surface water gaging stations, quarterly sampling, discharge measurements, sulfate and conductivity survey, and weir installation. Developed monitoring wells and conducted quarterly groundwater monitoring using low-flow sampling techniques. Performed data management, quality assurance, and geochemical and statistical analysis of laboratory analytical data for the continuous groundwater monitoring program.

Geosyntec consultants

Railroad Sites, *Washington D.C.* – Conducted soil gas screening of excavated soils and prepared soil manifests. Performed maintenance of cloud-based turbidity meters.

Multiple Projects and Clients, *Maryland, Virginia, New York, and Pennsylvania* – Supported field activities related to groundwater sampling, well development, soil sampling, and landfill gas monitoring.

PROFESSIONAL EXPERIENCE

Senior Staff Environmental Engineer, Geosyntec Consultants, Columbia, MD, 2015 – present
Graduate Research Assistant, South Dakota School of Mines & Technology, Rapid City, SD, 2013 – 2014
Graduate Teaching Assistant, South Dakota School of Mines & Technology, Rapid City, SD, 2013 – 2014

AFFILIATIONS

Associate Member, American Society of Civil Engineers – National Capitol Section

Engineers Without Borders – Washington, D.C. Chapter

INVITED PRESENTATIONS

Jones, S. N. Mass Discharge Metrics to Support Remedy Selection at Coal Ash Sites. Energy, Utility, and Environment, San Diego, CA, March 5-7, 2018.

Jones, S. N. Boron as an Emerging Contaminant at Coal Ash Sites and Large Plume Management Metrics. Groundwater Solutions: Innovating to Address Emerging Issues for Groundwater Resources, Arlington, VA, August 8-9, 2017.

Jones, S. N. Remediation of Acid Mine Drainage with Recycled Concrete Aggregates. Geotechnical Frontiers, Orlando, FL, March 12-14, 2017.

Jones, S. N. Remediation of Acid Mine Drainage with Recycled Concrete Aggregate Fines and Coal Fly Ash. 95th Annual Meeting of the Transportation Research Board, Washington D.C., January 10-14, 2016.

PUBLICATIONS

Jones, S. N., and Cetin, B. Evaluation of Waste Materials for Acid Mine Drainage Remediation. Fuel, 188 (2017) 294–309.

APPENDIX A.2 – EUROFINS LANCASTER QUALITY MANAGEMENT PLAN

Eurofins Document Reference	1-P-QM-GDL-9015377	**Revision**	14
Effective Date	Dec 31, 2015	**Status**	Effective
Historical/Local Document Number	DOD - Environmental Quality Policy Manual		
Local Document Level	Level 1		
Local Document Type	POL - Policy		
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Prepared by	Barbara Reedy, Christiane Sweigart, and Kathryn Brungard
Reviewed and Approved by	Robert Strocko;Review;Wednesday, November 18, 2015 10:39:07 AM EST Duane Luckenbill;Review;Sunday, December 13, 2015 10:34:22 PM EST Dorothy Love;Approval;Thursday, December 17, 2015 3:54:23 PM EST

Environmental Quality Policy Manual

Eurofins Lancaster Laboratories Environmental, LLC

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Reviewed and Approved by:
Vice-President/Technical Director
Microbiology Technical Director
Quality Assurance Director
(as documented on page 1)

Table of Contents

Revision Log:

Revision: 14		Effective Date: This version
Section	**Justification**	**Changes**
Revision Log	Formatting requirement per 1-P-QM-QMA-9017356	Removed revision logs up to the previous version
Throughout document	Title change	Update QA Manager references to be QA Director
Throughout document	Clarification	General rewording for better clarity and flow of information
Section 1.3	Reflect current version	Revised mission statement
Section 1.4	Enhancement	Revised display of information
Section 2.4	Additional scope of document	Added service centers associated with Lancaster to the scope of this document
Section 2.6	Process change	Remove reference to quarterly reports as this information is communicated to management through different means
Section 2.11.1	Process change	Added “Note” regarding training for seasonal and temporary staff
Section 2.16	Unnecessary statement	Removed reference to Eurofins sister laboratories
Section 2.17	Clarification/Process change	Clarified that the Ethics Statement is signed annually Changed Ethics Committee to Ethics hotline service
Section 3.1	Changes to campus	Updated description of campus to reflect current state
Section 3.3	Clarification	Added IT systems to the areas addressed by disaster recovery
Section 3.4	Added information	Clarified actions taken if there are adverse environmental conditions in the facility
Section 4.2	Clarification	Added explanation for applying signatures electronically to document through the document control interface
Section 5.1	Added information	Revised to include information on the bottle lot checks
Sections 5.4 & 5.5	Enhancement	Added explanations of the bar code reading process used in sample tracking and the individual bottle code tracking
Sections 5.4, 6.1 & 6.3	Added information	Specified that samples and standards/reagents are stored separately.
Section 6.3	Updated requirement	Added information regarding the need for ISO Guide 34 and ISO 17025 approved materials.
Section 6.4.4	Clarification	Added notation for reporting noncompliant data when approved by the client and comments added to the report.
Section 6.5.1.2	Added information	Specified that passwords must adhere to the Eurofins Password Policy and must be “strong: passwords
Section 6.5.2	Enhancements	Added information on the software change request, periodic reviews and retirement documents. Generalized the explanation on validation plans.
Section 8.1	Reflects current process	Changed the listing of services to current offerings and updated the website link for certification
Section 10.1	Enhancement	Added Bottle orders and clarified to reflect current flow
Section 11.1	Clarification	Added ability of QA to stop work for critical internal audit issues
Section 11.2	Process change	Added electronic means of routing documents; removed quarterly report reference
Section 11.5	Unnecessary statement	Removed the need to stamp documents as confidential
Section 12.1	Clarification	Explanations added regarding actions for noncompliant QC data; removed quarterly report reference
Section 12.2	Updated process	Information on the ICAR process was revised to reflect the current practice using Jira
Section 12.3	Clarification	Added information regarding QA trend evaluation of client concerns and routing of the client satisfaction survey

Revision: 14		Effective Date: This version
Section 12.4	Process change	Revised to remove references to the Ethics Committee and add information on the Ethics Hotline service; removed quarterly report reference
Section 12.4	Enhancement	Added information about use of Project Cycle to proactively ensure meeting the needs of the client
Section 13.4	Process change	Removed reference to subcontract warranty statement and added Laboratory Analytical Services Subcontract form
Appendices A-F and J-I	Updated for current information	Updated to reflect current SOPs, personnel, methods, etc.

Revision: 13		Effective Date: Aug 8, 2014
Section	**Justification**	**Changes**
Revision Log	Formatting requirement per 1-P-QM-QMA-9017356	Removed revision logs up to the previous version
Throughout Document	Reflect re-identification of documents in EtQ	Replaced all prior Level 1, 2, 3, and 4 document numbers (analyses excluded) with EDR numbers
Title Page	Regulatory compliance	Added text for address, phone, reviewer/approver titles (previously listed on hardcopy covers and pre-EtQ versions)
Section 1	Updated training requirements	Removed requirement for all employees to read the appendices, they are available as resources; required for dept. 4052 only.
Section 1.2	Regulatory compliance	Inserted additional ISO17025 text at opening and closing of Quality Policy Statement
Section 2.1.1	New Section	Summarize processes to ensure business continuity and contingency plans
Section 2.2	Reflect current structure	Moved summation of technical director and QA manager to this section; changed employee responsible for daily operation from COB to VP. Throughout document, clarified management structure to include VP.
Section 2.6	Added process	Added ability for management and/or QA to issue a stop work notice.
Section 2.16	Regulatory compliance	Inserted additional ISO17025 text regarding ensuring impartiality, operation integrity, etc.
Section 3	Added building	Added building D
Section 4.2	Clarification	Noted that interim amendments to controlled procedures are not allowed.
Section 5.5	Added information	Noted that minimum sample retention period is 2 weeks form reporting
Section 6.4	Clarification	Standardized use or the terminology for equipment (supporting units) vs instruments (data producing units)
Section 6.5.1.9	New section	Added to address passwords and audit trails for systems used to process electronic data
Section 6.5.2	Clarification	Clarified SDLC processes
Section 8.1	Added information	Added reference to laboratory website for all current accreditation records
Section 10.2	Added information	Added information regarding electronic data, signatures, and audit trails
Section 10.4	Regulatory compliance	Added DoD reporting requirements for DL, LOD, LOQ
Section 10.5	Clarification	Clarified process and intent of data review
Section 10.7	Updated process	Added process for identification of accreditation status Noted use of LlabWeb for secure data transfer
Section 12.1	Added process	Added ability for management and/or QA to issue a stop work notice.

Revision: 13		**Effective Date:** Aug 8, 2014
Section 12.4	Clarification, new process	Clarified processes that address preventive action; changed “PPI” to “Lean”
Section 13.2	Clarification	Added detail on project evaluations
13.4	Added detail	Added information regarding the subcontractor warranty and the need to ensure subcontractor can meet accreditation requirements
Appendices A-J	Updated for current information	Updated to reflect current SOPs, personnel, methods, etc.

INTRODUCTION

This *Quality Policy Manual* is based upon Eurofins Lancaster Laboratories Environmental LLC's (herein referred to as the laboratory) overall business and management philosophies, mission, and goals. This manual is written to present the policies employed by the laboratory as well as the support departments that serve the environmental laboratories and to comply with the requirements of the National Environmental Laboratory Accreditation Program, ISO 17025, and the Department of Defense (DoD). These policies define the "what" we do with emphasis on management's responsibilities and commitment to quality. Governing SOPs are in place within the organization, to ensure the proper execution of this policy document (refer to Appendix A). This manual is required reading for laboratory personnel. The appendices are available resources to all personnel but are not required reading for all employees. The most recent and up-to-date *Quality Policy Manual* and all referenced documents are available to all laboratory personnel who work in or support the laboratory. The laboratory actively strives for continuous improvement of its quality systems to better serve our clients.

1.1. Mission Statement

The laboratory offers analytical and consulting services in the chemical and biological sciences with comprehensive expertise in environmental laboratory applications. The company mission statement describes the corporate philosophy:

At Eurofins Lancaster Laboratories, Environmental LLC we are people working together to serve the health and environmental needs of society through science and technology. We strive to be the recognized leader in all that we do.

Our mission is to provide independent laboratory services in the chemical and biological sciences with excellent quality and service. As a corporate community, we:

- Deliver quality by fully understanding and always meeting the requirements of those we serve.
- Live our values by relating to our clients, coworkers, shareholders, suppliers, and community in a fair and ethical manner.
- Manage our growth and financial resources so we can serve our clients well, provide a satisfactory return to shareholders, and maintain our meaningful and enriching workplace.

1.2. Quality Policy

The Executive Management Group recognizes quality as a key element of the laboratory's standard of service. The group supports the laboratory's commitment to quality as defined by NELAP, ISO 17025, DoD, and other regulatory agencies (i.e. states) through the strict adherence to the Quality Policy Statement. The Quality Assurance Director wrote the Quality Policy Statement, with final approval from the laboratory Vice-President. The policy cannot be revised without their approval.

The Quality Policy Statement gives employees clear requirements for the production of analytical data. Employees are trained on the components of the Quality Policy Statement during their first day of orientation. Each employee signs the statement upon hire as agreement to implement the policy in all aspects of their work. Employee agreement to any subsequent revisions of the statement is obtained by documented reading and understanding of an agreement to follow the Quality Manual, which contains the current version of the statement. The statement is as follows:

As an organization, all personnel are committed to high quality professional practice, testing and data, and service to our clients.

We strive to provide the highest quality data achievable by:

- Following all documentation requirements; describing clearly and accurately all activities performed; documenting "real time" as the task is carried out; understanding that it is never acceptable to "back date" entries and should additional information be required at a later date, the actual date and by whom the notation is made must be documented.
- Providing accountability and traceability for each sample analyzed through proper sample handling, labeling, preparation, instrument calibration/qualification, analysis, and reporting; establishing an audit trail that identifies date, time, analyst, instrument used, instrument conditions, quality control samples (where appropriate and/or required by the method), and associated standard material.
- Emphasizing a total quality management process and commitment to continuous improvement which provides accuracy, and strict compliance with agency regulations and client requirements, giving the highest degree of confidence; understanding that meeting the requirements of the next employee in the work flow process is just as important as meeting the needs of the external client.
- Providing thorough documentation and explanation to qualify reported data that may not meet all requirements and specifications, but is still of use to the client; understanding this occurs only after discussion with the client on the data limitations and acceptability of this approach.
- Responding immediately to indications of questionable data, out-of-specification occurrences, equipment malfunctions, and other types of laboratory problems, with investigation and applicable corrective action; documenting these activities completely, including the reasons for the decisions made.
- Providing a work environment that ensures accessibility to all levels of management and encourages questions and expression of concern on quality issues to management.

We each take personal responsibility to provide this quality product while meeting the company's high standards of integrity and ethics, understanding that improprieties, such as failure to conduct the required test, manipulation of test procedures or data, or inaccurate documentation will not be tolerated. Intentional misrepresentation of the activities performed is considered fraud and is grounds for termination.

I understand the expectations and commit to implementation of all applicable policies and procedures and to providing quality data.

1.3. Statement of Values

Eurofins Lancaster Laboratories Environmental is a team of people who work together to serve the health and environmental needs of society through science and technology.

At Eurofins Lancaster Laboratories Environmental, our mission is to provide independent laboratory services in the chemical and biological sciences with excellent quality and service. We fulfill our mission by incorporating our values into our work every day.

As a corporate community, we embrace our heritage of integrity and strive to live by the following principles:

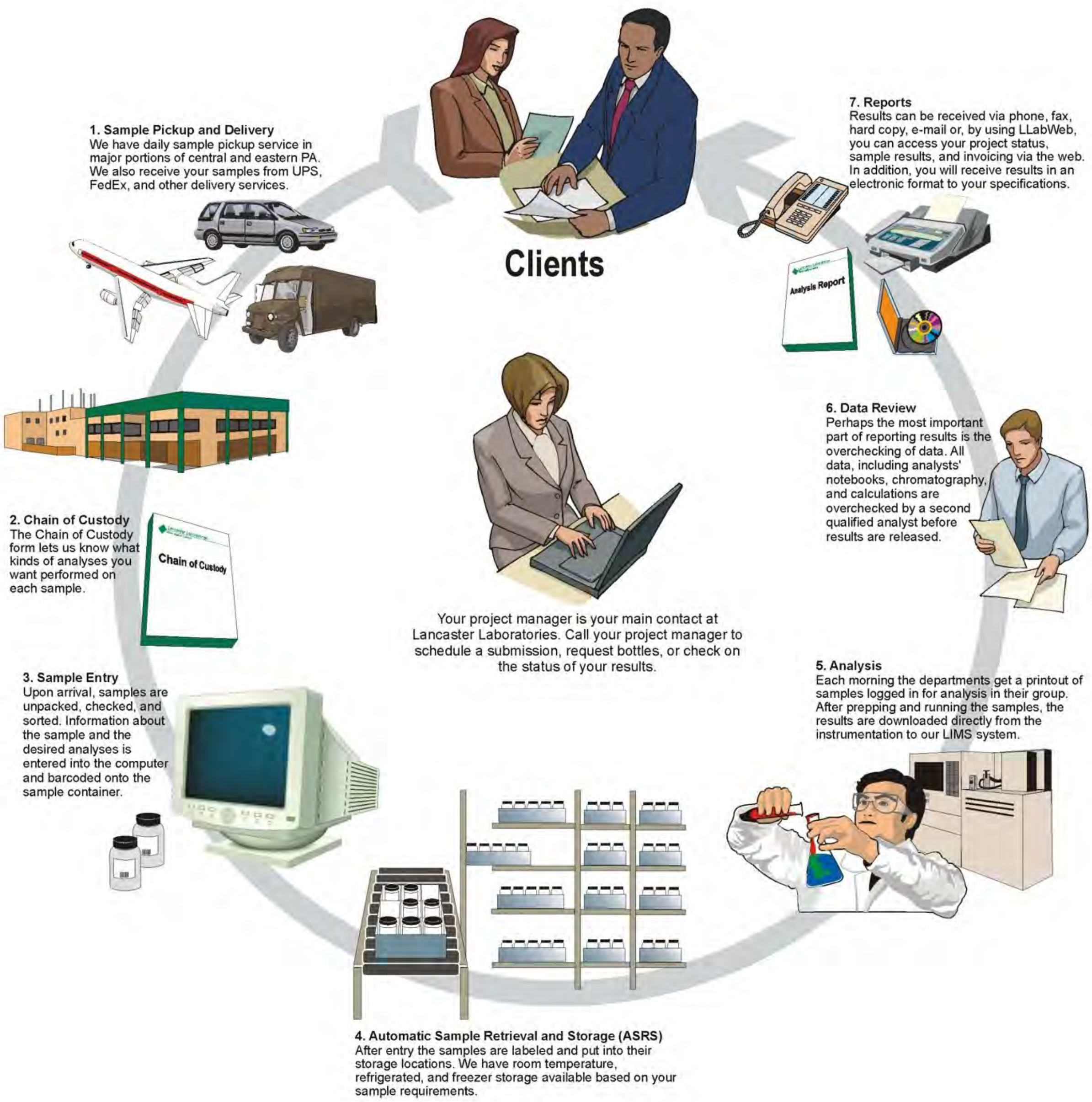
- Fairness and honesty in all our relationships
- Mutual trust
- A respect for ourselves and others
- A sense of caring that leads us to act responsibly toward each other and society, now and in the future
- Loyalty to our clients and one another
- A spirit of open-mindedness as we deal with all
- Dedication to service
- Good stewardship of our resources
- A commitment to flexibility and continuous improvement

We are committed to:

- Delivering quality by fully understanding and always meeting the requirements of those we serve.
- Living our values by relating to our clients, coworkers, shareholders, suppliers and community in a fair and ethical manner.
- Managing our growth and financial resources so we can serve our clients well, provide a satisfactory return to shareholders and maintain our meaningful and enriching workplace.

At Eurofins Lancaster Laboratories Environmental, we each take personal responsibility to live these values in all of our dealings, knowing full well that our pledge may involve difficult choices, hard work and courage.

1.4. Sample Flow-Through Diagram



1.5. Certifications, Accreditations, and Registrations

Accreditation/Certification is the process by which an agency or organization evaluates and recognizes a laboratory as meeting certain predetermined qualifications and/or standards. It is the one generally accepted method by which a laboratory such as ours can demonstrate its capability of generating acceptable, professional, quality test results in those areas in which it claims competence. To this end, we have actively sought accreditation by organizations offering it in those areas relevant to our technical expertise. We strive to ensure that the facilities, equipment, procedures, records, and methods used by the laboratory in the testing of environmental samples are in compliance with the requirements of these standards.

Although organizations offering accreditation differ somewhat in the details of their programs, they generally evaluate laboratories in four basic areas: personnel (adequate staffing, education, training, and experience), physical facilities, instrumentation/equipment, and quality assurance program. This evaluation is performed by one or more of the following procedures: periodic on-site inspections of the laboratory by assessors experienced in technical operations, quality systems, and management; periodic analysis of proficiency test samples; and periodic updating of the laboratory's file to reflect changes in personnel, equipment, or services offered. Some states offer reciprocity with other state programs.

Appendix B lists accreditations and registrations held by the laboratory in support of environmental work. Current copies of all scopes of accreditation are available on the laboratory website and are kept on file in the Quality Assurance Department.

2. ORGANIZATION AND PERSONNEL

2.1. Company Overview and History

The laboratory was founded in 1961 by Dr. Earl Hess in response to a need for high quality technical services by the agricultural and industrial communities in southeastern Pennsylvania. Nourished in a culture of quality and caring about all those associated with the business, the corporation became an industry leader known for innovative business practices and people-friendly policies. The company was independently owned until the retirement of Dr. Hess in 1995. At that time, the laboratory was acquired by a publicly held company, Thermo TerraTech, Inc., a Thermo Electron company. Ownership changed in September 2000, when the laboratory was acquired by Goldner, Hawn, Johnson, and Morrison, Inc. (GHJ&M), a private equity investment firm. In August 2005, the laboratory was acquired by Fisher Scientific under their BioPharma Division. On November 9, 2006, Thermo Electron and Fisher Scientific merged to form Thermo Fisher Scientific. In April 2011, Thermo Fisher Scientific sold the laboratory to Eurofins Scientific. Effective July 1, 2013, the Pharmaceutical and Environmental Divisions were split into separate business entities and the company name became Eurofins Lancaster Laboratories Environmental, LLC. The laboratory continues to operate as an independent laboratory and is incorporated by the State of Delaware.

The laboratory provides a wide array of laboratory services to clients working in environmental industries. We strive to offer high quality technical services in the chemical and biological sciences with personal attention to client needs. These services include chemical analyses, microbiological testing, and analytical method development. We are, therefore, a technical service company and do not manufacturer or distribute goods. Our "product" is accurate and timely technical information and our continued existence depends on the quality of the services we offer and efficiency with which we deliver them.

2.1.1 Business Continuity and Contingency Plans

Various policies and practices are in place to address continuity of business and contingency plans to ensure continued operations or minimal disruption in operations should unplanned events (natural disasters, unexpected management changes, etc.) occur.

Section 2.2 of this document explains the identification of deputies for key management positions. Section 3.3 discusses the disaster recovery plan. Section 6.5 addresses the security and backup of our computer systems. Section 10.8 addresses handling of client records should the company have a change in ownership or go out of business.

2.2. Organizational Structure

The laboratory Vice-President/Technical Director, Duane Luckenbill, is responsible for the daily operations of the laboratory.

The Executive Management Group is defined as the Eurofins Environment Testing US Chairman of the Board and President and Eurofins Lancaster Laboratories Environmental, LLC Vice-President.

The management staff includes directors, managers and group leaders. Organizational charts are presented in Appendix C. A list of key personnel is also provided. The Vice-President and Quality Assurance (QA) Director have identified deputies for all key management personnel.

2.2.1 Technical Director

The Technical Director ensures that the laboratory's policies and objectives for quality of testing services are documented in this quality manual. The Technical Director must assure that the manual is communicated to, understood, and implemented by all personnel concerned.

2.2.2. Quality Assurance Director

The Quality Assurance Director ensures that the quality system is followed at all times. The QA Director reports directly to the Vice-President thus ensuring corrective actions to quality issues are taken promptly and are separate from business decisions. The QA Director has no direct supervisory responsibility for the generation of technical data to avoid any conflict of interest in administrating the QA program. The QA Director has the final authority to stop work that compromises our integrity or data quality. The situation must be investigated and appropriate corrective action must be put in place before the QA Director will authorize the resumption of work. The specific duties of the QA Director are communicated in job plan format.

2.3. Management Responsibilities

Laboratory management duties are outlined for supervisory personnel using a job plan format, which details each individual's responsibilities along with expected results. Typically, management duties include, but are not limited to:

- Personnel hiring and training
- Supervision of personnel
- Providing resources to ensure a work environment free from commercial, financial, and other undue pressures that may adversely affect the quality of their work
- Providing resources to ensure a safe work environment
- Directing daily work operations, including scheduling of work
- Ensuring compliance with the TNI Standards, ISO 17025, Department of Defense Quality Systems Manual, state agency programs, analytical methods, and client requirements.
- Assessing laboratory capacity and workload
- Resource allocation
- Ensuring quality of data produced
- Contributing to the continuous improvement of the laboratory operation
- Ensuring that corrective actions are carried out in an appropriate and agreed upon time-frame.
- Communicating problems and concerns to Senior and Executive Management to enlist a higher level of support for corrections and continuous improvements.
- Maintaining awareness of technical developments and regulatory requirements

2.4. Overview of the Quality Assurance Program

Quality Assurance (QA) is responsible for developing planned activities whose purpose is to provide assurance to all levels of management that a quality program is in place within the laboratory, and that it is functioning in an effective manner that is consistent with the requirements of NELAP, ISO 17025, DoD, and any other regulatory agencies (i.e. states) in which we hold accreditation. Although the laboratory is a wholly owned subsidiary of Eurofins Scientific, the Quality Assurance and Quality Systems operations described in this manual are specific to the Lancaster site and associated service centers.

The administration of the QA program is the responsibility of the QA Director in cooperation with all levels of management.

The QA program, as directed by executive management, was established to:

- Ensure accountability, accuracy, and traceability of all analytical data generated.
- Ensure that current regulatory, agency, and client requirements are being met.
- Ensure that operating procedures are in place to minimize the possible loss, damage, and tampering with data, in addition to ensuring that raw data is stored in a secured area and is maintained by designated archivists and/or system administrators.
- Ensure that curriculum vitae (CVs) and training records are maintained to document that staff members have the necessary education, training, and experience to perform their job responsibilities and functions.
- Ensure that regulatory training is provided to applicable employees on a routine and ongoing basis.
- Ensure that all procedures are available, controlled, and current.
- Ensure that documentation demonstrates that procedures are carried out in a compliant and effective manner.
- Ensure that all equipment and instrumentation is qualified, maintained, and calibrated, as appropriate, in accordance with written standard operating procedures.

- Ensure that all significant laboratory problems are investigated, evaluated for root cause and corrective action is put in place as documented
- Ensure that an internal audit program is in place to provide on-going monitoring and confirm that laboratory personnel are adhering to standard operating procedures and applicable regulations.
- Ensure that quality issues are brought to the attention of management in a timely manner.

2.5 Quality Assurance Responsibilities

The QA Director assigns tasks with input from the company Vice President. The primary responsibilities of QA include, but are not limited to the following:

- Oversee the laboratories' internal audit program which consists of various audit types and applies to all laboratory activities (technical and administrative).
- Review and approve standard operating procedures and analytical methods.
- Review and approve validation documentation.
- Review non-conforming quality control data
- Perform tracking and trending of quality measurements and report the status and effectiveness of the quality system to management.
- Approve investigation and corrective action reports (ICARs) and audit responses to ensure that they are completed in a timely manner, evaluated for root cause, that corrective actions are implemented as needed and to monitor corrective action for effectiveness.
- Host client and regulatory agencies during facility audits and follow-up to any cited deficiencies.
- Provide regulatory guidance to the laboratory and support areas.
- Monitor Good Laboratory Practice (GLP) regulatory activities.
- Communicate quality issues to management in a timely manner
- Provide and/or coordinate on-going regulatory training (e.g., GLP).
- Participate in the vendor and supplier approval process, including subcontractors.
- Review analytical data for compliance with our procedures.
- Prepare and review QA project plans (QAPPs) as required by EPA and client projects.
- Maintain and update this *Quality Policy Manual*.
- Maintenance of the Laboratory's accreditations, including but not limited to, administration of the proficiency test sample programs, both single and double blinds.
- Communicate (within 30 days) to the relevant state authorities when there are management or facility changes that impact the laboratory. Changes in the technical director must be communicated within 20 days.

2.6. Communication of Quality Issues to Management

The QA Department is responsible for preparing reports to Management to keep them apprised of outstanding quality issues. Reports to management foster communication, review, and refinement of QA activities to ensure that the QA program is adequate to meet regulatory and the laboratory's quality objectives. The following reports are used to communicate quality issues and include, but are not limited to:

- Internal, client, and agency audit reports and corrective action plans
- Proficiency test reports
- Investigation and corrective action reports
- Monthly quality status reports
- Plans for corrective action

Upon review of quality issues, management and/or QA may issue a stop work notice if an issue indicates the potential for a problem on a broader scale with an analysis. The investigation would need to be completed and the issue resolved before work could continue. The information is tracked through our Investigation and Corrective Action Report (ICAR) process.

2.7. Personnel Qualifications and Responsibilities

Full resumes and responsibilities of key personnel are provided in Appendix D.

Due to the number of analysts on staff, entry level chemists, technicians, and support personnel are not included in the resume section. However, all employees have job plans that define their responsibilities. Duties for these personnel typically include:

- Sample storage
- Sample preparations
- Performance of tests
- Calibration, operation, and maintenance of instruments
- Data entry
- Standard and reagent preparation
- Glassware preparation
- Data deliverables preparation

2.8. Relationship of Functional Groups and the Quality Assurance Program

In addition to this *Quality Policy Manual*, aspects of the QA program are documented in a series of standard operating procedures that support the proper execution of this document. Technical operation procedures with required quality components are also in place. A list of the titles of relevant SOPs is provided in Appendix E. There are a variety of mechanisms used to communicate requirements and verify compliance with the QA program, including:

- Management requires that all employees read and be trained in the policies and SOPs that are pertinent to their jobs.
- Employee job plans define individual responsibilities. All job plans include QA aspects, and performance is reviewed annually.
- Laboratory audit findings are circulated to management and require a response and follow-up to items needing corrective action.

- Cross-functional meetings, including representatives from QA, Client Services, Marketing, management, and technical operations are held regularly to review specific projects and quality issues.

2.9. Balancing Laboratory Capacity and Workload

Evaluating laboratory capacity to perform specific projects is the responsibility of the Vice-President, laboratory directors and managers, and the Client Services director and manager. These responsibilities are documented in the individual job plans for these positions.

The laboratory facilities and staff size are very large compared to other laboratories serving the environmental industry. Many analysts are cross-trained to perform a variety of tests, and there is redundant equipment available in case of malfunctions. This minimizes the need to evaluate small and medium size projects against capacity available to complete them. Large projects are reviewed against capacity estimates before bids are submitted to ensure that the client's analysis schedule is met.

Regularly scheduled meetings are held with upper management, laboratory middle management, Client Services and QA personnel to review progress with current projects, as well as special requirements of new work scheduled for the laboratory.

Laboratory capacity and backlog is tracked on a continuous basis using information from the Laboratory Sample Information System (LIMS) including turnaround time, and work in-house.

2.10. Identification of Approved Signatories

All data is reviewed and verified prior to release to the client. Based on complexity or regulatory needs, some projects are designated for secondary (technical and/or QA) review of the Analysis Reports and/or data deliverables. Approved signatories for these secondary reviews are defined in the SOP on Data Entry, Verification, and Reporting. Directors, managers, group leaders, and other designated employees (such as QA, project managers, and senior technical staff) are designated to approve/release Analysis Reports. Request for approval of an employee to approve/release reports must be made through the QA Department. These authorized personnel are designated with an asterisk in the personnel list provided in Appendix C.

2.11. Personnel Training

The experience and training received by personnel is of great importance to our clients and regulatory agencies. Curricula Vitae (CVs) and on-going training documentation are available to demonstrate how personnel have been prepared for the tasks they routinely perform. To ensure the highest quality of services at the laboratory, training programs and plans are developed to match skills with job functions. Accurate training documentation is the responsibility of both the employee and their supervisor. On a routine basis, the supervisor reviews and approves training documentation to verify that it is complete and current.

Training requirements can be met through education, prior job experience, internal and external training classes, on-the-job training, TRN training modules, procedure reading, or any combination thereof, to enable the person to perform assigned job functions and meet regulatory compliance.

Each analyst training to perform a new analysis is required to perform an initial demonstration of capability and meet the requirements for accuracy and precision before working independently on the test method. Typically, this is accomplished by the successful analysis of four known samples. However, there are certain tests performed that are not required by the mandated test method or regulation to perform the above procedure (i.e., EPA 1010, 9095). In this case, the analyst's documentation of proficiency is satisfied by the sign-off of having read, understood, and agreed to follow the SOP as written, on-the-job training and observation by a senior analyst.

Management personnel are responsible for planning ongoing professional growth and development activities for an employee through on-the–job training and/or internal and external training courses so an employee can maintain a current skill set to match job responsibilities.

An annual performance review based on job accountabilities, objective measures, and pre-defined standards is completed by management personnel for each employee. This assessment is documented and maintained. Input is obtained from other managerial personnel as needed.

2.11.1. New Hire Training

New employees are oriented as part of a year-long process that is designed to make the employee feel welcome and comfortable by defining our culture, traditions, philosophies, and work practices. During the orientation process an employee learns about personnel and safety policies and business strategies in addition to quality, ethics, and customer satisfaction expectations through a formal process administered by our Human Resources Department.

New employees are required to attend "core" technical orientation, as applicable, which can entail the participation in training module exercises, short session attendance, and/or other skill training specific to their assigned department or job function. Additional job-specific training required for an employee is based upon their assigned duties and is identified by their supervisor. Technical orientation occurs during the first few weeks of employment.

Note: Seasonal and temporary employees have reduced "core" training requirements based on the assigned tasks and as defined by QA, Safety, and the assigned department management.

The orientation process is designed to enable employees to initiate and take responsibility for their personal and professional career growth at the laboratory. The orientation process is conducted without regard to employee race, color, creed, national origin, sex, age, or disability in accordance with the laboratory's Employee Equal Opportunity (EEO) policy.

2.11.2. Ongoing Training

Refresher and ongoing training occurs through various means, which include but are not limited to, training in or independently review new/updated standard operating procedures and TRN training procedures; on-going regulatory training; in-house or off-site classes or seminars. The goal of this training is to ensure that employees remain current with changes to laboratory systems and practices, as applicable to their job function. Retraining and re-qualification activities occur as directed by procedures or regulations. Employees are retrained if an issue or investigation warrants that retraining is a necessary corrective action. Management directs when employee re-training is required, and the extent of the re-training.

2.12. Regulatory Training

The QA Department is responsible for coordinating and conducting initial and ongoing regulatory training (i.e., GLP) for all applicable laboratory and support personnel. It is the responsibility of management within each department to ensure that personnel attend the required training sessions.

The choice of training format and topics covered for ongoing regulatory training is left to the discretion of QA and the trainer. All training sessions reinforce the concepts in the regulations as they are relevant to the laboratory.

Whenever possible, after training is completed, a demonstration of proficiency of the training topic is given. The demonstration of proficiency is generally in the form of a quiz although other demonstrations of proficiency are acceptable depending on the scope and content of the training. If necessary, training is presented and/or repeated one-on-one with individuals who do not demonstrate proficiency in the training topic. This is performed by QA in conjunction with applicable laboratory management personnel.

2.13. Employee Safety

The laboratory, being mindful of its responsibilities as an employer and active corporate citizen, has established the following objectives of its safety program:

- Provide a safe environment for its employees, visitors, and the community surrounding its place of business.
- Provide ongoing safety training for employees.
- Provide all necessary facilities and equipment to ensure the safety of its employees and to minimize all chemical exposure during the normal performance of their required tasks, and to take all necessary precautions to safeguard the surrounding environment.
- Provide periodic health physicals for employees.
- Foster and encourage safe operations and a proper safety attitude on the part of our employees through general operations and systems, training, and the *Chemical Hygiene Plan* (CHP).

The CHP addresses various aspects of our safety program in greater detail.

A Safety Committee works to enhance our overall safety program. The committee meets on a routine and ongoing basis and its specific responsibilities are detailed below:

- Review accident and incident reports. Make recommendations for methods of prevention to eliminate further accidents.
- Promote safety awareness and distribute safety information by various means (e.g., posters, videotapes, pamphlets, and books). Use internal communication channels to promote safety awareness.
- Enhance and recommend safety-training programs for all employees, as necessary.
- Maintain up-to-date information on employee concerns that are safety related. Offer input and information to the Chemical Hygiene Officer and/or Safety Officer, as needed.

2.14. Client Services/Project Management Responsibilities

Members of the laboratory Client Services/Project Management Group are responsible for organizing and managing client projects. Clients are assigned a project manager (a.k.a. "CSR") who serves as their primary contact at the laboratory. It is the project manager's responsibility to act as the client advocate by communicating client requirements to laboratory personnel and ensuring that clients provide complete information needed by the laboratory to meet those requirements. All client verbal communications are documented by the project manager in a controlled notebook. In addition to information management, Project Management responsibilities include:

- Coordinating and preparing proposals in conjunction with technical staff.
- Confirming certification status.
- Hosting client visits and audits.
- Coordinating and communicating turnaround time (TAT) requirements for high priority samples/projects.
- Answering common technical questions, facilitating problem resolution.
- Providing clients with sample status report or results (partial reports) prior to receipt of the final Analysis Reports (e.g., fax, e-mail, phone).
- Scheduling sample submissions, sample containers, and sample pick-up via the laboratory courier service.
- Informing the client of deviation from their contract.

2.15. Confidentiality

Strict confidentiality is maintained in all of our dealings with clients. Confidentiality agreements, therefore, are willingly provided.

All employees are required to protect company technical data, including client names and test results from disclosure to any third party. This policy, as described in the *Eurofins Lancaster Laboratories Employee Handbook*, is provided and presented to employees during their orientation period and whenever revisions are made.

Intellectual property associated with the testing that we perform under contract for a client is the property of the client.

In an attempt to ensure the confidentiality of our systems and procedures within our laboratory, it is our policy to restrict the distribution of our internal procedures to clients. Clients are permitted to review our procedures while on-site as part of an audit or visit. Based on this policy, we would request that any documents viewed would not be shared or made available to any third parties without the permission of the laboratory.

2.16. Business Conduct

Our business conduct policy applies to all operations of the company. All employees must avoid involvement in any activities that would diminish confidence in their competence, impartiality, judgment, or operational integrity. All employees must further avoid any relationship with other individuals or organizations that might impair, or even appear to impair, the proper performance of their company-related responsibilities. Employees must avoid any situation that might affect their independence of judgment with respect to any business dealings between the company and any other organization or individual. Any employee who believes that they have such a conflict, whether actual or potential, or who is aware of any conflict involving any other employee must report all pertinent details to the Vice-President or President of the company. The company's management vigorously enforces this policy and takes prompt and appropriate action, including termination, against any employee found to be in violation.

2.17. Operational Integrity

All employees review and sign the Employee Ethics Statement on their first day of employment and annually thereafter. Employees responsible for generating, handling, or reviewing laboratory data understand that the laboratory mission is to perform all work with the highest level of integrity. Under no circumstances are shortcuts or generating results to suit a client's purpose rather than good scientific practice considered acceptable. Any violation of the laboratory ethics policy results in a detailed investigation that could lead to termination.

All levels of management consider the following activities unacceptable:

- Knowingly recording inaccurate data.
- Fabrication of data without performing the work needed to generate the information. This includes creating any type of fictitious data or documentation.
- Time travel or adjusting clocks on computerized systems to make it appear that data was acquired at some time other than the actual time.
- Manipulation of data for the express purpose of passing system suitability or quality control criteria.
- Selective use of data generated, or not using data that was legitimately generated and has an impact on the outcome of the test.
- Executing significant deviations from approved test methods and procedures without prior approval from the laboratory management and/or the client.

If an issue does arise which could compromise data integrity, personnel are instructed to perform the following activities:

- Clearly document the situation and maintain all data generated. There is a big difference between poor judgment and fraud. Fraud usually involves intent to conceal an action taken. Therefore, the more documentation that is maintained, the less likely an action is considered fraudulent if further scrutinized.
- When out-of-specification results or quality type issues are detected, all supporting data and relative background information must be documented and presented for management review. Problem resolution and client contact, as applicable, must also be documented.
- Review any questionable situations and decisions with a supervisor.

- Bring a questionable or uncomfortable issue directly to the QA Director or a member of the QA Department as part of our QA open door policy.
- Utilize the company's anonymous Ethics hotline service. See Section 12.4 of this manual.

3. BUILDINGS AND FACILITIES

3.1. Facility

The laboratory is located at 2425 New Holland Pike, Lancaster PA. The facility consists of two campuses with multiple buildings located on the North and South sides of Route 23. The two campuses are connected by a pedestrian bridge that spans Route 23.

Building A resides on a commercial plot measuring 13.6 acres on the north side of Route 23. Building A is a three-story building of concrete and steel construction which houses both laboratory space and administrative offices. It is approximately 108,000 square feet and consists of approximately 47,000 square feet of laboratory space; 29,000 square feet of office space; and 32,000 square feet of storage, mechanical, and common areas. On this parcel, adjacent to Building A, sit two chemical storage buildings (Buildings I and L) with a total space of 2500 square feet. In addition, a 10,500 square foot storage building houses stability chambers (Building J). The bottles packing area, which includes preservation of bottles being sent to clients for sampling, is located in a separate 3100 square foot building (Building K). In addition, there are two other buildings (Buildings G and H) with a total square footage of 20,000 square feet that host recycling, storage, workshop and facilities maintenance areas.

The remaining buildings reside on a commercial plot measuring 35.7 acres on the south side of Route 23. These building are connected to the north campus buildings via a pedestrian walkway over the highway.

Building B is a three-story building of steel and concrete construction. It is approximately 56,000 square feet and consists of approximately 17,000 square feet of laboratory space; 14,000 square feet of office space; and 25,000 square feet of storage, mechanical, and common areas.

Building C resides between buildings B and D and consists of a three-story building of steel and concrete construction. It is approximately 47,000 square feet and consists of approximately 25,000 square feet of laboratory space; 6,900 square feet of office space; and 15,100 square feet of storage, mechanical, and common areas. The first floor houses the main lobby and visitor's entrance.

Building D is connected to building C. It is a 78,000 square foot, four-story building of steel and concrete construction and provides approximately 35,000 square feet of laboratory space, 19,000 square feet of office space, and 24,000 square feet of storage, mechanical, common area.

Two small support buildings (Buildings E and F) with a combined space of approximately 800 square feet are used for chemical and waste storage on the south campus.

The Lancaster campus also utilized an adjacent parcel for a technical training center. This space is approximately 6,500 square feet.

There is an automatic fire alarm and security system hooked up at the facility. This system is monitored offsite by Choice Security. The entire campus and all exterior doors are monitored by video surveillance.

This facility is serviced by public sewer. Drinking water comes from a private well while the facility sprinkler system is fed by the public water supply. The closest surface water is the Conestoga Creek.

3.2. Security

The laboratory is considered a secure facility. All outside doors except the main lobby entrance are locked during normal business hours to prevent unauthorized entry. An attendant monitors this entrance at all times.

During evenings, weekends, and holidays, all doors are locked and Security personnel are on site to prevent unauthorized entry into the building. Video cameras are utilized by Security personnel to monitor the facility grounds.

Every employee is issued a photo ID badge which also serves as a building access card. This badge must be worn at all times while on laboratory property so that employees are easily identified. Access to secured/designated areas within the building is limited to only applicable employees through the building security system. This system is administered by Security staff.

All visitors must register with the lobby attendant and are issued a visitor badge. A staff person must accompany visitors while in the facility. Additional visitor rules are outlined in the *Visitor Security and Safety Rules* pamphlet which is provided to all guests.

Building access cards are issued on a temporary basis to contractors or service technicians (e.g., electricians and plumbers) who need access to the building to work on a project. These cards provide the contractor with limited access during the normal workday and must be returned when the work is complete.

3.3. Disaster Recovery

A disaster recovery plan is in place to provide direction for situations where normal operations of the laboratory are not possible. In the event that the building or information technology (IT) systems would be severely challenged, a designated disaster recovery team, which includes Physical Services, Maintenance, Safety, Corporate Management, Public Relations, IT, QA and other applicable personnel depending on the scope of the disaster, would assemble at a designated area to assess the situation and formulate a plan.

The plan addresses, in general terms, how to approach the following issues: electrical failures, heating/air conditioning failures, fire/building evacuation, computer failures, hazardous material spills, injury to employees, pandemic flu, disruption of phone service, and stability chamber failures.

3.4. Environmental Monitoring

The air handling system for the main laboratory is specially designed to protect sensitive instruments from harmful vapors to ensure that samples are not contaminated. The Physical Services/Maintenance Group is responsible for maintaining the HVAC and exhaust hood systems. This is particularly important in our instrumentation rooms and computer center where a controlled environment, positive pressure system is maintained.

Most refrigerators, freezers, incubators, and ovens used for analysis are monitored by a computerized system equipped with stationary thermometer temperature probes linked to a master panel that is accessed through a computer. If a unit is outside of a predefined temperature range for a specified period of time, the system alarms. Units not on the computerized system must be monitored manually by recording thermometer temperature readings twice daily.

The laboratory is set up so that there is effective separation between neighboring areas in which there is potential for contamination. Laboratory storage blanks are also used to evaluate conditions under which samples for volatile analysis are stored to monitor for cross-contamination potential. QA provides oversight of the environmental monitoring system.

QA and technical management, in consultation with facilities management as needed, evaluate any issues with environmental conditions that could have adverse effects on data to determine if alternative operational plans (moving testing to alternate laboratories, temporary shutdowns, etc.) need to be employed.

3.5. Water Systems

Well water and the public sewer system service the facility. The water system is monitored to meet the permit requirements of the Pennsylvania Department of Environmental Protection.

Reagent water is available to analysts for sample preparation (including dilution) and glassware cleaning. Two reverse-osmosis deionized water systems deliver highly purified water to a sealed fiberglass storage tank. From the storage tank the water is delivered to an ion-exchange-carbon filter system for further polishing. The water is also exposed to an in-line ultraviolet sterilization lamp before being circulated to taps throughout the laboratory.

Daily monitoring and preventive maintenance for the system is the responsibility of the Physical Services Department. Monthly and annual testing is performed as required by regulatory guidance. QA provides oversight of the water system monitoring. In addition, method blanks are tested with each batch (≤20) of samples.

3.6. Housekeeping/Cleaning

The laboratory is dedicated to providing a clean workplace. A third party professional cleaning service provides routine cleaning of “common areas” that include lavatories, drinking fountains, floors, and windows. Technical staff are responsible for the cleaning (or the contract of cleaning) of specific laboratory work areas.

Detergents used for cleaning contain no to very low levels of metals, pesticides/herbicides/ fungicides, or volatile solvents.

3.7. Insect & Rodent Control

Steps are taken to prevent, monitor, and control insect and rodent infestation. The coordination of this program is the responsibility of the Physical Services Department under the direction of QA. An outside service firm is contracted to perform routine and ongoing monitoring of the facility to ensure that preventive measures which are in place are effective and are working as intended.

No insect or rodent control chemical agents in a liquid or vapor form are applied or sprayed in any laboratory building, unless there is no other option, in which case department management must be contacted for approval.

3.8. Emergency Power Supply

The laboratory is located at the junction of two power grids that supply electrical service to the facility. If one of the power grids fails, we have the ability to work with the power company to have service switched to the other grid. Various types of diesel and natural gas generators are also available on a standby basis to supply power to selected areas of the laboratory in case of a power outage.

To reduce spikes and spurious line voltage changes to laboratory instruments that can affect results or damage electronic equipment, “conditional power” is fed to these sensitive instruments. All essential computer systems are on uninterrupted power supply (UPS) which is a battery system that provides continuous conditional power for a limited time period in the event of a short power outage.

3.9. Facility Changes

Procedures are in place to manage change, ensure communication, and to minimize negative consequences through active participation of personnel involved in a facility change. The goal is to ensure that physical and environmental condition changes are adequately evaluated for impact and reduction of risk to quality, safety, health, employee, environment, property, analytical services, and business operations before and after the change is implemented.

4. DOCUMENT CONTROL

The administration of the document control system including tracking, filing, updating, and archiving of historical copies is the responsibility of the Office Services (OS) Department.

It is our policy to restrict the distribution of our internal procedures to clients and we discourage the distribution of company confidential documents outside of the facility. Clients are permitted to review our procedures while on-site as part of an audit or visit. Any documents that are distributed are only sent with the approval of QA.

The goals of the document control process are:

- Format documents according to consistent and defined standards
- Review and approve new documents
- Schedule review of existing documents
- Control of document versions and effective dates
- Review and approval of document changes
- Control document distribution and removal of obsolete documents
- Archive and protect obsolete documents

4.1. Hierarchy of Internal Operating Procedures

The hierarchy of controlled procedures at the laboratory is defined. These procedures and documentation are made available to promote consistency throughout the organization and to meet regulatory requirements. A list of relevant methods and procedures is located in Appendix E. The development of new procedures and the updating and reclassification of current procedures is an ongoing project.

4.1.1. Level 1 – *Quality Policy Manual* and Company Policies

The intent of these documents is to define "what" we do with emphasis on Executive and Management's responsibility for quality.

The purpose of the *Quality Policy Manual* is to provide a framework to outline the quality systems at the laboratory. Organizational charts, list of SOPs, a list of equipment, instrumentation, and personnel resumes are included as attachments to this manual.

- Executive Management is responsible for ensuring that adequate personnel, resources, and support are available to carry out the requirements of this *Quality Policy Manual*.
- Management is responsible for ensuring that SOPs or other appropriate documents are written and available to personnel to define the practices and systems which support these policies.
- All employees are responsible for conducting business in a manner which is compliant with quality and company policies and associated SOPs or other appropriate documents. Review of these policies and procedures must be documented.

Additional company policies are written to support and expand upon this *Quality Policy Manual*. These policies contain more detailed information about a subject with approval signatures executed at the Executive and/or Management level.

4.1.2. Level 2 – Standard Operating Procedures

The intent of these standard operating procedures is to define "who, what, where, and when." These procedures provide specific information for a process or topic so that the requirements outlined in this *Quality Policy Manual* and company policies can be achieved. The review and approval of these SOPs is performed at the director/manager/group leader level, including QA review and signoff, and the responsibility of these SOPs lies with the area or person directing the operation.

SOPs can apply to site-wide operations, the entire company, across multiple departments, or a specific operating area.

4.1.3. Level 3 – Work Instructions (at a departmental level)

The intent of these procedures or documents is to define in greater detail the specific "how to". The level of detail in these documents must be sufficient so any appropriately trained person can perform the task accurately. Examples include, but are not limited to standard operating procedures (SOPs); maintenance and calibration procedures; and the laboratory analytical methods. Departmental level procedures/documents are reviewed and approved at the manager or group leader level including QA review and signoff.

4.1.4. Level 4 – Quality Records

The intent of these documents is to provide documented evidence to support our quality systems and operations. Examples include but are not limited to, data notebooks/logbooks, and preformatted data recording forms.

4.2. Document Approval, Issue, Control, and Maintenance

The document control process ensures that documents are approved and adequate for use. It ensures that documents are readily available to personnel and at locations where essential operations are performed.

Procedures are available in electronic form on the company's intranet site through our document management system. The Document Control Group maintains this system in a current and accurate state. These procedures can be printed from this system for reference by employees as the corresponding task is being performed. <u>Prior to using a printed document, the employee must ensure that it is the current version</u>.

Each procedure is uniquely identified and includes effective date, revision identification, and page numbering (total number of pages). All documents are searchable and uniquely identified in the document management system.

Controlled policies, procedures, and work instructions are reviewed and approved by appropriate individuals and are formally issued and administered through the Office Services Group. The review and approval signatures are applied as electronic signatures through the document control interface. Application of the signature is through secure log-in and password and can only be applied by those designated for the review or approval of the individual document.

Word versions of each procedure can be accessed within the document management system by designated personnel within the Document Control group. A PDF copy is maintained on a separate limited access server as a back up to the system.

Procedures undergo scheduled periodic review to ensure that they are accurate, current, and compliant. The frequency of review is either annual or biennial, depending on the procedure. QA is the final signature on procedures which gives QA the authority to implement the procedure; the exception is the Quality Assurance procedures for which the Vice President or his designee is the final signature. Upon the effective date of new or updated documents, all copies of obsolete documents are removed from service. The original historical copy of each outdated/obsolete procedure is clearly identified as a historical version and maintained in a permanent archive file separate from any current versions. (Note: OH EPA is required to review all revised documents applicable to its certification prior to the document being made effective).

Interim amendments to procedures are not allowed. Any needed changes require a revision to the document.

4.3. Client-Supplied Methods and Documentation

Client documentation to support environmental testing at the laboratory is maintained in a centralized area. This information is organized by client/project in the Client Services/Project Management Group. Client documentation includes the following information depending on project size and scope:

- Client supplied analyte lists
- Client supplied project plans
- Client contract quality manuals with specified limits, QC criteria, etc.
- Communication/correspondence records which relate to testing requirements, interpretation of results, or reporting formats

4.4. Laboratory Notebooks, Logbooks, and Forms

Procedures are in place to ensure that all data is traceable, authentic, complete, and retrievable. The following general requirements outline our system for the issuing, control, and archival of laboratory notebook and logbooks.

- The administration of notebooks and logbooks is controlled by the Office Services Group. They maintain a master index to uniquely number and identify each book distributed.
- Notebooks and logbooks can contain blank or preformatted pages.
- Notebooks and logbooks are bound, uniquely identified and have sequentially pre-numbered pages.
- If notebooks or logbooks contain preprinted laboratory form pages:
    - A unique identification number is assigned to each form
    - Forms are approved by appropriate management personnel before they are put into use
    - Forms are reviewed on a routine basis to ensure they are still accurate and current
- Completed notebooks are returned to an archivist. Incomplete books are returned to Document Control:
    - Two years from the issue date
    - for employee specific notebooks – when the employee leaves the company
    - for project specific notebooks – when the project for which it was used is complete
- In specific situations, records are bound to create books at the time of archival (e.g., temperature charts).
- At the time of archival any page(s) in the notebook or logbook that does not contain data documentation is crossed-out or a statement is written on the last page used to note that the book is complete to prevent data from being entered at a later date.
- Notebooks and logbooks identified as requiring permanent archival are assigned a designated qualifier.

4.5. Control of External Documents

Hard copy versions of external documents are controlled through the form system.

External documents such as copies of the 40 CFR and ASTM methods are stored exclusively in the QA Department. QA also keeps applicable agency documents on file, these include, but are not limited to, the TNI (The NELAC Institute) and ISO 17025 standards.

Environmental methods from the EPA or Standard Methods are available in the QA Department, but the technical areas also have copies that pertain to the tests that they perform. Any external document that is maintained in these areas must be inventoried and listed on a controlled form. Some methods are available on-line and are accessed through the Internet.

It is the laboratory's understanding that the need to control external documents is to ensure that the most current version of a method is referenced or appropriate manual is being used. Regulatory methods are used as references by the laboratory and testing is performed as per written SOPs that fall under our existing document control system and have scheduled reviews. The scheduled review of SOPs is used to ensure that the proper version of a method is referenced. While using the most current version of an analytical method is our typical practice, there are specific client needs and accreditation rules that require previous versions of a method to be used.

The technical areas are responsible for ensuring that all manufacturers' manuals are current and available to analysts. The vendor provides instrument manuals when new equipment is purchased or existing instruments are updated. These manuals are kept with the instruments to which they are associated.

5. SAMPLE HANDLING

5.1. Sample Collection

It is the responsibility of the client to send us representative and/or homogeneous and properly preserved samples of the system from which they are drawn. The laboratory assumes that all multiple sample containers with the same designator/description and bottle type contain a homogeneous, representative sample. We also assume that it is acceptable to deplete one container and move to the next, without implications unless otherwise indicated by the client.

The laboratory provides the appropriate sample containers, required preservative, chain-of-custody (COC) forms, shipping containers, labels, and custody seals. The laboratory also provides trip blanks and analyte-free water for field blanks. Preparation of methanol containers for field preservation of volatile soil samples is available.

Sample containers are purchased pre-cleaned by the supplier. For pre-preserved bottles, each lot of preservative is checked for contaminants before use. This also serves as a check on the associated containers. An annual bottle lot check is performed to evaluate the cleanliness of any containers not already covered by the preservative checks. The evaluation is to assess cleanliness to the laboratories' detection limits. These checks are processed through the LIMS as samples. Results are documented through the LIMS Analysis Report.

The laboratory provides instructions with all bottle orders that define how to sample, preserve, store, and ship the samples prior to their delivery at the laboratory. These instructions inform the client of the importance of proper sampling and advise them that non-compliant samples are rejected or reported with a qualifier.

If samples are collected by the laboratory personnel, applicable sampling methods are in place to perform the sampling operation.

As samples are analyzed at the laboratory, there are times when additional sample volume is necessary to complete testing or perform retesting. If this situation arises, "additional sample" is requested by the laboratory and/or submitted by a client to supplement current work being performed within our facility. Additional sample received is either assigned a new laboratory sample ID number and/or a comment noted on the final report to state that additional sample was received, depending on the situation. It is our goal to provide accurate traceability between sample submission and when testing is performed.

5.2. Sample Receipt and Entry

5.2.1. Sample Receipt

Samples can be received at the laboratory 24 hours a day, 7 days a week, 365 days of the year. Receipt can occur in one of three ways:

- The laboratory courier services (i.e., Transportation Department)
- Personal delivery
- Commercial courier

All samples received for testing are delivered to the Sample Administration Department immediately upon arrival. This group is responsible for the unpacking and organizing of the samples. This process includes checking custody seals if present, paperwork agreement, signing the chain of custody, recording cooler temperatures, documenting the condition of containers, accounting for all sample bottles, and observing any safety hazards, and reporting any problems to Client Services for communication to the client. This receipt process is documented in the LIMS.

5.2.2. Sample Entry

As soon as practical after sample receipt, all samples are entered into our LIMS. Samples awaiting log-in are stored in temporary holding areas, at appropriate storage conditions to maintain sample integrity. Samples scheduled for Volatile analysis are stored separately. If there is doubt about the suitability of items received or if items do not conform to the description provided or the testing required is not clear or specified, the client is contacted and the conversation documented.

At the time of entry, the LIMS assigns a unique laboratory sample number to each sample. This number is sequentially assigned and a label is generated and is attached to the sample container.

Samples are tracked to the minute upon arrival. This allows the client to see exactly how long it took the samples to pass through receipt, unpacking, and entry.

A sample acknowledgement is generated from the LIMS per sample entry group. Upon request, a copy of the Acknowledgement may be sent to the client on the day following sample log-in to confirm sample receipt and entry. Internally, appropriate personnel audit all applicable sample entry and client paperwork.

5.2.3. Sample Preservation Check

Support personnel check and document preservation of non-volatile liquid samples after the samples have been entered into the LIMS and before they are placed into storage. Any checks of volatile samples are performed and documented at the time of analysis.

5.2.4. Sample Rejection Policy

Any time a sample is received in a condition that does not meet the method, regulatory, or client requirements, the condition of the sample is clearly documented through the LIMS on a sample administration documentation log or sample problem form. This information is forwarded to the CSR and the client is contacted to discuss the best course of action. The client is given the option to resample or have the sample analyzed and reported with a comment.

5.3. Sample Identification and Tracking

A sample label is generated for each sample and, in addition to the assigned unique sample number, the following information is displayed on the label: client name, sample identification assigned by the client, sample collection information, bottle code ID, analyses requested, and any applicable notes to laboratory personnel. The label includes a barcode that is used to track this information about the sample/container and to trace each container's storage location.

To ensure accountability of results, the unique sample number assigned is used to identify the sample in all laboratory data documentation, including notebooks, instrument printouts, and final reports. The sample number is also used to identify additional containers of the sample that are created during sample preparation and analysis (e.g., subsamples, extracts, digests). Each container for a sample is tracked through the bottle code and an A.B.C… designator when there are multiple containers of the same type received. The link of the bottle code and sample number is used to identify which specific container was used for testing.

Routine sample tracking is documented using the Laboratory Sample Analysis Record (LSAR) which captures the date, time and analyst for each sample preparation and analysis. The information is compiled in the LIMS using electronic record tracking from the data upload and entry functions. This displays, per sample, on each Analysis Report.

5.4. Sample Storage

After sample entry, samples are placed in an assigned and identified storage location until needed for analysis. Room temperature, refrigerated, and frozen storage are available and samples are stored in accordance with regulatory, method, or client direction. The LIMS is used to assign storage locations, which assists in the orderly storage of samples. Sample storage locations are secured and monitored for accurate temperature control. Samples are stored separately from standards and reagents.

The central locked storage facility contains 3430 square feet of refrigerated space, including 2740 square feet equipped for automated sample retrieval. Samples are stored in the laboratory's automated storage and retrieval system (ASRS) or other assigned storage locations (separate volatiles areas) within the laboratory until completion of all analytical work.

When a sample is scheduled for analysis, the analyst requisitions it through the LIMS from the storage area. Barcode readers are used for LIMS documentation of the movement of the samples between storage and the laboratories. To maintain the integrity and security of the sample(s), the aliquot needed for analysis is removed and the sample(s) returned to storage as soon as possible

5.5. Sample Return/Disposal

Samples remain in the storage area following analysis until the testing results have been verified and the analysis report has been generated. On a regular basis, a list is generated from the LIMS that summarizes samples that can be removed from the storage area. At a minimum, water samples are held for 1 week and soil samples for 2 weeks after reporting before they would be eligible for disposal. Samples are either returned to the client or disposed of in accordance with local, state, and federal regulations. Removal of the containers from storage for permanent discard is also documented in the LIMS using the barcode reader.

Due to the variety of waste generated at the laboratory, several general categories of wastes and waste streams have been identified. Identification of waste occurs through information provided by the client, historical information, and/or analytical testing. The laboratory uses a sophisticated, computerized LIMS, which includes programming to assist in the identification of hazardous wastes at time of discard.

For reasons of environmental liability, client confidentiality, proprietary product formulation protection, etc., wastes generated by the laboratory are disposed of via incineration at EPA licensed facilities. The three exceptions include bulk neutralized acid waste, COD analysis waste, and lab pack waste containing mercury. None of these exceptions involve containers with client information.

5.6. Legal Chain of Custody

Samples being tested for litigation require locked storage and documentation of the time and personnel responsible when the sample was not in storage. This level of documentation is available upon client request and procedures to define these activities are in place and include the following:

- A chain-of-custody document is initiated for each bottle type submitted by the client.
- The chain of custody is signed each time the sample is stored, removed from storage, or changes hands.
- Clients requesting internal chain-of-custody documentation receive the completed forms after the analysis is complete.

5.7. Representativeness of Samples

Each analytical method provides specific procedures for ensuring that a representative aliquot of the sample is used for testing. These procedures include shaking water samples and mixing solid samples prior to removing an aliquot for testing. Analysts are also instructed in sampling techniques that prevent contamination of samples.

6. TECHNICAL REQUIREMENTS – TRACEABILITY OF MEASUREMENTS

6.1. Reagents and Solvents

The reliability of our analytical results can be directly affected by the quality of reagents used in the laboratory. Procedures are in place to address labeling, storage, and evaluation of these materials. Reagents and solvents include acids, bases, indicators, buffer solutions, colorimetric solutions (CS), test solutions (TS), and volumetric solutions (VS). The *Chemical Hygiene Plan* provides safety information in regard to the storage and handling of laboratory chemicals. All reagents are stored separately from samples.

Each analytical method includes a list of reagents needed to perform the test. Reagents/solvents are fully described, including chemical name, purity, and description of preparation. Where applicable, shelf life and storage conditions are also listed. The laboratory is responsible for checking that new supplies meet the method requirements. These checks are documented and maintained.

Departmental management ensures that an adequate inventory of reagents needed to perform testing is maintained. Reagents received at the laboratory funnel through the Shipping and Receiving Department and deliveries are verified and labeled with the date of receipt. Large volume reagents (e.g., solvents, acids) are stored in a building outside of the laboratory until needed for use.

In addition to the name and concentration of the reagent, all reagents are labeled with the manufacturer/vendor, storage conditions, the date opened, and an expiration or re-evaluation date. Before using any reagent, the analyst must ensure that the material was properly stored and labeled. If a reagent has passed its expiration date or shows signs of deterioration, the material is not to be used in the laboratory and must be discarded or segregated as expired. In some method development or research work, expired reagents may be used. These must be labeled as such or stored in a designated location.

If a re-evaluation date is reached before a reagent is completely consumed, the reagent will be inspected by physical observation for signs of degradation. Physical signs include, but are not limited to, color changes, clumping or other texture changes for solids and formation of precipitate in solutions. This evaluation is performed by an experienced chemist or microbiologist.

Subsequent reagent solutions or mixtures prepared at the laboratory are fully documented in a logbook and labeled to include: unique name, concentration, date prepared, name of analyst who prepared the reagent, storage conditions or reference to the logbook containing these details, and expiration/re-evaluation date. The information recorded allows these solutions to be traced to the original stock solution. The reference to the logbook is intended for use on containers that are too small to clearly document all of the information.

All reagent certificates and MSDSs are retained by the laboratory.

6.2. Media

Within the microbiology laboratory, procedures are in place to address preparation, labeling, storage, expiration, documentation, and quality/sterility evaluation requirements for these materials. These procedures are described in Appendix K.

6.3. Calibration Standards

Written calibration procedures are required, where applicable, for all instruments and equipment used in the laboratory. The source and accuracy of standards used for calibration purposes are integral to obtaining quality data. Requirements for calibration are provided in each analytical method including specifications for the standards used. Where available and practicable, calibration measurements made by the laboratory must be traceable to national standards of measurement (e.g., NIST). Certificates of Analysis (C of As) are maintained for each material, as applicable.

The laboratory's ISO 17025 and DoD accreditations require calibration materials to be certified and purchased from a reference material producer accredited to ISO Guide 34 and ISO 17025, when available. A list of accredited suppliers is maintained by QA. This is applicable to the tests under these scopes of accreditation and can be met through the stock standards used for calibration; a standard processed under the calibration such as an ICV or LCS; or comparison to a separate reference material at a frequency defined by at the test level (i.e. annually).

Standards are usually purchased from commercial supply houses either as neat compounds or as solutions with certified concentrations. Upon receipt at the laboratory, the material must be labeled with the date of receipt. The accuracy and quality of these purchased standards is documented on a C of A and these certificates are maintained on file in the laboratory. .

Most solutions and all neat materials require subsequent dilution to an appropriate working range. Records of all standard preparations include the dilution(s) made and a reference to the original and any intermediate mixtures. Solutions are labeled according to laboratory procedures and assigned unique names or code numbers that provide traceability to the original components.

All standards are stored separately from samples and in conditions as stipulated by the method or vendor (refrigerator, freezer, room temperature, etc.).

Each new preparation of standard is tested for integrity by comparison to standards from another source or previously prepared solutions. Standards are not used for sample analyses in the laboratory past their expiration date. In some method development or research work, expired standards may be used. These must be labeled as such or stored in a designated location.

6.4. Equipment and Instrumentation

The laboratory is equipped with all equipment and instrumentation required for testing the scope of work which it supports. All equipment and instrumentation is maintained in proper working order. A master list of our equipment and instruments is maintained by our accounting department and includes the date received and the condition at receipt (new v. used). Our major equipment and instrumentation capabilities are summarized in Appendix F. In addition, we have numerous other instruments including pH meters along with support equipment such as ovens, incubators, centrifuges, balances, etc.

6.4.1. General Requirements

- Equipment/instrumentation is assigned a unique designation. This unique number or system identification is used to track the equipment or instrument within data documentation.
- A maintenance logbook is established in conjunction with installation and is readily available to document all incidents and/or routine maintenance processes that pertain to the equipment or instrument as they occur. The corrective action taken, the date that the equipment/instrument is returned to service, and performance checks performed is documented.
- All test, measuring, and inspection of laboratory systems, equipment, and instrumentation used at the laboratory is routinely calibrated and maintained in accordance with applicable standard operating procedures.
- A member of the technical group, or designated individual, performs routinely scheduled maintenance and calibration of laboratory equipment and instruments as required by laboratory procedures. These activities are documented.
- If appropriate standards or expertise for calibration or maintenance are not available in-house, the operation is conducted by an outside service firm, with appropriate accreditation. Certificates or other data generated by the service firm are reviewed by applicable the laboratory personnel to verify acceptability. This information is maintained on file.

- All equipment or instruments taken out of service are tagged “DO NOT USE”. The following minimum information is documented on the tag:
  - Date taken out of service
  - Employee who took the equipment/instrument out of service
  - Reason for tag-out

6.4.2. Standard Operating Procedures

Information regarding operation, maintenance, and calibration of equipment and instrumentation is found in the respective SOPs. The procedures include, where applicable, a routine schedule for preventive maintenance and calibration along with acceptance criteria and remedial action to be taken in the event of failure. These procedures are maintained in the document control system and reviewed on a regular basis to verify they remain current and accurate. Vendor supplied manuals are also available to provide additional information in regard to operation and maintenance.

6.4.3. Maintenance

- Instrument and equipment maintenance is performed as either a preventive or corrective operation.
- Preventive maintenance procedures and schedules are developed for each instrument or piece of equipment, where applicable. Preventive maintenance operations are performed by an analyst, equipment maintenance specialist, or contracted (manufacturer’s representative or service firm personnel). Documentation is maintained in the associated maintenance log for the procedure(s) performed as part of the preventive maintenance operation. It is the responsibility of departmental management to ensure that a preventive maintenance schedule is addressed by a procedure where appropriate and is followed.
- Corrective maintenance is performed by an analyst, equipment maintenance specialist, or contracted (manufacturer’s representative or service firm personnel) in response to indications of equipment or instrument malfunctions. The unit must be clearly tagged as out of service. All corrective actions taken to bring the unit back into service are documented in the associated maintenance log. After repair, further notation is made in the log regarding the functional status. Calibration activities are performed, as applicable, and documented in the log before the unit is placed back into service.
- A supply of commonly needed replacement parts is maintained by the laboratory.
- A preventive maintenance schedule for major instruments is given in Appendix G. Maintenance of equipment used in microbiological testing is documented in Appendix K.

6.4.4. Calibration

- Calibration is the establishment of, under specified conditions, the relationship between the values/response indicated by a measuring instrument or system and the corresponding known/certified values associated with the standards used. Some types of calibrations are performed with a set frequency (e.g. daily) while others provide intermediate checks to ensure that the instrument response has not changed significantly.
- All measuring and testing instruments and equipment having an effect on the accuracy, precision, or validity of calibrations and tests are calibrated and/or verified on an on-going and routine basis. Methods for calibration of instruments and equipment vary widely with the nature of the device and the direction given by analytical procedures, departmental procedures, manufacturer recommendations, or regulatory requirements. Frequency of calibration can also depend on additional factors including ruggedness of the instrument or equipment and the frequency of use.
- Departmental management is responsible for developing or acquiring written calibration procedures for the types of instruments and equipment employed within their area, as applicable. Procedures address the following aspects: description of the calibration method, frequency/schedule for calibration, acceptance criteria, and corrective actions if failure occurs.
- Calibration information is recorded in a logbook that is associated with the instrument/equipment and/or a calibration certificate is maintained and/or data is generated and filed to document the activity.
- Calibration measurements are traceable to national standards of measurement (e.g., NIST) where available. Physical standards, such as NIST certified weights or thermometers are re-certified on a routine basis. Calibration certificates are maintained on file, where applicable, to indicate the traceability to national standards of measurement. These physical standards are used for no other purpose than calibration.
- Calibration failures are documented in the associated logbook and/or within the data generated from the instruments or equipment. Management personnel perform an evaluation and review of failures and assess any potential impact the failure might have on previously generated data. The laboratory utilizes “real-time” controls to ensure the accuracy of the data. These controls are used to assist in assessing the impact of the situation.
- After repair, adjustments, or relocation that could affect instrument response, calibration/verification activities are performed, as applicable, before the unit is returned to service.
- Analytical data is not reported from instrumentation or equipment with noncompliant calibration unless the client has agreed to receipt of the data and appropriate comments are applied to the final Analysis Report.
- A summary of the calibrations for most major instruments and equipment is given in Appendix H.
- Procedures for calibration of equipment used in microbiological testing are documented in Appendix K.

6.5. Computerized Systems and Computer Software

6.5.1. Computer Usage

The laboratory provides computer equipment for employees to use as a tool in performing their work. Computer equipment is the property of the laboratory and used in accordance with defined terms and conditions. Our goal is to provide standard hardware and software that meets the needs of the user. The majority of desktop PCs in use are standardized using cloning software.

6.5.1.1. Physical security of computer systems – It is company policy to protect computer hardware, software and data documentation from misuse, theft, unauthorized access and environmental hazards. The corporate computer area and computer "Hot-Site" is locked and requires identification/building card access. All vendors, contractors, or other visitors must be escorted into this area. Controlled access of the laboratory buildings is outlined in Section 3.2.

6.5.1.2. Passwords – Passwords are important for the security of company data and resources. The laboratory's primary network operating system is Windows and each employee must have a user ID and password combination to access the system. Other computer systems also require a user ID password combination for access. The following procedures apply regardless of which system(s) is being utilized:

- Passwords must be created as strong passwords in accordance with Eurofins Password Policy and must be kept confidential.
- Users must log-out of a system when not in use to prevent unauthorized access. In addition, the network access will automatically timeout after a set period of inactivity, requiring a user to log-in to access the system.
- Forgotten passwords can only be reset by the IT Department or by an appropriate System Administrator.
- Network and LIMS passwords automatically expire every 90 days. The computer prompts a user to change the password when the expiration date nears.

6.5.1.3. Computer viruses – The laboratory centrally and continuously monitors the computer network for computer viruses. Employees are prohibited from using the company's computer equipment to propagate any virus. Anti-virus software is employed to detect viruses on the Windows network. A notification is sent when there is a particularly dangerous or virulent data destructive program that employees need to be aware of. However, employees are instructed to always be cautious and observant even if there are no current warnings. Employees must report any virus concerns to the anti-virus administrator or IT Management as soon as possible. Employees who share files between their home computer and the laboratory should install anti-virus software on their home computer. If an employee does not have such software, the laboratory can suggest various no-cost anti-virus software products.

6.5.1.4. Internet and e-mail system – The e-mail system is used primarily for the laboratory's business purposes. The *Eurofins Lancaster Laboratories' Employee Handbook* provides additional information in regard to system usage. Employee access to the internet is restricted to those employees who have a business need for it. All employees have access to e-mail. Access to the internet is configured through a user's Windows network account. All internet and e-mail activity is subject to monitoring. All messages created, sent or received over the internet are company property and can be regarded as public information. E-mail and website filtering software is utilized.

6.5.1.5. The laboratory's Intranet (LabLinks) – The Intranet is designed to be a useful tool for employees to acquire company information and to provide a company communication system. The *Eurofins Lancaster Laboratories' Employee Handbook* provides additional information in regard to usage.

6.5.1.6. Software policy

- Copyright laws protect software, and the laboratory's intent is to abide by all software agreements.
- Software purchases must be formally requested and approved by management and/or validation personnel, as necessary.
- All software is used in accordance with applicable license agreements.
- Employees are not to install any software on computer(s) unless authorized by the IT Department.
- Software upgrades must occur in accordance with applicable change control procedures.
- Employees must not give software to outsiders (e.g., clients, contractors), unless approval is granted by management.
- Users must not make copies of any licensed software or related documentation without permission. Any user that illegally reproduces software is subject to civil and criminal penalties including fines and imprisonment.

6.5.1.7. Computer system backup, data restoration, and data archival – Mission critical data is stored on several computers throughout the laboratory. These computers are connected through the local area network. Selected files on these computers are backed up using an enterprise-level backup software program. The objective of this backup is to have the ability to restore data after a total loss (e.g., theft, fire, natural disaster). Procedures are in place to perform data backups and restores.

6.5.1.8. Remote access to computer systems – Employees are able to remotely connect to the laboratory computer systems through an encrypted (SSL) login. When logging in, users are authenticated with their Windows Active Directory account and password.

6.5.1.9. Electronic data – Instrument software used for processing data must, when available, have password access and audit trails enabled. All data processed through the LIMS includes tracking features to document who and when data was entered and/or changed.

6.5.2. System and Software Verification – The laboratory LIMS is an in-house developed program. The design and updates to the system are written following typical Software Development Life Cycle (SDLC) processes for initial planning through testing and implementation. Before a new computer system/program or significant modification of an existing system/program is implemented in our laboratory, it is necessary to generate a plan to specify the level of documentation required for the new or updated application. Developers, affected area management, and QA personnel review and approve the documentation.

The following are the typical documents that are compiled for these updates:

- System Change Request document – used for documenting/tracking changes in the programming
- Requirements documents – Describe the required system functionality and specifications
- Design documents – System overview, screen design, report layout, data description, system configuration, file structure and module design
- Testing documentation for system development/verification – Structural testing of the internal mechanisms and user testing of the installation and system qualification
- Periodic Review documents – periodic retesting of the programs is performed to ensure that the systems remain in a validated state.
- Retirement documents – used for documenting when a program is taken out of service
- Standard operating procedures and/or manuals

6.6. Change Control

Procedures are in place to define how to maintain facilities, processes, instrumentation, equipment, computerized systems, and computer software in a validated or controlled state through a plan of change control. Successful changes require a thorough evaluation and testing for potential consequences prior to implementation. Planning, authorizing, testing, and reviewing of proposed changes are documented throughout the change process. Changes are planned or could be made in response to an emergency situation. The following “general” elements apply to changes, as appropriate:

- Request to perform a change
- Evaluation of a change
- Authorization of a change request
- Preparation for an authorized change
- Execution and testing of the change
- Documentation of the change
- Approval of the change
- Change implementation and follow-up (Formal approval of the change is performed by designated responsible individuals and QA.)

6.7. Labware Cleaning

Dedicated washroom personnel support the laboratory operations in regard to labware preparation, washing, rinsing, and drying. Labware can include, but is not limited to glassware, plastic ware, utensils, and pipettes. Procedures are in place to outline the washing process for each type of labware. Most labware is cleaned using a Miele glass washing machine. Some labware is still washed by hand and either air-dried or dried in specifically designed ovens.

Most of the labware used in the laboratory is “common or non-dedicated” labware (common to a department), but some of the labware used in the laboratory may be identified as “dedicated” labware and exclusively used for certain analyses. Examples of dedicated labware include glassware used for high resolution mass spectrometer (HRMS) and low level mercury testing. This labware is isolated and cleaned only with “like” labware.

All glassware is class A and 100% visually inspected for breakage (e.g., cracks, chips), cleanliness, and dryness before being returned to the laboratory for use.

Generally, each test has controls in place to ensure that results are not adversely affected by unclean labware. These controls include blanks to detect positive interferences and recovery controls to detect negative interferences.

7. PURCHASING EQUIPMENT AND SUPPLIES

7.1. Procurement

It is the responsibility of management personnel within each department to ensure that the appropriate supplies are available and/or ordered with sufficient lead-time to perform analytical testing or to provide support to the testing areas. The individual technical departments have trained personnel who enter the supply order into the company’s requisition software system. The selection of these products is based on technical input at the analyst level and authorized by technical departmental management. The Purchasing Department maintains an ordering system in which purchase requisitions are managed. Common laboratory items (e.g., beakers, flasks, reagents) are ordered directly through the Purchasing Department. Purchase orders over a specified dollar amount require verification from the appropriate member(s) of the Executive Management Group before an order can be placed.

Upon receipt of an order, the Purchasing Department checks the order to ensure that all items were received as specified. Products that have specific storage requirements are taken to the technical area upon receipt. It is the technical area’s responsibility to ensure that the product is stored in the appropriate manner. Any checks on the quality of the materials received for use in a specific test are the responsibility of the laboratory using them. This is based upon the experience of the laboratory with the usability of the product. Generally, each test has controls in place to ensure that test results are not adversely affected by the materials.

Any problems encountered when using a material in the laboratory must be brought to the attention of the Purchasing Department and/or Quality Assurance, as applicable, to ensure that follow-up and corrective action occur.

7.2. Supplier Evaluation

Procedures are in place to evaluate vendors who supply us with: new equipment, instrumentation, computerized systems and computer software; commercially purchased glassware, including sample bottleware, reagents, chemicals, solvents, gases, media, and standards; and contracted and subcontracted services.

The laboratory strives to ensure that our suppliers continually improve their quality systems and we reserve the right to purchase from suppliers of our choice in order to best fulfill the needs of our clients and our business. When directed by a client to purchase from a specific supplier, we will do so. In this instance it is the client's responsibility to "qualify" the specified supplier. We attempt to purchase from businesses that we have an established purchase history or have previously acquired information regarding the supplier's quality programs.

The laboratory does not evaluate every supplier. Risk assessment is taken into consideration when making this decision. The risk assessment analysis includes system, material, services, and number of samples or operations the purchase may affect or support. Evaluations are not required for computer operating systems, utilities, toolsets, or systems software. They also are not required for any off-the-shelf configurable software package that has an extensive market performance history (e.g., Microsoft Word, Excel, Access).

Additional quality systems are also in place within the laboratory to further verify and support the materials used:

- C of A for every lot of purchased prepared microbiological media and for purchased chemicals, where available, are reviewed and maintained on file.
- For most chemical analyses a blank and a recovery check are routinely analyzed and serve as real time suitability testing of the reagent being used.
- Microbiological testing often employs positive and negative controls, which serve as real time control checks.

8. ANALYTICAL METHODS

8.1. Scope of Testing

Samples are analyzed in accordance with official published methods, standard methods, client-supplied methodology, or validated in-house methods. We recognize the importance of providing verifiable results and, therefore, use methods accepted and approved by a broad range of federal and state regulatory agencies. In order to meet the needs of our clients as well as regulatory agencies, the laboratory sometimes needs to support different versions of the same method (i.e. SW-846 8081A and 8081B). The laboratory can also assist in developing and validating analytical methods for specific products and matrices. All methods submitted for our review, as well as all analytical results, are considered confidential.

The laboratory performs a wide variety of environmental testing in support of the Safe Drinking Water Act (SDWA); Clean Water Act (CWA); Resource Conservation and Recovery Act (RCRA); Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA/Superfund); and the Clean Air Act (CAA). Methods approved by ASTM are also used in testing. Potable water, wastewater, soil, sediment, sludge, oils, biota, tissue, soil gas, and air are among the matrices typically analyzed.

Our areas of expertise include:

Standard Services	Specialty Services
• Volatiles • Semivolatiles • Metals • Pesticides/PCBs/Herbicides • Petroleum Analysis • Waste Characterization • Non-potable Water Testing • Drinking Water • Soil and Surface Water Testing • Vapor and Air Analysis • Sediment and Tissue Testing • Method Development • Shale Oil & Gas Analysis •	• Low-Level Mercury • Dioxins & Furans • Hydrazines and NDMAs • Perchlorate • 1,4-Dioxane • Pharmaceutical Manufacturing Industry (PMI) Wastewater • EPA Method 25D • PCB Congeners • Explosives • Alkyl PAHs, Alkanes, Biomarkers • PFC (PFOA) • Organic Acids • Aldehydes •

A list of tests covered under the laboratory's NELAP accreditation can be found in Appendix I. All current certificates and scopes of accreditation are available on the laboratory's website at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/. A complete list of the tests routinely performed by the laboratory can be found in the *Schedule of Services*.

8.2. Analytical Test Methods

Each laboratory is required to establish and maintain analytical procedures for all the methods referenced in standard testing. The sources for these methods include the most recent versions of these compendia:

- Test Methods for Evaluating Solid Waste, SW-846
- Standard Methods for the Examination of Water and Waste
- Code of Federal Regulations, Chapter 40
- EPA 100 through 600 and 1600 series methods
- ASTM

The test methods used are re-written into a laboratory standard format, which provides consistency in content and allows the analysts to locate the information they need quickly. Procedures are in place to define the format, required approvals, and the control system for these method documents. Elements to address in SOPs are based on TNI and DoD required sections. The format requirements include, but are not limited to, the following:

- Uniquely assigned method number, which is used extensively for scheduling and documentation purposes.
- Reference to the original source of the method (e.g. SW-846)
- Scope
- Basic Principles
- Apparatus and Reagents
- Personnel Training and Qualifications
- Safety and Waste Disposal
- Detailed procedure (including any method modifications)
- Calculations
- QA/Quality Control
- Revision Log
- Approval signatures from technical management and QA personnel

Analytical methods are maintained as controlled documents to ensure that analysts are always working with the most current version and are reviewed periodically for accuracy.

8.3. Client Supplied Methods

Most of the client-supplied method requirements presented to us involve achieving specific quality control criteria, limits of quantitation (LOQ), and/or method detection limits (MDL) using standard EPA methods. These requirements are communicated to the appropriate technical groups prior to the project start up. Each technical group evaluates the scope of work and the requirements to ensure the criteria can be met using the standard EPA method. The data is monitored to ensure the criteria are met throughout the project. The CSR notifies the client if there is a more appropriate method available or if the client's criteria cannot be achieved on a certain sample matrix (i.e., due to matrix or dilutions).

Occasionally, we are asked to transfer a non-standardized method from a client into our lab or to develop a new method, when one is not available. In the case of a method transfer, we set up the client's method and perform some initial evaluation. After the initial evaluation, we may make recommendations on how to improve method performance. If the method appears to be adequate, we determine linearity, specificity, precision, accuracy, MDL, and LOQ by performing calibrations, analyzing method blanks, and carrying out method detection limit and quad studies.

In the case of method development, we work with the client and/or data user to determine the level of validation required ensuring that the method meets its intended purpose. In addition to the elements above, we also determine standard and sample stability and robustness depending on the scope of the project. Typically, a standard operating procedure is written and submitted to the client with the results of the validation. These steps are completed prior to analysis of field samples. Data related to the setup of the method are archived.

8.4. Method Validation

Before new or revised analytical methods are authorized for routine use in the laboratory, validation data is required to demonstrate that the method as performed in our laboratory and analysts performing it are capable of meeting data quality objectives for precision and accuracy. A procedure is in place to outline this process.

Many methods published by USEPA include instructions for performing an initial demonstration of capability, which typically consist of determining the method detection limit and analyzing fortified samples in quadruplicate. This demonstration is performed and compared to acceptance limits for precision, accuracy, and detection limits, when available.

Methods that do not include specific validation requirements are validated by analyzing fortified samples or standard reference materials in replicate. The results of these analyses are used to assess accuracy and precision. Results of validation studies are documented and subject to review and approval by technical and QA management.

8.5. Procedural Deviations

Analysts are required to follow a documented method for all tests performed. Procedures are in place to ensure that deviations from analytical methods are documented, approved, and justified in an appropriate and consistent manner (Note: Deviation from the OH EPA approved SOPs is not permitted). We classify method deviations as either being a planned deviation or an unplanned deviation. In general, the following information is captured to document both types of situations:

- Description of the deviation
- Reason or justification for the deviation
- Impact the deviation had on the testing
- Signature/date of analyst performing the test
- Signature/date of Quality Assurance and Laboratory Management approving the deviation
- Signature/date of client approval, if necessary

Deviations to written procedures are documented in raw data records or through the ICAR (Investigation and Corrective Action Report) system. Both types of documentation require management and QA review and approval.

9. INTERNAL QUALITY CONTROL CHECKS

9.1. Laboratory Quality Control Samples and Acceptance Criteria

Quality control (QC) samples are analyzed with each batch of samples to demonstrate that all aspects of the analysis are in control within established limits of precision and accuracy. Management is responsible for ensuring that QC is analyzed as required by the referenced method. Each analytical SOP specifies (or cross-references another procedure) the type of QC sample, frequency of analysis, acceptance criteria for QC sample results, and corrective action to be taken if QC sample results fall outside of the acceptable range.

QA staff, at the direction of the technical department, must program the LIMS with the acceptance criteria for each QC type (other than blanks). The acceptance criteria are based on statistically generated limits from historical laboratory data, on method defined limits, government agency recommendations, or on client/project specific limits.

These limits are used to flag samples that are out of specification.

The types of QC samples and the information each provides are discussed in the following paragraphs.

Quality control checks used for microbiological tests can be found in Appendix K.

9.1.1. Blanks - A blank is a designated sample designed to monitor for sample contamination during the analysis process. The blank consists of a clean matrix (i.e. reagent water, Ottawa sand, glass beads, Teflon chips) taken through the entire sample preparation and analysis process. The blank and field samples are treated with the same reagents, internal standards, and surrogate standards. Ideally, blanks demonstrate that no artifacts were introduced during the analysis process. The specific acceptance criteria for each test are usually based on the required reporting limit (MDL or LOQ).

9.1.2. Surrogates - Surrogates are organic compounds, which are chemically similar to the analytes of interest but are not naturally occurring in environmental samples. When required by the analytical method, surrogates are spiked into all the field and QC samples to monitor analytical efficiency by measuring recovery on an individual sample basis. The percent recovery is determined and compared to the acceptance criteria.

9.1.3. Matrix Spikes - A matrix spike sample is created by fortifying a second aliquot of a water or soil sample with some or all of the analytes of interest. Blanks are not used for matrix spike QC. The concentration added is known and compared to the amount recovered to determine percent recovery. Matrix spike recoveries provide information about the potential matrix effects on the data. Matrix effects can cause results to be outside of the acceptance criteria.

9.1.4. Laboratory Control Samples - Laboratory control samples (LCS) are samples of known composition that are analyzed with each batch of samples to demonstrate laboratory accuracy. Laboratory fortified blank (LFB) is another term used to describe a LCS. The samples are clean samples fortified with known concentrations. Percent recovery is calculated and compared to acceptance criteria.

9.1.5. Duplicates and Matrix Spike Duplicates and Laboratory Control Sample Duplicates - A duplicate is a second aliquot of a sample that is treated identically to the original to determine precision of the test. To compare the values for each analyte, the relative percent difference (RPD) is calculated by dividing the difference between the numbers by their average. Precision for analytes that are not typically found in environmental samples (i.e., organic contaminants) is determined by analyzing a pair of matrix spike duplicates, defined as two spiked samples and comparing the RPD for the spiked compounds. The acceptance criteria are described as a maximum for the RPD value.

9.1.6. Internal Standards - Internal standards are organic compounds, which are chemically similar to the analytes of interest but are not naturally occurring in environmental samples. When required by the method, internal standards are added to every field and QC sample after extraction but prior to analysis. Comparison of the peak areas of the internal standards is used for quantitation of target analytes. Internal standard peak area and retention time also provide a check for changes in the instrument response. The acceptance criteria are stipulated in the analytical method.

9.1.7. Serial Dilutions - A serial dilution is the dilution of a sample with sufficiently high concentration by a factor of five to check for the influence of interferents. This QC check is performed for inorganics analyzed by ICP or ICP-MS. When corrected by the dilution factor, the diluted sample result must agree with the original sample within method specified limits.

9.1.8 Interelement Correction Standard – Analyzed to verify interelement and background correction factors. A solution containing both interfering and analyte elements of known concentration is analyzed at the beginning and end of each analytical run or a minimum of twice per 8 hours.

9.1.9. Second Source Check - A second source check is analyzed using either the LCS and/or an Initial Calibration Verification (ICV). The second source is a standard that is made from a solution or neat purchased from a different vendor than that used for the calibration standards. For some custom mixes, the same vendor but a different lot and preparation is used. This ensures that potential problems with a vendor supply would be evident in the analysis. Some tests use the continuing calibration verification standards as a second source from the initial calibration.

9.2. Quality Control Sample Frequency and Corrective Action

Each analytical method defines the frequency for the required QC samples and the corrective action required when a QC result fails to meet the acceptance criteria. A summary is provided in Appendix J.

The QC acceptance criteria are available to analysts in the laboratory. If the method reference requires the use of specific limits then the laboratory uses the published limits that are documented as part of the analytical method. Many methods require that each laboratory determine their own acceptance criteria based on statistical data obtained from performance of the method. In these cases, the limits are available to the analysts and are entered into the LIMS described below. Statistically determined acceptance criteria are subject to change as the laboratory recalculates its control limits. Due to their dynamic nature, acceptance criteria are not included in this manual.

The results of all quality control samples are entered into the LIMS in the same way as the results of client samples. The LIMS compares the individual values with the acceptance limits and identifies quality control sample results that are out of specification. If the results are not within the acceptance criteria, corrective action suitable to the situation must be taken. This includes, but is not limited to, checking calculations, examining other quality control analyzed with the same batch of samples, qualifying results with a comment stating the observed deviation, and reanalysis of the samples in the batch.

Each month, a summary of all QC entries (except blanks and surrogates) is generated from the LIMS. This summary is reviewed by QA staff and evaluated for changes in data that may indicate that an analysis is trending towards an out-of-control situation. The technical department is notified if a trend is observed.

The laboratory allows for marginal exceedances based on the number of analytes in the LCS. The exceedances are carefully monitored so that any systemic problems would be identified and corrective action taken. If the LCS is being reported based on the marginal exceedance allowance, a comment is added to the analytical report. Note: The use of marginal exceedance is not allowed for OH VAP work.

9.3. Quality Control Charts

The LIMS quality control system is used to report QC data to clients, to collect data for assessment of precision and accuracy statistical limits, and to generate control charts. Control charts are accessible to all employees through the LIMS interface. The system charts results from blanks, surrogates, matrix spike/matrix spike duplicates, duplicates, and laboratory control samples/laboratory control samples duplicate. These charts provide a graphical method for monitoring precision and bias over time. They can be used to detect quality problems by observation of patterns. QA staff uses the charts in conjunction with a LIMS generated monthly QC trend report to evaluate potential data trends.

9.4. Measurement Uncertainty

(ISO 17025) "All uncertainty components which are of importance in a given situation shall be taken into account using appropriate methods of analysis" (5.4.6.3). This means the laboratory must determine the uncertainty contribution of all steps in the testing process such as equipment, calibration, standards, reagents, preparation, cleanups, etc. Since, in most methods, the laboratory control sample (LCS) goes through the entire process of preparation to analysis; all factors that would contribute to uncertainty is evident through the LCS results. LCSs are performed with every batch of samples where appropriate for the method. Tests that do not have LCSs (i.e. TCLP; paint filter test), are evaluated on a case-by-case basis by taking into account the uncertainty of each of the steps taken to perform the test.

Measurement Uncertainty reports are generated by each technical department on an annual basis using a LIMS program and submitted to QA. Measurement Uncertainty is calculated as two times the standard deviation of the LCS recoveries for the group and date range of data points selected for all applicable methods. This is reported as a percentage. It is not necessary to apply or report the uncertainty value with sample results. When a client requests the measurement uncertainty it is applied by multiplying the determined analyte concentration by the uncertainty percentage.

10. ASSURING QUALITY OF TEST RESULTS

10.1. Data Management

At a minimum, data management is initiated when the laboratory receives the samples from the client. More often the process begins with client communication of their needs and requirements for a specific project and/or testing. When requested, bottle orders for the client's sampling efforts are generated through the LIMS by the CSR. The CSRs are responsible for entering the information in the sample set up function of the LIMS. Upon receipt of the samples a unique tracking number for the sample group and the samples within the group is generated based on this information. At this point, the LIMS becomes an integral part of tracking the samples through laboratory operations. The flow of data from the time samples enter the laboratory until the data is reported is summarized in the following table:

Sample and Data Flow

Action	Personnel Involved
Bottle orders generated upon request • Bottles packed and shipped to the client under chain of custody documentation	Client Service Representative Bottles Preparation
Sample received at Lancaster Labs • Unpacked and reconciled against the client paper work or COC • Sample Entry Documentation log completed	Sample Registration
Sample is entered into the LIMS • Lab ID number assigned • Analyses entered • Storage location assigned • Electronic record of sample number • Labels generated • Acknowledgement printed (record of samples received and analyses entered)	Sample Registration
Preservation checks performed Sample stored in assigned location (refrigerator, freezer, etc.) • Electronic record of sample #, bottle code, and location	Sample Registration
Acknowledgment sent to client (when requested)	Sample Registration
Samples requisitioned and removed from storage for analysis • Electronic requisition of sample number by bottle code • Necessary aliquot taken • Remaining sample returned to storage	Sample Registration Technical Personnel
Analysis is performed according to selected analytical method • Raw data recorded • Data Reviewed • Data uploaded to the LIMS from the instrument or manually entered by the analyst* (This is tracked by the unique sample number and batch number.)	Technical Personnel
LIMS performs calculations as programmed according to methods	Data Processing
Designated analyst or supervisor verifies raw data	Technical Personnel
Generation/release of reports (automated through LIMS)	Billing and Reporting Group
Data package deliverables are assembled, reviewed and released to client Electronic copy saved in the LIMS	Data Package Group
Electronic Data Deliverables (EDDs) are generated	EDD Group
Designated Data packages are overchecked by QA prior to release	QA
Hard copy of batch raw data is archived Electronic files are backed up and archived	Technical Personnel, Data Package Personnel, Office Services, IT

*Analyses requiring the analyst's interpretation may involve manual data reduction before entry into the LIMS.

10.2. Data Documentation

Analytical data generated in the laboratory is collected from the instruments or associated data system or is manually documented in bound notebooks. Analysts review data as it is generated to determine that the instruments/systems are performing within specifications. If any problems are observed during an analytical run or the testing process, corrective action is taken and documented.

Procedures are in place to ensure that all data is traceable, authentic, and complete. Electronic data records are maintained and tracked through the LIMS, requiring authorized, password protected user access. The following general requirements outline our system for notebook, logbook, and documentation recording:

- Observations, data, and calculations are recorded at the time they are made and are identifiable to the specific task.
- Entries must be legible, signed, and dated. The signature may be a wet or electronic signature.
- Errors are corrected in a manner that does not obliterate the original entry, initialed and dated, and coded with an explanatory identifier. Changes to electronic data are tracked through audit trail functions.
- Blank pages or substantial portions of pages which are left blank are crossed-out to eliminate the possibility of data entry at a later date.
- Notebook pages and instrument printouts are signed/dated to indicate second party data review; this may be a wet or electronic signature.
- At periodic intervals a supervisor or data reviewer checks equipment/instrument logbook entries and temperature recordings for completeness, legibility, and conformance to procedures.
- At a minimum, the following information is recorded as part of data documentation:
  - Date of analysis/operation
  - Signature/date of analyst performing test/operation
  - Identification of client sample(s) and material(s) analyzed
  - Materials, reagents, standards used to perform the testing/operation
  - Method used to perform testing/operation (including version number and/or effective date)
  - Equipment/instrumentation used to perform testing/operation
  - Calculations and how they were derived
  - Departures, planned or unplanned, from the analytical method
  - Signature/date of person reviewing data documentation
- For computer generated data, the following information is recorded:
  - Sample(s) analyzed/operations performed
  - Date of analysis/operation
  - Unique instrument identification
  - Name/date of person operating the instrument
  - Name/date of person reviewing data
  - Any manual notations or interpretations made on instrument printouts are signed, dated, and reviewed

10.3. Data Calculations

Most instruments either include or are connected to a data system programmed to perform calculations to reduce the raw data to a reportable form. All calculations are maintained in the instrument manuals and/or as part of the analytical method.

In many cases, the data from the local instrument system are uploaded directly to the LIMS for review and reporting. This direct upload eliminates the need to retype data and an associated source of transcription errors from the analytical scheme.

Some instruments report data that require application of additional factors before the data is in final form. For example, an extract concentration may be reported by the instrumental data system, but additional dilution and preparation factors may be needed before the result represents the concentration of analyte in the sample. Analysts input these additional factors into the LIMS, where final calculations are performed.

Analysts manually enter collected data, such as titration data, into the LIMS, which is programmed to perform calculations for final reporting. Documentation of the programming for each calculation performed by the LIMS is maintained.

10.4. Reporting Limits

It is important to ascertain the limit of quantitation (LOQ) that can be achieved by a given method, particularly when the method is commonly used to determine trace levels of analyte. The Environmental Protection Agency has set forth one method for determining method detection limits (MDLs) from which LOQs can be extrapolated. This process is summarized in a laboratory procedure.

MDLs are verified or determined annually on each instrument and are the basis for the LOQ used in the default reporting format. Because MDLs change each time they are re-evaluated, they are not included in this manual, but are available in each laboratory and available to clients upon request.

The reporting limit used to determine whether a result is significant and reported as detectable is dependent upon agency and client requirements. A variety of formats are available and include use of the MDL, LOQ, method specified limits, and project specific limits. The MDL and LOQ for each analyte are programmed into the LIMS for reporting purposes.

Under the DoD program, the laboratory must establish a Detection Limit (DL) and Limit of Detection (LOD). As defined by the DoD program, the DL is the smallest analyte concentration that can be demonstrated to be different from zero or a blank concentration with 99% confidence. The laboratory determines the DL using the calculated value from the MDL Study. The DL can be derived from pooled MDL values obtained across instruments. The LOD is the smallest amount of a substance that must be present in a sample in order to be detected at the DL with 99% confidence. It is established by spiking a quality system matrix at a concentration of 2-4 times the DL. The LOD must be verified on a quarterly basis or with each batch of samples.

10.5. Data Review

Final review and verification of the data are performed by designated employees using the sample results, quality control information, method criteria and Project Notes entered into the LIMS. Data are initially evaluated by the analyst and then a second designated employee knowledgeable in the test, other than the employee responsible for performing the test, reviews the data. The reviews include checks for correct transcription, calculations, passing calibrations, compliant quality control results, holding time compliance, and project specific requirements. Any issues or errors identified during this stage are addressed, corrected, and reviewed with the responsible person.

After determining that all necessary requirements for valid data and for the project are met, the reviewer electronically approves the data by changing the LIMS status of the data from "complete" to "verified". The LIMS is programmed with a list of approved reviewers for each test, and the system is password protected to ensure that only qualified individuals verify the data.

10.6. Data Qualification

Data qualifiers are used to provide additional information about the results reported. The most typical use for data qualifiers is for results that fall below the quantitation limit, in the region where it becomes more difficult to distinguish a positive result from the background instrument signal. The data systems used to generate and report results are programmed to flag values in this range as estimates.

Other qualifiers are applied to advise data users of any validation issues associated with the data. The laboratory makes every effort to meet all of the requirements for generation of data. Occasionally, generation of data that does not meet all the method requirements occurs due to sample matrix or other analytical problems. If the test cannot be repeated or reanalysis would not yield better quality data, qualified data is reported. Qualifiers can be in the form of comments on the analytical report or flags applied to the results.

10.7. Data Reporting

When all analyses are completed, reviewed and verified, a report is generated by the LIMS. The client receives a copy of the report containing the results of the analysis, associated QC data, and where necessary, explanatory comments to address non-conformances. To avoid ambiguity in interpreting results, a summary page that contains an explanation of all symbols and units used in reporting data is included with the Analysis Report submitted to clients. Some regulatory agencies also require the laboratory accreditation identification on the Analysis Reports. Where required, this information is added. The current list of agencies can be accessed in the LIMS. Copies of reports and associated supporting raw data are retained in our archives. The report contains the signature of the assigned client service representative who is the key contact for any questions concerning the results. Personnel authorized to review, sign, and release Analysis Reports are noted in the key personnel list provided in Appendix C.

The laboratory offers a variety of data reporting .levels and formats, from a basic report of sample and QC results only, to a comprehensive data package of QC/calibration information and raw data. The client and any agency involved direct the selection of report type. A summary of report formats and data packages types is provided in the laboratory *Schedule of Services*. Various electronic formats are also available formatted to client-specified file structure and sent via e-mail, direct upload, web-site access (LLabWeb), or common courier. LLabWeb is used for clients that require secure transfer of electronic data.

Client confidentiality of LLabWeb data is ensured by the use of a secured firewall internet environment coupled with the use of a user ID and password to gain login access to the system. User accounts are configured to only allow access to specific data associated with the user's business account number.

Amendments to a final report after issue are in the form of an additional document or data transfer and include a reference to the original report. When a completely new final report is required, it is uniquely identified and includes a reference to the original report it replaces.

10.7.1. Reporting the Results

Analytical reports are generated with a cover page that summarizes all samples in that group. This page lists the laboratory assigned sample number and the corresponding client description. The cover page identifies the laboratory contact person's name and phone number if there is a question about the report. Within this package, each page is uniquely identified and paginated. Analytical test results for methods listed on the laboratories' accreditation scope meet all requirements of NELAP accreditation and ISO 17025 unless noted otherwise. Ohio EPA VAP requires that a signed, notarized affidavit accompany each analytical report.

10.8. Data Storage, Security, and Archival

The laboratory has documented procedures and instructions for the identification, collection, access, indexing, filing, storage, maintenance, and disposition of data records. Records are in the form of paper records, electronic data files, magnetic tape, and CD-ROMs.

All data records are maintained in a confidential manner in an environment to minimize deterioration or damage and to prevent loss. Some records are stored in off-site facilities, in such a way that they are readily retrievable. Retention time for records is in accordance with specific procedures or instructions. Prior to the destruction of data/records, and if requested by a client or agency, the laboratory will notify the client/agency that their data is scheduled for destruction so arrangements can be made to have the original data sent to the client.

If specified in client contract(s), archived records are transferred according to their instructions in the event of a change in laboratory ownership or if the laboratory goes out of business. If not specified by the client, the sale agreement must require that archived records be maintained as scheduled by the new owners. In the case of bankruptcy, appropriate regulatory and state legal requirements concerning laboratory records must be followed.

The laboratory maintains all documentation which is necessary for historical reconstruction of data:

- Analysis reports
- Data notebooks
- Data logbooks
- Instrument output
- Correspondence and client files
- Instrument and equipment logbooks
- QA records
- Corporate documents
- Electronic records

11. AUDITS AND INSPECTIONS

11.1. Internal Quality Assurance Audits

The QA Department, which is independent of laboratory activities, performs routine and on-going system, traceability, and observation audits to objectively review current systems, operations, and procedures as well as automated data integrity audits of electronic data records. The goal of the audits is to ensure that the quality system activities are effective and in compliance with regulatory programs, including NELAP. ISO 17025, DoD, and state agencies, as well as internal policies and procedures. Audits are documented and tracked in a QA database.

Audits are scheduled and conducted following a predefined schedule, based on criticality of operation and prior audit results, with the goal of evaluating systems and technologies across the operation. If warranted, additional audits are performed to follow up on promised corrective action or areas of concern.

Results of an audit are documented in a report format and distributed to applicable management personnel responsible for the area(s) under audit. Management is responsible to address all non-conformances found during an audit with root cause analysis and application of a corrective action plan.

Audit reports and responses are circulated to Management to communicate the outcome of the audit and the proposed plan(s) for corrective action, if warranted. If any of the audit findings cast doubt on the validity of the results, the clients must be notified within three business days of the investigation. Should an audit issue present a major concern regarding validity of laboratory methods, QA personnel can issue a stop work notice.

All records maintained as part of an audit are kept on file for three years.

On an annual basis, an audit of the QA Department is performed as directed by the laboratory's Executive Management. The auditors assigned to carry out this operation are qualified staff members independent of the QA Department.

The specific content and findings of internal audits are considered company confidential and are not shared with clients.

11.2. Review of the Quality Assurance Program

All levels of management are continually updated on the status of quality and compliance by circulation of pertinent documents. Management review is documented by signatures on the documents, electronic records of each person's review, along with any comments or request for additional follow-up. The types of documents circulated real-time include:

- Internal, client, and agency audit reports and responses
- Proficiency test results
- Investigation and corrective action reports
- Monthly QA status reports

Executive management reviews the elements of the total QA program on an annual basis to ensure its continuing suitability and effectiveness in meeting the stated objectives outlined in Section 2.4 of this manual. The evaluation entails review of reports to management, all audit findings, client complaints, laboratory investigations, staff adequacy and training, and projected growth in workload. Patterns or trends in any of these areas are reviewed as a means to continually improve the quality system. This review also includes an evaluation of any audit findings resulting from the audit of the QA Department. At the conclusion of this quality system review, executive management determines the need to introduce changes or improvements into the quality systems at the laboratory. The minutes from the meeting and any recommendations for improvement are documented and a copy is forwarded to the QA staff for review and follow-up.

11.3. Good Laboratory Practice Critical Phase Inspections

Any project that is subject to Good Laboratory Practice (GLP) regulations is audited by the QA Department, as required by the regulations, at intervals adequate to ensure the integrity of the study. Inspections of a GLP project include direct observation of analysts as they perform various phases of the study. Data documentation is reviewed as part of the inspection. The purpose of this type of audit is to ensure that there are no deviations from written methods, procedures, or study protocols.

Results of inspections are documented in a report format and distributed to applicable management personnel responsible for the area(s) under audit. Management is responsible to address all non-conformances found during an inspection. Inspection reports and responses are circulated to applicable laboratory management and an off-site study director, as applicable, to communicate the outcome of the inspection and the proposed plan(s) for corrective action, if warranted.

All records maintained as part of an inspection are kept on file.

11.4. Client Audits

Because clients place great importance on compliance with applicable regulations, data quality, and project requirements, they may audit our facility as assurance that their objectives are being met. QA, management staff, CSRs, and the analytical laboratories play a key role in these audits. Visits by clients can range anywhere from a tour (to verify laboratory facilities and instrumentation) to an intensive inspection of technical operations, procedures, regulatory compliance, and/or review of specific project(s).

- Audits are scheduled directly with the CSR or QA. The request to audit is communicated to all applicable laboratory departments.
- In accordance with our policy on client confidentiality, a client is permitted to review only data and results that apply to their work, or which have been approved by laboratory management.
- An escort (designated laboratory employee) remains with an auditor at all times.

Responsibilities are assigned to the following groups in regard to client audits:

11.4.1. QA Department

- Research previous audit reports and laboratory responses to past deficiencies.
- Follow-up with the applicable analytical laboratory areas to ensure action items were completed from the last audit, as necessary.
- Work with client to set audit agenda.
- Function as an escort during the audit
- Answer questions the auditor has in regard to laboratory and quality systems.
- Take notes of areas where corrective action or suggestions are recommended during the audit.
- Communicate audit issues to management at the completion of the audit.
- Respond to client audit reports.
- Ensure follow-up to cited items are addressed in a timely manner.

11.4.2. CSRs

- Gather and organize relevant information (e.g., client correspondence, analysis/project requests, copies of analytical data from archives).
- Be knowledgeable about client-specific project requirements and issues.
- Function as an escort during the audit.
- Communicate issues/problems to appropriate personnel.

11.4.3. Laboratories

- Gather and organize laboratory data and documentation in preparation for client review.
- Assure corrective action was implemented from past audit findings, if necessary.
- Be prepared to discuss project data/testing results during the audit.
- Be familiar with client-specific project requirements and be prepared to answer client questions.
- Be familiar with the location of routine laboratory information and equipment (e.g., SOPs, data notebooks, calibration data, etc.).
- Be prepared to answer specific technical questions in regards to laboratory procedures and instrumentation within the area.
- Functions as an audit escort within the department during the audit.
- Laboratory managers may function as an escort during the audit

11.5. Agency Inspections

It is laboratory policy to cooperate to the fullest extent and maintain cordial relations with all government agencies. The QA Department is assigned the responsibility of hosting and working with agency representatives. Their role includes, escorting the investigator(s); ensuring all questions are answered promptly and accurately; making note of all unresolved issues; informing management of the audit status and outcome; responding to the audit report and ensuring that appropriate corrective action is completed.

Inspections can be performed by investigators or auditors from the EPA, states, third-party accreditation bodies (i.e. A2LA, United States Department of Agriculture (USDA), or other regulatory agencies.

Government agencies have the right to investigate and inspect the laboratory during normal business hours and permission to inspect is granted by Executive Management.

Designated members of the QA Department are primary contacts for announced inspections. The QA Director is the primary contact for all unannounced agency inspections. If the QA Director is unavailable, Executive Management is notified, in addition to a member of the QA Department. The QA Director, or their designee, must obtain evidence of the investigator's authority either in the form of a letter or examination/explanation of credentials.

Inspections include the examination of records or the inspection of facilities. Investigators are usually concerned only with the records relating to their responsibilities. As a general rule, they are given copies of records and documents, if requested. The laboratory must have a record of all items provided to an investigator.

Investigators must be escorted through the laboratory. The laboratory is not obligated to show an investigator the following types of information: sales, financial or pricing information, or any personnel data other than training or qualification documentation. On a case-by-case basis, internal QA audit reports and investigation reports are made available for agency review. Any questions or concerns about a request made by an investigator in regard to recording devices or photographs must be reviewed with legal counsel.

The laboratory personnel are not permitted to sign affidavits. If an affidavit is presented during an inspection, all personnel are directed not to sign it, read it, nor listen to it being read. The only document that is acceptable to sign is an acknowledgement that an inspection report has been received. If there is any doubt as to what should be signed, legal counsel must be consulted.

11.6. Proficiency Testing

Many of the organizations that certify our laboratory to perform various analyses require proof of our competency. Laboratory performance is checked regularly by participation in a variety of proficiency testing (PT) programs. When available, blind samples are obtained from vendors that are accredited to provide PT samples under the TNI and/or ISO 17025 standards for all test and matrices routinely tested at the laboratory. In addition, some individual certification programs require analysis of specific sets of proficiency samples. The laboratory also chooses to participate in a double blind program.

Generally, the PT programs consist of samples or ampulated spiking solutions used to fortify laboratory samples. The laboratories analyze the samples in the same manner as a client sample and the data is sent to the agency or vendor for evaluation. After the study results are returned to the laboratory, any data falling outside the acceptance criteria is investigated, root cause is identified, and corrective action is implemented, if needed. Results are circulated to management. No PT samples or portion of a PT sample are sent to another laboratory for analysis.

Double blind samples are submitted to the laboratories by the Client Services Department using a fictitious client name so that the analysts are not aware that the samples are PTs. The samples are submitted quarterly and include a cross-section of organic and inorganic tests. The acceptance criteria for these double blind samples are developed statistically using data from participating laboratories, providing a source of inter-laboratory comparison. Results are reviewed, investigated as needed, and circulated to management.

If a trend in PT failures is identified, additional blind samples are ordered for that specific test as corrective action.

Clients routinely submit blind and double blind samples to evaluate the laboratory's performance. If a report is issued to the laboratory, it is handled in the same manner as a scheduled PT study evaluation and follow-up.

12. CORRECTIVE AND PREVENTIVE ACTION

12.1. Laboratory Investigations and Corrective Action

Due to the technical nature of laboratory work and the broad scope of our QA program, a wide variety of laboratory issues can require investigation, root cause analysis, documentation, and corrective action. Prompt investigation and implementation of corrective action ensure that only data of known quality are reported and prevent the recurrence of errors. The following list provides "examples" of the type of issues that warrant investigation:

- Noncompliant QC results*
- Failed PT samples
- Reporting incorrect results
- Contamination issues
- Client technical complaints
- Procedural errors
- Missed holding times
- Systematic problems that compromise the accuracy or compliance of the data generated
- Problems with instrumentation and equipment which could compromise the data generated

These investigations must include the following:

- Identification of the problem
- Steps taken to investigate the problem
- Explanation of probable root cause(s) of the problem
- Steps taken to prevent future occurrence
- Determination of samples or systems affected by the problem

*Note: individual QC noncompliance does not require in depth investigation. Actions are taken as defined in the corresponding method and documented in the data. An adverse trend with noncompliance would be investigated.

Management is informed of problem situations. The QA staff track documentation, the status of the investigation activities, evaluates investigations for completeness and appropriateness, and monitors corrective action for follow-up/closure. Technical management and/or QA may issue a stop work notice if issues indicate the potential for problems on a broad scale or present a critical concern regarding the validity of the laboratory methods. The goal is to identify root cause, have the corrective action implemented promptly, and to the degree appropriate for the magnitude and risk of the problem. Tracking and trending of laboratory issues is performed by QA staff and reported to management on a monthly basis or immediately upon detection of a trend with potential for putting the laboratory or our clients at risk.

12.2. Investigation Processes

All results from quality control (QC) samples are logged into the LIMS quality control system, which is programmed to alert analysts to unacceptable results. Analysts are required to review the results and determine the source of the problem. The source of the problem and proposed corrective action must be documented. Corrective action may include, but is not limited to, re-analysis, re-extraction or re-digestion, instrument maintenance, or re-calibration. If these actions do not yield compliant data within the required hold time, a Nonconformance Form is initiated to document actions and communication with the client. The original form is archived with the associated raw data. Nonconformance Forms are reviewed by the technical department's management, or designee. A copy of the form is reviewed by QA.

Missed holding times are investigated and documented using a Missed Holding Time form. The form includes documentation of the affected samples, reason the hold was missed and corrective actions taken, if applicable. Each form also has documented review and approval by the department manager, department director and the QA Director. Clients are informed of any problems involving holding time.

Other types of problems having potential impact on data quality or involve deviations to our processes are investigated and documented using an Investigation and Corrective Action Report (ICAR). This process was developed to ensure that laboratory problems are investigated, evaluated for root cause, corrective action is put into place to prevent recurrence, laboratory management review and QA approval occurs, and all steps are documented. These investigations are initiated and managed through a workflow interface (Jira). Any employee can initiate an ICAR through this system to document a laboratory problem. The investigation must be completed by designated members of management and approved/closed by QA. Each investigation has a unique tracking number assigned by Jira. Closed investigations are routed to the laboratory Vice-President, associated laboratory Director and the QA Director. Follow-up to ensure effective corrective action is managed by QA staff.

If a laboratory error is identified from the outcome of the investigation that impacts validity of client data, the client must be immediately notified in writing of the situation and corrected data provided as soon as possible. If the root cause of the problem has affected any other client sample results, all affected clients are notified immediately of the problem.

12.3. Client Feedback

The laboratory is in the business of providing high quality analytical testing services. The data that we supply to our clients must be technically complete, accurate, and compliant with applicable regulations. Complaints can be received via letter, phone call, e-mail, or face-to-face meeting.

When a complaint is received, it is our responsibility to determine, to the best of our ability, the extent of the issue and what data is in question. The person receiving the complaint documents this information and promptly forwards it to the appropriate management personnel where the work in question was performed. If a data reporting error is discovered, the final report and/or data must be regenerated with the correct value(s).

The CSR is responsible for entering client concerns into the LIMS and an automated summary report is sent to QA on a weekly basis for review. In some cases, an ICAR is initiated to address and document the situation. While an individual issue may not warrant a formal investigation, QA monitors these issues for potential trends and will issue an ICAR if a trend is evident.

On an annual basis, the laboratory sends a client satisfaction survey to all clients. The results of these surveys are compiled, routed to the laboratory Vice-President, technical and operations directors and the QA Director, and used to identify areas of improvement for the laboratory.

12.4. Preventive Actions

All employees are empowered and encouraged to use the concept of Preventive Action to avoid a problematic situation. The company supports, embraces and drives the process for continuous quality improvement by several means, such as: Ethics Hotline, the Suggestion Box (accessible to all employees on the company's Intranet 'LabLinks'), and training classes that include "Making Quality a Science" and Ethics. If an employee identifies a potential problem or an area of concern or it should be brought to the attention of his/her supervisor, Human Resources, QA Director or the Ethics Hotline.

The laboratory also utilizes a formal program to encourage preventive action through development of lean processes. The goal of this program is to optimize processes to ensure efficiency and operational improvements while maintaining compliance. The efficiency gains are inherently coupled with minimizing errors and rework. Teams of employees learn the tools and techniques to evaluate a process, identify potential sources of errors, delays or problems in an operation, determine system changes that will minimize these and work to implement the improvements. Each project includes thorough documentation of the evaluation, measurement, and implementation phases. The process is continually monitored to ensure that the anticipated results are sustained.

Employees are also encouraged to communicate to their supervisor any area(s) or operation(s) that they believe could be streamlined, make their job easier, would provide a quality improvement, or could provide a cost savings to the company.

Described below are some of the systems available to employees to assist with building quality and efficiency into their daily jobs. They stress a proactive approach/environment to problem solving and to review quality systems and operational efficiencies.

- "Making Quality a Science" is an introductory total quality management (TQM) course required for all employees to teach why quality is important and to explain the laboratory's quality philosophy and processes, and how to apply quality thinking and techniques on the job. Topics discussed include: communication, teamwork, serving the client, measurement, quality tools, and continuous process improvement. To foster continuous improvements of laboratory systems, process improvement teams are formed, as needed, if an employee needs help in solving a problem or addressing an issue. The goal of these groups is to have representation from various areas of the laboratory work together to look at a problem, evaluate the need for a temporary fix, brainstorm root causes, plan process improvement, implement the process improvement, evaluate and follow-up to the corrective action.

- "Putting our Values to Work" (Ethics) is a seminar required for all employees to teach the laboratory's Statement of Values by examining how it translates to our everyday jobs and ethical decision making. Topics discussed include: Statement of Values, ethical paradigms, and ethical decision making. Mandatory ethics training refresher seminars are offered on an annual basis.

- The laboratory has contracted with an Ethics Hotline to provide an anonymous means of reporting ethics concerns or issues. The issue is forwarded by the service to the QA Director who will communicate internally with those who need to address the issue. All communication and actions are documented in a secure web interface managed by the hotline service company.

- The QA staff prepares monthly program status reports for management. The reports include a variety of metrics and graphs which are used to evaluate trends in laboratory performance across all quality and compliance areas. Management responds to any negative trends by developing a corrective action plan.

- The laboratory uses a Project Cycle process (further described in section 13.2) to proactively review and prepare for client projects in an effort to ensure full understanding by all laboratory staff of the client's needs and resolve any concerns in advance of receiving the work.

13. SERVICE TO CLIENTS

13.1. Service to Clients

We value our client relationships and support these partnerships through the following principles:

- Honesty and Fairness – Our corporate culture is founded on the principles of professionalism and high ethical standards in dealing with our clients. This may mean declining to provide the service requested (if we are convinced that to do so would be meaningless) or it may mean referring clients outside of our laboratory if we believe that another company can better meet their needs.

- Complete Service – We will give our clients full value on every service provided. We will provide detailed information on our methods, procedures, and QA programs if requested, and take a personal interest and initiative in helping solve our client's problems within the area of our professional expertise.

- Trustworthiness – All data and information developed for a client will be held confidential and not disclosed to a third party except on written request of the client. If information is subpoenaed, we must, by law, release it, but the client will be informed of the release.

- Commitment to Quality – We constantly strive to improve our service in quality, flexibility, and dependability, to keep our competitive edge. We will achieve this through: meeting the requirements of those we serve, staying apprised of regulatory and industry expectations, and providing prompt responses to client concerns.

- Basics of Superlative Service – Our focus is on our client's success. Through proactive collaborative communication, our leadership ensures we understand our client's expectations and strives to exceed them. We foster a service culture in our training, reward and recognition, and performance management process so each employee takes ownership to deliver superlative service to our clients. Feedback from clients, whether positive or negative, is an important part of our continuous improvement system. Ways in which feedback is gathered can include, but is not limited to, customer satisfaction surveys, client audits, and the customer complaint system, which is described within section 12.3.

We also view our fellow employees as our clients since they frequently receive the results of our labor. Meeting the requirements of the next employee in the workflow process is just as important as meeting the needs of an external client.

13.2. Review of Work Requests, Tenders, and Contracts

The laboratory places great importance on understanding and meeting client requirements for a project. We ensure, to the best of our ability, that client/project requirements are identified and communicated through the laboratory. Project evaluation can be achieved in various ways, including the review of analytical methods, protocols, business contracts, and quality project plans (QAPPs). The project review encompasses our Project Cycle process and individual topics to be evaluated for a project include, but are not limited to: scope of testing; required accreditations (i.e. individual state agencies, NELAP, DoD, and ISO 17025) held by the laboratory; appropriate and current testing methods; ability to meet project required reporting limits and QC (if applicable); inconsistencies clarified; and nonstandard work requests.

Project kick-off meetings can be arranged through the CSR or Business Development Group. These meetings allow the client and key technical personnel to discuss project issues and requirements prior to project initiation. Any differences between laboratory processes and the project requirements are discussed and addressed with the client and the laboratory staff before the project is accepted and samples arrive. Testing that cannot be performed at the laboratory may be subcontracted to another laboratory (see 13.4).

A key client contact, the CSR, is assigned to oversee the project. Communication between the client and laboratory staff is available and is coordinated through the CSR.

As a project continues, the CSRs provide continuous communication and status reports (if requested) about the project to the client. The CSR relays any project changes or modifications to the technical groups. If the client submits revised project documents (QAPPs, etc.) then the Project Cycle review process is repeated. The CSR also communicates any issues encountered by the technical laboratories back to the client and vice-versa.

13.3. Timely Delivery

Evaluating laboratory capacity and ability to perform specific projects is a joint responsibility between the Technical Director, Business Development, and the laboratory managers. We recognize that one of the most important aspects of the service we offer is turnaround time.

Many analysts are cross-trained to perform a variety of tests, and there is redundant equipment available in the laboratory area creating operation flexibility for routine work. Larger projects are reviewed against capacity estimates before bids are submitted to ensure that the client's schedule is met. Turnaround time is continually measured.

Regularly scheduled meetings are held with technical and support management, and project management personnel to review progress with current projects, as well as special requirements of new work scheduled for the laboratory.

Management receives a daily report of the status of all samples in the lab, including those with priority status or those that have exceeded a preset turnaround time. This enables the planning and organizing of the workload through efficient scheduling.

Any changes to the established timeline by the client or the laboratory must be communicated to the client or laboratory as soon as possible. Upon communication of changes, a new timeline is established and agreed upon by both parties. If a client requires a change in the scope of the project (e.g., number of samples submitted, change in analyses, revised protocol) the laboratory must be informed in writing and a new timeline and cost estimate is be provided.

13.4. Subcontracting

The laboratory may subcontract tests to other laboratories if the requested testing is not routinely performed in our laboratory. To a lesser extent, samples may need to be subcontracted to an overflow laboratory to ensure hold times and/or turn-around-times (TAT) are met.

Testing is only subcontracted with the client's knowledge and approval. The CSR must notify the client in writing when any of their requested analyses will be subcontracted to another lab. Client approval must be obtained in writing before samples are shipped.

Subcontract laboratories are selected based on their qualifications and accreditations. The subcontractor is requested to sign a Laboratory Analytical Services Subcontract. See form 9033100 to review details of the contract terms and information requested from the subcontract laboratory. If projects require a specific agency certification (i.e. individual state agencies, National Environmental Laboratory Accreditation Program (NELAP), Department of Defense (DoD) Environmental Laboratory Accreditation Program (ELAP), and ISO 17025), only an appropriately accredited laboratory is used. The client may also have a list of laboratories to be used for subcontracting. In these cases, the evaluation of the subcontract laboratory is made by the client.

Data obtained from subcontract laboratories is clearly marked as such when reported by the laboratory. The data are submitted to the client in the format obtained from the subcontractor.

13.5. Use of NELAP and A2LA logo

It is not laboratory policy to use these logos on any company letterhead, including analytical reports.

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Prepared by	Kathryn Brungard
Reviewed and Approved by	Robert Strocko;Review;Friday, January 15, 2016 1:14:50 PM EST Duane Luckenbill;Review;Monday, January 18, 2016 2:46:15 PM EST Dorothy Love;Approval;Monday, January 18, 2016 2:56:16 PM EST

Procedure Cross Reference List

NOTE: SOPs and Forms are indicated in the table with the unique Document Control Database number starting with "90…". The topic of the document is given in parentheses.

Section #	Title	Procedure(s)
1	Introduction	
1.1.	Mission Statement	Employee Handbook
1.2.	Quality Policy	9007879 (Quality Statement) Employee Handbook
1.3.	Statement of Values	Employee Handbook
1.5.	Certifications, Accreditations, and Registrations	9007852 (Cert Summary) Company website
2	Organization and Personnel	
2.1.1	Business Continuity and Contingency Plans	9017347 (Incident Response Plan) 9017681 (Preparedness, Contingency) 9017358 (Archiving SOP) 9021762 (Deputies form)
2.2.	Organizational Structure	Organization Charts
2.3.	Management Responsibilities	PQDs (job descriptions) PMDs (individual job plans)
2.4.	Overview of the Quality Assurance Program	Dept 4052 SOP Series
2.5.	Quality Assurance Responsibilities	Dept 4052 SOP Series
2.6.	Communication of Quality Issues to Management	9020717 (QA Reports)
2.7.	Personnel Qualifications and Responsibilities	9017379 (Employee Training) PQDs (job descriptions) PMDs (individual job plans) Task Specific Training
2.8.	Relationship of Functional Groups and the Quality Assurance Program	Quality Orientation TQM Training PMDs (individual job plans) Dept 4052 SOP Series 9017338 (Project Cycle)
2.9.	Balancing Laboratory Capacity and Workload	PMDs (individual job plans) LIMS reports for mgt
2.10.	Identification of Approved Signatories	9017322 (Date Entry, Verification and Reporting)
2.11.	Personnel Training	9017379 (Employee Training) 9015390 (DOCs) PQDs (job descriptions) PMDs (individual job plans) Task Specific Training
2.12.	Regulatory Training	9022322 (GLP)

Section #	Title	Procedure(s)
2.13.	Employee Safety	Analytical Methods Chemical Hygiene Plan 9017681 (Preparedness) Dept 6098 SOP Series PMDs (individual job plans)
2.14.	Client Services/Project Management Responsibilities	Dept 4039 SOP Series 9017338 (Project Cycle)
2.15.	Confidentiality	Employee Handbook 9017360 (E-mail System) 9022134 (Client and Agency Audits)
2.16.	Business Conduct	Employee Handbook
2.17.	Operational Integrity	9017675 (Manual Integration) 9017333 (Chromatographic Integration) 9017679 (Ethics Policy) 9007879 (Quality Statement)
3	Buildings and Facilities	
3.1.	Facility	Floor Plans
3.2.	Security	9017366 (Building Security)
3.3.	Disaster Recovery	9017347 (Incident Response Plan)
3.4.	Environmental Monitoring	9017311 (VOA Storage) 9021509 (ETM)
3.5.	Water Systems	9017368 (Reagent Water)
3.6.	Housekeeping/Cleaning	9017373 (Housekeeping)
3.7.	Insect & Rodent Control	9017367 (Insect & Rodent Control)
3.8.	Emergency Power Supply	9017347 (Incident Response Plan)
3.9.	Facility Changes	9017364 (Facility Change Control) 9028515 (Change Control)
4	Document Control	
4.1.	Hierarchy of Internal Operating Procedures	9017356 (Writing SOPs)
4.2.	Document Approval, Issue, Control, and Maintenance	9017357 (Document Control) 9017329 (Method Validation)
4.3.	Client-Supplied Methods and Documentation	9021833 Analytical Decision Making) 9022599 (QA review of QAPPs) 9017338 (Project Cycle) 9015436 (Auditing Paperwork)
4.4.	Laboratory Notebooks, Logbooks, and Forms	9017357 (Document Control) 9021767 (Notebooks)
4.5.	Control of External Documents	9017357 (Document Control) Departmental “Controlled Documents” forms

Section #	Title	Procedure(s)
5	Sample Handling	
5.1.	Sample Collection	Dept 4031 SOP Series
5.2.	Sample Receipt and Entry	Dept 6042 SOP Series
5.3.	Sample Identification and Tracking	Dept 6042 SOP Series 9017318 (LSAR)
5.4.	Sample Storage	Dept 6055 SOP Series
5.5.	Sample Return/Disposal	9015512 (Sample Discard) 9017352 (Hazardous Wastes - Lab) 9017756 (Hazardous Wastes – Storage)
5.6.	Legal Chain of Custody	9017335 (Legal COC)
5.7.	Representativeness of Samples	Analytical Methods 9017334 (Representative Solid Samples)
6	Technical Requirements - Traceability of Measurements	
6.1.	Reagents and Solvents	9017328 (Reagents and Standards) Analytical Methods
6.3.	Calibration Standards	9017328 (Reagents and Standards) Analytical Methods
6.4.	Equipment and Instrumentation	9017325 (Inst. & Equip M&C) 9015389 (Balance, Syringe, Pipette Verification)
6.5.	Computerized Systems and Computer Software	9028515 (Change Control) 9017361 (Network Accounts) 9017360 (E-mail System) 9017710 (Computer Backup) Employee Handbook 9017712 (Computer Viruses)
6.6.	Change Control	9028515 (Change Control)
6.7.	Labware Cleaning	Departmental Procedures
7	Purchasing Equipment and Supplies	
7.1	Procurement	9021705 (Procurement) 9018236 (Receipt of Lab Supplies)
7.2	Supplier Evaluation	9021705 (Procurement) 9017310 (Subcontracting) 9017328 (Reagents and Standards) 9015516 Preservative Checks)

Section #	Title	Procedure(s)
8	Analytical Methods	
8.1.	Scope of Testing	Schedule of Services Company website
8.2.	Analytical Test Methods	9017329 (Method Validation) 9023483 (Writing Procedure Guidance)
8.3.	Client Supplied Methods	9017329 (Method Validation)
8.4.	Method Validation	9017329 (Method Validation)
8.5.	Procedural Deviations	9017331 (ICARs)
9	Internal Quality Control Checks	
9.1.	Laboratory Quality Control Samples and Acceptance Criteria	9017313 (QC Limits) Analytical Methods
9.2.	Quality Control Sample Frequency and Corrective Action	9017315 (Noncompliant Data) Analytical Methods
9.3.	Quality Control Charts	9018253 (End of Month QC Reports)
9.4.	Measurement Uncertainty	9017313 (QC Limits)
10	Assuring Quality of Test Results	
10.1.	Data Management	9021767 (Notebooks)
10.2.	Data Documentation	9021767 (Notebooks) 9017322 (Date Entry, Verification and Reporting) 9007879 (Quality Statement)
10.3.	Data Calculations	9017322 (Date Entry, Verification and Reporting) Analytical Methods
10.4.	Reporting Limits	9017309 (MDLs & LOQs)
10.5.	Data Review	9021767 (Notebooks) 9017322 (Date Entry, Verification and Reporting)
10.6.	Data Qualification	9017315 (Noncompliant Data)
10.7.	Data Reporting	9017322 (Date Entry, Verification and Reporting) 9017330 (MCL Exceedance)
10.8.	Data Storage, Security, and Archival	9017358 (Data Archiving) 9017710 (Computer Backup)
11	Audits and Inspections	
11.1.	Internal Quality Assurance Audits	9020535 (Internal Audits) 9022322 (GLP) 9008821 (Internal Audit Checklist)
11.2.	Review of the Quality Assurance Program	9020535 (Internal Audits) 9020717 (QA Reports)
11.3.	Good Laboratory Practice Critical Phase Inspections	9022322 (GLP)
11.4.	Client Audits	Employee Handbook 9022134 (Client and Agency Audits)

Section #	Title	Procedure(s)
11.5.	Agency Inspections	Employee Handbook 9022134 (Client and Agency Audits)
11.6.	Proficiency Testing	9017321 (PT Program) 9018237 (PT Entry)
12	Corrective and Preventive Action	
12.1.	Laboratory Investigations and Corrective Action	9017315 (Noncompliant Data) 9017331 (ICARs) 9017332 (Client Complaints)
12.2.	Investigation Processes	9017326 Missed Hold Procedure) 9007810 (Missed Hold form) 9017331 (ICARs)
12.3.	Client Feedback	9017332 (Client Complaints) Annual Client Survey
12.4.	Preventive Actions	Corporate Training Lean Projects 9017338 (Project Cycle) 9028515 (Change Control) 9020535 (Internal Audits)
13	Service to Clients	
13.1.	Service to Clients	Employee Handbook Ethics Statement 9007879 (Quality Policy) TQM Training
13.2.	Review of Work Requests, Tenders, and Contracts	9015436 (Client Paperwork) 9017338 (Project Cycle) 9018254 (QAPP Review)
13.3.	Timely Delivery	9015434 (Tracking Rush Samples) 9015437 (Scheduling Rush Samples) Departmental LIMS reports
13.4.	Subcontracting	9033100 (Subcontractor Checklist) 9017310 Subcontracting) 9017338 (Project Cycle)

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Agency	Parameter	Applicable Matrices	Lab ID No.
Federal Programs:			
American Association for Laboratory Accreditation (A2LA)	Organics, inorganics, dioxin per ISO 17025 and DoD QSM 5.0, KY UST, WY Storage Tank Program, Food and Feed, and PFAAs	Potable water, nonpotable water, solid and hazardous waste, air, tissue and tobacco	0001.01
USDA Quarantine Soil Permit	All	Solid	PCIP-14-00703
State Programs:			
State of Alaska, Department of Environmental Conservation	Organics, inorganics, UST analysis	Nonpotable water, solid and hazardous waste	UST-061
State of Arizona, Department of Health Services	Dioxin	Potable water, nonpotable water, solid and hazardous waste	AZ0780
State of Arkansas, Department of Environmental Quality	Organics, inorganics, dioxin	Nonpotable water, solid and hazardous waste	88-0660
State of California, Department of Health ELAP	Organics, inorganics, dioxin	Potable water, nonpotable water, solid and hazardous waste	2792
State of Colorado, Department of Public Health and Environment	Organics, inorganics, dioxin	Potable water	None
State of Connecticut, Department of Public Health	Organics, inorganics, dioxin, micro	Potable water, nonpotable water, solid and hazardous waste	PH-0746
State of Delaware, Health and Social Services	Organics, inorganics, dioxin, micro	Potable water	None
[3]State of Florida, Department of Health	Organics, inorganics, dioxin, micro	Air and emissions, potable water, nonpotable water, solid and chemical materials	E87997
[3]State of Hawaii	Organics, inorganics, dioxin	Potable water	None
[3]State of Illinois, Environmental Protection Agency	Organics, inorganics, dioxin	Nonpotable water, solid and chemical materials	200027
State of Iowa, Department of Natural Resources	Organics, inorganics, UST analysis	Nonpotable water, solid and hazardous waste	361
[3]State of Kansas, Department of Health and Environment	Organics, inorganics, dioxin	Potable water, nonpotable water, solid and chemical materials	E-10151
Commonwealth of Kentucky, Department of Environmental Protection, Drinking Water Certification Program	Organics, inorganics, dioxin	Potable water	90088
Commonwealth of Kentucky, Department of Environmental Protection, Wastewater Certification Program	Organics, inorganics, dioxin, micro	Nonpotable water	90088
[4]Commonwealth of Kentucky, Department for Environmental Protection – UST Branch	Organics, metals, UST analysis	Nonpotable water, solids	89
[1, 3, 5] State of Louisiana, Department of Environmental Quality	Organics, inorganics, dioxin	Air emissions, biological tissue (direct accreditation), nonpotable water, solid chemical materials	30729 02055
State of Maryland, Department of the Environment	Organics, inorganics, dioxin, micro	Potable water	100
Commonwealth of Massachusetts, Department of Environmental Protection	Organics, inorganics	Nonpotable water	M-PA009

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Agency	Parameter	Applicable Matrices	Lab ID No. Certificate No.
State of Michigan, Department of Environmental Quality	Organics, inorganics, dioxin	Potable water	9930
State of Missouri, Department of Natural Resources	Organics, inorganics	Potable water	450
State of Montana, Department of Public Health and Human Services	Organics, inorganics, dioxin	Potable water	CERT0098
State of Montana, Department of Environmental Quality	Organics, UST analysis	Nonpotable water, solid and chemical materials	None
[3]State of Nevada, Division of Environmental Protection	Organics, inorganics, dioxin	Potable water, nonpotable water, solid and chemical materials	PA00009
[3]State of New Hampshire, Department of Environmental Services	Organics, inorganics, micro	Potable water, nonpotable water, solid and chemical materials	2730
[3]State of New Jersey, Department of Environmental Protection (NJDEP)	Organics, inorganics, dioxin, micro	Air and emissions , potable water, nonpotable water, solid and chemical materials,	PA011
[3]State of New York, Department of Health	Organics, inorganics, dioxin, micro	Air, nonpotable water, potable water, solid and chemical materials	10670
State of North Carolina, Department of the Environment and Natural Resources	Organics, inorganics	Nonpotable water	521
State of North Carolina, Department of Health and Human Services	Organics, micro	Potable water	42705
State of North Dakota, Department of Health	Organics, inorganics, dioxin	Potable water, nonpotable water	R-205
State of Ohio, Environmental Protection Agency (Voluntary Action Program)	Organics, inorganics	Nonpotable water, solid and hazardous waste	CL0070
State of Oklahoma, Department of Environmental Quality	Organics, inorganics, dioxin	Nonpotable water, solid and hazardous waste	9804
[3]State of Oregon, Public Health Laboratory	Organics, inorganics, dioxin	Air, nonpotable water, solid and chemical materials	PA200001
[2]Commonwealth of Pennsylvania, Department of Environmental Protection (Bureau of Laboratories)	Organics, inorganics, dioxin, micro	Potable water, nonpotable water, solid and chemical materials (direct accreditation)	36-00037
State of Rhode Island, Department of Health	Organics, inorganics	Potable water, nonpotable water	LAO00338
State of South Carolina, Department of Health and Environmental Control	Organics, inorganics, dioxin	Potable water, nonpotable water, solid and hazardous waste	89002 89002002
State of Tennessee, Department of Environment & Conservation	Organics, inorganics, dioxin	Potable water	TN02838
[3,5]State of Texas, Commission on Environmental Quality	Organics, inorganics, dioxin, micro	Air and emissions, potable water, nonpotable water, solid and chemical materials, biological tissue (direct accreditation)	T104704194
[3]State of Utah, Department of Health	Organics, inorganics, dioxin	Potable water, nonpotable water, solid and hazardous material	PA00009

Agency	Parameter	Applicable Matrices	Lab ID No. Certificate No.
State of Vermont, Department of Health Laboratory	Organics, inorganics, dioxin, micro	Potable water	VT 36037
[3] Commonwealth of Virginia, VELAP	Organics, inorganics, dioxin, micro	Air, Potable water, nonpotable water, solid and chemical materials	460182
State of Washington, Department of Ecology	Organics, inorganics, dioxin	Air, Potable water, Nonpotable water, solid and chemical materials	C457
State of West Virginia, Department of Health and Human Resources	Organics, inorganics	Potable water	9906C
State of West Virginia, Department of Environmental Protection	Organics, inorganics, dioxin, micro	Nonpotable water, solid and chemical materials, hazardous waste	055
State of Wisconsin, Department of Natural Resources	Organics, inorganics, dioxin	Nonpotable water, solid and hazardous waste	998035060
State of Wyoming and all Tribal Public Water Systems in Region 8	Organics, inorganics, dioxin, micro	Potable water	8TMS-L
[4]State of Wyoming – UST Branch	Organics, metals, UST analysis	Nonpotable water, solids and hazardous waste	None

[1]NELAP Primary AB: Air and Emissions
[2]NELAP Primary AB: Potable Water, Nonpotable water, solid and chemical materials
[3]NELAP Secondary AB
[4]Approval for UST work by A2LA
[5] NELAP Primary AB: Biological Tissue

NOTE: This list accurately reflects the certifications, accreditations, registrations, and contracts held at the time of publication and is subject to change. Check with your account manager on the status of any certification needed for a specific project. Our current scopes of accreditation can be viewed at http://www.eurofinsus.com/environment-testing/laboratories/eurofins-lancaster-laboratories-environmental/resources/certifications/ .

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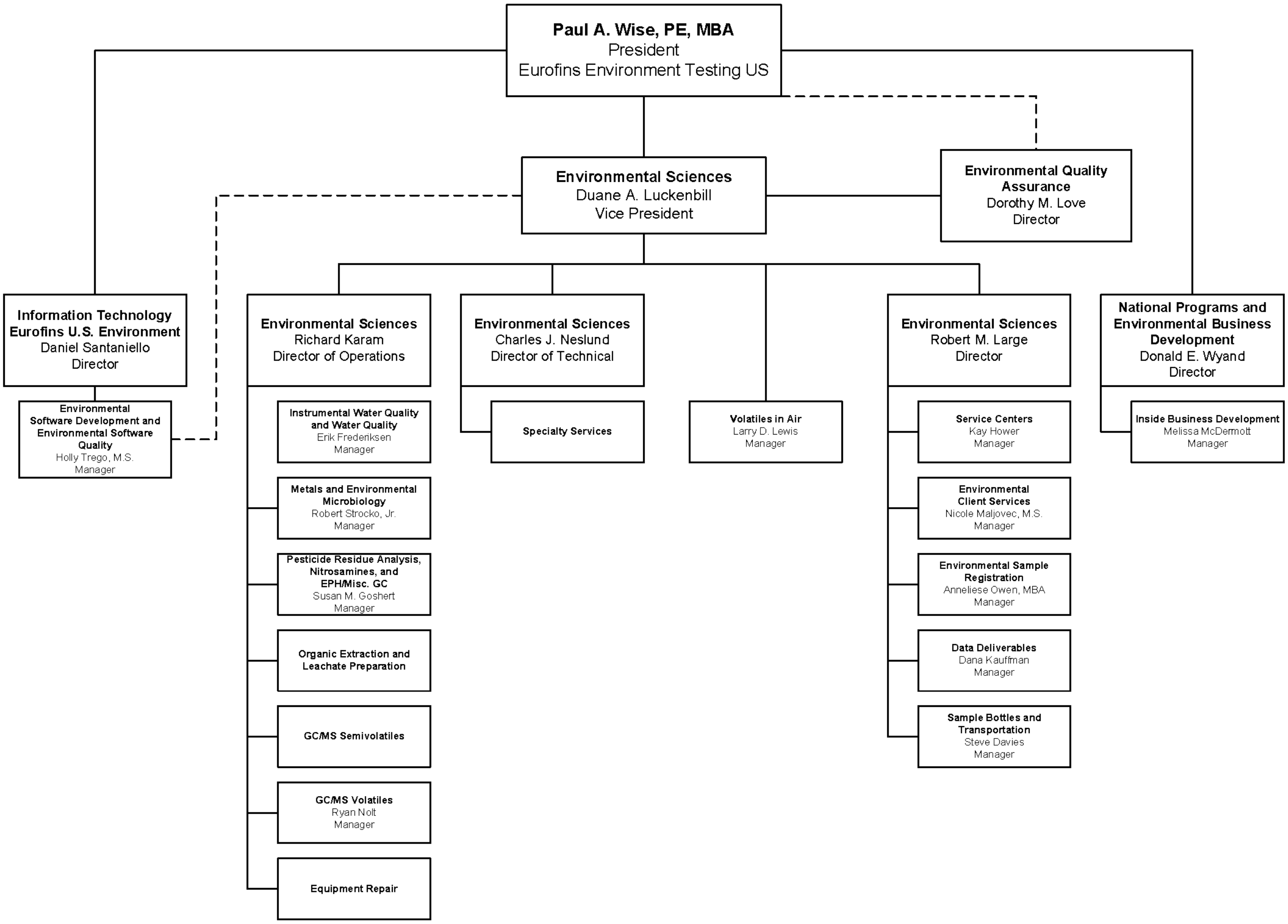
Eurofins Lancaster Laboratories Environmental



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Christiane Sweigart	B.S.	Senior Specialist
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Duane Luckenbill	B.S.	Vice President
Donald Wyand	B.S.	Director Sales
Robert Large*	B.S.	Director Operations Support
Richard Karam*	B.S.	Director Scientific
Charles Neslund*	B.S.	Director Scientific
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Audrey McClune		Specialist I
Betty Umble		Specialist I
Grace Salm		Specialist I
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Judi Brown		Specialist I
Kathy Fair		Specialist I
Lydia Steinke	B.S.	Specialist I
M Susan Kreider		Specialist II
Patricia Madrigal-Kauffman	A.S.	Specialist I
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Timothy Hauck		Courier/Sample Support Spec

Name	Degree	Title
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Catherine Bachman	B.S.	Scientist
Holly Ziegler	B.S.	Senior Scientist
Joseph Gambler	B.S.	Principal Scientist
Linda Hartenstine	B.A.	Senior Scientist
Mark Ratcliff*	B.A.	Senior Specialist
Matthew Barton*	B.S.	Senior Specialist
William Saadeh	B.S.	Scientist
GC/MS Volatiles		
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Kathrine Muramatsu	B.S.	Senior Scientist Group Leader
Kenneth Boley*	B.S.	Senior Scientist Group Leader
Roy Mellott	B.S.	Senior Scientist Group Leader
Amanda Richards		Scientist
Angela Sneeringer	B.S.	Senior Scientist
Anita Dale		Scientist
Brett Kenyon	B.S.	Scientist
Chad Moline*	B.S.	Senior Specialist
Chelsea Stong	B.S.	Senior Specialist
Christine Dulaney*	B.S.	Senior Specialist
Christopher Torres	B.S.	Scientist
Daniel Heller	B.S.E.	Senior Scientist
Jason Long	B.S.	Senior Scientist
Jeremy Giffin	B.S.	Scientist
Kelly Keller		Scientific Support Spec I
Kerri Legerlotz	B.S.	Senior Scientist
Kevin Sposito	B.S.	Senior Scientist
Linda Pape	B.A.	Senior Scientist
Marie Beamenderfer	B.S.	Senior Scientist
Marla Brewer*	B.S.	Senior Specialist
Robin Runkle*	B.S.	Senior Specialist
Sara Johnson	B.S.	Senior Scientist
Sarah Guill	B.S.	Scientist
Stephanie Selis	B.S.	Senior Scientist
Additional support personnel in this group: 6		

Instrumental Water Quality		
Erik Frederiksen*	B.A.	Manager
Nicole Veety		Senior Scientist Group Leader
Clinton Wilson	B.A.	Scientist
Drew Gerhart	B.S.	Scientist
James Mathiot		Scientist
Joseph McKenzie		Scientist
Sandra Miller		Scientist
Additional support personnel in this group: 4		
Metals		
Robert Strocko*	B.S.	Manager
Nina Haller*		Senior Specialist Group Leader
Choon Tian	B.A.	Scientist
Damary Valentin		Scientist
Deborah Krady	B.S.	Scientific Support Spec I
Debra Bryan		Operations Support Spec I
Eric Eby	B.S.	Senior Scientist
Jennifer Moyer	B.S.	Senior Specialist
Katlin Cataldi	B.S.	Scientist
Parker Lindstrom	B.S.	Senior Scientist
Suzanne Will	B.S.	Scientist
Tara Snyder	B.S.	Scientist
Additional support personnel in this group: 7		
Organic Extraction		
Richard Karam*	B.S.	Director
Joseph Feister		Senior Scientist Group Leader
Wanda Oswald		Senior Scientist Group Leader
Darin Wagner	B.A.	Scientist
David Hershey		Scientist
David Schrum		Technician II
Heidi Roberts*	B.S.	Senior Scientist
Jessica Velez	B.S.	Scientist
JoElla Rice		Technician II
Joseph Feister		Senior Scientist Group Leader
Justin Bukeavich		Technician
Kailah Ortiz		Technician
Robert Vincent	B.S.	Principal Scientist
Ryan Schafran	B.S.	Scientist
Shawn McMullen	B.A.	Scientist
Additional support personnel in this group: 20		

Pesticide Residue Analysis		
Susan Goshert*	B.S.	Manager
James Place	B.S.	Senior Scientist
Jamie Brillhart	B.S.	Senior Scientist
Jessica Miller	B.S.	Senior Scientist
Lisa Reinert	B.S.	Scientist
Monica Souders	B.S.	Scientist
Richard Shober	B.S.	Principal Scientist
Valerie Tomayko*	B.S.	Pr Scientific Sup Spec I
Additional support personnel in this group: 1		
Specialty Services Group		
Charles Neslund*	B.S.	Director
Christine Ratcliff	B.S.	Pr Scientific Sup Spec I GL
Brett Weidman	B.S.	Scientist
Deborah Zimmerman		Scientist
Ginelle McQuaid		Scientist
Joseph Anderson	B.S.	Senior Scientist
Meng Yu	M.S.	Principal Scientist
Michael Ziegler	B.S.	Senior Scientist
Michele Smith*	B.S.	Senior Specialist
Paul Cormier	B.A.	Pr Scientific Sup Spec I
Robert Brown		Principal Scientist
Timothy Trees	A.S.	Principal Scientist
Additional support personnel in this group: 3		
Volatiles in Air		
Larry Lewis	B.S.	Manager Scientific
Jeffrey Smith	B.A.	Senior Scientist Group Leader
Jacob Bailey	B.S.	Scientist
Additional support personnel in this group: 1		
Water Quality		
Erik Frederiksen*	B.A.	Manager Scientific
Kenneth Bell*	B.S.	Principal Scientist GL
Hannah Royer	B.A.	Scientist
Michele Graham	B.S.	Scientist
Michelle Lalli		Scientist
Robert Heisey*	B.A.	Senior Specialist
Susan Engle		Scientist
Susan Hibner	B.S.	Scientist
Yolunder Bunch		Scientist
Additional support personnel in this group: 6		

Environmental Software Development		
Holly Trego	B.S.	Manager IT Support
Andrew Strebel		IT Development Pr Spec II
Bret Winey	B.S.	IT Development Sr Specialist
Catherine Holt	B.S.	IT Development Pr Spec II
Chadwick Hershey	B.S.	IT Development Sr Specialist
Christopher Stauffer	B.S.	IT Development Sr Specialist
Diana Holmes	M.S.	IT Development Sr Specialist
Eric Walker		IT Development Specialist
John Riggs	B.S.	IT Development Sr Spec GL
Joshua Peters	B.S.	IT Development Specialist
Tiffany Betz	B.S.	IT Development Pr Spec II
Timothy Weaver	B.A.	IT Development Sr Specialist
Environmental Sample Administration		
Anneliese Owen	M.B.A.	Manager Scientific Support
Carolyn Cyms	B.S.	Senior Specialist Group Leader
Tamara Helsel		Senior Specialist Group Leader
Christine Knoedler	B.A.	Scientific Support Spec I
Deborah Neslund		Specialist II
Katherine Metzger	B.A.	Scientific Support Spec I
Katie Hartlove		Scientific Support Spec I
Kristin Zeigler	B.S.	Scientific Support Spec I
Additional support personnel in this group: 5		
Equipment Maintenance & Repair		
Robert Allison		Facilities Specialist I
Training		
Beth DiPaolo	M.A.	Vice President of PSS & Recruiting/Organizational Development
Kimberly Davies	M.B.A.	Director
Lindsay Deibler-Wallace	M.S.	Senior Specialist Group Leader
Barbara Weaver	M.S.	Pr Scientific Sup Spec I
Harry Ward	PHD	Pr Scientific Sup Spec I
Julia Matesich	B.S.	Scientific Support Spec I
Michael Salgado	B.S.	Senior Specialist
Sample Bottles		
Steven Davies	B.S.	Manager
Karen Guito		Courier/Sample Support Spec
Samantha DeFalcis		Courier/Sample Support Spec
Sandra Muckle		Courier/Sample Support Spec
Additional support personnel in this group: 3		

Sample Support		
Anneliese Owen	M.B.A.	Manager Scientific Support
Chad Wettig		Senior Specialist Group Leader
Lisa Cooke		Scientist
Stephanie Sanchez		Scientist
Additional support personnel in this group: 10		
Transportation		
Steven Davies	B.S.	Manager Operations Support
Christopher Winters		Courier/Sample Support Spec
L Kenneth Miller		Courier/Sample Support Spec
Leon Wolf		Courier/Sample Support Spec
Timothy Miller		Courier/Sample Support Spec
Additional support personnel in this group: 17		
Safety		
Rachel Brady	B.S.	Senior Specialist Group Leader
Beth Rich		Operations Support Sr Spec I
Stephen Nowakowski	B.S.	Senior Specialist
Additional support personnel in this group: 7		

*Denotes those employees who are authorized to release Analysis Reports.

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Jeffrey S. Allen, Courier/Sample Support Group Leader, Field Sampling
Information not available at time of printing

Joseph D. Anderson, B.S., Senior Chemist, Specialty Services Group
Education:
B.S. General Science, Pennsylvania State University (2004)
Professional Experience:
ALSI, GC GC/MS Analyst (2004-2010)
Responsibilities included preparing, running, and reviewing samples according to client and industry methods using various instrumentations including GC and GC/MS; performing analysis for various departments as determined by work volume and staffing needs; reviewing and reporting data within client specified criteria
With Lancaster Laboratories since 2010
Senior Chemist, Flexible Staffing (2010)
Responsibilities included preparing, running, and reviewing samples according to client, compendia, and industry methods using various wet chemistry techniques and instrumentation, which may include but is not limited to, gas chromatography, liquid chromatography, IC, and TOC instrumentation; performing analysis for various departments as determined by work volume and staffing needs
Senior Chemist, Specialty Services Group (2012)
Responsibilities include maintaining instrumentation; tuning and calibrating instrument daily; analyzing quality control and client samples; reviewing and assembling data in an efficient manner with a high degree of quality; evaluating current organizational and analytical systems; diagnosing complex problems and offering solutions with a high degree of independence; suggesting and implementing improvements to maximize quality and productivity; acting as technical resource for internal problems and projects; assisting in “brainstorming” client problems and projects; training new employees in all aspects of instrumentation; researching new and emerging technologies

F. Bradley Ayars, Principal Specialist Group Leader, Data Deliverables
Continuing Education:
Environmental Law & Policy, Franklin & Marshall College (1991)
Professional Experience:
With Eurofins Lancaster Laboratories since 1988
Client Services Specialist (1992)
Environmental Project Management (1994)
Senior Specialist Coordinator, Electronic Data Deliverables (1997)
Responsibilities included supervising EDD staff; developing and maintaining EDD formats; overchecking lab data for EDDs; primary contact for EDD issues
Senior Specialist Group Leader, Electronic Data Deliverables (2005)
Responsibilities included supervising EDD staff; developing and maintaining EDD formats; overchecking lab data for EDDs; primary contact for EDD issues
Principal Specialist Group Leader, Electronic Data Deliverables (2014)
Responsibilities include supervising EDD staff; developing and maintaining EDD formats; overchecking lab data for EDDs; primary contact for EDD issues

Duane A. Luckenbill, B.S., Vice President, Eurofins Lancaster Laboratories Environmental
Education:
B.S. Chemistry, Clarion University of PA (1989)
Continuing Education:
Introduction to Mass Spectral Interpretation, Hewlett-Packard (1995)
Technical Training, OI Analytical (1995)
Professional Experience:
ATEC Associates, Inc., GC/MS Analyst (1989)
With Eurofins Lancaster Laboratories since 1989
Chemist (1991)
Chemist/Coordinator (1993)
Group Leader (1997)
Manager (2001)
Responsibilities included client satisfaction, safety and quality systems administration, and all aspects of financial, personnel, and operations management of the GC/MS Volatiles and GC/MS Semivolatiles groups
Director, Environmental Sciences (2005)
Responsibilities included client satisfaction, safety and quality systems administration, and all aspects of financial, personnel, and operations management of the GC/MS Volatiles, GC/MS Semivolatiles, Volatiles in Air, Organic Extraction, Leachate Preparation, Field Sampling, Pesticide Residue Analysis, Volatiles by GC, and EPH/Miscellaneous GC groups

Vice President, Eurofins Lancaster Laboratories Environmental (2013)
Responsibilities include all aspects of financial, personnel, and operations management of all Technical areas, Environmental Quality and Compliance, Computer Application/Development, and Environmental Support Services while continually focusing on client satisfaction, safety, and quality systems administration; collaborating with other Eurofins US environmental companies to expand national testing capabilities and grow market share in the US

Awards, Citations, Honorary Societies & Publications:
Undergraduate Award in Analytical Chemistry, American Chemical Society (1988)
Department of Chemistry Competitive Award, Clarion University (1988-1989)
Outstanding Senior Chemistry Award, American Institute of Chemists Foundation (1989)
Senior College Award for Chemistry, Society for Analytical Chemists of Pittsburgh (1989)
One publication on mass spectrometry

Matthew Rusty E. Barton, B.S., Senior Specialist, GC/MS Semivolatiles

Education:
B.S. Biochemistry, East Stroudsburg University (1991)

Professional Experience:
With Lancaster Laboratories since 1991
Senior Chemist (1998)
Senior Chemist/Coordinator (1999)
Responsibilities included: supervise personnel; schedule lab work; perform purge and trap gas chromatography testing; operate O.I. 4560/4551, Tekmar 3000, Archon 5100, and HP5890 Series II OC instruments; review and approve data; and developing and evaluating new methods.
Senior Chemist, Nitrosamines (2003)
Responsibilities included: Analysis of nitrites in tobacco samples
Senior Chemist, EPH/Misc. GC (2004)
Responsibilities include: Analysis of environmental samples for diesel range organics via gas chromatography
Senior Specialist, GC/MS Semivolatiles (2008)
Responsibilities include: audit and upload of departmental data

Marie D. Beamenderfer, B.S., Senior Chemist, GC Volatiles

Education:
B.S. Biology, The Pennsylvania State University (2006)

Professional Experience:
With Eurofins Lancaster Laboratories since 2006
Chemist, GC Volatiles (2006)
Responsibilities included maintaining GC instrumentation; calibrating instruments as needed; analyzing quality control and client samples; reviewing and assembling data in an efficient manner with a high degree of quality; evaluating current organizational and analytical systems; suggesting and implementing the necessary corrective action to ensure the above can be performed in alignment with client and/or regulatory requirements; performing all duties with minimal supervision; training new employees; tracking inventory of instrument parts and standards and entering them into the standards database as received; verifying data on an as needed basis
Senior Chemist, GC Volatiles (2012)
Responsibilities include maintaining GC instrumentation; calibrating instruments as needed analyzing quality control and client samples; reviewing and assembling data in an efficient manner with a high degree of quality; evaluating current organizational and analytical systems; suggesting and implementing the necessary corrective action to ensure the above can be performed in alignment with client and/or regulatory requirements; performing all duties with minimal supervision; training new employees; tracking inventory of instrument parts and standards and entering them into the standards database as received; working on special assignments; diagnosing complex problems and offering solutions with a high degree of independence; assisting in “brainstorming” client problems and projects; completing assigned projects on time; verifying data on an as needed basis

Kenneth A. Bell, B.S., Principal Chemist Group Leader, Water Quality

Education:

B.S. Chemistry, Millersville University (1997)

Professional Experience:

Johnsons Chemical, Laboratory Assistant (1989-1992)

Responsibilities included collecting samples and performing testing on raw material

With Eurofins Lancaster Laboratories since 1994

Senior Laboratory Technician, Water Quality (1994)

Responsibilities included routinely performing analytical testing using wet chemistry methods

Chemist/Coordinator, Water Quality (1994)

Responsibilities included performing wet chemistry analyses, sample verification, and coordinating workflow

Senior Chemist/Coordinator, Water Quality (1994)

Responsibilities included coordinating workflow, performing sample verification, back-up report signing, training new employees, revising standard operating procedures, writing annual job plans and reviews

Senior Chemist Group Leader, Water Quality (2005)

Responsibilities included coordinating workflow, performing sample verification, back-up report signing, training new employees, revising standard operating procedures, writing annual job plans and reviews

Principal Chemist Group Leader, Water Quality (2014)

Responsibilities include coordinating workflow, performing sample verification, back-up report signing, training new employees, revising standard operating procedures, writing annual job plans and reviews

Tiffany D. Betz, B.S., Principal Specialist, Environmental Software Development

Education:

B.S. Computer Science, Millersville University (2001)

Continuing Education:

Oracle Exam #1Z0-007, Introduction to Oracle 9i: SQL (May 17, 2004)

Oracle Exam #1Z0-147, Oracle 9i: Program with PL/SQL (August 4, 2004)

Professional Experience:

With Eurofins Lancaster Laboratories since 2000

Specialist, Computer Applications Development (2000)

Responsibilities included performing computer applications development and maintenance.

Senior Specialist, Computer Applications Development (2006)

Responsibilities included performing computer applications development and maintenance.

Principal Specialist, Environmental Software Development (2012)

Responsibilities include analyzing, designing, developing, documenting, validating, and deploying custom software in a regulated environment; conforming to FDA guidelines and CFR Part 11 in all duties; strictly adhering to Lancaster Laboratories Software Development Lifecycle (SDLC) policies and procedures; preparing and executing software test plans for custom developed Laboratory Information Management System (LIMS) and other software in accordance with internal procedures; spending a large portion of time writing documentation in support of various software development stages and in accordance with SDLC procedures; spending some portion of time supporting and assisting users with new software applications; at times, conducting formal training sessions with a small group of users to familiarize them with a new computer system

Kenneth L. Boley, Jr., B.S., Senior Chemist Group Leader, GC/MS Volatiles

Education:

B.S. Chemistry, Messiah College (1995)

Professional Experience:

Heritage Custom Kitchens, Inc., Face Frame Assembler (1997–2001)

Responsibilities included reading and interpreting job orders; overseeing daily production of department; performing various manufacturing duties daily; member of the safety committee, first aid team, and security team

With Lancaster Laboratories since 2001

Chemist, GC/MS Volatiles (2001)

Responsibilities included analyzing samples and QC by purge and trap GC/MS; generating and reviewing raw data; performing maintenance on GC/MS, purge and traps, and various autosamplers; following methods and SOPs

Senior Chemist, GC/MS Volatiles (2005)

Responsibilities included performing routine and non-routine analyses; diagnosing and solving technical problems; maintaining and troubleshooting instrumentation; writing and revising SOPs; training new analysts; auditing and uploading data as work load deems necessary

Senior Chemist Group Leader, GC/MS Volatiles (2009)

Responsibilities include maintaining GC/MS instrumentation; tuning and calibrating instrument daily; analyzing quality control and client samples; reviewing and assembling data in an efficient manner with a high degree of quality; evaluating current organizational and analytical systems; suggesting and implementing corrective action and system improvements when necessary; performing all duties with minimal supervision; working on special assignments; diagnosing complex problems and offering solutions with a high degree of independence; assisting in “brainstorming” client problems and projects; completing assigned projects on time; researching new and emerging technologies; producing written and oral reports on research activities; performing both technical and personnel aspects of group operations; performing work within the department or other areas as required; acting as a technical resource, trainer, and troubleshooter to specific department; making recommendations for operational and/or technical improvements; communicating effectively within the group; coaching and developing direct reports; planning and monitoring workflow

Nancy J. Bornholm, B.S., Principal Specialist, Environmental Client Services

Education:

B.S. Chemistry (magna cum laude), Muhlenberg College (1981)

Continuing Education:

Instrumental Analysis of Paints and Polymers, FBI Academy (1984)
Analytical Chemistry of Contaminants in Surface and Groundwater, ACS Short Course (1986)

Professional Experience:

University of Connecticut Health Center, Laboratory Technician (1977-1980)
Institute for Cancer Research, Research Technician (1981)
Baltimore City Crime Laboratory, Mobile Crime Unit Trainee (1981-1982)
Maryland State Police Crime Laboratory, Forensic Chemist III (1982-1985)
With Lancaster Laboratories since 1985

Senior Specialist, Environmental Client Services (1987)

Responsibilities included project management; audit sample entries; answer client questions; communicate client requirements to lab areas; and schedule sample submissions and provide sampling containers

Principal Specialist, Environmental Client Services (2004)

Responsibilities include performing project management for large clients/projects; auditing sample entries for accuracy; providing price quotes; answering client questions; understanding and communicating client requirements to lab personnel; scheduling sample submissions; ordering sampling containers and providing pre-printed COCs; serving as a technical resource to both internal and external clients and notifying management of any client issues

Awards, Citations, Honorary Societies, and Publications:

Quarterly Impact Award (2008)
Superlative Service President’s Award (2008)

Rachel A. Brady, B.S., Senior Specialist Group Leader, Safety

Education:

B.S. Environmental Biology, Millersville University (2002)

Professional Experience:

TIER Environmental, Lab Pack Chemist (2005-2006)

Responsibilities included preparing shipments/paperwork for hazardous/residual waste disposal

Clean Harbors, InSite Supervisor (2010-2014)

Responsibilities included overseeing Hazardous Waste disposal program; all residual waste; waste water treatment plant operations

With Eurofins Lancaster Laboratories since 2014

Specialist, Safety (2014)

Responsibilities included implementing and performing hazardous, biologic, and chemotherapeutic waste removal

Senior Specialist, Safety (2015)

Responsibilities include overseeing waste team; RSO; oversee all Environmental Programs

Marla S. Brewer, B.S., Senior Specialist, GC/MS Volatiles

Education:

B.S. Industrial Hygiene, Purdue University (2000)

Continuing Education:

OSHA 8-Hour (2000)
Comprehensive GC/MS Seminar, Restek (2002)
Practical Process Improvement Facilitator Training (2010)

Professional Experience:

ALCOA, Industrial Hygiene Intern (1999)

Responsibilities included performing air sampling for a variety of substances; conducting noise survey including area and personal sampling; testing plant environment for heat stress and evaluated reports; assisting in formulation of written program

BP-Amoco Refinery/Orr Professional Services, Industrial Hygiene Technician (2000)

Responsibilities included performing air sampling to reevaluate Benzene Exposure Surveillance Program; conducting noise surveys including area and personal monitoring to reevaluate Hearing Conservation Program

With Eurofins Lancaster Laboratories since 2000

Senior Technician, Volatiles by GC (2000)

Responsibilities included performing prescreen analysis, sample prep, GC maintenance, and data review

Chemist, GC/MS Volatiles (2001)

Responsibilities included analyzing samples and QC by purge and trap GC/MS; generating and reviewing raw data; performing maintenance on GC/MS, purge and traps, and various autosamplers

Senior Specialist, GC/MS Volatiles (2006)

Responsibilities include performing GC/MS volatile data interpretation; reviewing and approving data; signing reports; analyzing samples; generating raw data; sample verification; SOP revisions and updates

Jamie L. Brillhart, B.S., Senior Chemist, Pesticide Residue Analysis

Education:

B.S. Physical Science, York College of Pennsylvania (2003)

Professional Experience:

B-H Laboratories Inc./Analytical Laboratory Services Inc., Inorganic Laboratory Technician/Inorganic Chemist (2003-2005)

Responsibilities included performing wet chemistry testing on drinking waters and waste water; being responsible for analyses included fluoride, cyanide, phosphorus, nitrate/nitrite, cadmium reduction, and grease and oil testing when needed; prepping and analyzing for mercury on a mercury analyzer; analyzing for various metals on a graphite furnace; prepping leachates; prepping standards as needed

Hercon Laboratories, Inc., QC Analyst I (2005-2007)

Responsibilities included performing Quality Control Testing on Transdermal Systems; performing assays, dissolutions, degradation, residual solvents, and raw material testing; prepping necessary standards and performing instrument maintenance as needed

With Lancaster Laboratories since 2007

Chemist, Pesticide Residue Analysis (2007)

Responsibilities included analyzing soils for PPL Pesticides using 5890 and 6890 GCs with ECD detectors; performing instrument maintenance; prepping standards; auditing calibrations as necessary; being able to analyze for OPPAs, ACMOs, EDBs, PCBs, and Herbicides as needed

Senior Chemist, Pesticide Residue Analysis (2011)

Responsibilities include analyzing soils for PPL Pesticides using 5890 and 6890 GCs with ECD detectors; performing instrument maintenance; prepping standards; auditing calibrations as necessary; being able to analyze for OPPAs, ACMOs, EDBs, PCBs, and Herbicides as needed

Marianne L. Bragg, B.S., Principal Specialist, Business Development, Environmental Sciences

Education:

B.S. Biology, Millersville University (1987)

Professional Experience:

With Eurofins Lancaster Laboratories since 1985

Coordinator

Group Leader (1990)

Principal Specialist (1994)

Responsibilities included advising clients on testing; providing price quotes and proposals; answering client questions; scheduling sample submissions and providing sampling containers; communicating client requirements to lab areas; assisting with client visits to the lab

Principal Specialist/Coordinator, Environmental Business Development (2002)

In addition to the responsibilities listed above, manage workload and workflow among business development staff

Principal Specialist/Group Leader, Environmental Business Development (2005)

In addition to the responsibilities listed above, manage workload and workflow among business development staff

Principal Specialist, Environmental Business Development (2007)

Responsibilities included advising clients on testing; providing price quotes and proposals; answering client questions; scheduling sample submissions and providing sampling containers; communicating client requirements to lab areas; assisting with client visits to the lab

Principal Specialist, Business Development, Environmental Sciences (2014)

Responsibilities include independently securing new business consistent with operational capabilities and business plan goals; collaborating efforts and activities with those of Outside Sales account managers as needed; focusing on proposal writing for major national accounts; attending face-to-face sales meetings with selected national accounts as needed and maintaining responsibility for their maintenance and growth

Robert Brown, Principal Chemist, Specialty Services Group

Education:

Attended 2.5 years at Pennsylvania State University towards B.S. in Microbiology (1988)

Completed 20 credits towards B.S. in Environmental Biology, Millersville University (1993)

Professional Experience:

With Eurofins Lancaster Laboratories since 1988

Chemist (1993)

Senior Chemist (1997)

Responsibilities included performing extractable petroleum testing; operating multiple Hewlett-Packard gas chromatograph (GC) instruments; data interpretation and entry; developing and evaluating new methods

Principal Chemist (2004)

Responsibilities included performing extractable petroleum testing; operating multiple Hewlett-Packard gas chromatograph (GC) instruments; data interpretation and entry; developing and evaluating new methods; serving as primary technical contact for client service representatives and their clients

Principal Chemist Group Leader, EPH/Misc. GC (2005)

Responsibilities included performing extractable petroleum testing; operating multiple Hewlett-Packard gas chromatograph (GC) instruments; data interpretation and entry; developing and evaluating new methods; serving as primary technical contact for client service representatives and their clients

Principal Chemist, Specialty Services Group (2011)

Responsibilities include: acting as technical resource within the environmental division; developing and validating analytical protocols; troubleshooting and solving analytical chemistry problems; optimizing instrument configuration and performance; evaluating and interpreting analytical results; writing SOPs; assisting in responding to and eliminating ICARs, assisting in optimizing procedures in prep lab; communicating effectively within department; performing routine work as required

Kathryn A. Brungard, Senior Specialist, Environmental Quality Assurance

Continuing Education:

Clinical Laboratory Science, Temple University (1984-1988)

Professional Experience:

Environmental Partners, Inc., Environmental Technician/Health and Safety Coordinator (2003-2005)

Responsibilities included determining personnel health and safety risks on each work site and determining appropriate measures to be taken for personal protection; maintaining and servicing sampling equipment; calibrating meters and analytical equipment; collecting and processing representative samples at each monitoring site following state mandated procedures; routinely measuring field water and soil quality parameters; performing product recovery as part of site remedial measures; evaluating and reporting upon trends and/or results that were out-of-range

Maxwell House Coffee/Kraft Foods, Quality Assurance Technician (2004-2005)

Responsibilities included conducting hourly audits on operating production lines which included weight of product, oxygen content, density, caffeine level by HPLC, moisture content, inspection for foreign or incidental materials, and packaging compliance; performing weekly water testing for level of chlorine and microbial contamination; producing result spreadsheets and accurate logs; notifying upper management of all results in a timely manner

Columbia Analytical Services, Inc, Quality Assurance Program Manager (2005-2009)

Responsibilities included being responsible for the overall coordination of the NELAP certified environmental laboratory program; monitoring laboratory quality systems through audits; identifying potential problem areas, recommending corrective actions, and providing technical assistance and training as necessary; informing management of potential problems and recommending remedial measures in a timely basis both orally and by written communication; maintaining performance evaluation records; maintaining accreditations for regulatory agencies and client programs; providing audit responses and initiating changes in procedures; maintaining the calibration of all weights, balances, and thermometers

With Eurofins Lancaster Laboratories since 2010

Senior Specialist, Environmental Quality Assurance (2010)

Responsibilities include ensuring quality of data being produced in the laboratories by performing data review, auditing laboratories, and reviewing written procedures; ensuring laboratory adherence to government regulations and client requirements; reviewing client and government documents for requirements outside our usual laboratory practices; setting up and testing new analysis in the laboratory sample management system as required by the departments

Memberships and Appointments:

Florida Society of Environmental Analysts (2005-2009)

Society of Women Environmental Professionals, SWEP (2012-present)

Rachel R. Cochis, B.A., Principal Specialist Group Leader, GC/MS Semivolatiles

Education:

B.A. Science, Pennsylvania State University (1992)

Continuing Education:

Introduction to Mass Spec Interpretation, Hewlett-Packard (1995)

Gas Chromatography Principles & Practices (1994)

Professional Experience:

With Eurofins Lancaster Laboratories since 1993

Chemist (1994), GC/MS Semivolatiles (1993)

Responsibilities included performing semvolatiles analysis on water and soil samples

Senior Chemist Coordinator, GC/MS Semivolatiles (1996)

Responsibilities included scheduling lab work; performing data interpretation and entry; reviewing and approving data; revising and updating SOPs and analytical methods; monitoring turnaround time; communicating client requirements to lab areas

Senior Specialist Group Leader, GC/MS Semivolatiles (2005)

Responsibilities included scheduling lab work; performing data interpretation and entry; reviewing and approving data; revising and updating SOPs and analytical methods; monitoring turnaround time; communicating client requirements to lab areas

Principal Specialist Group Leader, GC/MS Semivolatiles (2013)

Responsibilities include scheduling lab work; performing data interpretation and entry; reviewing and approving data; revising and updating SOPs and analytical methods; monitoring turnaround time; communicating client requirements to lab areas

Tracy A. Cole, Senior Specialist, EPH/Miscellaneous GC

Continuing Education:

Gas Chromatography: Principles and Practice, LLU (1997)

Professional Experience:

With Lancaster Laboratories since 1991

Laboratory Technician, Volatiles in Air (1991)

Responsibilities included preparing samples and standards; washing glassware; loading samples on instruments

Senior Technician, Volatiles in Air and EPH/Miscellaneous GC (1994)

Responsibilities included analyzing routine samples and QC by Gas Chromatography for DRO and miscellaneous organic compounds; preparing direct injection samples for analysis; preparing standards; reviewing chromatography data and uploading to the LIMS

Chemist, EPH/Miscellaneous GC (1999)

Responsibilities included analyzing routine and nonroutine samples and QC by Gas Chromatography for various organic analyses including DRO, TPH, and other petroleum related methods and miscellaneous organic compounds by direct injection; reviewing chromatography data and uploading to the LIMS; performing instrument maintenance; calibrating instruments for various methods

Senior Specialist, EPH/Miscellaneous GC (2008)

Responsibilities include reviewing/verifying data for technical correctness including raw chromatography data, initial calibrations, and analytical reports; ensuring that method and project requirements were followed and entry into the LIMS is correct; acting as a technical resource for the department; assisting in reviewing/writing SOPs and other technical documents

Paul R. Cormier, B.A., Principal Specialist, Specialty Services Group

Education:

B.S. Microbiology, Virginia Tech (1984)

B.A. Chemistry, Virginia Tech (1984)

Continuing Education:

Hewlett-Packard GC/MS Advance Operations/System Manager Course (1990)

Mass Spectral Interpretation, Finnigan MAT Institute (1991)

Technical Training, OI Analytical (1995)

Professional Experiences:

Environmental Testing & Certification (1985-1989)

Analytikem, Inc. (1989-1990)

With Lancaster Laboratories since 1990

Senior Chemist (1990)

Responsibilities included: operate GC/MS instruments; data interpretation; review and approve data; repairing instruments; and train other analysts.

Senior Specialist (2005)

Responsibilities included: operate GC/MS instruments; data interpretation; review and approve data; repairing instruments; and train other analysts.

Principal Specialist, GC/MS Volatiles (2006)

Responsibilities include: operate GC/MS instruments; data interpretation; review and approve data; repairing instruments; and train other analysts.

Principal Specialist, Specialty Services Group (2010)

Responsibilities include acting as technical resource within the environmental division; developing and validating analytical protocols; troubleshooting and solving analytical chemistry problems; optimizing instrument configuration and performance; evaluating and interpreting analytical results; writing SOPs; assisting in responding to and eliminating ICARs, assisting in optimizing procedures in prep lab; communicating effectively within department; performing routine work as required

Memberships & Appointments:

American Chemical Society

Teresa L. Cunningham, B.S., Principal Specialist, Environmental Client Services and Inside Business Development

Education:

B.S. Biology, St. Joseph's University (1999)

Continuing Education:

Chemical Monitoring Assistance Program, Pennsylvania Rural Water Association (2000)
How to Deliver Exceptional Customer Service, Fred Pryor Seminars (2000)
Organizational Behavior, Penn State University (2005)

Professional Experience:

With Eurofins Lancaster Laboratories since 1999

Specialist, Environmental Client Services (1999-2000)
Senior Specialist, Environmental Client Services (2001)
Senior Specialist Coordinator, Environmental Client Services (2001)

Responsibilities included serving as project manager for clients with petroleum-related testing accounts; coordinating client requests with laboratory groups to ensure that the client's needs are met; scheduling bottle shipments and sample pickups; preparing quotations; coordinating staff

Senior Specialist Group Leader, Environmental Client Services (2005)

Responsibilities included serving as project manager for clients with petroleum-related testing accounts; coordinating client requests with laboratory groups to ensure that the client's needs are met; scheduling bottle shipments and sample pickups; preparing quotations; coordinating staff

Manager, Environmental Client Services (2006)

Responsibilities included overseeing implementation of new projects; coordinating client requests with laboratory groups to ensure that the client's needs are met; coordinating staff

Principal Specialist, Environmental Client Services and Inside Business Development (2008)

Responsibilities include performing project management; training new client service representatives; auditing sample entry; answering client questions; communicating client requirements to lab areas

Carolyn M. Cyms, B.S., Senior Specialist Group Leader, Environmental Sample Administration

Education:

B.S. Secondary Education/Chemistry, Bloomsburg University of Pennsylvania (1993)
Post Baccalaureate Certificate, Biology and MS Math, Millersville University (2002)

Continuing Education:

Accounting I, HACC (1996)
Introduction to the Internet, PC Focus (1996)
Self-Discipline & Emotional Control, Franklin-Covey (1997)
Child Growth & Development, HACC (1998)
Cell Biology, Millersville University (2000)
Botany; Genetics; Zoology; Biochemistry; Ecology, and Ecology Lab, Millersville University (2001)
Immunology; Animal Behavior; Teaching Biological Issues; Entomology, Millersville University (2002)
Introduction to Computer Programming, Millersville University (2003)

Professional Experience:

Lancaster Theological Seminary, Field Education Assistant-Special Project Coordinator (1996-1999)

Responsibilities included assisting with mailings, organization of the field education program; creating and preparing a student field education manual for the ministerial studies program; acting as liaison between Field Ed Professor, Field Ed sites, and students; preparing all written correspondences for the field ed office; organizing and preparing materials for meetings; tracking student progress through the program; assisting with other special projects requiring computer skills of PageMaker, WordPerfect, Quattro Pro, and Envoy

Self-Employed, Tutor (1994-2005)

Responsibilities included tutoring HACC students in Introduction to Chemistry, Chemistry, Biology, and Algebra

Millersville University – Biology Department, Assistant (2003)

Responsibilities included preparing Power Point presentations for a stream restoration monitoring program; photographing various stages of the project

With Lancaster Laboratories since 1994

Administrator III, Environmental Sample Administration (1994)

Responsibilities included receiving samples, entering samples, auditing, filing, noting discrepancies, and unpacking samples

Administrator III/Coordinator, Environmental Sample Administration (1995)

Responsibilities included relaying technical/client information when it became available; answering questions from clients/technical areas when CSR was unavailable; coordinating/prioritizing entry; supervising and evaluating work of 2nd Shift Environmental Entry Staff; training new personnel in the entry/interpretation process; preparing Job Plans on an as-needed basis

Specialist I, Environmental Sample Administration (1996)

Responsibilities included receiving samples; entering samples; auditing; filing; noting discrepancies; unpacking samples; acting as project coordinator on an as-needed basis

Senior Specialist, Environmental Sample Administration (2000)

Responsibilities included receiving samples; entering samples; auditing; filing; noting discrepancies; unpacking samples; acting as project coordinator on an as-needed basis; training; preparing resource materials; working on special projects as needed

Senior Specialist Coordinator, Environmental Sample Administration (2004)

Responsibilities included receiving samples; entering samples; auditing; filing; noting discrepancies; unpacking samples; acting as project coordinator on an as-needed basis; training; preparing resource materials; working on special projects as needed

Senior Specialist Group Leader, Environmental Sample Administration (2005)

Responsibilities include receiving samples; entering samples; auditing; filing; noting discrepancies; unpacking samples; acting as project coordinator on an as-needed basis; training; preparing resource materials; working on special projects as needed

Awards, Citations, Honorary Societies & Publications:

Residential Life Award of Merit (1990)
Bloomsburg University Dean's List 6 of 8 semesters, graduated cum laude (1990-1993)
Kappa Delta Phi (National Co-Ed Honor Society) (1994)
Spirit of LLI (2001)

Memberships & Appointments:

Elizabethtown Fire Company (1993-present)
Safety Committee (1994-1998)
Alpha Phi Omega (National Co-Ed Service Fraternity) (1991-1993)
NSTA (2000-2008)
Kappa Delta Phi (1994, 2001-2003)

Steven C. Davies, B.S., Manager, Transportation and Sample Bottles

Education:

B.S. Elementary Education, Lancaster Bible College (1987)

Professional Experience:

With Lancaster Laboratories since 1990

Transportation Coordinator (1991)

Transportation Group Leader (1994)

Transportation and Sample Bottles Group Leader (1998)

Responsibilities included supervise personnel; schedule lab work; manage financial resources; answer client questions; communicate client requirements to lab areas; and schedule sample submissions and provide sampling containers.

Transportation and Sample Bottles Manager (2005)

Responsibilities include supervise personnel; schedule lab work; manage financial resources; answer client questions; communicate client requirements to lab areas; and schedule sample submissions and provide sampling containers.

Lindsay C. Deibler-Wallace, M.S., Senior Specialist Group Leader, Training

Education:

B.S. Chemistry, Lebanon Valley College (2002)
M.S. Secondary Science Education, George Mason University (2007)

Professional Experience:

Flint Hill School, Upper School Science Teacher (2002-2013)

Responsibilities included developing and implementing rigorous lessons, laboratory activities and assessments for Physics, Chemistry and Honors Chemistry; created video podcasts for all Chemistry lecture material that students study outside of class time according to the Flipped Learning style; proposed and developed the curriculum to teach a new elective course in Forensic Science; utilized various computer resources to promote interactive learning and to prepare students for future workforce by encouraging group work, problem solving, and critical thinking; differentiated instruction and customized instructional strategies to ensure that all students achieve at high levels; provided a safe and engaging learning environment that encourages student success; analyzed data from formal and informal assessments to improve instruction; chaired bi-weekly grade level faculty meetings

With Eurofins Lancaster Laboratories since 2014

Senior Specialist, Training (2014)

Responsibilities included facilitating Core and Elective training for new employees; conducting orientations, internal courses, and other learning experiences

Senior Specialist Group Leader, Training (2015)

Responsibilities include managing the resources of the technical training group; designing and delivering core and elective technical training

Christine M. Dulaney, B.A., Senior Specialist, GC/MS Volatiles

Education:

B.A. Biology, Meredith College (1984)

Continuing Education:

Waters Fundamentals of HPLC, Compuchem Laboratories (1989)

Professional Experience:

Compuchem Laboratories (1984-1998)

Extraction Technician (1984-1986)

Responsibilities included performing extraction of various environmental matrices for pesticide GC analysis and semivolatile GC/MS analysis; extracting quarterly PE samples

GC Technician (1986-1989)

Responsibilities included performing analysis of environmental extracts for pesticides, PAHs, and volatile organic compounds using GC, HPLC, and purge and trap, respectively; performing routine instrument maintenance

Senior Chemist, Pesticide Review (1990-1995, 1996-1998)

Responsibilities included performing qualitative and quantitative review of pesticide, PAH, and volatile organic data; reviewing instrument maintenance and standard logbooks

With Eurofins Lancaster Laboratories since 1998

Chemist, Pesticide Residue (1998)

Responsibilities included reviewing GC pesticide residue data packages; responding to client inquiries and ICARs

Project Management Specialist, Pharmaceutical Client Services (2003)

Responsibilities included managing details of various pharmaceutical client accounts using the laboratory information management system; acting as liaison between the client and internal laboratory personnel

Senior Specialist, GC/MS Volatiles (2005)

Responsibilities include auditing data for various GC and GC/MS volatile analyses; verifying data within the laboratory information management system, communicating and following up on outstanding data issues

Eric L. Eby, B.S., Senior Chemist, Metals

Education:

B.S. Biology, Millersville University (1988)

Continuing Education:

OSHA 40-hour Hazardous Waste Management, Phoenix Safety Associates (1991)
DX500 Maintenance and Troubleshooting, Dionex (1996)
The Chemistry Behind the Techniques, EAS, Inc. (1996)
Cleaning Validation Strategies, Applied Analytical Industries, Inc. (1997)
Gas Chromatography Practical Theory and Applications, Lancaster Laboratories (1998)

Professional Experience:

With Lancaster Laboratories since 1988

Associate Chemist (1993)

Responsibilities included environmental wet chemistry testing and field sampling.

Chemist (1997)

Senior Chemist, Pharmaceutical Raw Materials (1998)

Responsibilities included IC, TOC analysis, IC maintenance, USP purified water testing, raw materials testing, USP <661> container closure testing.

Senior Chemist, Pharmaceutical Product Testing (2000)

Responsibilities included pharmaceutical product testing per client specific methods, IC and HPLC maintenance.

Senior Chemist, Metals (2005)

Responsibilities include ICP analysis for environmental testing and ICP instrument maintenance.

Joseph S. Feister, Senior Chemist Group Leader, Organic Extraction

Professional Experience:

With Eurofins Lancaster Laboratories since 1993
Laboratory Technician, Pesticide Residue Analysis (1993)
Responsibilities included prepping samples
Senior Technician, Organic Extraction (1996)
Responsibilities included prepping samples
Chemist Group Leader, Organic Extraction (2001)
Responsibilities included prepping samples; supervising employees
Senior Chemist Group Leader, Organic Extraction (2015)
Responsibilities include performing high level, difficult preps (with minimal supervision or guidance) following standard operating procedures (SOPs); self-train in new techniques; entering information into computer; training new or existing employees in extraction techniques or use of equipment; using knowledge to actively improve current processes; developing, enhancing, and validating new extraction methods; keeping work area clean and organized; preparing spikes; repairing equipment; updating departmental SOPs and training manual; disposing of wastes in approved manner; assisting in incident prevention and remediation when necessary; performing both technical and personnel aspects of group operations; performing work within the department or other areas as required; acting as a technical resource, trainer, and troubleshooter to specific department; making recommendations for operational and/or technical improvements; communicating effectively within the group; coaching and developing direct reports; planning and monitoring workflow

Erik J. Frederiksen, B.A., Manager, Water Quality and Instrumental Water Quality

Education:

B.A. Chemistry, University of Virginia (1990)

Continuing Education:

Infrared Spectral Interpretation (1993)

Professional Experience:

With Eurofins Lancaster Laboratories since 1990
Chemist/Coordinator (1993)
Group Leader, Water Quality Department (1994)
Responsibilities included supervising personnel; managing laboratory operations; project management; managing financial resources; reviewing and approving data
Manager, Water Quality and Instrumental Water Quality Departments (2005)
Responsibilities include supervising personnel; managing laboratory operations; project management; managing financial resources; reviewing and approving data

Lynn Frederiksen, B.S., Principal Specialist, Environmental Client Services

Education:

B.S. Conservation and Resource Development, University of Maryland (1981)

Professional Experience:

University of Missouri, Senior Research Lab Technician (1982 – 1984)
GPU Nuclear Corporation, Data Analyst (1985 – 1989)
With Eurofins Lancaster Laboratories since 1989
Senior Specialist (1989)/Team Leader, Environmental Client Services (2006)
Responsibilities included: consult with clients regarding testing needs; revise and update SOPs; provide price quotes; audit sample entry; answer client questions; communicate client requirements to lab areas; provide status reports, including results, to clients; schedule sample submissions and provide sampling containers; assist Group Leader with training of new employees and delegating new projects.
Senior Specialist Group Leader, Environmental Client Services (2007)
Responsibilities included: managing a team of client service representatives, training of new employees, setting up and delegating new projects, serving as primary project manager for several large petroleum clients and consultants.
Principal Specialist Group Leader, Environmental Client Services (2011)
Responsibilities included serving as the primary contact or back-up with the laboratory for a number of assigned clients requiring specialized testing or complex projects; understanding and communicating technical information and client requirements to laboratory personnel, helping to ensure that requirements are met; leading broad-based complex projects to a satisfactory conclusion according to client technical and schedule requirements; developing strong relationships with major accounts resulting in additional sales; advising and training other members of the department; serving as a technical resource both internally and externally; proactively assisting Outside Business Development with client visits, presentations, and internal audits for assigned clients; participating on PPI teams

Principal Specialist, Environmental Client Services (2015)

Responsibilities include serving as the primary contact or back-up with the laboratory for a number of assigned clients requiring specialized testing or complex projects; understanding and communicating technical information and client requirements to laboratory personnel, helping to ensure that requirements are met; leading broad-based complex projects to a satisfactory conclusion according to client technical and schedule requirements; developing strong relationships with major accounts resulting in additional sales; advising and training other members of the department; serving as a technical resource both internally and externally; proactively assisting Outside Business Development with client visits, presentations, and internal audits for assigned clients; participating on PPI teams

Joseph M. Gambler, B.S., Principal Chemist, GC/MS Semivolatiles

Education:

B.S. Chemistry, Millersville University (1996)

Professional Experience:

Wyeth, Biological Manufacturing Technician (1996)

With Eurofins Lancaster Laboratories since 1996

Senior Chemist, GC/MS Semivolatiles (1996)

Responsibilities included training new hires; maintaining GC/MS systems; preparing standards/stocks/spikes; maintaining Helium supply system; performing data interpretation; ordering supplies; auditing; cross trained in Pesticides Department

Principal Chemist, GC/MS Semivolatiles (2015)

Responsibilities include maintaining GC/MS instrumentation; tuning and calibrating instruments daily; analyzing quality control and client samples; reviewing and assembling this data in an efficient manner with a high degree of quality to meet client requirements; working on special projects, research, or IT needs for the group (at the direction of Group Leader or Manager) with little or no supervision

Stephen J. Gordon, B.S., Project Manager, Pittsburgh Service Center

Education:

B.S. Chemistry, Carnegie Mellon University (1996)

Professional Experience:

Alcoa, Inc, Senior Technician (1997-2000)

Responsibilities included analytical chemist specialized in PCB congener analysis by GC-ECD

Clark Laboratories, LLC, Project Manager (2000-2012)

Responsibilities included managing ASTM D02 interlaboratory crosscheck program and working as an analytical chemist

Environmental Data Services, Senior Technical Specialist (2012-2015)

Responsibilities included data validation, laboratory auditing, technical writing

With Eurofins Lancaster Laboratories since 2015

Project Manager, Pittsburgh Service Center (2015)

Responsibilities include serving as the primary contact for a number of assigned clients; understanding technical information and communicating client requirements to laboratory personnel; helping to ensure that requirements are met; managing large/complex projects according to client technical and schedule requirements; developing strong relationships with major accounts resulting in additional sales; training subordinates; delegating routine tasks; resolving issues when problems arise; participating in departmental process improvement; packing bottle orders and delivering bottles/picking up samples as needed

Susan M. Goshert, B.S., Manager, EPH/Miscellaneous GC, Pesticide Residue Analysis, Nitrosamines

Education:

B.S. Chemistry, Juniata College (1988)

Continuing Education:

Advanced Aquarius Report Training, Hewlett-Packard (1989)
How to Handle People with Tact and Skill, Harrisburg Area Community College (1992)
Positive Attitude and Peak Performance, Harrisburg Area Community College (1992)

Professional Experience:

With Lancaster Laboratories since 1988
- Chemist (1990)
- Senior Chemist Coordinator (1997)
  - Responsibilities included supervising personnel; reviewing and approving data; monitoring turnaround time
- Senior Specialist Group Leader, EPH/Misc. GC (2005)
  - Responsibilities included supervising personnel; reviewing and approving data; monitoring turnaround time
- Principal Specialist Group Leader, GC/MS Volatiles (2008)
  - Responsibilities included supervising personnel; reviewing and approving data; monitoring turnaround time
- Manager, EPH/Miscellaneous GC, Pesticide Residue Analysis, Nitrosamines (2012)
  - Responsibilities include supervising personnel; managing laboratory operations and financial resources; project management; reviewing and approving data; consulting with clients regarding testing needs

Brian K. Graham, B.A., Senior Chemist, GC/MS Semivolatiles

Education:

B.A. Mathematics, Millersville University (1996)

Professional Experience:

With Lancaster Laboratories since 1989
- Chemist, GC/MS Semivolatiles (1989-2006)
- Senior Chemist, GC/MS Semivolatiles (2006)
  - Responsibilities include maintaining GC/MS Instrumentation; tuning and calibrating GC/MS; analyzing samples by GC/MS; reviewing and assembling all supporting GC/MS data; preparing standards for calibrations; training new analysts

Nina C. Haller, Senior Specialist Group Leader, Metals

Continuing Education:

State Dairy Lab Cert., State of PA (1993)
Butterfat Testing License, State of PA (1995)
Seminar ICP/ICPMS, Fisons Instruments (1995)
Three-day ICP Trace Training Course, Thermo Jarrell Ash, MA (1996)

Professional Experience:

Hazelton Research Products, Lab Technician (1981-1984)
  - Responsibilities included rabbit production facility, removal of ovaries, care, and maintenance

With Lancaster Laboratories since 1987
- Technical Associate, Foods (1987)
  - Responsibilities included coordinating Listeria Testing Program; performing data entry and verification
- Chemist, Metals (1993)
  - Responsibilities included performing daily tracking of rushes; operating and maintaining ICP instrumentation; reviewing and verifying of ICP data, data package review
- Specialist Group Leader, Metals (2003)
  - Responsibilities included overseeing the ICP/ICPMS personnel and instrumentation workflow; verifying ICP/ICPMS/GFAA/Hg data
- Senior Specialist Group Leader, Metals (2006)
  - Responsibilities included overseeing the ICP/ICPMS personnel and instrumentation workflow; verifying ICP/ICPMS/GFAA/Hg data
- Senior Specialist Group Leader, Metals (2007)
  - Responsibilities include overseeing metals instrument and verification personnel and instrumentation workflow; verifying metals data

Michele D. Hamilton, B.S., Senior Chemist Group Leader, EPH/Misc. GC

Education:

B.S. Chemistry, Temple University (1990)

Continuing Education:

Gas Chromatography: Practical Theory and Applications for LL (1993)
Practice of Modern HPLC, LC Resources (1996)

Professional Experience:

With Eurofins Lancaster Laboratories since 1991
Senior Chemist (1997)
Senior Chemist Coordinator (2000)
Responsibilities included supervising personnel; coaching and developing new employees; sample tracking; reviewing rush request; communicating client requirements; operating GC and HPLC instruments; data interpretation and entry; calibrating; repairing instruments and verifying data
Senior Chemist Group Leader, Pesticide Residue Analysis (2005)
Responsibilities included supervising personnel; coaching and developing new employees; sample tracking; reviewing rush request; communicating client requirements; operating GC and HPLC instruments; data interpretation and entry; calibrating; repairing instruments and verifying data
Senior Chemist Group Leader, EPH Misc. GC (2011)
Responsibilities include supervising personnel; coaching and developing new employees; sample tracking; reviewing rush request; communicating client requirements; operating GC instruments; data interpretation and entry; calibrating; repairing instruments and verifying data

Linda M. Hartenstine, B.A., Senior Chemist, GC/MS Semivolatiles

Education:

B.A. Chemistry, Millersville University (1994)

Professional Experience:

With Lancaster Laboratories since 1994
Associate Chemist (1994)
Chemist (1997)
Senior Chemist, GC/MS Semivolatiles (1998)
Responsibilities include performing GC/MS semivolatiles testing; operating GC/MS instruments; data interpretation; developing and evaluating new methods; calibrating and repairing instruments; preparing standards; revising and updating SOPs and analytical methods; training other analysts

Robert G. Heisey, Jr., B.A., Senior Specialist, Water Quality

Education:

B.A. Chemistry, Millersville State College (1972)

Professional Experience:

RCA Corp., Engineering Technician (1972-1987)
With Lancaster Laboratories since 1988
Chemist Coordinator (1989)
Senior Chemist Coordinator (1997)
Responsibilities included: supervise personnel; schedule lab work; review and approve data; develop and evaluate new methods; prepare test standards.
Senior Chemist Group Leader (2005)
Responsibilities included: supervise personnel; schedule lab work; review and approve data; develop and evaluate new methods; prepare test standards.
Senior Specialist, Water Quality (2006)
Responsibilities include: review and approve data; develop and evaluate new methods; prepare test standards; order laboratory supplies; maintain department's chemical inventory.

Daniel H. Heller, B.A., Senior Chemist, GC/MS Volatiles

Education:

A.S.T. Machine Technology, Stevens State College (1998)
B.A. Secondary Education Biology, Millersville University (2003)

Professional Experience:

Tyco Electronics, Machinist B (1998-2004)
Responsibilities included machining various materials using various machines
Columbia Junior/Senior High School, Teacher (2005)
Responsibilities included teaching 9th and 10th grade biology
Penn State Cooperative Extension, Biologist (2005-2006)
Responsibilities included treating and surveying mosquito populations
With Lancaster Laboratories since 2006
Chemist, GC/MS Volatiles (2006)
Responsibilities included evaluating water samples for volatiles using GC/MS instrumentation
Senior Chemist, GC/MS Volatiles (2012)
Responsibilities include evaluating water samples for volatiles using GC/MS instrumentation

Tamara J. Helsel, Senior Specialist Group Leader, Environmental Sample Administration

Professional Experience:

Willow Valley Retirement Communities, Certified Nursing Assistant (2000-2001)
Responsibilities included assisting nursing home residents with their daily activities and personal hygiene
Bayada Nurses, Certified Nursing Assistant (2000-2001)
Responsibilities included assisting people with disabilities in their homes with their personal hygiene and daily activities
With Eurofins Lancaster Laboratories since 2001
Senior Administrator, Environmental Sample Administration (2001)
Responsibilities included performing sample receipt, interpretation, and entry
Specialist, Environmental Sample Administration (2001)
Responsibilities included performing sample receipt, interpretation, and entry
Senior Specialist, Environmental Sample Administration (2007)
Responsibilities included performing sample receipt, interpretation, and entry
Senior Specialist Group Leader, Environmental Sample Administration (2013)
Responsibilities include performing sample receipt, interpretation, and entry

Memberships and Appointments:

Lancaster Laboratories Safety Committee (2003-2007)

Chadwick J. Hershey, B.S., Senior Specialist, Environmental Software Development

Education:

B.A. Economics, Millersville University (2001)
B.S. Computer Science, Millersville University (2001)

Continuing Education:

Mastering Microsoft Visual Basic 6 Development, IntelliMark (2001)
Oracle Exam #120-007, Introduction to Oracle 9i: SQL (2004)

Professional Experience:

With Eurofins Lancaster Laboratories since 1999
Intern, Computer Applications Development (1999-2001)
Responsibilities included maintaining and developing departmental computer systems
Specialist, Computer Applications Development (2001)
Responsibilities included maintaining and developing departmental computer systems
Senior Specialist, Environmental Software Development (2006)
Responsibilities include maintaining and developing departmental computer systems

Catherine M. Holt, B.S., Principal Specialist, Environmental Software Development

Education:

B.A. Mathematics, Franklin & Marshall College (1984)
B.S. Computer Science, Millersville University (1987)

Continuing Education:

Novell Network Seminar, Novell (1989)
Clarion Database Management Seminar, Clarion Software (1991)
Operations Process Optimization, Penn State University (1992)
Fast Track to Powerbuilder Seminar, Actium (1997)
Mastering Visual Basic 6 Development, Microsoft Corporation (1999)
Introduction to Oracle9I: SQL, Online Testing (2004)
Programming with the Microsoft .NET framework using Microsoft Visual Studio 2005 (2008)
Windows Forms 3.5 Programming for Experienced VB .NET Programmers (2010)

Professional Experience:

R.R. Donnelley & Sons Company, Technician (1985-1987)
Responsibilities included scanning and developing photographs for use in catalogs
Shared Medical Systems, Programmer (1987-1989)
Responsibilities included customizing and installing software at hospitals
With Eurofins Lancaster Laboratories since 1989
Principal Specialist, Computer Applications Development (1989)
Responsibilities included developing and maintaining computer systems/programs for laboratory use
Principal Specialist/Coordinator, Computer Applications Development (1995)
Responsibilities included supervising personnel; developing and maintaining computer systems/programs for lab use; communicating with clients about disk requirements
Principal Specialist, Environmental Software Development (1997)
Responsibilities include developing and maintaining computer systems in VB6 and VB.net for use within Parallax shell

Diana G. Holmes, M.S., Senior Specialist, Environmental Software Development

Education:

B.A. Physics, Cornell University (1983)
M.S. Computer Science, Rensselaer Polytechnic Institute (1985)

Professional Experience:

AT&T Bell Laboratories, Technical Staff Member (1985-1986)
Responsibilities included developing software for testing software
Prime Computer, Software Engineer II (1986-1988)
Responsibilities included designing, implementing, and testing software for PRIMOS and mini-supercomputers
Banyan Systems, Principal Software Engineer (1988-1999)
Responsibilities included developing, enhancing, and maintaining suite of services for VINES mail service; worked with 3rd party developers; third line customer support
Progressive Systems/Cobalt Networks, Senior Software Engineer (1999-2000)
Responsibilities included managing and leading software releases; designed and implemented software features; third line customer support
Sun Microsystems, Project Manager (2000-2005)
Responsibilities included project manager for Linux Operation System releases
Innovative Emergency Management, Inc., Applications Systems Engineer (2005-2006)
Responsibilities included providing system administration support, development of software tools for deployment
Pennington Biomedical Research Center, IT Applications Developer III (2006-2013)
Responsibilities included analyzing, designing, developing, executing, documenting, and supporting software applications for the Basic Science labs
With Eurofins Lancaster Laboratories since 2013
Senior Specialist, Environmental Software Development (2013)
Responsibilities include providing technical support for maintenance of installed software applications and assistance with development, installation, and maintenance of new applications for general use; assistance in development, implementation, and maintenance of software intended to improve quality and efficiency of work performed

Kay G. Hower, B.S., Manager, ELLE Service Centers

Education:

B.S. Animal Science, University of Delaware (1988)

Professional Experience:

U.S. Fish and Wildlife Service, Research Assistant (1990-1991)
RMC Environmental Services, Biological Technician (1992-1994)
Lancaster Laboratories
Senior Specialist, Project Manager, Environmental Client Services (1994-2001)
Responsibilities included managing client projects; auditing sample entry; communicating client requirements to lab areas; providing status reports, including results, to clients; scheduling sample submissions and providing sampling containers.
Principal Specialist, Environmental Business Development (2001-2007)
Responsibilities included providing price quotes and proposals; advising clients on testing; assisting on client visits/audits; answering client questions; communicating client requirements to lab areas
Principal Specialist, Pharmaceutical Client Services (2007-2008)
Responsibilities included acting as the pharmaceutical client liaison within the laboratory by communicating client's requirements to the technical staff by maintaining project-related documentation, communicating desired turnaround times, and managing information flow; other duties include facilitating and organizing client audits, visits, and conference calls; monitoring ongoing projects and providing status updates as needed; auditing client sample paperwork and resolving discrepancies; overseeing the general administration of pharmaceutical projects (issuing quotations, answering billing and reporting questions, and scheduling sample pickups)
Urological Associates of Lancaster, Surgical Coordinator (2010-2012)
Responsibilities included coordinating surgical procedures for seven urologists at four facilities; meeting with patients to explain procedure details including pre-hospital testing, day-of timeline and post-op appointments and testing; obtaining insurance authorizations
With Eurofins Lancaster Laboratories since 2012
Principal Specialist Group Leader, Bay Area Service Center (2012)
Responsibilities included serving as the primary contact with the laboratory for a number of assigned clients; communicating technical information and conveying client requirements to laboratory personnel, ensuring that those requirements are met; managing large/complex projects according to client technical and schedule requirements; developing strong relationships with major accounts resulting in additional sales; performing both technical and personnel aspects of group operations; performing work within the department or other areas as required; acting as a technical resource, trainer, and troubleshooter to specific department; making recommendations for operational and/or technical improvements; communicating effectively within the group; coaching and developing direct reports; planning and monitoring workflow
Manager, ELLE Service Centers (2014)
Responsibilities include overseeing all managerial operations of the service centers; managing the service centers in an efficient and financially sound manner; providing leadership and coaching to assigned individuals; participating in long-term and short-term planning and goal-setting for the group; coordinating functions and responsibilities of assigned department members to provide consistent service; relaying corporate information appropriately; traveling to existing service centers on a quarterly basis and assisting in set-up and training as new centers are opened; serving as the primary contact with the laboratory for assigned clients; communicating technical information and conveying client requirements to laboratory personnel

Sara E. Johnson, B.S., Senior Chemist, GC/MS Volatiles

Education:

B.S. Chemistry, Biochemistry option, Millersville University (2006)

Professional Experience:

With Lancaster Laboratories since 2006
Chemist, Flexible Staffing (2006)
Responsibilities included flexing to various departments as needed and performing analysis ranging from GC/MS to SDS-PAGE Electrophoresis with colloidal blue or silver staining
Chemist, GC/MS Volatiles (2008)
Responsibilities included performing GC/MS analysis of water and soil samples along with other matrices by various analytical methods such as EPA 624, 8260B, and CLP; evaluating analytical data generated; calibrating and troubleshooting GC/MS instrumentation
Senior Chemist, GC/MS Volatiles (2010)
Responsibilities include performing GC/MS analysis of water and soil samples along with other matrices by various analytical methods such as EPA 624, 8260B, and CLP; evaluating analytical data generated; calibrating and troubleshooting GC/MS instrumentation; assisting other employees with any questions that may arise and helping to train new employees

Laura A. Jovanovic, B.A., Principal Specialist Account Manager, Environmental Business Development/Sales

Education:

B.A. History/Russian, Indiana University (1986)

Professional Experience:

Environmental Services of America, Senior Account Manager (1991-1996)
Responsibilities included sales and management of Midwest Accounts for a treatment, storage and disposal facility; field supervisor and sampling
HazChem Environmental, Account/Project Manager (1997-2005)
Responsibilities included development and maintenance of industrial accounts, field sampling, project management and emergency response
TestAmerica, Senior Account Executive (2005-2014)
Responsibilities included Midwest Laboratory Sales for a nationwide environmental laboratory network
With Eurofins Lancaster Laboratories since 2014
Principal Specialist Account Manager, Environmental Business Development/Sales (2014)
Responsibilities include Field Sales for Illinois, Wisconsin, and Indiana

Richard H. Karam, B.A., Director of Operations, Eurofins Lancaster Laboratories Environmental

Education:

B.A. Environmental Studies, Green Mountain College (2000)

Professional Experience:

Severn Trent Laboratories
Analytical Chemist (2000-2005)
Responsibilities included analyzing environmental samples for various general chemistry parameters, metals by ICP/ICPMS, pesticides/PCBs/herbicides by GC, and semivolatiles by GC/MS
Project Manager (2005-2006)
Responsibilities included managing environmental projects; writing case narratives; project set up
With Eurofins Lancaster Laboratories since 2006
Group Leader, GC/MS Semivolatiles (2006)
Responsibilities included coordinating production in GC/MS Semivolatiles; reviewing and signing reports
Manager, GC/MS Semivolatiles (2007)
Responsibilities included ensuring the accuracy and acceptability of all data generated by the GC/MS Semivolatiles group; coordinating daily prioritization of workload and monitoring the holding time and turnaround time status of samples; responding to client questions regarding GC/MS Semivolatiles data and methods and communicating technical issues or concerns about samples to project managers for clarification or resolution with the client
Manager, Organic Extraction/Leachate Preparation/GC/MS Volatiles/GC/MS Semivolatiles (2008)
Responsibilities included ensuring the accuracy and acceptability of all data generated by the groups; coordinating daily prioritization of workload and monitoring the holding time and turnaround time status of samples; responding to client questions regarding data and methods and communicating technical issues or concerns about samples to project managers for clarification or resolution with the client
Director of Operations, Eurofins Lancaster Laboratories Environmental (2014)
Responsibilities include leading departments in accordance with vision, values, and strategic goals of company; overseeing and facilitating efficient operations and systems, sound business practices, consistent client service, and motivated staff

Dana M. Kauffman, Manager, Sample Support and Data Deliverables

Continuing Education:

Introduction to Electronics, Lancaster County Career & Technology Center, Brownstown (1994)
AC/DC Electronics, Lancaster County Career & Technology Center (1995)
Entry Level Management (1997)
Gas Chromatography: Principles and Practices, Lancaster Labs University (2003)
Practical Process Improvement Facilitator Training (2009)
Practical Process Improvement Process Manager Training (2011)

Professional Experience:

With Lancaster Laboratories since 1994
Lab Technician (1995)
Senior Technician (1996)
Sample Support Coordinator (1997)
Group Leader, Sample Support (1999); Group Leader, Volatiles by GC (2002)
Responsibilities included supervising personnel; managing laboratory operations; project management; sample preparation; developing and evaluating new methods; reagent preparation; revising and updating SOPs; ordering supplies; training other analysts; running the automated storage and retrieval system; lab cleaning and maintenance; monitoring laboratory activities; performing internal audits; enforcing regulatory compliance requirements; maintaining required certifications; communicating client requirements to lab areas
Manager, Sample Support and Data Deliverables (2005)
Responsibilities include overseeing all upfront sample handling requirements including storage, preservation, homogenization, moisture determination, volatile prescreen, and volatile soil prep; supervising group leader personnel; project management; revising and updating SOPs; performing internal audits; enforcing regulatory compliance requirements; maintaining required certifications; communicating client requirements to lab areas; data package and EDD TAT monitoring; overseeing all data package processes including data assembly, review, and processing; Practical Process Improvement (PPI) process manager responsible for facilitating PPI project team training and PPI efforts within LLI

Katherine A. Klinefelter, M.S., Principal Specialist, Environmental Client Services

Education:

B.S. Chemistry, Rutgers University (1983)
M.S. Physiology, Rutgers University (1985)

Continuing Education:

Additional graduate work in Physiology, Rutgers University (1985-1989)
Practical Process Improvement (Team Member Training), Lancaster Labs University (2009)

Professional Experience:

Rutgers University, Research and Teaching Assistant (1984-1989)
M. S. Hershey Medical Center of Penn State University, Senior Research Technician (1990-1993)
With Lancaster Laboratories since 1993
Environmental Project Management
Senior Specialist, Environmental Client Services (1993)
Senior Specialist/Coordinator, Environmental Client Services (1996)
Senior Specialist, Environmental Client Services (2000)
Principal Specialist, Environmental Client Services (2007)
Responsibilities include project management; training new client service representatives; auditing sample entry; answering client questions; communicating client requirements to lab areas

Awards, Citations, Honorary Societies & Publications:

Dean's Graduate Student Dissertation Research Award, Rutgers University
Dean's Graduate Student Travel Award, Rutgers University
Steinetz Memorial Fund Award, Department of Biological Sciences, Rutgers University
10 abstracts and 3 scientific papers on membrane transport physiology
4 presentations on membrane transport physiology
Quarterly Impact Award for Practical Process Improvement (2009)

Wendy A. Kozma, B.S., Principal Specialist Group Leader, Environmental Client Services

Education:

B.S. Environmental Science, Allegheny College (1991)

Professional Experience:

Roy F. Weston, Inc. (1992-1993)

With Lancaster Laboratories since 1993

Senior Specialist, Environmental Client Services (1996)

Responsibilities included performing project management; advising clients on testing; providing price quotes; monitoring turnaround time; auditing sample entries; answering client questions; communicating client requirements to lab areas; providing status reports, including results, to clients; scheduling sample submissions; ordering sampling containers

Principal Specialist, Environmental Client Services (2004)

Responsibilities included performing project management; advising clients on testing; providing price quotes; monitoring turnaround time; auditing sample entries; answering client questions; communicating client requirements to lab areas; providing status reports, including results, to clients; scheduling sample submissions; ordering sampling containers

Principal Specialist Group Leader, Environmental Client Services (2006)

Responsibilities include performing project management; advising clients on testing; providing price quotes; monitoring turnaround time; auditing sample entries; answering client questions; communicating client requirements to lab areas; providing status reports, including results, to clients; scheduling sample submissions; ordering sampling containers

M. Susan Kreider, Senior Specialist, Data Deliverables

Continuing Education:

Chemistry and Psychology courses, F&M College

Professional Experience:

General Cigar Co., R&D Center, Laboratory Technician (1963-1966)

Responsibilities included testing tobacco products; smoke analysis; nicotine and tar analysis; preparing samples for gas chromatography

Company F. Weaver, Inc., Laboratory Technician (1966-1967)

Responsibilities included performing microbiological testing of food products, both raw materials and finished products; training factory employees in sterile food handling

Microbiological Associates, Inc., Stock Line/Sterile Technician (1968-1969)

Responsibilities included performing cancer research; dissection of animal and human tissue for cell line production; freezing of live cells; all phases of sterile lab work

Warner Lambert Co., Assistant Microbiologist/Organic Chemistry Technician (1970-1975)

Responsibilities included performing microbiological and chemical testing of raw material and finished products

Julia Winifred & Co. (Jacks III), Sales Clerk (1982-1983)

Responsibilities included retail sales; preparing windows and displays in store

With Lancaster Laboratories since 1983

Laboratory Technician, ExpressLAB (1983)

Responsibilities included performing sample prep and analyses

Senior Technician, ExpressLAB (1986)

Responsibilities included performing sample prep and analyses

Chemist, ExpressLAB (1988)

Responsibilities included performing sample prep and analyses

Specialist, Pesticide Residue Analysis (1998)

Responsibilities included performing sample prep and analyses

Specialist, EPH/Misc. GC (2003)

Responsibilities included performing sample prep and analyses

Specialist, Data Deliverables (2005)

Responsibilities included validating and sending data deliverables

Senior Specialist, Data Deliverables (2006)

Responsibilities include validating and sending data deliverables

Robert M. Large, B.S., Director, Environmental Support Services: Client Services/Inside Business Development, Sample Administration, Data Deliverables, Sample Support, Transportation, Sample Kits, Various Service Centers

Education:

B.S. Zoology, Pennsylvania State University (1973)

Continuing Education:

Chromatography/Mass Spectral Interpretation, Finnigan MAT Institute (1981)
Foundations of Management, Gilbert Associates (1982)
M.B.A. Program, St. Joseph's University (1984-1987)
How to Market Professional Services, ACIL (1990)

Professional Experience:

Gilbert Associates, Inc., Program Manager (1977-1984)
Spotts, Stevens, & McCoy, Director of Client Services (1984-1990)
With Eurofins Lancaster Laboratories since 1990
Marketing Specialist, Environmental Client Services (1990)
Group Leader, Environmental Client Services (1994)
Manager, Environmental Client Services (1995)
Responsibilities included supervising personnel; project management; various office tasks; reviewed contract terms; interpreted QC implications to data quality; advised clients on testing; set up and managed the Bay Area Service Center in Richmond, CA (2001); managed Environmental Sample Administration (2002); managed Inside Business Development (2003)
Director, Environmental Support Services: Client Services, Inside Business Development, Sample Administration, Data Deliverables, Sample Support, Transportation, Sample Kits (2005)
Responsibilities included supervising personnel; project management; various office tasks; interpreting QC implications to data quality; advising clients on testing; assisting setting up Professional Scientific Staffing (PSS) for a major biotech client (2004); managing Data Deliverables and Sample Support (2010)
Director, Environmental Support Services: Client Services, Inside Business Development, Sample Administration, Data Deliverables, Sample Support, Transportation, Sample Kits, Various Service Centers (2012)
Responsibilities include supervising personnel; project management; various office tasks; reviewing contract terms; interpreting QC implications to data quality; advising clients on testing; setting up and managing service centers across the United States

Tara D. Laroche, M.S., National Program Manager, Business Development/Sales, Environmental Sciences

Education:

A.S. Science, Navarro College (1998)
M.S. Science - Biology, University of Texas at Arlington (2001)
B.S. Science, University of Louisiana at Monroe (2001)

Professional Experience:

Eichrom Technologies, Technical Sales Chemist (2008-2009)
Responsibilities included launching new product offering for a bio-assay for dioxin analysis to E/C firms and laboratories
AirToxics Laboratories, Technical Sales Representative (2009-2010)
Responsibilities included covering Great Lakes and East Coast calling on E/C firms
TestAmerica Laboratories, Account Executive (2011-2014)
Responsibilities included Covered Oklahoma, Colorado, Wyoming, and Utah calling on E/C firms and commercial/industrial clients.
With Eurofins Lancaster Laboratories since 2014
National Program Manager, Business Development/Sales, Environmental Sciences (2014)
Responsibilities include managing sales

Memberships and Appointments:

Colorado Oil & Gas Association
General Member (2011-present)
Rocky Mountain Association of Environmental Professionals
Vice President (2012-present)
Women's Energy Network
General Member (2014-present)
Marcellus Shale Coalition
Water Resources & Waste Management Committee member (2014-present)
Western Energy Alliance
Environmental & Regulatory Committee Member (2014-present)

Kerri E. Legerlotz, Senior Chemist, GC/MS Volatiles

Education:

B.S. Chemistry, Houghton College (2005)

Professional Experience:

Pfizer, Chemist (2005-2006)

Responsibilities included performing raw material, finished product, and stability testing; wet chemistry, pH, viscosity, IR, Karl Fischer, specific gravity

With Lancaster Laboratories since 2006

Chemist, GC/MS Volatiles (2006)

Responsibilities included testing for volatile compounds using GC/MS by purge and trap; preparing working standards from neat compounds

Senior Chemist, GC/MS Volatiles (2013)

Responsibilities include analyzing water and soil samples by purge and trap GC/MS; generating and reviewing raw data; performing maintenance on GC/MS, purge and traps, and various autosamplers; troubleshooting problems on GC/MS, purge and traps, and autosamplers; formulating and diluting analytical reference materials

Jenifer E. Lewis, B.S., Principal Specialist Account Manager, Environmental Business Development/Sales

Education:

B.S. Chemistry, University of Delaware (1984)

Continuing Education:

21 credits towards M.B.A., University of Delaware

Professional Experience:

J. M. Huber Corporation, Research Chemist (1984-1985)

With Eurofins Lancaster Laboratories since 1985

Chemist/Coordinator, Pesticide Residue Analysis (1989)

Group Leader, Pesticide Residue Analysis (1992)

Responsibilities included supervising personnel; managing laboratory operations and financial resources; project management; reviewing and approving data; consulting with clients regarding testing needs

Manager, Pesticide Residue Analysis (1992)

Responsibilities included supervising personnel; managing laboratory operations and financial resources; project management; reviewing and approving data; consulting with clients regarding testing needs

Manager, Pesticide Residue Analysis, EPH/Miscellaneous GC (1996)

Responsibilities included supervising personnel; managing laboratory operations and financial resources; project management; reviewing and approving data; consulting with clients regarding testing needs

Manager, Pesticide Residue Analysis, EPH/Miscellaneous GC, Nitrosamines (1998)

Responsibilities included supervising personnel; managing laboratory operations and financial resources; project management; reviewing and approving data; consulting with clients regarding testing needs

Manager, Pesticide Residue Analysis, EPH/Miscellaneous GC, Nitrosamines, Volatiles by GC (2005)

Responsibilities included supervising personnel; managing laboratory operations and financial resources; project management; reviewing and approving data; consulting with clients regarding testing needs

Manager, Pesticide Residue Analysis, EPH/Miscellaneous GC, Nitrosamines (2011)

Responsibilities included supervising personnel; managing laboratory operations and financial resources; project management; reviewing and approving data; consulting with clients regarding testing needs

Principal Specialist Account Manager, Environmental Business Development/Sales (2012)

Responsibilities include developing new business revenue for LL by performing account management duties for existing accounts and prospects in the commercial and DOD markets; identifying and securing sales opportunities through phone calls, sales visits, presentations, team selling, quotes, and proposals; generating new business opportunities consistent with our operational capabilities and capacity

Larry Lewis, B.S., Manager, Volatiles in Air

Information not available at time of printing

Parker D. Lindstrom, B.S., Senior Chemist Metrology, Metals

Education:
- B.S. Chemical Oceanography, Millersville University (2002)

Continuing Education:
- Comprehensive Gas Chromatography Seminar, RESTEK (2002)
- Comprehensive GC/MS Seminar, RESTEK (2002)
- Statistics at Lancaster Laboratories, LLU (2005)
- 24-hour HAZWOPER, LLU (2006)

Professional Experience:
- Fred Fiorentino, Assistant Laborer (1997-2002)
  - Responsibilities included roofing, painting, general construction, clean-up, installation of windows, doors, stairs, decking
- Dr. Kerper, Office Assistant (2000-2002)
  - Responsibilities included filing, cataloging children's books
- Millersville University IMC/IMS, Media/Education Assistant (2000-2002)
  - Responsibilities included assisting teachers in creating media for the classroom, editing video and audio projects
- With Eurofins Lancaster Laboratories since 2002
  - Associate Chemist/Senior Chemist, GC/MS Volatiles (2002)
    - Responsibilities included running purge and trap and GC/MS to analyze samples and QC for VOCs; performing purge and trap and GC/MS maintenance
  - Senior Chemist, Metals (2006)
    - Responsibilities included running ICP/MS; verifying samples; performing maintenance; prepping samples; general troubleshooting for metals department; installation, maintenance and operation of CVAF low level Mercury; maintenance and operation of AA Mercury; providing general computer help to Computer Services department
  - Senior Chemist Metrology, Metals (2009)
    - Responsibilities include helping the instrument (Metrology) group maintain and qualify HPLCs, GCs, and other pharmaceutical instruments; helping with other qualifications as needed (hoods, storage units, etc); for a short time in 2009 verifying data in Water Quality department

Memberships and Appointments:
- Emergency Response Team (Spill Team), Lancaster Laboratories (2006)

Jason M. Long, B.S., Senior Chemist, GC/MS Volatiles

Education:
- B.S. Chemistry, Shippensburg University (2004)

Professional Experience:
- EA Engineering Science & Technology, Lab Tech (2004)
  - Responsibilities included setting up and running tests in toxicology lab; cleaning glassware used in performing tests; titrating for alkalinity and pH of water samples
- With Lancaster Laboratories since 2004
  - Chemist, GC/MS Volatiles (2004)
    - Responsibilities included analyzing water and soil samples by purge and trap GC/MS; generating and reviewing raw data; performing maintenance on GC/MS, purge and traps, and various autosamplers
  - Senior Chemist, GC/MS Volatiles (2007)
    - Responsibilities include analyzing water and soil samples by purge and trap GC/MS; generating and reviewing raw data; performing maintenance on GC/MS, purge and traps, and various autosamplers; troubleshooting problems on GC/MS, purge and traps, and autosamplers

Lyssa M. Longenecker, B.S., Senior Specialist, Environmental Client Services
Education:
B.S. Biology, Millersville University of PA (2010)
Professional Experience:
With Eurofins Lancaster Laboratories since 2011
Specialist, Environmental Client Services (2011)
Responsibilities included serving as the primary laboratory contact to clients; communicating technical information to the client in a comprehensible manner; deciphering the clients' testing needs; conveying the clients' requirements to the laboratory; ensuring clients' requirements and needs are met
Senior Specialist, Environmental Client Services (2014)
Responsibilities include serving as the primary laboratory contact to clients; communicating technical information to the client in a comprehensible manner; deciphering the clients' testing needs; conveying the clients' requirements to the laboratory; ensuring clients' requirements and needs are met

Karen P. Lopez, B.S., Project Manager, Bay Area Service Center
Education:
B.S. Environmental Science, University of California Riverside (2005)
Professional Experience:
Eurofins Air Toxics, Inc.
Account Manager (2008-2010)
Responsibilities included generating quotes for clients by gathering critical project information and coordinating with the sales and project management to determine product offering and price point; follow-up on quotes to gather sales and market intelligence; schedule client visits for sales and management; facilitate conference details and follow-up as needed; provide back-up for the Project Management team during staff absences or times of high workload
Project Manager (2010-2015)
Responsibilities included performing all project liaison functions needed for goal achievement between the clients, sales team, laboratory, and finance team; project management from A to Z, including contract execution, project set-up, project execution, and result achieved evaluation; respond professionally and timely to client inquiries, handle simple to complicated technical explanations
With Eurofins Lancaster Laboratories since 2015
Project Manager, Bay Area Service Center (2015)
Responsibilities include serving as the primary contact for a number of assigned clients; understanding technical information and communicating client requirements to laboratory personnel; help to ensure that requirements are met; managing large/complex projects according to client technical and schedule requirements; developing strong relationships with major accounts resulting in additional sales

Dorothy M. Love, B.S., Director, ELLE and Eurofins Environment Testing US, Quality Assurance
Education:
B.S. Environmental Health, Indiana University of Pennsylvania (1981)
Professional Experience:
Sun Transport, Inc., Safety Assistant (1980-1981)
Texas A & M University, Research Assistant (1982-1984)
Texas Water Commission, Chemist (1984-1986)
GHR Analytical, Chemist (1986-1987)
Clean Harbors, Inc., Senior Chemist (1987-1989)
With Eurofins Lancaster Laboratories since 1989
Senior Specialist (1989)
Senior QA Specialist (1998) Coordinator (2000)
Principal Specialist/Coordinator, Quality Assurance (2003)
Responsibilities included supervising personnel; training other QA staff; revised and updated analytical methods; monitored laboratory activities and corrective action for quality issues; performed internal audits; worked with external auditors; reviewed lab data and procedures; enforced regulatory compliance requirements; reviewed/wrote client/lab Quality Assurance Project Plans (QAPP)
Principal Specialist Group Leader, Quality Assurance (2005)
Responsibilities included supervising personnel; training other QA staff; revised and updated analytical methods; monitored laboratory activities and corrective action for quality issues; performed internal audits; worked with external auditors; reviewed lab data and procedures; enforced regulatory compliance requirements; reviewed/wrote client/lab Quality Assurance Project Plans (QAPP)
Manager, Environmental Quality Assurance (2013)
Responsibilities included supervising the Environmental QA department; monitoring regulatory activities; reviewing procedures and data; interacting with clients and agencies; performing regulatory and client document review; enforcing regulatory compliance; quality improvement; staff training; QA policy development and maintenance

Director, ELLE and Eurofins Environment Testing US, Quality Assurance (2015)
Responsibilities include supervising the ELLE QA department; monitoring regulatory activities; reviewing procedures and data; interacting with clients and agencies; performing regulatory and client document review; enforcing regulatory compliance; quality improvement; staff training; QA policy development and maintenance; overseeing QA programs at all Eurofins Environment BUs in order to harmonize quality and ethics systems across the environmental business

Memberships and Appointments:
Society of Women Environmental Professionals (SWEP (2007-present)
TNI Quality Systems Committee (2009-2014)
NJ Environmental Laboratory Advisory Committee (2012-present)

Natalie R. Luciano, B.A., Senior Specialist, Environmental Client Services

Education:
B.A. Biology, Bridgewater College (2006)

Continuing Education:
Safe Drinking Water Regulations Revisions, PaAAEL & PA DEP (2010)
PA Regulatory Update Bureau of Safe Drinking Water, PaAAEL (2013)
PA DEP Regulatory Update, PA DEP (2013)

Professional Experience:
With Eurofins Lancaster Laboratories Environmental, LLC since 2007
Specialist, Environmental Client Services and Inside Business Development (2007)
Responsibilities included performing project management; serving as the primary contact for external clients; communicating client requirements to laboratory areas; auditing entries and reviewing sample data
Senior Specialist, Environmental Client Services and Inside Business Development (2013)
Responsibilities include performing project management; serving as the primary contact for external clients; communicating client requirements to laboratory areas; auditing entries and reviewing sample data

Nicole L. Maljovec, M.S., Manager, Environmental Client Services & Inside Business Development

Education:
B.S. Chemistry, St. Bonaventure University (2004)
M.S. Adolescence Education, D'Youville College (2005)

Professional Experience:
CYTEC Industries, Industrial Hygiene Internship (2003-2004)
Responsibilities included performing air monitoring and sampling; complying with OSHA standards; assisting R/D lab with the identification of unknown chemicals and wastes
Niagara Wheatfield, Environmental Science Teacher (2005-2006)
Responsibilities included teaching chemistry, chemistry lab, and environmental science; developing special education plans to assist students with learning disabilities
With Lancaster Laboratories since 2006
Specialist, Environmental Client Services (2006)
Responsibilities included performing project management; advising clients on testing; providing price quotes; monitoring turnaround time; auditing sample entries; answering client questions; communicating client requirements to lab areas; providing status reports, including results, to clients; scheduling sample submissions; ordering sampling containers
Senior Specialist Group Leader, Environmental Client Services (2007)
Responsibilities included performing project management; advising clients on testing; providing price quotes; monitoring turnaround time; auditing sample entries; answering client questions; communicating client requirements to lab areas; providing status reports, including results, to clients; scheduling sample submissions; ordering sampling containers; managing a team of client service representatives and administrative assistants, training of new employees, setting up and delegating new projects, serving as primary project manager for several large clients and consultants
Principal Specialist Group Leader, Environmental Client Services (2012)
Responsibilities included serving as the primary contact or back-up with the laboratory for a number of assigned clients requiring specialized testing or complex projects; understanding and communicating technical information and client requirements to laboratory personnel, helping to ensure that requirements are met; leading broad-based complex projects to a satisfactory conclusion according to client technical and schedule requirements; developing strong relationships with major accounts resulting in additional sales; advising and training other members of the department; serving as a technical resource both internally and externally; proactively assisting Outside Business Development with client visits, presentations, and internal audits for assigned clients; participating on PPI teams
Manager, Environmental Client Services & Inside Business Development (2014)
Responsibilities include overseeing all managerial operations of the department; managing the department in an efficient and financially sound manner; providing leadership and coaching to assigned individuals; participating in long-and short-term planning and goal-setting for the group; coordinating functions and responsibilities of assigned department members to provide consistent service; coordinating internal efforts between Environmental Client Services and other departments; relaying corporate information appropriately

Melissa McDermott, B.A., Inside National Sales Manager, Business Development, Environmental Sciences

Education:

B.A. Biology, Millersville University (1992)
Elementary Education Certification, PA (May 2009)
Middle School Science Certification, PA (July 2009)

Continuing Education:

Gas Chromatography Principles and Practices (1995)
Conflict Resolution and Confrontation Skills Seminar (1996)
Coaching Skills for Supervisors Seminar (1996)
Waste Testing and Quality Assurance Symposium (1996)
Entry Level Management (1997)
How to Deliver Exceptional Customer Service Seminar (1997)
Statistics at Lancaster Laboratories (2006)

Professional Experience:

With Eurofins Lancaster Laboratories since 1992

Chemist, EPH/Misc. GC (1993)

Responsibilities included performing analysis of environmental samples for metals by AA flame and cold vapor generation; assembling client data packages

Chemist Coordinator, EPH/Misc. GC (1996)

Responsibilities included coordinating rush work; communicating with client service representatives regarding sample status; answering client questions; generating employee job plans; conducting employee evaluations

Senior Chemist, EPH/Misc. GC (1997)

Responsibilities included performing analysis of environmental samples for DRO and interpretive TPH analyses; verifying analyses performed by other analysts; preparing standards; revising departmental SOPs; method development; reviewing data packages

Senior Specialist, Environmental Client Services (1997)

Responsibilities included auditing sample entry; answering client questions; communicating client requirements to lab areas; providing status reports, including results, to clients; scheduling sample submissions and providing sampling containers

Senior Chemist, EPH/Misc. GC (2002)

Responsibilities included reviewing and approving data; writing departmental methods; reviewing and approving data packages; acting as technical resource within department; answering client questions; monitoring and performing QA metrics

Senior Specialist, Environmental Client Services (2007)

Responsibilities included acting as technical resource between client services and laboratories; scheduling sample submissions and providing sampling containers; communicating client requirements to lab areas

Senior Chemist, EPH/Misc. GC (2009)

Responsibilities included reviewing and approving data; writing departmental methods; reviewing and approving data packages; acting as technical resource within department; answering client questions; monitoring and performing QA metrics

Senior Chemist Group Leader, Pesticides (2011)

Responsibilities included performing routine and non-routine instrumental analyses of QC and clients' samples for pesticides, PCBs, herbicides, and other related compounds in accordance with departmental methods and standard operating procedures (SOPs); assisting in implementing special client requests; identifying and offering solutions to correct instrument problems and causes of QC problems; reviewing data for accuracy and completeness (for both routine and non-routine analyses, reports, or data packages); serving as a technical resource for the department; performing both technical and personnel aspects of group operations; performing work within the department or other areas as required; acting as a technical resource, trainer, and troubleshooter to specific department; making recommendations for operational and/or technical improvements; communicating effectively within the group; coaching and developing direct reports; planning and monitoring workflow

Principal Specialist, Environmental Business Development (2014)

Responsibilities included using company literature, verbal discussions, formal written quotes, proposals, tours, and audits to independently secure new business consistent with operational capabilities and business plan goals; collaborating efforts and activities with those of Outside Sales account managers as needed; focusing on proposal writing for major national accounts; attending face-to-face sales meetings with selected national accounts as needed and maintaining responsibility for their maintenance and growth

Inside National Sales Manager, Business Development, Environmental Sciences (2015)

Responsibilities include overseeing all managerial operations of the department; managing the department in an efficient and financially sound manner; providing leadership and coaching to assigned individuals; participating in long-and short-term planning and goal-setting for the group; coordinating functions and responsibilities of assigned department members to provide consistent service; relaying corporate information appropriately

Roy R. Mellott Jr., B.S., Senior Chemist Group Leader, GC/MS Volatiles

Education:

B.S. Biology, Millersville University (1993)

Continuing Education:

Hazardous Waste Disposal, LLU (1996)
GC: Principles & Practices, LLU (1997)
GC/MS: Applications/Troubleshooting Seminar, ECS/MDL Systems, Inc. (1999)
Introduction to Interpretation of Mass Spectra, LLU (2005)
Interpretation of Mass Spectra, Intermediate, LLU (2005)
Role of the Leader 1 – Giving Recognition, LLU (2007)
Role of the Leader 2 – Clarifying Performance Expectations, LLU (2007)
Role of the Leader 3 – Developing Others, LLU (2007)
Role of the Leader 4 – Providing Constructive Feedback, LLU (2007)
PPI Team Training, LLU (2010)
PPI Facilitator Workshop, LLU (2010)
Targeted Selection, LLU (2010)
Role of the Leader Building Team Pride and Purpose, LLU (2011)
Role of the Leader Resolving Conflicts with Your Peers, LLU (2011)

Professional Experience:

With Eurofins Lancaster Laboratories since 1995

Senior Lab Tech I, GC/MS Volatiles (1995)

Responsibilities included requisitioning samples; performing sample storage, prescreening, discard, hazardous waste disposal; tracking down missing samples by various means

Chemist/Auditor, GC/MS Volatiles (1996)

Responsibilities included performing analysis of waters, soils, and other matrices for VOCs via various analytical methods; evaluation of analytical data; calibrating and troubleshooting various GC/MS equipment; evaluation/review of analyst-generated data; corresponding with analysts about possible trends (whether analyst- or system-related) in generated data; evaluation/review of corrections of problems with generated data

Senior Chemist, GC/MS Volatiles (2002)

Responsibilities included performing analysis of waters, soils, and other matrices for VOCs via various analytical methods; evaluation of analytical data; setting up, calibrating, and troubleshooting various GC/MS equipment; evaluation/review of analyst-generated data; corresponding with analysts about possible trends (whether analyst- or system-related) in generated data; evaluation/review of corrections of problems with generated data; updating/correcting SOPs and laboratory and analytical procedures; preparation, tracking and documentation of analytical standards used in the laboratory; training of new employees to the department

Senior Chemist Group Leader, GC/MS Volatiles (2005)

Responsibilities include performing analysis of waters, soils, and other matrices for VOCs via various analytical methods; evaluation of analytical data; setting up, calibrating, and troubleshooting various GC/MS equipment; evaluation/review of analyst-generated data; corresponding with analysts about possible trends (whether analyst- or system-related) in generated data; evaluation/review of corrections of problems with generated data; updating/correcting SOPs and laboratory and analytical procedures; preparation, tracking and documentation of analytical standards used in the laboratory; training of new employees to the department

Memberships & Appointments:

Nature Conservancy (1998-present)
Eurofins Lancaster Laboratories
  Ethics Committee (1999-2003)
Lancaster Herpetological Society
  Treasurer (2005-present)
HabitatMT (2011-present)

Jessica L. Miller, B.S., Senior Chemist, Pesticide Residue Analysis
Education:
B.S. Chemistry, Cedar Crest College (2011)
Continuing Education:
Gas Chromatography Principles and Practice (2011)
Agilent Breaking Bad Chromatography Habits Seminar (2014)
Professional Experience:
With Eurofins Lancaster Laboratories since 2011
Chemist, Pesticide Residue Analysis (2011)
Responsibilities included performing pesticide residue analysis; prescreening samples; calibrating, reviewing, and uploading data
Senior Chemist, Pesticide Residue Analysis (2014)
Responsibilities include performing pesticide residue analysis; prescreening samples; calibrating, reviewing, and uploading data
Memberships and Appointments:
Psi Chi
Member (2009)
Gamma Sigma Epsilon
Member (2011)

Megan A. Moeller, B.S., Senior Specialist, Environmental Client Services
Education:
B.S. Environmental Science, University of Delaware (1999)
Professional Experience:
With Lancaster Laboratories since 1999
Sample Administration/Client Service Specialist, Environmental Client Services (2003)
Responsibilities included Interpretation and entry of incoming samples. Route samples to the correct locations. Assist Client Service representatives with auditing, reviewing reports, and reviewing invoices.
Specialist, Environmental Client Services (2004-2006)
Responsibilities included managing projects, prepare quotations, audit sample entries, answer client questions, communicate client requirements to lab areas, schedule sample submissions, and provide sample containers.
Senior Specialist, Environmental Client Services (2006)
Responsibilities include managing projects, prepare quotations, audit sample entries, answer client questions, communicate client requirements to lab areas, schedule sample submissions, and provide sample containers.

Chad A. Moline, B.S., Senior Specialist, GC/MS Volatiles
Education:
B.S. Environmental Studies, Slippery Rock University (1998)
Teaching Certification, Secondary Education, Millersville University (2003)
Professional Experience:
Centre Analytical Laboratories, Lab Technician (1999-2000)
Responsibilities included running various wet chemistry analyses
Lancaster Laboratories, Chemist/Senior Chemist (2000-2005)
Responsibilities included maintaining GC/MS instrumentation
Warwick School District, Science Teacher (2005-2006)
Responsibilities included teaching chemistry and physics to 8th grade students
Conestoga Valley School District, Science Teacher (2006-2007)
Responsibilities included teaching chemistry and earth science to 8th grade students
With Eurofins Lancaster Laboratories since 2007
Senior Chemist Group Leader, GC/MS Semivolatiles (2007)
Responsibilities included monitoring workflow; meeting client turnaround times
Senior Chemist, GC/MS Semivolatiles (2012)
Responsibilities included maintaining and operating GC/MS instrumentation
Senior Specialist, GC/MS Volatiles (2014)
Responsibilities include performing technical audit of GC/MS volatiles data in a timely manner with zero defects as a goal; acting as a technical resource to department; evaluating issues in technical data and suggesting possible solutions; performing sample/QC verification in the LIMS; reviewing analytical reports; evaluating and interpreting analytical results; writing and revising SOPs; assisting in responding to and eliminating ICARs; making recommendations for technical improvements; communicating effectively within department; completing assigned tasks on time; assisting in "brainstorming" client problems and projects; performing all duties with minimal supervision

Jennifer L. Moyer, B.S., Senior Specialist, Metals

Education:
B.S. Chemistry, Lock Haven University (2000)

Professional Experience:
Lock Haven University, Lab Tech (1996-1998)
Responsibilities included setting up labs; stocking and setting up stock rooms; helping professors with projects
Croda Inc., Process Development Chemist (1998-2000)
Responsibilities included developing and improving procedures on existing products
With Lancaster Laboratories since 2000
Chemist, Metals (2000)
Responsibilities included running and maintaining ICP instruments
Chemist, Metals (2002)
Responsibilities included running and maintaining Graphite Furnace Atomic Absorption instruments
Group Leader/Specialist, Metals (2003)
Responsibilities included overseeing Graphite Furnace Atomic Absorption and Mercury analysts
Senior Specialist, Metals (2007)
Responsibilities include verifying ICP, GFAA, Mercury, and ICP-MS

Kevin T. Moran, M.B.A., Senior Specialist Account Manager, Environmental Business Development/Sales

Education:
B.S. Marine Engineering, U.S. Merchant Marine Academy (1972)
M.B.A. Marketing, Babson College (1981)

Professional Experience:
SAIC, Regional Sales Manager (1994-1999)
Responsibilities included selling process treatment equipment for groundwater remediation to environmental consulting companies and industrial end users; managing a staff of seven engineers and technicians engaged in operating and constructing groundwater treatment systems
Mantech Environmental, Marketing Manager (1999-2000)
Responsibilities included developing strategy to target industrial customers with multiple sites for an innovative groundwater remediation technology
Hazleton Environmental, Marketing Manager (2000-2003)
Responsibilities included developing marketing strategy for sales of process treatment equipment to industrial and municipal users; aiding company in breaking into DOD market for treatment equipment
With Eurofins Lancaster Laboratories since 2003
Senior Specialist Account Manager, Environmental Business Development/Sales (2003)
Responsibilities include managing and growing revenue at assigned industrial accounts; using selling skills to add new industrial and environmental consulting firms for analytical services in New York, New Jersey, and New England

Kathrine K. Muramatsu, B.S., Senior Chemist Group Leader, GC/MS Volatiles

Education:
B.S. Chemistry, University of Colorado (2005)

Continuing Education:
Forensic Science and DNA Testing Certification (2006)
24-Hour Emergency Response (HAZWOPER), Lancaster Laboratories (2009)
American Heart Association (AHA)/American Red Cross certified, Lancaster Laboratories (2009)

Professional Experience:
With Eurofins Lancaster Laboratories since 2007
Chemist, Analytical Chemistry, Professional Scientific Staffing – CO (2007)
Responsibilities included ensuring compliance with cGMPs; performing analysis of system water, clean in place (CIP) samples, clean out of place (COP) samples, and other sample types; methods used were total organic carbon (TOC), pH, conductivity, Limulus Amebocyte Lysate (LAL), and UV spectroscopy
Chemist, GC/MS Volatiles (2007)
Responsibilities included analyzing environmental samples of various sample matrices using purge and trap GC/MS; generating and reviewing raw data; performing instrument maintenance as needed
Chemist Group Leader, GC/MS Volatiles (2009)
Responsibilities included supervising and mentoring personnel; coordinating daily workload through prioritizing and scheduling; processing monthly metrics for the department; verifying sample data; analyzing environmental samples of various sample matrices using purge and trap GC/MS; generating and reviewing raw data; performing instrument maintenance as needed

Senior Chemist Group Leader, GC/MS Volatiles (2014)
Responsibilities include supervising and mentoring personnel; coordinating daily workload through prioritizing and scheduling; processing monthly metrics for the department; verifying sample data; analyzing environmental samples of various sample matrices using purge and trap GC/MS; generating and reviewing raw data; performing instrument maintenance as needed

Awards, Citations, Honorary Societies, and Publications
Dean's List (2002)
Colorado Scholars (2002-2005)
Superlative Service Award (2010)
Two publications in the Journal of Organic Chemistry

Memberships and Appointments:
American Chemical Society

Charles J. Neslund, B.S., Technical Director, Volatiles in Air and Specialty Services Group, Eurofins Lancaster Laboratories Environmental

Education:
B.S. Chemistry, University of Pittsburgh (1982)

Continuing Education:
Graduate studies in organic chemistry, University of Pittsburgh (1983)

Professional Experience:
Lancaster Laboratories (1984-1996)
Chemist (1986)
Group Leader (1987)
Chemist (1991)
OI Analytical, Sales Representative (1996)
With Eurofins Lancaster Laboratories since 1997
Group Leader, GC/MS Semivolatiles (1997)
Responsibilities included supervising personnel; scheduling lab work; managing laboratory operations and financial resources; project management; data interpretation; reviewing and approving data; developing and evaluating new methods; consulting with clients regarding testing needs; revising and updating SOPs and analytical methods
Manager, GC/MS Semivolatiles and Volatiles in Air (2005)
Responsibilities included supervising personnel; scheduling lab work; managing laboratory operations and financial resources; project management; data interpretation; reviewing and approving data; developing and evaluating new methods; consulting with clients regarding testing needs; revising and updating SOPs and analytical methods
Manager, Volatiles in Air and Specialty Services Group (2007)
Responsibilities included supervising personnel; scheduling lab work; managing laboratory operations and financial resources; project management; data interpretation; reviewing and approving data; developing and evaluating new methods; consulting with clients regarding testing needs; revising and updating SOPs and analytical methods; marketing specialty services capabilities; conducting technical presentations
Technical Director, Volatiles in Air and Specialty Services Group, Eurofins Lancaster Laboratories Environmental (2014)
Responsibilities include leading departments in accordance with vision, values, and strategic goals of company; overseeing and facilitating efficient operations and systems, sound business practices, consistent client service, and motivated staff

Awards, Citations, Honorary Societies & Publications:
Dawson-Grundmann Innovation Award (1995)

Memberships & Appointments:
American Chemical Society (ACS)
Chromatography Forum of the Delaware Valley (CFDV)
Past member of Executive Committee of the Chromatography Forum of the Delaware Valley
Air & Waste Management Association (A&WMA)
Society of Environmental Toxicology and Chemistry (SETAC)
Sediment Management Workgroup (SMWG)

Deborah A. Neslund, Senior Specialist, Environmental Sample Administration

Professional Experience:

Lancaster General Hospital, Phlebotomist (1976-1977)
Fairfax Hospital, LPN (1978)
Lancaster General Hospital, Phlebotomist/EKG Technician (1980-1986)
With Eurofins Lancaster Laboratories since 1986

Senior Specialist Coordinator, Environmental Sample Administration (1986)

Responsibilities included supervising personnel; directed flow of samples to include prioritization to meet hold times and standards set for rush and other samples; developed and improved systems for efficiency within SA; represented SA in communications with Technical Groups, Client Services, and other support areas; logged-in samples

Senior Specialist Group Leader, Environmental Sample Administration (2005)

Responsibilities included supervising personnel; directed flow of samples to include prioritization to meet hold times and standards set for rush and other samples; developed and improved systems for efficiency within SA; represented SA in communications with Technical Groups, Client Services, and other support areas; logged-in samples

Senior Specialist (2013)

Responsibilities include directing flow of samples to include prioritization to meet hold times and standards set for rush and other samples; developing and improving systems for efficiency within SA; representing SA in communications with Technical Groups, Client Services, and other support areas; logging-in samples

Ryan V. Nolt, B.S., Manager, GC/MS Volatiles and Equipment Maintenance & Repair

Education:

B.S. Chemistry, Millersville University (1997)

Professional Experience:

With Eurofins Lancaster Laboratories since 1996

Clerk II, Sample Support (1996)

Responsibilities included performing ASRS operations, preserving incoming samples, homogenizing samples, packing bottle orders, and performing sample discard

Senior Technician, ExpressLAB (1997)

Responsibilities included performing sample dilutions, preparing standards, prepping samples, and setting up new instruments

Chemist, GC/MS Volatiles (1998)

Responsibilities included performing purge and trap and GC/MS maintenance; tuning and calibrating GC/MS system; analyzing samples; reviewing, working up, and assembling all supporting data; and preparing new standards

Senior Chemist Coordinator, GC/MS Volatiles (2000)

Responsibilities included performing routine and non-routine laboratory analysis; diagnosing and solving technical problems; implementing improvements to maximize quality; maintaining and troubleshooting instruments; writing and revising SOPs; validating new methods and equipment; assigning new work to instrument groups and monitoring productivity; training new analysts

Principal Chemist Group Leader, GC/MS Volatiles (2005)

Responsibilities included performing routine and non-routine laboratory analysis; diagnosing and solving technical problems; implementing improvements to maximize quality; maintaining and troubleshooting instruments; writing and revising SOPs; validating new methods and equipment; assigning new work to instrument groups and monitoring productivity; training new analysts

Manager, GC/MS Volatiles (2014)

Responsibilities included performing a variety of technical and administrative tasks to develop, evaluate, and supervise staff; planning and monitoring work flow; designing, implementing, and utilizing departmental operations systems; promoting safety; remaining current on technical developments in the area of GC/MS volatiles; communicating with clients; maintaining a strong commitment to quality

Manager, GC/MS Volatiles and Equipment Maintenance & Repair (2015)

Responsibilities include performing a variety of technical and administrative tasks to develop, evaluate, and supervise staff; planning and monitoring work flow; designing, implementing, and utilizing departmental operations systems; promoting safety; remaining current on technical developments in the area of GC/MS volatiles; communicating with clients; maintaining a strong commitment to quality

Stephen Nowakowski, B.S., Senior Specialist, Safety

Information not available at time of printing

Wanda Oswald, Senior Scientist Group Leader, Organic Extraction
Information not available at time of printing

Anneliese H. Owen, M.B.A., Manager, Environmental Sample Administration
Education:
B.S. Molecular and Cell Biology, Pennsylvania State University (1986)
M.B.A. Pennsylvania State University (1993)
Professional Experience:
With Lancaster Laboratories since 1986
Coordinator (1987)
Client Services Specialist (1988)
Business Development Specialist (1990)
Group Leader, Environmental Sample Administration (1992)
Responsibilities included: supervise personnel; manage laboratory operations and financial resources; sample interpretation and entry; and monitor corrective action for quality issues.
Manager, Environmental Sample Administration (2005)
Responsibilities include: supervise personnel; manage laboratory operations and financial resources; sample interpretation and entry; and monitor corrective action for quality issues.

Linda C. Pape, B.A., Senior Chemist, GC/MS Volatiles
Education:
B.A. Business Administration, Milsaps College (1985)
Professional Experience:
Rite Aid Pharmacy, Store Manager (1985-1989)
Responsibilities included being responsible for overall maintenance and security of merchandise, store, and property; ordering and display of all merchandise; auditing daily cash and inventory reports; scheduling employees; payroll accounting; training of new and prospective personnel
With Lancaster Laboratories since 1993
Chemist, Volatiles by GC (1993)
Responsibilities included analyzing client-submitted samples and their associated quality control samples by purge-and-trap gas chromatography; reviewing and uploading the corresponding data in an efficient manner with a high degree of accuracy and quality; evaluating current organizational and analytical systems; suggesting and implementing necessary corrective action to ensure the above can be performed in alignment with client and/or regulatory requirements; initiating and leading technical projects to a timely, accurate, and efficient conclusion while meeting client and/or regulatory requirements with a high degree of quality
Chemist, Water Quality (2000)
In addition to responsibilities listed above performed CN distillation, PO_4 digestion, and phenol distillation during a 3-month time frame
Senior Chemist, Volatiles by GC (2007)
Responsibilities included analyzing client-submitted samples and their associated quality control samples by purge-and-trap gas chromatography; reviewing and uploading the corresponding data in an efficient manner with a high degree of accuracy and quality; performing final review (verification) of data for clients (adding appropriate comments as necessary); evaluating current organizational and analytical systems; suggesting and implementing necessary corrective action to ensure the above can be performed in alignment with client and/or regulatory requirements; initiating and leading technical projects to a timely, accurate, and efficient conclusion while meeting client and/or regulatory requirements with a high degree of quality; training new employees in Volatiles by GC soils
Senior Chemist, Volatiles by GC/MS (2008)
Responsibilities included analyzing client-submitted samples and their associated quality control samples by purge-and-trap gas chromatography/mass spectrometry; reviewing and uploading the corresponding data in an efficient manner with a high degree of accuracy and quality; performing final review (verification) of data for clients (adding appropriate comments as necessary); evaluating current organizational and analytical systems; suggesting and implementing necessary corrective action to ensure the above can be performed in alignment with client and/or regulatory requirements; initiating and leading technical projects to a timely, accurate, and efficient conclusion while meeting client and/or regulatory requirements with a high degree of quality; training new employees
Senior Chemist, GC/MS Volatiles (2009)
Responsibilities include analyzing client-submitted samples and their associated quality control samples; reviewing and uploading the corresponding data in an efficient manner with a high degree of accuracy and quality; performing final review (verification) of data for clients (adding appropriate comments as necessary); evaluating current organizational and analytical systems; suggesting and implementing necessary corrective action to ensure the above can be performed in alignment with client and/or regulatory requirements; initiating and leading technical projects to a timely, accurate, and efficient conclusion while meeting client and/or regulatory requirements with a high degree of quality; training new employees

James H. Place, B.S., Senior Chemist, Pesticide Residue Analysis

Education:

B.S. Physical Science, York College of Pennsylvania (1997)

Professional Experience:

AMZ Corporation, Laboratory Technician (1998-2000)

Responsibilities included performing analysis and maintenance of chemical compositions pertaining to electroplating baths

Nichia America Co., Laboratory Technician (2000-2001)

Responsibilities included performing analysis of phosphorus for composition of pigments; performing sample screening and AA analysis

AMZ Corporation, Laboratory Technician (2001-2003)

Responsibilities included performing analysis and maintenance of chemical compositions pertaining to electroplating baths; conducting inventory and ordering chemicals

With Lancaster Laboratories since 2003

Chemist, Pesticide Residue Analysis (2003)

Responsibilities include performing routine and non-routine instrumental analyses of QC and clients' samples for pesticides, PCBs, herbicides, and other related compounds in accordance with departmental methods and SOPs; achieving quality results within the time-frame expected by our clients with minimal daily supervision; maintaining the GCs or HPLCs used for routine analyses; identifying and correcting common instrument or QC problems

Senior Chemist, Pesticide Residue Analysis (2008)

Responsibilities include performing routine and non-routine instrumental analyses of QC and clients' samples for pesticides, PCBs, herbicides, and other related compounds in accordance with departmental methods and SOPs; assisting in implementing special client requests; identifying and offering solutions to correct instrument problems and causes of QC problems; reviewing data for accuracy and completeness (for both routine and non-routine analyses, reports, or data packages); serving as a technical resource for the department

Kaitlin N. Plasterer, B.S., Senior Specialist, Environmental Client Services

Education:

B.S. Chemistry/Business, Arcadia University (2010)

Professional Experience:

With Eurofins Lancaster Laboratories since 2011

Specialist, Environmental Client Services (2011)

Responsibilities included serving as the primary contact for assigned clients; understanding basic technical issues and working with management to achieve problem resolution with clients; auditing incoming client paperwork for accuracy and making necessary corrections; assisting Senior Specialists with auditing as needed; identifying problems and suggesting solutions; maintaining knowledge of regulatory requirements and changes that may affect clients

Senior Specialist, Environmental Client Services (2014)

Responsibilities include acting as the environmental client liaison within the laboratory by communicating client's requirements to the technical staff by maintaining project-related documentation, communicating desired turnaround times, and managing information flow; facilitating and organizing client audits, visits, and conference calls; monitoring ongoing projects and providing status updates as needed; auditing client sample paperwork and resolving discrepancies; overseeing the general administration of environmental projects (issuing quotations, answering billing and reporting questions, and scheduling sample pickups); managing a combination of routine, non-routine, and complex client projects; initiating improvements to drive efficiencies; assisting in training; updating training documents and SOPs as appropriate

Awards, Citations, Honorary Societies, and Publications:

Phi Beta Delta Honors Society for Excellence in international education (2010)

Christine M. Ratcliff, B.S., Principal Specialist Group Leader, Specialty Services Group

Education:

B.S. Chemistry, Shippensburg University (1988)

Continuing Education:

Mass Spectral Interpretation, Finnigan MAT Institute (1990)

Professional Experience:

With Eurofins Lancaster Laboratories since 1988

Chemist (1991)
Coordinator (1994)
Group Leader (1996)
Senior Chemist/Coordinator (1997)
Senior Chemist (2002)
Responsibilities included reviewing and approving data; revising and updating SOPs and analytical methods; reviewing lab data
Senior Specialist, GC/MS Semivolatiles (2005)
Responsibilities included reviewing and approving data; revising and updating SOPs and analytical methods; reviewing lab data
Principal Specialist, GC/MS Semivolatiles (2009)
Responsibilities included reviewing and approving data; revising and updating SOPs and analytical methods; reviewing lab data; performing technical audit of GC/MS semivolatiles data in a timely manner
Principal Specialist, Volatiles in Air (2009)
Responsibilities included reviewing and approving data; revising and updating SOPs and analytical methods; reviewing lab data; performing technical audit of Volatiles in Air, GC/MS semivolatiles, and GC/MS volatiles data in a timely manner
Principal Specialist, Volatiles in Air (2009)
Responsibilities included reviewing and approving data; revising and updating SOPs and analytical methods; reviewing lab data; performing technical audit of Volatiles in Air, GC/MS semivolatiles, GC/MS volatiles, and dioxans and furans data in a timely manner
Principal Specialist Group Leader, Specialty Services Group (2014)
Responsibilities include reviewing and approving data; revising and updating SOPs and analytical methods; reviewing lab data; performing technical audit of Volatiles in Air, GC/MS semivolatiles, GC/MS volatiles, and dioxans and furans data in a timely manner; performing both technical and personnel aspects of group operations; performing work within the department or other areas as required; acting as a technical resource, trainer, and troubleshooter to specific department; making recommendations for operational and/or technical improvements; communicating effectively within the group; coaching and developing direct reports; planning and monitoring workflow; monitoring data for and supporting departmental MOS

Mark A. Ratcliff, B.A., Senior Specialist, GC/MS Semivolatiles

Education:

B.A. Physics, Franklin & Marshall College (1988)

Continuing Education:

Finnegan Mass Spectral Interpretation Course (1991)

Professional Experience:

With Eurofins Lancaster Laboratories since 1989

Chemist (1992)
Senior Chemist (1996)
Responsibilities included performing GC/MS semivolatiles testing; operating GC/MS instruments; data interpretation; calibrating and repairing instruments; preparing standards; revising and updating SOPs; training other analysts
Senior Specialist, GC/MS Semivolatiles (2005)
Responsibilities include performing GC/MS semivolatiles testing; operating GC/MS instruments; data interpretation; calibrating and repairing instruments; preparing standards; revising and updating SOPs; training other analysts

Barbara F. Reedy, B.S., Senior Specialist, Environmental Quality Assurance

Education:

B.S. Environmental Biology, Millersville University (1993)

Continuing Education:

Environmental GC Analysis Seminar, Restek (2001)
The Internet Audit A Quality Tool, PaAAEL (2001)
Advanced Gas Chromatography Mass Spectroscopy Seminar, PaAAEL (2002)
LC/MS/MS System Seminar, Applied Biosystems (2006)
Introduction to Root Cause Analysis, Patton Professional (2007)
When to Initiate Corrective Action, Patton Professional (2007)
Practical Process Improvement Training in the role of Team Member (2008)
GC Pesticide/PCB's Analysis Training Seminar (2008)
NY/PAAAEL Annual Meeting - Internal & Electronic Audits: Satisfying Regulatory Requirements, Corrective and Preventive Actions, Ethics and Data Integrity Training (2009)
Environmental Laboratory Assessment Basic Assessor Training – TNI Standard 2009 (2012)

Professional Experience:

Department of Environmental Resources, Division of Rivers and Wetlands, Scientific Intern (1993)

Responsibilities included reviewing wetland permits applications; inspecting and photographing wetland mitigation sites; determining hydrology, soil type, and the consistency of the mitigation with the approved project plans; researching records of the sites

With Eurofins Lancaster Laboratories since 1993

Associate Chemist/Chemist, Volatiles by GC (1993)

Responsibilities included calibrating Capillary, VOA, BTEX, and FID instruments; performing routine maintenance; interpreting, reviewing, and uploading data

Senior Chemist, Volatiles by GC (1999)

Responsibilities included being primary verifier for the majority of data for Volatiles by GC for the ELCD/PID and FID for both waters and soils; signing of analytical reports; generating statistically determined QC windows; training new analysts to review and upload data into the LIMS

Senior Specialist, Environmental Quality Assurance (2001)

Responsibilities include ensuring quality of data being produced in the laboratories by performing data review, auditing laboratories, and reviewing written procedures; ensuring laboratory adherence to government regulations and client requirements; reviewing client and government documents for requirements outside our usual laboratory practices; setup and testing new analysis in the laboratory sample management system as required by the departments; maintaining documentation of agency certifications

Memberships & Appointments:

Pennsylvania Association of Accredited Laboratories (2013-present)

Beth A. Rich, Senior Specialist, Safety

Professional Experience:

With Eurofins Lancaster Laboratories since 1998

Senior Administrator, Human Resources (1998)

Responsibilities included entering and maintaining employee information in system; photocopying, filing, maintaining personnel files; tracking mid-year and annual job plan completion; following up on exit interviews and other HR admin and support

Specialist, Human Resources (2005)

Responsibilities included maintaining a high level of human resource generalist knowledge to support all personnel in the HR department and to serve all employees

Senior Specialist, Human Resources (2010)

Responsibilities included maintaining a high level of human resource generalist knowledge to support all personnel in the HR department and to serve all employees

Senior Specialist, Safety (2013)

Responsibilities include managing worker's compensation and return to work programs; coordinating annual health screenings, flu shots, and blood bank donations; setting up new site worker's compensation systems as needed; filing incident reports and tracking recordable incidents; coordinating special medical programs as needed

John R. Riggs, Jr., B.S., Senior Specialist Group Leader, Environmental Software Development

Education:

B.S. Professional Studies (Computer Science/Mathematic), Misericordia University (1994)

Continuing Education:

Masters Business Administration, Elizabethtown College (Expected graduation date: 2015)

Professional Experience:

Nissin Foods, Inc., Distribution Supervisor/IT Engineer (1994-1998)

Responsibilities included acting as a liaison between local and corporate management teams; supervised the activities of multiple teams of material handlers engaged in receiving, storing, and shipping finished goods; ensured the accuracy of orders and inventory to meet customer demand; maintained documentation and prepared reports which reflected the effectiveness and efficiency of department activities; Implemented warehouse safety procedures and hold regular safety meetings; established and recommended changes to policies to improve the organization; supported and maintained Novell servers and backups; administered user accounts and email; configured new desktop machines and maintained existing work stations

AVAR, Project Manager/Lead Developer (1998-2014)

Responsibilities included directing the planning, design, production and management of applications and data centers; lead a development team in creating software applications to provide business solutions; acted as a point of contact for vendors, business units, and Information Technology partners during integration of projects, administering schedules and communicating risks; conducted meetings, helping to facilitate communication and maximize productivity; coordinated the work of multiple teams to support applications for data management systems; oversaw creation and maintenance of all unit and system testing plans; supervised the generation of documentation and technical guides for end users; prepared and deliver end-user training

With Eurofins Lancaster Laboratories since 2014

Senior Specialist Group Leader, Environmental Software Development (2014)

Responsibilities include providing technical support for maintenance of installed software applications and assisting with the development, installation, and maintenance of new applications for general use; assisting in development, implementation, and maintenance of software intended to improve the quality and efficiency of work performed

Heidi L. Roberts, B.S., Senior Chemist, Organic Extraction

Education:

B.S. Environmental Science/Biology, Kutztown University (1996)

Continuing Education:

P.E. Spectroscopy Seminar, Perkin Elmer (1998)
Statistics, LLU (1999)
Pharm. Calc. Class, LLU (1999)
LLI Leadership Training (2000)
Practical Process Improvement Team Member Training (2008)
Practical Process Improvement Facilitator Training (2010)

Professional Experience:

M.J. Reider Associates, Lab Technician (1996-1997)

Responsibilities included organics prep/method development for HEM/various wet chemistry analyses

With Eurofins Lancaster Laboratories since 1997

Chemist, Metals (1998)

Responsibilities included performing metals analyses, maintenance of instruments, verification of analyses, analyzed GMP samples, administered quad studies, MDL studies, IDL studies

Coordinator, Metals (1999)

Responsibilities included coordination of GFAA/FAA/Hg group, verification of analyses, instrument maintenance and operation, updating of SOPs, training records, quad studies, MDLs, and IDLs, performed GMP analyses

Coordinator/Specialist, Environmental Client Services (2001)

Responsibilities included supervising Commercial Account Team and administrators, handle miscellaneous and homeowner calls, prepare bottle orders, audit sample paperwork, monitor sample progress, and handle client concerns

Senior Specialist Group Leader, Environmental Client Services (2005)

Responsibilities included supervising Account Management Team and administrator, work with team members on continual process improvement, manage several large client accounts, prepare bottle orders, audit sample paperwork, monitor sample progress, and handle client concerns

Senior Chemist, Organic Extraction (2007)

Responsibilities include performing non-routine extractions, scheduling prep work, verification of prepped batches, processing MOS reports, updating EtQ for DP36, point person for project rollouts

Memberships and Appointments:

Ethics Committee, Lancaster Laboratories (1998)
MOS Process Improvement Team, Lancaster Laboratories (2005)

Nicholas R. Rossi, M.S., Senior Chemist, EPH/Misc. GC

Education:

B.S. Biology, Messiah College (2005)
M.S. Environmental Pollution Control, Penn State Harrisburg (2011)

Professional Experience:

Vermont Agency of Agriculture, Laboratory Technician/Sample Collector (2004-2005)
Responsibilities included collecting water samples from agricultural sites and extracting samples in the lab
With Eurofins Lancaster Laboratories since 2005
Chemist, GC/MS Volatiles (2005)
Responsibilities included organizing batches of samples, sample preparation, analyzing soil and water samples for volatile organic compounds using purge and trap GC-MS, instrument maintenance, and performing a level II audit on data prior to verification; processing plan improvement (PPI) team to reduce the amount of errors in the prescreen department; evaluating the process, implementing changes, and tracking results
Chemist, EPH/Misc. GC (2011)
Responsibilities included analyzing routine and non-routine samples and their associated quality control samples by gas chromatography; reviewing and reporting the corresponding data; maintaining, optimizing, and calibrating equipment (functions are to be performed in an efficient manner with a high degree of accuracy and quality); assisting in organization of related departmental work and in sample preparation (as required) to consistently meet client turnaround time requirements
Senior Chemist, EPH/Misc. GC (2013)
Responsibilities include performing routine and non-routine instrumental analyses of QC and clients' samples for total petroleum hydrocarbons, diesel range organics, and other miscellaneous organic compounds in accordance with departmental methods and SOPs; assisting in implementing special client requests; identifying and offering solutions to correct instrument problems and causes for QC problems; reviewing data for accuracy and completeness for routine and non-routine analyses, reports, or data packages; serving as a technical resource for the department

Memberships and Appointments:

American Chemical Society (2010)
Pennsylvania Department of Environmental Professionals (2011)

Beth A. Rubino, B.S., Senior Specialist, GC/MS Semivolatiles

Education:

B.S. Environmental Resource Management, Pennsylvania State University (1984)

Professional Experience:

Roy F. Weston, Inc., Chemist (1984-1997)
Responsibilities included extraction laboratory unit leader. Managed staff, sample flow, and scheduling on organic extractions to meet hold time requirements; trained personnel on extraction methods and SOP's; performed field sampling and field laboratory responsibilities
Performed GC/MS sample analysis of semi-volatiles, data interpretation, and instrument maintenance
RECRA Environmental, Inc, Senior Chemist (1997-2001)
Responsibilities included technical support for the GC/MS unit; managed staff, sample flow, and scheduling to meet customer's requirements; conducted training on GC/MS analysis, its software, interpretation, and procedure awareness
Lionville Laboratory, Inc, Data Lead Chemist (2001-2013)
Responsibilities included technical support for GC/MS data review and logbook quality assurance and quality control; trained personnel on MS systems and SOP's; assured compliance with client requirements; Prepared and provided accurate and timely data to clients
With Eurofins Lancaster Laboratories since 2014
Senior Specialist, GC/MS Semivolatiles (2014)
Responsibilities include performing technical audit of GC/MS semivolatiles data in a timely manner with zero defects as a goal

Robin C. Runkle, B.S., Senior Specialist, GC/MS Volatiles

Education:

B.S. Chemistry, State University of New York at Oneonta (1988)

Continuing Education:

Introduction to Mass Spectral Interpretation, Finnigan Mat (1991)
Gas Chromatography: Practical Theory and Applications for LL (1993)
HP5890 GC Troubleshooting and Maintenance, Hewlett-Packard (1993)
Technical Training, OI Analytical (1995)

Professional Experience:

With Lancaster Laboratories since 1989

Senior Chemist (1993)

Responsibilities included: sample preparation; perform GC/MS volatile testing; operate GC/MS instruments; data interpretation; review and approve data; developing and evaluating new methods; calibrating and repairing instruments; prepare standards; reagent preparation; revise and update SOPs and analytical methods; order supplies; train other analysts; and prepare and test trip blank water.

Senior Specialist, GC/MS Volatiles (2005)

Responsibilities include: data review and verification, review and sign reports, respond to and work on client inquiries and ATF requests.

Michael S. Salgado, B.S., Senior Specialist, Training

Education:

B.S. Biology, Moravian College (2010)

Professional Experience:

Light Knowledge Resources, Scientific Writing Intern (2008-2009)

Responsibilities included researching and composing articles focusing on multiple myeloma, of which many have been published on their website The Myeloma Beacon

Indiana University Bloomington, IN, Undergraduate Researcher (2009-2009)

Responsibilities included researching in a virology lab and used techniques and tools such as SDS gel electrophoresis, PCR, RT-PCR, minipreps, sequence analysis, cell transformations and transfections, sterile microbial techniques, pouring plates and media preparation, streaking, colony counts, trouble shooting skills, mixers, balances, pH meters, laminar flow hoods, autoclaves, pipettes, and maintained cultures; the research aimed to formulate a strategy to analyze the role of the Reovirus µ1 membrane penetration protein in induction of apoptosis; the data compiled will be used in further research on this virus

Godiva Chocolatier, Technical Data Entry Technician (2010-2012)

Responsibilities included analyzing ingredient, allergen, regulatory, processing, SOP, audit, packaging and quality information and then shifted the data into their work-in-progress database to aid in Godiva's product lifecycle management project; validated the data entered for the product lifecycle management project and updated database specifications when changes were made to raw material specifications; aided coworkers in different departments in becoming familiar with the new data base and data entry process; actively participated in sensory testing with the sensory team to aid in product development; took part in editing audit, guideline, specification, and safety standard documents

With Eurofins Lancaster Laboratories since 2012

Biologist, Professional Scientific Staffing – PA or NJ (2012)

Responsibilities included performing tissue culture based potency assays on live vaccine products; process intermediates and related experimental samples; prepare solutions and culture media; maintain multiple cell lines; maintain records and test results following GMP

Senior Specialist, Training (2015)

Responsibilities include facilitating Core and Elective training for new employees; conducting orientations, internal courses, and other learning experiences

Grace M. Salm, Specialist Group Leader, Data Deliverables

Continuing Education:

Introduction to Personal Computers, Lancaster County Career and Technology Center (2000)
Windows, Lancaster County Career and Technology Center (2000)
PC Upgrading & Repair, Lancaster County Career and Technology Center (2000)

Professional Experience:

With Eurofins Lancaster Laboratories since 2000
Data Package Administrator, GC/MS Semivolatiles (2000)
Responsibilities included assembling departmental data in specific order; checking in data; filing batchlogs
Specialist, GC/MS Semivolatiles/Data Deliverables (2006)
Responsibilities included performing data assembly in department 4026; assemblers and reviewers became part of department 4038; reviewing data for departments 4026, 4021, and 4030
Specialist Group Leader, Data Deliverables (2010)
Responsibilities include scheduling for data package assembly/review; following up with corrections; assembly/review for 4032, 4037, and review for 4028; following up on CSR requests; conducting performance reviews for direct reports; updating SOPs

Richard A. Shober, B.S., Principal Chemist, Pesticide Residue Analysis

Education:

B.S. Chemistry, Muhlenberg College (1984)

Continuing Education:

Inductively Coupled Plasma Spectroscopy, Allied Analytical (1985)
ACS Short Course, Analytical Chemistry of Contaminants in Surface and Groundwater (1986)
Gas Chromatography: Practical Theory & Application, Lancaster Laboratories (1994)
Mass Spectral Interpretation, Hewlett-Packard (1995)
Comprehensive HPLC, RESTEK (2010)

Professional Experience:

With Lancaster Laboratories since 1984
Principal Chemist, Pesticide Residue Analysis (1999)
Responsibilities include performing pesticide residue testing; operating gas chromatography instruments; interpreting data; repairing instruments; developing new methods for and operating LC/MS/MS; developing and maintaining computer systems/programs for lab use

Awards, Citations, Honorary Societies & Publications:

Poster paper on computer applications for analytical chemistry
Poster paper on tobacco specific nitrosamine analysis

Biographical Listings:

Who's Who in Environmental Science

Stephanie A. Selis, B.S.E., Senior Chemist, GC/MS Volatiles

Education:

B.S.E. Biology, Chemistry Minor, Millersville University (1996)

Professional Experience:

Access I, Access II, PC Focus (1997)
Emergency Evacuation Coordinator (1998)
Gas Chromatography Principles and Practices, Lancaster Laboratories University (1998)
GC/MS Theories and Applications, MDL Systems (1999)
Statistics, Lancaster Laboratories University (2000)
Enlightened Leadership: Getting to the Heart of Change, Lancaster Laboratories University (2000)
Building Relationship Versatility: Social Styles at Work, Lancaster Laboratories University (2000)
Leadership at Lancaster Laboratories, Lancaster Laboratories University (2000)
Introduction to Interpretation of Mass Spectra, Lancaster Laboratories University (2005)

Professional Experience:

With Lancaster Laboratories since 1996
Chemist (1996)
Senior Chemist, Volatiles by GC (2000)
Responsibilities included performing sample analysis, troubleshooting, and maintenance; calibrating the system; establishing QC windows for soil analysis; writing SOPs; performing data entry; preparing standards; performing sample verification; training analysts
Senior Chemist, GC/MS Volatiles (2005)
Responsibilities include performing sample analysis; auditing maintenance notebooks; performing troubleshooting, maintenance, and system calibration; preparing standards; performing sample verification; training analysts

Richard A. Shober, B.S., Principal Chemist, Pesticide Residue Analysis

Education:
B.S. Chemistry, Muhlenberg College (1984)

Continuing Education:
Inductively Coupled Plasma Spectroscopy, Allied Analytical (1985)
ACS Short Course, Analytical Chemistry of Contaminants in Surface and Groundwater (1986)
Gas Chromatography: Practical Theory & Application, Lancaster Laboratories (1994)
Mass Spectral Interpretation, Hewlett-Packard (1995)
Comprehensive HPLC, RESTEK (2010)

Professional Experience:
With Lancaster Laboratories since 1984
Principal Chemist, Pesticide Residue Analysis (1999)
Responsibilities include performing pesticide residue testing; operating gas chromatography instruments; interpreting data; repairing instruments; developing new methods for and operating LC/MS/MS; developing and maintaining computer systems/programs for lab use

Awards, Citations, Honorary Societies & Publications:
Poster paper on computer applications for analytical chemistry
Poster paper on tobacco specific nitrosamine analysis

Biographical Listings:
Who's Who in Environmental Science

Jeffrey B. Smith, B.A., Senior Chemist Group Leader, Volatiles in Air

Education:
B.A. Biology, University of Delaware (1991)

Professional Experience:
Roy F. Weston, Inc., Chemist (1991-1997)
Merck, Chemist (1997-2000)
With Lancaster Laboratories since 2001
Senior Chemist, GC/MS Semivolatiles (2001)
Responsibilities included performing GC/MS analysis of semivolatile organics
Senior Chemist Group Leader, Volatiles in Air (2005)
Responsibilities include tracking of all incoming work and scheduling analysts; tracking all incoming summa orders and assigning to analyst; main CSR contact for group; instrument troubleshooting and maintenance; auditing and certifying data as needed

Michele J. Smith, B.S., Senior Specialist, Specialty Services Group

Education:
B.S. Chemistry, St. Mary's College, Notre Dame, Indiana (1998)
22 credits master's study with Penn State University (2000-2002)

Continuing Education:
Gas Chromatography Principles and Practices, Lancaster Laboratories University (1999)
Statistics, Lancaster Laboratories University (2000)

Professional Experience:
St. Mary's College, Laboratory Teaching Assistant (1996-1998)
Responsibilities included: assisted professor in the laboratory—responsible for experiment demonstrations, answered student's questions, and graded lab reports.
With Lancaster Laboratories since 1998
Chemist (1998)
Responsibilities included: maintain GC/MS instrumentation, tune and calibrate GC/MS, analyze samples by GC/MS, review and assemble all supporting GC/MS data, review daily QC outliers.
Senior Chemist (2001)
Responsibilities included: maintain GC/MS instrumentation, tune and calibrate GC/MS, analyze samples by GC/MS, review and assemble all supporting GC/MS data, perform technical audit of GC/MS and HPLC, sign analysis reports, track samples to meet turnaround time.
Senior Chemist Coordinator (2004)
Responsibilities included: maintain GC/MS instrumentation, tune and calibrate GC/MS, analyze samples by GC/MS, review and assemble all supporting GC/MS data, perform technical audit of GC/MS and HPLC, sign analysis reports, track samples to meet turnaround time.
Senior Specialist Group Leader, GC/MS Semivolatiles (2005)
Responsibilities included: review and assemble GC/MS data, perform technical audit of GC/MS and HPLC, sign analysis reports, schedule and track samples to meet turnaround time.

Senior Specialist, Environmental Client Services (2008)
Responsibilities included auditing sample paperwork; setting up standard forms; generating bottle orders; preparing quotes
Senior Specialist, Specialty Services Group (2011)
Responsibilities include maintaining instrumentation; tuning and calibrating instrument daily; analyzing quality control and client samples; reviewing and assembling data in an efficient manner with a high degree of quality; evaluating current organizational and analytical systems; diagnosing complex problems and offering solutions with a high degree of independence; suggesting and implementing improvements to maximize quality and productivity; acting as technical resource for internal problems and projects; assisting in "brainstorming" client problems and projects; training new employees in all aspects of instrumentation; researching new and emerging technologies

Memberships and Appointments:
American Chemical Society (1998-2002)

Angela D. Sneeringer, B.S., Senior Chemist, GC/MS Volatiles

Education:
B.S. Biochemistry, Elizabethtown College (2001)

Professional Experience:
Wyeth, Chemist (2001-2003)
Responsibilities included CIP/SIP of tanks, large volume solution formulation, record review
Cycle Chem, Technical Services Rep (2003-2005)
Responsibilities included shipping documents for hazardous waste transportation; assisting clients with all necessary paperwork; scheduling of waste pickup
With Eurofins Lancaster Laboratories since 2005
Chemist, Pharmaceutical Raw Materials (2005)
Responsibilities included performing TOC of pharmaceutical waters using OI and Sievers analyzers
Chemist, GC/MS Volatiles (2005)
Responsibilities included performing GC/MS of volatile organic compounds using Agilent 5970 series MS and Shimadzu QP5000, also OI 5660 and 5661 concentrators and autosamplers
Senior Chemist, GC/MS Volatiles (2015)
Responsibilities include maintaining GC/MS instrumentation; tuning and calibrating instrument daily; analyzing quality control and client samples; reviewing and assembling data in an efficient manner with a high degree of quality; evaluating current organizational and analytical systems; suggesting and implementing the necessary corrective action to ensure the above can be performed in alignment with client and/or regulatory requirements; performing all duties with minimal supervision; working on special assignments; diagnosing complex problems and offering solutions with a high degree of independence; assisting in "brainstorming" client problems and projects; completing assigned projects on time; researching new and emerging technologies; producing written and oral reports on research activities

Tara M. Spaide, Senior Specialist, Business Development, Environmental Sciences

Continuing Education:
Algebra and Analytical Geometry, Pennsylvania State University (1993)
Chemistry, Pennsylvania State University (1993)

Professional Experience:
With Eurofins Lancaster Laboratories since 1986
Senior Specialist Coordinator, Organic Extraction (1997)
Responsibilities included supervising personnel; scheduling lab work; managing laboratory operations; reviewing and approving data; and revising and updating analytical methods
Senior Chemist Coordinator, Organic Extraction (2003)
Responsibilities included supervising personnel; scheduling lab work; managing laboratory operations; reviewing and approving data; and revising and updating analytical methods
Senior Chemist Group Leader, Organic Extraction (2005)
Responsibilities included supervising personnel; scheduling lab work; managing laboratory operations; reviewing and approving data; and revising and updating analytical methods
Senior Specialist, Environmental Client Services (2007)
Responsibilities included auditing sample paperwork; setting up standard forms; generating bottle orders; preparing quotes
Senior Specialist, Business Development, Environmental Sciences (2015)
Responsibilities include independently securing new business consistent with operational capabilities and business plan goals; collaborating efforts and activities with those of Outside Sales account managers as needed; focusing on proposal writing for major national accounts; attending face-to-face sales meetings with selected national accounts as needed and maintaining responsibility for their maintenance and growth

Kevin A. Sposito, B.S., Senior Chemist, GC/MS Volatiles

Education:

B.S. Forensic Chemistry, York College of Pennsylvania (2009)

Professional Experience:

Analytical Lab Services, Laboratory Technician (2010)

Responsibilities included performing Liquid-Liquid extractions of water sample to isolate organic analytes of interest

With Eurofins Lancaster Laboratories since 2010

Chemist, GC/MS Volatiles (2010)

Responsibilities included maintaining GC/MS instrumentation; tuning and calibrating instruments daily; analyzing quality control and client samples; reviewing and assembling data

Senior Chemist, GC/MS Volatiles (2015)

Responsibilities include maintaining GC/MS instrumentation; tuning and calibrating instrument daily; analyzing quality control and client samples; reviewing and assembling data in an efficient manner with a high degree of quality; evaluating current organizational and analytical systems; suggesting and implementing the necessary corrective action to ensure the above can be performed in alignment with client and/or regulatory requirements; performing all duties with minimal supervision; working on special assignments; diagnosing complex problems and offering solutions with a high degree of independence; assisting in “brainstorming” client problems and projects; completing assigned projects on time; researching new and emerging technologies; producing written and oral reports on research activities

Larry D. Starkey, Senior Specialist Group Leader, Bay Area Service Center and SeaTac Service Center

Professional Experience:

Walnut Creek Honda, Utility (1987-1992)

Responsibilities included performing new car inventory, general maintenance, and vehicle repair; being a service adviser

Star Courier Service, Manager (1992-2008)

Responsibilities included being a dispatcher, accountant (AP-AR-Income Statement-Tax Prep), supervisor, and driver

With Eurofins Lancaster Laboratories since 2008

Senior Administrator, Bay Area Service Center (2008)

Responsibilities included performing courier service; ordering and inventory control of bottling room; performing preservation with acid, bottle prep, packing of samples, packing of bottle orders, sending of rush e-mails to technical department, assisting in STLC threshold, packing and shipping of hazardous materials, sub-contracting of analysis

Specialist, Bay Area Service Center (2012)

Responsibilities included handling the receipt of samples at the Bay Area Service Center; reconciling chains-of-custody and documenting any discrepancies or damages at receipt; picking up samples and delivering bottle kits in the Bay Area; packing and shipping samples via overnight courier to Eurofins Lancaster Laboratories Environmental, LLC; supporting the SeaTac and Fort Collins Service Centers

Senior Specialist Group Leader, Bay Area Service Center and SeaTac Service Center (2014)

Responsibilities include serving as the primary contact with the laboratory for a number of assigned clients; communicating technical information and conveying client requirements to laboratory personnel, ensuring that those requirements are met; managing large/complex projects according to client technical and schedule requirements; developing strong relationships with major accounts resulting in additional sales; providing courier service including bottle delivery and sample pick-up in Bay Area; assisting in start-up and stocking of other service centers; ordering supplies as needed; performing both technical and personnel aspects of group operations; performing work within the department or other areas as required; acting as a technical resource, trainer, and troubleshooter to specific department; making recommendations for operational and/or technical improvements; communicating effectively within the group; coaching and developing direct reports; planning and monitoring workflow

Christopher M. Stauffer, B.S., Senior Specialist, Environment Software Development

Education:

B.S. Computer Science, Millersville University (2013)

Professional Experience:

Lawn Equipment Parts Co., Junior Network Admin (2008-2011)

Responsibilities included monitoring and maintaining network; applying software patches deployed to employees' desktops

With Eurofins Lancaster Laboratories since 2012

Specialist, Computer Application Development (2012)

Responsibilities included performing software development for Parallax

Senior Specialist, Computer Application Development (2015)

Responsibilities include providing technical support for maintenance of installed software applications and assisting with the development, installation, and maintenance of new applications for general use; assisting in development, implementation, and maintenance of software intended to improve the quality and efficiency of work performed

Memberships and Appointments:

Association for Computing Machinery

Member of SIGARCH, SIGMICRO (2011-2013)

Chelsea B. Stong, B.S., Senior Specialist, GC/MS Volatiles

Education:

B.S. Biology, Eastern University (2007)

Professional Experience:

With Eurofins Lancaster Laboratories since 2006

Laboratory Technician, GC/MS Volatiles (2006)

Responsibilities included scanning samples into LIMS; prepping samples for analysis

Chemist, GC/MS Volatiles (2007)

Responsibilities included analyzing water and soil samples using a GC/MS; prepping samples for analysis; working up raw data

Senior Chemist, GC/MS Volatiles (2012)

Responsibilities included maintaining GC/MS instrumentation; tuning and calibrating instrument daily; analyzing quality control and client samples; reviewing and assembling data in an efficient manner with a high degree of quality; evaluating current organizational and analytical systems; suggesting and implementing the necessary corrective action to ensure the above can be performed in alignment with client and/or regulatory requirements; performing all duties with minimal supervision; working on special assignments; diagnosing complex problems and offering solutions with a high degree of independence; assisting in "brainstorming" client problems and projects; completing assigned projects on time; researching new and emerging technologies; producing written and oral reports on research activities

Senior Specialist, GC/MS Volatiles (2015)

Responsibilities include performing technical audit of GC/MS volatiles data in a timely manner with zero defects as a goal; acting as a technical resource to department; evaluating issues in technical data and suggesting possible solutions; performing sample/QC verification in the LIMS; reviewing analytical reports; evaluating and interpreting analytical results; writing and revising SOPs; assisting in responding to and eliminating ICARs; making recommendations for technical improvements; communicating effectively within department; completing assigned tasks on time; assisting in "brainstorming" client problems and projects; performing all duties with minimal supervision

Andrew J. Strebel, Principal Specialist, Environmental Software Development

Continuing Education:

Advanced Aquarius Programmers Course, Hewlett-Packard (1989)
Environmental Applications of GC/MS, Indiana University (1989)
Environmental GC-MS (DOS) Operation, Hewlett-Packard (1995)
Unix Module 1, Albright College (1995)
Unix Module 2, Albright College (1995)
Unix Shell Scripts, Albright College (1995)
Unix AWK Programming, Albright College (1995)
Target Training, Thru-Put Systems, Inc. (1995)
Report Writer Training, Thru-Put Systems, Inc. (1998)
HP-UX System Administration for HP 9000s, Hewlett Packard (1998)
HP-UX Troubleshooting for HP 9000s, Hewlett Packard (1998)
GC/MS Training Course, MDL Systems (1999)
LC/MS/MS 101 Training Course, Basic Mass Spec Solutions, Inc. (2001)
GC-MSD Macro Programming, Agilent Technologies (2012)

Professional Experience:

With Eurofins Lancaster Laboratories since 1986

Technical Specialist (1991)

Chemist (1994)

Senior Chemist (1997)

Principal Chemist, GC/MS Semivolatiles (2001)

Responsibilities included performing routine semivolatile testing; operated GC/MS semivolatile instruments; data interpretation; reviewed and approved data; developing and evaluating new methods; calibrating and repairing instruments; prepared standards; revised and updated SOPs and analytical methods; trained other analysts; developed and maintained computer systems/programs for lab use; computer validation testing

Principal Specialist, Environmental Software Development (2013)

Responsibilities include special project data interpretation and review; developing and evaluating new methods for the Target data system; developing and maintaining computer systems/programs for lab use; and computer validation testing

Robert Strocko, Jr., B.S., Manager, Metals and Microbiology

Education:

B.S. Biology, York College of Pennsylvania (1988)

Continuing Education:

Thermo Jarrel l ASA ICP Course, Thermo Jarrell ASA (1993)

Professional Experience:

Springettsbury Waste Water Treatment Facility, Chemistry Technician (1986-1988)

Responsibilities included running NPDES tests on wastewater, % solids, NH4, pH, BOD, suspended solids, coliform, dissolved solids, temperature, and Hexa-Chrome testing

Penn Dairies, Laboratory Technician (1988-1989)

Responsibilities included testing raw milk for coliform bacteria for acceptance; performing milk-fat percent solids on milk products; calculating sugar content in sweetened milk

Pennsylvania Department of Environmental Resources, Chemistry Technician (1989-1992)

Responsibilities included receiving samples; logging data for analysis to computer; handling field sampling questions; operating flame AA; shipping cooler to field samples

With Eurofins Lancaster Laboratories since 1992

Chemist, Metals (1992)

Responsibilities included setting up, pouring, and running samples on ICP; reviewing and verifying ICP data; performing instrument maintenance; calculating IDLs, MDLs, and linear ranges; writing SOPs

Chemist/Coordinator, Metals (1996)

Responsibilities included overseeing prep room personnel and work flow; scheduling work flow through prep room; writing job plans and job reviews; ordering standards and reagents; overchecking notebooks

Manager, Metals (1998)

Responsibilities include overseeing technical areas in ICP, low-level mercury, ICP-MS, and mercury; writing SOPs, ICARs, etc.; writing job plans and job reviews; handling technical questions for clients/client services; verifying ICP/ICP-MS/Hg data

Manager, Metals Analysis and Microbiology (2013)

Responsibilities included overseeing technical areas in ICP, low-level mercury, ICP-MS, and mercury; writing SOPs, ICARs, etc.; writing job plans and job reviews; handling technical questions for clients/client services; verifying ICP/ICP-MS/Hg data

Manager, Metals Analysis and Microbiology (2014)

Responsibilities include included overseeing technical areas in ICP, low-level mercury, ICP-MS, and mercury; writing SOPs, ICARs, etc.; writing job plans and job reviews; handling technical questions for clients/client services; verifying ICP/ICP-MS/Hg data; overseeing technical area in Microbiology; tests include Colilert (presence/absence), Colilert (Q-tray), Heterotrophic Plate Count (HPC), Fecal Coliform by Membrane Filtration, Yeast and Mold, Hydrocarbon degraders; overseeing writing of SOPs, responding to ICARs; writing job plans and job reviews; handling technical questions for clients/client services; verifying data

Christiane S. Sweigart, B.S., Senior Specialist, Environmental Quality Assurance

Education:

B.S. Science, Elizabethtown College (1985)
Medical/Technology Degree, St. Joseph School of Medical Technology (1985)

Continuing Education:

The Principals of Gas Chromatography (1993)
Statistics Course (1993)
Creative Training Techniques Conference (1997)
SEDD/ADR Implementation Workshop (2008)
ERPTOOLSX (Environmental Resources Planning Tools) (2010)
PPI (Practical Process Improvement) - Facilitator Training (2011)

Professional Experience:

With Eurofins Lancaster Laboratories since 1985

Chemist, GC/MS (1985)

Responsibilities included GC/MS operation targeting VOA and BNA compounds, instrument maintenance, sample handling, and data handling (interpretation and documentation)

Chemist, GC/VOA (1986)

Responsibilities included GC operation targeting both aromatic and halogenated compounds, FID operation, instrument maintenance, sample handling, and data handling (interpretation and documentation); training others on FID methods, development of training/reference manual for FID, development of internal Operating Manual, standard documentation, definition and maintenance of statistically defined windows, and temporary coordinator in Department 4025

Chemist Coordinator, GC/VOA (1993)

Responsibilities included coordination of sample analysis and data management; job plans and feedback for several personnel; communication both internal and external, and data handling (interpretation and documentation; and combination of existing department with another (personnel, instrumentation, and sample volume)

Senior Specialist, Human Resources (1997)

Responsibilities included recruiting, training, and professional development

Senior Specialist, Electronic Data Deliverables (2001)

Responsibilities included EDD generation, EDD content review, and communication (internal and external)

Senior Specialist, Environmental Quality Assurance (2013)

Responsibilities include ensuring quality of operations and data being produced in the laboratories; ensuring laboratory adherence to government regulations and client requirements; independently performing complex work and special projects in addition to routine and non-routine duties

Awards, Citations, Honorary Societies & Publications:

Recognition for the implementation of a revamped New Hire Orientation (1999)
Recognition for the development and presentation of the Ethic's Refresher (2001)

Memberships & Appointments:

LCAHRM (1997-2001)

Valerie L. Tomayko, B.S., Principal Specialist, Pesticide Residue Analysis

Education:

A.S. Chemical Engineering Technology, Pennsylvania State University (1977)
B.S. Human Resource Management, Geneva College (1993)

Professional Experience:

Hercules Inc., Laboratory Technician (1977-1983)
Antech Ltd., Associate Chemist, (1985-1989)
Quanterra (formerly Wadsworth/Alert), Chemist, (1989-1997)
UEC (United States Steel Engineering Consultants), Chemist (1997)
With Lancaster Laboratories since 1997

Senior Chemist, Pesticide Residue Analysis (1997)

Responsibilities included: data interpretation; review and approve data; review data packages; and generate statistical QC limits for Pesticide Residue Analysis and Extractable Petroleum Hydrocarbons/MBC GC and Nitrosamines departments.

Senior Chemist Coordinator, Pesticide Residue Analysis (2001)

Responsibilities included: Monitor turnaround time and status of samples and packages; coordinate work flow; track employees' progress; assist in implementing procedures/protocols for meeting QA requirements, data package requirements, and special client or project-specific requests. In addition to data interpretation; review and approve data; review data packages; and generate statistical QC limits for Pesticide Residue Analysis and Extractable Petroleum Hydrocarbons/MBC GC and Nitrosamines departments.

Senior Specialist Group Leader, Pesticide Residue Analysis (2005)

Responsibilities included: Monitor turnaround time and status of samples and packages; coordinate work flow; track employees' progress; assist in implementing procedures/protocols for meeting QA requirements, data package requirements, and special client or project-specific requests. In addition to data interpretation; review and approve data; review data packages; and generate statistical QC limits for Pesticide Residue Analysis and Extractable Petroleum Hydrocarbons/MBC GC and Nitrosamines departments.

Senior Specialist Group Leader, Volatiles by GC (2006)

Responsibilities included: Monitor turnaround time and status of samples; coordinate work flow; track employees' progress; assist in implementing procedures/protocols for meeting QA requirements, data package requirements, and special client or project-specific requests. In addition to data interpretation; review and approve data; review data packages; and generate statistical QC limits for GC Volatile analysis.

Principal Specialist, Pesticide Residue Analysis (2011)

Responsibilities include reviewing laboratory data for technical compliance to methods, SOPs, client protocols, and regulatory agency requirements; overchecking and verifying data from the analysts performing instrumental analyses, including QC and clients' samples for pesticides, PCBs, herbicides, and other related compounds; reviewing data for accuracy and completeness (for routine and non-routine analyses, analytical reports, and/or data packages); assisting in implementing special client requests that impact data processing and reporting; identifying and offering solutions to correct problems related to data processing and reporting; serving as a technical resource for the department with regard to QA/QC procedures and issues

Timothy J. Trees, A.A.S., Principal Chemist, Specialty Services Group

Education:

Certificate, N.Y.S. Water/Wastewater Treatment Operations, Columbia Greene Community College (1985)
A.A.S. Environmental Control of Hazardous Waste/Water Quality, Ulster County Community College (1988)

Continuing Education:

Water Treatment Operations, NYS License Board (1984)
Wastewater Treatment Operations, NYS License Board (1986)
Varian AA Course (1992)
Service Operations Process Optimization, Pennsylvania State University (1992)
Hitachi GFAA Workshop, Hitachi, CT (1994)
24-hour HAZWOPER (spill response) (1995)
Atomic Spectroscopy Workshop, Perkin-Elmer (1997)

Professional Experience:

York Wastewater Management (1985-1986)
Rider Engineering (1986-1988)
With Eurofins Lancaster Laboratories since 1988

Senior Technician, Metals (1988)

Responsibilities included: operation, maintenance, and sample preparation of mercury cold vapor and hydride generation instrumentation for the determination of mercury, arsenic, and selenium; data entry; troubleshooting instruments; repair of instrumentations' electronic system.

Chemist I, Metals (1990)

Responsibilities included: operation and maintenance of graphite furnace instrumentation; verification of mercury cold vapor and hydride generation data; coaching and training of personnel in the operation of mercury and hydride instrumentation; troubleshooting and repair of instrumentations' mechanical and electronic system.

Chemist I/Coordinator, Metals (1992)

Responsibilities included: operation and maintenance of graphite furnace instrumentation; ICP operation; verification of mercury cold vapor and hydride generation data; coaching and training of personnel in the operation of mercury, hydride, and graphite
furnace instrumentation; troubleshooting and repair of instrumentations' mechanical and electronic system; systems operation optimization to increase production; scheduling of personnel for department operation; job plan and review with employees.

Chemist II/Coordinator, Metals (1993)

Responsibilities included: coaching and training of personnel in the operation of mercury, hydride, and graphite furnace instrumentation; assist clients with data interpretation and process improvement; ICP operation; verification of graphite furnace, mercury cold vapor, and hydride generation data; data package review; troubleshooting and repair of instrumentations' mechanical and electronic systems; system operations optimization to increase production; scheduling of personnel for department operation; job plan and review with employees.

Senior Chemist/Coordinator, Metals (1994)

Responsibilities included: operation, maintenance, repair, and troubleshooting of department graphite furnaces; flame atomic absorption, mercury cold vapor, hydride generation, and Inductively Coupled Plasma Instrumentation as well as computer systems used in the operation with these instruments; data qualification, interpretation, and verification of department workload; assist clients with interpretation of data, cause and effect; coaching and training of department personnel in areas of sample preparation, instrument setup, maintenance, and analysis using these instruments; job plan, review, and evaluation with employees; ordering of supplies; maintained operation of Metals Atomic Absorption for the department; method development for both environmental and pharmaceutical divisions for graphite furnace and ICP work; Set up and maintain, all SOPs and documentation for computer systems and instrumentation to comply with GMP regulations; data package review for metals analysis; review and verification of ICP data as needed.

Principal Chemist/Coordinator, Metals (1996)

Responsibilities included: operation, maintenance, repair, and troubleshooting of department graphite furnaces; flame atomic absorption, mercury cold vapor, hydride generation, and Inductively Coupled Plasma Instrumentation as well as computer systems used in the operation with these instruments; data qualification, interpretation, and verification of department workload; assist clients with interpretation of data, cause and effect; coaching and training of department personnel in areas of sample preparation, instrument setup, maintenance, and analysis using these instruments; job plan, review, and evaluation with employees; ordering of supplies; maintained operation of Metals Atomic Absorption for the department; method development for both environmental and pharmaceutical divisions for graphite furnace and ICP work; Set up and maintain, all SOPs and documentation for computer systems and instrumentation to comply with GMP regulations; data package review for metals analysis; review and verification of ICP data as needed.

Senior Chemist, GC/MS Semivolatiles (1998)

Responsibilities included: operation, maintenance, and troubleshooting of GC/MS instrumentation; HP5890, 6890 GC, 5971, 5972, 5973 Mass Spec; review and data interpretation of various analyses including but not limited to, 8270C, Appendix IX, 625, CLP 3/90, and 2/88; standards preparation for various methods; data interpretation and data package assembly of batch data; evaluation and review of system procedures.

Principal Chemist, GC/MS Semivolatiles (2001)

Responsibilities included: operation, maintenance, and troubleshooting of GC/MS instrumentation; HP5890, 6890 GC, 5971,5972, 5973 Mass Spec; method development, research, and development of GC/MS procedures; review and data interpretation of various analyses including but not limited to 8270C, Appendix IX, 625, CLP 3/90 and 2/88; standards preparation for various methods; data interpretation and data package assembly of batch data; evaluation and review of system procedures; analysis and troubleshooting of HPLC and analysis of PAHs; coaching and training of analysts to assist with troubleshooting; working in Pharmaceutical Method Development and Validation, operating LC/MS, LC/MS/MS, and GC/MS instrumentation, and performing instrument qualifications since June 2003

Principal Chemist, Flexible Staffing (2006)

Responsibilities included working in GC/MS Volatiles in Air department; operation, maintenance, and troubleshooting GC/MS instrumentation; HP5890, 6890 GC, 5971, 5972, 5973 Mass Spec; method development, research, and development of GC/MS procedures; review and data interpretation of various analyses including but not limited to TO-15 and TO-14; standards preparation for various methods; data interpretation and data package assembly of batch data; evaluation and review of system procedures; ability to operate a variety of instrumentation and data systems

Principal Chemist, GC/MS Semivolatiles (2007)

Responsibilities included operating, performing maintenance on, and troubleshooting GC/MS instrumentation; HP5890, 6890 GC, 5971,5972, 5973, 5975 Mass Spec; setting up and performing method development of Thermo Fisher TRACE GC and DSQ II MS; performing method development using both EI and CI mode of analysis; method development, research, and development of GC/MS procedures; review and data interpretation of various analyses including, but not limited to, 8270C, Appendix IX, 625, CLP 3/90 and 2/88; standards preparation for various methods; data interpretation and data package assembly of batch data; evaluation and review of system procedures; analysis and troubleshooting of HPLC and analysis of PAHs; coaching and training of analysts to assist with troubleshooting; Including working in GC/MS Volatiles in Air department; operation, maintenance, and troubleshooting GC/MS instrumentation; HP5890, 6890 GC, 5971, 5972, 5973 Mass Spec; method development, research, and development of GC/MS procedures; review and data interpretation of various analyses including but not limited to TO-15 and TO-14; standards preparation for various methods; data interpretation and data package assembly of batch data; evaluation and review of system procedures; ability to operate a variety of instrumentation and data systems

Principal Chemist, Specialty Services Group (2011)

Responsibilities include acting as technical resource within the environmental division; developing and validating analytical protocols; troubleshooting and solving analytical chemistry problems; optimizing instrument configuration and performance; evaluating and interpreting analytical results; writing SOPs; assisting in responding to and eliminating ICARs, assisting in optimizing procedures in prep lab; communicating effectively within department; performing routine work as required. Maintain and operation of Thermo Fisher Scientific TSQ Quantum XLS MS/MS as well as TSQ8000 MS/MS with a Trace 1310 GC; developing methods utilizing GC triple Quad technology in a variety of matrices; utilizing various extraction technologies such as QuEChERS (Quick, Easy, Cheap, Effective, Rugged, and Safe) to effectively extract and cleanup sample matrices

Holly L. Trego, M.S., Manager, Environmental Software Development

Education:

B.S. Computer Science, Millersville University (1998)
M.S. Computer Science, Pennsylvania State University (2004)

Professional Experience:

Millersville University (1994-1998)
Computer Programmer
Responsibilities included organizing meetings with staff of Academic Advising and students; maintained statistics on students' grades in the Undeclared program using SAS; created reports in Cobol to report on the statistics; organized summer orientation for the Undeclared program
Internet Programmer
Responsibilities included creating and maintaining various interactive web pages to allow students to view information; developed web site for students to vote on what classes departments should offer
With Eurofins Lancaster Laboratories since 1996
Senior Specialist, Computer Applications Development (1996)
Responsibilities included write Visual Basic code to general client reports; design Powerbuilder System with customized macros which processes analytical data; develop data acquisition software with SQL*Loader
Senior Specialist/Group Leader, Computer Applications Development (2005)
Responsibilities included managing environmental application development projects, maintenance of existing applications
Manager, Computer Applications Development (2007)
Responsibilities included managing environmental application development projects, maintenance of existing applications
Manager, Environmental Software Development (2013)
Responsibilities include managing application development projects, maintenance of existing applications

Nicole M. Veety, B.S., Senior Chemist Group Leader, Instrumental Water Quality

Education:

AA Psychology, Harrisburg Area Community College (1997)
B.S. Psychobiology, Lebanon Valley College (2000)

Professional Experience:

With Eurofins Lancaster Laboratories since 2000
Senior Technician, Instrumental Water Quality (2000)
Responsibilities included various prep analyses, data entry, TOC and TOX analyses.
Chemist, Instrumental Water Quality (2003)
Responsibilities included performing various analyses, verification, and review and revise SOPs.
Senior Chemist, Instrumental Water Quality (2006)
Responsibilities include performing various analyses, method development, verification, and review and revise SOPs.
Senior Chemist Group Leader, Instrumental Water Quality (2009)
Responsibilities include performing various analyses, method development, verification, and review and revise SOPs; acting as a technical resource, trainer, and troubleshooter; making recommendations for operational and/or technical improvements; coaching and developing direct reports; planning and monitoring workflow.

Awards, Citations, Honorary Societies, and Publications:

Phi Theta Kappa National Honor Society (Alpha Nu Omega) (1996-2000)

David Velasquez, Senior Account Manager, Environmental Sciences

Information not available at time of printing

Robert Todd Vincent, B.S., Principal Chemist, Organic Extraction

Education:

B.S. Chemistry, West Virginia Wesleyan College (2001)

Professional Experience:

With Lancaster Laboratories since 2001

Chemist, EPH/Misc. GC (2001)

Responsibilities included analyzing samples; performing equipment repair; GC method development

Chemist, Organic Extraction (2005)

Responsibilities included performing method development; equipment repair

Senior Chemist, Organic Extraction (2007)

Responsibilities included performing method development; equipment repair; vendor relations; technology evaluation

Principal Chemist, Organic Extraction (2011)

Responsibilities include performing high level, difficult preps (with minimal supervision or guidance) following standard operating procedures (SOPs); self-train in new techniques; entering information into computer; training new or existing employees in extraction techniques or use of equipment; using knowledge to actively improve current processes; developing, enhancing, and validating new extraction methods; keeping work area clean and organized; preparing spikes; repairing equipment; updating departmental SOPs and training manual; disposing of wastes in approved manner; assisting in incident prevention and remediation when necessary

Harry D. Ward, Ph.D., Principal Specialist, Training

Education:

B.S. Chemistry, Muhlenberg College (1980)

Ph.D. Organic Chemistry, University of Delaware (1985)

Professional Experience:

Armstrong World Industries, Inc., Research Scientist (1985-2003)

Responsibilities included performing research and development related to flooring

With Eurofins Lancaster Laboratories since 2003

Senior Chemist, Pharmaceutical Product Testing (2003)

Responsibilities included performing pharmaceutical product testing

Senior Chemist, Method Development & Validation (2005)

Responsibilities included performing pharmaceutical method development and validation

Senior Training Specialist, Human Resources (2006)

Responsibilities included design and delivery of core and elective technical training

Principal Training Specialist, Human Resources (2008)

Responsibilities included design and delivery of core and elective technical training

Principal Specialist Group Leader, Training (2011)

Responsibilities included managing the resources of the technical training group; designing and delivering core and elective technical training

Principal Specialist, Training (2015)

Responsibilities included facilitating all steps associated with technical training

Barbara J. Weaver, M.S., CIH, Principal Specialist, Training

Education:

B.S. Chemistry, Elizabethtown College (1971)
M.S. Analytical Chemistry, Illinois Institute of Technology (2001)

Certifications:

CIH - American Board of Industrial Hygiene - Certified in the comprehensive practice of industrial hygiene (1983), Certification #2719

Continuing Education:

Business Law, Elizabethtown College (1979)
NIOSH Course #553 "Industrial Hygiene Sampling, Decision Making, Monitoring and Record Keeping, Sampling Strategies" (1979)
Industrial Toxicology, 5-Day Workshop, Thomas Jefferson University (1980)
Special Topics: Environmental Analytical Chemistry, Graduate Work, Villanova University (1981)
"Comprehensive Industrial Hygiene Review", University of Cincinnati, NIOSH Education Resource Center (1983)
Environmental Health, Graduate Work, West Chester University (1985)
Chemical Hygiene - The OSHA Laboratory Standard, NEAIHA PDC (1990)
Health and Safety Management for Hazardous Waste Professionals, AIHA PDC #11 (1990)
Financial Accounting, Penn State (1990)
NIOSH Course #582 "Sample and Analysis of Airborne Asbestos Dust", NIOSH Education Resource Center, Cincinnati (1992)
Survey of Management, Penn State University (1993)
Laboratory Safety and Health, American Chemical Society (1994)
24-hour HAZWOPER (spill response) and Refreshers (1995-present)
Health, Safety, and Environmental Auditing, Johns Hopkins (1995)
Managing Ionizing Radiation Programs for Industrial Hygienists, AIHA (1996)
Radiation Safety Officer Training, Radiation Safety Associates, MA (1997)
Presenting Data and Information, Edward R. Tufte, Graphic Press LLC (2005)
IATA/FIATA Dangerous Goods, IATA (2007)
GC/MS Training Seminar, Restek (2008)
IATA Dangerous Goods Refresher Training, DGI (2009)
Exposure Assessment Strategies and Statistics, 4.6 CEUs, AIHA (2009)
Practical Process Improvement, Training in the Role of Facilitator (2010)
DOT (49CFR) Shipper Course, DGI (2011)
IATA Acceptance Training, all inclusive (2011)

Professional Experience:

Warner Lambert, Inc., Quality Control Chemist (1970-1973)

Responsibilities included performing USP/NF and client-specific raw materials and product testing; conducting specific project assignments such as documentation of product-specific alcohol denaturing at supplier's site; pre-market new product quality control testing; serving on panels for testing fragrance and color

Hershey Medical Center, Junior Research Technician (1973-1974)

Responsibilities included developing rubidium-crystal FID-GC (nitrogen sensitive) methods for the low level detection of barbiturates in solution and in blood extracts; performing analysis of blood and spiked blood from rat and monkey; performing analysis of a specific liver enzyme; using preparative fix-angle ultracentrifuge in sample preparation; developing electron microscopy photographs for liver cell mitochondria study

Elizabethtown College, Laboratory Instructor (1977-1978)

Responsibilities included preparing materials for freshman chemistry laboratories; providing basic laboratory instruction for freshmen; conducting research on the separation of linoleic and linolenic acids (omega-3 and omega-6 fatty acids in olive oil) using spinning band distillation; testing flame-retardant cellulose insulation to determine the flame-retardant formulation for industrial client

With Lancaster Laboratories since 1978

Chemist, Air Quality/Industrial Hygiene (1978)

Responsibilities included performing air and miscellaneous chemical analysis using gas chromatography, colorimetric analysis, UV-Vis, spectrophotometry, fiber-counting using phase contrast microscopy, and infrared analysis

Program Manager, Air Quality/Industrial Hygiene (1978)

Responsibilities for the Air Quality and Miscellaneous Chemistry Group included conducting NIOSH, OSHA, and EPA air sampling and analysis; industrial hygiene (air quality and employee exposure in the workplace) consulting services; responsibilities for laboratory work included method development for analysis of pharmaceutical active compounds in air; method development for the FID-GC analysis of cholesterol and fatty acid profiles; infra-red and gas chromatography methods; forensic sample analysis and expert witness testimony; USP/NF testing, some ASTM testing, analytical microscopy using phase contrast, fluorescence and light microscopy; preparing and/or submitting PAT and QA test samples and blanks for analysis; business development, technical writing, proposal, pricing and quote development, and client services for QA/IH; managing the industrial hygiene field sampling/consultation and industrial hygiene/miscellaneous chemistry (client special projects) lab group; maintaining DEA registration; serving as laboratory director for the AIHA analytical laboratory certification for more than 10 years

Marketing and Technical Services Specialist, Business Development (1987)
Responsibilities included inside and external business development including client visits and trade shows; serving as client services/account representative for air quality, foods, and pharmaceutical sciences; creating and tracking quotes and responses to requests for bids and proposals; continued to serve as laboratory director for the AIHA analytical laboratory certification
Principal Specialist reporting to Vice President, Environmental and Pharmaceutical Sciences (1987)
Responsibilities included technical writing, special projects, and performing Graphite Furnace Atomic Absorption for Pb and Cu in water; pesticides data entry verification; coordinating, developing, and providing technical and EHS training; providing technical support to the EHS staff; serving as interim EHS officer and the EHS liaison with our parent company; serving as Lancaster Radiation Safety Officer during the period in which Lancaster held a site NRC license; serving as a permanent member of the safety committee representing EHS training
Principal Specialist, Training (1991)
Responsibilities include coordinating, developing, and providing technical training and environmental health and safety (EHS) training; soliciting and managing grants for training programs; providing coordination for the external and continuing education programs; providing technical support for the EHS staff and continuing to represent EHS training on the safety committee

Awards, Citations, Honorary Societies & Publications:

1 publication on microscopy
1 publication on NMR and Copper-histidine
Book Review - Review of *Guidelines for Laboratory Design: Health and Safety Aspect,* ***The Synergist*** March 2002
Acknowledged in two EPA publications: Pb-Based Paint Laboratory Operations Guidelines: Analysis of Pb in Paint, Dust and Soil (EPA 747-R-92-006 May 1993) and Environmental Management Guide for Small Laboratories (EPA 233-B-98-001 July 1998)
Biographical Listings: *Who's Who in the East*, under Barbara J. Felty; *Who's Who in the Safety Profession*
2014 designated as a Fellow of the American Industrial Hygiene Association

Barbara J. Weaver, M.S., CIH, Principal Specialist, Training (continued)

Memberships and Appointments:

American Board of Industrial Hygiene (1984-present)
American Industrial Hygiene Association (AIHA) Member (1980-present), Fellow (2014 to present)
Sampling and Laboratory Analysis Committee (2001-present)
Communication and Training Methods Committee (2006-present)
AIHA - Central Pennsylvania Section, Charter Member (1981-present)
Treasurer (1981-1984, 2008-present), President-elect (1985-1986, 2002-2005), President (1986-1987, 2005-2006), Secretary (2007-2008), Membership Director (1988-1993), Director (2000-2002)
American Chemical Society (1985-present)
Chemical Health and Safety Section, Membership Committee (1992-1993)
Lancaster County Industrial Safety Council (Director 1988-1990)
Leadership Lancaster (1995)
Mentor (1999-2002), Marketing Committee (1999-2000)
Johns Hopkins NIOSH Education Resource Center Continuing Education Advisory Committee (1996-2006)
Penn State University–Lancaster Center Advisory Committee (2002–2006)
Chromatography Forum, Delaware Valley (2002-present/lifetime member)

Timothy S. Weaver, B.A., Senior Specialist, Environmental Software Development

Education:

B.A. Mathematics, Franklin & Marshall College (1996)

Professional Experience:

With Eurofins Lancaster Laboratories since 1996
Computer Specialist, Volatiles by GC (1996)
Responsibilities included programming, maintenance, and updates
Computer Specialist, Environmental Sciences (1997)
Responsibilities included disk format programming initially, followed by pesticides system and database maintenance and programming
Specialist, Computer Applications Development (2002)
Responsibilities included pesticides system and database maintenance and programming; invoice print server maintenance; LLENS program administration
Senior Specialist, Environmental Software Development (2008)
Responsibilities include pesticides system and database maintenance and programming; invoice print server maintenance; LLENS program administration

Chad Wettig, Senior Specialist Group Leader, Sample Support

Continuing Education:

Leadership at Lancaster Laboratories, LLI (2000)
Role of a Leader (parts 1-4), LLI (2007)
PPI Team Training, LLI (2009)
Microsoft Excel 2003, HACC (2011)

Professional Experience:

Landis Valley, Waiter (1995)
Responsibilities included setting up banquets; serving food; maintenance work
With Eurofins Lancaster Laboratories since 1995
Clerk II, Sample Support (1995)
Responsibilities included performing homogenization, Subsampling, preservation; operating ASRS; handling hazardous sample discard
Senior Technician, Sample Support (1998)
Responsibilities included operating ASRS; performing homogenization, preservation, volatile prep; handling hazardous sample discard
Specialist, Sample Support (1999)
Responsibilities included being the technical contact between labs and client services; investigating client issues with samples
Chemist Group Leader, Sample Support (2000)
Responsibilities included acting as a resource for Client Services, Sample Administration, and the technical departments concerning all sample questions, problems, and availability; investigating problems; setting up, and maintaining systems for special projects; assisting in ASRS hardware support; communicating with Environmental Health and Safety office concerning hazardous discard; verifying results for various analysis; performing all jobs in the department as needed including volatile prep, prescreen and dilutions; assisting with ASRS operation, preservation, homogenization, and moisture; performing both technical and personnel aspects of group operations; performing work within the department or other areas as required; acting as a technical resource, trainer, and troubleshooter to specific department; making recommendations for operational and/or technical improvements; communicating effectively within the group; coaching and developing direct reports; planning and monitoring workflow; monitoring data for and supporting departmental MOS
Senior Specialist Group Leader, Sample Support (2015)
Responsibilities include acting as a resource for Client Services, Sample Administration, and the technical departments concerning all sample questions, problems, and availability; investigating problems; setting up, and maintaining systems for special projects; assisting in ASRS hardware support; communicating with Environmental Health and Safety office concerning hazardous discard; verifying results for various analysis; performing all jobs in the department as needed including volatile prep, prescreen and dilutions; assisting with ASRS operation, preservation, homogenization, and moisture; performing both technical and personnel aspects of group operations; performing work within the department or other areas as required; acting as a technical resource, trainer, and troubleshooter to specific department; making recommendations for operational and/or technical improvements; communicating effectively within the group; coaching and developing direct reports; planning and monitoring workflow; monitoring data for and supporting departmental MOS

Heather E. Williams, B.S., Senior Chemist, EPH/Miscellaneous GC

Education:

B.S. Forensic and Investigative Science, West Virginia University (2004)

Continuing Education:

Principles of Gas Chromatography, LLU (2007)

Professional Experience:

With Lancaster Laboratories since 2006
Chemist, EPH/Miscellaneous GC (2006)
Responsibilities included analyzing routine samples and their associated QC by gas chromatography for extractable petroleum products such as DRO, TPH, and other related materials; reviewing, calculating, and reporting the corresponding data and results; maintaining, optimizing, and calibrating Gas Chromatographs in an efficient and accurate manner; assisting in organization of department work, track samples, and prepare samples and standards to consistently meet turnaround time requirements
Senior Chemist, EPH/Miscellaneous GC (2008)
Responsibilities include analyzing routine samples and their associated QC by gas chromatography for extractable petroleum products such as DRO, TPH and other related materials; reviewing, interpreting, calculating, and reporting the corresponding data and results; maintaining, optimizing, and calibrating Gas Chromatographs in an efficient and accurate manner; assisting in organization of department work, tracking samples; preparing samples and standards to consistently meet turnaround time requirements; verifying sample data; corresponding with client service representatives regarding client inquiries and providing answers and solutions when problems arise; SOP writing and revising as new methods are developed; assisting with new instrument installation and set-up; participating in practical process improvements as a member of a team

Bret M. Winey, B.S., Senior Specialist, Environmental Software Development
Education:
B.S. Computer Science, Millersville University (2005)
Professional Experience:
Penn State University, College of Medicine, Programmer/Analyst (2009-2011)
Responsibilities included developing systems responsible for collecting and analyzing medical research data
Weidenhammer Systems Corp., Programmer/Analyst (2011-2012)
Responsibilities included maintaining and implementing functionality on clients' websites, using specification gathered directly from the respective client
Donegal Mutual Insurance Company, Inc., Programmer (2012-2013)
Responsibilities included maintaining existing web presentation and provide aid during transition to new website design
With Eurofins Lancaster Laboratories since 2013
Senior Specialist, Environmental Software Development (2013)
Responsibilities include providing technical support for maintenance of installed software applications and assisting with the development, installation, and maintenance of new applications for general use; assisting in development, implementation, and maintenance of software intended to improve the quality and efficiency of work performed

Meng Yu, M.S., Principal Chemist, Specialty Services Group
Education:
B.S. Chemical Engineering, Zhejiang University of Technology (1986)
Post Graduate, Biogeography and Environmental Assessment, University of Saarland (1995)
M.S. Chemistry, Catholic University of Leuven (1999)
Professional Experience:
Setsco Service Ltd, Executive Chemist (1999-2002)
Responsibilities performing EPA and USDA method development and validation for water, soil, food, and pharmaceutical materials using USP, BP, and AOAC methods; performing pesticide residue analysis using all kinds of GC
Cantest Ltd, Research Chemist (2002-2008)
Responsibilities included performing bioanalytical and food safety method development and validation; performing pesticide and drug residue method validation as per USDA, EPA, CFIA methods; UPLCMSMS, LCMSMS, LCMS and GCMS operation and maintenance
Pharmanet Inc. HSP Laboratory, Research Scientist (2008-2010)
Responsibilities included performing bioanalytical method development and validation for plasma, urine, tissue, etc.; performing LCMSMS operation, tuning, and maintenance
With Lancaster Laboratories since 2010
Principal Chemist, Specialty Services Group (2010)
Responsibilities include developing and validating new testing methods; operating and maintaining LCMSMS instruments; performing sample analyses
Memberships and Appointments:
ASMS (2010)

Holly B. Ziegler, B.S., Senior Chemist, GC/MS Semivolatiles
Education:
B.S. Forensic Chemistry, Buffalo State College (SUNY) (2006)
Professional Experience:
New York State Police, Toxicology Intern (2005-2006)
Responsibilities included performing analysis of alternative medicines using FPIA, SPE, GC/NPD, and GC/MS
With Eurofins Lancaster Laboratories since 2006
Chemist, GC/MS Volatiles (2006)
Responsibilities included analyzing soils and waters for VOAs using purge and trap and GC/MS instrumentation
Senior Chemist, GC/MS Volatiles (2010)
Responsibilities included analyzing performing GC/MS analysis of water and soil samples along with other matrices by various analytical methods such as EPA 8260B and CLP; evaluating analytical data generated; calibrating and troubleshooting GC/MS instrumentation; assisting other employees with any questions that may arise and helping to train new employees
Senior Chemist, GC/MS Semivolatiles (2011)
Responsibilities include maintaining GC/MS instrumentation; tuning and calibrating instruments daily; analyzing quality control and client samples; reviewing and assembling this data in an efficient manner with a high degree of quality to meet client requirements; working on special assignments; running 8270C, 625, THPA, and TEL methods
Memberships and Appointments:
Emergency Response Team (Hazmat technician) – LLI (2006-2011)

Michael A. Ziegler, B.S., Senior Chemist, Volatiles in Air

Education:

B.S. Molecular Biology, Clarion University of PA (2002)

Professional Experience:

With Eurofins Lancaster Laboratories since 2006

Chemist, GC/MS Volatiles (2006)

Responsibilities included maintaining GC/MS instrumentation; tuning and calibrating instrument daily; analyzing quality control and client samples; reviewing and assembling data in an efficient manner with a high degree of quality; evaluating current organizational and analytical systems; suggesting and implementing the necessary corrective action to ensure the above can be performed in alignment with client and/or regulatory requirements; performing all duties with minimal supervision

Chemist, Volatiles in Air (2010)

Responsibilities included maintaining GC and/or GC/MS instrumentation and calibrating GC and/or GC/MS instrument daily; analyzing quality control and client samples; reviewing and assembling data in an efficient manner with a high degree of quality to meet client requirements; performing various Airlab duties associated with sample prep and sample flow (these include, but are not limited to, sample retrieval and entry, Nitrogen tank replacement, summa can cleaning, summa/FC requests, and sample pressurization/prescreen)

Senior Chemist, Volatiles in Air (2014)

Responsibilities include maintaining GC and/or GC/MS instrumentation and calibrating GC and/or GC/MS instrument daily; analyzing quality control and client samples; reviewing and assembling data in an efficient manner with a high degree of quality to meet client requirements; performing various Airlab duties associated with sample prep and sample flow (these include, but are not limited to, sample retrieval and entry, Nitrogen tank replacement, summa can cleaning, summa/FC requests, and sample pressurization/prescreen)

Eurofins Document Reference	1-P-QM-GDL-9015382	Revision	5
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Document Title	Document ID	Historical Document ID	Document Owner
Level 1			
Environmental Quality Policy Manual	1-P-QM-GDL-9015377	DOD - Environmental Quality Policy Manual	4052 - Environmental Quality Assurance
Procedure Cross Reference List	1-P-QM-GDL-9015378	DOD - Environmental Quality Policy Manual Appendix A	4052 - Environmental Quality Assurance
Certifications, Accreditation, Registrations, and Contracts	1-P-QM-GDL-9015379	DOD - Environmental Quality Policy Manual Appendix B	4052 - Environmental Quality Assurance
Organizational Charts Personnel to Sign Reports	1-P-QM-GDL-9015380	DOD - Environmental Quality Policy Manual Appendix C	4052 - Environmental Quality Assurance
Personnel Qualifications and Responsibilities	1-P-QM-GDL-9015381	DOD - Environmental Quality Policy Manual Appendix D	4052 - Environmental Quality Assurance
SOPs and Analytical Methods	1-P-QM-GDL-9015382	DOD - Environmental Quality Policy Manual Appendix E	4052 - Environmental Quality Assurance
Instrument and Equipment List	1-P-QM-GDL-9015383	DOD - Environmental Quality Policy Manual Appendix F	4052 - Environmental Quality Assurance
Preventative Maintenance Schedules	1-P-QM-GDL-9015384	DOD - Environmental Quality Policy Manual Appendix G	4052 - Environmental Quality Assurance
Calibration Schedules	1-P-QM-GDL-9015385	DOD - Environmental Quality Policy Manual Appendix H	4052 - Environmental Quality Assurance
NELAP Scope of Testing	1-P-QM-GDL-9015386	DOD - Environmental Quality Policy Manual Appendix I	4052 - Environmental Quality Assurance
Quality Control Types, Frequency, and Corrective Action	1-P-QM-GDL-9015387	DOD - Environmental Quality Policy Manual Appendix J	4052 - Environmental Quality Assurance
Microbiological Testing	1-P-QM-GDL-9015388	DOD - Environmental Quality Policy Manual Appendix K	4052 - Environmental Quality Assurance
Manual Integration for ELLE	1-P-QM-GDL-9017675	Policy 0001	4052 - Environmental Quality Assurance
Laboratory Ethics and Data Integrity Policy	1-P-QM-GDL-9017679	Policy 0007	4052 - Environmental Quality Assurance
Chemical Hygiene Plan	1-P-QM-GDL-9015198	Chemical Hygiene Plan	6098 - Safety
Preparedness, Prevention, and Contingency Plan	1-P-QM-GDL-9017681	Policy 0010	6098 - Safety
Exposure Control Plan for Bloodborne Pathogens	1-P-QM-GDL-9017682	Policy 0011	6098 - Safety
Level 2			
Balance, Syringe, Pipette Verification	1-P-QM-QMA-9015389	DOD - LOM-SOP-ES-235	4052 - Environmental Quality Assurance
Bay Area Service Center Dangerous Goods Shipping Procedure	1-P-QM-QMA-9017337	LOM-SOP-ES-237	50 - Bay Area Service Center
Building Security	1-P-QM-QMA-9017366	LOM-SOP-LAB-212	6043 - Physical Services
Change Control Procedures for ELLE	1-P-QM-QMA-9028515	N/A	4052 - Environmental Quality Assurance

Document Title	Document ID	Historical Document ID	Document Owner
Level 2 (continued)			
Chromatography Integration and Documentation	1-P-QM-QMA-9017333	LOM-SOP-ES-232	4052 - Environmental Quality Assurance
Chromatography Integration and Documentation for OH VAP	1-P-QM-QMA-9022815	LOM-SOP-ES-232 (OH VAP)	4052 - Environmental Quality Assurance
Communicating Maximum Contaminant Level (MCL) Exceedances	1-P-QM-QMA-9017330	LOM-SOP-ES-227	4039 – Environmental Client Services
Compliance with Environmental GLP Regulations	1-P-QM-QMA-9022322	LOM-SOP-LAB-204 and LOM-SOP-LAB-224	4052 - Environmental Quality Assurance
Data and Record Storage, Security, Retention, Archival, and Disposal	1-P-QM-QMA-9017358	LOM-SOP-LAB-203	6047 - Office Services
Data Entry, Verification and Reporting	1-P-QM-QMA-9017322	LOM-SOP-ES-218	4052 - Environmental Quality Assurance
Demonstrations of Capability	1-P-QM-QMA-9015390	DOD - LOM-SOP-ES-238	4052 - Environmental Quality Assurance
Determining Method Detection Limits and Limits of Quantitation	1-P-QM-QMA-9017309	LOM-SOP-ES-203	4052 - Environmental Quality Assurance
E-Mail System	1-P-QM-QMA-9017360	LOM-SOP-LAB-205	9013 - Information Technology
Employee Training Program	1-P-QM-QMA-9017379	LOM-SOP-LAB-231	6047 - Office Services
Environmental Project Cycle	1-P-QM-QMA-9017338	LOM-SOP-ES-239	4052 - Environmental Quality Assurance
Establishing Control Limits	1-P-QM-QMA-9017313	LOM-SOP-ES-207	4052 - Environmental Quality Assurance
EtQ System User Account Maintenance	1-P-QM-QMA-9017380	LOM-SOP-LAB-232	6047 - Office Services
Eurofins North America E-Mail and Archiving	1-P-QM-QMA-9020074	NA	9013 - Information Technology
Facilities Operation Manual	1-P-QM-QMA-9017374	LOM-SOP-LAB-223	6043 - Physical Services
Facility Change Control Procedure	1-P-QM-QMA-9017364	LOM-SOP-LAB-209	6043 - Physical Services
Forensic Laboratory Services	1-P-QM-QMA-9017307	LOM-SOP-ES-201	4052 - Environmental Quality Assurance
Guidelines for Analytical Decision Making in Environmental Testing	1-P-QM-QMA-9021833	LOM-SOP-LAB-226	4052 - Environmental Quality Assurance
Guidelines for Writing Technical Reports	1-P-QM-QMA-9017308	LOM-SOP-ES-202	4052 - Environmental Quality Assurance
Handling of Client Technical Complaints (Investigations and Response)	1-P-QM-QMA-9017332	LOM-SOP-ES-231	4052 - Environmental Quality Assurance
HP-UX Target 3.5 Data System Accounts and Electronic Signature Security	1-P-QM-QMA-9017336	LOM-SOP-ES-236	4052 - Environmental Quality Assurance
Implementation of the Computer Services Validation Master Plan (CSVMP)	1-P-QM-QMA-9017425	LOM-SOP-VAL-210	4044 - Environmental Software Development
Insect and Rodent Control	1-P-QM-QMA-9017367	LOM-SOP-LAB-213	6043 - Physical Services
Instrument Maintenance and Calibration	1-P-QM-QMA-9017325	LOM-SOP-ES-222	4052 - Environmental Quality Assurance
Investigation and Corrective Action of Noncompliant Data	1-P-QM-QMA-9017315	LOM-SOP-ES-209	4052 - Environmental Quality Assurance

Document Title	Document ID	Historical Document ID	Document Owner
Level 2 – (continued)			
Investigation and Corrective Action Reporting for Laboratory Problems	1-P-QM-QMA-9017331	LOM-SOP-ES-230	4052 - Environmental Quality Assurance
Laboratory Housekeeping and Cleaning	1-P-QM-QMA-9017373	LOM-SOP-LAB-221	6043 - Physical Services
Laboratory Notebooks, Logbooks, and Documentation for Environmental Testing	1-P-QM-QMA-9021767	LOM-SOP-LAB-220	4052 - Environmental Quality Assurance
Laboratory Sample Analysis Record (LSAR) Documentation	1-P-QM-QMA-9017318	LOM-SOP-ES-212	4052 - Environmental Quality Assurance
Laboratory/Quality Systems Procedures Summary	1-P-QM-QMA-9033535	N/A	4052 - Environmental Quality Assurance
Legal Chain-of-Custody Documentation	1-P-QM-QMA-9017335	LOM-SOP-ES-234	4052 - Environmental Quality Assurance
Missed Holding Time Reports	1-P-QM-QMA-9017326	LOM-SOP-ES-223	4052 - Environmental Quality Assurance
Monitoring of the Volatile Organics Analysis (VOA) Storage Areas for Contamination	1-P-QM-QMA-9017311	LOM-SOP-ES-205	4052 - Environmental Quality Assurance
Monitoring Temperatures in Refrigerators, Freezers, Incubators, and Ovens Using the ETM	1-P-QM-QMA-9021509	N/A	4052 - Environmental Quality Assurance
Obtaining a Representative Environmental Solid Sample Aliquot	1-P-QM-QMA-9017334	LOM-SOP-ES-233	4052 - Environmental Quality Assurance
Procurement of Environmental Laboratory Supplies	1-P-QM-QMA-9021705	LOM-SOP-LAB-218	4052 - Environmental Quality Assurance
Proficiency Test Samples	1-P-QM-QMA-9017321	LOM-SOP-ES-216	4052 - Environmental Quality Assurance
Quarantine Soils Procedures	1-P-QM-QMA-9017317	LOM-SOP-ES-211	4052 - Environmental Quality Assurance
Reagents and Standards	1-P-QM-QMA-9017328	LOM-SOP-ES-225	4052 - Environmental Quality Assurance
Review of Legal Matters	1-P-QM-QMA-9017371	LOM-SOP-LAB-219	40 - Environmental Sciences
Sample Requisition	1-P-QM-QMA-9017312	LOM-SOP-ES-206	4052 - Environmental Quality Assurance
Subcontracting Analytical Testing	1-P-QM-QMA-9017310	LOM-SOP-ES-204	4052 - Environmental Quality Assurance
Thermometer Use and Calibration	1-P-QM-QMA-9017314	LOM-SOP-ES-208	4052 - Environmental Quality Assurance
Use and Maintenance of Reagent Water Supply	1-P-QM-QMA-9017368	LOM-SOP-LAB-214	4052 - Environmental Quality Assurance
Utilizing the Services and Support of the Computer Systems Group	1-P-QM-QMA-9017362	LOM-SOP-LAB-207	9013 - Information Technology
Validation and Authorization of Analytical Methods	1-P-QM-QMA-9017329	LOM-SOP-ES-226	4052 - Environmental Quality Assurance
Windows Network and Computer Accounts	1-P-QM-QMA-9017361	LOM-SOP-LAB-206	9013 - Information Technology
Writing and Reviewing Lancaster Laboratories Policies and Operating Procedures	1-P-QM-QMA-9017356	LOM-SOP-LAB-201	6047 - Office Services

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Level 3 – Environmental Microbiology			
2% Brilliant Green Bile Broth (for Coliform Test Dept. 02)	1-P-QM-WI -9018027	SOP-PM-001, Media 400	3002 - Environmental Microbiology
Biological Reaction Activity Test	1-P-QM-WI -9032790	Analysis 13697, 13698, 13699	3002 - Environmental Microbiology
Coliform Analysis - Presence/Absence and MPN	1-P-QM-WI -9014018	Analysis 6477, 6479, 8161, 13666, 13668, 13669, 13671	3002 - Environmental Microbiology
EC Medium – for Dept. 02	1-P-QM-WI -9018028	SOP-PM-001, Media 401	3002 - Environmental Microbiology
Free Chlorine Residual Data Records (Optional Total Chlorine Reading)	1-P-QM-WI -9011681	Analysis 0308	3002 - Environmental Microbiology
Hexadecane HC Emulsion (for HC degrading PC study)	1-P-QM-WI -9018016	SOP-PM-001, Media 382	3002 - Environmental Microbiology
Hydrocarbon Degrading Plate Count Study Waters and Solids	1-P-QM-WI -9013997	Analysis 6157, 6158	3002 - Environmental Microbiology
Lauryl Sulfate Tryptose Broth (1x LST) Single Strength – for Dept. 02	1-P-QM-WI -9018025	SOP-PM-001, Media 398	3002 - Environmental Microbiology
Lauryl Sulfate Tryptose Double Strength (2x LST) – for Dept. 02	1-P-QM-WI -9018026	SOP-PM-001, Media 399	3002 - Environmental Microbiology
M-FC (for Dept. 02)	1-P-QM-WI -9018024	SOP-PM-001, Media 397	3002 - Environmental Microbiology
Modification DPD Free Chlorine Residual In Water (Presence/Absence)	1-P-QM-WI -9011686	Analysis 0416	3002 - Environmental Microbiology
Modification Fecal Coliform by Membrane Filtration	1-P-QM-WI -9011598	Analysis 0199, 11028	3002 - Environmental Microbiology
MS/Agar Noble Base (for HC degrading PC study)	1-P-QM-WI -9018021	SOP-PM-001, Media 390	3002 - Environmental Microbiology
MS/Agar Noble Medium (for HC degrading PC study for Dept. 02)	1-P-QM-WI -9018022	SOP-PM-001, Media 391	3002 - Environmental Microbiology
Pour Plate Analysis - Heterotrophic Plate Count and Yeast/Mold	1-P-QM-WI -9011658	Analysis 0307, 4196, 12833, 13667, 13670	3002 - Environmental Microbiology
Quanti-Tray X Sealer	1-P-QM-PRO-9017534	OMC-PM-078	3002 - Environmental Microbiology
Tryptic Soy Broth (TSB) for Dept. 02 Sterility Checks	1-P-QM-WI -9018035	SOP-PM-001, Media 409	3002 - Environmental Microbiology
Tryptic Soy Broth (TSB)—for Dept. 02	1-P-QM-WI -9018023	SOP-PM-001, Media 396	3002 - Environmental Microbiology
Level 3 – Environmental Sciences			
Calibrating the 1-uL Standard Delivery Groove on the Archon Model 5100A and O.I. 4660 Autosampler Systems	1-P-QM-PRO-9017815	SOP-OR-075	4021 - GC/MS Volatiles
Determination of GRO by GC in Waters and Wastewaters by Method 8015B, 8015C, 8015D	1-P-QM-WI -9015131	Analysis DOD - 1635, 1636, 1728, 1729, 2762, 2763, 8229, 8268, 10598	4021 - GC/MS Volatiles
Determination of GRO by GC in Waters and Wastewaters by Method AK101	1-P-QM-WI -9013129	Analysis 1438, 1440	4021 - GC/MS Volatiles
Determination of Volatile Gasoline Range Organics in Soil and Water - Northwest GX Method	1-P-QM-WI -9013411	Analysis 2005, 2006, 8273, 8274	4021 - GC/MS Volatiles
Determination of Volatile Gasoline Range Organics in Soil and Water Maine Method	1-P-QM-WI -9012774	Analysis 10438, 10439	4021 - GC/MS Volatiles

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Determination of Volatile Gasoline Range Organics in Soil and Water Oklahoma Method	1-P-QM-WI -9013441	Analysis 2315, 8789	4021 - GC/MS Volatiles
Determination of Volatile Target Compounds and Gasoline Range Organics (GRO) by Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS) in Waters and Wastewaters by Method 8260C	1-P-QM-WI -9013078	Analysis 11996, 11997, 13130	4021 - GC/MS Volatiles
Determination of Volatile Target Compounds and Gasoline Range Organics (GRO) by GC/MS in Soils and Solids by Method 8260B	1-P-QM-WI -9012764	Analysis 10237, 10607, 10949, 10950, 10951	4021 - GC/MS Volatiles
Determination of Volatile Target Compounds and Gasoline Range Organics (GRO) by GC/MS in Soils and Solids by Method 8260C	1-P-QM-WI -9013077	Analysis 11995	4021 - GC/MS Volatiles
Determination of Volatile Target Compounds and Gasoline Range Organics (GRO) by GCMS in Waters and Wastewaters by Method 8260B	1-P-QM-WI -9015141	Analysis DOD - 2898, 10335, 10943, 10945	4021 - GC/MS Volatiles
Determination of Volatile Target Compounds by Capillary Column Gas Chromatography/Mass Spectrometry (GC/MS) in Waters and Wastewaters by Method 6200B	1-P-QM-WI -9015099	Analysis 10460	4021 - GC/MS Volatiles
Gasoline Range Organics (GRO) in Soils using Purge and Trap Gas Chromatography by SW-846, Method 8015B or SW-846, Method 8015C, or SW-846, Method 8015D	1-P-QM-WI -9015132	Analysis DOD - 1637, 1638, 1700, 1725, 1726, 2765, 2766, 5550, 5551, 10599, 12989	4021 - GC/MS Volatiles
GC and GC/MS Instrumentation Maintenance	1-P-QM-PRO-9015467	DOD - SOP-MS-004	4021 - GC/MS Volatiles
GC/MS Volatile Standards Traceability	1-P-QM-PRO-9015469	DOD - SOP-MS-006	4021 - GC/MS Volatiles
GC/MS Volatiles Audit Process	1-P-QM-PRO-9015471	DOD - SOP-MS-012	4021 - GC/MS Volatiles
Glassware Cleaning	1-P-QM-PRO-9015465	DOD - SOP-MS-001	4021 - GC/MS Volatiles
GRO in Soils for South Carolina	1-P-QM-WI -9012790	Analysis 10654	4021 - GC/MS Volatiles
GRO in Water for South Carolina	1-P-QM-WI -9012789	Analysis 10653	4021 - GC/MS Volatiles
Level II Review of GS/MS Volatiles	1-P-QM-PRO-9017810	SOP-MS-017	4021 - GC/MS Volatiles
Low Concentration Waters for Volatile Organic Analysis	1-P-QM-WI -9015153	Analysis DOD - 4914	4021 - GC/MS Volatiles
Method AK101 for the Determination of Gasoline Range Organics in Soil Analysis for the State of Alaska	1-P-QM-WI -9013134	Analysis 1450, 1451	4021 - GC/MS Volatiles
Preparation and Analysis of Cleaning Blanks for GC and GC/MS Volatiles	1-P-QM-PRO-9015470	DOD - SOP-MS-007	4021 - GC/MS Volatiles
Preparation and Testing of Storage Blanks for GC/MS Volatile Analysis	1-P-QM-PRO-9015473	DOD - SOP-MS-015	4021 - GC/MS Volatiles
Preparation and Testing of Trip Blanks for GC/MS Volatile Analyses	1-P-QM-PRO-9015466	DOD - SOP-MS-002	4021 - GC/MS Volatiles
Preparation of Oil Samples	1-P-QM-WI -9015068	Analysis DOD - 0373	4021 - GC/MS Volatiles
Preservation and Residual Chlorine Checks of Samples for GC/MS Volatile Water Analysis	1-P-QM-PRO-9015468	DOD - SOP-MS-005	4021 - GC/MS Volatiles
Purgeable Aromatics in High-Level Soils by Method 8021B	1-P-QM-WI -9015190	Analysis DOD - 8179	4021 - GC/MS Volatiles
Purgeable Aromatics in Water Samples by Method 602	1-P-QM-WI -9014655	Analysis 8241	4021 - GC/MS Volatiles
Purgeable Aromatics in Water Samples by Method 8021B	1-P-QM-WI -9015135	Analysis DOD - 2102, 6464, 8806	4021 - GC/MS Volatiles
Statistical Calculations Used in the Analysis of Samples by EPA Methodology	1-P-QM-PRO-9015491	DOD - SOP-OR-020	4021 - GC/MS Volatiles
Targeted Library Search by GC/MS	1-P-QM-WI -9013053	Analysis 11660	4021 - GC/MS Volatiles

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The Determination of 1,2,3- Trichloropropane by Gas Chromatography/ Mass Spectrometry (GC/MS) using Isotope Dilution and Selective Ion Monitoring (SIM)	1-P-QM-WI -9012867	Analysis 11017	4021 - GC/MS Volatiles
The Determination of 1,4-Dioxane by Gas Chromatography/Mass Spectrometry (GC/MS) using Isotope Dilution and Selective Ion Monitoring (SIM)	1-P-QM-WI -9015075	Analysis DOD - 0527, 10326	4021 - GC/MS Volatiles
The Determination of Ethylene Oxide and Crotonaldehyde by Gas Chromatography/Mass Spectrometry (GC/MS) in Water and Soil by SW-846 Method 8260B	1-P-QM-WI -9014003	Analysis 6372, 6377	4021 - GC/MS Volatiles
The Determination of Vinyl Chloride and Carbon Disulfide by Gas Chromatography/Mass Spectrometry (GC/MS) using Selective Ion Monitoring (SIM)	1-P-QM-WI -9013992	Analysis 6008	4021 - GC/MS Volatiles
The Determination of Vinyl Chloride, Trichloroethene and Tetrachloroethene by Gas Chromatography /Mass Spectrometry (GC/MS) using Selective Ion Monitoring (SIM)	1-P-QM-WI -9013082	Analysis 12030	4021 - GC/MS Volatiles
The Determination of Volatile Organic Compounds in Wastewater by Isotope Dilution and Gas Chromatography/Mass Spectrometry (GC/MS)	1-P-QM-WI -9015136	Analysis 2394, 2417	4021 - GC/MS Volatiles
Toxicity Characteristic Leachate Procedure (TCLP); Determination of Volatile Target Compounds by GCMS in Zero Headspace Extractions (ZHE)	1-P-QM-WI -9015142	Analysis DOD - 3636	4021 - GC/MS Volatiles
Use of 40-mL Vials for Volatile Organic Analyses	1-P-QM-PRO-9015474	DOD - SOP-MS-016	4021 - GC/MS Volatiles
Volatile Compounds in Aqueous and Solid Samples by SW-846 8260B for OH VAP	1-P-QM-WI -9012739	Analysis 10237, 10335 OH VAP	4021 - GC/MS Volatiles
Volatile Organics Tentatively Identified Compound Method	1-P-QM-WI -9015084	Analysis DOD - 0890, 0880, 12028	4021 - GC/MS Volatiles
Volatile Organics Tentatively Identified Compound Method (Interpretive)	1-P-QM-WI -9012746	Analysis 0882, 0884, 12027	4021 - GC/MS Volatiles
Waters for Purgeable Organic Compounds by Capillary Column Gas Chromatography Mass Spectrometry	1-P-QM-WI -9015143	Analysis DOD - 3648	4021 - GC/MS Volatiles
Waters for Volatile Organic Compounds by Purge and Trap Gas Chromatography/Mass Spectrometry using EPA Method 624	1-P-QM-WI -9015097	Analysis DOD - 10371	4021 - GC/MS Volatiles
3030 C, Treatment for Acid-Extractable Metals for North Carolina Groundwater Samples	1-P-QM-WI -9013465	Analysis 2812, 10651, 11988, 11989	4022 - Metals
Bottletop Dispensers	1-P-QM-PRO-9015404	DOD - MC-IO-019	4022 - Metals
Digestion of Aqueous Samples by SW-846 3005A for ICP Analysis – OH VAP	1-P-QM-WI -9024237	Analysis 1848 OH VAP	4022 - Metals
Digestion of Aqueous Samples by SW-846 3010A for ICP Analysis – OH VAP	1-P-QM-WI -9024239	Analysis 5705 OH VAP	4022 - Metals
Digestion of Aqueous Samples by SW846 Method 3020A/3010A Modified for Analysis by ICP/MS for OH VAP	1-P-QM-WI -9022821	6050 OH VAP	4022 - Metals
Digestion of Aqueous Samples by SW-846 Method 7470A for OH VAP	1-P-QM-WI -9013986	Analysis 5713 OH VAP	4022 - Metals
Digestion of Aqueous Samples by SW-846 Method 7470A, EPA 254.1	1-P-QM-WI -9015082	Analysis DOD - 5713, 5714	4022 - Metals

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Digestion of Non-Aqueous Samples by SW-846 Method 3050B for OH VAP	1-P-QM-WI -9013983	Analysis 5708, 10637, 11026, 11027 OH VAP	4022 - Metals
Digestion of Solid Samples by SW-846 Method 7471A - OH VAP	1-P-QM-WI -9013985	Analysis 5711 OH VAP	4022 - Metals
Dilute/Run and AVS/SEM Sample Handling for Metals	1-P-QM-WI -9013476	Analysis 4792, 13449	4022 - Metals
Fixed-Volume Hand-Held Pipettes	1-P-QM-PRO-9015403	DOD - MC-IO-003	4022 - Metals
Glassware Cleaning	1-P-QM-PRO-9015463	DOD - SOP-IO-013	4022 - Metals
Langelier Index in Water	1-P-QM-WI -9012744	Analysis 0576	4022 - Metals
Low Level Mercury by EPA Method 1631 Revision E in Waters Using Cold Vapor Atomic Fluorescence Spectrometry	1-P-QM-WI -9013144	Analysis 1573, 1574	4022 - Metals
Maintenance and Calibration of HACH Model 2100N Laboratory Turbidimeter	1-P-QM-PRO-9017427	MC-IO-017	4022 - Metals
Mercury in Aqueous and Solid Samples by SW-846 Method 7470A (Aqueous) and 7471A (Solid) for OH VAP	1-P-QM-WI -9011649	Analysis 0259, 0159 OH VAP	4022 - Metals
Mercury in Aqueous, Solid and Tissue Samples by Cold Vapor AA	1-P-QM-WI -9015067	Analysis DOD - 0259, 0159	4022 - Metals
Metals by ICP for Methods SW-846 6010B/C (aqueous, solid, tissue) and EPA 200.7(aqueous)	1-P-QM-WI -9018442	Analysis 6966, 1643, 6935, 7914, 6946, 6947, 1650, 6949, 6952, 6951, 6953, 1654, 1662, 1656, 1657, 6958, 6960, 1667, 6961,10145, 6955, 6944, 6936, 6969, 7968, …	4022 - Metals
Metals by Inductively Coupled Plasma Mass Spectrometry for SW-846 Methods 6020/6020A (aqueous, solid, tissue) and EPA 200.8 (aqueous)	1-P-QM-WI -9018443	Analysis 6142, 6123, 6125, 10801, 6126, 6127, 6129, 6128, 6132, 6131, 6133, 6134, 6140, 6136, 6137, 6138, 6143, 6139, 6135, 6124, 6141, 6146, 6144, 6147, 6145, …	4022 - Metals
Metals Use of the LLENS System	1-P-QM-PRO-9015464	DOD - SOP-IO-036	4022 - Metals
Sample Prep of Sediments, Sludges, Soils, and Tissues by SW846 3050B for Analysis of Metals by ICP and ICP-MS	1-P-QM-WI -9015160	Analysis DOD - 5708, 10637	4022 - Metals
Sample Preparation of Leachates and Other Wastewater for Analysis of Total Metals by Inductively Coupled Plasma-Mass Spectrometer (ICP-MS)	1-P-QM-WI -9015165	Analysis DOD - 6050, 10639	4022 - Metals
Sample Preparation of Oils for Analysis of Metals by Inductively Coupled Plasma Spectroscopy	1-P-QM-WI -9015091	Analysis DOD - 1015	4022 - Metals
Sample Preparation of Potable Water, Groundwater, Surface Water, and Wastewater for Analysis of Total Recoverable Metals by ICP (5716)	1-P-QM-WI -9013987	Analysis 5716	4022 - Metals
Sample Preparation of Potable Water, Groundwater, Surface Water, and Wastewater for Analysis of Total Recoverable Metals by ICPMS (7050)	1-P-QM-WI -9014042	Analysis 7050	4022 - Metals

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Sample Preparation of Soil, Sediment, Sludge, Oils, and Tissues for Total Mercury Analysis by Atomic Absorption Cold Vapor Technique	1-P-QM-WI -9015161	Analysis DOD - 5711, 10638	4022 - Metals
Sample Preparation of Wastewater and Leachates for Analysis of Total Metals by Inductively Coupled Plasma Atomic Emission Spectrometry	1-P-QM-WI -9015159	Analysis DOD - 5705, 10636	4022 - Metals
Sample Preparation of Waters for Analysis of Total Recoverable Metals by Inductively Coupled Plasma Optical Emission Spectrometry	1-P-QM-WI -9015133	Analysis DOD - 1848, 10635	4022 - Metals
Trace Metals in Aqueous and Non-Aqueous Samples by Method SW-846 6010B for OH VAP	1-P-QM-WI -9022822	7066, 6966, 1743, 1643, 7035, 6935, 7046, 6946, 7047, 6947, 1750, 1650, 7049, 6949, 7052, 6952, 7051, 6951, 7053, 6953, 1754, 1654, 1762, 1662, 7058, 6958, 1767, 1667, 7061, 6961, 7055, 6955, 7044, 6944, 7036, 6936, 7022, 6925, 7071, 6971, 7072,... OH VAP	4022 - Metals
Trace Metals in Aqueous and Non-Aqueous Samples by Method SW-846 6020 for OH VAP	1-P-QM-WI -9022820	6127, 6027, 6131, 6031, 6137, 6037, 6139, 6039, 6133, 6033, 6125, 6142, 6042, 6128, 6028, 6124, 6024, 6126, 6026, 6145, 6045, 6135, 6035 OH VAP	4022 - Metals
Undigested Sample Preparation of Potable Water for Analysis of Total Recoverable Metals by Inductively Coupled Plasma Mass Spectrometry [ICP-MS]	1-P-QM-WI -9013994	Analysis 6051, 5281	4022 - Metals
Analysis of Chlorinated Herbicides by 8151A in Water	1-P-QM-WI -9015088	Analysis DOD - 0952, 10407	4024 - Pesticide Residue Analysis
Analysis of Pesticides by 8081B in Solid Samples using GC-ECD	1-P-QM-WI -9015108	Analysis DOD - 10590	4024 - Pesticide Residue Analysis
Analysis of Polychlorinated Biphenyls (PCBs) by 8082A in Aqueous Samples using GC-ECD	1-P-QM-WI -9015109	Analysis DOD - 10591, 13092	4024 - Pesticide Residue Analysis
Captan and Captafol by Method 8081A in Waters and Solids using GC-ECD	1-P-QM-WI -9013435	Analysis 2257, 2253	4024 - Pesticide Residue Analysis
Chlorinated Acids in Water Using GC-ECD by Method 515.1	1-P-QM-WI -9013405	Analysis 1864	4024 - Pesticide Residue Analysis
Chlorinated Herbicides by 8151A in Solids by GC-ECD	1-P-QM-WI -9015158	Analysis DOD - 10401	4024 - Pesticide Residue Analysis
Common Equations Used During Chromatographic Analyses	1-P-QM-PRO-9015501	DOD - SOP-PP-040	4024 - Pesticide Residue Analysis
Creating Calibration Timed Events in Chrom Perfect	1-P-QM-PRO-9018227	SOP-PP-036	4024 - Pesticide Residue Analysis
Data Audit Procedure for Department 4024	1-P-QM-PRO-9018224	SOP-PP-023	4024 - Pesticide Residue Analysis
Determination of Picric Acid in Soil Samples by HPLC with UV	1-P-QM-WI -9012797	Analysis 10709	4024 - Pesticide Residue Analysis
EDB, DBCP and TCP by Method 8011 in Solids using Microextraction and GC-ECD	1-P-QM-WI -9025366	Analysis 13214	4024 - Pesticide Residue Analysis
EDB/DBCP and TCP by Method 504.1 or 8011 in Waters using Microextraction and GC-ECD	1-P-QM-WI -9015094	Analysis DOD - 1034, 7934, 10398	4024 - Pesticide Residue Analysis
Extraction By Method 8318/8318A for Carbamate and Urea Pesticides in Solids	1-P-QM-WI -9013140	Analysis 1510, 11143	4024 - Pesticide Residue Analysis

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Extraction for Perchlorate by Method 6850 in Solids	1-P-QM-WI -9015167	Analysis DOD - 6568	4024 - Pesticide Residue Analysis
Extraction of Chlorinated Acids and Herbicides in Drinking Water by Method 515.1	1-P-QM-WI -9014002	Analysis 6369	4024 - Pesticide Residue Analysis
Extraction of Chlorinated Herbicides in a Soil Matrix	1-P-QM-WI -9013472	Analysis 4181	4024 - Pesticide Residue Analysis
Extraction of Chlorinated Herbicides in a Water Matrix by SW-846 8151A	1-P-QM-WI -9015078	Analysis DOD - 0816, 11110, 11111	4024 - Pesticide Residue Analysis
Extraction of Formaldehyde and Other Aldehydes in a Water by Method 8315A	1-P-QM-WI -9015090	Analysis DOD - 1013, 11124, 12857	4024 - Pesticide Residue Analysis
Extraction of Nitroaromatics and Nitroamines by Method 8330/A/B in Water	1-P-QM-WI -9015171	Analysis DOD - 6915, 11122, 11125, 13432	4024 - Pesticide Residue Analysis
Extraction Procedure for the Determination of Formaldehyde and Aldehydes in a Solid Matrix	1-P-QM-WI -9015162	Analysis DOD - 5876, 11139	4024 - Pesticide Residue Analysis
Formaldehyde and Other Aldehydes by Method 8315A in Aqueous and Solid Samples using HPLC	1-P-QM-WI -9013471	Analysis 8044, 8045, 12856, 13022, 13031	4024 - Pesticide Residue Analysis
Interpretation of Chromatographic Data	1-P-QM-PRO-9015494	DOD - SOP-PP-011	4024 - Pesticide Residue Analysis
Liquid/Liquid Extraction Procedure for the Determination of Organophosphorous Pesticides in a Wastewater Matrix	1-P-QM-WI -9012765	Analysis 10240	4024 - Pesticide Residue Analysis
Low Level PCBs in Water by Method 8082/8082A using GC-ECD	1-P-QM-WI -9013081	Analysis 12013, 12686	4024 - Pesticide Residue Analysis
Medium Level Sonic Probe Extraction Procedure for the Determination of Pesticides and PCBs in a Solid Matrix	1-P-QM-WI -9012745	Analysis 0819M, 11144	4024 - Pesticide Residue Analysis
Microextraction by Method 504.1 or 8011 for EDB, DBCP, and TCP in Water	1-P-QM-WI -9014309	Analysis 7786, 13715	4024 - Pesticide Residue Analysis
Microextraction of EDB, DBCP, and TCP in Solids by Method 8011	1-P-QM-WI -9025371	Analysis 13218	4024 - Pesticide Residue Analysis
Micromass Quattro Micro Tandem Mass Spectrometer with a Waters 2795 HPLC System (LC/MS/MS)	1-P-QM-PRO-9018230	SOP-PP-042	4024 - Pesticide Residue Analysis
Microwave Extraction Method 3546 for PCBs in a Solid Matrix	1-P-QM-WI -9015104	Analysis DOD - 10497, 11140, 13100	4024 - Pesticide Residue Analysis
Microwave Extraction Method 3546 for Pesticides in a Solid Matrix	1-P-QM-WI -9015103	Analysis DOD - 10496, 11141	4024 - Pesticide Residue Analysis
Microwave Extraction of Pesticides and PCBs in Non-aqueous Samples by SW-846 Method 3546 for OH VAP	1-P-QM-WI -9022433	Analysis 10496, 10497 OH VAP	4024 - Pesticide Residue Analysis
Monitoring QC Data Acceptance Limits	1-P-QM-PRO-9015496	DOD - SOP-PP-025	4024 - Pesticide Residue Analysis
Nitroaromatics and Nitroamines by Method 8330B in Water and Solids using HPLC with UV Detection	1-P-QM-WI -9029396	Analysis DOD - 13395, 13413	4024 - Pesticide Residue Analysis
Nitroaromatics and Nitroamines in Water and Solids by HPLC with UV Detection by Method 8330(A)	1-P-QM-WI -9015172	Analysis DOD - 6916, 6918, 10595, 10596, 10131, 10132	4024 - Pesticide Residue Analysis
Nitrogen and Phosphorus Containing Pesticides by EPA Method 507 in Water using GC-NPD	1-P-QM-WI -9013407	Analysis 1870	4024 - Pesticide Residue Analysis
N-Methylcarbamate Pesticides by Method 8318 / 8318A in Solids	1-P-QM-WI -9013139	Analysis 1509, 10597	4024 - Pesticide Residue Analysis
N-Methylcarbamates by Method 531.1 in Groundwater and Drinking Water using High Performance Liquid Chromatography (HPLC)	1-P-QM-WI -9013126	Analysis 1340	4024 - Pesticide Residue Analysis

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OP Pesticides (Acephate and Methamidophos) by 8141A in Aqueous and Solid Samples using GC-NPD	1-P-QM-WI -9013395	Analysis 1782, 1785	4024 - Pesticide Residue Analysis
Organic Acids in Water by Methods 8015B/D or 8321B using HPLC/UV	1-P-QM-WI -9015063	Analysis 8843, 12737, 13947	4024 - Pesticide Residue Analysis
Organophosphorous Pesticides by Method 8141A/8141B in Solid Samples using GC-NPD	1-P-QM-WI -9015157	Analysis DOD - 5367, 10408, 10594, 13178, 13184	4024 - Pesticide Residue Analysis
Organophosphorous Pesticides by Methods 8141A/8141B/622 in Aqueous Samples using GC-NPD	1-P-QM-WI -9015156	Analysis DOD - 5366, 10410, 10593, 12144, 13182, 13186	4024 - Pesticide Residue Analysis
Passive In-Situ Chemical Extraction Sampler (PISCES) Procedure for the Determination of Polychlorinated Biphenyls (PCBs)	1-P-QM-WI -9013121	Analysis 12801	4024 - Pesticide Residue Analysis
PCBs in Oil by SW-846 Method 8082	1-P-QM-WI -9011597	Analysis 0174	4024 - Pesticide Residue Analysis
Perchlorate by Method 6850 in Waters and Solids by LC/MS/MS	1-P-QM-WI -9015166	Analysis DOD - 6386, 6557	4024 - Pesticide Residue Analysis
Pesticide Extract Cleanup Using Gel Permeation Chromatography	1-P-QM-PRO-9015407	DOD - MC-OE-004	4024 - Pesticide Residue Analysis
Pesticides by Method 8081A in Solid Samples using GC-ECD	1-P-QM-WI -9015128	Analysis DOD - 1363, 1420, 4225, 10738, 13237	4024 - Pesticide Residue Analysis
Pesticides in Aqueous and Non-aqueous Samples by SW-846 Method 8081A for OH VAP	1-P-QM-WI -9022430	Analysis 0177, 1363, 10738 OH VAP	4024 - Pesticide Residue Analysis
Pesticides in Aqueous Samples by Method 608	1-P-QM-WI -9014174	Analysis 7572	4024 - Pesticide Residue Analysis
Pesticides in Water by Method 8081A using GC-ECD	1-P-QM-WI -9015066	Analysis DOD - 0177, 0950, 0180, 1954	4024 - Pesticide Residue Analysis
Pesticides in Water by Method 8081B using GC-ECD	1-P-QM-WI -9015107	Analysis DOD - 10589, 10647	4024 - Pesticide Residue Analysis
Picric Acid in Water by Method 8015B Using HPLC with UV Detection	1-P-QM-WI -9013439	Analysis 2265	4024 - Pesticide Residue Analysis
Polychlorinated Biphenyls (PCBs) by Method 608 or 8082 in Waters	1-P-QM-WI -9015164	Analysis DOD - 6030, 10227	4024 - Pesticide Residue Analysis
Polychlorinated Biphenyls (PCBs) by Method 8082 in Solids and Wipes	1-P-QM-WI -9015126	Analysis DOD - 0042, 1030, 6011, 7512, 10225, 10736, 10906, 12800, 13236	4024 - Pesticide Residue Analysis
Polychlorinated Biphenyls (PCBs) in Aqueous and Non-aqueous Samples by SW-846 Method 8082 for OH VAP	1-P-QM-WI -9022429	Analysis 10225, 10227, 10736 OH VAP	4024 - Pesticide Residue Analysis
Polychlorinated Biphenyls (PCBs) in Solid Samples by 8082A Using GC-ECD	1-P-QM-WI -9015110	Analysis DOD - 10592, 10885, 12718, 13099, 13219, 13713	4024 - Pesticide Residue Analysis
Prescreening Water and Soil Samples for Pesticides and PCBs	1-P-QM-PRO-9018229	SOP-PP-041	4024 - Pesticide Residue Analysis
Preventative and Corrective GC Maintenance	1-P-QM-PRO-9015495	DOD - SOP-PP-013	4024 - Pesticide Residue Analysis
Preventative and Corrective HPLC Maintenance for the Pesticide Residue Analysis Department	1-P-QM-PRO-9015497	DOD - SOP-PP-029	4024 - Pesticide Residue Analysis
QC Data Acceptability and Corrective Action	1-P-QM-PRO-9015493	DOD - SOP-PP-002	4024 - Pesticide Residue Analysis

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Separatory Funnel Extraction by Method 3510C, 608 or 622 for Pesticides and PCBs in a Wastewater	1-P-QM-WI -9015079	Analysis DOD - 6654, 10241, 11112, 11113, 11114, 11116, 11117, 11118, 11119, 11120, 11121, 11123, 11126, 11960, 12026, 12822, 13086, 13093, 13183, 13187	4024 - Pesticide Residue Analysis
Separatory Funnel Extraction of Pesticides and PCBs in Aqueous Samples by SW-846 Method 3510C for OH VAP	1-P-QM-WI -9022427	Analysis 11117, 11118 OH VAP	4024 - Pesticide Residue Analysis
Separatory Funnel Extraction Procedure for the Determination of Chlorinated Pesticides; Nitrogen and Phosphorus Containing Pesticides; and PCBs in a Drinking Water Matrix	1-P-QM-WI -9014001	Analysis 6368, 11127	4024 - Pesticide Residue Analysis
Setting Retention Time Windows	1-P-QM-PRO-9018226	SOP-PP-035	4024 - Pesticide Residue Analysis
Setting Up Analysis Numbers in the Departmental Database	1-P-QM-PRO-9018228	SOP-PP-037	4024 - Pesticide Residue Analysis
Setting Up Single Component Initial Calibrations	1-P-QM-PRO-9015498	DOD - SOP-PP-031	4024 - Pesticide Residue Analysis
Sonic Probe Extraction for the Determination of Pesticides in a Solid Matrix	1-P-QM-WI -9015163	Analysis DOD - 11129, 11131, 11134	4024 - Pesticide Residue Analysis
Sonic Probe Extraction of Pesticides and PCBs in Solid Samples by SW-846 Method 3550C for OH VAP	1-P-QM-WI -9022432	Analysis 0819, 11134 OH VAP	4024 - Pesticide Residue Analysis
Sonic Probe Extraction Procedure for the Determination of Polychlorinated Biphenyls (PCBs) in a Solid Matrix	1-P-QM-WI -9015081	Analysis DOD - 0819, 11128, 11132, 11135	4024 - Pesticide Residue Analysis
Sonication Extraction of Nitroaromatics and Nitroamines by Method 8330/A/B in Soilds	1-P-QM-WI -9015173	Analysis DOD - 6917, 11137, 11138, 13433	4024 - Pesticide Residue Analysis
Soxhlet Extraction (Method 3540C) for Triazine Herbicides and Organophosphorous Pesticides in a Solid Matrix	1-P-QM-WI -9015170	Analysis DOD - 6677, 11130, 11133, 11142, 13181, 13185	4024 - Pesticide Residue Analysis
Standards Preparation, Coding, and Storage	1-P-QM-PRO-9018222	SOP-PP-021	4024 - Pesticide Residue Analysis
Standards Traceability and Monitoring	1-P-QM-PRO-9018220	SOP-PP-003	4024 - Pesticide Residue Analysis
Uploading Data to the LIMS	1-P-QM-PRO-9018225	SOP-PP-027	4024 - Pesticide Residue Analysis
Using "Datalog" Software for Data Acquisition of Multicomponent Pesticides/PCBs	1-P-QM-PRO-9015499	DOD - SOP-PP-032	4024 - Pesticide Residue Analysis
Using "Datalog" Software for Single-component Data Acquisition	1-P-QM-PRO-9015500	DOD - SOP-PP-033	4024 - Pesticide Residue Analysis
Waste Dilution Procedure for the Determination of PCBs in Oil	1-P-QM-WI -9015077	Analysis DOD - 0815	4024 - Pesticide Residue Analysis
Waste Dilution Procedure for the Determination of Pesticides and PCBs in a Non-Water Soluble Leachate Matrix	1-P-QM-WI -9015080	Analysis DOD - 11114DIL	4024 - Pesticide Residue Analysis
Analysis of Chlorinated Herbicides in Water by Selective Ion Monitoring Gas Chromatography/Mass Spectroscopy (SIM/GC/MS)	1-P-QM-WI -9013416	Analysis 2026	4026 - GC/MS Semivolatiles
Determination of Benz(a)pyrene in Smokeless Tobacco by Selective Ion Monitoring Gas Chromatography/Mass Spectrometry (SIM/GC/MS)	1-P-QM-WI -9014169	Analysis 7325, 0089	4026 - GC/MS Semivolatiles

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Determination of N-Nitrosodimethylamine (NDMA) in Water and Soil by EPA 1625C	1-P-QM-WI -9012803	Analysis 10962, 11622	4026 - GC/MS Semivolatiles
Determination of Priority Pollutants by Method 625	1-P-QM-WI -9015093	Analysis DOD - 10334, 2783	4026 - GC/MS Semivolatiles
Determination of Tetraethyl Lead (TEL) and Tetramethyl Lead (TML) by GC/MS Analysis	1-P-QM-WI -9015145	Analysis DOD - 4220, 4221	4026 - GC/MS Semivolatiles
Dioxin Screening (2,3,7,8-TCDD) of Aqueous and Solid Matrices using GC-MS SIM	1-P-QM-WI -9015072	Analysis DOD - 0382, 1196	4026 - GC/MS Semivolatiles
Extraction of Semi-Volatile Organic Compounds by Method 525.2 in Drinking Waters	1-P-QM-WI -9015152	Analysis DOD - 4894	4026 - GC/MS Semivolatiles
Extraction Procedure for the Determination of 2-Chlrorbenzalmalonotrile (CS) and 3-Quinuclidinyl Benzilate (BZ) in Water and Wastewater	1-P-QM-WI -9012779	Analysis 10475	4026 - GC/MS Semivolatiles
Extraction Procedure for the Determination of PAHs in an XAD Air Tube Sample by TO-15A	1-P-QM-WI -9014491	Analysis 7806AIR	4026 - GC/MS Semivolatiles
GC/MS Audit Process	1-P-QM-PRO-9015455	DOD - SOP-EX-009	4026 - GC/MS Semivolatiles
GC/MS Electronic Data Management and Handling	1-P-QM-PRO-9015453	DOD - SOP-EX-006	4026 - GC/MS Semivolatiles
GC/MS Preventative and Corrective Maintenance	1-P-QM-PRO-9015393	DOD - MC-EX-001	4026 - GC/MS Semivolatiles
Liquid/Liquid Extraction Procedure for the Determination of Base-Neutrals and Acid Extractables in a Wastewater Matrix by Method 8270	1-P-QM-WI -9015098	Analysis DOD - 10458	4026 - GC/MS Semivolatiles
Liquid/Liquid Extraction Procedure for the Determination of Neutral Extractables in a Wastewater Matrix	1-P-QM-WI -9013043	Analysis 11629	4026 - GC/MS Semivolatiles
Liquid-Liquid Extraction Procedure for the Determination of Target Compound List Analytes in a Water Matrix	1-P-QM-WI -9015147	Analysis DOD - 4606	4026 - GC/MS Semivolatiles
Low-Level Sonic Probe Extraction Procedure by Method 3550C for the Determination of Semivolatiles in a Solid Matrix	1-P-QM-WI -9015070	Analysis DOD - 0381, 10478, 10480, 10483, 10486, 10487L	4026 - GC/MS Semivolatiles
Low-Level Sonic Probe Extraction Procedure for the Determination of Target Compound List Analytes in a Solid Matrix	1-P-QM-WI -9015148	Analysis DOD - 4607	4026 - GC/MS Semivolatiles
Low-Level Sonication Extraction Procedure for the Determination of Polynuclear Aromatic Hydrocarbons (PAHs) in a Solid Matrix by GC/MS	1-P-QM-WI -9014490	Analysis 7806	4026 - GC/MS Semivolatiles
Microwave Extraction by Method 3546 for Semivolatiles	1-P-QM-WI -9015105	Analysis DOD - 10498, 10809, 10810, 10811, 10812, 10813, 10814, 11630, 11916	4026 - GC/MS Semivolatiles
Microwave Extraction for the Determination of Semivolatiles in a Solid Matrix	1-P-QM-WI -9012780	Analysis 10481, 11598	4026 - GC/MS Semivolatiles
Microwave Extraction of Semivolatiles in Non-Aqueous Samples by SW-846 Method 3546 for OH VAP	1-P-QM-WI -9022475	Analysis 10813 OH VAP	4026 - GC/MS Semivolatiles
Monitoring QC Data Acceptance Limits	1-P-QM-PRO-9015457	DOD - SOP-EX-020	4026 - GC/MS Semivolatiles
Pesticide Extract Cleanup Using Gel Permeation Chromatography for OH VAP	1-P-QM-PRO-9023663	N/A	4026 - GC/MS Semivolatiles
Quality Control Spike Mix Verification	1-P-QM-PRO-9015454	DOD - SOP-EX-008	4026 - GC/MS Semivolatiles

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Semivolatile Compounds by Method 525.2 in Drinking Water using GC/MS	1-P-QM-WI -9015092	Analysis DOD - 10333	4026 - GC/MS Semivolatiles
Semivolatile Extract Cleanup Using Gel Permeation Chromatography	1-P-QM-PRO-9015406	DOD - MC-OE-003	4026 - GC/MS Semivolatiles
Semivolatile Extract Cleanup Using Gel Permeation Chromatography for OH VAP	1-P-QM-PRO-9023664	N/A	4026 - GC/MS Semivolatiles
Semivolatile Organic Compounds by Method 8270D in Aqueous and Non-Aqueous Matrices using GC-MS	1-P-QM-WI -9015100	Analysis DOD - 10461, 10462, 10726	4026 - GC/MS Semivolatiles
Semivolatile Organic Compounds in Aqueous and Non-Aqueous Samples by Method SW-846 8270C for OH VAP	1-P-QM-WI -9022474	Analysis 1309, 10723 OH VAP	4026 - GC/MS Semivolatiles
Semivolatile Organic Compounds, Including DRO/ORO, by Method 8270C in Aqueous and Non-Aqueous Matrices Using GC-MS	1-P-QM-WI -9015087	Analysis DOD - 0949, 1309, 1476, 1536, 1946, 1947, 1953, 2035, 2395, 4615, 4678, 4688, 6387, 6397, 7804, 7805, 10032, 10723, 10724, 10727, 10728, 13615, 13618	4026 - GC/MS Semivolatiles
Semivolatile Organics Tentatively Identified Compound Method	1-P-QM-WI -9015083	Analysis DOD - 0885, 0886, 0887, 0893, 7125, 12126	4026 - GC/MS Semivolatiles
Semivolatile Run/Injection Log Generation	1-P-QM-PRO-9015456	DOD - SOP-EX-019	4026 - GC/MS Semivolatiles
Semivolatile Spiking and Calibration Standards	1-P-QM-PRO-9015452	DOD - SOP-EX-001	4026 - GC/MS Semivolatiles
Semivolatiles by Methods 8270C/D SIM	1-P-QM-WI -9015192	Analysis DOD - 8357, 0038, 0039, 10010, 10137, 10138, 10725, 11915, 11917, 12969, 12970, 12971	4026 - GC/MS Semivolatiles
Separatory Funnel Extraction (Method 3510C) or Waste Dilution (Method 3580A) of Base Neutrals and Acid Extractables in Leachates	1-P-QM-WI -9015149	Analysis DOD - 4731	4026 - GC/MS Semivolatiles
Separatory Funnel Extraction by Method 3510C for BNAs in Wastewater	1-P-QM-WI -9015076	Analysis DOD - 0813, 11010, 11015, 10464, 10467, 10476	4026 - GC/MS Semivolatiles
Separatory Funnel Extraction by Method 3510C for Tetraethyl Lead in Waters	1-P-QM-WI -9015101	Analysis DOD - 10472	4026 - GC/MS Semivolatiles
Separatory Funnel Extraction for the Determination of PAHs in Water by GC/MS Using Method 3510C	1-P-QM-WI -9015185	Analysis DOD - 7807	4026 - GC/MS Semivolatiles
Separatory Funnel Extraction Procedure for the Determination of Base-Neutrals and Acid Extractables by SIM in a Wastewater Matrix	1-P-QM-WI -9015121	Analysis DOD - 11012, 10465, 10466, 10470, 10471, 11912	4026 - GC/MS Semivolatiles
Separatory Funnel Extraction Procedure for the Determination of Base-Neutrals and Acid Extractables in a Wastewater Matrix by Method 625	1-P-QM-WI -9015188	Analysis DOD - 8108, 10463	4026 - GC/MS Semivolatiles
Separatory Funnel Extraction Semivolatile Organic Compounds in an Aqueous Samples by SW-846 Method 3510C for OH VAP	1-P-QM-WI -9022472	Analysis 10464 OH VAP	4026 - GC/MS Semivolatiles
Solid Phase Extraction Procedure for the Determination of THPA, THPI and PA in a Water Matrix	1-P-QM-WI -9012865	Analysis 11011	4026 - GC/MS Semivolatiles
Sonic Probe Extraction Procedure for the Determination of Semivolatiles in a Complex Matrix	1-P-QM-WI -9015189	Analysis DOD - 8108TJ	4026 - GC/MS Semivolatiles

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Sonic Probe Extraction Procedure for the Determination of Semivolatiles in a Solid Matrix by SIM	1-P-QM-WI -9015102	Analysis DOD - 10479, 10484, 10489, 11914	4026 - GC/MS Semivolatiles
Sonic Probe Extraction Procedure for the Determination of Semivolatiles in Non-Aqueous Samples by SW-846 Method 3550C for OH VAP	1-P-QM-WI -9022476	Analysis 0381 10478 OH VAP	4026 - GC/MS Semivolatiles
The Determination of d-Limonene in Plastic by Gas Chromatography/Mass Spectrometry (GC/MS)	1-P-QM-WI -9012761	Analysis 10215	4026 - GC/MS Semivolatiles
The Determination of Semivolatiles by Large Volume Injection (LVI) Gas Chromatography/Mass Spectrometry (GC/MS)	1-P-QM-WI -9014025	Analysis 6570	4026 - GC/MS Semivolatiles
THPA, THPI and PA by 8270C Mod. or CEPH 440 in Waters and Solids Using GC/MS	1-P-QM-WI -9013141	Analysis 1542, 2345	4026 - GC/MS Semivolatiles
Waste Dilution Procedure for the Determination of Acid Extractables and Base-Neutrals in a Non-Water Soluble Leachate Matrix	1-P-QM-WI -9015150	Analysis DOD - 4731DIL	4026 - GC/MS Semivolatiles
Waste Dilution Procedure for the Determination of Acid Extractables and Base-Neutrals in a Non-Water Soluble Matrix	1-P-QM-WI -9015071	Analysis DOD - 0381DIL	4026 - GC/MS Semivolatiles
Accusterilizer - Steam Sterilizer	1-P-QM-PRO-9015400	DOD - MC-IC-008	4027 - Instrumental Water Quality
Automated Determination of Ammonia Nitrogen in Water and Wastewater Using Segmented Flow Analysis and Gas Diffusion by EPA 350.1	1-P-QM-PRO-9020808	Analysis 12892, 13000	4027 - Instrumental Water Quality
Automated Determination of Phenols in Water, Wastewater, and Soils By Automated Flow Analyzer EPA 420.4, EPA 420.2, SW-846, 9066	1-P-QM-WI -9011690	Analysis 0434, 2393, 5912	4027 - Instrumental Water Quality
Automated Determination of Total Kjeldahl Nitrogen in Water, Wastewater, and Solids	1-P-QM-WI -9011633	Analysis 0217, 1511, 0223, 4235, 6165	4027 - Instrumental Water Quality
Department 4027 Chemical Inventory and Review Procedures	1-P-QM-PRO-9015460	DOD - SOP-IC-016	4027 - Instrumental Water Quality
Determination of Hexavalent Chromium by Ion Chromatography in Solids and Waters SW-846 7199 and EPA 218.6	1-P-QM-WI -9013989	Analysis 5892, 6467	4027 - Instrumental Water Quality
Determination of Inorganic Anions by Ion Chromatography	1-P-QM-WI -9011637	Analysis 0224, 0228, 0332, 0368, 1504, 1505, 1506, 7322, 7332, 7333, 7334, 7335, 7336, 7337, 7338	4027 - Instrumental Water Quality
Determination of Inorganic Anions by Ion Chromatography (Department of Defense)	1-P-QM-WI -9015115	Analysis DOD - 10697, 10698, 10699, 10700, 10701, 10702, 10703	4027 - Instrumental Water Quality
Determination of Nitrocellulose in Water and Soil	1-P-QM-WI -9011683	Analysis 0370, 0371, 1105, 1106	4027 - Instrumental Water Quality
Determination of Perchlorate by Ion Chromatography	1-P-QM-WI -9013993	Analysis 6019, 10130, 10147	4027 - Instrumental Water Quality
Determination of TOC and TC in Solids and Sludges by Combustion	1-P-QM-WI -9013418	Analysis 2079, 0383, 6623, 10065, 11356, 11763	4027 - Instrumental Water Quality
Determination of Total and Amenable Cyanide in Water, Wastewater, and Soils, Free Cyanide in Water and Wastewater, Reactive Cyanide of Solids, and Weak Acid Dissociable Cyanide in Waters and Soils	1-P-QM-WI -9011646	Analysis 0237, 1123, 1549, 5895, 5898, 8255, 0241, 4814, 0961, 0957, 0959	4027 - Instrumental Water Quality

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Determination of Total and Available Cyanide in Water using Amperometric Detection by ASTM D 7511-09e2 and Method OIA-1677-09	1-P-QM-WI -9013123	Analysis 12823, 12941, 12999	4027 - Instrumental Water Quality
Determination of Total and Soluble Phosphorus in Water, Wastewater, and Soils (Colorimetric, Ascorbic Acid, Automated)	1-P-QM-WI -9011640	Analysis 0227, 0345, 1546, 5893, 5894, 13463	4027 - Instrumental Water Quality
Determination of Total Carbon in Water and Wastewater	1-P-QM-WI -9013142	Analysis 1550	4027 - Instrumental Water Quality
Determination of Total Cyanide in Water, Wastewater, and Soils (Department of Defense) SW-846 9012B, SW-846 9012A	1-P-QM-WI -9015116	Analysis DOD - 10704, 10705	4027 - Instrumental Water Quality
Determination of Total Organic Carbon in Water and Wastewater (Quadruplicate Studies)	1-P-QM-WI -9011682	Analysis 0354	4027 - Instrumental Water Quality
Determination of Total Organic Carbon, Dissolved Organic Carbon, and Inorganic Carbon in Water and Wastewater	1-P-QM-WI -9011651	Analysis 0273, 6090, 7547	4027 - Instrumental Water Quality
Digestion of Total and Soluble Phosphorus in Water, Wastewater, and Soils EPA 361.1, SM20 4500 P B, and SM20 4500 P E	1-P-QM-WI -9014675	Analysis 8261, 8262, 8263, 8264, 8895, 13464	4027 - Instrumental Water Quality
Hexavalent Chromium (Cr VI) in Aqueous and Non-aqueous Samples by Method SW-846 7199 for OH VAP	1-P-QM-WI -9022443	Analysis 5892, 6467 OH VAP	4027 - Instrumental Water Quality
ICS-1000, ICS 1100, ICS-2000 and ICS-3000 Ion Chromatography Systems	1-P-QM-PRO-9015402	DOD - MC-IC-010	4027 - Instrumental Water Quality
Low Level Hexavalent Chromium by Ion Chromatography in Solids and Waters	1-P-QM-WI -9029677	Analysis 12868	4027 - Instrumental Water Quality
Maintenance and Calibration of A.I. Scientific AIM600 Digestor	1-P-QM-PRO-9015397	DOD - MC-IC-005	4027 - Instrumental Water Quality
Maintenance of Continuous Flow Analyzers	1-P-QM-PRO-9015399	DOD - MC-IC-007	4027 - Instrumental Water Quality
Maintenance of the OI Analytical Model 1030 Total Organic Carbon Analyzer	1-P-QM-PRO-9015398	DOD - MC-IC-006	4027 - Instrumental Water Quality
Maintenance of the OI Analytical Total Organic Carbon Solids Analyzer	1-P-QM-PRO-9015461	DOD - SOP-IC-017	4027 - Instrumental Water Quality
Moisture by Sartorius Moisture Analyzer/Moisture by Mettler Toledo HB43 SM20 2540 G	1-P-QM-WI -9013422	Analysis 2111, 2118, 2121	4027 - Instrumental Water Quality
Nitrate Nitrogen in Water and Wastewater (Colorimetric, Automated Cadmium Reduction)	1-P-QM-WI -9011635	Analysis 0220, 7882, 5992	4027 - Instrumental Water Quality
Nitrite Nitrogen in Water and Wastewater (Colorimetric, Automated)	1-P-QM-WI -9011634	Analysis 0219, 5991	4027 - Instrumental Water Quality
pH Electrodes and Meters	1-P-QM-PRO-9015396	DOD - MC-IC-003	4027 - Instrumental Water Quality
Phenol Distillation (as Preparation for Analysis on the Flow Analyzer)	1-P-QM-WI -9011693	Analysis 0491, 5911, 8123	4027 - Instrumental Water Quality
Quality Control for Auto-Analyzer Analyses Performed in Instrumental Water Quality	1-P-QM-PRO-9015459	DOD - SOP-IC-004	4027 - Instrumental Water Quality
Reagent Water Extraction (as Preparation for Analysis on the Ion Chromatograph or Autoanalyzer)	1-P-QM-WI -9013127	Analysis 1352, 10129	4027 - Instrumental Water Quality
Total and Amenable Cyanide Distillation (As Preparation for Analysis on the Automatic Flow Analyzer)	1-P-QM-WI -9011694	Analysis 0492, 1548, 5896, 5897, 8256, 0956, 0958	4027 - Instrumental Water Quality
Total Cyanide Analysis of Waters and Solids by Massachusetts Contingency Plan (MCP)/NJ DKQP	1-P-QM-WI -9012873	Analysis 11151	4027 - Instrumental Water Quality
Total Cyanide Distillation (Department of Defense)	1-P-QM-WI -9015117	Analysis DOD - 10706, 10707	4027 - Instrumental Water Quality

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Total Kjeldahl Nitrogen Digestion of Solids and Soils (a preparation for Analysis #1511)	1-P-QM-WI -9013138	Analysis 1465	4027 - Instrumental Water Quality
Total Kjeldahl Nitrogen Digestion of Water and Wastewater (A Preparation for Analysis 0217)	1-P-QM-WI -9013136	Analysis 1460	4027 - Instrumental Water Quality
Weak Acid Dissociable Cyanide Distillation (as Preparation for Analysis on the Flow Analyzer)	1-P-QM-WI -9014171	Analysis 7528, 0960	4027 - Instrumental Water Quality
Calibration of the Leachate Tumblers	1-P-QM-PRO-9015416	DOD - MC-TL-002	4028 - Leachate Preparation
Cation Exchange Capacity of Soils (Sodium Acetate) by Method 9081	1-P-QM-WI -9015138	Analysis DOD - 2595	4028 - Leachate Preparation
Food and Tissue Preparation	1-P-QM-WI -9015137	Analysis DOD - 2487	4028 - Leachate Preparation
Glassware Cleaning for Leachate Extractions	1-P-QM-PRO-9015525	DOD - SOP-TL-001	4028 - Leachate Preparation
Leachate Blank Evaluations	1-P-QM-PRO-9015526	DOD - SOP-TL-002	4028 - Leachate Preparation
Manually Pressurized Zero Headspace Extractor (ZHE)	1-P-QM-PRO-9015528	DOD - SOP-TL-004	4028 - Leachate Preparation
pH Meters and Probes	1-P-QM-PRO-9015415	DOD - MC-TL-001	4028 - Leachate Preparation
Procedure for Calculating and Reporting Weighted Average Results for TCLP Extracts	1-P-QM-PRO-9015529	DOD - SOP-TL-005	4028 - Leachate Preparation
Shake Extraction of Solid Waste with Water ASTM Method #D3987-85	1-P-QM-WI -9015074	Analysis DOD - 0447	4028 - Leachate Preparation
Subsampling and Preservation of Leachates	1-P-QM-PRO-9015527	DOD - SOP-TL-003	4028 - Leachate Preparation
Synthetic Precipitation Leaching Procedure (SPLP) for Nonvolatile Leachates	1-P-QM-WI -9015130	Analysis DOD - 1567	4028 - Leachate Preparation
Synthetic Precipitation Leaching Procedure (SPLP) Zero Headspace Leachates	1-P-QM-WI -9015194	Analysis DOD - 8792, 1339	4028 - Leachate Preparation
Toxicity Characteristic Leaching Procedure TCLP Nonvolatile Leachates	1-P-QM-WI -9015086	Analysis DOD - 0947, 1339	4028 - Leachate Preparation
Toxicity Characteristic Leaching Procedure TCLP Zero Headspace Leachates, Method 1311	1-P-QM-WI -9015085	Analysis DOD - 0946, 2573, 0075	4028 - Leachate Preparation
Waste Extraction Test Leaching Procedure for Volatile and Non-volatile Analytes	1-P-QM-WI -9015129	Analysis DOD - 1435, 1436	4028 - Leachate Preparation
#1443 Specific Gravity by SM 2710 F #6569 Bulk Density by ASTM E868-82 Sec 9.9 Modified	1-P-QM-WI -9013131	Analysis 1443, 6569	4029 - Water Quality
Accumet Model AB30 pH/Ion/Conductivity Meter	1-P-QM-PRO-9015419	DOD - MC-WQ-004	4029 - Water Quality
Acid Volatile Sulfide in Solids	1-P-QM-WI -9013392	Analysis 1630	4029 - Water Quality
Adjustable Volume Handheld Pipettes	1-P-QM-PRO-9015426	DOD - MC-WQ-014	4029 - Water Quality
Ammonia Nitrogen by Ion-Selective Electrode Method (ISE) in Solids by EPA 350.3 (Modified) and SM 4500-NH3B-1997	1-P-QM-WI -9012763	Analysis 10222, 10696	4029 - Water Quality
Ammonia-Nitrogen for Soils (Tritrimetric Distillation Procedure) by 4500-NH3 B/C (Modified)-1997, or EPA 350.2 (Modified)	1-P-QM-WI -9012743	Analysis 0573	4029 - Water Quality
Ammonia-Nitrogen for Waters (Titrimetric Distillation Procedure) by 4500-NH3 B/C (Modified)-1997, or EPA 350.2	1-P-QM-WI -9011636	Analysis 0221	4029 - Water Quality

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Analysis of Conductivity, Alkalinity, pH, Temperature of pH, Fluoride, Turbidity, Total Hardness, Carbonate, Bicarbonate, and Ammonia by Either Man-Tech Multi-Parameter System or Manual Technique	1-P-QM-WI -9013112	Analysis 12145, 12146, 12147, 12148, 12149, 12150, 12151, 12152, 12677, 12678, 12679	4029 - Water Quality
Bellack Distillation for Fluoride in Waters and Solids by SM 4500 F B–1997 or EPA 340.1 Procedure 6.1	1-P-QM-WI -9013133	Analysis 1448	4029 - Water Quality
BOD by SM 5210 B-2001 or EPA 405.1 and CBOD by SM 5210 B–2001 in Waters	1-P-QM-WI -9011645	Analysis 0235, 1364	4029 - Water Quality
Calibration of Hach 2100AN Turbidimeter	1-P-QM-PRO-9015423	DOD - MC-WQ-010	4029 - Water Quality
Chemical Oxygen Demand (COD) (Dichromate Reflux Method) (Titrimetric, Mid-Level)	1-P-QM-WI -9011644	Analysis 0234	4029 - Water Quality
Chemical Oxygen Demand (COD) (Dichromatic Reflux Method) (Colorimetric)	1-P-QM-WI -9013470	Analysis 4001	4029 - Water Quality
Chemical Oxygen Demand (Low-Level) by 410.4	1-P-QM-WI -9032852	Analysis 13700	4029 - Water Quality
Chemical Review	1-P-QM-PRO-9015534	DOD - SOP-WQ-016	4029 - Water Quality
Chloride (Titrimetric Determination) by SM 4500-Cl C-1997	1-P-QM-WI -9013035	Analysis 1124	4029 - Water Quality
Chlorine Residual by 4500 Cl F-2000, or EPA 330.4	1-P-QM-WI -9011648	Analysis 0240	4029 - Water Quality
Color by 2120 B-2001, or EPA 110.2	1-P-QM-WI -9011653	Analysis 0277	4029 - Water Quality
Colorimetric Sulfide in Waters (#0230), Sulfide as H2S (#10293 Calculation), Dissolved Sulfide in Waters (#10499) by 4500-S2 B/C/D-2000, 4500-S2 F-2000, or EPA 376.2	1-P-QM-WI -9011642	Analysis 0230, 10293, 10499	4029 - Water Quality
Determination of Flash Point for Liquids and Solids	1-P-QM-WI -9011689	Analysis 0430	4029 - Water Quality
Digestion Procedure for the Determination of Hexavalent Chromium (Cr VI) Digestion of Non-aqueous Samples by Method SW-846 3060A for OH VAP	1-P-QM-WI -9022448	Analysis 7825 OH VAP	4029 - Water Quality
Dissolved Oxygen (Membrane Electrode) by 4500 O G-2001 or EPA 360.1	1-P-QM-WI -9011688	Analysis 0428	4029 - Water Quality
Dissolved Silica (Colorimetric) by SM4500SiO2 C-1997 or EPA 370.1	1-P-QM-WI -9012742	Analysis 0559	4029 - Water Quality
Equipment Incubators and Refrigerators	1-P-QM-PRO-9015420	DOD - MC-WQ-006	4029 - Water Quality
Equipment Muffle Furnaces and Ovens	1-P-QM-PRO-9015422	DOD - MC-WQ-009	4029 - Water Quality
Ferrous Iron By Method 3500-Fe B (Modified) - 1997	1-P-QM-WI -9015060	Analysis 8344	4029 - Water Quality
Fixed Dissolved Solids (Calculation)	1-P-QM-WI -9011628	Analysis 0210	4029 - Water Quality
Fixed Suspended Solids (Gravimetric) (#207) Volatile Suspended Solids (Gravimetric) (#208) by SM 2540 E - 1997	1-P-QM-WI -9011626	Analysis 0207, 0208	4029 - Water Quality
Fixed Volume Hand-Held Pipettes	1-P-QM-PRO-9015425	DOD - MC-WQ-013	4029 - Water Quality
Flash Point for Liquids and Solids by ASTM Method D93-07 - ERPIMS	1-P-QM-WI -9035589	Analysis 0430 ERPIMS	4029 - Water Quality
Hach DR 2800 Spectrophotometer	1-P-QM-PRO-9015427	DOD - MC-WQ-017	4029 - Water Quality
Hexane Extractable Material (HEM) and Silica Gel Treated Hexane Extractable Materials (SGT-HEM) in Waters by EPA Method 1664A and 1664B	1-P-QM-WI -9014492	Analysis 8079, 8078, 0612	4029 - Water Quality
Hexavalent Chromium (Colorimetric) by SW-846 7196A	1-P-QM-WI -9011652	Analysis 0276	4029 - Water Quality

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Hexavalent Chromium (Colorimetric) in Waters by CTRCP	1-P-QM-WI -9013410	Analysis 1968	4029 - Water Quality
Hexavalent Chromium (Colorimetric) in Waters by MCP	1-P-QM-WI -9012870	Analysis 11145	4029 - Water Quality
Hexavalent Chromium (Colorimetric) in Waters by SM846 7196A NJ DKQP	1-P-QM-WI -9029546	Analysis 13447	4029 - Water Quality
Hexavalent Chromium in Soilds (Alkaline Digestion and Analysis Methods) by SW846 3060A, SW846 7196A NJ DKQP	1-P-QM-WI -9029548	Analysis 13431	4029 - Water Quality
Hexavalent Chromium in Solids (Alkaline Digestion and Analysis Methods)	1-P-QM-WI -9011687	Analysis 0425, 7825, 2432	4029 - Water Quality
Hexavalent Chromium in Solids by Alkaline Digestion and Analysis Methods (Department of Defense)	1-P-QM-WI -9015114	Analysis DOD - 10679, 7825	4029 - Water Quality
Hexavalent Chromium in Solids by CTRCP (Alkaline Digestion and Analysis Methods)	1-P-QM-WI -9013409	Analysis 1962, 7825	4029 - Water Quality
Hexavalent Chromium in Solids by MCP (Alkaline Digestion and Analysis Methods)	1-P-QM-WI -9012871	Analysis 11146	4029 - Water Quality
Hexavalent Chromium in Waters (Colorimetric) (Department of Defense)	1-P-QM-WI -9015113	Analysis DOD - 10678	4029 - Water Quality
Ignitability of Solids by 40 CFR, Part 261.21	1-P-QM-WI -9012741	Analysis 0542	4029 - Water Quality
Instructions for Collecting Data on the LLENS System	1-P-QM-PRO-9015533	DOD - SOP-WQ-014	4029 - Water Quality
Low-Level Hexavalent Chromium (colorimetric) by 3500-Cr B-2009	1-P-QM-WI -9013132	Analysis 1446	4029 - Water Quality
Maintenance of Desiccators	1-P-QM-PRO-9015424	DOD - MC-WQ-012	4029 - Water Quality
Maintenance of Hot Plates	1-P-QM-PRO-9015430	DOD - MC-WQ-024	4029 - Water Quality
Methylene-Blue-Active Substances (MBAS) by 5540 C-2000 or EPA 425.1	1-P-QM-WI -9011638	Analysis 0225	4029 - Water Quality
Moisture (Gravimetric), Total Residue (#0521), Volatile Residue (#0522), Total Fixed Residue/Ash (#1029) by SM 2540 G-1997 or SM 2540 E-1997 in Solids	1-P-QM-WI -9014030	Analysis 6866, 0521, 0522, 1029	4029 - Water Quality
n-Hexane Extractable Material (HEM) in Solids and Silica Gel Treated n-Hexane Extractable Material (SGT-HEM)	1-P-QM-WI -9013456	Analysis 2562, 6598	4029 - Water Quality
Orion 960 Autotitration System	1-P-QM-PRO-9015428	DOD - MC-WQ-022	4029 - Water Quality
Orthophosphate by EPA 365.3, or 4500-P E-1999	1-P-QM-WI -9011639	Analysis 0226	4029 - Water Quality
Oxidation-Reduction Potential	1-P-QM-WI -9013403	Analysis 1821	4029 - Water Quality
Paint Filter Liquids Test (Free Liquids Test)	1-P-QM-WI -9013402	Analysis 1820	4029 - Water Quality
Particle Size Distribution of Soils and Solids/Grain Size Classification by ASTM D422-63 (reapproved 2007)	1-P-QM-WI -9014165	Analysis 7103, 11601, 11604	4029 - Water Quality
Percent Solids for GC/MS by EPA 1666	1-P-QM-WI -9013444	Analysis 2365	4029 - Water Quality
pH (SW) (Electrometric)	1-P-QM-WI -9011685	Analysis 0394, 0496	4029 - Water Quality
pH Probes and Meters	1-P-QM-PRO-9015421	DOD - MC-WQ-007	4029 - Water Quality
Quality Control Data for Wet Chemistry	1-P-QM-PRO-9015535	DOD - SOP-WQ-017	4029 - Water Quality
Reactive Sulfide	1-P-QM-WI -9013032	Analysis 1122	4029 - Water Quality
Reactivity of Waste	1-P-QM-WI -9013027	Analysis 1121	4029 - Water Quality
Settleable Solids by 2540 F-1997, or EPA 160.5	1-P-QM-WI -9011631	Analysis 0215	4029 - Water Quality

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Soluble Biochemical Oxygen Demand Determination in Waters by Incubation by 5210 B Modified-2001 or EPA 405.1	1-P-QM-WI -9012740	Analysis 0541	4029 - Water Quality
Specific Conductance (Solids) by SW-846 9050 (Modified), EPA 120.1 (Modified) or 2510B-1997	1-P-QM-WI -9013113	Analysis 1215	4029 - Water Quality
Spectronic Genesys 2 and Genesys 10 Vis Spectrophotometers	1-P-QM-PRO-9015417	DOD - MC-WQ-002	4029 - Water Quality
Standardization of 0.02 and 0.1 Normal Sulfuric Acid	1-P-QM-PRO-9015530	DOD - SOP-WQ-002	4029 - Water Quality
Standardization of 0.02 Normal Sodium Hydroxide	1-P-QM-PRO-9015531	DOD - SOP-WQ-005	4029 - Water Quality
Sulfate (turbidimetric) by EPA 375.4 in Waters	1-P-QM-WI -9013037	Analysis 1125	4029 - Water Quality
Sulfide Titration for Water by 4500 S2 F-2000, EPA 376.1, or SW-846 Method 9034	1-P-QM-WI -9013125	Analysis 1333	4029 - Water Quality
Sulfite by 4500-SO3 B-2000, or EPA 377.1	1-P-QM-WI -9011641	Analysis 0229	4029 - Water Quality
Total Dissolved Solids (Calculation)	1-P-QM-WI -9011627	Analysis 0209	4029 - Water Quality
Total Dissolved Solids by 2540 C	1-P-QM-WI -9014026	Analysis 6649	4029 - Water Quality
Total Dissolved Solids in Waters (Gravimetric) by 2540 C-1997 or EPA 160.1	1-P-QM-WI -9011630	Analysis 0212	4029 - Water Quality
Total Fixed Solids Total Volatile Solids by 2540 E-1997, 160.4 or 2540 G-1997	1-P-QM-WI -9011624	Analysis 0204, 0205	4029 - Water Quality
Total Solids by 2540 B-1997, EPA 160.3 or 2540 G-1997	1-P-QM-WI -9011623	Analysis 0203	4029 - Water Quality
Total Suspended Solids in Waters (Gravimetric) by SM 2540 D - 1997	1-P-QM-WI -9012778	Analysis 10457	4029 - Water Quality
Volatile Dissolved Solids (Calculation)	1-P-QM-WI -9011629	Analysis 0211	4029 - Water Quality
Water Quality Washroom Procedures	1-P-QM-PRO-9015532	DOD - SOP-WQ-006	4029 - Water Quality
YSI Model 5100 Dissolved Oxygen Meter	1-P-QM-PRO-9015429	DOD - MC-WQ-023	4029 - Water Quality
Analysis of Air for Selected Volatile Organic Compounds by Gas Chromatography with Flame Ionization Detector and Photo Using EPA Method 18 and 25	1-P-QM-WI -9015177	Analysis DOD - 7090	4030 - Volatiles in Air
Calibration of Pressure Gauges	1-P-QM-PRO-9015391	DOD - MC-AL-002	4030 - Volatiles in Air
Cleaning and Handling of Flow Controllers	1-P-QM-PRO-9015432	DOD - SOP-AL-002	4030 - Volatiles in Air
Cleaning and Handling of Summa Canisters	1-P-QM-PRO-9015431	DOD - SOP-AL-001	4030 - Volatiles in Air
Helium as a Tracer Gas	1-P-QM-WI -9012770	Analysis 10341	4030 - Volatiles in Air
Oxygen and Carbon Dioxide in Air	1-P-QM-WI -9011592	Analysis 0034	4030 - Volatiles in Air
Preparing Summa Can Order	1-P-QM-PRO-9017690	SOP-AL-005	4030 - Volatiles in Air
Procedure for Compositing Samples from a Tedlar Bag	1-P-QM-PRO-9017689	SOP-AL-004	4030 - Volatiles in Air
Routine Instrument Maintenance for Volatiles in Air by GC and GC/MS	1-P-QM-PRO-9015392	DOD - MC-AL-003	4030 - Volatiles in Air
SIM Analysis of Low-Level Volatile Organic Compounds in Air Collected in Specially Treated Canisters or Tedlar Bags Using Cryogenic Preconcentration and Gas Chromatography with SIM Mass Selective Detection Using EPA Method TO-15	1-P-QM-WI -9015182	Analysis DOD - 7345	4030 - Volatiles in Air
The Determination of Volatile Organic Compounds in Air Collected in Summa Canisters or Tedlar Bags Using Cryogenic Preconcentration and GC/MS Detection Using EPA Method TO-14 or TO-15	1-P-QM-WI -9015155	Analysis DOD - 5265, 5298, 0015, 0037, 7199, 7869	4030 - Volatiles in Air

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Volatiles in Air Audit Process	1-P-QM-PRO-9015433	DOD - SOP-AL-003	4030 - Volatiles in Air
Volatiles in Air Tentatively Identified Compound Method	1-P-QM-WI -9014034	Analysis 6900	4030 - Volatiles in Air
Volatiles in Air Tentatively Identified Compound Method (Interpretive)	1-P-QM-WI -9012747	Analysis 0888	4030 - Volatiles in Air
Calibration, Operation and Maintenance of pH Probes and Meters	1-P-QM-PRO-9017426	MC-FS-002	4031 - Field Sampling
Collecting Potable Water Samples	1-P-QM-PRO-9017759	SOP-FS-004	4031 - Field Sampling
Collecting Water Samples for Regulatory Purposes	1-P-QM-PRO-9015458	DOD - SOP-FS-012	4031 - Field Sampling
Direct Field Readings Using Orion Model 1230 Multi-Parameter Meter	1-P-QM-PRO-9017761	SOP-FS-008	4031 - Field Sampling
Groundwater Monitoring Sampling Procedure	1-P-QM-PRO-9017760	SOP-FS-006	4031 - Field Sampling
Low Level Mercury Sampling	1-P-QM-PRO-9017763	SOP-FS-010	4031 - Field Sampling
Performing Free Chlorine Residual Readings	1-P-QM-PRO-9017764	SOP-FS-011	4031 - Field Sampling
Sampling Swimming Pool Water	1-P-QM-PRO-9018291	SOP-TR-003	4031 - Field Sampling
Soil Sampling Procedures	1-P-QM-PRO-9017758	SOP-FS-003	4031 - Field Sampling
Symphony Multi-Parameter Meter	1-P-QM-PRO-9017762	SOP-FS-009	4031 - Field Sampling
Wastewater Field Sampling Procedures	1-P-QM-PRO-9017757	SOP-FS-002	4031 - Field Sampling
1,6-hexanediamine in by 8015B Modified in Waters and Solids	1-P-QM-WI -9028763	Analysis 8919, 8920	4032 - EPH/Misc. GC
10g Silica Gel Cleanup for Hydrocarbons by GC in Soil and Water Matrices	1-P-QM-WI -9013055	Analysis 11681	4032 - EPH/Misc. GC
3 g Silica Gel Column Cleanup for DRO	1-P-QM-WI -9021425	Analysis 12932	4032 - EPH/Misc. GC
Alumina Column Cleanup by Method 3610B for Solid Samples	1-P-QM-WI -9013040	Analysis 11599, 11600	4032 - EPH/Misc. GC
Analysis of DRO/RRO by Alaska 102/103 in Waters and Soils	1-P-QM-WI -9013394	Analysis 1738, 1741, 1742, 2238, 2244, 2245, 2923	4032 - EPH/Misc. GC
Carbon Dioxide in Water Using Headspace Sampling Techniques and GC-TCD, Method RSK-175 or 8015	1-P-QM-WI -9015187	Analysis DOD - 8097, 13139	4032 - EPH/Misc. GC
CCWE Water Miscible Solvents	1-P-QM-WI -9012748	Analysis 0969	4032 - EPH/Misc. GC
Common Equations Used During Chromatographic Analyses	1-P-QM-PRO-9015448	DOD - SOP-EP-008	4032 - EPH/Misc. GC
Determination of Diesel and Residual Range Organics using Alaska 102/103 Small Volume (SV) Protocols in Aqueous Samples	1-P-QM-WI -9021778	Analysis 13025, 13028, 13222, 13930	4032 - EPH/Misc. GC
Determination of Petroleum Range Organics in Waters and Solids using FL-PRO	1-P-QM-WI -9013420	Analysis 0347, 0359, 2099, 2100	4032 - EPH/Misc. GC
DRO by 8015B and TPH by NWTPH-DX (Modified) in Water using Mini-Extraction and GC-FID	1-P-QM-WI -9021423	Analysis 12899, 12908, 12917	4032 - EPH/Misc. GC
DRO in Waters or Solids by Wisconsin DRO Method using GC-FID	1-P-QM-WI -9014172	Analysis 7553, 7554	4032 - EPH/Misc. GC
DRO/TPH by Method 8015 (B, C, or D) in Waters using Microextraction and GC-FID	1-P-QM-WI -9020899	Analysis 12858, 12879, 13163, 13165	4032 - EPH/Misc. GC
EPH by Massachusetts Protocol (MAEPH) in Waters and Solids Using GC	1-P-QM-WI -9013971	Analysis 5331, 5332, 5944, 5949, 5968, 5969, 10892, 10897	4032 - EPH/Misc. GC
EPH in Waters and Solids Using GC-FID by Method ECY97-602 WA EPH	1-P-QM-WI -9013990	Analysis 5979, 5970	4032 - EPH/Misc. GC

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Extractable Petroleum Hydrocarbons by Method OA-2 (Iowa/Missouri Protocol) in Waters and Solids using GC/FID	1-P-QM-WI -9013421	Analysis 2110, 2112	4032 - EPH/Misc. GC
Extraction of Soils/Solids for Glycol Analysis	1-P-QM-WI -9013039	Analysis 11551, 13121	4032 - EPH/Misc. GC
Extraction of Solids/Soils for Analysis of Alcohols by Method 8015B	1-P-QM-WI -9011684	Analysis 0380	4032 - EPH/Misc. GC
Extraction Procedure for the Determination of Diesel Range Organics in a Water or Wastewater Matrix by Oklahoma Methodology	1-P-QM-WI -9013016	Analysis 11168	4032 - EPH/Misc. GC
Extraction Procedure for the Determination of Total Petroleum Hydrocarbon Organics in a Water or Wastewater Matrix by Texas Methodology	1-P-QM-WI -9013023	Analysis 11192	4032 - EPH/Misc. GC
Extraction Procedure for the Determination of Total Petroleum Hydrocarbons in a Water or Wastewater Matrix by Connecticut Methodology	1-P-QM-WI -9013020	Analysis 11178	4032 - EPH/Misc. GC
Extraction Procedure for the Determination ofTotal Petroleum Hydrocarbons in a Soil or Solid Matrix by Texas Methodology	1-P-QM-WI -9013033	Analysis 11230, 11244	4032 - EPH/Misc. GC
Extraction Procedure for Wisconsin DRO Soils and Solid Waste	1-P-QM-WI -9012868	Analysis 11029	4032 - EPH/Misc. GC
Fractionated EPH using LA RECAP Ranges in Waters and Solids by GC-FID	1-P-QM-WI -9015030	Analysis 8323, 8324, 6976, 7062	4032 - EPH/Misc. GC
GC Routine and Nonroutine Maintenance for Instrumentation Used for VPH Analysis	1-P-QM-PRO-9023979	N/A	4032 - EPH/Misc. GC
Glycols by Method 8015B/8015C in Solids using GC-FID	1-P-QM-WI -9015029	Analysis 8283, 12925, 12934	4032 - EPH/Misc. GC
Glycols in Waters by Method 8015B or 8015C Using GC-FID	1-P-QM-WI -9015028	Analysis 8278, 11099, 12926	4032 - EPH/Misc. GC
Interpretation and Integration of Chromatographic Data	1-P-QM-PRO-9015451	DOD - SOP-EP-011	4032 - EPH/Misc. GC
MA DEP VPH in Waters and Solids Using GC	1-P-QM-WI -9015061	Analysis 8754, 8765, 5869, 5988, 6629, 6630, 10886, 10889	4032 - EPH/Misc. GC
Maintenance and Troubleshooting Procedures for GC-FID Instrumentation	1-P-QM-PRO-9015447	DOD - SOP-EP-006	4032 - EPH/Misc. GC
Microextraction by Method 3511 for the Determination of Diesel Range Organics in Water	1-P-QM-WI -9013110	Analysis 12059, 12897, 13175, 13177	4032 - EPH/Misc. GC
Microwave Extraction Method 3546 for DRO and Saturated Hydrocarbons in a Solid Matrix	1-P-QM-WI -9015120	Analysis DOD - 10942, 11509, 11210	4032 - EPH/Misc. GC
Microwave Extraction Method 3546 for NJ EPH in a Solid Matrix	1-P-QM-WI -9012864	Analysis 10979, 11990	4032 - EPH/Misc. GC
Microwave Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in a Solid Matrix by Montana Protocol	1-P-QM-WI -9013028	Analysis 11212	4032 - EPH/Misc. GC
Microwave Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in a Solid Matrix by Washington Protocol	1-P-QM-WI -9013029	Analysis 11213	4032 - EPH/Misc. GC
Microwave Extraction, Method 3546, for MA EPH in a Solid Matrix	1-P-QM-WI -9013429	Analysis 2168, 11235	4032 - EPH/Misc. GC
Monitoring QC Data Acceptance Limits	1-P-QM-PRO-9015450	DOD - SOP-EP-010	4032 - EPH/Misc. GC
New Jersey Extractable Petroleum Hydrocarbons (NJEPH) in Waters and Solids using GC-FID	1-P-QM-WI -9012863	Analysis 10967, 10973, 11986, 12997	4032 - EPH/Misc. GC

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PMI VOCs (Direct Injection) by Method 1671A in Waters Using GC/FID	1-P-QM-WI -9013445	Analysis 2366, 2380	4032 - EPH/Misc. GC
QC Data Acceptability and Corrective Action	1-P-QM-PRO-9015449	DOD - SOP-EP-009	4032 - EPH/Misc. GC
Qualitative/Quantitative GC Fingerprint by 8015B Mod/ 8015C Mod/ or 8015D Mod	1-P-QM-WI -9013412	Analysis 2012, 2535	4032 - EPH/Misc. GC
Quick Silica Gel Cleanup for Hydrocarbons by GC in Solid and Water Matrices	1-P-QM-WI -9013430	Analysis 2176	4032 - EPH/Misc. GC
Separatory Funnel Extract Procedure for the Determination of Extractable Petroleum Hydrocarbons (EPH) in a Water or Wastewater Matrix by Tennessee Methodology	1-P-QM-WI -9013021	Analysis 11179	4032 - EPH/Misc. GC
Separatory Funnel Extraction by Method 3510C for DRO in Water by California Methodology	1-P-QM-WI -9013446	Analysis 2376, 11169, 11180, 11187, 11188, 11198, 11199, 12820, 13156	4032 - EPH/Misc. GC
Separatory Funnel Extraction for DRO and RRO by AK 102/103 in a Water Matrix	1-P-QM-WI -9013022	Analysis 11184, 11185, 11242, 13027, 13030	4032 - EPH/Misc. GC
Separatory Funnel Extraction Method 3510C for DRO in Water or Wastewater	1-P-QM-WI -9015175	Analysis DOD - 7003, 10304, 11164, 11167, 11171, 11172, 11176, 11177, 11181, 11183, 11189, 11190, 11191, 11195, 11196, 11201, 11203, 11596, 12820, 12906, 12915, 12923, 13095, 13212	4032 - EPH/Misc. GC
Separatory Funnel Extraction Method ECY 97-602 NWTPH-DX for TPH in a Water or Wastewater Matrix	1-P-QM-WI -9013424	Analysis 2135, 11197, 12007, 12119, 12120, 12907, 12916, 12924	4032 - EPH/Misc. GC
Separatory Funnel Extraction Procedure for the Determination of Diesel Range Organics in a Water or Wastewater Matrix by Maine Methodology	1-P-QM-WI -9013014	Analysis 11165	4032 - EPH/Misc. GC
Separatory Funnel Extraction Procedure for the Determination of Diesel Range Organics in a Water or Wastewater Matrix by Wisconsin Protocol	1-P-QM-WI -9013015	Analysis 11166	4032 - EPH/Misc. GC
Separatory Funnel Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in a Water Matrix by Washington Methodology	1-P-QM-WI -9013019	Analysis 11175	4032 - EPH/Misc. GC
Separatory Funnel Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in a Water or Wastewater Matrix by Massachusetts or New Jersey Protocol	1-P-QM-WI -9014170	Analysis 7326, 10980, 11200 MA/LA/NJ	4032 - EPH/Misc. GC
Separatory Funnel Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in a Water or Wastewater Matrix by Montana Protocol	1-P-QM-WI -9013018	Analysis 11174, 11243	4032 - EPH/Misc. GC
Separatory Funnel Extraction Procedure for the Determination of Total Petroleum Hydrocarbon Organics in a Water or Wastewater Matrix by FL-PRO	1-P-QM-WI -9013017	Analysis 11170	4032 - EPH/Misc. GC
Silica Gel Column Cleanup (Method 3630C Mod) for Hydrocarbons by GC in Aqueous Matrices	1-P-QM-WI -9020897	Analysis 12894	4032 - EPH/Misc. GC
Silica Gel Fractionation for Hydrocarbons by GC in Soil and Water Matrices	1-P-QM-WI -9012711	Analysis 0497	4032 - EPH/Misc. GC

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Sonic Disruption Extraction Procedure for the Determination of GC Fingerprint on Petroleum Products in Soil or Solid Matrix	1-P-QM-WI -9015151	Analysis DOD - 4833, 11227	4032 - EPH/Misc. GC
Sonic Probe Extraction by FL-PRO for Petroleum Range Organics in Solids	1-P-QM-WI -9013026	Analysis 11208	4032 - EPH/Misc. GC
Sonic Probe Extraction for the Determination of Extractable Total Petroleum Hydrocarbons in Soil or Solid Matrix Connecticut Methology	1-P-QM-WI -9013030	Analysis 11216	4032 - EPH/Misc. GC
Sonic Probe Extraction for TPH in Solids by Washington DX	1-P-QM-WI -9014041	Analysis 7024, 11234, 12008, 12117, 12118	4032 - EPH/Misc. GC
Sonic Probe Extraction of Glycols by Method 3550C from a Solid Matrix	1-P-QM-WI -9032542	Analysis 12933	4032 - EPH/Misc. GC
Sonic Probe Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in Soil or Solid Matrix Tennessee Methodology	1-P-QM-WI -9013031	Analysis 11217	4032 - EPH/Misc. GC
Sonication Extraction Method 3550C for DRO in Soils or Solids	1-P-QM-WI -9015176	Analysis DOD - 7004, 10303, 11204, 11205, 11209, 11215, 11218, 11219, 11225, 11228, 11229, 11233, 11236, 11237, 11238, 13097	4032 - EPH/Misc. GC
Sonication Extraction Procedure for the Determination of Diesel Organics in Soil or Solid Matrix by Alaska Methodology	1-P-QM-WI -9015123	Analysis DOD - 11222, 11223, 11239, 11248	4032 - EPH/Misc. GC
Sonication Extraction Procedure for the Determination of Diesel Organics in Soil or Solid Matrix Oklahoma Methodology	1-P-QM-WI -9013024	Analysis 11206	4032 - EPH/Misc. GC
Sonication Extraction Procedure for the Determination of Diesel Range Organics in Soil or Solid Matrix California Methodology	1-P-QM-WI -9013025	Analysis 11207, 11214	4032 - EPH/Misc. GC
Terphenyls by Method 8015B in Water and Solids Using GC-FID	1-P-QM-WI -9012769	Analysis 10318, 10319	4032 - EPH/Misc. GC
TNRCC TX Method 1005 - Total Petroleum Hydrocarbons (Gasoline Range, Diesel Range, and Extended Range Organics) in Waters and Solids	1-P-QM-WI -9013442	Analysis 2318, 2321	4032 - EPH/Misc. GC
Total Extractable Hydrocarbons (TEH) by Method 8015B Modified Using GC-FID	1-P-QM-WI -9013137	Analysis 1464, 1469, 10007	4032 - EPH/Misc. GC
Total Petroleum Hydrocarbons with Ranges by Methods 8015B/8015C/8015D in Waters and Solids by GC-FID	1-P-QM-WI -9015186	Analysis DOD - 8093, 8107, 2500, 2516, 2729, 2740, 0071, 0072, 6631, 6635, 10199, 10365, 12952	4032 - EPH/Misc. GC
Total Saturated Hydrocarbons by Method 8015C in Waters and Solids using GC/FID	1-P-QM-WI -9013038	Analysis 11507, 11554	4032 - EPH/Misc. GC
TPH by CT ETPH	1-P-QM-WI -9013462	Analysis 2768, 2769	4032 - EPH/Misc. GC
TPH by Methods 8015B/C/D mod. in Waters and Solids Using GC-FID	1-P-QM-WI -9015154	Analysis DOD - 5256, 5260, 8734, 8735, 13137, 13138	4032 - EPH/Misc. GC
TPH by NWTPH-Dx (modified) in Soils using GC-FID	1-P-QM-WI -9015027	Analysis 8272, 2214, 12006	4032 - EPH/Misc. GC
TPH by NWTPH-Dx (modified) in Waters using GC-FID	1-P-QM-WI -9015026	Analysis 8271, 2211, 12005	4032 - EPH/Misc. GC
TPH by TN EPH in Water and Soil using GC-FID	1-P-QM-WI -9013463	Analysis 2784, 2785	4032 - EPH/Misc. GC
TPH DRO (Diesel Range Organics) by Oklahoma DEQ Method	1-P-QM-WI -9014308	Analysis 7784, 7785, 10024, 10027	4032 - EPH/Misc. GC

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TPH-DRO by 8015B in Water using GC-FID (Diesel Range Organics)	1-P-QM-WI -9020088	1070, 2216, 5867, 6609, 6610, 6884, 6885, 6912, 6913, 8269, 8349, 11918, 12680, 12816, 11346	4032 - EPH/Misc. GC
TPH-DRO by 8015B/8015C/8015D in Solids using GC-FID (Diesel Range Organics)	1-P-QM-WI -9015191	Analysis DOD - 1104, 2222, 5868, 6901, 6902, 8270, 8345, 10941, 12831, 13567	4032 - EPH/Misc. GC
TPH-DRO by 8015C South Carolina Methodology Using GC-FID	1-P-QM-WI -9024963	Analysis 13094, 13096	4032 - EPH/Misc. GC
TPH-DRO by 8015C/8015D in Water using GC-FID (Diesel Range Organics)	1-P-QM-WI -9015111	Analysis DOD - 10600, 13256	4032 - EPH/Misc. GC
TPH-DRO by Methods 8015C or 8015D in Solids using GC-FID	1-P-QM-WI -9015112	Analysis DOD - 10601, 12838	4032 - EPH/Misc. GC
TPH-DX with Fuel Identification in Waters and Solids by NWTPH-DX	1-P-QM-WI -9023949	Analysis 12071, 12082, 12093, 12094	4032 - EPH/Misc. GC
TX 1006 Characterization of C6-C35 Petroleum Hydrocarbons in Waters and Soilds	1-P-QM-WI -9013996	Analysis 6091, 6104	4032 - EPH/Misc. GC
Using "Range Compound Analysis" Software for Range Data Acquisition	1-P-QM-PRO-9017817	SOP-OR-082	4032 - EPH/Misc. GC
Volatile Hydrocarbons in Water by Method RSK-175 Modified and SW-846 8015 Using Headspace Sampling Techniques and GC-FID	1-P-QM-WI -9015178	Analysis DOD - 7105, 10602, 13693	4032 - EPH/Misc. GC
Volatile Organic Concentration of Waste Samples by Method 25D Using FID and ELCD	1-P-QM-WI -9014040	Analysis 7001	4032 - EPH/Misc. GC
VPH in Waters and Solids Using GC-FID by Method ECY 97-602 WA VPH	1-P-QM-WI -9013982	Analysis 5665, 5666	4032 - EPH/Misc. GC
Waste Dilution for the Determination of Saturated Hydrocarbons in an Oil Matrix	1-P-QM-WI -9013051	Analysis 11657	4032 - EPH/Misc. GC
Water Miscible Solvents by Method 8015B/8015C/8015D Using GC-FID	1-P-QM-WI -9015169	Analysis DOD - 6624, 10501, 10603, 10604	4032 - EPH/Misc. GC
Analysis of Nicotine in Tobacco by GC/FID Following Coresta 62	1-P-QM-WI -9014032	Analysis 6878	4035 - Nitrosamines
Analysis of Nicotine in Tobacco by GC/FID for Smokeless Tobacco Products Using the CDC Method	1-P-QM-WI -9011595	Analysis 0097	4035 - Nitrosamines
Analysis of Tobacco Specific Nitrosamines (TSNA) in Tobacco Leaf by LC/MS/MS	1-P-QM-WI -9013802	Analysis 5102	4035 - Nitrosamines
CDC Tobacco Moisture	1-P-QM-WI -9011594	Analysis 0091	4035 - Nitrosamines
Column Cleanup of Tobacco for TSNAs	1-P-QM-WI -9014036	Analysis 6962	4035 - Nitrosamines
Extraction of Nicotine from Tobacco and Tobacco Products	1-P-QM-WI -9014031	Analysis 6870	4035 - Nitrosamines
Extraction of Nicotine from Tobacco Products Using the Centers for Disease Control Protocol	1-P-QM-WI -9011593	Analysis 0088	4035 - Nitrosamines
Extraction of Tobacco for Benzo[a]Pyrene	1-P-QM-WI -9014033	Analysis 6883	4035 - Nitrosamines
Extraction of Tobacco Specific N-Nitrosamines in Tobacco Filler	1-P-QM-WI -9013443	Analysis 2326LC	4035 - Nitrosamines
Nitrate in Tobacco Prep	1-P-QM-WI -9013457	Analysis 2610	4035 - Nitrosamines
Nitrate Nitrogen in Tobacco (Colorimetric, Automated Cadmium Reduction)	1-P-QM-WI -9013464	Analysis 2808	4035 - Nitrosamines
Nitrite in Tobacco Prep	1-P-QM-WI -9013438	Analysis 2264	4035 - Nitrosamines
Nitrite Nitrogen Analysis in Tobacco	1-P-QM-WI -9013440	Analysis 2266	4035 - Nitrosamines
Tobacco Drying and Grinding	1-P-QM-WI -9013801	Analysis 4998	4035 - Nitrosamines

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10g Silica Gel Cleanup for Hydrocarbons by GC in Soil and Water Matrices	1-P-QM-WI -9013055	Analysis 11681	4036 - Organic Extraction
3 g Silica Gel Column Cleanup for DRO	1-P-QM-WI -9021425	Analysis 12932	4036 - Organic Extraction
Alumina Column Cleanup by Method 3610B for Solid Samples	1-P-QM-WI -9013040	Analysis 11599, 11600	4036 - Organic Extraction
Cleanup Procedures for the Extraction of Pesticides and Polychlorinated Biphenyls (PCBs)	1-P-QM-PRO-9015477	DOD - SOP-OE-004	4036 - Organic Extraction
Concentration Using a TurboVap LV Concentration Workstation	1-P-QM-PRO-9015489	DOD - SOP-OE-016	4036 - Organic Extraction
Determination of Percentage Fat Using Accelerated Solvent Extraction (ASE)	1-P-QM-WI -9015144	Analysis DOD - 4193ASE	4036 - Organic Extraction
Determining QC Sample Volume for Organic Extractions	1-P-QM-PRO-9015480	DOD - SOP-OE-007	4036 - Organic Extraction
Electrothermal Heating Mantles	1-P-QM-PRO-9015410	DOD - MC-OE-009	4036 - Organic Extraction
Extraction By Method 8318/8318A for Carbamate and Urea Pesticides in Solids	1-P-QM-WI -9013140	Analysis 1510, 11143	4036 - Organic Extraction
Extraction for Perchlorate by Method 6850 in Solids	1-P-QM-WI -9015167	Analysis DOD - 6568	4036 - Organic Extraction
Extraction of Chlorinated Acids and Herbicides in Drinking Water by Method 515.1	1-P-QM-WI -9014002	Analysis 6369	4036 - Organic Extraction
Extraction of Chlorinated Herbicides in a Soil Matrix	1-P-QM-WI -9013472	Analysis 4181	4036 - Organic Extraction
Extraction of Chlorinated Herbicides in a Water Matrix by SW-846 8151A	1-P-QM-WI -9015078	Analysis DOD - 0816, 11110, 11111	4036 - Organic Extraction
Extraction of Formaldehyde and Other Aldehydes in a Water by Method 8315A	1-P-QM-WI -9015090	Analysis DOD - 1013, 11124, 12857	4036 - Organic Extraction
Extraction of Nitroaromatics and Nitroamines by Method 8330/A/B in Water	1-P-QM-WI -9015171	Analysis DOD - 6915, 11122, 11125, 13432	4036 - Organic Extraction
Extraction of Semi-Volatile Organic Compounds by Method 525.2 in Drinking Waters	1-P-QM-WI -9015152	Analysis DOD - 4894	4036 - Organic Extraction
Extraction Procedure for the Determination of 2-Chlrorbenzalmalonotrile (CS) and 3-Quinuclidinyl Benzilate (BZ) in Water and Wastewater	1-P-QM-WI -9012779	Analysis 10475	4036 - Organic Extraction
Extraction Procedure for the Determination of Diesel Range Organics in a Water or Wastewater Matrix by Oklahoma Methodology	1-P-QM-WI -9013016	Analysis 11168	4036 - Organic Extraction
Extraction Procedure for the Determination of Formaldehyde and Aldehydes in a Solid Matrix	1-P-QM-WI -9015162	Analysis DOD - 5876, 11139	4036 - Organic Extraction
Extraction Procedure for the Determination of PAHs in an XAD Air Tube Sample by TO-15A	1-P-QM-WI -9014491	Analysis 7806AIR	4036 - Organic Extraction
Extraction Procedure for the Determination of Total Petroleum Hydrocarbon Organics in a Water or Wastewater Matrix by Texas Methodology	1-P-QM-WI -9013023	Analysis 11192	4036 - Organic Extraction
Extraction Procedure for the Determination of Total Petroleum Hydrocarbons in a Water or Wastewater Matrix by Connecticut Methodology	1-P-QM-WI -9013020	Analysis 11178	4036 - Organic Extraction
Extraction Procedure for the Determination ofTotal Petroleum Hydrocarbons in a Soil or Solid Matrix by Texas Methodology	1-P-QM-WI -9013033	Analysis 11230, 11244	4036 - Organic Extraction
Extraction Procedure for Wisconsin DRO Soils and Solid Waste	1-P-QM-WI -9012868	Analysis 11029	4036 - Organic Extraction
Glassware Cleaning for Organic Extractions	1-P-QM-PRO-9015475	DOD - SOP-OE-001	4036 - Organic Extraction
Glassware Cleaning using Automatic Washers for non-Organic Extraction Glassware	1-P-QM-PRO-9015487	DOD - SOP-OE-014	4036 - Organic Extraction

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Liquid/Liquid Extraction Procedure for the Determination of Base-Neutrals and Acid Extractables in a Wastewater Matrix by Method 8270	1-P-QM-WI -9015098	Analysis DOD - 10458	4036 - Organic Extraction
Liquid/Liquid Extraction Procedure for the Determination of Neutral Extractables in a Wastewater Matrix	1-P-QM-WI -9013043	Analysis 11629	4036 - Organic Extraction
Liquid/Liquid Extraction Procedure for the Determination of Organophosphorous Pesticides in a Wastewater Matrix	1-P-QM-WI -9012765	Analysis 10240	4036 - Organic Extraction
Liquid-Liquid Extraction Procedure for the Determination of Target Compound List Analytes in a Water Matrix	1-P-QM-WI -9015147	Analysis DOD - 4606	4036 - Organic Extraction
Low-Level Sonic Probe Extraction Procedure by Method 3550C for the Determination of Semivolatiles in a Solid Matrix	1-P-QM-WI -9015070	Analysis DOD - 0381, 10478, 10480, 10483, 10486, 10487L	4036 - Organic Extraction
Low-Level Sonic Probe Extraction Procedure for the Determination of Target Compound List Analytes in a Solid Matrix	1-P-QM-WI -9015148	Analysis DOD - 4607	4036 - Organic Extraction
Low-Level Sonication Extraction Procedure for the Determination of Polynuclear Aromatic Hydrocarbons (PAHs) in a Solid Matrix by GC/MS	1-P-QM-WI -9014490	Analysis 7806	4036 - Organic Extraction
Maintenance and Calibration of the Microwave Accelerated Reaction System	1-P-QM-PRO-9017428	MC-OE-013	4036 - Organic Extraction
Maintenance of Accelerated Solvent Extractor (ASE) and the Pressurized Solvent Extractor (PSE)	1-P-QM-PRO-9015486	DOD - SOP-OE-013	4036 - Organic Extraction
Medium Level Sonic Probe Extraction Procedure for the Determination of Pesticides and PCBs in a Solid Matrix	1-P-QM-WI -9012745	Analysis 0819M, 11144	4036 - Organic Extraction
Microextraction by Method 3511 for the Determination of Diesel Range Organics in Water	1-P-QM-WI -9013110	Analysis 12059, 12897, 13175, 13177	4036 - Organic Extraction
Microextraction by Method 504.1 or 8011 for EDB, DBCP, and TCP in Water	1-P-QM-WI -9014309	Analysis 7786, 13715	4036 - Organic Extraction
Microextraction of EDB, DBCP, and TCP in Solids by Method 8011	1-P-QM-WI -9025371	Analysis 13218	4036 - Organic Extraction
Microwave Extraction by Method 3546 for Semivolatiles	1-P-QM-WI -9015105	Analysis DOD - 10498, 10809, 10810, 10811, 10812, 10813, 10814, 11630, 11916	4036 - Organic Extraction
Microwave Extraction for the Determination of Semivolatiles in a Solid Matrix	1-P-QM-WI -9012780	Analysis 10481, 11598	4036 - Organic Extraction
Microwave Extraction Method 3546 for DRO and Saturated Hydrocarbons in a Solid Matrix	1-P-QM-WI -9015120	Analysis DOD - 10942, 11509, 11210	4036 - Organic Extraction
Microwave Extraction Method 3546 for NJ EPH in a Solid Matrix	1-P-QM-WI -9012864	Analysis 10979, 11990	4036 - Organic Extraction
Microwave Extraction Method 3546 for PCBs in a Solid Matrix	1-P-QM-WI -9015104	Analysis DOD - 10497, 11140, 13100	4036 - Organic Extraction
Microwave Extraction Method 3546 for Pesticides in a Solid Matrix	1-P-QM-WI -9015103	Analysis DOD - 10496, 11141	4036 - Organic Extraction
Microwave Extraction of Pesticides and PCBs in Non-aqueous Samples by SW-846 Method 3546 for OH VAP	1-P-QM-WI -9022433	Analysis 10496, 10497 OH VAP	4036 - Organic Extraction
Microwave Extraction of Semivolatiles in Non-Aqueous Samples by SW-846 Method 3546 for OH VAP	1-P-QM-WI -9022475	Analysis 10813 OH VAP	4036 - Organic Extraction

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Microwave Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in a Solid Matrix by Montana Protocol	1-P-QM-WI -9013028	Analysis 11212	4036 - Organic Extraction
Microwave Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in a Solid Matrix by Washington Protocol	1-P-QM-WI -9013029	Analysis 11213	4036 - Organic Extraction
Microwave Extraction, Method 3546, for MA EPH in a Solid Matrix	1-P-QM-WI -9013429	Analysis 2168, 11235	4036 - Organic Extraction
Multipette Stream Operation and Calibration	1-P-QM-PRO-9029413	N/A	4036 - Organic Extraction
N-Evap	1-P-QM-PRO-9015411	DOD - MC-OE-010	4036 - Organic Extraction
Organic Extraction Standards Storage and Handling	1-P-QM-PRO-9015490	DOD - SOP-OE-017	4036 - Organic Extraction
Passive In-Situ Chemical Extraction Sampler (PISCES) Procedure for the Determination of Polychlorinated Biphenyls (PCBs)	1-P-QM-WI -9013121	Analysis 12801	4036 - Organic Extraction
Pesticide Extract Cleanup Using Gel Permeation Chromatography	1-P-QM-PRO-9015407	DOD - MC-OE-004	4036 - Organic Extraction
Pesticide Extract Cleanup Using Gel Permeation Chromatography for OH VAP	1-P-QM-PRO-9023663	N/A	4036 - Organic Extraction
Pesticide Extract Concentration Using a Zymark TurboVap II Concentration Workstation	1-P-QM-PRO-9015485	DOD - SOP-OE-012	4036 - Organic Extraction
Pesticides and Polychlorinated Biphenyls (PCBs) Cleanup Procedures for OH VAP	1-P-QM-PRO-9024148	N/A	4036 - Organic Extraction
pH Meters and Electrodes	1-P-QM-PRO-9015478	DOD - SOP-OE-005	4036 - Organic Extraction
Pore Water Generation Procedure	1-P-QM-WI -9015106	Analysis DOD - 10500	4036 - Organic Extraction
Procedure for Containment and Clean Up of Hazardous Materials Spills in Organic Prep Lab	1-P-QM-PRO-9015479	DOD - SOP-OE-006	4036 - Organic Extraction
Quick Silica Gel Cleanup for Hydrocarbons by GC in Solid and Water Matrices	1-P-QM-WI -9013430	Analysis 2176	4036 - Organic Extraction
Refrigerated Recirculators	1-P-QM-PRO-9015409	DOD - MC-OE-008	4036 - Organic Extraction
Routine Maintenance of Miele Glass Washers	1-P-QM-PRO-9015484	DOD - SOP-OE-011	4036 - Organic Extraction
Sampling Equipment Cleaning and Validation for Metals Analysis	1-P-QM-WI -9015089	Analysis DOD - 10068	4036 - Organic Extraction
Scheduling Extraction Batches	1-P-QM-PRO-9015481	DOD - SOP-OE-008	4036 - Organic Extraction
Semivolatile Extract Cleanup Using Gel Permeation Chromatography	1-P-QM-PRO-9015406	DOD - MC-OE-003	4036 - Organic Extraction
Semivolatile Extract Cleanup Using Gel Permeation Chromatography for OH VAP	1-P-QM-PRO-9023664	N/A	4036 - Organic Extraction
Semivolatile Extract Concentration Using a Zymark TurboVap II Concentration Workstation	1-P-QM-PRO-9015488	DOD - SOP-OE-015	4036 - Organic Extraction
Separatory Funnel Extract Procedure for the Determination of Extractable Petroleum Hydrocarbons (EPH) in a Water or Wastewater Matrix by Tennessee Methodology	1-P-QM-WI -9013021	Analysis 11179	4036 - Organic Extraction
Separatory Funnel Extraction (Method 3510C) or Waste Dilution (Method 3580A) of Base Neutrals and Acid Extractables in Leachates	1-P-QM-WI -9015149	Analysis DOD - 4731	4036 - Organic Extraction
Separatory Funnel Extraction by Method 3510C for BNAs in Wastewater	1-P-QM-WI -9015076	Analysis DOD - 0813, 11010, 11015, 10464, 10467, 10476	4036 - Organic Extraction
Separatory Funnel Extraction by Method 3510C for DRO in Water by California Methodology	1-P-QM-WI -9013446	Analysis 2376, 11169, 11180, 11187, 11188, 11198, 11199, 12820, 13156	4036 - Organic Extraction

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Separatory Funnel Extraction by Method 3510C for Tetraethyl Lead in Waters	1-P-QM-WI -9015101	Analysis DOD - 10472	4036 - Organic Extraction
Separatory Funnel Extraction by Method 3510C, 608 or 622 for Pesticides and PCBs in a Wastewater	1-P-QM-WI -9015079	Analysis DOD - 6654, 10241, 11112, 11113, 11114, 11116, 11117, 11118, 11119, 11120, 11121, 11123, 11126, 11960, 12026, 12822, 13086, 13093, 13183, 13187	4036 - Organic Extraction
Separatory Funnel Extraction for DRO and RRO by AK 102/103 in a Water Matrix	1-P-QM-WI -9013022	Analysis 11184, 11185, 11242, 13027, 13030	4036 - Organic Extraction
Separatory Funnel Extraction for the Determination of PAHs in Water by GC/MS Using Method 3510C	1-P-QM-WI -9015185	Analysis DOD - 7807	4036 - Organic Extraction
Separatory Funnel Extraction Method 3510C for DRO in Water or Wastewater	1-P-QM-WI -9015175	Analysis DOD - 7003, 10304, 11164, 11167, 11171, 11172, 11176, 11177, 11181, 11183, 11189, 11190, 11191, 11195, 11196, 11201, 11203, 11596, 12820, 12906, 12915, 12923, 13095, 13212	4036 - Organic Extraction
Separatory Funnel Extraction Method ECY 97-602 NWTPH-DX for TPH in a Water or Wastewater Matrix	1-P-QM-WI -9013424	Analysis 2135, 11197, 12007, 12119, 12120, 12907, 12916, 12924	4036 - Organic Extraction
Separatory Funnel Extraction of Pesticides and PCBs in Aqueous Samples by SW-846 Method 3510C for OH VAP	1-P-QM-WI -9022427	Analysis 11117, 11118 OH VAP	4036 - Organic Extraction
Separatory Funnel Extraction Procedure for the Determination of Base-Neutrals and Acid Extractables by SIM in a Wastewater Matrix	1-P-QM-WI -9015121	Analysis DOD - 11012, 10465, 10466, 10470, 10471, 11912	4036 - Organic Extraction
Separatory Funnel Extraction Procedure for the Determination of Base-Neutrals and Acid Extractables in a Wastewater Matrix by Method 625	1-P-QM-WI -9015188	Analysis DOD - 8108, 10463	4036 - Organic Extraction
Separatory Funnel Extraction Procedure for the Determination of Chlorinated Pesticides; Nitrogen and Phosphorus Containing Pesticides; and PCBs in a Drinking Water Matrix	1-P-QM-WI -9014001	Analysis 6368, 11127	4036 - Organic Extraction
Separatory Funnel Extraction Procedure for the Determination of Diesel Range Organics in a Water or Wastewater Matrix by Maine Methodology	1-P-QM-WI -9013014	Analysis 11165	4036 - Organic Extraction
Separatory Funnel Extraction Procedure for the Determination of Diesel Range Organics in a Water or Wastewater Matrix by Wisconsin Protocol	1-P-QM-WI -9013015	Analysis 11166	4036 - Organic Extraction
Separatory Funnel Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in a Water Matrix by Washington Methodology	1-P-QM-WI -9013019	Analysis 11175	4036 - Organic Extraction
Separatory Funnel Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in a Water or Wastewater Matrix by Massachusetts or New Jersey Protocol	1-P-QM-WI -9014170	Analysis 7326, 10980, 11200 MA/LA/NJ	4036 - Organic Extraction

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Separatory Funnel Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in a Water or Wastewater Matrix by Montana Protocol	1-P-QM-WI -9013018	Analysis 11174, 11243	4036 - Organic Extraction
Separatory Funnel Extraction Procedure for the Determination of Total Petroleum Hydrocarbon Organics in a Water or Wastewater Matrix by FL-PRO	1-P-QM-WI -9013017	Analysis 11170	4036 - Organic Extraction
Separatory Funnel Extraction Semivolatile Organic Compounds in an Aqueous Samples by SW-846 Method 3510C for OH VAP	1-P-QM-WI -9022472	Analysis 10464 OH VAP	4036 - Organic Extraction
Silica Gel Column Cleanup (Method 3630C Mod) for Hydrocarbons by GC in Aqueous Matrices	1-P-QM-WI -9020897	Analysis 12894	4036 - Organic Extraction
Silica Gel Fractionation for Hydrocarbons by GC in Soil and Water Matrices	1-P-QM-WI -9012711	Analysis 0497	4036 - Organic Extraction
Solid Phase Extraction Procedure for the Determination of THPA, THPI and PA in a Water Matrix	1-P-QM-WI -9012865	Analysis 11011	4036 - Organic Extraction
Solvent and Reagent Lot Testing for Organic Extractions	1-P-QM-PRO-9015476	DOD - SOP-OE-002	4036 - Organic Extraction
Sonic Disruption Extraction Procedure for the Determination of GC Fingerprint on Petroleum Products in Soil or Solid Matrix	1-P-QM-WI -9015151	Analysis DOD - 4833, 11227	4036 - Organic Extraction
Sonic Probe Extraction by FL-PRO for Petroleum Range Organics in Solids	1-P-QM-WI -9013026	Analysis 11208	4036 - Organic Extraction
Sonic Probe Extraction for the Determination of Extractable Total Petroleum Hydrocarbons in Soil or Solid Matrix Connecticut Methology	1-P-QM-WI -9013030	Analysis 11216	4036 - Organic Extraction
Sonic Probe Extraction for the Determination of Pesticides in a Solid Matrix	1-P-QM-WI -9015163	Analysis DOD - 11129, 11131, 11134	4036 - Organic Extraction
Sonic Probe Extraction for TPH in Solids by Washington DX	1-P-QM-WI -9014041	Analysis 7024, 11234, 12008, 12117, 12118	4036 - Organic Extraction
Sonic Probe Extraction of Glycols by Method 3550C from a Solid Matrix	1-P-QM-WI -9032542	Analysis 12933	4036 - Organic Extraction
Sonic Probe Extraction of Pesticides and PCBs in Solid Samples by SW-846 Method 3550C for OH VAP	1-P-QM-WI -9022432	Analysis 0819, 11134 OH VAP	4036 - Organic Extraction
Sonic Probe Extraction Procedure for the Determination of Extractable Petroleum Hydrocarbons in Soil or Solid Matrix Tennessee Methodology	1-P-QM-WI -9013031	Analysis 11217	4036 - Organic Extraction
Sonic Probe Extraction Procedure for the Determination of Polychlorinated Biphenyls (PCBs) in a Solid Matrix	1-P-QM-WI -9015081	Analysis DOD - 0819, 11128, 11132, 11135	4036 - Organic Extraction
Sonic Probe Extraction Procedure for the Determination of Semivolatiles in a Complex Matrix	1-P-QM-WI -9015189	Analysis DOD - 8108TJ	4036 - Organic Extraction
Sonic Probe Extraction Procedure for the Determination of Semivolatiles in a Solid Matrix by SIM	1-P-QM-WI -9015102	Analysis DOD - 10479, 10484, 10489, 11914	4036 - Organic Extraction
Sonic Probe Extraction Procedure for the Determination of Semivolatiles in Non-Aqueous Samples by SW-846 Method 3550C for OH VAP	1-P-QM-WI -9022476	Analysis 0381 10478 OH VAP	4036 - Organic Extraction

Document Title	Document ID	Historical Document ID	Document Owner
Level 3 – Environmental Sciences (continued)			
Sonication Extraction Method 3550C for DRO in Soils or Solids	1-P-QM-WI -9015176	Analysis DOD - 7004, 10303, 11204, 11205, 11209, 11215, 11218, 11219, 11225, 11228, 11229, 11233, 11236, 11237, 11238, 13097	4036 - Organic Extraction
Sonication Extraction of Nitroaromatics and Nitroamines by Method 8330/A/B in Soilds	1-P-QM-WI -9015173	Analysis DOD - 6917, 11137, 11138, 13433	4036 - Organic Extraction
Sonication Extraction Procedure for the Determination of Diesel Organics in Soil or Solid Matrix by Alaska Methodology	1-P-QM-WI -9015123	Analysis DOD - 11222, 11223, 11239, 11248	4036 - Organic Extraction
Sonication Extraction Procedure for the Determination of Diesel Organics in Soil or Solid Matrix Oklahoma Methodology	1-P-QM-WI -9013024	Analysis 11206	4036 - Organic Extraction
Sonication Extraction Procedure for the Determination of Diesel Range Organics in Soil or Solid Matrix California Methodology	1-P-QM-WI -9013025	Analysis 11207, 11214	4036 - Organic Extraction
Soxhlet Extraction (Method 3540C) for Triazine Herbicides and Organophosphorous Pesticides in a Solid Matrix	1-P-QM-WI -9015170	Analysis DOD - 6677, 11130, 11133, 11142, 13181, 13185	4036 - Organic Extraction
Soxhlet Extraction Procedure for Extractable Matter in Textiles	1-P-QM-WI -9015134	Analysis DOD - 1948, 1949, 1950, 1951, 1952	4036 - Organic Extraction
Spike Solution Testing and Approval	1-P-QM-PRO-9015482	DOD - SOP-OE-009	4036 - Organic Extraction
Steam Bath and N-Evap Usage, Calibration and Maintenance	1-P-QM-PRO-9015408	DOD - MC-OE-007	4036 - Organic Extraction
Ultrasonic Probe Horn Cleaning	1-P-QM-PRO-9015483	DOD - SOP-OE-010	4036 - Organic Extraction
Ultrasonic Processor Maintenance and Tuning	1-P-QM-PRO-9015405	DOD - MC-OE-002	4036 - Organic Extraction
Waste Dilution for the Determination of Saturated Hydrocarbons in an Oil Matrix	1-P-QM-WI -9013051	Analysis 11657	4036 - Organic Extraction
Waste Dilution Procedure for the Determination of Acid Extractables and Base-Neutrals in a Non-Water Soluble Leachate Matrix	1-P-QM-WI -9015150	Analysis DOD - 4731DIL	4036 - Organic Extraction
Waste Dilution Procedure for the Determination of Acid Extractables and Base-Neutrals in a Non-Water Soluble Matrix	1-P-QM-WI -9015071	Analysis DOD - 0381DIL	4036 - Organic Extraction
Waste Dilution Procedure for the Determination of PCBs in Oil	1-P-QM-WI -9015077	Analysis DOD - 0815	4036 - Organic Extraction
Waste Dilution Procedure for the Determination of Pesticides and PCBs in a Non-Water Soluble Leachate Matrix	1-P-QM-WI -9015080	Analysis DOD - 11114DIL	4036 - Organic Extraction
Analysis of Fluorotelomer Alcohols in Water, Wastewater, Soil and Sludges	1-P-QM-WI -9035224	Analysis 13969, 13977	4037 - Specialty Services Group
Determination of Dioxin-like Polychlorinated Biophenyls by HRGC/HRMS in Aqueous and Solid Matrices	1-P-QM-WI -9013071	Analysis 11773, 12416, 12942	4037 - Specialty Services Group
Determination of Diuron, Fenuron and Monuron in Soil Samples by LC/MS/MS	1-P-QM-WI -9013054	Analysis 11663	4037 - Specialty Services Group
Determination of Diuron, Fenuron and Monuron in Water Samples by SPE Extraction and LC/MS/MS	1-P-QM-WI -9013044	Analysis 11639	4037 - Specialty Services Group
Determination of Endothall in Soil Samples by LCMSMS	1-P-QM-WI -9015125	Analysis DOD - 11688	4037 - Specialty Services Group
Determination of Glycols in Waters by Direct Injection LC/MS/MS Method	1-P-QM-WI -9013111	Analysis 12060	4037 - Specialty Services Group
Determination of Hydrazine in Mainstream Smoke via Liquid Chromatography/Tandem Mass Spectrometry	1-P-QM-WI -9020139	NA	4037 - Specialty Services Group

Document Title	Document ID	Historical Document ID	Document Owner
Level 3 – Environmental Sciences (continued)			
Determination of Hydrazine, Monomethylhydrazine and 1,1-Dimethylhydrazinein Soil Samples by LC/MS/MS	1-P-QM-WI -9015096	Analysis DOD - 10346	4037 - Specialty Services Group
Determination of Hydrazine, Monomethylhydrazine and 1.1-Dimethylhydrazine in Aqueous Samples by LC/MS/MS Using SW-846 8315A Modified	1-P-QM-WI -9015095	Analysis DOD - 10342	4037 - Specialty Services Group
Determination of Multiple Client Specific APIs in Surface Water by LCMSMS	1-P-QM-WI -9023568	N/A	4037 - Specialty Services Group
Determination of PCB Homologs in Waters and Solids by Method 680	1-P-QM-WI -9034081	Analysis 13716, 13729	4037 - Specialty Services Group
Determination of Percentage Lipids in Animal and Marine Tissue	1-P-QM-WI -9032128	Analysis 13448	4037 - Specialty Services Group
Determination of Perchlorate in Milk and Milk Powder by LCMSMS	1-P-QM-WI -9013074	Analysis 11962, 11964	4037 - Specialty Services Group
Determination of Perfluorinated Compounds (PFCs) in Solids by Method 537 Modified Using LC/MS/MS	1-P-QM-WI -9035864	Analysis 14027	4037 - Specialty Services Group
Determination of Perfluorooctanoic Acid (PFOA) in Aqueous Samples by LC/MS/MS	1-P-QM-WI -9012866	Analysis 11016	4037 - Specialty Services Group
Determination of Selected Perfluorinated Alkyl Acids (PFAAs) in Aqueous Samples by LC/MS/MS by Method 537	1-P-QM-WI -9012802	Analysis 10954	4037 - Specialty Services Group
Determination of Tetra- Through Octa-Chlorinated Dioxins and Furans using HRGC/HRMS by EPA 1613B or SW-846 8290A	1-P-QM-WI -9015119	Analysis DOD - 10915, 11031, 11645, 11650, 12935, 12936, 12937, 13232, 13233	4037 - Specialty Services Group
DFS HRGC/HRMS Preventative and Corrective Maintenance	1-P-QM-PRO-9015412	DOD - MC-SP-001	4037 - Specialty Services Group
Extraction of Vegetation utilizing the QuEChERS (Quick, Easy, Cheap, Effective, Rugged, Safe) Technique for Pesticides	1-P-QM-WI -9013073	Analysis 11911	4037 - Specialty Services Group
Extraction of Water and Soil Samples by Method 680	1-P-QM-WI -9034059	Analysis 13730, 13731	4037 - Specialty Services Group
Extraction of Waters for Fluorotelomer Alcohols	1-P-QM-WI -9035209	Analysis 13976, 13978	4037 - Specialty Services Group
Glassware Cleaning for HRMS Extractions	1-P-QM-PRO-9025452	N/A	4037 - Specialty Services Group
Maintenance and Tuning for Thermo Scientific TSQ Quantum Access Tandem Mass Spectrometer with a Thermo Electron Accela HPLC System (LC/MS/MS)	1-P-QM-PRO-9018268	SOP-SP-001	4037 - Specialty Services Group
ORGANOTINS by KRONE et al. (1989) via GC/MS and Selected Ion Monitoring (SIM)	1-P-QM-WI -9028808	N/A	4037 - Specialty Services Group
PCB Congeners by Method 1668 HRGC/HRMS in Aqueous and Solid Matricies	1-P-QM-WI -9013114	Analysis 12154, 12429	4037 - Specialty Services Group
Processing High Resolution Mass Spectrometry Data Using TargetQuan	1-P-QM-PRO-9018269	SOP-SP-004	4037 - Specialty Services Group
Sample Extract Column Cleanup Procedure for HRMS Analysis	1-P-QM-PRO-9015510	DOD - SOP-SP-003	4037 - Specialty Services Group
Separatory Funnel Sample Extraction Procedure for HRMS Analysis in a Water Matrix	1-P-QM-WI -9015118	Analysis DOD - 10914	4037 - Specialty Services Group
Soxhlet Sample Extraction Procedure for HRMS Analysis in a Solid Matrix	1-P-QM-WI -9015122	Analysis DOD - 11030	4037 - Specialty Services Group
Standards Management in the High Resolution Mass Spectrometry Laboratory	1-P-QM-PRO-9018270	SOP-SP-005	4037 - Specialty Services Group

Document Title	Document ID	Historical Document ID	Document Owner
Level 3 – Environmental Sciences (continued)			
The Determination of Pesticides by Gas Chromatography/Tandem Mass Spectrometry (GC/MS/MS)	1-P-QM-WI -9013072	Analysis 11788	4037 - Specialty Services Group
Thermo Scientific Trace Ultra Gas Chromatograph Quantum XLS Tandem Mass Spectrometer (GC/MS/MS) Preventative and Corrective Maintenance	1-P-QM-PRO-9017429	MC-SP-002	4037 - Specialty Services Group
Archiving Department 4025 Raw Sample Data and Other Miscellaneous Data	1-P-QM-PRO-9015445	DOD - SOP-DP-022	4038 - Data Deliverables
Assembly and Review of Environmental Data Packages	1-P-QM-PRO-9017748	SOP-DP-037	4038 - Data Deliverables
Generation and Content Review of GLP Compliant Data Packages	1-P-QM-PRO-9017747	SOP-DP-034	4038 - Data Deliverables
Overchecking the Electronic Data Deliverable	1-P-QM-PRO-9015442	DOD - SOP-DP-009	4038 - Data Deliverables
Preparation of Data Packages on CD ROM	1-P-QM-PRO-9015444	DOD - SOP-DP-014	4038 - Data Deliverables
Processing and Sending Data Packages	1-P-QM-PRO-9015441	DOD - SOP-DP-007	4038 - Data Deliverables
Auditing Client Paperwork	1-P-QM-PRO-9015436	DOD - SOP-CL-007	4039 – Environmental Client Services
Client Concern and ISPD Code Entry	1-P-QM-PRO-9015439	DOD - SOP-CL-015	4039 – Environmental Client Services
Client/Prospects Visits	1-P-QM-PRO-9017799	SOP-MK-104	4039 – Environmental Client Services
Creating Bottle Orders	1-P-QM-PRO-9017701	SOP-CL-016	4039 – Environmental Client Services
Creating Project Information Lists	1-P-QM-PRO-9017702	SOP-CL-017	4039 – Environmental Client Services
Daily or Weekly DEP Reporting	1-P-QM-PRO-9017699	SOP-CL-012	4039 – Environmental Client Services
Monthly DEP Reporting	1-P-QM-PRO-9017700	SOP-CL-013	4039 – Environmental Client Services
Phone Log and Email Documentation	1-P-QM-PRO-9015435	DOD - SOP-CL-006	4039 – Environmental Client Services
Preparing Quotations	1-P-QM-PRO-9017698	SOP-CL-008	4039 – Environmental Client Services
Proposal Preparation	1-P-QM-PRO-9017800	SOP-MK-105	4039 – Environmental Client Services
Sample Set-Up Form Creation Guide	1-P-QM-PRO-9015438	DOD - SOP-CL-014	4039 – Environmental Client Services
Scheduling and Pricing of Rush Samples	1-P-QM-PRO-9015437	DOD - SOP-CL-010	4039 – Environmental Client Services
Tracking and Communicating Rush Results	1-P-QM-PRO-9015434	DOD - SOP-CL-005	4039 – Environmental Client Services
ELLE QA Reports to Management	1-P-QM-PRO-9020717	N/A	4052 - Environmental Quality Assurance
Environmental Quality Assurance Functions for GLP Compliance	1-P-QM-PRO-9018256	SOP-QC-032	4052 - Environmental Quality Assurance
Environmental Quality Assurance Review of Client Project and Bid Documents	1-P-QM-PRO-9022599	N/A	4052 - Environmental Quality Assurance
ETM System Probe Calibration	1-P-QM-PRO-9015418	DOD - MC-WQ-003	4052 - Environmental Quality Assurance
Hosting of Environmental Client and Agency Audits	1-P-QM-PRO-9022134	N/A	4052 - Environmental Quality Assurance
Maintenance of Environmental Certifications and Accreditations	1-P-QM-PRO-9018261	SOP-QC-039	4052 - Environmental Quality Assurance
Performing Electronic Data Audits using Mint Miner Software	1-P-QM-PRO-9018259	SOP-QC-036	4052 - Environmental Quality Assurance

Document Title	Document ID	Historical Document ID	Document Owner
Level 3 – Environmental Sciences (continued)			
Performing Environmental Quality Assurance Audits	1-P-QM-PRO-9020535	N/A	4052 - Environmental Quality Assurance
Proficiency Test and Double Blind Samples	1-P-QM-PRO-9018237	SOP-QC-003	4052 - Environmental Quality Assurance
QA Approval of Environmental Analytical Procedures and Standard Operating Procedures	1-P-QM-PRO-9022099	N/A	4052 - Environmental Quality Assurance
QA Processing for Bottle Lot and Preservative Checks	1-P-QM-PRO-9035857	N/A	4052 - Environmental Quality Assurance
Quality Assurance Review of End-of-Month QC Reports	1-P-QM-PRO-9018253	SOP-QC-028	4052 - Environmental Quality Assurance
Sample Pick-Up, Transportation, and Delivery	1-P-QM-PRO-9018293	SOP-TR-018	6041 - Transportation
Transportation Summary SOP	1-P-QM-PRO-9028514	N/A	6041 - Transportation
What to Do in Case of Vehicular Accident or Breakdown	1-P-QM-PRO-9018292	SOP-TR-010	6041 - Transportation
Assigning Sample Delivery Group Numbers and Five-Digit Sample Codes to Sample Groups	1-P-QM-PRO-9015506	DOD - SOP-SA-119	6042 - Environmental Sample Administration
Entry of Environmental Samples Requiring Subcontracting	1-P-QM-PRO-9015507	DOD - SOP-SA-129	6042 - Environmental Sample Administration
Environmental Sample Entry	1-P-QM-PRO-9015502	DOD - SOP-SA-101	6042 - Environmental Sample Administration
Environmental Sample Receipt and Unpacking	1-P-QM-PRO-9015504	DOD - SOP-SA-103	6042 - Environmental Sample Administration
Filing of Sample Information	1-P-QM-PRO-9015505	DOD - SOP-SA-107	6042 - Environmental Sample Administration
Sample Receipt at Sample Receipt Desk	1-P-QM-PRO-9015503	DOD - SOP-SA-102	6042 - Environmental Sample Administration
Taking the Temperature of Environmental Samples Upon Arrival at the Lab	1-P-QM-PRO-9015508	DOD - SOP-SA-138	6042 - Environmental Sample Administration
ASRS Emergency Failure Procedure	1-P-QM-PRO-9015523	DOD - SOP-SS-024	6055 - Sample Support
Automated Storage and Retrieval System (ASRS) Lockout/Tagout Procedure	1-P-QM-PRO-9015518	DOD - SOP-SS-019	6055 - Sample Support
Automated Storage, Retrieval, and Discarding of Samples	1-P-QM-PRO-9015512	DOD - SOP-SS-006	6055 - Sample Support
Bulk Solid Sample Preparation by SW-846 5035A for OH VAP	1-P-QM-WI -9012777	Analysis 11967 OH VAP	6055 - Sample Support
GC/MS - Bulk Solid Matrix Sample Preparation	1-P-QM-WI -9015069	Analysis DOD - 0374, 6646, 10445, 11966, 11967	6055 - Sample Support
Glassware Cleaning	1-P-QM-PRO-9018271	SOP-SS-026	6055 - Sample Support
Hardware Procedures for ASRS	1-P-QM-PRO-9015515	DOD - SOP-SS-015	6055 - Sample Support
Homogenization, Sample Splitting, and Subsampling of Solid Waste Samples from Environmental Sources	1-P-QM-PRO-9015513	DOD - SOP-SS-009	6055 - Sample Support
Instructions for Collecting Data on the LLENS System	1-P-QM-PRO-9015520	DOD - SOP-SS-021	6055 - Sample Support
Liquid Sample Preservation	1-P-QM-PRO-9015511	DOD - SOP-SS-002	6055 - Sample Support
Maintenance of Desiccators	1-P-QM-PRO-9015414	DOD - MC-SS-002	6055 - Sample Support
Moisture (Gravimetric)	1-P-QM-WI -9015065	Analysis DOD - 0111, 6111, 7611, 11624, 12845	6055 - Sample Support
Non-Automated Storage, Retrieval, and Discarding of Samples	1-P-QM-PRO-9015521	DOD - SOP-SS-022	6055 - Sample Support
Outlier Quality Control Data	1-P-QM-PRO-9015519	DOD - SOP-SS-020	6055 - Sample Support
Percent Solids by SM 2540G-1997	1-P-QM-WI -9015183	Analysis DOD - 7400	6055 - Sample Support

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Level 3 – Environmental Sciences (continued)			
Pipette Dispenser Calibration Procedure	1-P-QM-PRO-9015517	DOD - SOP-SS-018	6055 - Sample Support
Preparation of Soil and Solid Samples for GC Volatile Analyses	1-P-QM-WI -9015124	Analysis DOD - 1150, 6170, 11968, 11969	6055 - Sample Support
Preparation of Soils for Volatile Analysis by EPA SW-846 Method 5035	1-P-QM-WI -9015193	Analysis DOD - 8389, 8390, 6130, 6117, 6174, 7578, 7320	6055 - Sample Support
Preparation of Solid Samples by SW-846 Method 5035A (Field Preserved and EnCores) for OH VAP	1-P-QM-WI -9022845	Analysis 2392, 6171, 6176, 7320, 7578, 7579, 8389, 8390 OH VAP	6055 - Sample Support
Preparation of Vials for Field Preservation of Soils for Volatile Analysis	1-P-QM-WI -9015073	Analysis DOD - 0388, 6119, 6169, 6647, 0405, 1169, 6171, 6172, 6173, 6645, 2392, 6176, 7579, 0069, 11014, 11764	6055 - Sample Support
Prescreening Water and Soil Samples for Volatile Organic Compounds	1-P-QM-PRO-9015522	DOD - SOP-SS-023	6055 - Sample Support
Preservation and Bottles Room Preservative Traceability	1-P-QM-PRO-9015516	DOD - SOP-SS-017	6055 - Sample Support
Sample Preparation of Solid Samples for Extraction and Analysis by SW-846 8330B	1-P-QM-PRO-9030806	N/A	6055 - Sample Support
Sample Support Ovens	1-P-QM-PRO-9015413	DOD - MC-SS-001	6055 - Sample Support
Subsampling for Subcontracted Analyses	1-P-QM-PRO-9015514	DOD - SOP-SS-010	6055 - Sample Support
Tobacco Moisture	1-P-QM-WI -9015168	Analysis DOD - 6611	6055 - Sample Support
Water Content (Moisture) by ASTM D 2216	1-P-QM-WI -9014166	Analysis 7116, 7119	6055 - Sample Support
Bottle Preparation	1-P-QM-PRO-9018263	SOP-SB-003	6059 - Sample Bottles
Packing Bottle Orders	1-P-QM-PRO-9018264	SOP-SB-008	6059 - Sample Bottles
Preparation of Acid Dilutions	1-P-QM-PRO-9018267	SOP-SB-017	6059 - Sample Bottles
Preparation of Trip Blanks	1-P-QM-PRO-9018265	SOP-SB-012	6059 - Sample Bottles
Processing Bottle Orders	1-P-QM-PRO-9018266	SOP-SB-016	6059 - Sample Bottles

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Instrument	# of Units	Manufacturer/Model #
Liquid Chromatography/Gas Chromatography/Mass Spectrometry (LC/GC/MS)		
LC/MS/MS	1	AB Sciex 4000 with Agilent 1100 Series LC
LC/MS/MS	1	Agilent 1200 LC with Agilent 6410 MS/MS
LC/MS/MS	1	Agilent 1290 LC with Micromass Quattro micro MS/MS and Waters 2996 Photodiode Array UV-Vis Detector
LC/MS/MS	1	Thermo Scientific TSQ Quantum Access with Acella LC
LC/MS/MS	2	Waters 2795 LC with Micromass Quattro micro MS/MS
GC/MS	2	Agilent 5972
GC/MS	20	Agilent 5973
GC/MS	10	Agilent 5975
GC/MS	3	Agilent 5977A
GC/MS	2	Shimadzu
GC/MS	1	Thermo Scientific ISQ
GC/MS	1	DSQ II MS with Trace GC Ultra GC
GC/MS/MS	1	Thermo TSQ 8000 MSMS with Trace 1310 GC
GC/MS/MS	1	Thermo TSQ Quantum XLS MSMS with Trace GC Ultra GC
HRGC/HRMS	4	Thermo Scientific DFS
Gas Chromatograph	13	Agilent 5890
Gas Chromatograph	40	Agilent 6890
Gas Chromatograph	2	Shimadzu
Gas Chromatograph	26	Agilent 7890
Gas Chromatograph	1	Varian 3400
Auxiliary Equipment for Gas Chromatographs		
Most of the GC/MS and GC systems include autosamplers and approximately half are fitted with purge and trap concentrators for analysis of volatiles.		
Purge/Trap Concentrators	30	OI 4560/4660
Autosamplers	13	Archon 5100/5100A
Autosamplers	20	Agilent 7673
Autosamplers	21	Agilent 7683
Autosamplers	28	Agilent 7693
Autosamplers	6	OI 4551/4552
Autosamplers	5	EST Centruion
Autosamplers	7	Thermo Scientific AS TriPlus
Autosamplers	3	CTC Combipal Headspace
Automated Sampling System (Tedlar Bags)	1	Tekmar 2016/2032/LSC2000
Automated Sampling System (Summa Canisters)	3	Entech 7016CR Autosamplers
Automated Sampling System (Tedlar Bags/Summa Canisters)	1	Entech 7032A
Automated Sampling System (Tedlar Bags/Summa Canisters)	1	Markes CIA-A HL Satellite Autosampler
Automated Concentrator	3	Entech 7100
Automated Concentrator	1	Markes Unity 2/CIA-A HL
Automated Summa Canister Cleaning System	1	Wasson/TO-Clean
Detectors available for GC: Electron Capture, Flame Ionization, Photoionization, Hall Electrolytic Conductivity, Nitrogen/Phosphorus, and Thermal Conductivity. All of the chromatographs are connected to electronic integration systems.		

High Performance Liquid Chromatography		
High Performance Liquid Chromatograph	2	Agilent 1100 LC
High Performance Liquid Chromatograph	2	Agilent 1200 HPLC
High Performance Liquid Chromatograph	1	Waters alliance 2695
High Performance Liquid Chromatograph	1	Waters alliance 2795
Gel Permeation Chromatography		
Gel Permeation Chromatograph	3	J2Scientific AccuPrep
Ion Chromatography		
Ion Chromatograph	1	Metrohm 881 IC Pro
Ion Chromatograph	1	Dionex ICS1000
Ion Chromatograph	1	Dionex ICS3000
Ion Chromatograph	1	Dionex ICS2000
Ion Chromatograph	4	Dionex ICS1100
Atomic Absorption/Emission Spectrophotometry		
ICAP^{TM} 6000 Duo ICP Analyzer	4	Thermo
ICP/MS	1	P/E Sciex Elan 9000
ICP/MS	1	Agilent 7500ce
ICP/MS	1	Agilent 7700x
Mercury Analyzer	2	Leeman Labs Hydra II
Mercury Analyzer	1	Leeman Labs HYDRA AF_{GOLD+}
Prep Station	3	Thomas Cain DEENA 60
UV Vis/IR Spectrophotometry:		
UV-Vis Spectrophotometer	3	Spectronic Genesys
UV-Vis Spectrophotomenter	1	Hach DR2800
Miscellaneous Chemistry Instrumentation		
Auto-titrator System	2	Mantech
Block Digestion Systems	8	Environmental Express SC150
Block Digestion Systems	6	Environmental Express SC154
Centrifuge	5	Various
Chilled water recirculators		Various
Closed Cup Flashpoint Apparatus, Pensky-Martin	1	Fisher Scientific TA6
Cyanide Midi Distillation Kits	3	Various
Dissolved Oxygen Meter	1	YSI Model 59
Flow Solution Autoanalyzer	2	Alpkem
Glassware washer - automated	6	Miele – (2) PG8257 (1) G7827 (1) G7704 (2) G7883
Kjehldal Distillation Apparatus	2	Fisher
Microwave Extractors	3	CEM MarsXpress
pH meters	13	Various
Phenol Midi Distillation	2	Andrews Glass
Pressurized Solvent Extractor	2	Dionex ASE200
Puck Mill	1	ESSA/2000
Sonicators	12	Various
Total Organic Carbon Analyzer	2	O.I. Corp. 1030
Total Organic Carbon Combustion Analyzer	1	O.I. Corp. 1010
Turbidimeter	1	Hach 2100AN
Zero Headspace Extractor	74	Various Models

Microbiology Equipment		
Autoclave	2	Steris – Amsco,
Balance	5	Mettler, PB 3002
Balance	1	Mettler-Toledo, AT200
Balance	2	Mettler-Toledo, PR2002
Balance	1	Sartorius BP4100
Biological Safety Cabinet	4	NuAire NU-425-600 Type A/B 3
Biological Safety Cabinet	1	NuAire NU-435-600 Type B2 Fume Hood
Colony Counter	1	Quebec Dark Field
Incubator	1	PGC 9311-1127
Incubator	1	PS WFY20SAWI
Microscope	1	Stereoscope with Zoom, AO Model 570
Microscope	1	Zeiss
pH Meter	2	Orion Model 410A
Quanti-Tray Sealer	1	IDEXX Model 2X
Water Bath	1	Boekel Grant with Removal Heater Circulator
Water Bath	1	Thermo Electron Corp.
Water Bath	1	Precision Coliform Incubator Bath
Water Bath	1	VWR 1275PC
Water Bath	2	Thermo Scientific Model 2862
UV Light	1	Spectronics

Computer Equipment

Our laboratories make extensive use of computers for business applications, technical operations (e.g., our sample management system), and QA Program (see section on Quality Assurance). The following is a list of the major components of our computer systems.

Numerous physical and virtual servers used to support the systems

Oracle systems run on IBM UNIX servers:

- One IBM Power 740 Server running AIX UNIX with 6 - 3.3 GHz Power7 Cores CPUs, 128GB RAM.
- One IBM P5-520 Server running AIX UNIX with 4-way 1.90GHz CPUs, 24GB RAM.
- 40+ Terra Bytes of disk storage and several SAN devices including V7000, DS4100, HP2000 and Clarion CX4-40.
- Various tape backup systems
- On-line fail over databases are available for all corporate production Oracle databases.

Networks/Telecommunication:

- TCP/IP based network
- Ten Gigabit switch to accommodate company server farm
- Dual Cisco 6506E network cores

Personal Computers/Servers:

- Internet access is provided with an ASA firewall to control incoming and outgoing traffic
- ArcServe backup server
- Microsoft Exchange server
- Dell PowerEdge file and print servers
- More than 30 Network File Servers
- More than 1000 Personal Computers

Power Systems:

- 3 Phase Power Supply
- Backup generators for life safety and sample integrity preservation

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Effective Date	Aug 8, 2014	Status	Effective
Historical/Local Document Number	DOD - Environmental Quality Policy Manual Appendix G		
Local Document Level	Level 1		
Local Document Type	POL - Policy		
Local Document Category	ES - Environmental Sciences		

Prepared by	Kathryn Brungard
Reviewed and Approved by	Duane Luckenbill;Review;Tuesday, July 29, 2014 11:01:38 AM EDT Robert Strocko;Review;Wednesday, July 30, 2014 1:13:46 PM EDT Dorothy Love;Approval;Wednesday, July 30, 2014 2:16:10 PM EDT

Preventive Maintenance Schedule

Instrument	Preventive Maintenance	Frequency
GC/MS GC/MS/MS	Change septum	AN* : Min. weekly
	Clean/replace injection port seal & liner	AN
	Check/clean fans	Monthly or AN
	Check/clean cool flow	Monthly or AN
	Clean source and replace parts	Bimonthly or AN
	Change oil in diffusion pump	Annually or AN
	Change oil and service rough pump	Annually
	Change column	AN
GC and GC/MS Purge and Trap Concentrators	Check gas flows and pressures	Prior to calib. or AN
	Replace adsorbent trap in concentrators	AN
	Flush purge pathways	Monthly or AN
	Clean/replace water management	AN
GC	Septum change	AN: Min. weekly
	Column/injection port maintenance	AN
	Clean detector	AN
	Leak check ECDs	Semiannually
	Change/clean PID lamp	AN
	Change/clean/Replace FID parts	AN
	Change column	AN
GC/HRMS	System bakeout	AN
	Replacing the Secondary Electron Multiplier (SEM)	AN
	Adjusting potentials on ion source	AN
	Check sensitivity and resolution on ion source	Daily
	Cleaning ion source	AN
	Replace filament on ion source	AN
	Cleaning reference inlet	AN
	Check oil level on forepumps	monthly
	Change oil on forepumps	Yearly or if oil is cloudy or discolored
	Exchange lubricant reservoir on turbopumps	Yearly or after 5000 hours of operation
	Replace injection port liner	AN
	Clip injection port end of column	AN
	Replace septum	AN
	Clean chiller water/air filters and inspect fluid level	Monthly
	Change column	AN
LC/MS/MS	Change rough pump (vacuum) oil	Annually
	Clean cones and spray chamber	As needed, before each calibration
	Clean source and ion lenses	Annually
	Check electrospray capillary	AN
	Empty waste liquid reservoir	AN
	Tune and calibrate MS	AN

Instrument	Preventive Maintenance	Frequency
HPLC	Pump lubrication	Annually
	Check pump seals	Annually
	Check-valves cleaned or rebuilt	AN
	Replace and/or adjust detector bulb	AN
	Clean detector flow cell	AN
	Replace Teflon lines	AN
	Autosampler septa replacement	AN
	In-line filter sonication/cleaning	AN
	System passivation	AN
	PCRS pump lubrication	AN
	Empty waste liquid reservoir	AN
Cold Vapor AA and Cold Vapor AF	Replace pump tubing	AN
	Lubricate pump head & autosampler	AN
	Clean optical cells and windows	AN
ICP	Replace pump winding	AN
	Lubricate autosampler	AN
	Vacuum instrument airfilters and air intakes	AN
	Clean optics and lenses	AN
	Clean Torch and injector tip	AN
	Clean nebulizer and spray chamber	AN
ICP/MS	Change interface rough pump oil	AN
	Change MS rough pump oil	AN
	Clean cones and ion lenses	AN
	Clean Torch, injector tip, nebulizer and spray chamber	AN
	Change peristaltic tubing	AN
	Vacuum instrument airfilters and air intakes	AN
	Empty waste liquid reservoir	AN
Total Organic Carbon Analyzer	Check for leaks	AN
	Inspect rotary valve	AN
	Clean gas permeation tube	AN
	Check halide scrubber	AN
	Check dessicant tube	AN
	Dust back and clean circuit boards	AN
Autoanalyzer spectrophotometer	Clean sample probe	AN
	Clean proportioning pump	AN
	Inspect pump tubing, replace if worn	AN
	Clean wash receptacles	AN

*AN = as needed. These actions may be performed more frequently as required by the instrument's operational response.

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Local Document Type	POL - Policy		
Local Document Category	ES - Environmental Sciences		

Prepared by	Barbara F. Reedy
Reviewed and Approved by	Duane Luckenbill;Review;Sunday, December 13, 2015 10:30:21 PM EST Dorothy Love;Approval;Thursday, December 17, 2015 3:57:57 PM EST

Details on method/instrument calibration processes are provided in the individual Analytical Procedures. This appendix provides an overview for representative methodology.
Note: This appendix is not applicable to OH VAP work. See the OH VAP approved SOPs for calibration information.

Calibration Summary for SW-846 Methods

	Initial Calibration			Continuing Calibration Verification		
Instrument	Frequency	# Std Conc	Acceptance Criteria	Frequency	# Std Conc	Acceptance Criteria
GC/MS Volatiles* (8260B)	After C-cal fails	6	RF for SPCCs >0.300 for chlorobenzene and 1,1,2,2-tetrachloroethane, and >0.100 for 1,1-dichloroethene, bromoform and chloromethane %RSD CCCs <30%	Every 12 hours	1	RF for SPCCs >0.300 for chlorobenzene and 1,1,2,2-tetrachloro-ethane, and >0.100 for 1,1-dichloroethene, bromoform and chloromethane %Drift for CCCs <20
GC/MS Volatiles* (8260C)	After C-cal fails	7	RF must meet minimum RF listed in SOP %RSD of <20% for all analytes (10% may fail)	Every 12 hours	1	RF must meet minimum RF listed in SOP %Drift for CCCs <20, 20% can fail if not detected in proceeding samples
GC/MS Semivolatiles (8270C)*	After C-cal fails	6	RF for SPCCs >0.050 Max %RSD for CCCs <30%	Every 12 hours	1	RF for SPCCs 0.050 %Drift for CCCs <20
GC/MS Semivolatiles (8270D)*	After C-cal fails	6	% RSD ≤ 20% for each compound, (no more than 10% of the compounds can exceed 20% RSD); alternate fit must be used for any analyte with RSD >20% (use linear fit if correlation coefficient is 0.990 or greater; if correlation coefficient is < 0.990 then quadratic fit can be used, but the coefficient of determination must be 0.990 or greater). If linear fit is used, it must pass a linear regression check (the low standard must be within 30% of its true concentration)	Every 12 hours	1	%Drift ± 20%; (no more than 20% of the compounds can exceed 20% drift, and all compounds that exceed 20% drift must be ≤ 50% drift)
GC/MS Semi-volatiles SIM	After C-cal Fails	6	% RSD for all compounds ≤20%	Every 12 hours	1	%Drift ± 20%

Calibration Summary for SW-846 Methods

	Initial Calibration			Continuing Calibration Verification		
Instrument	Frequency	# Std Conc	Acceptance Criteria	Frequency	# Std Conc	Acceptance Criteria
GC VOA	After C-cal fails	At least 5	% RSD ≤20% for individual compounds. Alternatively, if the average of the %RSDs of all compounds in the calibration standard is ≤20% then the average RF can be used for all compounds.	Every 10 samples	1	%Drift ± 15% for individual compounds or average % drift for all compounds in the standard ± 15%
GC Pesticides (8081A)	After C-cal fails	5	20% RSD of RFs of initial calibration to use avg. RF, otherwise use curve fit. Degradation for DDT, endrin 15% Alternatively, if the average of the %RSDs of all compounds in the calibration standard is ≤20%, then the AVG RF can be used for all compounds.	Every 20 samples or 12 hours	1	≤15% drift from initial response for quantitation C-cal - A CCV is also compliant if the average % difference is ≤15% for all compounds in the CCV standard. DDT/Endrin breakdown check 15% every 12 hours or 20 injections
GC Pesticides (8081B)	After C-cal fails	5	20% RSD of RFs of initial calibration to use avg. RF, otherwise use curve fit. Degradation for DDT, endrin 15%	Every 20 samples or 12 hours ,	1	≤20% drift from initial response for quantitation DDT/Endrin breakdown check 15% every 12 hours or 20 injections
GC PCBs (8082)	After C-cal fails	5	20% RSD of RFs of initial calibration to use avg. RF, otherwise use curve fit. Alternatively, if the average of the %RSDs of all compounds in the calibration standard is ≤20%, then the AVG RF can be used for all compounds.	Every 20 samples or 12 hours	1	≤15% drift from initial response for quantitation C-cal - A CCV is also compliant if the average % difference is ≤15% for all compounds in the CCV standard.
GC PCBs (8082A)	After C-cal fails	5	20% RSD of RFs of initial calibration to use avg. RF, otherwise use curve fit.	Every 20 samples or 12 hours	1	≤20% drift from initial response for quantitation
GC Herbicides (8151A)	After C-cal fails	5	20% RSD of RFs of initial calibration to use avg. RF, otherwise use curve fit. Alternatively, if the average of the %RSDs of all compounds in the calibration standard is ≤20%, then the AVG RF can be used for all compounds.	Every 10 samples	1	≤15% drift from initial response for quantitation C-cal - A CCV is also compliant if the average % difference is ≤15% for all compounds in the CCV standard.

Calibration Summary for SW-846 Methods

	Initial Calibration			Continuing Calibration Verification		
Instrument	Frequency	# Std Conc	Acceptance Criteria	Frequency	# Std Conc	Acceptance Criteria
Explosives by HPLC (8330)	Each new run or after C-cal fails	5	20% RSD of RFs of initial calibration to use average RF, otherwise use curve fit Alternatively, if the average of the %RSDs of all compounds in the calibration standard is ≤20%, then the AVG RF can be used for all compounds.	Every 10 samples	1	≤15% drift from initial response for quantitation C-cal - A CCV is also compliant if the average % difference is ≤15% for all compounds in the CCV standard.
Explosives by HPLC (8330A/B)	Each new run or after C-cal fails	5	20% RSD of RFs of initial calibration to use average RF, otherwise use curve fit	Every 10 samples	1	≤20% drift from initial response for quantitation
Congeners by HRGC/HRMS	After C-cal fails	6	If %RSD for native compounds <20% and for labeled compounds <35%, otherwise a calibration curve is used	Every 12 hours	1	<15% valley peak resolution for 2378-TCDD All native and labeled compounds meet method defined recovery limits RTs within ±15 secs of RT in ICAL
Dioxins by HRGC/HRMS	After C-cal fails	6	If %RSD for native compounds <20% and for labeled compounds <35%, otherwise a calibration curve is used	Every 12 hours	1	<25% valley peak resolution for 2378-TCDD All native and labeled compounds meet method defined recovery limits RTs within ±15 secs of RT in ICAL
GC TPH-GRO	After C-cal fails	At least 5	% RSD of <20% to use the average CF, otherwise use calibration curve	Every 12 hours	1	%Drift ±15%
GC TPH-DRO (8015B)	After C-cal fails	5	20% RSD of RFs of initial calibration to use average RF, otherwise use curve fit.	Every 12 hours	1	% Drift ±15%
GC TPH-DRO (8015C/D)	After C-cal fails	5	20% RSD of RFs of initial calibration to use average RF, otherwise use curve fit.	Every 12 hours	1	% Drift ±20%
ICP/MS	Each new run	1	Independent calibration verification (ICV) within ±10%	Every 10 samples	1	±10% of true value
ICP	Each new run	1	Independent calibration verification within ±10%, standards <5%RSD	Every 10 samples	1	Same as initial
CVAA	Each new run	5	Independent calibration verification within ±10% Correlation coefficient >0.995	Every 10 samples	1	±20% of true value

Calibration Summary for SW-846 Methods

	Initial Calibration			Continuing Calibration Verification		
Instrument	Frequency	# Std Conc	Acceptance Criteria	Frequency	# Std Conc	Acceptance Criteria
Autoanalyzer	Daily	6	Correlation coefficient >0.995	Every 10 samples	1	±10% of true value
TOC Analyzer	Monthly	Water – 6 Soil – 4	Corr. Coeff. > 0.995	Every 10 samples	1	±10% of true value
Balance	Daily	bracket range of use	Top-loading: ± 2% or ± 0.02g of true value of weight, whichever is greater. Analytical: ± 0.1% or ± 0.5mg of true value of weight, whichever is greater.	N/A	N/A	N/A

*All compounds with %RSD >15 must use first or second order regression fit of the six calibration points. Alternatively, if average of the %RSD of all compounds in calibration standard is ≤15%, the AVG RF can be used for all compounds.

Abbreviations
Std Conc - The number of standard concentrations used
%RSD - Percent Relative Standard Deviation CF – Calibration Factor
SPCCs - System Performance Check Compounds
CCCs - Calibration Check Compounds C-cal - Continuing Calibration
RF - Response factor
CVAA - Cold Vapor Atomic Absorption
ICP/MS - Inductively Coupled Plasma – Mass Spectrometry
ICP - Inductively Coupled Plasma spectrophotometer; ICP run also includes inter-element correction check standard (at beginning and end of run)

GC/MS Tuning Criteria

BFB Key Ions and Ion Abundance Criteria:

Mass	Method 8260B	Method 524.2
50	15% to 40% of mass 95	15% to 40% of mass 95
75	30% to 60% of mass 95	30% to 80% of mass 95
95	Base peak = 100%	Base peak = 100%
96	5% to 9% of mass 95	5% to 9% of mass 95
173	<2% of mass 174	<2% of mass 174
174	>50% of mass 95	>50% of mass 95
175	5% to 9% of mass 174	5% to 9% of mass 174
176	>95% but <101% of mass 174	>95% but <101% of mass 174
177	5% to 9% of mass 176	5% to 9% of mass 176

DFTPP Key Ions and Ion Abundance Criteria:

Mass	Method 8270D	Method 8270C	Method 525.2
51	30 % to 80 % of mass 198	30 % to 60 % of mass 198	10 % to 80 % of base peak
68	<2% of mass 69	<2% of mass 69	<2% of mass 69
69	mass 69 relative	mass 69 relative abundance	mass 69 relative abundance

	abundance		
70	<2% of mass 69	<2% of mass 69	<2% of mass 69
127	25 % to 75 % of mass 198	40% to 60 % of mass 198	10% to 80 % of base peak
197	<1% of mass 198	<1% of mass 198	<2% of mass 198
198	Base Peak = 100%	Base Peak = 100%	Base peak or >50 % of mass 442
199	5% to 9% of mass 198	5% to 9% of mass 198	5% to 9% of mass 198
275	10% to 30% of mass 198	10% to 30% of mass 198	10% to 60% of base peak
365	>0.75% of mass 198	>1% of mass 198	>1% of base peak
441	Present but < 24% mass 442	Present but < mass 443	Present but < mass 443
442	>50% of mass 198	>40% of mass 198	Base peak or >50% of mass 198
443	15% to 24% of mass 442	17% to 23% of mass 442	15% to 24% of mass 442

Calibration Summary for Drinking Water Methods

	Initial Calibration			Continuing Calibration Verification		
Instrument	Frequency	# Std Conc	Acceptance Criteria	Frequency	# Std Conc	Acceptance Criteria
GC/MS 525.2	After C-cal fails	6	The RSD for each analyte mean RF must be ≤30%. Or a linear regression calibration curve may be used.	Every 12 hours	1	%D for RF must be ≤30%. If curve used, the point must fall on curve from I-cal.
GC 504.1	Every new run	5	% RSD <20% to use Average RF, otherwise use calibration curve.	Every 10 samples or each batch if <10 samples	1	70% to 130% of expected value
GC/MS 524.2	After C-cal fails	4	% RSD <20% otherwise use calibration curve	Every 12 hours	1	%D for RF must be ≤30%. If curved used, the % recovery based on the concentration spiked must be 70% to 130% of expected value.
GC 507 515.1	Each new run, or after C-cal fails	3	≤20% RSD of RFs of Initial Calibration to use avg. RF, otherwise use curve fit. (Degradation for DDT, Endrin ≤20% initially - Method 508.)	Every 10 samples	1	≤20% drift from initial response for both quantitation and confirmation.
HPLC 531.1	Each new run, or after C-cal fails	3	≤20% RSD of RFs of initial calibration to use avg. RF, otherwise use curve fit	Every 10 samples and/or blanks	1	≤20% drift from initial response.
Mercury auto-analyzer	Each new run	5	Initial calibration verification with ±5%	Every 10 samples	1	±10% of true value
Auto-analyzer	Daily	6	Correlation coefficient >0.995	Every 10 samples	1	±10% of true value
Balance	Daily	bracket range of use	Top-loading: ± 2% or ± 0.02g of true value of weight, whichever is greater. Analytical: ± 0.1% or ± 0.5mg of true value of weight, whichever is greater.	N/A	N/A	N/A

Calibration Summary for Drinking Water Methods

	Initial Calibration			Continuing Calibration Verification		
Instrument	Frequency	# Std Conc	Acceptance Criteria	Frequency	# Std Conc	Acceptance Criteria
ICP	Each new run	1	Initial calibration verification ±5%	Every 10 samples	1	±10% of true value
ICP-MS	Each new run	1	Independent calibration verification within ±10%	Every 10 samples	1	±15% of true value
pH meter	Daily	3	See SOP	Every 10 samples	1	Statistical limits
IC	Monthly	5	Correlation coefficient >0.995	Every 10 samples	1	±10% of true value
ISE	Every 3 months	5	Correlation coefficient >0.995	Every 10 samples	1	±10% of true value

Abbreviations

Std Conc - The number of standard concentrations used
SPCCs - System Performance Check Compounds
CCCs - Calibration Check Compounds
RF - Response Factor
%RSD - Percent Relative Standard Deviation
%D - Percent Difference
C-cal - Continuing Calibration
CVAF – Cold Vapor Atomic Fluorescence
HPLC - High Performance Liquid Chromatography
GC - Gas Chromatograph
GC/MS - Gas Chromatography/Mass Spectrometry
ICP - Inductively Coupled Plasma spectrophotometer
ICP/MS - Inductively Coupled Plasma – Mass Spectrometry
IC - Ion Chromatograph
ISE - Ion Specific Electrode

Method 507 **Laboratory Performance Check Solution (analyzed prior to system calibration)**			
Test	Analyte	Conc. µg/mL	Requirements
Sensitivity	Vernolate	0.05	Detection of analyte; S/N > 3
Chromatographic performance	Bromacil	5.0	0.80 < PGF[a] <1.20
Column performance	Prometon Atrazine	0.30 0.15	Resolution[b] > 0.7

[a]PGF - Peak Gaussian factor. Calculated using the equation:

$$PGF = \frac{1.83 \times W(1/2)}{W(1/10)}$$

Where W(1/2) is the peak width at half height and W(1/10) is the peak width at 10% peak height.

[b]Resolution between the two peaks as defined by the equation:

$$R = \frac{t}{W}$$

Where t is the difference in elution times between the two peaks and W is the average peak width, at the baseline, of the two peaks.

Method 531.1

Laboratory Performance Check Solution (analyzed prior to system calibration)

Test	*Analyte*	Conc. µg/mL	Requirements
Sensitivity	3-Hydroxycarbofuran	2	Detection of analyte; S/N > 3
Chromatographic performance	Aldicarb Sulfoxide	100	0.90 < PGF < 1.1[a]
Column performance	Methiocarb4-Bromo-3,5-Dimethylphenyl N-Methylcarbamate (IS)	20 10	Resolution > 1.0[b]

[a]PGF - Peak Gaussian factor. Calculated using the equation:

$$PGF = \frac{1.83 \times W(1/2)}{W(1/10)}$$

Where: W(1/2) is the peak width at half height in seconds
W(1/10) is the peak width in seconds at 10% peak height.

[b]Resolution between the two peaks as defined by the equation:

$$R = \frac{t}{W}$$

Where: t is the difference in elution times between the two peaks
W is the average peak width, at the baseline, of the two peaks.

Method 515 **Laboratory Performance Check Solution (analyzed prior to system calibration)**			
Test	Analyte	Conc. µg/mL	Requirements
Sensitivity	Dinoseb	0.004	Detection of analyte; S/N >3
Chromatographic performance	4-Nitrophenol	1.6	0.70 < PGF[a] < 1.05
Column performance	3,5-Dichlorobenzoic acid 4-Nitrophenol	0.6 1.6	Resolution[b] >0.40

[a]PGF - Peak Gaussian factor. Calculated using the equation:

$$PGF = \frac{1.83 \times W(1/2)}{W(1/10)}$$

Where W(1/2) is the peak width at half height and W(1/10) is the peak width at tenth height.

[b]Resolution between the two peaks as defined by the equation:

$$R = \frac{t}{W}$$

Where t is the difference in elution times between the two peaks and W is the average peak width, at the baseline, of the two peaks.

Calibration Summary for EPA 100, 200, 300, 600 & 1600 Series Methods

	Initial Calibration			Continuing Calibration Verification		
Instrument	Frequency	# Std Conc	Acceptance Criteria	Frequency	# Std Conc	Acceptance Criteria
GC/MS Volatiles*	After C-cal fails	5	RSD ≤35% for all compounds*, or a linear regression may be used	Every 24 hours	1	All compounds must meet the QC acceptance criteria as stated in the method. Compounds not stated must meet a 65% -135% recovery criteria.
GC/MS Semivolatiles**	After C-cal fails	5	RSD ≤35% for all compounds**, or a linear regression may be used Tailing factors: Benzidine < 3 Pentachlorophenol < 5	Every 24 hours	1	All compounds calibrating for <20
GC Pesticides & PCBs (Method 608)	After C-cal fails	5	10% RSD of RFs of initial calibration to use avg. RF, otherwise use curve fit. Degradation for DDT, Endrin 15%	Every 10 samples	1	≤15% drift from initial response for quantitation
GC VOA Halocarbons and/or Aromatics	After C-cal fails	At least 5	%RSD of ≤10% for individual compounds to use average RFs. If %RSD >10%, a quadratic fit type is used if correlation coefficient is >0.995.	Every 12 hours, or every 10 samples	1	Method defined limits
Dioxins by HRGC/HRMS	After C-cal fails	6	If %RSD for native compounds <20% and for labeled compounds <20%, otherwise a calibration curve is used	Every 12 hours	1	<25% valley peak resolution for 2378-TCDD All native and labeled compounds meet method defined recovery limits RTs within ±15 secs of RT in ICAL
ICP/MS	Each new run	1	Independent calibration verification (ICV) within ±10%	Every 10 samples	1	±15% of true value
ICP	Each new run	1	Independent calibration verification within ±5%, standards <3%RSD	Every 10 samples	1	±10% of true value
CVAA	Each new run	5	Independent calibration verification within ±5% Correlation coefficient >0.995	Every 10 samples	1	±10% of true value

Calibration Summary for EPA 100, 200, 300, 600 & 1600 Series Methods

	Initial Calibration			Continuing Calibration Verification		
Instrument	Frequency	# Std Conc	Acceptance Criteria	Frequency	# Std Conc	Acceptance Criteria
CVAF	Each new run	5	The RSD ≤ 15%, and the low standard recovers ±23% of the true value	After the calibration and at the end of the analytical batch	1	±23% of the true value
Auto-analyzer	Daily	6	Correlation coefficient >0.995	Every 10 samples	1	±10% of true value
TOC	Monthly	6	Corr. Coeff. > 0.995	Every 10 samples	1	±10% of true value
Balance	Daily	4	Top-loading ±0.5%, Analytical ± 0.1% for weights >0.1 g 50 mg ± 0.5%, 20 mg ± 1.0% 10 mg and 5 mg ± 2.0%	N/A	N/A	N/A

*All compounds with %RSD >35 must use first or second order regression fit of the five calibration points. The first order regression may only be used if the correlation coefficient r ≥0.990. The second order regression may only be used if the coefficient of determination $r^2 \geq 0.990$.

* * All compounds with % RSD >35 must use first order regression fit of the five calibration points. The first order regression may only be used if the correlation coefficient r ≥0.990.

Abbreviations

Std Conc - The number of standard concentrations used
SPCCs - System Performance Check Compounds
CCCs - Calibration Check Compounds
RF - Response Factor
%RSD - Percent Relative Standard Deviation
C-cal - Continuing Calibration
CVAA - Cold Vapor Atomic Absorption spectrophotometer
CVAF - Cold Vapor Fluorescence spectrophotometer
HPLC - High Performance Liquid Chromatography
ICP - Inductively Coupled Plasma spectrophotometer; ICP run also includes inter-element correction check standard (beginning and end of run)
ICP/MS - Inductively Coupled Plasma - Mass Spectrometry

Calibration Summary for EPA TO Series Methods						
	Initial Calibration			Continuing Calibration Verification		
Instrument	Frequency	# Std Conc	Acceptance Criteria	Frequency	# Std Conc	Acceptance Criteria
GC/MS Volatiles TO-15	After C-cal fails	Minimum of 5	RSD ≤30% for all compounds, 2 allowed to be >30% as long as <40%.	Every 24 hours	1	All compounds ≤30 difference.
GC/MS Volatiles TO-14A	After C-cal fails	Minimum of 5	RSD ≤30% for all compounds, 2 allowed to be >30% as long as <40%.	Every 24 hours	1	All compounds ≤30 difference.

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Prepared by	Barbara Reedy
Reviewed and Approved by	Duane Luckenbill;Review;Sunday, December 13, 2015 10:27:16 PM EST Dorothy Love;Approval;Thursday, December 17, 2015 3:58:32 PM EST

NOTE: Current certificates are maintained by the QA Department and are available on our website at http://env.lancasterlabs.com/resources/certifications

pennsylvania
DEPARTMENT OF ENVIRONMENTAL PROTECTION

Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037   EPA Lab Code: PA00009   TNI Code: (717) 656-2300
PADWIS ID: 36037

Eurofins Lancaster Laboratories Environmental LLC
2425 New Holland Pike
Lancaster, PA 17601-5994

Matrix: Drinking Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 110.2		Color	NELAP	PA	4/4/2005
EPA 150.1		pH	NELAP	PA	2/28/2002
EPA 1613	B	Dioxin	NELAP	PA	10/5/2010
EPA 1664	B	Oil and grease	NELAP	PA	1/27/2014
EPA 1664	A	Oil and grease	NELAP	PA	5/24/2011
EPA 180.1		Turbidity	NELAP	PA	4/4/2005
EPA 200.7	4.4	Aluminum	NELAP	PA	4/4/2005
EPA 200.7	4.4	Barium	NELAP	PA	1/22/2001
EPA 200.7	4.4	Beryllium	NELAP	PA	6/2/2004
EPA 200.7	4.4	Cadmium	NELAP	PA	1/22/2001
EPA 200.7	4.4	Calcium	NELAP	PA	11/28/2001
EPA 200.7	4.4	Chromium	NELAP	PA	1/22/2001
EPA 200.7	4.4	Cobalt	NELAP	PA	10/16/2008
EPA 200.7	4.4	Copper	NELAP	PA	1/22/2001
EPA 200.7	4.4	Iron	NELAP	PA	4/4/2005
EPA 200.7	4.4	Lithium	NELAP	PA	11/13/2012
EPA 200.7	4.4	Magnesium	NELAP	PA	12/4/2007
EPA 200.7	4.4	Manganese	NELAP	PA	4/4/2005
EPA 200.7	4.4	Nickel	NELAP	PA	1/22/2001
EPA 200.7	4.4	Potassium	NELAP	PA	5/24/2011
EPA 200.7	4.4	Silver	NELAP	PA	1/26/2001
EPA 200.7	4.4	Sodium	NELAP	PA	1/22/2001
EPA 200.7	4.4	Strontium	NELAP	PA	5/24/2011
EPA 200.7	4.4	Sulfur	NELAP	PA	11/9/2012
EPA 200.7	4.4	Tin	NELAP	PA	11/3/2008
EPA 200.7	4.4	Vanadium	NELAP	PA	10/16/2008
EPA 200.7	4.4	Zinc	NELAP	PA	4/4/2005
EPA 200.8	5.4	Antimony	NELAP	PA	2/10/2005
EPA 200.8	5.4	Arsenic	NELAP	PA	2/10/2005
EPA 200.8	5.4	Barium	NELAP	PA	11/16/2011
EPA 200.8	5.4	Beryllium	NELAP	PA	2/10/2005
EPA 200.8	5.4	Cadmium	NELAP	PA	2/10/2005
EPA 200.8	5.4	Calcium	NELAP	PA	11/16/2011
EPA 200.8	5.4	Chromium	NELAP	PA	2/10/2005
EPA 200.8	5.4	Copper	NELAP	PA	3/9/2007
EPA 200.8	5.4	Iron	NELAP	PA	11/2/2012
EPA 200.8	5.4	Lead	NELAP	PA	2/10/2005
EPA 200.8	5.4	Magnesium	NELAP	PA	11/2/2012
EPA 200.8	5.4	Manganese	NELAP	PA	11/16/2011

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Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Drinking Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 200.8	5.4	Nickel	NELAP	PA	2/10/2005
EPA 200.8	5.4	Potassium	NELAP	PA	11/16/2011
EPA 200.8	5.4	Selenium	NELAP	PA	2/10/2005
EPA 200.8	5.4	Sodium	NELAP	PA	11/16/2011
EPA 200.8	5.4	Strontium	NELAP	PA	11/16/2011
EPA 200.8	5.4	Thallium	NELAP	PA	2/10/2005
EPA 200.8	5.4	Zinc	NELAP	PA	11/16/2011
EPA 218.7		Chromium VI	NELAP	PA	11/27/2013
EPA 245.1	3.0	Mercury	NELAP	PA	8/29/2001
EPA 300.0	2.1	Bromide	NELAP	PA	11/9/2012
EPA 300.0	2.1	Chloride	NELAP	PA	5/17/2005
EPA 300.0	2.1	Fluoride	NELAP	PA	1/22/2004
EPA 300.0	2.1	Nitrate as N	NELAP	PA	10/31/2002
EPA 300.0	2.1	Nitrite as N	NELAP	PA	10/31/2002
EPA 300.0	2.1	Sulfate	NELAP	PA	7/7/2003
EPA 335.4		Cyanide	NELAP	PA	7/11/2006
EPA 353.2		Nitrate as N	NELAP	PA	2/28/2002
EPA 353.2		Nitrite as N	NELAP	PA	2/28/2002
EPA 353.2		Total nitrate-nitrite	NELAP	PA	5/24/2011
EPA 504.1	1.1	1,2,3-Trichloropropane (1,2,3-TCP)	NELAP	PA	5/17/2005
EPA 504.1	1.1	1,2-Dibromo-3-chloropropane (DBCP, Dibromochloropropane)	NELAP	PA	2/28/2002
EPA 504.1	1.1	1,2-Dibromoethane (EDB, Ethylene dibromide)	NELAP	PA	1/26/2001
EPA 507	2.1	Alachlor (Lasso)	NELAP	PA	2/28/2002
EPA 507	2.1	Atrazine	NELAP	PA	2/28/2002
EPA 507	2.1	Simazine	NELAP	PA	2/28/2002
EPA 508	3.1	Aldrin (HHDN)	NELAP	PA	5/18/2005
EPA 508	3.1	Aroclor-1016 (PCB-1016)	NELAP	PA	4/24/2007
EPA 508	3.1	Aroclor-1221 (PCB-1221)	NELAP	PA	4/24/2007
EPA 508	3.1	Aroclor-1232 (PCB-1232)	NELAP	PA	4/24/2007
EPA 508	3.1	Aroclor-1242 (PCB-1242)	NELAP	PA	4/24/2007
EPA 508	3.1	Aroclor-1248 (PCB-1248)	NELAP	PA	4/24/2007
EPA 508	3.1	Aroclor-1254 (PCB-1254)	NELAP	PA	4/24/2007
EPA 508	3.1	Aroclor-1260 (PCB-1260)	NELAP	PA	4/24/2007
EPA 508	3.1	Chlordane (tech.)	NELAP	PA	2/28/2002
EPA 508	3.1	Dieldrin	NELAP	PA	1/3/2002
EPA 508	3.1	Endrin	NELAP	PA	2/28/2002
EPA 508	3.1	Heptachlor	NELAP	PA	2/28/2002
EPA 508	3.1	Heptachlor epoxide	NELAP	PA	2/28/2002
EPA 508	3.1	Hexachlorobenzene	NELAP	PA	2/28/2002
EPA 508	3.1	Hexachlorocyclopentadiene	NELAP	PA	2/28/2002
EPA 508	3.1	Methoxychlor	NELAP	PA	2/28/2002
EPA 508	3.1	Toxaphene (Chlorinated camphene)	NELAP	PA	4/14/2015
EPA 508	3.1	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	NELAP	PA	2/28/2002

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Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Drinking Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 515.1	4.0	2,4,5-TP (Silvex)	NELAP	PA	1/24/2001
EPA 515.1	4.0	2,4-D	NELAP	PA	1/24/2001
EPA 515.1	4.0	Dalapon (2,2-Dichloropropionic acid)	NELAP	PA	1/24/2001
EPA 515.1	4.0	Dicamba	NELAP	PA	1/24/2001
EPA 515.1	4.0	Dinoseb (2-sec-Butyl-4,6-dinitrophenol, DNBP)	NELAP	PA	1/24/2001
EPA 515.1	4.0	Pentachlorophenol (PCP)	NELAP	PA	1/24/2001
EPA 515.1	4.0	Picloram (4-Amino-3,5,6-trichloro-2-pyridinecarboxylic acid)	NELAP	PA	1/24/2001
EPA 524.2	4.1	1,1,1,2-Tetrachloroethane	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,1,1-Trichloroethane	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,1,2,2-Tetrachloroethane	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,1,2-Trichloroethane	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,1-Dichloro-2-propanone (1,1-Dichloropropanone)	NELAP	PA	5/17/2005
EPA 524.2	4.1	1,1-Dichloroethane	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,1-Dichloroethene (1,1-Dichloroethylene)	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,1-Dichloropropene	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,2,3-Trichlorobenzene	NELAP	PA	4/4/2005
EPA 524.2	4.1	1,2,3-Trichloropropane (1,2,3-TCP)	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,2,4-Trichlorobenzene	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,2,4-Trimethylbenzene	NELAP	PA	4/4/2005
EPA 524.2	4.1	1,2-Dichlorobenzene (o-Dichlorobenzene)	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,2-Dichloroethane	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,2-Dichloropropane	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,3,5-Trimethylbenzene	NELAP	PA	5/17/2005
EPA 524.2	4.1	1,3-Dichlorobenzene (m-Dichlorobenzene)	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,3-Dichloropropane	NELAP	PA	10/31/2002
EPA 524.2	4.1	1,4-Dichlorobenzene (p-Dichlorobenzene)	NELAP	PA	10/31/2002
EPA 524.2	4.1	1-Chlorobutane	NELAP	PA	5/24/2007
EPA 524.2	4.1	2,2-Dichloropropane	NELAP	PA	10/31/2002
EPA 524.2	4.1	2-Butanone (Methyl ethyl ketone, MEK)	NELAP	PA	5/24/2007
EPA 524.2	4.1	2-Chlorotoluene	NELAP	PA	10/31/2002
EPA 524.2	4.1	2-Hexanone	NELAP	PA	5/24/2007
EPA 524.2	4.1	2-Nitropropane	NELAP	PA	5/24/2007
EPA 524.2	4.1	4-Chlorotoluene	NELAP	PA	10/31/2002
EPA 524.2	4.1	4-Methyl-2-pentanone (MIBK)	NELAP	PA	5/24/2007
EPA 524.2	4.1	Acetone	NELAP	PA	5/24/2007
EPA 524.2	4.1	Acrylonitrile	NELAP	PA	5/24/2007
EPA 524.2	4.1	Allyl chloride (3-Chloropropene)	NELAP	PA	7/3/2007
EPA 524.2	4.1	Benzene	NELAP	PA	10/31/2002
EPA 524.2	4.1	Bromobenzene	NELAP	PA	10/31/2002
EPA 524.2	4.1	Bromochloromethane	NELAP	PA	4/4/2005
EPA 524.2	4.1	Bromodichloromethane	NELAP	PA	10/31/2002
EPA 524.2	4.1	Bromoform	NELAP	PA	10/31/2002
EPA 524.2	4.1	Carbon disulfide	NELAP	PA	5/24/2007

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Drinking Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 524.2	4.1	Carbon tetrachloride	NELAP	PA	10/31/2002
EPA 524.2	4.1	Chloroacetonitrile	NELAP	PA	5/24/2007
EPA 524.2	4.1	Chlorobenzene	NELAP	PA	10/31/2002
EPA 524.2	4.1	Chloroethane	NELAP	PA	10/31/2002
EPA 524.2	4.1	Chloroform	NELAP	PA	10/31/2002
EPA 524.2	4.1	Dibromochloromethane	NELAP	PA	10/31/2002
EPA 524.2	4.1	Dibromomethane	NELAP	PA	10/31/2002
EPA 524.2	4.1	Dichlorodifluoromethane (Freon 12)	NELAP	PA	4/4/2005
EPA 524.2	4.1	Diethyl ether (Ethyl ether)	NELAP	PA	5/24/2007
EPA 524.2	4.1	Diisopropyl ether (DIPE)	NELAP	PA	1/7/2010
EPA 524.2	4.1	Ethyl methacrylate	NELAP	PA	5/24/2007
EPA 524.2	4.1	Ethyl tert-butyl ether (ETBE)	NELAP	PA	1/24/2007
EPA 524.2	4.1	Ethylbenzene	NELAP	PA	10/31/2002
EPA 524.2	4.1	Hexachlorobutadiene (1,3-Hexachlorobutadiene)	NELAP	PA	4/4/2005
EPA 524.2	4.1	Hexachloroethane	NELAP	PA	5/24/2007
EPA 524.2	4.1	Isopropylbenzene (Cumene)	NELAP	PA	4/4/2005
EPA 524.2	4.1	Methacrylonitrile	NELAP	PA	5/24/2007
EPA 524.2	4.1	Methyl bromide (Bromomethane)	NELAP	PA	10/31/2002
EPA 524.2	4.1	Methyl chloride (Chloromethane)	NELAP	PA	10/31/2002
EPA 524.2	4.1	Methyl iodide (Iodomethane)	NELAP	PA	5/24/2007
EPA 524.2	4.1	Methyl tert-butyl ether (MTBE)	NELAP	PA	4/4/2005
EPA 524.2	4.1	Methylacrylate	NELAP	PA	5/24/2007
EPA 524.2	4.1	Methylene chloride (Dichloromethane)	NELAP	PA	10/31/2002
EPA 524.2	4.1	Methylmethacrylate	NELAP	PA	5/24/2007
EPA 524.2	4.1	Naphthalene	NELAP	PA	5/17/2005
EPA 524.2	4.1	Nitrobenzene	NELAP	PA	5/17/2005
EPA 524.2	4.1	Pentachloroethane	NELAP	PA	5/24/2007
EPA 524.2	4.1	Propionitrile (Ethyl cyanide)	NELAP	PA	5/24/2007
EPA 524.2	4.1	Styrene	NELAP	PA	10/31/2002
EPA 524.2	4.1	Tetrachloroethene (PCE, Perchloroethylene)	NELAP	PA	10/31/2002
EPA 524.2	4.1	Tetrahydrofuran (THF)	NELAP	PA	5/24/2007
EPA 524.2	4.1	Toluene	NELAP	PA	10/31/2002
EPA 524.2	4.1	Total trihalomethanes (TTHMs)	NELAP	PA	10/31/2002
EPA 524.2	4.1	Trichloroethene (TCE, Trichloroethylene)	NELAP	PA	10/31/2002
EPA 524.2	4.1	Trichlorofluoromethane (Freon 11)	NELAP	PA	4/4/2005
EPA 524.2	4.1	Vinyl chloride (Chloroethene)	NELAP	PA	10/31/2002
EPA 524.2	4.1	Xylenes, total	NELAP	PA	10/31/2002
EPA 524.2	4.1	cis-1,2-Dichloroethene	NELAP	PA	10/31/2002
EPA 524.2	4.1	cis-1,3-Dichloropropene	NELAP	PA	10/31/2002
EPA 524.2	4.1	m+p-Xylene	NELAP	PA	12/8/2014
EPA 524.2	4.1	n-Butylbenzene	NELAP	PA	4/4/2005
EPA 524.2	4.1	n-Propylbenzene	NELAP	PA	5/17/2005
EPA 524.2	4.1	o-Xylene	NELAP	PA	12/8/2014
EPA 524.2	4.1	p-Isopropyltoluene (4-Isopropyltoluene)	NELAP	PA	5/17/2005
EPA 524.2	4.1	sec-Butylbenzene	NELAP	PA	4/4/2005

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Drinking Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 524.2	4.1	tert-Amyl methyl ether (TAME)	NELAP	PA	1/24/2007
EPA 524.2	4.1	tert-Butyl alcohol (2-Methyl-2-propanol)	NELAP	PA	5/24/2007
EPA 524.2	4.1	tert-Butylbenzene	NELAP	PA	4/4/2005
EPA 524.2	4.1	trans-1,2-Dichloroethene	NELAP	PA	10/31/2002
EPA 524.2	4.1	trans-1,3-Dichloropropene	NELAP	PA	10/31/2002
EPA 524.2	4.1	trans-1,4-Dichloro-2-butene	NELAP	PA	5/24/2007
EPA 525.2	2.0	2,3-Dichlorobiphenyl (BZ 5)	NELAP	PA	5/17/2005
EPA 525.2	2.0	Acenaphthene	NELAP	PA	5/25/2007
EPA 525.2	2.0	Acenaphthylene	NELAP	PA	4/28/2010
EPA 525.2	2.0	Alachlor (Lasso)	NELAP	PA	2/28/2002
EPA 525.2	2.0	Aldrin (HHDN)	NELAP	PA	10/9/2013
EPA 525.2	2.0	Anthracene	NELAP	PA	5/25/2007
EPA 525.2	2.0	Atrazine	NELAP	PA	1/3/2002
EPA 525.2	2.0	Benzo[a]anthracene	NELAP	PA	5/25/2007
EPA 525.2	2.0	Benzo[a]pyrene	NELAP	PA	1/24/2001
EPA 525.2	2.0	Benzo[b]fluoranthene	NELAP	PA	6/4/2007
EPA 525.2	2.0	Benzo[ghi]perylene	NELAP	PA	7/3/2007
EPA 525.2	2.0	Benzo[k]fluoranthene	NELAP	PA	6/4/2007
EPA 525.2	2.0	Benzyl butyl phthalate (Butyl benzyl phthalate)	NELAP	PA	5/25/2007
EPA 525.2	2.0	Butachlor	NELAP	PA	12/19/2002
EPA 525.2	2.0	Chrysene (Benzo[a]phenanthrene)	NELAP	PA	5/25/2007
EPA 525.2	2.0	Di-n-butyl phthalate	NELAP	PA	5/25/2007
EPA 525.2	2.0	Dibenzo[a,h]anthracene	NELAP	PA	5/25/2007
EPA 525.2	2.0	Dieldrin	NELAP	PA	5/17/2005
EPA 525.2	2.0	Diethyl phthalate	NELAP	PA	5/25/2007
EPA 525.2	2.0	Dimethyl phthalate	NELAP	PA	5/25/2007
EPA 525.2	2.0	Endrin	NELAP	PA	5/17/2005
EPA 525.2	2.0	Fluoranthene	NELAP	PA	3/7/2012
EPA 525.2	2.0	Fluorene	NELAP	PA	2/7/2012
EPA 525.2	2.0	Heptachlor	NELAP	PA	5/17/2005
EPA 525.2	2.0	Heptachlor epoxide	NELAP	PA	5/17/2005
EPA 525.2	2.0	Hexachlorobenzene	NELAP	PA	2/11/2005
EPA 525.2	2.0	Hexachlorocyclopentadiene	NELAP	PA	1/24/2001
EPA 525.2	2.0	Indeno(1,2,3-cd)pyrene	NELAP	PA	2/7/2012
EPA 525.2	2.0	Methoxychlor	NELAP	PA	1/24/2001
EPA 525.2	2.0	Metolachlor	NELAP	PA	12/19/2002
EPA 525.2	2.0	Metribuzin	NELAP	PA	12/19/2002
EPA 525.2	2.0	Phenanthrene	NELAP	PA	5/25/2007
EPA 525.2	2.0	Propachlor (Ramrod)	NELAP	PA	1/24/2001
EPA 525.2	2.0	Pyrene	NELAP	PA	5/25/2007
EPA 525.2	2.0	Simazine	NELAP	PA	1/3/2002
EPA 525.2	2.0	bis(2-Ethylhexyl) adipate (di(2-Ethylhexyl) adipate)	NELAP	PA	1/24/2001
EPA 525.2	2.0	bis(2-Ethylhexyl) phthalate (DEHP)	NELAP	PA	1/24/2001

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Drinking Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 525.2	2.0	gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	NELAP	PA	1/24/2001
EPA 531.1	3.1	3-Hydroxycarbofuran	NELAP	PA	11/7/2006
EPA 531.1	3.1	Aldicarb (Temik)	NELAP	PA	4/14/2015
EPA 531.1	3.1	Aldicarb sulfone	NELAP	PA	1/24/2001
EPA 531.1	3.1	Aldicarb sulfoxide	NELAP	PA	1/24/2001
EPA 531.1	3.1	Carbaryl (Sevin)	NELAP	PA	10/9/2002
EPA 531.1	3.1	Carbofuran (Furaden)	NELAP	PA	1/24/2001
EPA 531.1	3.1	Methomyl (Lannate)	NELAP	PA	1/24/2001
EPA 531.1	3.1	Oxamyl (Vydate)	NELAP	PA	1/24/2001
EPA 8015		Ethane	NELAP	PA	5/24/2011
EPA 8015		Methane	NELAP	PA	5/24/2011
EPA 8015		Propane	NELAP	PA	11/9/2012
SM 2120 B		Color	NELAP	PA	5/25/2005
SM 2130 B		Turbidity	NELAP	PA	5/17/2005
SM 2320 B		Alkalinity as CaCO3	NELAP	PA	1/24/2001
SM 2340 C		Total hardness as CaCO3	NELAP	PA	5/24/2011
SM 2510 B		Conductivity	NELAP	PA	5/17/2005
SM 2540 C		Total dissolved solids (TDS)	NELAP	PA	6/2/2004
SM 2540 D		Residue, nonfilterable (TSS)	NELAP	PA	5/24/2011
SM 2550 B		Temperature, deg. C	NELAP	PA	4/4/2005
SM 4500-Cl F		Total residual chlorine	NELAP	PA	5/24/2011
SM 4500-F- C		Fluoride	NELAP	PA	10/15/2003
SM 4500-H+ B		pH	NELAP	PA	5/16/2007
SM 4500-P E		Orthophosphate as P	NELAP	PA	6/12/2007
SM 4500-SiO2 C	20-22	Silica, dissolved	NELAP	PA	5/24/2007
SM 5310 C		Total organic carbon (TOC)	NELAP	PA	4/18/2013
SM 5540 C		Surfactants as MBAS	NELAP	PA	5/24/2007
SM 9215 B		Heterotrophic bacteria (Enumeration)	NELAP	PA	2/5/2003
SM 9223 Colilert		Total coliform & E. coli (P/A)	NELAP	PA	1/26/2001

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
AK-101		Gasoline-range organics (GRO)	NELAP	PA	12/12/2005
AK-102		Diesel-range organics (DRO)	NELAP	PA	12/12/2005
ASTM D7511-09		Total cyanide	NELAP	PA	2/15/2013
EPA 1010		Ignitability	NELAP	PA	12/12/2005
EPA 130.2		Hardness	NELAP	PA	1/19/2005
EPA 1311		Toxicity characteristic leaching procedure (TCLP)	NELAP	PA	12/12/2005
EPA 1312		Synthetic precipitation leaching procedure (SPLP)	NELAP	PA	12/12/2005
EPA 160.1		Residue, filterable (TDS)	NELAP	PA	1/19/2005
EPA 160.4		Residue, volatile	NELAP	PA	1/19/2005

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1613	B	1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	NELAP	PA	6/30/2010
EPA 1613	B	1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	NELAP	PA	6/30/2010
EPA 1613	B	2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 1613	B	2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	NELAP	PA	6/30/2010
EPA 1613	B	2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD)(Dioxin)	NELAP	PA	6/30/2010
EPA 1613	B	2,3,7,8-Tetrachlorodibenzofuran (TCDF)	NELAP	PA	6/30/2010
EPA 1613	B	Total heptachlorodibenzo-p-dioxin (HpCDD)	NELAP	PA	8/6/2010
EPA 1613	B	Total heptachlorodibenzofuran (HpCDF)	NELAP	PA	8/6/2010
EPA 1613	B	Total hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	8/6/2010
EPA 1613	B	Total hexachlorodibenzofuran (HxCDF)	NELAP	PA	8/6/2010
EPA 1613	B	Total pentachlorodibenzo-p-dioxin (PeCDD)	NELAP	PA	8/6/2010
EPA 1613	B	Total pentachlorodibenzofuran (PeCDF)	NELAP	PA	8/6/2010
EPA 1613	B	Total tetrachlorodibenzo-p-dioxin (TCDD)	NELAP	PA	8/6/2010
EPA 1613	B	Total tetrachlorodibenzofuran (TCDF)	NELAP	PA	8/6/2010
EPA 1625	C	N-Nitrosodimethylamine	NELAP	PA	11/23/2010
EPA 1631	E	Mercury	NELAP	PA	10/16/2014
EPA 1664	A	Non-polar material	NELAP	PA	11/17/2006
EPA 1664	A	Oil and grease	NELAP	PA	1/19/2005
EPA 1664	B	Oil and grease	NELAP	PA	1/27/2014
EPA 1666	A	4-Methyl-2-pentanone (MIBK)	NELAP	PA	12/12/2005
EPA 1666	A	Diisopropyl ether (DIPE)	NELAP	PA	1/19/2005
EPA 1666	A	Ethyl acetate	NELAP	PA	1/19/2005

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1666	A	Isobutyraldehyde	NELAP	PA	1/19/2005
EPA 1666	A	Isopropyl acetate	NELAP	PA	1/19/2005
EPA 1666	A	Isopropyl alcohol (2-Propanol)	NELAP	PA	12/2/2009
EPA 1666	A	Methyl formate	NELAP	PA	1/19/2005
EPA 1666	A	Tetrahydrofuran (THF)	NELAP	PA	1/19/2005
EPA 1666	A	Xylenes, total	NELAP	PA	1/19/2005
EPA 1666	A	n-Amyl acetate (n-Pentyl acetate)	NELAP	PA	4/4/2005
EPA 1666	A	n-Amyl alcohol (1-Pentanol)	NELAP	PA	4/4/2005
EPA 1666	A	n-Butyl acetate	NELAP	PA	4/4/2005
EPA 1666	A	n-Heptane	NELAP	PA	1/19/2005
EPA 1666	A	n-Hexane	NELAP	PA	1/19/2005
EPA 1666	A	tert-Butyl alcohol (2-Methyl-2-propanol)	NELAP	PA	4/4/2005
EPA 1668		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ 206)	NELAP	PA	2/1/2013
EPA 1668		2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ 194)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ 196)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ 207)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ 195)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ 170)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ 197)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ 171)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4'-Hexachlorobiphenyl (BZ 128)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ 177)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ 201)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ 175)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5'-Hexachlorobiphenyl (BZ 130)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ 199)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ 208)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ 198)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ 172)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ 174)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ 200)	NELAP	PA	12/17/2012

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1668		2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ 173)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5-Hexachlorobiphenyl (BZ 129)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,6'-Hexachlorobiphenyl (BZ 132)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ 176)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,6-Hexachlorobiphenyl (BZ 131)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4-Pentachlorobiphenyl (BZ 82)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ 202)	NELAP	PA	2/1/2013
EPA 1668		2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ 178)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5,5'-Hexachlorobiphenyl (BZ 133)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5,6'-Hexachlorobiphenyl (BZ 135)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ 179)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5,6-Hexachlorobiphenyl (BZ 134)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5-Pentachlorobiphenyl (BZ 83)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',6,6'-Hexachlorobiphenyl (BZ 136)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',6-Pentachlorobiphenyl (BZ 84)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3'-Tetrachlorobiphenyl (BZ 40)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5',6-Hexachlorobiphenyl (BZ 149)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5'-Pentachlorobiphenyl (BZ 97)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ 187)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5,5'-Hexachlorobiphenyl (BZ 146)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5,6'-Hexachlorobiphenyl (BZ 148)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ 188)	NELAP	PA	2/1/2013
EPA 1668		2,2',3,4',5,6-Hexachlorobiphenyl (BZ 147)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5-Pentachlorobiphenyl (BZ 90)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',6'-Pentachlorobiphenyl (BZ 98)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',6,6'-Hexachlorobiphenyl (BZ 150)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',6-Pentachlorobiphenyl (BZ 91)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4'-Tetrachlorobiphenyl (BZ 42)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ 183)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5'-Hexachlorobiphenyl (BZ 138)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ 203)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ 180)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ 182)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ 204)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ 181)	NELAP	PA	12/17/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1668		2,2',3,4,4',5-Hexachlorobiphenyl (BZ 137)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',6'-Hexachlorobiphenyl (BZ 140)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ 184)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',6-Hexachlorobiphenyl (BZ 139)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4'-Pentachlorobiphenyl (BZ 85)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5',6-Hexachlorobiphenyl (BZ 144)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5'-Pentachlorobiphenyl (BZ 87)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ 185)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5,5'-Hexachlorobiphenyl (BZ 141)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5,6'-Hexachlorobiphenyl (BZ 143)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ 186)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5,6-Hexachlorobiphenyl (BZ 142)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5-Pentachlorobiphenyl (BZ 86)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,6'-Pentachlorobiphenyl (BZ 89)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,6,6'-Hexachlorobiphenyl (BZ 145)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,6-Pentachlorobiphenyl (BZ 88)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4-Tetrachlorobiphenyl (BZ 41)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5',6-Pentachlorobiphenyl (BZ 95)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5'-Tetrachlorobiphenyl (BZ 44)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5,5',6-Hexachlorobiphenyl (BZ 151)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5,5'-Pentachlorobiphenyl (BZ 92)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5,6'-Pentachlorobiphenyl (BZ 94)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5,6,6'-Hexachlorobiphenyl (BZ 152)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5,6-Pentachlorobiphenyl (BZ 93)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5-Tetrachlorobiphenyl (BZ 43)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,6'-Tetrachlorobiphenyl (BZ 46)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,6,6'-Pentachlorobiphenyl (BZ 96)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,6-Tetrachlorobiphenyl (BZ 45)	NELAP	PA	12/17/2012
EPA 1668		2,2',3-Trichlorobiphenyl (BZ 16)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4',5,5'-Hexachlorobiphenyl (BZ 153)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4',5,6'-Hexachlorobiphenyl (BZ 154)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4',5-Pentachlorobiphenyl (BZ 99)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4',6,6'-Hexachlorobiphenyl (BZ 155)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4',6-Pentachlorobiphenyl (BZ 100)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4'-Tetrachlorobiphenyl (BZ 47)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,5',6-Pentachlorobiphenyl (BZ 103)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,5'-Tetrachlorobiphenyl (BZ 49)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,5,5'-Pentachlorobiphenyl (BZ 101)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,5,6'-Pentachlorobiphenyl (BZ 102)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,5-Tetrachlorobiphenyl (BZ 48)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,6'-Tetrachlorobiphenyl (BZ 51)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,6,6'-Pentachlorobiphenyl (BZ 104)	NELAP	PA	2/1/2013
EPA 1668		2,2',4,6-Tetrachlorobiphenyl (BZ 50)	NELAP	PA	12/17/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1668		2,2',4-Trichlorobiphenyl (BZ 17)	NELAP	PA	12/17/2012
EPA 1668		2,2',5,5'-Tetrachlorobiphenyl (BZ 52)	NELAP	PA	12/17/2012
EPA 1668		2,2',5,6'-Tetrachlorobiphenyl (BZ 53)	NELAP	PA	12/17/2012
EPA 1668		2,2',5-Trichlorobiphenyl (BZ 18)	NELAP	PA	12/17/2012
EPA 1668		2,2',6,6'-Tetrachlorobiphenyl (BZ 54)	NELAP	PA	12/17/2012
EPA 1668		2,2',6-Trichlorobiphenyl (BZ 19)	NELAP	PA	12/17/2012
EPA 1668		2,2'-Dichlorobiphenyl (BZ 4)	NELAP	PA	12/17/2012
EPA 1668		2,3',4',5',6-Pentachlorobiphenyl (BZ 125)	NELAP	PA	12/17/2012
EPA 1668		2,3',4',5'-Tetrachlorobiphenyl (BZ 76)	NELAP	PA	12/17/2012
EPA 1668		2,3',4',5,5'-Pentachlorobiphenyl (BZ 124)	NELAP	PA	12/17/2012
EPA 1668		2,3',4',5-Tetrachlorobiphenyl (BZ 70)	NELAP	PA	12/17/2012
EPA 1668		2,3',4',6-Tetrachlorobiphenyl (BZ 71)	NELAP	PA	12/17/2012
EPA 1668		2,3',4'-Trichlorobiphenyl (BZ 33)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,4',5',6-Hexachlorobiphenyl (BZ 168)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,4',5'-Pentachlorobiphenyl (BZ 123)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,4',6-Pentachlorobiphenyl (BZ 119)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,4'-Tetrachlorobiphenyl (BZ 66)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,5',6-Pentachlorobiphenyl (BZ 121)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,5'-Tetrachlorobiphenyl (BZ 68)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,5,5'-Pentachlorobiphenyl (BZ 120)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,5-Tetrachlorobiphenyl (BZ 67)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,6-Tetrachlorobiphenyl (BZ 69)	NELAP	PA	12/17/2012
EPA 1668		2,3',4-Trichlorobiphenyl (BZ 25)	NELAP	PA	12/17/2012
EPA 1668		2,3',5',6-Tetrachlorobiphenyl (BZ 73)	NELAP	PA	12/17/2012
EPA 1668		2,3',5'-Trichlorobiphenyl (BZ 34)	NELAP	PA	12/17/2012
EPA 1668		2,3',5,5'-Tetrachlorobiphenyl (BZ 72)	NELAP	PA	12/17/2012
EPA 1668		2,3',5-Trichlorobiphenyl (BZ 26)	NELAP	PA	12/17/2012
EPA 1668		2,3',6-Trichlorobiphenyl (BZ 27)	NELAP	PA	12/17/2012
EPA 1668		2,3'-Dichlorobiphenyl (BZ 6)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5',6-Hexachlorobiphenyl (BZ 164)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5'-Pentachlorobiphenyl (BZ 122)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ 193)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5,5'-Hexachlorobiphenyl (BZ 162)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5,6-Hexachlorobiphenyl (BZ 163)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5-Pentachlorobiphenyl (BZ 107)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',6-Pentachlorobiphenyl (BZ 110)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4'-Tetrachlorobiphenyl (BZ 56)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ 191)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 157)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ 205)	NELAP	PA	2/1/2013

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 EPA Lab Code: PA00009 TNI Code: (717) 656-2300

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1668		2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ 189)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ 190)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',6-Hexachlorobiphenyl (BZ 158)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4'-Pentachlorobiphenyl (BZ 105)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5',6-Hexachlorobiphenyl (BZ 161)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5'-Pentachlorobiphenyl (BZ 108)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ 192)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5,5'-Hexachlorobiphenyl (BZ 159)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5,6-Hexachlorobiphenyl (BZ 160)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5-Pentachlorobiphenyl (BZ 106)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,6-Pentachlorobiphenyl (BZ 109)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4-Tetrachlorobiphenyl (BZ 55)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5',6-Pentachlorobiphenyl (BZ 113)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5'-Tetrachlorobiphenyl (BZ 58)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5,5',6-Hexachlorobiphenyl (BZ 165)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5,5'-Pentachlorobiphenyl (BZ 111)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5,6-Pentachlorobiphenyl (BZ 112)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5-Tetrachlorobiphenyl (BZ 57)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',6-Tetrachlorobiphenyl (BZ 59)	NELAP	PA	12/17/2012
EPA 1668		2,3,3'-Trichlorobiphenyl (BZ 20)	NELAP	PA	12/17/2012
EPA 1668		2,3,4',5,6-Pentachlorobiphenyl (BZ 117)	NELAP	PA	12/17/2012
EPA 1668		2,3,4',5-Tetrachlorobiphenyl (BZ 63)	NELAP	PA	12/17/2012
EPA 1668		2,3,4',6-Tetrachlorobiphenyl (BZ 64)	NELAP	PA	12/17/2012
EPA 1668		2,3,4'-Trichlorobiphenyl (BZ 22)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,4',5,6-Hexachlorobiphenyl (BZ 166)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,4',6-Pentachlorobiphenyl (BZ 115)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,4'-Tetrachlorobiphenyl (BZ 60)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,5,6-Pentachlorobiphenyl (BZ 116)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,5-Tetrachlorobiphenyl (BZ 61)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,6-Tetrachlorobiphenyl (BZ 62)	NELAP	PA	12/17/2012
EPA 1668		2,3,4-Trichlorobiphenyl (BZ 21)	NELAP	PA	12/17/2012
EPA 1668		2,3,5,6-Tetrachlorobiphenyl (BZ 65)	NELAP	PA	12/17/2012
EPA 1668		2,3,5-Trichlorobiphenyl (BZ 23)	NELAP	PA	12/17/2012
EPA 1668		2,3,6-Trichlorobiphenyl (BZ 24)	NELAP	PA	12/17/2012
EPA 1668		2,3-Dichlorobiphenyl (BZ 5)	NELAP	PA	12/17/2012
EPA 1668		2,4',5-Trichlorobiphenyl (BZ 31)	NELAP	PA	12/17/2012
EPA 1668		2,4',6-Trichlorobiphenyl (BZ 32)	NELAP	PA	12/17/2012
EPA 1668		2,4'-Dichlorobiphenyl (BZ 8)	NELAP	PA	12/17/2012
EPA 1668		2,4,4',5-Tetrachlorobiphenyl (BZ 74)	NELAP	PA	12/17/2012
EPA 1668		2,4,4',6-Tetrachlorobiphenyl (BZ 75)	NELAP	PA	12/17/2012
EPA 1668		2,4,4'-Trichlorobiphenyl (BZ 28)	NELAP	PA	12/17/2012

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Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1668		2,4,5-Trichlorobiphenyl (BZ 29)	NELAP	PA	12/17/2012
EPA 1668		2,4,6-Trichlorobiphenyl (BZ 30)	NELAP	PA	12/17/2012
EPA 1668		2,4-Dichlorobiphenyl (BZ 7)	NELAP	PA	12/17/2012
EPA 1668		2,5-Dichlorobiphenyl (BZ 9)	NELAP	PA	12/17/2012
EPA 1668		2,6-Dichlorobiphenyl (BZ 10)	NELAP	PA	12/17/2012
EPA 1668		2-Chlorobiphenyl (BZ 1)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,5'-Tetrachlorobiphenyl (BZ 79)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,5,5'-Pentachlorobiphenyl (BZ 127)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,5-Tetrachlorobiphenyl (BZ 78)	NELAP	PA	12/17/2012
EPA 1668		3,3',4-Trichlorobiphenyl (BZ 35)	NELAP	PA	12/17/2012
EPA 1668		3,3',5,5'-Tetrachlorobiphenyl (BZ 80)	NELAP	PA	12/17/2012
EPA 1668		3,3',5-Trichlorobiphenyl (BZ 36)	NELAP	PA	12/17/2012
EPA 1668		3,3'-Dichlorobiphenyl (BZ 11)	NELAP	PA	12/17/2012
EPA 1668		3,4',5-Trichlorobiphenyl (BZ 39)	NELAP	PA	12/17/2012
EPA 1668		3,4'-Dichlorobiphenyl (BZ 13)	NELAP	PA	12/17/2012
EPA 1668		3,4,4',5-Tetrachlorobiphenyl (BZ 81)	NELAP	PA	12/17/2012
EPA 1668		3,4,4'-Trichlorobiphenyl (BZ 37)	NELAP	PA	12/17/2012
EPA 1668		3,4,5-Trichlorobiphenyl (BZ 38)	NELAP	PA	12/17/2012
EPA 1668		3,4-Dichlorobiphenyl (BZ 12)	NELAP	PA	12/17/2012
EPA 1668		3,5-Dichlorobiphenyl (BZ 14)	NELAP	PA	12/17/2012
EPA 1668		3-Chlorobiphenyl (BZ 2)	NELAP	PA	12/17/2012
EPA 1668		4,4'-Dichlorobiphenyl (BZ 15)	NELAP	PA	12/17/2012
EPA 1668		4-Chlorobiphenyl (BZ 3)	NELAP	PA	12/17/2012
EPA 1668		Decachlorobiphenyl	NELAP	PA	2/1/2013
EPA 1668	A	PCBs as congeners by HRGC/HRMS	NELAP	PA	3/4/2015
EPA 1668	C	PCBs as congeners by HRGC/HRMS	NELAP	PA	3/4/2015
EPA 1671	A	Acetonitrile	NELAP	PA	1/19/2005
EPA 1671	A	Diethylamine	NELAP	PA	1/19/2005
EPA 1671	A	Dimethyl sulfoxide	NELAP	PA	1/19/2005
EPA 1671	A	Ethanol	NELAP	PA	1/19/2005
EPA 1671	A	Methanol	NELAP	PA	1/19/2005
EPA 1671	A	Methyl cellosolve (2-Methoxyethanol)	NELAP	PA	1/19/2005
EPA 1671	A	Triethylamine	NELAP	PA	1/19/2005
EPA 1671	A	n-Propanol (1-Propanol)	NELAP	PA	1/19/2005
EPA 170.1		Temperature, deg. C	NELAP	PA	4/4/2005
EPA 180.1		Turbidity	NELAP	PA	1/19/2005
EPA 200.2		Metals sample preparation	NELAP	PA	1/24/2007
EPA 200.7	4.4	Aluminum	NELAP	PA	1/19/2005
EPA 200.7	4.4	Antimony	NELAP	PA	1/19/2005
EPA 200.7	4.4	Arsenic	NELAP	PA	1/19/2005
EPA 200.7	4.4	Barium	NELAP	PA	1/19/2005
EPA 200.7	4.4	Beryllium	NELAP	PA	1/19/2005

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Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 200.7	4.4	Boron	NELAP	PA	1/19/2005
EPA 200.7	4.4	Cadmium	NELAP	PA	1/19/2005
EPA 200.7	4.4	Calcium	NELAP	PA	1/19/2005
EPA 200.7	4.4	Chromium	NELAP	PA	1/19/2005
EPA 200.7	4.4	Cobalt	NELAP	PA	1/19/2005
EPA 200.7	4.4	Copper	NELAP	PA	1/19/2005
EPA 200.7	4.4	Iron	NELAP	PA	1/19/2005
EPA 200.7	4.4	Lead	NELAP	PA	1/19/2005
EPA 200.7	4.4	Lithium	NELAP	PA	2/7/2012
EPA 200.7	4.4	Magnesium	NELAP	PA	1/19/2005
EPA 200.7	4.4	Manganese	NELAP	PA	1/19/2005
EPA 200.7	4.4	Molybdenum	NELAP	PA	1/19/2005
EPA 200.7	4.4	Nickel	NELAP	PA	1/19/2005
EPA 200.7	4.4	Potassium	NELAP	PA	1/19/2005
EPA 200.7	4.4	Selenium	NELAP	PA	1/19/2005
EPA 200.7	4.4	Silver	NELAP	PA	4/4/2005
EPA 200.7	4.4	Sodium	NELAP	PA	1/19/2005
EPA 200.7	4.4	Strontium	NELAP	PA	5/24/2011
EPA 200.7	4.4	Thallium	NELAP	PA	1/19/2005
EPA 200.7	4.4	Tin	NELAP	PA	1/19/2005
EPA 200.7	4.4	Titanium	NELAP	PA	1/19/2005
EPA 200.7	4.4	Vanadium	NELAP	PA	1/19/2005
EPA 200.7	4.4	Zinc	NELAP	PA	1/19/2005
EPA 200.7	4.4	Zirconium	NELAP	PA	7/29/2015
EPA 200.8	5.4	Aluminum	NELAP	PA	1/7/2010
EPA 200.8	5.4	Antimony	NELAP	PA	4/4/2005
EPA 200.8	5.4	Arsenic	NELAP	PA	4/4/2005
EPA 200.8	5.4	Barium	NELAP	PA	4/4/2005
EPA 200.8	5.4	Beryllium	NELAP	PA	4/4/2005
EPA 200.8	5.4	Boron	NELAP	PA	1/11/2012
EPA 200.8	5.4	Cadmium	NELAP	PA	4/4/2005
EPA 200.8	5.4	Calcium	NELAP	PA	1/7/2010
EPA 200.8	5.4	Chromium	NELAP	PA	4/4/2005
EPA 200.8	5.4	Cobalt	NELAP	PA	11/23/2010
EPA 200.8	5.4	Copper	NELAP	PA	4/4/2005
EPA 200.8	5.4	Iron	NELAP	PA	11/23/2010
EPA 200.8	5.4	Lead	NELAP	PA	4/4/2005
EPA 200.8	5.4	Magnesium	NELAP	PA	1/7/2010
EPA 200.8	5.4	Manganese	NELAP	PA	11/23/2010
EPA 200.8	5.4	Molybdenum	NELAP	PA	1/7/2010
EPA 200.8	5.4	Nickel	NELAP	PA	4/4/2005
EPA 200.8	5.4	Potassium	NELAP	PA	1/7/2010
EPA 200.8	5.4	Selenium	NELAP	PA	12/12/2005
EPA 200.8	5.4	Silver	NELAP	PA	1/2/2007
EPA 200.8	5.4	Sodium	NELAP	PA	1/7/2010

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 200.8	5.4	Strontium	NELAP	PA	1/7/2010
EPA 200.8	5.4	Thallium	NELAP	PA	5/31/2006
EPA 200.8	5.4	Tin	NELAP	PA	1/7/2010
EPA 200.8	5.4	Titanium	NELAP	PA	1/7/2010
EPA 200.8	5.4	Vanadium	NELAP	PA	1/7/2010
EPA 200.8	5.4	Zinc	NELAP	PA	1/18/2011
EPA 218.6		Chromium VI	NELAP	PA	4/4/2005
EPA 245.1	3.0	Mercury	NELAP	PA	1/19/2005
EPA 300.0	2.1	Bromide	NELAP	PA	4/4/2005
EPA 300.0	2.1	Chloride	NELAP	PA	1/19/2005
EPA 300.0	2.1	Fluoride	NELAP	PA	5/25/2005
EPA 300.0	2.1	Nitrate as N	NELAP	PA	1/19/2005
EPA 300.0	2.1	Nitrite as N	NELAP	PA	1/19/2005
EPA 300.0	2.1	Sulfate	NELAP	PA	1/19/2005
EPA 3005	A	Preconcentration under acid	NELAP	PA	12/12/2005
EPA 3010	A	Hot plate acid digestion (HNO3 + HCl)	NELAP	PA	12/12/2005
EPA 3020	A	Hot plate acid digestion (HNO3 only)	NELAP	PA	12/12/2005
EPA 305.2		Acidity as CaCO3	NELAP	PA	1/24/2007
EPA 3060	A	Alkaline digestion of Cr(VI)	NELAP	PA	1/24/2007
EPA 335.4		Total cyanide	NELAP	PA	1/19/2005
EPA 350.1		Ammonia as N	NELAP	PA	10/9/2013
EPA 351.2		Kjeldahl nitrogen, total (TKN)	NELAP	PA	1/19/2005
EPA 3510	C	Separatory funnel liquid-liquid extraction	NELAP	PA	12/12/2005
EPA 3511		Organic compounds in water by microextraction	NELAP	PA	3/7/2012
EPA 3520	C	Continuous liquid-liquid extraction	NELAP	PA	12/12/2005
EPA 353.2		Nitrate as N	NELAP	PA	1/19/2005
EPA 353.2		Nitrite as N	NELAP	PA	1/19/2005
EPA 353.2		Total nitrate-nitrite	NELAP	PA	4/4/2005
EPA 3620	B	Florisil cleanup	NELAP	PA	12/12/2005
EPA 3630	C	Silica gel cleanup	NELAP	PA	12/12/2005
EPA 3640	A	Gel permeation cleanup (GPC)	NELAP	PA	12/12/2005
EPA 365.1		Phosphorus, total	NELAP	PA	4/4/2005
EPA 365.3		Orthophosphate as P	NELAP	PA	1/19/2005
EPA 3660	B	Sulfur cleanup	NELAP	PA	12/12/2005
EPA 375.4		Sulfate	NELAP	PA	4/4/2005
EPA 410.4		Chemical oxygen demand (COD)	NELAP	PA	4/1/2005
EPA 415.1		Total organic carbon (TOC)	NELAP	PA	1/19/2005
EPA 420.4		Total phenolics	NELAP	PA	4/17/2007
EPA 425.1		Surfactants as MBAS	NELAP	PA	1/19/2005
EPA 5030	C	Aqueous-phase purge-and-trap	NELAP	PA	1/27/2014
EPA 5030	B	Aqueous-phase purge-and-trap	NELAP	PA	12/12/2005
EPA 524.2	4.1	1,2-Dichlorobenzene (o-Dichlorobenzene)	NELAP	PA	1/18/2011
EPA 524.2	4.1	1,2-Dichloroethane	NELAP	PA	1/18/2011
EPA 524.2	4.1	4-Methyl-2-pentanone (MIBK)	NELAP	PA	5/24/2011
EPA 524.2	4.1	Acetone	NELAP	PA	1/18/2011

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 524.2	4.1	Benzene	NELAP	PA	1/18/2011
EPA 524.2	4.1	Chlorobenzene	NELAP	PA	1/18/2011
EPA 524.2	4.1	Chloroform	NELAP	PA	1/18/2011
EPA 524.2	4.1	Methylene chloride (Dichloromethane)	NELAP	PA	5/24/2011
EPA 524.2	4.1	Tetrahydrofuran (THF)	NELAP	PA	5/24/2011
EPA 524.2	4.1	Toluene	NELAP	PA	1/18/2011
EPA 524.2	4.1	m+p-Xylene	NELAP	PA	7/25/2011
EPA 524.2	4.1	o-Xylene	NELAP	PA	5/24/2011
EPA 6010		Aluminum	NELAP	PA	12/12/2005
EPA 6010		Antimony	NELAP	PA	12/12/2005
EPA 6010		Arsenic	NELAP	PA	12/12/2005
EPA 6010		Barium	NELAP	PA	12/12/2005
EPA 6010		Beryllium	NELAP	PA	12/12/2005
EPA 6010		Boron	NELAP	PA	12/12/2005
EPA 6010		Cadmium	NELAP	PA	12/12/2005
EPA 6010		Calcium	NELAP	PA	12/12/2005
EPA 6010		Chromium	NELAP	PA	12/12/2005
EPA 6010		Cobalt	NELAP	PA	12/12/2005
EPA 6010		Copper	NELAP	PA	12/12/2005
EPA 6010		Iron	NELAP	PA	12/12/2005
EPA 6010		Lead	NELAP	PA	12/12/2005
EPA 6010		Lithium	NELAP	PA	1/18/2011
EPA 6010		Magnesium	NELAP	PA	12/12/2005
EPA 6010		Manganese	NELAP	PA	12/12/2005
EPA 6010	C	Metals by ICP/AES	NELAP	PA	3/26/2012
EPA 6010	B	Metals by ICP/AES	NELAP	PA	3/26/2012
EPA 6010		Molybdenum	NELAP	PA	12/12/2005
EPA 6010		Nickel	NELAP	PA	12/12/2005
EPA 6010		Potassium	NELAP	PA	12/12/2005
EPA 6010		Selenium	NELAP	PA	12/12/2005
EPA 6010		Silver	NELAP	PA	12/12/2005
EPA 6010		Sodium	NELAP	PA	12/12/2005
EPA 6010		Strontium	NELAP	PA	12/12/2005
EPA 6010		Sulfur	NELAP	PA	12/19/2011
EPA 6010		Thallium	NELAP	PA	12/12/2005
EPA 6010		Tin	NELAP	PA	12/12/2005
EPA 6010		Titanium	NELAP	PA	12/12/2005
EPA 6010		Vanadium	NELAP	PA	12/12/2005
EPA 6010		Zinc	NELAP	PA	12/12/2005
EPA 6010		Zirconium	NELAP	PA	7/29/2015
EPA 602		Benzene	NELAP	PA	1/19/2005
EPA 602		Ethylbenzene	NELAP	PA	1/19/2005
EPA 602		Methyl tert-butyl ether (MTBE)	NELAP	PA	1/19/2005
EPA 602		Naphthalene	NELAP	PA	1/18/2011
EPA 602		Styrene	NELAP	PA	6/24/2008

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Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 602		Toluene	NELAP	PA	1/19/2005
EPA 602		Xylenes, total	NELAP	PA	1/19/2005
EPA 602		m+p-Xylene	NELAP	PA	1/18/2011
EPA 602		o-Xylene	NELAP	PA	1/18/2011
EPA 6020		Aluminum	NELAP	PA	1/7/2010
EPA 6020		Antimony	NELAP	PA	12/12/2005
EPA 6020		Arsenic	NELAP	PA	12/12/2005
EPA 6020		Barium	NELAP	PA	12/12/2005
EPA 6020		Beryllium	NELAP	PA	12/12/2005
EPA 6020		Boron	NELAP	PA	1/11/2012
EPA 6020		Cadmium	NELAP	PA	12/12/2005
EPA 6020		Calcium	NELAP	PA	1/7/2010
EPA 6020		Chromium	NELAP	PA	12/12/2005
EPA 6020		Cobalt	NELAP	PA	11/23/2010
EPA 6020		Copper	NELAP	PA	12/12/2005
EPA 6020		Iron	NELAP	PA	11/23/2010
EPA 6020		Lead	NELAP	PA	12/12/2005
EPA 6020		Magnesium	NELAP	PA	1/7/2010
EPA 6020		Manganese	NELAP	PA	11/23/2010
EPA 6020	A	Metals by ICP/MS	NELAP	PA	3/26/2012
EPA 6020		Molybdenum	NELAP	PA	1/7/2010
EPA 6020		Nickel	NELAP	PA	7/23/2008
EPA 6020		Potassium	NELAP	PA	1/7/2010
EPA 6020		Selenium	NELAP	PA	12/12/2005
EPA 6020		Silver	NELAP	PA	1/12/2007
EPA 6020		Sodium	NELAP	PA	1/7/2010
EPA 6020		Strontium	NELAP	PA	1/7/2010
EPA 6020		Thallium	NELAP	PA	12/12/2005
EPA 6020		Tin	NELAP	PA	1/7/2010
EPA 6020		Titanium	NELAP	PA	1/7/2010
EPA 6020		Vanadium	NELAP	PA	1/7/2010
EPA 6020		Zinc	NELAP	PA	1/18/2011
EPA 608		4,4'-DDD	NELAP	PA	1/19/2005
EPA 608		4,4'-DDE	NELAP	PA	1/19/2005
EPA 608		4,4'-DDT	NELAP	PA	1/19/2005
EPA 608		Aldrin (HHDN)	NELAP	PA	1/19/2005
EPA 608		Aroclor-1016 (PCB-1016)	NELAP	PA	12/11/2006
EPA 608		Aroclor-1221 (PCB-1221)	NELAP	PA	12/11/2006
EPA 608		Aroclor-1232 (PCB-1232)	NELAP	PA	12/11/2006
EPA 608		Aroclor-1242 (PCB-1242)	NELAP	PA	12/11/2006
EPA 608		Aroclor-1248 (PCB-1248)	NELAP	PA	12/11/2006
EPA 608		Aroclor-1254 (PCB-1254)	NELAP	PA	12/11/2006
EPA 608		Aroclor-1260 (PCB-1260)	NELAP	PA	12/11/2006
EPA 608		Aroclor-1268 (PCB-1268)	NELAP	PA	11/13/2012
EPA 608		Chlordane (tech.)	NELAP	PA	1/19/2005

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 608		Dieldrin	NELAP	PA	1/19/2005
EPA 608		Endosulfan I	NELAP	PA	1/19/2005
EPA 608		Endosulfan II	NELAP	PA	1/19/2005
EPA 608		Endosulfan sulfate	NELAP	PA	1/19/2005
EPA 608		Endrin	NELAP	PA	1/19/2005
EPA 608		Endrin aldehyde	NELAP	PA	1/19/2005
EPA 608		Heptachlor	NELAP	PA	1/19/2005
EPA 608		Heptachlor epoxide	NELAP	PA	1/19/2005
EPA 608		Methoxychlor	NELAP	PA	5/2/2006
EPA 608		Mirex	NELAP	PA	11/13/2012
EPA 608		Toxaphene (Chlorinated camphene)	NELAP	PA	1/19/2005
EPA 608		alpha-BHC (alpha-Hexachlorocyclohexane)	NELAP	PA	1/19/2005
EPA 608		beta-BHC (beta-Hexachlorocyclohexane)	NELAP	PA	1/19/2005
EPA 608		delta-BHC (delta-Hexachlorocyclohexane)	NELAP	PA	1/19/2005
EPA 608		gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	NELAP	PA	1/19/2005
EPA 622		Azinphos-methyl (Guthion)	NELAP	PA	6/15/2009
EPA 622		Bolstar (Sulprofos)	NELAP	PA	6/15/2009
EPA 622		Carbophenothion (Trithion)	NELAP	PA	4/28/2010
EPA 622		Chlorpyrifos	NELAP	PA	6/15/2009
EPA 622		Coumaphos	NELAP	PA	6/15/2009
EPA 622		Demeton-O	NELAP	PA	6/15/2009
EPA 622		Demeton-S	NELAP	PA	6/15/2009
EPA 622		Diazinon (Spectracide)	NELAP	PA	6/15/2009
EPA 622		Dichlorovos (DDVP, Dichlorvos)	NELAP	PA	6/15/2009
EPA 622		Disulfoton	NELAP	PA	6/15/2009
EPA 622		EPN (Santox)	NELAP	PA	6/15/2009
EPA 622		Ethion	NELAP	PA	6/15/2009
EPA 622		Ethoprop (Prophos)	NELAP	PA	6/15/2009
EPA 622		Famphur	NELAP	PA	6/15/2009
EPA 622		Fensulfothion	NELAP	PA	6/15/2009
EPA 622		Fenthion	NELAP	PA	6/15/2009
EPA 622		Malathion	NELAP	PA	6/15/2009
EPA 622		Merphos	NELAP	PA	6/15/2009
EPA 622		Methyl parathion (Parathion, methyl)	NELAP	PA	6/15/2009
EPA 622		Mevinphos	NELAP	PA	6/15/2009
EPA 622		Naled	NELAP	PA	6/15/2009
EPA 622		Parathion, ethyl (Ethyl parathion, Parathion)	NELAP	PA	6/15/2009
EPA 622		Phorate (Thimet)	NELAP	PA	6/15/2009
EPA 622		Ronnel	NELAP	PA	6/15/2009
EPA 622		Stirophos (Tetrachlorovinphos)	NELAP	PA	6/15/2009
EPA 622		Tokuthion (Prothiophos)	NELAP	PA	6/15/2009
EPA 622		Trichloronate	NELAP	PA	6/15/2009
EPA 624		1,1,1,2-Tetrachloroethane	NELAP	PA	1/19/2005
EPA 624		1,1,1-Trichloroethane	NELAP	PA	1/19/2005
EPA 624		1,1,2,2-Tetrachloroethane	NELAP	PA	1/19/2005

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 624		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NELAP	PA	7/3/2007
EPA 624		1,1,2-Trichloroethane	NELAP	PA	1/19/2005
EPA 624		1,1-Dichloroethane	NELAP	PA	1/19/2005
EPA 624		1,1-Dichloroethene (1,1-Dichloroethylene)	NELAP	PA	1/19/2005
EPA 624		1,1-Dichloropropene	NELAP	PA	7/3/2007
EPA 624		1,2,3-Trichlorobenzene	NELAP	PA	7/3/2007
EPA 624		1,2,3-Trichloropropane (1,2,3-TCP)	NELAP	PA	7/3/2007
EPA 624		1,2,3-Trimethylbenzene	NELAP	PA	7/3/2007
EPA 624		1,2,4-Trichlorobenzene	NELAP	PA	7/3/2007
EPA 624		1,2,4-Trimethylbenzene	NELAP	PA	7/3/2007
EPA 624		1,2-Dibromo-3-chloropropane (DBCP, Dibromochloropropane)	NELAP	PA	7/3/2007
EPA 624		1,2-Dibromoethane (EDB, Ethylene dibromide)	NELAP	PA	7/3/2007
EPA 624		1,2-Dichlorobenzene (o-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 624		1,2-Dichloroethane	NELAP	PA	1/19/2005
EPA 624		1,2-Dichloropropane	NELAP	PA	1/19/2005
EPA 624		1,3,5-Trimethylbenzene	NELAP	PA	7/3/2007
EPA 624		1,3-Dichlorobenzene (m-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 624		1,3-Dichloropropane	NELAP	PA	7/3/2007
EPA 624		1,4-Dichlorobenzene (p-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 624		1,4-Dioxane (1,4-Diethyleneoxide)	NELAP	PA	7/3/2007
EPA 624		2,2-Dichloropropane	NELAP	PA	7/3/2007
EPA 624		2-Butanone (Methyl ethyl ketone, MEK)	NELAP	PA	7/3/2007
EPA 624		2-Chloroethyl vinyl ether	NELAP	PA	1/19/2005
EPA 624		2-Chlorotoluene	NELAP	PA	7/3/2007
EPA 624		2-Hexanone	NELAP	PA	7/3/2007
EPA 624		4-Chloro-2-nitrophenol	NELAP	PA	7/3/2007
EPA 624		4-Chlorotoluene	NELAP	PA	7/3/2007
EPA 624		4-Methyl-2-pentanone (MIBK)	NELAP	PA	5/2/2006
EPA 624		Acetone	NELAP	PA	7/3/2007
EPA 624		Acetonitrile	NELAP	PA	7/3/2007
EPA 624		Acrolein (Propenal)	NELAP	PA	1/19/2005
EPA 624		Acrylonitrile	NELAP	PA	1/19/2005
EPA 624		Allyl chloride (3-Chloropropene)	NELAP	PA	7/3/2007
EPA 624		Benzene	NELAP	PA	1/19/2005
EPA 624		Bromobenzene	NELAP	PA	7/3/2007
EPA 624		Bromochloromethane	NELAP	PA	5/2/2006
EPA 624		Bromodichloromethane	NELAP	PA	1/19/2005
EPA 624		Bromoform	NELAP	PA	1/19/2005
EPA 624		Carbon disulfide	NELAP	PA	7/3/2007
EPA 624		Carbon tetrachloride	NELAP	PA	1/19/2005
EPA 624		Chlorobenzene	NELAP	PA	1/19/2005
EPA 624		Chloroethane	NELAP	PA	1/19/2005
EPA 624		Chloroform	NELAP	PA	1/19/2005

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 624		Chloroprene (2-Chloro-1,3-butadiene)	NELAP	PA	6/12/2009
EPA 624		Cyclohexane	NELAP	PA	7/3/2007
EPA 624		Dibromochloromethane	NELAP	PA	4/4/2005
EPA 624		Dibromomethane	NELAP	PA	7/3/2007
EPA 624		Dichlorodifluoromethane (Freon 12)	NELAP	PA	7/3/2007
EPA 624		Diisopropyl ether (DIPE)	NELAP	PA	5/2/2006
EPA 624		Ethyl acetate	NELAP	PA	1/20/2012
EPA 624		Ethyl methacrylate	NELAP	PA	7/3/2007
EPA 624		Ethylbenzene	NELAP	PA	1/19/2005
EPA 624		Freon 113 (1,1,2-Trichloro-1,2,2-trifluoroethane)	NELAP	PA	2/1/2011
EPA 624		Freon-123A	NELAP	PA	2/1/2011
EPA 624		Isobutyl alcohol (2-Methyl-1-propanol)	NELAP	PA	7/3/2007
EPA 624		Isopropylbenzene (Cumene)	NELAP	PA	5/2/2006
EPA 624		Methacrylonitrile	NELAP	PA	7/3/2007
EPA 624		Methyl bromide (Bromomethane)	NELAP	PA	1/19/2005
EPA 624		Methyl chloride (Chloromethane)	NELAP	PA	1/19/2005
EPA 624		Methyl iodide (Iodomethane)	NELAP	PA	7/3/2007
EPA 624		Methyl tert-butyl ether (MTBE)	NELAP	PA	12/12/2005
EPA 624		Methylene chloride (Dichloromethane)	NELAP	PA	1/19/2005
EPA 624		Methylmethacrylate	NELAP	PA	7/3/2007
EPA 624		Naphthalene	NELAP	PA	7/3/2007
EPA 624		Pentachloroethane	NELAP	PA	7/3/2007
EPA 624		Propionitrile (Ethyl cyanide)	NELAP	PA	7/3/2007
EPA 624		Styrene	NELAP	PA	5/2/2006
EPA 624		Tetrachloroethene (PCE, Perchloroethylene)	NELAP	PA	1/19/2005
EPA 624		Tetrahydrofuran (THF)	NELAP	PA	7/3/2007
EPA 624		Toluene	NELAP	PA	1/19/2005
EPA 624		Trichloroethene (TCE, Trichloroethylene)	NELAP	PA	1/19/2005
EPA 624		Trichlorofluoromethane (Freon 11)	NELAP	PA	1/19/2005
EPA 624		Vinyl acetate	NELAP	PA	7/3/2007
EPA 624		Vinyl chloride (Chloroethene)	NELAP	PA	1/19/2005
EPA 624		Xylenes, total	NELAP	PA	1/19/2005
EPA 624		cis-1,2-Dichloroethene	NELAP	PA	6/12/2009
EPA 624		cis-1,3-Dichloropropene	NELAP	PA	1/19/2005
EPA 624		n-Butylbenzene	NELAP	PA	7/3/2007
EPA 624		n-Heptane	NELAP	PA	7/3/2007
EPA 624		n-Hexane	NELAP	PA	7/3/2007
EPA 624		n-Propylbenzene	NELAP	PA	7/3/2007
EPA 624		p-Isopropyltoluene (4-Isopropyltoluene)	NELAP	PA	7/3/2007
EPA 624		sec-Butylbenzene	NELAP	PA	7/3/2007
EPA 624		tert-Amyl methyl ether (TAME)	NELAP	PA	5/2/2006
EPA 624		tert-Butyl alcohol (2-Methyl-2-propanol)	NELAP	PA	5/2/2006
EPA 624		tert-Butyl ethyl ether	NELAP	PA	5/2/2006
EPA 624		tert-Butylbenzene	NELAP	PA	7/3/2007
EPA 624		trans-1,2-Dichloroethene	NELAP	PA	1/19/2005

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 624		trans-1,3-Dichloropropene	NELAP	PA	1/19/2005
EPA 625		1,1'-Biphenyl (Biphenyl, Lemonene)	NELAP	PA	7/3/2007
EPA 625		1,2,4,5-Tetrachlorobenzene	NELAP	PA	5/2/2006
EPA 625		1,2,4-Trichlorobenzene	NELAP	PA	1/19/2005
EPA 625		1,2-Dichlorobenzene (o-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 625		1,2-Diphenylhydrazine	NELAP	PA	5/2/2006
EPA 625		1,3-Dichlorobenzene (m-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 625		1,4-Dichlorobenzene (p-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 625		1,4-Dioxane (1,4-Diethyleneoxide)	NELAP	PA	7/3/2007
EPA 625		1-Methylphenanthrene	NELAP	PA	5/2/2006
EPA 625		2,3,4,6-Tetrachlorophenol	NELAP	PA	7/3/2007
EPA 625		2,3-Dichloroaniline	NELAP	PA	5/2/2006
EPA 625		2,3-Dinitrotoluene	NELAP	PA	7/3/2007
EPA 625		2,4,5-Trichlorophenol	NELAP	PA	7/3/2007
EPA 625		2,4,6-Trichlorophenol	NELAP	PA	1/19/2005
EPA 625		2,4-Dichlorophenol	NELAP	PA	1/19/2005
EPA 625		2,4-Dimethylphenol	NELAP	PA	1/19/2005
EPA 625		2,4-Dinitrophenol	NELAP	PA	1/19/2005
EPA 625		2,4-Dinitrotoluene (2,4-DNT)	NELAP	PA	1/19/2005
EPA 625		2,6-Dichlorophenol	NELAP	PA	7/3/2007
EPA 625		2,6-Dinitrotoluene (2,6-DNT)	NELAP	PA	1/19/2005
EPA 625		2-Chloronaphthalene	NELAP	PA	1/19/2005
EPA 625		2-Chlorophenol	NELAP	PA	1/19/2005
EPA 625		2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	NELAP	PA	1/19/2005
EPA 625		2-Methylnaphthalene	NELAP	PA	7/3/2007
EPA 625		2-Methylphenol (o-Cresol)	NELAP	PA	7/3/2007
EPA 625		2-Nitroaniline	NELAP	PA	7/3/2007
EPA 625		2-Nitrophenol	NELAP	PA	1/19/2005
EPA 625		3+4-Methylphenol (m+p-Cresol)	NELAP	PA	7/3/2007
EPA 625		3,3'-Dichlorobenzidine	NELAP	PA	1/19/2005
EPA 625		3-Nitroaniline	NELAP	PA	7/3/2007
EPA 625		4-Bromophenyl phenyl ether	NELAP	PA	1/19/2005
EPA 625		4-Chloro-3-methylphenol	NELAP	PA	1/19/2005
EPA 625		4-Chloroaniline	NELAP	PA	7/3/2007
EPA 625		4-Chlorophenyl phenyl ether	NELAP	PA	1/19/2005
EPA 625		4-Nitroaniline	NELAP	PA	7/3/2007
EPA 625		4-Nitrophenol	NELAP	PA	1/19/2005
EPA 625		Acenaphthene	NELAP	PA	1/19/2005
EPA 625		Acenaphthylene	NELAP	PA	1/19/2005
EPA 625		Acetophenone	NELAP	PA	5/2/2006
EPA 625		Aniline	NELAP	PA	5/2/2006
EPA 625		Anthracene	NELAP	PA	4/4/2005
EPA 625		Benzidine	NELAP	PA	1/19/2005
EPA 625		Benzo[a]anthracene	NELAP	PA	1/19/2005
EPA 625		Benzo[a]pyrene	NELAP	PA	1/19/2005

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 625		Benzo[b]fluoranthene	NELAP	PA	1/19/2005
EPA 625		Benzo[ghi]perylene	NELAP	PA	1/19/2005
EPA 625		Benzo[k]fluoranthene	NELAP	PA	1/19/2005
EPA 625		Benzoic acid	NELAP	PA	5/2/2006
EPA 625		Benzyl alcohol	NELAP	PA	7/3/2007
EPA 625		Butyl benzyl phthalate (Benzyl butyl phthalate)	NELAP	PA	1/19/2005
EPA 625		Carbazole	NELAP	PA	5/2/2006
EPA 625		Chrysene (Benzo[a]phenanthrene)	NELAP	PA	1/19/2005
EPA 625		Di-n-butyl phthalate	NELAP	PA	1/19/2005
EPA 625		Di-n-octyl phthalate	NELAP	PA	1/19/2005
EPA 625		Dibenzo[a,h]anthracene	NELAP	PA	1/19/2005
EPA 625		Dibenzofuran	NELAP	PA	7/3/2007
EPA 625		Diethyl phthalate	NELAP	PA	1/19/2005
EPA 625		Dimethyl phthalate	NELAP	PA	1/19/2005
EPA 625		Diphenyl ether	NELAP	PA	7/3/2007
EPA 625		Fluoranthene	NELAP	PA	1/19/2005
EPA 625		Fluorene	NELAP	PA	1/19/2005
EPA 625		Hexachlorobenzene	NELAP	PA	1/19/2005
EPA 625		Hexachlorobutadiene (1,3-Hexachlorobutadiene)	NELAP	PA	1/19/2005
EPA 625		Hexachlorocyclopentadiene	NELAP	PA	1/19/2005
EPA 625		Hexachloroethane	NELAP	PA	1/19/2005
EPA 625		Indeno(1,2,3-cd)pyrene	NELAP	PA	1/19/2005
EPA 625		Isophorone	NELAP	PA	1/19/2005
EPA 625		N-Nitrosodi-n-butylamine	NELAP	PA	5/2/2006
EPA 625		N-Nitrosodi-n-propylamine	NELAP	PA	1/19/2005
EPA 625		N-Nitrosodiethylamine	NELAP	PA	5/2/2006
EPA 625		N-Nitrosodimethylamine	NELAP	PA	1/19/2005
EPA 625		N-Nitrosodiphenylamine	NELAP	PA	1/19/2005
EPA 625		N-Nitrosopyrrolidine	NELAP	PA	5/2/2006
EPA 625		Naphthalene	NELAP	PA	1/19/2005
EPA 625		Nitrobenzene	NELAP	PA	1/19/2005
EPA 625		Pentachlorobenzene	NELAP	PA	7/3/2007
EPA 625		Pentachlorophenol (PCP)	NELAP	PA	1/19/2005
EPA 625		Phenanthrene	NELAP	PA	1/19/2005
EPA 625		Phenol	NELAP	PA	1/19/2005
EPA 625		Pyrene	NELAP	PA	1/19/2005
EPA 625		Pyridine	NELAP	PA	5/2/2006
EPA 625		alpha-Terpineol	NELAP	PA	5/2/2006
EPA 625		bis(2-Chloroethoxy)methane	NELAP	PA	1/19/2005
EPA 625		bis(2-Chloroethyl) ether	NELAP	PA	1/19/2005
EPA 625		bis(2-Chloroisopropyl) ether	NELAP	PA	1/19/2005
EPA 625		bis(2-Ethylhexyl) phthalate (DEHP)	NELAP	PA	1/19/2005
EPA 625		n-Decane	NELAP	PA	5/2/2006
EPA 625		n-Docosane	NELAP	PA	5/2/2006

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Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 625		n-Dodecane	NELAP	PA	5/2/2006
EPA 625		n-Eicosane	NELAP	PA	5/2/2006
EPA 625		n-Hexadecane	NELAP	PA	5/2/2006
EPA 625		n-Octadecane	NELAP	PA	5/2/2006
EPA 625		n-Tetradecane	NELAP	PA	5/2/2006
EPA 625		o-Toluidine (2-Toluidine, 2-Methylaniline)	NELAP	PA	7/3/2007
EPA 6850		Perchlorate	NELAP	PA	1/19/2011
EPA 7196	A	Chromium VI	NELAP	PA	4/6/2006
EPA 7199		Chromium VI	NELAP	PA	1/4/2006
EPA 7470		Mercury	NELAP	PA	11/21/2005
EPA 8011		1,2-Dibromo-3-chloropropane (DBCP, Dibromochloropropane)	NELAP	PA	5/2/2006
EPA 8011		1,2-Dibromoethane (EDB, Ethylene dibromide)	NELAP	PA	12/12/2005
EPA 8015		Diesel-range organics (DRO)	NELAP	PA	12/12/2005
EPA 8015		Diethylene glycol	NELAP	PA	1/20/2012
EPA 8015		Ethane	NELAP	PA	12/4/2007
EPA 8015		Ethanol	NELAP	PA	12/4/2007
EPA 8015		Ethene	NELAP	PA	12/4/2007
EPA 8015		Ethylene glycol	NELAP	PA	12/4/2007
EPA 8015		Gasoline-range organics (GRO)	NELAP	PA	12/12/2005
EPA 8015		Isobutyl alcohol (2-Methyl-1-propanol)	NELAP	PA	2/7/2012
EPA 8015		Isopropyl alcohol (2-Propanol)	NELAP	PA	12/4/2007
EPA 8015		Methane	NELAP	PA	12/4/2007
EPA 8015		Methanol	NELAP	PA	12/4/2007
EPA 8015	C	Nonhalogenated organics by GC/FID	NELAP	PA	3/26/2012
EPA 8015	B	Nonhalogenated organics by GC/FID	NELAP	PA	3/26/2012
EPA 8015	D	Nonhalogenated organics by GC/FID	NELAP	PA	7/29/2015
EPA 8015		Propane	NELAP	PA	12/4/2007
EPA 8015		Propylene glycol	NELAP	PA	1/20/2012
EPA 8015		Tetraethylene glycol	NELAP	PA	1/20/2012
EPA 8015		Total petroleum hydrocarbons (TPH)	NELAP	PA	1/24/2007
EPA 8015		Triethylene glycol	NELAP	PA	1/20/2012
EPA 8015		n-Butyl alcohol (n-Butanol, 1-Butanol)	NELAP	PA	2/7/2012
EPA 8015		n-Propanol (1-Propanol)	NELAP	PA	2/7/2012
EPA 8021		Benzene	NELAP	PA	12/12/2005
EPA 8021		Ethylbenzene	NELAP	PA	12/12/2005
EPA 8021		Isopropylbenzene (Cumene)	NELAP	PA	12/12/2005
EPA 8021		Methyl tert-butyl ether (MTBE)	NELAP	PA	2/11/2011
EPA 8021		Naphthalene	NELAP	PA	6/24/2008
EPA 8021		Toluene	NELAP	PA	12/12/2005
EPA 8021	B	VOCs by GC/PID/ELCD	NELAP	PA	3/26/2012
EPA 8021		Xylenes, total	NELAP	PA	12/12/2005
EPA 8021		m-Xylene	NELAP	PA	11/23/2009
EPA 8021		o-Xylene	NELAP	PA	11/23/2009
EPA 8021		p-Xylene	NELAP	PA	11/23/2009

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Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8081		4,4'-DDD	NELAP	PA	2/10/2006
EPA 8081		4,4'-DDE	NELAP	PA	12/12/2005
EPA 8081		4,4'-DDT	NELAP	PA	12/12/2005
EPA 8081		Aldrin (HHDN)	NELAP	PA	12/12/2005
EPA 8081		Chlordane (tech.)	NELAP	PA	12/12/2005
EPA 8081		Dieldrin	NELAP	PA	12/12/2005
EPA 8081		Endosulfan I	NELAP	PA	2/10/2006
EPA 8081		Endosulfan II	NELAP	PA	12/12/2005
EPA 8081		Endosulfan sulfate	NELAP	PA	12/12/2005
EPA 8081		Endrin	NELAP	PA	12/12/2005
EPA 8081		Endrin aldehyde	NELAP	PA	12/12/2005
EPA 8081		Endrin ketone	NELAP	PA	2/10/2006
EPA 8081		Heptachlor	NELAP	PA	12/12/2005
EPA 8081		Heptachlor epoxide	NELAP	PA	12/12/2005
EPA 8081		Kepone	NELAP	PA	5/2/2006
EPA 8081		Methoxychlor	NELAP	PA	12/12/2005
EPA 8081		Mirex	NELAP	PA	12/12/2005
EPA 8081	A	Organochlorine pesticides by GC/ECD	NELAP	PA	3/26/2012
EPA 8081	B	Organochlorine pesticides by GC/ECD	NELAP	PA	1/1/2013
EPA 8081		Toxaphene (Chlorinated camphene)	NELAP	PA	12/12/2005
EPA 8081		alpha-BHC (alpha-Hexachlorocyclohexane)	NELAP	PA	2/10/2006
EPA 8081		alpha-Chlordane	NELAP	PA	2/10/2006
EPA 8081		beta-BHC (beta-Hexachlorocyclohexane)	NELAP	PA	2/10/2006
EPA 8081		delta-BHC (delta-Hexachlorocyclohexane)	NELAP	PA	2/10/2006
EPA 8081		gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	NELAP	PA	2/10/2006
EPA 8081		gamma-Chlordane	NELAP	PA	2/10/2006
EPA 8082		Aroclor-1016 (PCB-1016)	NELAP	PA	12/11/2006
EPA 8082		Aroclor-1221 (PCB-1221)	NELAP	PA	12/11/2006
EPA 8082		Aroclor-1232 (PCB-1232)	NELAP	PA	12/11/2006
EPA 8082		Aroclor-1242 (PCB-1242)	NELAP	PA	12/11/2006
EPA 8082		Aroclor-1248 (PCB-1248)	NELAP	PA	12/11/2006
EPA 8082		Aroclor-1254 (PCB-1254)	NELAP	PA	12/11/2006
EPA 8082		Aroclor-1260 (PCB-1260)	NELAP	PA	12/11/2006
EPA 8082		Aroclor-1262 (PCB-1262)	NELAP	PA	7/23/2008
EPA 8082		Aroclor-1268 (PCB-1268)	NELAP	PA	7/23/2008
EPA 8082		Decachlorobiphenyl	NELAP	PA	12/17/2012
EPA 8082	A	PCBs by GC/ECD	NELAP	PA	3/26/2012
EPA 8141		Alachlor (Lasso)	NELAP	PA	1/21/2009
EPA 8141		Atrazine	NELAP	PA	12/12/2005
EPA 8141		Azinphos-methyl (Guthion)	NELAP	PA	12/12/2005
EPA 8141		Bolstar (Sulprofos)	NELAP	PA	12/12/2005
EPA 8141		Carbophenothion (Trithion)	NELAP	PA	11/9/2012
EPA 8141		Chlorpyrifos	NELAP	PA	12/12/2005
EPA 8141		Coumaphos	NELAP	PA	12/12/2005
EPA 8141		Demeton-O	NELAP	PA	12/12/2005

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8141		Demeton-S	NELAP	PA	12/12/2005
EPA 8141		Diazinon (Spectracide)	NELAP	PA	12/12/2005
EPA 8141		Dichlorovos (DDVP, Dichlorvos)	NELAP	PA	12/12/2005
EPA 8141		Disulfoton	NELAP	PA	12/12/2005
EPA 8141		EPN (Santox)	NELAP	PA	12/12/2005
EPA 8141		Ethion	NELAP	PA	12/12/2005
EPA 8141		Ethoprop (Prophos)	NELAP	PA	12/12/2005
EPA 8141		Famphur	NELAP	PA	12/12/2005
EPA 8141		Fensulfothion	NELAP	PA	12/12/2005
EPA 8141		Fenthion	NELAP	PA	12/12/2005
EPA 8141		Malathion	NELAP	PA	12/12/2005
EPA 8141		Merphos	NELAP	PA	12/12/2005
EPA 8141		Methyl parathion (Parathion, methyl)	NELAP	PA	12/12/2005
EPA 8141		Metolachlor	NELAP	PA	1/24/2007
EPA 8141		Mevinphos	NELAP	PA	12/12/2005
EPA 8141		Naled	NELAP	PA	12/12/2005
EPA 8141	B	Organophosphorus compounds by GC/NPD	NELAP	PA	3/26/2012
EPA 8141	A	Organophosphorus compounds by GC/NPD	NELAP	PA	3/26/2012
EPA 8141		Parathion, ethyl (Ethyl parathion, Parathion)	NELAP	PA	12/12/2005
EPA 8141		Phorate (Thimet)	NELAP	PA	12/12/2005
EPA 8141		Ronnel	NELAP	PA	12/12/2005
EPA 8141		Simazine	NELAP	PA	12/12/2005
EPA 8141		Stirophos (Tetrachlorovinphos)	NELAP	PA	5/2/2006
EPA 8141		Tokuthion (Prothiophos)	NELAP	PA	12/12/2005
EPA 8141		Trichloronate	NELAP	PA	5/2/2006
EPA 8151		2,4,5-T	NELAP	PA	12/12/2005
EPA 8151		2,4,5-TP (Silvex)	NELAP	PA	12/12/2005
EPA 8151		2,4-D	NELAP	PA	12/12/2005
EPA 8151		2,4-DB (Butoxon)	NELAP	PA	12/12/2005
EPA 8151	A	Chlorinated herbicides by GC/ECD	NELAP	PA	3/26/2012
EPA 8151		Dalapon (2,2-Dichloropropionic acid)	NELAP	PA	12/12/2005
EPA 8151		Dicamba	NELAP	PA	12/12/2005
EPA 8151		Dichloroprop (Dichlorprop)	NELAP	PA	1/24/2007
EPA 8151		Dinoseb (2-sec-Butyl-4,6-dinitrophenol, DNBP)	NELAP	PA	12/12/2005
EPA 8151		MCPA	NELAP	PA	12/12/2005
EPA 8151		MCPP (Mecoprop)	NELAP	PA	12/12/2005
EPA 8151		Pentachlorophenol (PCP)	NELAP	PA	12/12/2005
EPA 8151		Picloram (4-Amino-3,5,6-trichloro-2-pyridinecarboxylic acid)	NELAP	PA	12/12/2005
EPA 8260		1,1,1,2-Tetrachloroethane	NELAP	PA	12/12/2005
EPA 8260		1,1,1-Trichloroethane	NELAP	PA	12/12/2005
EPA 8260		1,1,2,2-Tetrachloroethane	NELAP	PA	12/12/2005
EPA 8260		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NELAP	PA	12/12/2005
EPA 8260		1,1,2-Trichloroethane	NELAP	PA	12/12/2005

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8260		1,1-Dichloroethane	NELAP	PA	12/12/2005
EPA 8260		1,1-Dichloroethene (1,1-Dichloroethylene)	NELAP	PA	12/12/2005
EPA 8260		1,1-Dichloropropene	NELAP	PA	12/12/2005
EPA 8260		1,2,3-Trichlorobenzene	NELAP	PA	12/12/2005
EPA 8260		1,2,3-Trichloropropane (1,2,3-TCP)	NELAP	PA	12/12/2005
EPA 8260		1,2,4-Trichlorobenzene	NELAP	PA	12/12/2005
EPA 8260		1,2,4-Trimethylbenzene	NELAP	PA	12/12/2005
EPA 8260		1,2-Dibromo-3-chloropropane (DBCP, Dibromochloropropane)	NELAP	PA	12/12/2005
EPA 8260		1,2-Dibromoethane (EDB, Ethylene dibromide)	NELAP	PA	12/12/2005
EPA 8260		1,2-Dichloro-1,1,2-trifluoroethane	NELAP	PA	3/19/2015
EPA 8260		1,2-Dichlorobenzene (o-Dichlorobenzene)	NELAP	PA	12/12/2005
EPA 8260		1,2-Dichloroethane	NELAP	PA	12/12/2005
EPA 8260		1,2-Dichloropropane	NELAP	PA	12/12/2005
EPA 8260		1,3,5-Trimethylbenzene	NELAP	PA	12/12/2005
EPA 8260		1,3-Dichlorobenzene (m-Dichlorobenzene)	NELAP	PA	12/12/2005
EPA 8260		1,3-Dichloropropane	NELAP	PA	12/12/2005
EPA 8260		1,4-Dichlorobenzene (p-Dichlorobenzene)	NELAP	PA	12/12/2005
EPA 8260		1,4-Dioxane (1,4-Diethyleneoxide)	NELAP	PA	12/12/2005
EPA 8260		2,2-Dichloropropane	NELAP	PA	5/2/2006
EPA 8260		2-Butanone (Methyl ethyl ketone, MEK)	NELAP	PA	5/2/2006
EPA 8260		2-Chloroethyl vinyl ether	NELAP	PA	12/12/2005
EPA 8260		2-Chlorotoluene	NELAP	PA	12/12/2005
EPA 8260		2-Hexanone	NELAP	PA	12/12/2005
EPA 8260		2-Nitropropane	NELAP	PA	1/19/2011
EPA 8260		3,3'-Dimethyl-1-butanol	NELAP	PA	4/17/2009
EPA 8260		4-Chlorotoluene	NELAP	PA	12/12/2005
EPA 8260		4-Methyl-2-pentanone (MIBK)	NELAP	PA	12/12/2005
EPA 8260		Acetone	NELAP	PA	12/12/2005
EPA 8260		Acetonitrile	NELAP	PA	12/12/2005
EPA 8260		Acrolein (Propenal)	NELAP	PA	12/12/2005
EPA 8260		Acrylonitrile	NELAP	PA	12/12/2005
EPA 8260		Allyl chloride (3-Chloropropene)	NELAP	PA	12/12/2005
EPA 8260		Benzene	NELAP	PA	12/12/2005
EPA 8260		Benzyl chloride	NELAP	PA	7/3/2007
EPA 8260		Bromobenzene	NELAP	PA	12/12/2005
EPA 8260		Bromochloromethane	NELAP	PA	12/12/2005
EPA 8260		Bromodichloromethane	NELAP	PA	12/12/2005
EPA 8260		Bromoform	NELAP	PA	12/12/2005
EPA 8260		Carbon disulfide	NELAP	PA	12/12/2005
EPA 8260		Carbon tetrachloride	NELAP	PA	12/12/2005
EPA 8260		Chlorobenzene	NELAP	PA	12/12/2005
EPA 8260		Chloroethane	NELAP	PA	12/12/2005
EPA 8260		Chloroform	NELAP	PA	12/12/2005
EPA 8260		Chloroprene (2-Chloro-1,3-butadiene)	NELAP	PA	7/3/2007

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8260		Crotonaldehyde	NELAP	PA	10/30/2014
EPA 8260		Cyclohexane	NELAP	PA	7/3/2007
EPA 8260		Cyclohexanone	NELAP	PA	6/7/2012
EPA 8260		Dibromochloromethane	NELAP	PA	12/12/2005
EPA 8260		Dibromomethane	NELAP	PA	5/2/2006
EPA 8260		Dichlorodifluoromethane (Freon 12)	NELAP	PA	12/12/2005
EPA 8260		Diethyl ether (Ethyl ether)	NELAP	PA	2/1/2011
EPA 8260		Diisopropyl ether (DIPE)	NELAP	PA	7/3/2007
EPA 8260		Dimethyl ether	NELAP	PA	6/7/2012
EPA 8260		Epichlorohydrin (1-Chloro-2,3-epoxypropane)	NELAP	PA	4/17/2009
EPA 8260		Ethanol	NELAP	PA	1/24/2007
EPA 8260		Ethyl acetate	NELAP	PA	1/24/2007
EPA 8260		Ethyl methacrylate	NELAP	PA	1/24/2007
EPA 8260		Ethyl tert-butyl ether (ETBE)	NELAP	PA	1/24/2007
EPA 8260		Ethylbenzene	NELAP	PA	12/12/2005
EPA 8260		Ethylene oxide	NELAP	PA	10/30/2014
EPA 8260		Freon 113 (1,1,2-Trichloro-1,2,2-trifluoroethane)	NELAP	PA	3/4/2015
EPA 8260		Gasoline-range organics (GRO)	NELAP	PA	6/8/2006
EPA 8260		Heptane	NELAP	PA	1/20/2012
EPA 8260		Hexachlorobutadiene (1,3-Hexachlorobutadiene)	NELAP	PA	12/12/2005
EPA 8260		Hexachloroethane	NELAP	PA	5/23/2012
EPA 8260		Isobutyl alcohol (2-Methyl-1-propanol)	NELAP	PA	7/3/2007
EPA 8260		Isopropyl alcohol (2-Propanol)	NELAP	PA	1/18/2011
EPA 8260		Isopropylbenzene (Cumene)	NELAP	PA	5/2/2006
EPA 8260		Methacrylonitrile	NELAP	PA	7/3/2007
EPA 8260		Methyl acetate	NELAP	PA	1/24/2007
EPA 8260		Methyl bromide (Bromomethane)	NELAP	PA	12/12/2005
EPA 8260		Methyl chloride (Chloromethane)	NELAP	PA	12/12/2005
EPA 8260		Methyl iodide (Iodomethane)	NELAP	PA	5/25/2007
EPA 8260		Methyl tert-butyl ether (MTBE)	NELAP	PA	12/12/2005
EPA 8260		Methylcyclohexane	NELAP	PA	1/21/2009
EPA 8260		Methylene chloride (Dichloromethane)	NELAP	PA	12/12/2005
EPA 8260		Methylmethacrylate	NELAP	PA	5/25/2007
EPA 8260		Naphthalene	NELAP	PA	12/12/2005
EPA 8260		Pentachloroethane	NELAP	PA	1/24/2007
EPA 8260		Propionitrile (Ethyl cyanide)	NELAP	PA	12/12/2005
EPA 8260		Styrene	NELAP	PA	12/12/2005
EPA 8260		Tetrachloroethene (PCE, Perchloroethylene)	NELAP	PA	12/12/2005
EPA 8260		Tetrahydrofuran (THF)	NELAP	PA	1/18/2011
EPA 8260		Toluene	NELAP	PA	12/12/2005
EPA 8260		Trichloroethene (TCE, Trichloroethylene)	NELAP	PA	12/12/2005
EPA 8260		Trichlorofluoromethane (Freon 11)	NELAP	PA	12/12/2005
EPA 8260	B	VOCs by GC/MS	NELAP	PA	3/26/2012

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8260	C	VOCs by GC/MS	NELAP	PA	3/26/2012
EPA 8260		Vinyl acetate	NELAP	PA	12/12/2005
EPA 8260		Vinyl chloride (Chloroethene)	NELAP	PA	12/12/2005
EPA 8260		Xylenes, total	NELAP	PA	12/12/2005
EPA 8260		cis-1,2-Dichloroethene	NELAP	PA	12/12/2005
EPA 8260		cis-1,3-Dichloropropene	NELAP	PA	12/12/2005
EPA 8260		m+p-Xylene	NELAP	PA	4/17/2009
EPA 8260		n-Butyl alcohol (n-Butanol, 1-Butanol)	NELAP	PA	4/17/2009
EPA 8260		n-Butylbenzene	NELAP	PA	12/12/2005
EPA 8260		n-Hexane	NELAP	PA	1/20/2012
EPA 8260		n-Propylamine	NELAP	PA	12/12/2005
EPA 8260		n-Propylbenzene	NELAP	PA	1/24/2007
EPA 8260		o-Xylene	NELAP	PA	4/17/2009
EPA 8260		p-Isopropyltoluene (4-Isopropyltoluene)	NELAP	PA	1/24/2007
EPA 8260		sec-Butylbenzene	NELAP	PA	12/12/2005
EPA 8260		tert-Amyl alcohol (2-Methyl-2-butanol)	NELAP	PA	4/17/2009
EPA 8260		tert-Amyl methyl ether (TAME)	NELAP	PA	1/24/2007
EPA 8260		tert-Butyl alcohol (2-Methyl-2-propanol)	NELAP	PA	12/12/2005
EPA 8260		tert-Butyl formate	NELAP	PA	4/17/2009
EPA 8260		tert-Butylbenzene	NELAP	PA	12/12/2005
EPA 8260		trans-1,2-Dichloroethene	NELAP	PA	12/12/2005
EPA 8260		trans-1,3-Dichloropropene	NELAP	PA	12/12/2005
EPA 8260		trans-1,4-Dichloro-2-butene	NELAP	PA	7/3/2007
EPA 8260 SIM		1,4-Dioxane (1,4-Diethyleneoxide)	NELAP	PA	12/4/2007
EPA 8270		1,1'-Biphenyl (Biphenyl, Lemonene)	NELAP	PA	4/17/2009
EPA 8270		1,2,3,4-Tetrachlorobenzene	NELAP	PA	7/3/2007
EPA 8270		1,2,3,4-Tetrahydronaphthalene	NELAP	PA	4/17/2009
EPA 8270		1,2,3,5-Tetrachlorobenzene	NELAP	PA	7/3/2007
EPA 8270		1,2,4,5-Tetrachlorobenzene	NELAP	PA	12/12/2005
EPA 8270		1,2,4-Trichlorobenzene	NELAP	PA	12/12/2005
EPA 8270		1,2-Dichlorobenzene (o-Dichlorobenzene)	NELAP	PA	12/12/2005
EPA 8270		1,2-Diphenylhydrazine	NELAP	PA	12/12/2005
EPA 8270		1,3,5-Trinitrobenzene (1,3,5-TNB)	NELAP	PA	12/12/2005
EPA 8270		1,3-Dichlorobenzene (m-Dichlorobenzene)	NELAP	PA	12/12/2005
EPA 8270		1,3-Dinitrobenzene (1,3-DNB)	NELAP	PA	12/12/2005
EPA 8270		1,4-Dichlorobenzene (p-Dichlorobenzene)	NELAP	PA	12/12/2005
EPA 8270		1,4-Dinitrobenzene (1,4-DNB)	NELAP	PA	4/17/2009
EPA 8270		1,4-Dioxane (1,4-Diethyleneoxide)	NELAP	PA	4/17/2009
EPA 8270		1,4-Naphthoquinone	NELAP	PA	12/12/2005
EPA 8270		1,4-Phenylenediamine	NELAP	PA	12/12/2005
EPA 8270		1-Chloronaphthalene	NELAP	PA	12/12/2005
EPA 8270		1-Methylnaphthalene	NELAP	PA	4/17/2009
EPA 8270		1-Naphthylamine (alpha-Naphthylamine)	NELAP	PA	12/12/2005
EPA 8270		2,2'-Oxybis(1-chloropropane) (bis(2-Chloro-1-methylethyl) ether)	NELAP	PA	1/19/2011
EPA 8270		2,3,4,6-Tetrachlorophenol	NELAP	PA	12/12/2005

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Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8270		2,4,5-Trichlorophenol	NELAP	PA	12/12/2005
EPA 8270		2,4,6-Trichlorophenol	NELAP	PA	12/12/2005
EPA 8270		2,4-Dichlorophenol	NELAP	PA	12/12/2005
EPA 8270		2,4-Dimethylphenol	NELAP	PA	12/12/2005
EPA 8270		2,4-Dinitrophenol	NELAP	PA	12/12/2005
EPA 8270		2,4-Dinitrotoluene (2,4-DNT)	NELAP	PA	12/12/2005
EPA 8270		2,6-Dichlorophenol	NELAP	PA	12/12/2005
EPA 8270		2,6-Dinitrotoluene (2,6-DNT)	NELAP	PA	12/12/2005
EPA 8270		2-Acetylaminofluorene	NELAP	PA	12/12/2005
EPA 8270		2-Butoxyethanol	NELAP	PA	2/7/2012
EPA 8270		2-Chloronaphthalene	NELAP	PA	12/12/2005
EPA 8270		2-Chlorophenol	NELAP	PA	12/12/2005
EPA 8270		2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	NELAP	PA	12/12/2005
EPA 8270		2-Methylnaphthalene	NELAP	PA	12/12/2005
EPA 8270		2-Methylphenol (o-Cresol)	NELAP	PA	12/12/2005
EPA 8270		2-Naphthylamine (beta-Naphthylamine)	NELAP	PA	12/12/2005
EPA 8270		2-Nitroaniline	NELAP	PA	12/12/2005
EPA 8270		2-Nitrophenol	NELAP	PA	12/12/2005
EPA 8270		2-Picoline (2-Methylpyridine)	NELAP	PA	5/2/2006
EPA 8270		3+4-Methylphenol (m+p-Cresol)	NELAP	PA	12/12/2005
EPA 8270		3,3'-Dichlorobenzidine	NELAP	PA	12/12/2005
EPA 8270		3,3'-Dimethylbenzidine	NELAP	PA	7/3/2007
EPA 8270		3-Methylcholanthrene	NELAP	PA	12/12/2005
EPA 8270		3-Nitroaniline	NELAP	PA	12/12/2005
EPA 8270		4,4'-Methylenebis(2-chloroaniline)	NELAP	PA	12/12/2005
EPA 8270		4-Aminobiphenyl	NELAP	PA	12/12/2005
EPA 8270		4-Bromophenyl phenyl ether	NELAP	PA	12/12/2005
EPA 8270		4-Chloro-3-methylphenol	NELAP	PA	12/12/2005
EPA 8270		4-Chloroaniline	NELAP	PA	12/12/2005
EPA 8270		4-Chlorophenyl phenyl ether	NELAP	PA	12/12/2005
EPA 8270		4-Nitroaniline	NELAP	PA	12/12/2005
EPA 8270		4-Nitrophenol	NELAP	PA	12/12/2005
EPA 8270		4-Nitroquinoline-1-oxide	NELAP	PA	7/3/2007
EPA 8270		5-Nitro-o-toluidine	NELAP	PA	12/12/2005
EPA 8270		6-Methylchrysene	NELAP	PA	1/19/2011
EPA 8270		7,12-Dimethylbenz(a)anthracene	NELAP	PA	12/12/2005
EPA 8270		Acenaphthene	NELAP	PA	12/12/2005
EPA 8270		Acenaphthylene	NELAP	PA	12/12/2005
EPA 8270		Acetophenone	NELAP	PA	12/12/2005
EPA 8270		Aniline	NELAP	PA	12/12/2005
EPA 8270		Anthracene	NELAP	PA	12/12/2005
EPA 8270		Aramite	NELAP	PA	12/12/2005
EPA 8270		Atrazine	NELAP	PA	1/22/2007
EPA 8270		Benzaldehyde	NELAP	PA	4/17/2009
EPA 8270		Benzenethiol	NELAP	PA	4/17/2009

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Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 EPA Lab Code: PA00009 TNI Code: (717) 656-2300
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8270		Benzidine	NELAP	PA	12/12/2005
EPA 8270		Benzo[a]anthracene	NELAP	PA	12/12/2005
EPA 8270		Benzo[a]pyrene	NELAP	PA	12/12/2005
EPA 8270		Benzo[b]fluoranthene	NELAP	PA	12/12/2005
EPA 8270		Benzo[ghi]perylene	NELAP	PA	12/12/2005
EPA 8270		Benzo[k]fluoranthene	NELAP	PA	12/12/2005
EPA 8270		Benzoic acid	NELAP	PA	12/12/2005
EPA 8270		Benzyl alcohol	NELAP	PA	12/12/2005
EPA 8270		Butyl benzyl phthalate (Benzyl butyl phthalate)	NELAP	PA	12/12/2005
EPA 8270		Caprolactam	NELAP	PA	4/17/2009
EPA 8270		Carbazole	NELAP	PA	12/12/2005
EPA 8270		Chlorobenzilate	NELAP	PA	12/12/2005
EPA 8270		Chrysene (Benzo[a]phenanthrene)	NELAP	PA	12/12/2005
EPA 8270		Di-n-butyl phthalate	NELAP	PA	12/12/2005
EPA 8270		Di-n-octyl phthalate	NELAP	PA	12/12/2005
EPA 8270		Diallate (cis or trans)	NELAP	PA	12/12/2005
EPA 8270		Dibenz[a,b]acridine	NELAP	PA	4/17/2009
EPA 8270		Dibenz[a,j]acridine	NELAP	PA	12/12/2005
EPA 8270		Dibenzo[a,h]anthracene	NELAP	PA	12/12/2005
EPA 8270		Dibenzofuran	NELAP	PA	12/12/2005
EPA 8270		Diethyl phthalate	NELAP	PA	12/12/2005
EPA 8270		Dimethoate	NELAP	PA	12/12/2005
EPA 8270		Dimethyl phthalate	NELAP	PA	12/12/2005
EPA 8270		Dimethylaminoazobenzene (4-Dimethylaminoazobenzene)	NELAP	PA	5/2/2006
EPA 8270		Dinoseb (2-sec-Butyl-4,6-dinitrophenol, DNBP)	NELAP	PA	12/12/2005
EPA 8270		Diphenylamine	NELAP	PA	12/12/2005
EPA 8270		Disulfoton	NELAP	PA	12/12/2005
EPA 8270		Ethyl methanesulfonate	NELAP	PA	12/12/2005
EPA 8270		Famphur	NELAP	PA	12/12/2005
EPA 8270		Fluoranthene	NELAP	PA	12/12/2005
EPA 8270		Fluorene	NELAP	PA	12/12/2005
EPA 8270		Hexachlorobenzene	NELAP	PA	12/12/2005
EPA 8270		Hexachlorobutadiene (1,3-Hexachlorobutadiene)	NELAP	PA	12/12/2005
EPA 8270		Hexachlorocyclopentadiene	NELAP	PA	12/12/2005
EPA 8270		Hexachloroethane	NELAP	PA	12/12/2005
EPA 8270		Hexachloropropene	NELAP	PA	12/12/2005
EPA 8270		Indene	NELAP	PA	4/17/2009
EPA 8270		Indeno(1,2,3-cd)pyrene	NELAP	PA	12/12/2005
EPA 8270		Isodrin	NELAP	PA	12/12/2005
EPA 8270		Isophorone	NELAP	PA	12/12/2005
EPA 8270		Isosafrole	NELAP	PA	12/12/2005
EPA 8270		Kepone	NELAP	PA	12/12/2005

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8270		Methapyrilene	NELAP	PA	12/12/2005
EPA 8270		Methyl methanesulfonate	NELAP	PA	12/12/2005
EPA 8270		Methyl parathion (Parathion, methyl)	NELAP	PA	5/25/2007
EPA 8270		N,N-Dimethylacetamide	NELAP	PA	4/17/2009
EPA 8270		N,N-Dimethylformamide	NELAP	PA	4/17/2009
EPA 8270		N-Nitrosodi-n-butylamine	NELAP	PA	12/12/2005
EPA 8270		N-Nitrosodi-n-propylamine	NELAP	PA	12/12/2005
EPA 8270		N-Nitrosodiethylamine	NELAP	PA	12/12/2005
EPA 8270		N-Nitrosodimethylamine	NELAP	PA	12/12/2005
EPA 8270		N-Nitrosodiphenylamine	NELAP	PA	12/12/2005
EPA 8270		N-Nitrosomethylethylamine	NELAP	PA	12/12/2005
EPA 8270		N-Nitrosomorpholine	NELAP	PA	12/12/2005
EPA 8270		N-Nitrosopiperidine	NELAP	PA	12/12/2005
EPA 8270		N-Nitrosopyrrolidine	NELAP	PA	12/12/2005
EPA 8270		Naphthalene	NELAP	PA	12/12/2005
EPA 8270		Nitrobenzene	NELAP	PA	12/12/2005
EPA 8270		O,O,O-Triethyl phosphorothioate	NELAP	PA	12/12/2005
EPA 8270		Parathion, ethyl (Ethyl parathion, Parathion)	NELAP	PA	5/25/2007
EPA 8270		Pentachlorobenzene	NELAP	PA	12/12/2005
EPA 8270		Pentachloronitrobenzene (PCNB)	NELAP	PA	12/12/2005
EPA 8270		Pentachlorophenol (PCP)	NELAP	PA	12/12/2005
EPA 8270		Phenacetin	NELAP	PA	12/12/2005
EPA 8270		Phenanthrene	NELAP	PA	12/12/2005
EPA 8270		Phenol	NELAP	PA	12/12/2005
EPA 8270		Phorate (Thimet)	NELAP	PA	12/12/2005
EPA 8270		Phthalic anhydride	NELAP	PA	1/21/2009
EPA 8270		Pronamide (Kerb)	NELAP	PA	12/12/2005
EPA 8270		Pyrene	NELAP	PA	12/12/2005
EPA 8270		Pyridine	NELAP	PA	12/12/2005
EPA 8270		Quinoline	NELAP	PA	4/17/2009
EPA 8270	C	SOCs by GC/MS	NELAP	PA	3/26/2012
EPA 8270	D	SOCs by GC/MS	NELAP	PA	3/26/2012
EPA 8270		Safrole	NELAP	PA	12/12/2005
EPA 8270		Sulfotepp (Tetraethyl dithiopyrophosphate)	NELAP	PA	4/17/2009
EPA 8270		Tetraethyl lead	NELAP	PA	3/7/2012
EPA 8270		Thionazine (Thionazin, Zinophos)	NELAP	PA	12/12/2005
EPA 8270		a,a-Dimethylphenethylamine (Phentermine)	NELAP	PA	12/12/2005
EPA 8270		a-Methylstyrene	NELAP	PA	4/17/2009
EPA 8270		bis(2-Chloroethoxy)methane	NELAP	PA	12/12/2005
EPA 8270		bis(2-Chloroethyl) ether	NELAP	PA	12/12/2005
EPA 8270		bis(2-Chloroisopropyl) ether	NELAP	PA	12/12/2005
EPA 8270		bis(2-Chloromethyl) ether	NELAP	PA	1/21/2009
EPA 8270		bis(2-Ethylhexyl) phthalate (DEHP)	NELAP	PA	12/12/2005
EPA 8270		o-Toluidine (2-Toluidine, 2-Methylaniline)	NELAP	PA	12/12/2005
EPA 8270		p-(Dimethylamino)azobenzene	NELAP	PA	4/17/2009

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8270		tris-(2,3-Dibromopropyl) phosphate (tris-BP)	NELAP	PA	4/17/2009
EPA 8270 SIM		1-Methylnaphthalene	NELAP	PA	7/25/2011
EPA 8270 SIM		2-Methylnaphthalene	NELAP	PA	5/23/2012
EPA 8270 SIM		Acenaphthene	NELAP	PA	12/4/2007
EPA 8270 SIM		Acenaphthylene	NELAP	PA	12/4/2007
EPA 8270 SIM		Anthracene	NELAP	PA	12/4/2007
EPA 8270 SIM		Benzo[a]anthracene	NELAP	PA	12/4/2007
EPA 8270 SIM		Benzo[a]pyrene	NELAP	PA	12/4/2007
EPA 8270 SIM		Benzo[b]fluoranthene	NELAP	PA	12/4/2007
EPA 8270 SIM		Benzo[ghi]perylene	NELAP	PA	12/4/2007
EPA 8270 SIM		Benzo[k]fluoranthene	NELAP	PA	12/4/2007
EPA 8270 SIM		Chrysene (Benzo[a]phenanthrene)	NELAP	PA	12/4/2007
EPA 8270 SIM		Dibenzo[a,h]anthracene	NELAP	PA	12/4/2007
EPA 8270 SIM		Fluoranthene	NELAP	PA	12/4/2007
EPA 8270 SIM		Fluorene	NELAP	PA	12/4/2007
EPA 8270 SIM		Indeno(1,2,3-cd)pyrene	NELAP	PA	12/4/2007
EPA 8270 SIM		Naphthalene	NELAP	PA	12/4/2007
EPA 8270 SIM		Phenanthrene	NELAP	PA	12/4/2007
EPA 8270 SIM		Pyrene	NELAP	PA	12/4/2007
EPA 8290		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	8/6/2010
EPA 8290		1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	NELAP	PA	6/30/2010
EPA 8290		2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 8290		2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	NELAP	PA	8/6/2010

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8290		2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD)(Dioxin)	NELAP	PA	6/30/2010
EPA 8290		2,3,7,8-Tetrachlorodibenzofuran (TCDF)	NELAP	PA	6/30/2010
EPA 8290	A	PCDDs and PCDFs by HRGC-HRMS	NELAP	PA	3/4/2015
EPA 8290		PCDDs and PCDFs by HRGC-HRMS	NELAP	PA	3/26/2012
EPA 8290		Total TCDD	NELAP	PA	6/30/2010
EPA 8290		Total TCDF	NELAP	PA	6/30/2010
EPA 8290		Total heptachlorodibenzo-p-dioxin (HpCDD)	NELAP	PA	6/30/2010
EPA 8290		Total heptachlorodibenzofuran (HpCDF)	NELAP	PA	6/30/2010
EPA 8290		Total hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	6/30/2010
EPA 8290		Total hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 8290		Total pentachlorodibenzo-p-dioxin (PeCDD)	NELAP	PA	6/30/2010
EPA 8290		Total pentachlorodibenzofuran (PeCDF)	NELAP	PA	6/30/2010
EPA 8315		2,5-Dimethylbenzaldehyde	NELAP	PA	12/12/2005
EPA 8315		Acetaldehyde	NELAP	PA	12/12/2005
EPA 8315		Benzaldehyde	NELAP	PA	12/12/2005
EPA 8315		Butanal (Butyraldehyde)	NELAP	PA	5/2/2006
EPA 8315	A	Carbonyl compounds by HPLC	NELAP	PA	3/26/2012
EPA 8315		Crotonaldehyde	NELAP	PA	12/12/2005
EPA 8315		Formaldehyde	NELAP	PA	12/12/2005
EPA 8315		Hexanal (Hexaldehyde)	NELAP	PA	1/21/2009
EPA 8315		Isovaleraldehyde	NELAP	PA	12/12/2005
EPA 8315		Pentanal (Valeraldehyde)	NELAP	PA	12/12/2005
EPA 8315		Propanal (Propionaldehyde)	NELAP	PA	1/21/2009
EPA 8315		m-Tolualdehyde (1,3-Tolualdehyde)	NELAP	PA	5/2/2006
EPA 8315		o-Tolualdehyde (1,2-Tolualdehyde)	NELAP	PA	1/24/2007
EPA 8315		p-Tolualdehyde (1,4-Tolualdehyde)	NELAP	PA	1/24/2007
EPA 8330		1,3,5-Trinitrobenzene (1,3,5-TNB)	NELAP	PA	12/12/2005
EPA 8330		1,3-Dinitrobenzene (1,3-DNB)	NELAP	PA	12/12/2005
EPA 8330		2,4,6-Trinitrotoluene (2,4,6-TNT)	NELAP	PA	12/12/2005
EPA 8330		2,4-Diamino-6-nitrotoluene	NELAP	PA	7/29/2015
EPA 8330		2,4-Dinitrotoluene (2,4-DNT)	NELAP	PA	6/11/2007
EPA 8330		2,6-Diamino-4-nitrotoluene	NELAP	PA	7/29/2015
EPA 8330		2,6-Dinitrotoluene (2,6-DNT)	NELAP	PA	6/11/2007
EPA 8330		2-Amino-4,6-dinitrotoluene (2-Am-DNT)	NELAP	PA	12/12/2005
EPA 8330		2-Nitrotoluene	NELAP	PA	12/12/2005
EPA 8330		3,5-Dinitroaniline	NELAP	PA	7/29/2015
EPA 8330		3-Nitrotoluene	NELAP	PA	12/12/2005
EPA 8330		4-Amino-2,6-dinitrotoluene (4-Am-DNT)	NELAP	PA	12/12/2005
EPA 8330		4-Nitrotoluene	NELAP	PA	12/12/2005
EPA 8330		Methyl-2,4,6-trinitrophenylnitramine (Tetryl)	NELAP	PA	12/12/2005
EPA 8330		Nitroaromatics and nitramines by HPLC/UV	NELAP	PA	3/26/2012
EPA 8330	B	Nitroaromatics and nitramines by HPLC/UV	NELAP	PA	7/29/2015
EPA 8330	A	Nitroaromatics and nitramines by HPLC/UV	NELAP	PA	3/26/2012

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8330		Nitrobenzene	NELAP	PA	6/11/2007
EPA 8330		Nitroglycerin	NELAP	PA	1/24/2007
EPA 8330		Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	NELAP	PA	12/12/2005
EPA 8330		Pentaerythritol tetranitrate (PETN)	NELAP	PA	5/2/2006
EPA 8330		RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	NELAP	PA	12/12/2005
EPA 9012		Total cyanide	NELAP	PA	12/12/2005
EPA 9040		pH	NELAP	PA	12/12/2005
EPA 9050	A	Conductivity	NELAP	PA	1/27/2014
EPA 9050		Conductivity	NELAP	PA	12/12/2005
EPA 9056	A	Anions by IC	NELAP	PA	3/19/2015
EPA 9056		Bromide	NELAP	PA	12/12/2005
EPA 9056		Chloride	NELAP	PA	12/12/2005
EPA 9056		Fluoride	NELAP	PA	12/12/2005
EPA 9056		Nitrate as N	NELAP	PA	12/12/2005
EPA 9056		Nitrite as N	NELAP	PA	1/19/2005
EPA 9056		Sulfate	NELAP	PA	12/12/2005
EPA 9060		Total organic carbon (TOC)	NELAP	PA	12/12/2005
EPA 9066		Total phenolics	NELAP	PA	12/12/2005
FL-PRO		Total petroleum hydrocarbons (TPH)	NELAP	PA	12/12/2005
MA DEP EPH	1.1	C11-C22 Aromatics	NELAP	PA	7/15/2013
MA DEP EPH	1.1	C19-C36 Aliphatics	NELAP	PA	7/15/2013
MA DEP EPH	1.1	C9-C18 Aliphatics	NELAP	PA	7/15/2013
MA DEP VPH	1.1	C5-C8 Aliphatics	NELAP	PA	7/15/2013
MA DEP VPH	1.1	C9-C10 Aromatics	NELAP	PA	7/29/2015
MA DEP VPH	1.1	C9-C12 Aliphatics	NELAP	PA	7/15/2013
NWTPH-Dx		Diesel-range organics (DRO)	NELAP	PA	12/12/2005
NWTPH-Gx		Gasoline-range organics (GRO)	NELAP	PA	12/12/2005
OIA 1677		Available cyanide	NELAP	PA	10/9/2013
OIA 1677		Free cyanide	NELAP	PA	10/9/2013
RSK-175		Acetylene (Ethyne)	NELAP	PA	1/20/2012
RSK-175		Ethane	NELAP	PA	6/29/2010
RSK-175		Ethene	NELAP	PA	6/29/2010
RSK-175		Methane	NELAP	PA	6/29/2010
RSK-175		Propane	NELAP	PA	6/29/2010
RSK-175		n-Butane	NELAP	PA	12/22/2011
SM 2120 B		Color	NELAP	PA	4/17/2007
SM 2310 B		Acidity as CaCO3	NELAP	PA	4/17/2007
SM 2320 B		Alkalinity as CaCO3	NELAP	PA	1/19/2005
SM 2340 C		Total hardness as CaCO3	NELAP	PA	4/17/2007
SM 2510 B		Conductivity	NELAP	PA	12/12/2005
SM 2540 B		Residue, total	NELAP	PA	4/17/2007
SM 2540 C		Residue, filterable (TDS)	NELAP	PA	4/17/2007
SM 2540 D		Residue, nonfilterable (TSS)	NELAP	PA	4/17/2007
SM 2540 F		Residue, settleable	NELAP	PA	4/17/2007

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Non-Potable Water

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
SM 2580B		Oxidation-reduction potential	NELAP	PA	3/4/2015
SM 3500-Cr B	20-22	Chromium VI	NELAP	PA	5/24/2007
SM 3500-Fe B	20/21	Ferrous iron	NELAP	PA	6/15/2009
SM 4500-CN- G		Amenable cyanide	NELAP	PA	5/24/2007
SM 4500-Cl F		Total residual chlorine	NELAP	PA	1/11/2012
SM 4500-Cl- C		Chloride	NELAP	PA	4/17/2007
SM 4500-F- B		Preliminary distillation of fluoride	NELAP	PA	4/28/2010
SM 4500-F- C		Flnoride	NELAP	PA	1/19/2005
SM 4500-H+ B		pH	NELAP	PA	4/17/2007
SM 4500-NH3 B		Ammonia distillation	NELAP	PA	4/17/2007
SM 4500-NH3 C		Ammonia as N	NELAP	PA	4/17/2007
SM 4500-NH3 D		Ammonia as N	NELAP	PA	4/17/2007
SM 4500-O G		Oxygen (dissolved)	NELAP	PA	4/17/2007
SM 4500-P B		Phosphorus, total	NELAP	PA	4/28/2010
SM 4500-P E		Orthophosphate as P	NELAP	PA	12/12/2005
SM 4500-P F		Phosphorus, total	NELAP	PA	4/28/2010
SM 4500-S D		Sulfide	NELAP	PA	4/17/2007
SM 4500-S F		Sulfide	NELAP	PA	4/17/2007
SM 4500-SO3 B		Sulfite, SO3	NELAP	PA	4/17/2007
SM 4500-SiO2 C	20-22	Silica, as SiO2	NELAP	PA	5/25/2007
SM 4500-SiO2 C	20-22	Silica, dissolved	NELAP	PA	5/24/2007
SM 5210 B		Biochemical oxygen demand (BOD)	NELAP	PA	4/4/2005
SM 5210 B		Carbonaceous BOD (CBOD)	NELAP	PA	1/19/2005
SM 5310 C		Total organic carbon (TOC)	NELAP	PA	5/24/2007
SM 5540 C		Surfactants as MBAS	NELAP	PA	4/17/2007
SM 9222 D		Fecal coliform (Enumeration)	NELAP	PA	7/6/2007
TX1005 (TNRCC)		Total petroleum hydrocarbons (TPH)	NELAP	PA	12/12/2005
TX1006 (TNRCC)		Total petroleum hydrocarbons (TPH)	NELAP	PA	12/12/2005
WA-EPH		Diesel-range organics (DRO)	NELAP	PA	12/12/2005
WA-VPH		Gasoline-range organics (GRO)	NELAP	PA	12/12/2005
WI-DRO		Diesel-range organics (DRO)	NELAP	PA	12/12/2005
WI-GRO		Gasoline-range organics (GRO)	NELAP	PA	12/12/2005

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
AK-101		Gasoline-range organics (GRO)	NELAP	PA	12/12/2005
AK-102		Diesel-range organics (DRO)	NELAP	PA	12/12/2005
AK-103		Residual-range organics (RRO)	NELAP	PA	3/19/2015
EPA 1010		Ignitability	NELAP	PA	1/19/2005
EPA 1311		Toxicity characteristic leaching procedure (TCLP)	NELAP	PA	12/12/2005
EPA 1312		Synthetic precipitation leaching procedure (SPLP)	NELAP	PA	12/12/2005

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1668		2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ 206)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ 194)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ 196)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ 207)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ 195)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ 170)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ 197)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ 171)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,4'-Hexachlorobiphenyl (BZ 128)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ 177)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ 201)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ 175)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5'-Hexachlorobiphenyl (BZ 130)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ 199)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ 208)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ 198)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ 172)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ 174)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ 200)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ 173)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,5-Hexachlorobiphenyl (BZ 129)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,6'-Hexachlorobiphenyl (BZ 132)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ 176)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4,6-Hexachlorobiphenyl (BZ 131)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',4-Pentachlorobiphenyl (BZ 82)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ 202)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ 178)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5,5'-Hexachlorobiphenyl (BZ 133)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5,6'-Hexachlorobiphenyl (BZ 135)	NELAP	PA	12/17/2012

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1668		2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ 179)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5,6-Hexachlorobiphenyl (BZ 134)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',5-Pentachlorobiphenyl (BZ 83)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',6,6'-Hexachlorobiphenyl (BZ 136)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3',6-Pentachlorobiphenyl (BZ 84)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,3'-Tetrachlorobiphenyl (BZ 40)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5',6-Hexachlorobiphenyl (BZ 149)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5'-Pentachlorobiphenyl (BZ 97)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ 187)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5,5'-Hexachlorobiphenyl (BZ 146)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5,6'-Hexachlorobiphenyl (BZ 148)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ 188)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5,6-Hexachlorobiphenyl (BZ 147)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',5-Pentachlorobiphenyl (BZ 90)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',6'-Pentachlorobiphenyl (BZ 98)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',6,6'-Hexachlorobiphenyl (BZ 150)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4',6-Pentachlorobiphenyl (BZ 91)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4'-Tetrachlorobiphenyl (BZ 42)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ 183)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5'-Hexachlorobiphenyl (BZ 138)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ 203)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ 180)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ 182)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ 204)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ 181)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',5-Hexachlorobiphenyl (BZ 137)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',6'-Hexachlorobiphenyl (BZ 140)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ 184)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4',6-Hexachlorobiphenyl (BZ 139)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,4'-Pentachlorobiphenyl (BZ 85)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5',6-Hexachlorobiphenyl (BZ 144)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5'-Pentachlorobiphenyl (BZ 87)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ 185)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5,5'-Hexachlorobiphenyl (BZ 141)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5,6'-Hexachlorobiphenyl (BZ 143)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ 186)	NELAP	PA	12/17/2012

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1668		2,2',3,4,5,6-Hexachlorobiphenyl (BZ 142)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,5-Pentachlorobiphenyl (BZ 86)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,6'-Pentachlorobiphenyl (BZ 89)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,6,6'-Hexachlorobiphenyl (BZ 145)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4,6-Pentachlorobiphenyl (BZ 88)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,4-Tetrachlorobiphenyl (BZ 41)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5',6-Pentachlorobiphenyl (BZ 95)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5'-Tetrachlorobiphenyl (BZ 44)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5,5',6-Hexachlorobiphenyl (BZ 151)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5,5'-Pentachlorobiphenyl (BZ 92)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5,6'-Pentachlorobiphenyl (BZ 94)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5,6,6'-Hexachlorobiphenyl (BZ 152)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5,6-Pentachlorobiphenyl (BZ 93)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,5-Tetrachlorobiphenyl (BZ 43)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,6'-Tetrachlorobiphenyl (BZ 46)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,6,6'-Pentachlorobiphenyl (BZ 96)	NELAP	PA	12/17/2012
EPA 1668		2,2',3,6-Tetrachlorobiphenyl (BZ 45)	NELAP	PA	12/17/2012
EPA 1668		2,2',3-Trichlorobiphenyl (BZ 16)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4',5,5'-Hexachlorobiphenyl (BZ 153)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4',5,6'-Hexachlorobiphenyl (BZ 154)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4',5-Pentachlorobiphenyl (BZ 99)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4',6,6'-Hexachlorobiphenyl (BZ 155)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4',6-Pentachlorobiphenyl (BZ 100)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,4'-Tetrachlorobiphenyl (BZ 47)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,5',6-Pentachlorobiphenyl (BZ 103)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,5'-Tetrachlorobiphenyl (BZ 49)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,5,5'-Pentachlorobiphenyl (BZ 101)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,5,6'-Pentachlorobiphenyl (BZ 102)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,5-Tetrachlorobiphenyl (BZ 48)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,6'-Tetrachlorobiphenyl (BZ 51)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,6,6'-Pentachlorobiphenyl (BZ 104)	NELAP	PA	12/17/2012
EPA 1668		2,2',4,6-Tetrachlorobiphenyl (BZ 50)	NELAP	PA	12/17/2012
EPA 1668		2,2',4-Trichlorobiphenyl (BZ 17)	NELAP	PA	12/17/2012
EPA 1668		2,2',5,5'-Tetrachlorobiphenyl (BZ 52)	NELAP	PA	12/17/2012
EPA 1668		2,2',5,6'-Tetrachlorobiphenyl (BZ 53)	NELAP	PA	12/17/2012
EPA 1668		2,2',5-Trichlorobiphenyl (BZ 18)	NELAP	PA	12/17/2012
EPA 1668		2,2',6,6'-Tetrachlorobiphenyl (BZ 54)	NELAP	PA	12/17/2012
EPA 1668		2,2',6-Trichlorobiphenyl (BZ 19)	NELAP	PA	12/17/2012
EPA 1668		2,2'-Dichlorobiphenyl (BZ 4)	NELAP	PA	12/17/2012
EPA 1668		2,3',4',5',6-Pentachlorobiphenyl (BZ 125)	NELAP	PA	12/17/2012
EPA 1668		2,3',4',5'-Tetrachlorobiphenyl (BZ 76)	NELAP	PA	12/17/2012
EPA 1668		2,3',4',5,5'-Pentachlorobiphenyl (BZ 124)	NELAP	PA	12/17/2012
EPA 1668		2,3',4',5-Tetrachlorobiphenyl (BZ 70)	NELAP	PA	12/17/2012
EPA 1668		2,3',4',6-Tetrachlorobiphenyl (BZ 71)	NELAP	PA	12/17/2012
EPA 1668		2,3',4'-Trichlorobiphenyl (BZ 33)	NELAP	PA	12/17/2012

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 EPA Lab Code: PA00009 TNI Code: (717) 656-2300

PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1668		2,3',4,4',5',6-Hexachlorobiphenyl (BZ 168)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,4',5'-Pentachlorobiphenyl (BZ 123)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,4',5,5'-Hexachlorobiphenyl (BZ 167)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,4',5-Pentachlorobiphenyl (BZ 118)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,4',6-Pentachlorobiphenyl (BZ 119)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,4'-Tetrachlorobiphenyl (BZ 66)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,5',6-Pentachlorobiphenyl (BZ 121)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,5'-Tetrachlorobiphenyl (BZ 68)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,5,5'-Pentachlorobiphenyl (BZ 120)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,5-Tetrachlorobiphenyl (BZ 67)	NELAP	PA	12/17/2012
EPA 1668		2,3',4,6-Tetrachlorobiphenyl (BZ 69)	NELAP	PA	12/17/2012
EPA 1668		2,3',4-Trichlorobiphenyl (BZ 25)	NELAP	PA	12/17/2012
EPA 1668		2,3',5',6-Tetrachlorobiphenyl (BZ 73)	NELAP	PA	12/17/2012
EPA 1668		2,3',5'-Trichlorobiphenyl (BZ 34)	NELAP	PA	12/17/2012
EPA 1668		2,3',5,5'-Tetrachlorobiphenyl (BZ 72)	NELAP	PA	12/17/2012
EPA 1668		2,3',5-Trichlorobiphenyl (BZ 26)	NELAP	PA	12/17/2012
EPA 1668		2,3',6-Trichlorobiphenyl (BZ 27)	NELAP	PA	12/17/2012
EPA 1668		2,3'-Dichlorobiphenyl (BZ 6)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5',6-Hexachlorobiphenyl (BZ 164)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5'-Pentachlorobiphenyl (BZ 122)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ 193)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5,5'-Hexachlorobiphenyl (BZ 162)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5,6-Hexachlorobiphenyl (BZ 163)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',5-Pentachlorobiphenyl (BZ 107)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4',6-Pentachlorobiphenyl (BZ 110)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4'-Tetrachlorobiphenyl (BZ 56)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ 191)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',5'-Hexachlorobiphenyl (BZ 157)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ 205)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ 189)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ 190)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',5-Hexachlorobiphenyl (BZ 156)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4',6-Hexachlorobiphenyl (BZ 158)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,4'-Pentachlorobiphenyl (BZ 105)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5',6-Hexachlorobiphenyl (BZ 161)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5'-Pentachlorobiphenyl (BZ 108)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ 192)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5,5'-Hexachlorobiphenyl (BZ 159)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5,6-Hexachlorobiphenyl (BZ 160)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,5-Pentachlorobiphenyl (BZ 106)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',4,6-Pentachlorobiphenyl (BZ 109)	NELAP	PA	12/17/2012

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 EPA Lab Code: PA00009 TNI Code: (717) 656-2300

PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1668		2,3,3',4-Tetrachlorobiphenyl (BZ 55)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5',6-Pentachlorobiphenyl (BZ 113)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5'-Tetrachlorobiphenyl (BZ 58)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5,5',6-Hexachlorobiphenyl (BZ 165)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5,5'-Pentachlorobiphenyl (BZ 111)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5,6-Pentachlorobiphenyl (BZ 112)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',5-Tetrachlorobiphenyl (BZ 57)	NELAP	PA	12/17/2012
EPA 1668		2,3,3',6-Tetrachlorobiphenyl (BZ 59)	NELAP	PA	12/17/2012
EPA 1668		2,3,3'-Trichlorobiphenyl (BZ 20)	NELAP	PA	12/17/2012
EPA 1668		2,3,4',5,6-Pentachlorobiphenyl (BZ 117)	NELAP	PA	12/17/2012
EPA 1668		2,3,4',5-Tetrachlorobiphenyl (BZ 63)	NELAP	PA	12/17/2012
EPA 1668		2,3,4',6-Tetrachlorobiphenyl (BZ 64)	NELAP	PA	12/17/2012
EPA 1668		2,3,4'-Trichlorobiphenyl (BZ 22)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,4',5,6-Hexachlorobiphenyl (BZ 166)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,4',5-Pentachlorobiphenyl (BZ 114)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,4',6-Pentachlorobiphenyl (BZ 115)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,4'-Tetrachlorobiphenyl (BZ 60)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,5,6-Pentachlorobiphenyl (BZ 116)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,5-Tetrachlorobiphenyl (BZ 61)	NELAP	PA	12/17/2012
EPA 1668		2,3,4,6-Tetrachlorobiphenyl (BZ 62)	NELAP	PA	12/17/2012
EPA 1668		2,3,4-Trichlorobiphenyl (BZ 21)	NELAP	PA	12/17/2012
EPA 1668		2,3,5,6-Tetrachlorobiphenyl (BZ 65)	NELAP	PA	12/17/2012
EPA 1668		2,3,5-Trichlorobiphenyl (BZ 23)	NELAP	PA	12/17/2012
EPA 1668		2,3,6-Trichlorobiphenyl (BZ 24)	NELAP	PA	12/17/2012
EPA 1668		2,3-Dichlorobiphenyl (BZ 5)	NELAP	PA	12/17/2012
EPA 1668		2,4',5-Trichlorobiphenyl (BZ 31)	NELAP	PA	12/17/2012
EPA 1668		2,4',6-Trichlorobiphenyl (BZ 32)	NELAP	PA	12/17/2012
EPA 1668		2,4'-Dichlorobiphenyl (BZ 8)	NELAP	PA	12/17/2012
EPA 1668		2,4,4',5-Tetrachlorobiphenyl (BZ 74)	NELAP	PA	12/17/2012
EPA 1668		2,4,4',6-Tetrachlorobiphenyl (BZ 75)	NELAP	PA	12/17/2012
EPA 1668		2,4,4'-Trichlorobiphenyl (BZ 28)	NELAP	PA	12/17/2012
EPA 1668		2,4,5-Trichlorobiphenyl (BZ 29)	NELAP	PA	12/17/2012
EPA 1668		2,4,6-Trichlorobiphenyl (BZ 30)	NELAP	PA	12/17/2012
EPA 1668		2,4-Dichlorobiphenyl (BZ 7)	NELAP	PA	12/17/2012
EPA 1668		2,5-Dichlorobiphenyl (BZ 9)	NELAP	PA	12/17/2012
EPA 1668		2,6-Dichlorobiphenyl (BZ 10)	NELAP	PA	12/17/2012
EPA 1668		2-Chlorobiphenyl (BZ 1)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,4',5,5'-Hexachlorobiphenyl (BZ 169)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,4',5-Pentachlorobiphenyl (BZ 126)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,4'-Tetrachlorobiphenyl (BZ 77)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,5'-Tetrachlorobiphenyl (BZ 79)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,5,5'-Pentachlorobiphenyl (BZ 127)	NELAP	PA	12/17/2012
EPA 1668		3,3',4,5-Tetrachlorobiphenyl (BZ 78)	NELAP	PA	12/17/2012
EPA 1668		3,3',4-Trichlorobiphenyl (BZ 35)	NELAP	PA	12/17/2012
EPA 1668		3,3',5,5'-Tetrachlorobiphenyl (BZ 80)	NELAP	PA	12/17/2012

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 1668		3,3',5-Trichlorobiphenyl (BZ 36)	NELAP	PA	12/17/2012
EPA 1668		3,3'-Dichlorobiphenyl (BZ 11)	NELAP	PA	12/17/2012
EPA 1668		3,4',5-Trichlorobiphenyl (BZ 39)	NELAP	PA	12/17/2012
EPA 1668		3,4'-Dichlorobiphenyl (BZ 13)	NELAP	PA	12/17/2012
EPA 1668		3,4,4',5-Tetrachlorobiphenyl (BZ 81)	NELAP	PA	12/17/2012
EPA 1668		3,4,4'-Trichlorobiphenyl (BZ 37)	NELAP	PA	12/17/2012
EPA 1668		3,4,5-Trichlorobiphenyl (BZ 38)	NELAP	PA	12/17/2012
EPA 1668		3,4-Dichlorobiphenyl (BZ 12)	NELAP	PA	12/17/2012
EPA 1668		3,5-Dichlorobiphenyl (BZ 14)	NELAP	PA	12/17/2012
EPA 1668		3-Chlorobiphenyl (BZ 2)	NELAP	PA	12/17/2012
EPA 1668		4,4'-Dichlorobiphenyl (BZ 15)	NELAP	PA	12/17/2012
EPA 1668		4-Chlorobiphenyl (BZ 3)	NELAP	PA	12/17/2012
EPA 1668		Decachlorobiphenyl	NELAP	PA	12/17/2012
EPA 1668	C	PCBs as congeners by HRGC/HRMS	NELAP	PA	3/4/2015
EPA 1668	A	PCBs as congeners by HRGC/HRMS	NELAP	PA	3/4/2015
EPA 300.0	2.1	Bromide	NELAP	PA	10/16/2012
EPA 300.0	2.1	Chloride	NELAP	PA	10/30/2014
EPA 300.0	2.1	Fluoride	NELAP	PA	10/16/2012
EPA 300.0	2.1	Nitrate as N	NELAP	PA	10/16/2012
EPA 300.0	2.1	Nitrite as N	NELAP	PA	10/16/2012
EPA 300.0	2.1	Sulfate	NELAP	PA	10/16/2012
EPA 3050	B	Acid digestion of solids	NELAP	PA	4/4/2005
EPA 3060	A	Alkaline digestion of Cr(VI)	NELAP	PA	4/4/2005
EPA 350.3		Ammonia as N	NELAP	PA	12/8/2014
EPA 3510	C	Separatory funnel liquid-liquid extraction	NELAP	PA	4/4/2005
EPA 3540	C	Soxhlet extraction	NELAP	PA	4/4/2005
EPA 3546		Microwave extraction	NELAP	PA	9/25/2009
EPA 3550		Ultrasonic extraction	NELAP	PA	4/4/2005
EPA 3550	C	Ultrasonic extraction	NELAP	PA	3/4/2015
EPA 3620	B	Florisil cleanup	NELAP	PA	4/4/2005
EPA 3630	C	Silica gel cleanup	NELAP	PA	4/4/2005
EPA 3640	A	Gel permeation cleanup (GPC)	NELAP	PA	4/4/2005
EPA 3660	B	Sulfur cleanup	NELAP	PA	4/4/2005
EPA 3665	A	Sulfuric acid/permanganate clean-up	NELAP	PA	4/4/2005
EPA 5030		Bulk purge-and-trap (methanol)	NELAP	PA	12/4/2007
EPA 5035		Closed-system purge-and-trap (bisulfate option)	NELAP	PA	12/12/2005
EPA 5035		Closed-system purge-and-trap (methanol option)	NELAP	PA	4/4/2005
EPA 5035		Closed-system purge-and-trap (unpreserved)	NELAP	PA	4/4/2005
EPA 6010		Aluminum	NELAP	PA	1/19/2005
EPA 6010		Antimony	NELAP	PA	1/19/2005
EPA 6010		Arsenic	NELAP	PA	1/19/2005
EPA 6010		Barium	NELAP	PA	1/19/2005
EPA 6010		Beryllium	NELAP	PA	1/19/2005
EPA 6010		Boron	NELAP	PA	1/19/2005

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 6010		Cadmium	NELAP	PA	1/19/2005
EPA 6010		Calcium	NELAP	PA	1/19/2005
EPA 6010		Chromium	NELAP	PA	1/19/2005
EPA 6010		Cobalt	NELAP	PA	1/19/2005
EPA 6010		Copper	NELAP	PA	1/19/2005
EPA 6010		Iron	NELAP	PA	1/19/2005
EPA 6010		Lead	NELAP	PA	1/19/2005
EPA 6010		Lithium	NELAP	PA	1/20/2012
EPA 6010		Magnesium	NELAP	PA	1/19/2005
EPA 6010		Manganese	NELAP	PA	1/19/2005
EPA 6010	C	Metals by ICP/AES	NELAP	PA	3/26/2012
EPA 6010	B	Metals by ICP/AES	NELAP	PA	3/26/2012
EPA 6010		Molybdenum	NELAP	PA	1/19/2005
EPA 6010		Nickel	NELAP	PA	1/19/2005
EPA 6010		Potassium	NELAP	PA	1/19/2005
EPA 6010		Selenium	NELAP	PA	1/19/2005
EPA 6010		Silica, as SiO2	NELAP	PA	1/20/2012
EPA 6010		Silver	NELAP	PA	1/19/2005
EPA 6010		Sodium	NELAP	PA	1/19/2005
EPA 6010		Strontium	NELAP	PA	1/19/2005
EPA 6010		Sulfur	NELAP	PA	12/19/2011
EPA 6010		Thallium	NELAP	PA	1/19/2005
EPA 6010		Tin	NELAP	PA	1/19/2005
EPA 6010		Titanium	NELAP	PA	1/19/2005
EPA 6010		Vanadium	NELAP	PA	1/19/2005
EPA 6010		Zinc	NELAP	PA	1/19/2005
EPA 6010		Zirconium	NELAP	PA	7/29/2015
EPA 6020		Aluminum	NELAP	PA	4/29/2010
EPA 6020		Antimony	NELAP	PA	1/19/2005
EPA 6020		Arsenic	NELAP	PA	1/19/2005
EPA 6020		Barium	NELAP	PA	1/20/2012
EPA 6020		Beryllium	NELAP	PA	1/19/2005
EPA 6020		Boron	NELAP	PA	4/29/2010
EPA 6020		Cadmium	NELAP	PA	1/19/2005
EPA 6020		Calcium	NELAP	PA	4/29/2010
EPA 6020		Chromium	NELAP	PA	1/19/2005
EPA 6020		Cobalt	NELAP	PA	4/29/2010
EPA 6020		Copper	NELAP	PA	1/19/2005
EPA 6020		Iron	NELAP	PA	4/29/2010
EPA 6020		Lead	NELAP	PA	1/19/2005
EPA 6020		Magnesium	NELAP	PA	4/29/2010
EPA 6020		Manganese	NELAP	PA	4/29/2010
EPA 6020	A	Metals by ICP/MS	NELAP	PA	3/26/2012
EPA 6020		Molybdenum	NELAP	PA	7/25/2011
EPA 6020		Nickel	NELAP	PA	4/4/2005

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 6020		Potassium	NELAP	PA	4/29/2010
EPA 6020		Selenium	NELAP	PA	4/4/2005
EPA 6020		Silver	NELAP	PA	2/23/2010
EPA 6020		Sodium	NELAP	PA	4/29/2010
EPA 6020		Strontium	NELAP	PA	4/29/2010
EPA 6020		Thallium	NELAP	PA	1/19/2005
EPA 6020		Tin	NELAP	PA	4/29/2010
EPA 6020		Titanium	NELAP	PA	4/29/2010
EPA 6020		Vanadium	NELAP	PA	1/7/2010
EPA 6020		Zinc	NELAP	PA	2/1/2011
EPA 6850		Perchlorate	NELAP	PA	1/19/2011
EPA 7.3.3.2		Reactive cyanide	NELAP	PA	12/12/2005
EPA 7.3.4.2		Reactive sulfide	NELAP	PA	12/12/2005
EPA 7196		Chromium VI	NELAP	PA	1/19/2005
EPA 7199		Chromium VI	NELAP	PA	5/2/2006
EPA 7471		Mercury	NELAP	PA	10/17/2007
EPA 8011		1,2,3-Trichloropropane (1,2,3-TCP)	NELAP	PA	3/19/2015
EPA 8011		1,2-Dibromo-3-chloropropane (DBCP, Dibromochloropropane)	NELAP	PA	3/19/2015
EPA 8011		1,2-Dibromoethane (EDB, Ethylene dibromide)	NELAP	PA	6/12/2015
EPA 8015		Diesel-range organics (DRO)	NELAP	PA	4/4/2005
EPA 8015		Ethanol	NELAP	PA	1/19/2005
EPA 8015		Ethylene glycol	NELAP	PA	12/4/2007
EPA 8015		Gasoline-range organics (GRO)	NELAP	PA	4/4/2005
EPA 8015		Isopropyl alcohol (2-Propanol)	NELAP	PA	12/4/2007
EPA 8015		Methanol	NELAP	PA	1/19/2005
EPA 8015	C	Nonhalogenated organics by GC/FID	NELAP	PA	3/26/2012
EPA 8015	B	Nonhalogenated organics by GC/FID	NELAP	PA	3/26/2012
EPA 8015	D	Nonhalogenated organics by GC/FID	NELAP	PA	7/29/2015
EPA 8021		Benzene	NELAP	PA	1/19/2005
EPA 8021		Ethylbenzene	NELAP	PA	1/19/2005
EPA 8021		Isopropylbenzene (Cumene)	NELAP	PA	1/24/2007
EPA 8021		Methyl tert-butyl ether (MTBE)	NELAP	PA	5/2/2006
EPA 8021		Naphthalene	NELAP	PA	12/4/2007
EPA 8021		Toluene	NELAP	PA	1/19/2005
EPA 8021	B	VOCs by GC/PID/ELCD	NELAP	PA	3/26/2012
EPA 8021		Xylenes, total	NELAP	PA	1/19/2005
EPA 8021		m-Xylene	NELAP	PA	1/24/2007
EPA 8021		o-Xylene	NELAP	PA	1/24/2007
EPA 8021		p-Xylene	NELAP	PA	1/24/2007
EPA 8081		4,4'-DDD	NELAP	PA	1/19/2005
EPA 8081		4,4'-DDE	NELAP	PA	1/19/2005
EPA 8081		4,4'-DDT	NELAP	PA	1/19/2005
EPA 8081		Aldrin (HHDN)	NELAP	PA	1/19/2005
EPA 8081		Chlordane (tech.)	NELAP	PA	1/19/2005

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PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8081		Dieldrin	NELAP	PA	1/19/2005
EPA 8081		Endosulfan I	NELAP	PA	1/19/2005
EPA 8081		Endosulfan II	NELAP	PA	1/19/2005
EPA 8081		Endosulfan sulfate	NELAP	PA	1/19/2005
EPA 8081		Endrin	NELAP	PA	1/19/2005
EPA 8081		Endrin aldehyde	NELAP	PA	1/19/2005
EPA 8081		Endrin ketone	NELAP	PA	1/19/2005
EPA 8081		Heptachlor	NELAP	PA	1/19/2005
EPA 8081		Heptachlor epoxide	NELAP	PA	1/19/2005
EPA 8081		Kepone	NELAP	PA	1/19/2005
EPA 8081		Methoxychlor	NELAP	PA	1/19/2005
EPA 8081		Mirex	NELAP	PA	1/19/2005
EPA 8081	A	Organochlorine pesticides by GC/ECD	NELAP	PA	3/26/2012
EPA 8081	B	Organochlorine pesticides by GC/ECD	NELAP	PA	1/1/2013
EPA 8081		Toxaphene (Chlorinated camphene)	NELAP	PA	1/19/2005
EPA 8081		alpha-BHC (alpha-Hexachlorocyclohexane)	NELAP	PA	1/19/2005
EPA 8081		alpha-Chlordane	NELAP	PA	4/4/2005
EPA 8081		beta-BHC (beta-Hexachlorocyclohexane)	NELAP	PA	1/19/2005
EPA 8081		delta-BHC (delta-Hexachlorocyclohexane)	NELAP	PA	1/19/2005
EPA 8081		gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	NELAP	PA	1/19/2005
EPA 8081		gamma-Chlordane	NELAP	PA	4/4/2005
EPA 8082		Aroclor-1016 (PCB-1016)	NELAP	PA	1/2/2007
EPA 8082		Aroclor-1016 (in oil)	NELAP	PA	5/24/2011
EPA 8082		Aroclor-1221 (PCB-1221)	NELAP	PA	1/2/2007
EPA 8082		Aroclor-1221 (in oil)	NELAP	PA	5/24/2011
EPA 8082		Aroclor-1232 (PCB-1232)	NELAP	PA	1/2/2007
EPA 8082		Aroclor-1232 (in oil)	NELAP	PA	5/24/2011
EPA 8082		Aroclor-1242 (PCB-1242)	NELAP	PA	1/2/2007
EPA 8082		Aroclor-1242 (in oil)	NELAP	PA	5/24/2011
EPA 8082		Aroclor-1248 (PCB-1248)	NELAP	PA	1/2/2007
EPA 8082		Aroclor-1248 (in oil)	NELAP	PA	5/24/2011
EPA 8082		Aroclor-1254 (PCB-1254)	NELAP	PA	1/2/2007
EPA 8082		Aroclor-1254 (in oil)	NELAP	PA	5/24/2011
EPA 8082		Aroclor-1260 (PCB-1260)	NELAP	PA	1/2/2007
EPA 8082		Aroclor-1260 (in oil)	NELAP	PA	5/24/2011
EPA 8082		Aroclor-1262 (PCB-1262)	NELAP	PA	7/23/2008
EPA 8082		Aroclor-1268 (PCB-1268)	NELAP	PA	7/23/2008
EPA 8082		Decachlorobiphenyl	NELAP	PA	12/17/2012
EPA 8082	A	PCBs by GC/ECD	NELAP	PA	3/26/2012
EPA 8141		Alachlor (Lasso)	NELAP	PA	1/21/2009
EPA 8141		Atrazine	NELAP	PA	1/19/2005
EPA 8141		Azinphos-methyl (Guthion)	NELAP	PA	4/4/2005
EPA 8141		Bolstar (Sulprofos)	NELAP	PA	1/19/2005
EPA 8141		Carbophenothion (Trithion)	NELAP	PA	11/9/2012
EPA 8141		Chlorpyrifos	NELAP	PA	4/4/2005

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Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8141		Coumaphos	NELAP	PA	1/19/2005
EPA 8141		Demeton-O	NELAP	PA	1/19/2005
EPA 8141		Demeton-S	NELAP	PA	1/19/2005
EPA 8141		Diazinon (Spectracide)	NELAP	PA	1/19/2005
EPA 8141		Dichlorovos (DDVP, Dichlorvos)	NELAP	PA	1/19/2005
EPA 8141		Disulfoton	NELAP	PA	1/19/2005
EPA 8141		EPN (Santox)	NELAP	PA	1/19/2005
EPA 8141		Ethion	NELAP	PA	1/19/2005
EPA 8141		Ethoprop (Prophos)	NELAP	PA	1/19/2005
EPA 8141		Famphur	NELAP	PA	1/19/2005
EPA 8141		Fensulfothion	NELAP	PA	1/19/2005
EPA 8141		Fenthion	NELAP	PA	4/4/2005
EPA 8141		Malathion	NELAP	PA	1/19/2005
EPA 8141		Merphos	NELAP	PA	1/19/2005
EPA 8141		Methyl parathion (Parathion, methyl)	NELAP	PA	5/25/2005
EPA 8141		Mevinphos	NELAP	PA	1/19/2005
EPA 8141		Naled	NELAP	PA	1/19/2005
EPA 8141	A	Organophosphorus compounds by GC/NPD	NELAP	PA	3/26/2012
EPA 8141	B	Organophosphorus compounds by GC/NPD	NELAP	PA	3/26/2012
EPA 8141		Parathion, ethyl (Ethyl parathion, Parathion)	NELAP	PA	1/19/2005
EPA 8141		Phorate (Thimet)	NELAP	PA	1/19/2005
EPA 8141		Ronnel	NELAP	PA	1/19/2005
EPA 8141		Simazine	NELAP	PA	1/4/2006
EPA 8141		Stirophos (Tetrachlorovinphos)	NELAP	PA	1/19/2005
EPA 8141		Tokuthion (Prothiophos)	NELAP	PA	1/19/2005
EPA 8141		Trichloronate	NELAP	PA	1/19/2005
EPA 8151		2,4,5-T	NELAP	PA	1/19/2005
EPA 8151		2,4,5-TP (Silvex)	NELAP	PA	1/19/2005
EPA 8151		2,4-D	NELAP	PA	1/19/2005
EPA 8151		2,4-DB (Butoxon)	NELAP	PA	4/4/2005
EPA 8151	A	Chlorinated herbicides by GC/ECD	NELAP	PA	3/26/2012
EPA 8151		Dalapon (2,2-Dichloropropionic acid)	NELAP	PA	1/19/2005
EPA 8151		Dicamba	NELAP	PA	1/19/2005
EPA 8151		Dichloroprop (Dichlorprop)	NELAP	PA	1/19/2005
EPA 8151		Dinoseb (2-sec-Butyl-4,6-dinitrophenol, DNBP)	NELAP	PA	1/19/2005
EPA 8151		MCPA	NELAP	PA	1/19/2005
EPA 8151		MCPP (Mecoprop)	NELAP	PA	5/2/2006
EPA 8151		Pentachlorophenol (PCP)	NELAP	PA	1/19/2005
EPA 8151		Picloram (4-Amino-3,5,6-trichloro-2-pyridinecarboxylic acid)	NELAP	PA	1/19/2005
EPA 8260		1,1,1,2-Tetrachloroethane	NELAP	PA	1/19/2005
EPA 8260		1,1,1-Trichloroethane	NELAP	PA	1/19/2005
EPA 8260		1,1,2,2-Tetrachloroethane	NELAP	PA	1/19/2005
EPA 8260		1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	NELAP	PA	5/2/2006

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Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8260		1,1,2-Trichloroethane	NELAP	PA	1/19/2005
EPA 8260		1,1-Dichloroethane	NELAP	PA	1/19/2005
EPA 8260		1,1-Dichloroethene (1,1-Dichloroethylene)	NELAP	PA	1/19/2005
EPA 8260		1,1-Dichloropropene	NELAP	PA	1/19/2005
EPA 8260		1,2,3-Trichlorobenzene	NELAP	PA	1/19/2005
EPA 8260		1,2,3-Trichloropropane (1,2,3-TCP)	NELAP	PA	1/19/2005
EPA 8260		1,2,4-Trichlorobenzene	NELAP	PA	1/19/2005
EPA 8260		1,2,4-Trimethylbenzene	NELAP	PA	1/19/2005
EPA 8260		1,2-Dibromo-3-chloropropane (DBCP, Dibromochloropropane)	NELAP	PA	1/19/2005
EPA 8260		1,2-Dibromoethane (EDB, Ethylene dibromide)	NELAP	PA	1/19/2005
EPA 8260		1,2-Dichlorobenzene (o-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 8260		1,2-Dichloroethane	NELAP	PA	1/19/2005
EPA 8260		1,2-Dichloropropane	NELAP	PA	1/19/2005
EPA 8260		1,3,5-Trimethylbenzene	NELAP	PA	1/19/2005
EPA 8260		1,3-Dichlorobenzene (m-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 8260		1,3-Dichloropropane	NELAP	PA	1/19/2005
EPA 8260		1,4-Dichlorobenzene (p-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 8260		1,4-Dioxane (1,4-Diethyleneoxide)	NELAP	PA	1/19/2005
EPA 8260		2,2-Dichloropropane	NELAP	PA	1/19/2005
EPA 8260		2-Butanone (Methyl ethyl ketone, MEK)	NELAP	PA	1/19/2005
EPA 8260		2-Chloroethyl vinyl ether	NELAP	PA	1/19/2005
EPA 8260		2-Chlorotoluene	NELAP	PA	5/2/2006
EPA 8260		2-Hexanone	NELAP	PA	1/19/2005
EPA 8260		2-Nitropropane	NELAP	PA	12/17/2012
EPA 8260		3,3'-Dimethyl-1-butanol	NELAP	PA	4/17/2009
EPA 8260		4-Chloro-2-nitrophenol	NELAP	PA	5/2/2006
EPA 8260		4-Chlorotoluene	NELAP	PA	1/19/2005
EPA 8260		4-Methyl-2-pentanone (MIBK)	NELAP	PA	1/19/2005
EPA 8260		Acetone	NELAP	PA	1/19/2005
EPA 8260		Acetonitrile	NELAP	PA	1/4/2006
EPA 8260		Acrolein (Propenal)	NELAP	PA	1/19/2005
EPA 8260		Acrylonitrile	NELAP	PA	1/19/2005
EPA 8260		Allyl chloride (3-Chloropropene)	NELAP	PA	1/19/2005
EPA 8260		Benzene	NELAP	PA	1/19/2005
EPA 8260		Benzyl chloride	NELAP	PA	1/4/2006
EPA 8260		Bromobenzene	NELAP	PA	1/19/2005
EPA 8260		Bromochloromethane	NELAP	PA	1/19/2005
EPA 8260		Bromodichloromethane	NELAP	PA	1/19/2005
EPA 8260		Bromoform	NELAP	PA	1/19/2005
EPA 8260		Carbon disulfide	NELAP	PA	1/19/2005
EPA 8260		Carbon tetrachloride	NELAP	PA	1/19/2005
EPA 8260		Chlorobenzene	NELAP	PA	1/19/2005
EPA 8260		Chloroethane	NELAP	PA	1/19/2005
EPA 8260		Chloroform	NELAP	PA	1/19/2005

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8260		Chloroprene (2-Chloro-1,3-butadiene)	NELAP	PA	4/17/2009
EPA 8260		Crotonaldehyde	NELAP	PA	10/30/2014
EPA 8260		Cyclohexane	NELAP	PA	6/29/2010
EPA 8260		Cyclohexanone	NELAP	PA	7/3/2007
EPA 8260		Dibromochloromethane	NELAP	PA	1/19/2005
EPA 8260		Dibromomethane	NELAP	PA	1/19/2005
EPA 8260		Dichlorodifluoromethane (Freon 12)	NELAP	PA	1/19/2005
EPA 8260		Diisopropyl ether (DIPE)	NELAP	PA	7/3/2007
EPA 8260		Epichlorohydrin (1-Chloro-2,3-epoxypropane)	NELAP	PA	1/4/2006
EPA 8260		Ethanol	NELAP	PA	1/4/2006
EPA 8260		Ethyl acetate	NELAP	PA	1/4/2006
EPA 8260		Ethyl methacrylate	NELAP	PA	1/4/2006
EPA 8260		Ethyl tert-butyl ether (ETBE)	NELAP	PA	7/3/2007
EPA 8260		Ethylbenzene	NELAP	PA	1/19/2005
EPA 8260		Ethylene oxide	NELAP	PA	10/30/2014
EPA 8260		Gasoline-range organics (GRO)	NELAP	PA	6/8/2006
EPA 8260		Hexachlorobutadiene (1,3-Hexachlorobutadiene)	NELAP	PA	1/19/2005
EPA 8260		Isobutyl alcohol (2-Methyl-1-propanol)	NELAP	PA	7/3/2007
EPA 8260		Isopropyl alcohol (2-Propanol)	NELAP	PA	1/19/2005
EPA 8260		Isopropylbenzene (Cumene)	NELAP	PA	8/7/2005
EPA 8260		Methacrylonitrile	NELAP	PA	1/24/2007
EPA 8260		Methyl acetate	NELAP	PA	6/29/2010
EPA 8260		Methyl bromide (Bromomethane)	NELAP	PA	1/19/2005
EPA 8260		Methyl chloride (Chloromethane)	NELAP	PA	1/19/2005
EPA 8260		Methyl iodide (Iodomethane)	NELAP	PA	5/2/2006
EPA 8260		Methyl tert-butyl ether (MTBE)	NELAP	PA	1/19/2005
EPA 8260		Methylcyclohexane	NELAP	PA	1/21/2009
EPA 8260		Methylene chloride (Dichloromethane)	NELAP	PA	1/19/2005
EPA 8260		Methylmethacrylate	NELAP	PA	5/2/2006
EPA 8260		Naphthalene	NELAP	PA	1/19/2005
EPA 8260		Pentachloroethane	NELAP	PA	1/24/2007
EPA 8260		Propionitrile (Ethyl cyanide)	NELAP	PA	1/24/2007
EPA 8260		Styrene	NELAP	PA	1/19/2005
EPA 8260		Tetrachloroethene (PCE, Perchloroethylene)	NELAP	PA	1/19/2005
EPA 8260		Tetrahydrofuran (THF)	NELAP	PA	6/7/2012
EPA 8260		Toluene	NELAP	PA	1/19/2005
EPA 8260		Trichloroethene (TCE, Trichloroethylene)	NELAP	PA	1/19/2005
EPA 8260		Trichlorofluoromethane (Freon 11)	NELAP	PA	1/19/2005
EPA 8260	B	VOCs by GC/MS	NELAP	PA	3/26/2012
EPA 8260	C	VOCs by GC/MS	NELAP	PA	3/26/2012
EPA 8260		Vinyl acetate	NELAP	PA	1/19/2005
EPA 8260		Vinyl chloride (Chloroethene)	NELAP	PA	1/19/2005
EPA 8260		Xylenes, total	NELAP	PA	1/19/2005
EPA 8260		cis-1,2-Dichloroethene	NELAP	PA	1/19/2005

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8260		cis-1,3-Dichloropropene	NELAP	PA	1/19/2005
EPA 8260		m+p-Xylene	NELAP	PA	1/24/2007
EPA 8260		n-Butyl alcohol (n-Butanol, 1-Butanol)	NELAP	PA	1/19/2005
EPA 8260		n-Butylbenzene	NELAP	PA	1/19/2005
EPA 8260		n-Propylbenzene	NELAP	PA	1/4/2006
EPA 8260		o-Xylene	NELAP	PA	1/24/2007
EPA 8260		p-Isopropyltoluene (4-Isopropyltoluene)	NELAP	PA	1/24/2007
EPA 8260		sec-Butylbenzene	NELAP	PA	1/19/2005
EPA 8260		tert-Amyl alcohol (2-Methyl-2-butanol)	NELAP	PA	4/17/2009
EPA 8260		tert-Amyl methyl ether (TAME)	NELAP	PA	7/3/2007
EPA 8260		tert-Butyl alcohol (2-Methyl-2-propanol)	NELAP	PA	1/19/2005
EPA 8260		tert-Butyl ethyl ether	NELAP	PA	5/25/2007
EPA 8260		tert-Butyl formate	NELAP	PA	4/17/2009
EPA 8260		tert-Butylbenzene	NELAP	PA	1/19/2005
EPA 8260		trans-1,2-Dichloroethene	NELAP	PA	1/19/2005
EPA 8260		trans-1,3-Dichloropropene	NELAP	PA	1/19/2005
EPA 8260		trans-1,4-Dichloro-2-butene	NELAP	PA	7/3/2007
EPA 8260 SIM		1,4-Dioxane (1,4-Diethyleneoxide)	NELAP	PA	4/17/2009
EPA 8270		1,1'-Biphenyl (Biphenyl, Lemonene)	NELAP	PA	12/4/2007
EPA 8270		1,2,3,4-Tetrachlorobenzene	NELAP	PA	7/3/2007
EPA 8270		1,2,3,4-Tetrahydronaphthalene	NELAP	PA	12/4/2007
EPA 8270		1,2,3,5-Tetrachlorobenzene	NELAP	PA	7/3/2007
EPA 8270		1,2,4,5-Tetrachlorobenzene	NELAP	PA	4/4/2005
EPA 8270		1,2,4-Trichlorobenzene	NELAP	PA	1/19/2005
EPA 8270		1,2-Dichlorobenzene (o-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 8270		1,2-Dinitrobenzene (1,2-DNB)	NELAP	PA	1/19/2005
EPA 8270		1,2-Diphenylhydrazine	NELAP	PA	5/2/2006
EPA 8270		1,3,5-Trinitrobenzene (1,3,5-TNB)	NELAP	PA	1/4/2006
EPA 8270		1,3-Dichlorobenzene (m-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 8270		1,3-Dinitrobenzene (1,3-DNB)	NELAP	PA	1/19/2005
EPA 8270		1,4-Dichlorobenzene (p-Dichlorobenzene)	NELAP	PA	1/19/2005
EPA 8270		1,4-Dinitrobenzene (1,4-DNB)	NELAP	PA	5/2/2006
EPA 8270		1,4-Dioxane (1,4-Diethyleneoxide)	NELAP	PA	12/4/2007
EPA 8270		1,4-Naphthoquinone	NELAP	PA	1/19/2005
EPA 8270		1,4-Phenylenediamine	NELAP	PA	1/19/2005
EPA 8270		1-Chloronaphthalene	NELAP	PA	1/4/2006
EPA 8270		1-Methylnaphthalene	NELAP	PA	12/4/2007
EPA 8270		1-Naphthylamine (alpha-Naphthylamine)	NELAP	PA	4/4/2005
EPA 8270		2,2'-Oxybis(1-chloropropane) (bis(2-Chloro-1-methylethyl) ether)	NELAP	PA	10/30/2014
EPA 8270		2,3,4,6-Tetrachlorophenol	NELAP	PA	1/19/2005
EPA 8270		2,4,5-Trichlorophenol	NELAP	PA	1/19/2005
EPA 8270		2,4,6-Trichlorophenol	NELAP	PA	1/19/2005
EPA 8270		2,4-Dichlorophenol	NELAP	PA	1/19/2005
EPA 8270		2,4-Dimethylphenol	NELAP	PA	1/19/2005
EPA 8270		2,4-Dinitrophenol	NELAP	PA	1/19/2005

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8270		2,4-Dinitrotoluene (2,4-DNT)	NELAP	PA	1/19/2005
EPA 8270		2,6-Dichlorophenol	NELAP	PA	1/19/2005
EPA 8270		2,6-Dinitrotoluene (2,6-DNT)	NELAP	PA	1/19/2005
EPA 8270		2-Acetylaminofluorene	NELAP	PA	1/19/2005
EPA 8270		2-Chloronaphthalene	NELAP	PA	1/19/2005
EPA 8270		2-Chlorophenol	NELAP	PA	1/19/2005
EPA 8270		2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	NELAP	PA	1/19/2005
EPA 8270		2-Methylnaphthalene	NELAP	PA	1/19/2005
EPA 8270		2-Methylphenol (o-Cresol)	NELAP	PA	1/19/2005
EPA 8270		2-Naphthylamine (beta-Naphthylamine)	NELAP	PA	5/17/2005
EPA 8270		2-Nitroaniline	NELAP	PA	4/4/2005
EPA 8270		2-Nitrophenol	NELAP	PA	1/19/2005
EPA 8270		2-Picoline (2-Methylpyridine)	NELAP	PA	1/19/2005
EPA 8270		3+4-Methylphenol (m+p-Cresol)	NELAP	PA	1/19/2005
EPA 8270		3,3'-Dichlorobenzidine	NELAP	PA	1/19/2005
EPA 8270		3,3'-Dimethoxybenzidine	NELAP	PA	4/17/2009
EPA 8270		3,3'-Dimethylbenzidine	NELAP	PA	1/19/2005
EPA 8270		3-Methylcholanthrene	NELAP	PA	1/19/2005
EPA 8270		3-Nitroaniline	NELAP	PA	1/19/2005
EPA 8270		4,4'-Methylenebis(2-chloroaniline)	NELAP	PA	1/19/2005
EPA 8270		4-Aminobiphenyl	NELAP	PA	1/19/2005
EPA 8270		4-Bromophenyl phenyl ether	NELAP	PA	1/19/2005
EPA 8270		4-Chloro-3-methylphenol	NELAP	PA	1/19/2005
EPA 8270		4-Chloroaniline	NELAP	PA	1/19/2005
EPA 8270		4-Chlorophenyl phenyl ether	NELAP	PA	1/19/2005
EPA 8270		4-Nitroaniline	NELAP	PA	4/4/2005
EPA 8270		4-Nitrophenol	NELAP	PA	1/19/2005
EPA 8270		4-Nitroquinoline-1-oxide	NELAP	PA	7/3/2007
EPA 8270		5-Nitro-o-toluidine	NELAP	PA	4/4/2005
EPA 8270		6-Methylchrysene	NELAP	PA	12/4/2007
EPA 8270		7,12-Dimethylbenz(a)anthracene	NELAP	PA	1/19/2005
EPA 8270		Acenaphthene	NELAP	PA	1/19/2005
EPA 8270		Acenaphthylene	NELAP	PA	1/19/2005
EPA 8270		Acetophenone	NELAP	PA	1/19/2005
EPA 8270		Acrylamide	NELAP	PA	1/21/2009
EPA 8270		Aniline	NELAP	PA	1/19/2005
EPA 8270		Anthracene	NELAP	PA	1/19/2005
EPA 8270		Aramite	NELAP	PA	5/17/2005
EPA 8270		Atrazine	NELAP	PA	1/12/2007
EPA 8270		Benzaldehyde	NELAP	PA	12/4/2007
EPA 8270		Benzenethiol	NELAP	PA	12/4/2007
EPA 8270		Benzidine	NELAP	PA	1/19/2005
EPA 8270		Benzo[a]anthracene	NELAP	PA	1/19/2005
EPA 8270		Benzo[a]pyrene	NELAP	PA	1/19/2005
EPA 8270		Benzo[b]fluoranthene	NELAP	PA	1/19/2005

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Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8270		Benzo[ghi]perylene	NELAP	PA	1/19/2005
EPA 8270		Benzo[k]fluoranthene	NELAP	PA	1/19/2005
EPA 8270		Benzoic acid	NELAP	PA	1/19/2005
EPA 8270		Benzyl alcohol	NELAP	PA	1/19/2005
EPA 8270		Butyl benzyl phthalate (Benzyl butyl phthalate)	NELAP	PA	5/17/2005
EPA 8270		Caprolactam	NELAP	PA	12/4/2007
EPA 8270		Carbazole	NELAP	PA	1/19/2005
EPA 8270		Chlorobenzilate	NELAP	PA	5/2/2006
EPA 8270		Chrysene (Benzo[a]phenanthrene)	NELAP	PA	1/19/2005
EPA 8270		Di-n-butyl phthalate	NELAP	PA	1/19/2005
EPA 8270		Di-n-octyl phthalate	NELAP	PA	1/19/2005
EPA 8270		Diallate (cis or trans)	NELAP	PA	5/2/2006
EPA 8270		Dibenz[a,h]acridine	NELAP	PA	12/4/2007
EPA 8270		Dibenz[a,j]acridine	NELAP	PA	5/17/2005
EPA 8270		Dibenzo[a,h]anthracene	NELAP	PA	1/19/2005
EPA 8270		Dibenzofuran	NELAP	PA	1/19/2005
EPA 8270		Diethyl phthalate	NELAP	PA	1/19/2005
EPA 8270		Dimethoate	NELAP	PA	5/2/2006
EPA 8270		Dimethyl phthalate	NELAP	PA	1/19/2005
EPA 8270		Diphenylamine	NELAP	PA	5/2/2006
EPA 8270		Disulfoton	NELAP	PA	7/1/2007
EPA 8270		Ethyl methanesulfonate	NELAP	PA	1/19/2005
EPA 8270		Famphur	NELAP	PA	5/2/2006
EPA 8270		Fluoranthene	NELAP	PA	1/19/2005
EPA 8270		Fluorene	NELAP	PA	1/19/2005
EPA 8270		Hexachlorobenzene	NELAP	PA	1/19/2005
EPA 8270		Hexachlorobutadiene (1,3-Hexachlorobutadiene)	NELAP	PA	1/19/2005
EPA 8270		Hexachlorocyclopentadiene	NELAP	PA	1/19/2005
EPA 8270		Hexachloroethane	NELAP	PA	1/19/2005
EPA 8270		Hexachloropropene	NELAP	PA	1/19/2005
EPA 8270		Indene	NELAP	PA	12/4/2007
EPA 8270		Indeno(1,2,3-cd)pyrene	NELAP	PA	1/19/2005
EPA 8270		Isodrin	NELAP	PA	5/2/2006
EPA 8270		Isophorone	NELAP	PA	1/19/2005
EPA 8270		Isosafrole	NELAP	PA	1/19/2005
EPA 8270		Kepone	NELAP	PA	5/2/2006
EPA 8270		Malononitrile	NELAP	PA	5/23/2013
EPA 8270		Methapyrilene	NELAP	PA	1/19/2005
EPA 8270		Methyl methanesulfonate	NELAP	PA	1/19/2005
EPA 8270		Methyl parathion (Parathion, methyl)	NELAP	PA	5/25/2007
EPA 8270		N,N-Dimethylacetamide	NELAP	PA	12/4/2007
EPA 8270		N,N-Dimethylformamide	NELAP	PA	12/4/2007
EPA 8270		N-Nitrosodi-n-butylamine	NELAP	PA	1/19/2005
EPA 8270		N-Nitrosodi-n-propylamine	NELAP	PA	1/19/2005

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**
PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8270		N-Nitrosodiethylamine	NELAP	PA	1/19/2005
EPA 8270		N-Nitrosodimethylamine	NELAP	PA	1/19/2005
EPA 8270		N-Nitrosodiphenylamine	NELAP	PA	1/19/2005
EPA 8270		N-Nitrosomethylethylamine	NELAP	PA	1/19/2005
EPA 8270		N-Nitrosomorpholine	NELAP	PA	1/19/2005
EPA 8270		N-Nitrosopiperidine	NELAP	PA	1/19/2005
EPA 8270		N-Nitrosopyrrolidine	NELAP	PA	1/19/2005
EPA 8270		Naphthalene	NELAP	PA	1/19/2005
EPA 8270		Nitrobenzene	NELAP	PA	1/4/2006
EPA 8270		O,O,O-Triethyl phosphorothioate	NELAP	PA	5/2/2006
EPA 8270		Parathion, ethyl (Ethyl parathion, Parathion)	NELAP	PA	5/25/2007
EPA 8270		Pentachlorobenzene	NELAP	PA	1/19/2005
EPA 8270		Pentachloronitrobenzene (PCNB)	NELAP	PA	1/19/2005
EPA 8270		Pentachlorophenol (PCP)	NELAP	PA	1/19/2005
EPA 8270		Phenacetin	NELAP	PA	1/19/2005
EPA 8270		Phenanthrene	NELAP	PA	1/19/2005
EPA 8270		Phenol	NELAP	PA	1/19/2005
EPA 8270		Phorate (Thimet)	NELAP	PA	5/2/2006
EPA 8270		Phthalic anhydride	NELAP	PA	1/21/2009
EPA 8270		Pronamide (Kerb)	NELAP	PA	1/19/2005
EPA 8270		Pyrene	NELAP	PA	1/19/2005
EPA 8270		Pyridine	NELAP	PA	4/4/2005
EPA 8270		Quinoline	NELAP	PA	12/4/2007
EPA 8270	C	SOCs by GC/MS	NELAP	PA	3/26/2012
EPA 8270	D	SOCs by GC/MS	NELAP	PA	3/26/2012
EPA 8270		Safrole	NELAP	PA	1/19/2005
EPA 8270		Sulfotepp (Tetraethyl dithiopyrophosphate)	NELAP	PA	12/4/2007
EPA 8270		Tetraethyl lead	NELAP	PA	3/7/2012
EPA 8270		Thionazine (Thionazin, Zinophos)	NELAP	PA	5/2/2006
EPA 8270		a,a-Dimethylphenethylamine (Phentermine)	NELAP	PA	5/2/2006
EPA 8270		bis(2-Chloroethoxy)methane	NELAP	PA	1/19/2005
EPA 8270		bis(2-Chloroethyl) ether	NELAP	PA	1/19/2005
EPA 8270		bis(2-Chloroisopropyl) ether	NELAP	PA	1/4/2006
EPA 8270		bis(2-Chloromethyl) ether	NELAP	PA	1/21/2009
EPA 8270		bis(2-Ethylhexyl) adipate (di(2-Ethylhexyl) adipate)	NELAP	PA	1/21/2009
EPA 8270		bis(2-Ethylhexyl) phthalate (DEHP)	NELAP	PA	1/19/2005
EPA 8270		o-Toluidine (2-Toluidine, 2-Methylaniline)	NELAP	PA	1/19/2005
EPA 8270		p-(Dimethylamino)azobenzene	NELAP	PA	5/2/2006
EPA 8270		p-Chloronitrobenzene	NELAP	PA	1/21/2009
EPA 8270		tris-(2,3-Dibromopropyl) phosphate (tris-BP)	NELAP	PA	12/4/2007
EPA 8270 SIM		1-Methylnaphthalene	NELAP	PA	7/25/2011
EPA 8270 SIM		2-Methylnaphthalene	NELAP	PA	5/23/2012
EPA 8270 SIM		Acenaphthene	NELAP	PA	12/4/2007
EPA 8270 SIM		Acenaphthylene	NELAP	PA	12/4/2007

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Laboratory Scope of Accreditation

Attached to Certificate of Accreditation 014-006 expiration date January 31, 2016. This listing of accredited analytes should be used only when associated with a valid certificate of accreditation.

DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8270 SIM		Anthracene	NELAP	PA	12/4/2007
EPA 8270 SIM		Benzo[a]anthracene	NELAP	PA	12/4/2007
EPA 8270 SIM		Benzo[a]pyrene	NELAP	PA	12/4/2007
EPA 8270 SIM		Benzo[b]fluoranthene	NELAP	PA	12/4/2007
EPA 8270 SIM		Benzo[ghi]perylene	NELAP	PA	12/4/2007
EPA 8270 SIM		Benzo[k]fluoranthene	NELAP	PA	12/4/2007
EPA 8270 SIM		Chrysene (Benzo[a]phenanthrene)	NELAP	PA	12/4/2007
EPA 8270 SIM		Dibenzo[a,h]anthracene	NELAP	PA	12/4/2007
EPA 8270 SIM		Fluoranthene	NELAP	PA	12/4/2007
EPA 8270 SIM		Fluorene	NELAP	PA	12/4/2007
EPA 8270 SIM		Indeno(1,2,3-cd)pyrene	NELAP	PA	12/4/2007
EPA 8270 SIM		Naphthalene	NELAP	PA	12/4/2007
EPA 8270 SIM		Phenanthrene	NELAP	PA	12/4/2007
EPA 8270 SIM		Pyrene	NELAP	PA	12/4/2007
EPA 8290		1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,4,7,8-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	8/6/2010
EPA 8290		1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,6,7,8-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,7,8,9-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,7,8-Pentachlorodibenzo-p-dioxin (PeCDD)	NELAP	PA	6/30/2010
EPA 8290		1,2,3,7,8-Pentachlorodibenzofuran (PeCDF)	NELAP	PA	6/30/2010
EPA 8290		2,3,4,6,7,8-Hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 8290		2,3,4,7,8-Pentachlorodibenzofuran (PeCDF)	NELAP	PA	8/6/2010
EPA 8290		2,3,7,8-Tetrachlorodibenzo-p-dioxin (2,3,7,8-TCDD)(Dioxin)	NELAP	PA	6/30/2010
EPA 8290		2,3,7,8-Tetrachlorodibenzofuran (TCDF)	NELAP	PA	6/30/2010
EPA 8290		PCDDs and PCDFs by HRGC-HRMS	NELAP	PA	3/26/2012
EPA 8290	A	PCDDs and PCDFs by HRGC-HRMS	NELAP	PA	3/4/2015
EPA 8290		Total TCDD	NELAP	PA	6/30/2010

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8290		Total TCDF	NELAP	PA	6/30/2010
EPA 8290		Total heptachlorodibenzo-p-dioxin (HpCDD)	NELAP	PA	6/30/2010
EPA 8290		Total heptachlorodibenzofuran (HpCDF)	NELAP	PA	6/30/2010
EPA 8290		Total hexachlorodibenzo-p-dioxin (HxCDD)	NELAP	PA	6/30/2010
EPA 8290		Total hexachlorodibenzofuran (HxCDF)	NELAP	PA	6/30/2010
EPA 8290		Total pentachlorodibenzo-p-dioxin (PeCDD)	NELAP	PA	6/30/2010
EPA 8290		Total pentachlorodibenzofuran (PeCDF)	NELAP	PA	6/30/2010
EPA 8315		2,5-Dimethylbenzaldehyde	NELAP	PA	1/21/2009
EPA 8315		Acetaldehyde	NELAP	PA	1/21/2009
EPA 8315		Benzaldehyde	NELAP	PA	1/21/2009
EPA 8315		Butanal (Butyraldehyde)	NELAP	PA	1/21/2009
EPA 8315	A	Carbonyl compounds by HPLC	NELAP	PA	3/26/2012
EPA 8315		Crotonaldehyde	NELAP	PA	1/21/2009
EPA 8315		Formaldehyde	NELAP	PA	1/19/2005
EPA 8315		Hexanal (Hexaldehyde)	NELAP	PA	1/21/2009
EPA 8315		Isovaleraldehyde	NELAP	PA	1/21/2009
EPA 8315		Pentanal (Valeraldehyde)	NELAP	PA	1/21/2009
EPA 8315		Propanal (Propionaldehyde)	NELAP	PA	1/21/2009
EPA 8315		m-Tolualdehyde (1,3-Tolualdehyde)	NELAP	PA	1/21/2009
EPA 8315		o-Tolualdehyde (1,2-Tolualdehyde)	NELAP	PA	1/21/2009
EPA 8315		p-Tolualdehyde (1,4-Tolualdehyde)	NELAP	PA	1/21/2009
EPA 8318		3-Hydroxycarbofuran	NELAP	PA	4/4/2005
EPA 8318		Aldicarb (Temik)	NELAP	PA	4/4/2005
EPA 8318		Aldicarb sulfone	NELAP	PA	4/4/2005
EPA 8318		Aldicarb sulfoxide	NELAP	PA	12/12/2005
EPA 8318		Carbaryl (Sevin)	NELAP	PA	4/4/2005
EPA 8318		Carbofuran (Furaden)	NELAP	PA	4/4/2005
EPA 8318		Methiocarb (Mesurol)	NELAP	PA	4/4/2005
EPA 8318		Methomyl (Lannate)	NELAP	PA	4/4/2005
EPA 8318	A	N-Methylcarbamates by HPLC	NELAP	PA	10/15/2012
EPA 8318		Oxamyl (Vydate)	NELAP	PA	12/12/2005
EPA 8318		Propoxur (Baygon)	NELAP	PA	4/4/2005
EPA 8330		1,3,5-Trinitrobenzene (1,3,5-TNB)	NELAP	PA	1/19/2005
EPA 8330		1,3-Dinitrobenzene (1,3-DNB)	NELAP	PA	1/19/2005
EPA 8330		2,4,6-Trinitrotoluene (2,4,6-TNT)	NELAP	PA	1/19/2005
EPA 8330		2,4-Diamino-6-nitrotoluene	NELAP	PA	7/29/2015
EPA 8330		2,4-Dinitrotoluene (2,4-DNT)	NELAP	PA	1/19/2005
EPA 8330		2,6-Diamino-4-nitrotoluene	NELAP	PA	7/29/2015
EPA 8330		2,6-Dinitrotoluene (2,6-DNT)	NELAP	PA	1/19/2005
EPA 8330		2-Amino-4,6-dinitrotoluene (2-Am-DNT)	NELAP	PA	1/19/2005
EPA 8330		2-Nitrotoluene	NELAP	PA	1/19/2005
EPA 8330		3,5-Dinitroaniline	NELAP	PA	7/29/2015
EPA 8330		3-Nitrotoluene	NELAP	PA	1/19/2005
EPA 8330		4-Amino-2,6-dinitrotoluene (4-Am-DNT)	NELAP	PA	1/19/2005
EPA 8330		4-Nitrotoluene	NELAP	PA	1/19/2005

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DEPARTMENT OF ENVIRONMENTAL PROTECTION

Laboratory Scope of Accreditation

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DEP Laboratory ID: 36-00037 **EPA Lab Code: PA00009** **TNI Code:** **(717) 656-2300**

PADWIS ID: 36037

Matrix: Solid and Chemical Materials

Method	Revision	Analyte	Accreditation Type	Primary	Effective Date
EPA 8330		Methyl-2,4,6-trinitrophenylnitramine (Tetryl)	NELAP	PA	1/19/2005
EPA 8330		Nitroaromatics and nitramines by HPLC/UV	NELAP	PA	3/26/2012
EPA 8330	A	Nitroaromatics and nitramines by HPLC/UV	NELAP	PA	3/26/2012
EPA 8330	B	Nitroaromatics and nitramines by HPLC/UV	NELAP	PA	7/29/2015
EPA 8330		Nitrobenzene	NELAP	PA	1/19/2005
EPA 8330		Nitroglycerin	NELAP	PA	10/9/2013
EPA 8330		Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	NELAP	PA	1/24/2006
EPA 8330		Pentaerythritol tetranitrate (PETN)	NELAP	PA	11/21/2005
EPA 8330		RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	NELAP	PA	1/19/2005
EPA 9012		Total cyanide	NELAP	PA	4/18/2013
EPA 9045		pH	NELAP	PA	11/19/2008
EPA 9050	A	Conductivity	NELAP	PA	1/27/2014
EPA 9050		Conductivity	NELAP	PA	5/17/2005
EPA 9060		Total organic carbon (TOC)	NELAP	PA	1/19/2005
EPA 9066		Total phenolics	NELAP	PA	4/4/2005
EPA 9071	B	Oil and grease	NELAP	PA	1/19/2005
EPA 9081		Cation exchange capacity of soils (Ammonium acetate)	NELAP	PA	5/25/2005
EPA 9095	A	Paint filter liquids test	NELAP	PA	1/24/2007
EPA Lloyd Kahn Method		Total organic carbon (TOC)	NELAP	PA	10/9/2013
FL-PRO		Total petroleum hydrocarbons (TPH)	NELAP	PA	12/12/2005
MA DEP EPH	1.1	C11-C22 Aromatics	NELAP	PA	7/15/2013
MA DEP EPH	1.1	C19-C36 Aliphatics	NELAP	PA	7/15/2013
MA DEP EPH	1.1	C9-C18 Aliphatics	NELAP	PA	7/15/2013
MA DEP VPH	1.1	C5-C8 Aliphatics	NELAP	PA	7/15/2013
MA DEP VPH	1.1	C9-C10 Aromatics	NELAP	PA	7/15/2013
MA DEP VPH	1.1	C9-C12 Aliphatics	NELAP	PA	7/15/2013
NWTPH-Dx		Diesel-range organics (DRO)	NELAP	PA	12/12/2005
NWTPH-Gx		Gasoline-range organics (GRO)	NELAP	PA	12/12/2005
SM 2540 G		Residue, total	NELAP	PA	2/25/2014
SM 2540 G		Total, fixed, and volatile residue	NELAP	PA	3/19/2015
SM 5310 B		Total organic carbon (TOC)	NELAP	PA	10/9/2013
TX1005 (TNRCC)		Total petroleum hydrocarbons (TPH)	NELAP	PA	12/12/2005
TX1006 (TNRCC)		Total petroleum hydrocarbons (TPH)	NELAP	PA	12/12/2005
WA-EPH		Diesel-range organics (DRO)	NELAP	PA	12/12/2005
WA-VPH		Gasoline-range organics (GRO)	NELAP	PA	12/12/2005
WI-DRO		Diesel-range organics (DRO)	NELAP	PA	12/12/2005
WI-GRO		Gasoline-range organics (GRO)	NELAP	PA	12/12/2005

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STATE OF LOUISIANA
DEPARTMENT OF ENVIRONMENTAL QUALITY
Issue Date: July 1, 2015

Eurofins Lancaster Laboratories Inc
AI Number: 30729
Expiration Date: June 30, 2016

2425 New Holland Pike, Lancaster, Pennsylvania 17601-5994

Certificate Number: 02055

Air Emissions

Analyte	Method Name	Method Code	Type	AB
4385 - Bromobenzene	EPA TO-15 (extended)	2368	NELAP	LA
4577 - Chlorodifluoromethane (Freon-22)	EPA TO-15 (extended)	2368	NELAP	LA
4627 - Dichlorofluoromethane (Freon 21)	EPA TO-15 (extended)	2368	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA TO-15 (extended)	2368	NELAP	LA
5027 - n-Octane	EPA TO-15 (extended)	2368	NELAP	LA
5028 - n-Pentane	EPA TO-15 (extended)	2368	NELAP	LA
100170 - Gaseous Organic Compound Emissions	EPA 18	10246636	NELAP	LA
100077 - Gaseous Nonmethane Organic Emissions	EPA Method 25	10246738	NELAP	LA
5105 - 1,1,1,2-Tetrachloroethane	EPA TO-15	10248803	NELAP	LA
5160 - 1,1,1-Trichloroethane	EPA TO-15	10248803	NELAP	LA
5110 - 1,1,2,2-Tetrachloroethane	EPA TO-15	10248803	NELAP	LA
5195 - 1,1,2-Trichloro-1,2,2-trifluoroethane	EPA TO-15	10248803	NELAP	LA
5165 - 1,1,2-Trichloroethane	EPA TO-15	10248803	NELAP	LA
4630 - 1,1-Dichloroethane	EPA TO-15	10248803	NELAP	LA
4640 - 1,1-Dichloroethylene	EPA TO-15	10248803	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA TO-15	10248803	NELAP	LA
5210 - 1,2,4-Trimethylbenzene	EPA TO-15	10248803	NELAP	LA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA TO-15	10248803	NELAP	LA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA TO-15	10248803	NELAP	LA
4695 - 1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon-114)	EPA TO-15	10248803	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA TO-15	10248803	NELAP	LA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA TO-15	10248803	NELAP	LA
4655 - 1,2-Dichloropropane	EPA TO-15	10248803	NELAP	LA
5215 - 1,3,5-Trimethylbenzene	EPA TO-15	10248803	NELAP	LA
9318 - 1,3-Butadiene	EPA TO-15	10248803	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA TO-15	10248803	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA TO-15	10248803	NELAP	LA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA TO-15	10248803	NELAP	LA
5220 - 2,2,4-Trimethylpentane (Isooctane)	EPA TO-15	10248803	NELAP	LA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA TO-15	10248803	NELAP	LA
4535 - 2-Chlorotoluene	EPA TO-15	10248803	NELAP	LA
4860 - 2-Hexanone	EPA TO-15	10248803	NELAP	LA
4542 - 4-Ethyltoluene	EPA TO-15	10248803	NELAP	LA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA TO-15	10248803	NELAP	LA
4315 - Acetone	EPA TO-15	10248803	NELAP	LA
4320 - Acetonitrile	EPA TO-15	10248803	NELAP	LA
4325 - Acrolein (Propenal)	EPA TO-15	10248803	NELAP	LA
4340 - Acrylonitrile	EPA TO-15	10248803	NELAP	LA
4355 - Allyl chloride (3-Chloropropene)	EPA TO-15	10248803	NELAP	LA
4375 - Benzene	EPA TO-15	10248803	NELAP	LA
5635 - Benzyl chloride	EPA TO-15	10248803	NELAP	LA
4395 - Bromodichloromethane	EPA TO-15	10248803	NELAP	LA
4400 - Bromoform	EPA TO-15	10248803	NELAP	LA

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Air Emissions

Analyte	Method Name	Method Code	Type	AB
4450 - Carbon disulfide	EPA TO-15	10248803	NELAP	LA
4455 - Carbon tetrachloride	EPA TO-15	10248803	NELAP	LA
4475 - Chlorobenzene	EPA TO-15	10248803	NELAP	LA
4575 - Chlorodibromomethane	EPA TO-15	10248803	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA TO-15	10248803	NELAP	LA
4505 - Chloroform	EPA TO-15	10248803	NELAP	LA
4555 - Cyclohexane	EPA TO-15	10248803	NELAP	LA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA TO-15	10248803	NELAP	LA
4595 - Dibromomethane (Methylene bromide)	EPA TO-15	10248803	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA TO-15	10248803	NELAP	LA
4750 - Ethanol	EPA TO-15	10248803	NELAP	LA
4755 - Ethyl acetate	EPA TO-15	10248803	NELAP	LA
4760 - Ethyl acrylate	EPA TO-15	10248803	NELAP	LA
4810 - Ethyl methacrylate	EPA TO-15	10248803	NELAP	LA
4770 - Ethyl-t-butyl ether (ETBE) (2-Ethoxy-2-methylpropane)	EPA TO-15	10248803	NELAP	LA
4765 - Ethylbenzene	EPA TO-15	10248803	NELAP	LA
4835 - Hexachlorobutadiene	EPA TO-15	10248803	NELAP	LA
4840 - Hexachloroethane	EPA TO-15	10248803	NELAP	LA
4870 - Iodomethane (Methyl iodide)	EPA TO-15	10248803	NELAP	LA
4900 - Isopropylbenzene	EPA TO-15	10248803	NELAP	LA
4945 - Methyl acrylate	EPA TO-15	10248803	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA TO-15	10248803	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA TO-15	10248803	NELAP	LA
100201 - Methyl isobutyl ketone (Hexanone)	EPA TO-15	10248803	NELAP	LA
4990 - Methyl methacrylate	EPA TO-15	10248803	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA TO-15	10248803	NELAP	LA
4975 - Methylene chloride (Dichloromethane)	EPA TO-15	10248803	NELAP	LA
5005 - Naphthalene	EPA TO-15	10248803	NELAP	LA
4836 - Propylene	EPA TO-15	10248803	NELAP	LA
5100 - Styrene	EPA TO-15	10248803	NELAP	LA
4370 - T-amylmethylether (TAME)	EPA TO-15	10248803	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA TO-15	10248803	NELAP	LA
5120 - Tetrahydrofuran (THF)	EPA TO-15	10248803	NELAP	LA
5140 - Toluene	EPA TO-15	10248803	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA TO-15	10248803	NELAP	LA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA TO-15	10248803	NELAP	LA
5225 - Vinyl acetate	EPA TO-15	10248803	NELAP	LA
5230 - Vinyl bromide (Bromoethane)	EPA TO-15	10248803	NELAP	LA
5235 - Vinyl chloride	EPA TO-15	10248803	NELAP	LA
5260 - Xylene (total)	EPA TO-15	10248803	NELAP	LA
4705 - cis & trans-1,2-Dichloroethene	EPA TO-15	10248803	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA TO-15	10248803	NELAP	LA
4680 - cis-1,3-Dichloropropene	EPA TO-15	10248803	NELAP	LA
5240 - m+p-xylene	EPA TO-15	10248803	NELAP	LA
5245 - m-Xylene	EPA TO-15	10248803	NELAP	LA
4435 - n-Butylbenzene	EPA TO-15	10248803	NELAP	LA
4825 - n-Heptane	EPA TO-15	10248803	NELAP	LA
4855 - n-Hexane	EPA TO-15	10248803	NELAP	LA
5090 - n-Propylbenzene	EPA TO-15	10248803	NELAP	LA

Air Emissions

Analyte	Method Name	Method Code	Type	AB
5250 - o-Xylene	EPA TO-15	10248803	NELAP	LA
5255 - p-Xylene	EPA TO-15	10248803	NELAP	LA
4440 - sec-Butylbenzene	EPA TO-15	10248803	NELAP	LA
4420 - tert-Butyl alcohol	EPA TO-15	10248803	NELAP	LA
4445 - tert-Butylbenzene	EPA TO-15	10248803	NELAP	LA
4700 - trans-1,2-Dichloroethylene	EPA TO-15	10248803	NELAP	LA
4685 - trans-1,3-Dichloropropylene	EPA TO-15	10248803	NELAP	LA
5105 - 1,1,1,2-Tetrachloroethane	EPA TO-14A, Rev.2	10312002	NELAP	LA
5160 - 1,1,1-Trichloroethane	EPA TO-14A, Rev.2	10312002	NELAP	LA
5110 - 1,1,2,2-Tetrachloroethane	EPA TO-14A, Rev.2	10312002	NELAP	LA
5195 - 1,1,2-Trichloro-1,2,2-trifluoroethane	EPA TO-14A, Rev.2	10312002	NELAP	LA
5165 - 1,1,2-Trichloroethane	EPA TO-14A, Rev.2	10312002	NELAP	LA
4630 - 1,1-Dichloroethane	EPA TO-14A, Rev.2	10312002	NELAP	LA
4640 - 1,1-Dichloroethylene	EPA TO-14A, Rev.2	10312002	NELAP	LA
5180 - 1,2,3-Trichloropropane	EPA TO-14A, Rev.2	10312002	NELAP	LA
5155 - 1,2,4-Trichlorobenzene	EPA TO-14A, Rev.2	10312002	NELAP	LA
5210 - 1,2,4-Trimethylbenzene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA TO-14A, Rev.2	10312002	NELAP	LA
4695 - 1,2-Dichloro-1,1,2,2-tetrafluoroethane (Freon-114)	EPA TO-14A, Rev.2	10312002	NELAP	LA
4610 - 1,2-Dichlorobenzene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA TO-14A, Rev.2	10312002	NELAP	LA
4655 - 1,2-Dichloropropane	EPA TO-14A, Rev.2	10312002	NELAP	LA
5215 - 1,3,5-Trimethylbenzene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4615 - 1,3-Dichlorobenzene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4835 - 1,3-Hexachlorobutadiene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4620 - 1,4-Dichlorobenzene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA TO-14A, Rev.2	10312002	NELAP	LA
5220 - 2,2,4-Trimethylpentane (Isooctane)	EPA TO-14A, Rev.2	10312002	NELAP	LA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA TO-14A, Rev.2	10312002	NELAP	LA
4860 - 2-Hexanone	EPA TO-14A, Rev.2	10312002	NELAP	LA
4542 - 4-Ethyltoluene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA TO-14A, Rev.2	10312002	NELAP	LA
4315 - Acetone	EPA TO-14A, Rev.2	10312002	NELAP	LA
4375 - Benzene	EPA TO-14A, Rev.2	10312002	NELAP	LA
5635 - Benzyl chloride	EPA TO-14A, Rev.2	10312002	NELAP	LA
4385 - Bromobenzene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4395 - Bromodichloromethane	EPA TO-14A, Rev.2	10312002	NELAP	LA
4400 - Bromoform	EPA TO-14A, Rev.2	10312002	NELAP	LA
4450 - Carbon disulfide	EPA TO-14A, Rev.2	10312002	NELAP	LA
4455 - Carbon tetrachloride	EPA TO-14A, Rev.2	10312002	NELAP	LA
4475 - Chlorobenzene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4485 - Chloroethane (Ethyl chloride)	EPA TO-14A, Rev.2	10312002	NELAP	LA
4505 - Chloroform	EPA TO-14A, Rev.2	10312002	NELAP	LA
4555 - Cyclohexane	EPA TO-14A, Rev.2	10312002	NELAP	LA
4625 - Dichlorodifluoromethane (Freon-12)	EPA TO-14A, Rev.2	10312002	NELAP	LA
4755 - Ethyl acetate	EPA TO-14A, Rev.2	10312002	NELAP	LA
4765 - Ethylbenzene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4835 - Hexachlorobutadiene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4950 - Methyl bromide (Bromomethane)	EPA TO-14A, Rev.2	10312002	NELAP	LA
4960 - Methyl chloride (Chloromethane)	EPA TO-14A, Rev.2	10312002	NELAP	LA
4990 - Methyl methacrylate	EPA TO-14A, Rev.2	10312002	NELAP	LA
5000 - Methyl tert-butyl ether (MTBE)	EPA TO-14A, Rev.2	10312002	NELAP	LA

Air Emissions

Analyte	Method Name	Method Code	Type	AB
4975 - Methylene chloride (Dichloromethane)	EPA TO-14A, Rev.2	10312002	NELAP	LA
5100 - Styrene	EPA TO-14A, Rev.2	10312002	NELAP	LA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA TO-14A, Rev.2	10312002	NELAP	LA
5140 - Toluene	EPA TO-14A, Rev.2	10312002	NELAP	LA
5170 - Trichloroethene (Trichloroethylene)	EPA TO-14A, Rev.2	10312002	NELAP	LA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA TO-14A, Rev.2	10312002	NELAP	LA
5225 - Vinyl acetate	EPA TO-14A, Rev.2	10312002	NELAP	LA
5235 - Vinyl chloride	EPA TO-14A, Rev.2	10312002	NELAP	LA
5260 - Xylene (total)	EPA TO-14A, Rev.2	10312002	NELAP	LA
4645 - cis-1,2-Dichloroethylene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4680 - cis-1,3-Dichloropropene	EPA TO-14A, Rev.2	10312002	NELAP	LA
5240 - m+p-xylene	EPA TO-14A, Rev.2	10312002	NELAP	LA
5027 - n-Octane	EPA TO-14A, Rev.2	10312002	NELAP	LA
5028 - n-Pentane	EPA TO-14A, Rev.2	10312002	NELAP	LA
5090 - n-Propylbenzene	EPA TO-14A, Rev.2	10312002	NELAP	LA
5250 - o-Xylene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4700 - trans-1,2-Dichloroethylene	EPA TO-14A, Rev.2	10312002	NELAP	LA
4685 - trans-1,3-Dichloropropylene	EPA TO-14A, Rev.2	10312002	NELAP	LA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
9369 - Diesel range organics (DRO)	Texas 1006	867	NELAP	PA
6211 - EPH Aliphatic >C10-C12	Texas 1006	867	NELAP	PA
6212 - EPH Aliphatic >C12-C16	Texas 1006	867	NELAP	PA
6214 - EPH Aliphatic >C16-C21	Texas 1006	867	NELAP	PA
6216 - EPH Aliphatic >C21-C34	Texas 1006	867	NELAP	PA
6224 - EPH Aromatic >C10-C12	Texas 1006	867	NELAP	PA
6226 - EPH Aromatic >C12-C16	Texas 1006	867	NELAP	PA
6228 - EPH Aromatic >C16-C21	Texas 1006	867	NELAP	PA
6231 - EPH Aromatic >C21-C34	Texas 1006	867	NELAP	PA
6236 - EPH Aromatic C8-C10	Texas 1006	867	NELAP	PA
100163 - 1,5-pentanediol	EPA 625 (extended)	2326	NELAP	PA
100164 - 1,6-hexanediol	EPA 625 (extended)	2326	NELAP	PA
5145 - 2-Methylaniline (o-Toluidine)	EPA 625 (extended)	2326	NELAP	PA
6205 - Diphenylamine	EPA 625 (extended)	2326	NELAP	PA
6298 - Hexanoic acid	EPA 625 (extended)	2326	NELAP	PA
6335 - Maleic anhydride	EPA 625 (extended)	2326	NELAP	PA
5035 - Pentachloroethane	EPA 625 (extended)	2326	NELAP	PA
9547 - Pentanoic Acid	EPA 625 (extended)	2326	NELAP	PA
100199 - Sulfolane	EPA 625 (extended)	2326	NELAP	PA
100253 - Toluene diamines (total)	EPA 625 (extended)	2326	NELAP	PA
8262 - Tributyl phosphate	EPA 625 (extended)	2326	NELAP	PA
100252 - p-Toluidine	EPA 625 (extended)	2326	NELAP	PA
4720 - Diethylene glycol	EPA 8015C (extended)	2331	NELAP	PA
6657 - Propylene Glycol	EPA 8015C (extended)	2331	NELAP	PA
9646 - Triethylene Glycol	EPA 8015C (extended)	2331	NELAP	PA
4670 - 1,1-Dichloropropene	EPA 624 (extended)	2337	NELAP	PA
5150 - 1,2,3-Trichlorobenzene	EPA 624 (extended)	2337	NELAP	PA
4660 - 1,3-Dichloropropane	EPA 624 (extended)	2337	NELAP	PA
4675 - 1,3-Dichloropropene	EPA 624 (extended)	2337	NELAP	PA
4665 - 2,2-Dichloropropane	EPA 624 (extended)	2337	NELAP	PA

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Non Potable Water

Analyte	Method Name	Method Code	Type	AB
4535 - 2-Chlorotoluene	EPA 624 (extended)	2337	NELAP	PA
4540 - 4-Chlorotoluene	EPA 624 (extended)	2337	NELAP	PA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 624 (extended)	2337	NELAP	PA
4385 - Bromobenzene	EPA 624 (extended)	2337	NELAP	PA
4870 - Iodomethane (Methyl iodide)	EPA 624 (extended)	2337	NELAP	PA
4900 - Isopropylbenzene	EPA 624 (extended)	2337	NELAP	PA
4435 - n-Butylbenzene	EPA 624 (extended)	2337	NELAP	PA
5090 - n-Propylbenzene	EPA 624 (extended)	2337	NELAP	PA
4440 - sec-Butylbenzene	EPA 624 (extended)	2337	NELAP	PA
4445 - tert-Butylbenzene	EPA 624 (extended)	2337	NELAP	PA
1605 - Color	EPA 110.2	10005400	NELAP	PA
1755 - Total hardness as CaCO3	EPA 120.1	10006209	NELAP	PA
1610 - Conductivity	EPA 120.1	10006403	NELAP	PA
1750 - Hardness	EPA 130.2	10007202	NELAP	PA
1755 - Total hardness as CaCO3	EPA 130.2	10007202	NELAP	PA
1900 - pH	EPA 150.1	10008205	NELAP	PA
1955 - Residue-filterable (TDS)	EPA 160.1	10009004	NELAP	PA
1955 - Residue-filterable (TDS)	EPA 160.1	10009208	NELAP	PA
1960 - Residue-nonfilterable (TSS)	EPA 160.2	10009402	NELAP	PA
1950 - Residue-total	EPA 160.3	10009800	NELAP	PA
1970 - Residue-volatile	EPA 160.4	10010205	NELAP	PA
1970 - Residue-volatile	EPA 160.4	10010409	NELAP	PA
2030 - Temperature, deg. C	EPA 170.1	10011004	NELAP	PA
2055 - Turbidity	EPA 180.1	10011402	NELAP	PA
2055 - Turbidity	EPA 180.1, Rev.2	10011800	NELAP	PA
1015 - Barium	EPA 200.7	10013408	NELAP	PA
1080 - Lithium	EPA 200.7	10013408	NELAP	PA
1000 - Aluminum	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1005 - Antimony	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1010 - Arsenic	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1015 - Barium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1020 - Beryllium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1025 - Boron	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1030 - Cadmium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1035 - Calcium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1040 - Chromium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1050 - Cobalt	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1055 - Copper	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1070 - Iron	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1075 - Lead	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1085 - Magnesium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1090 - Manganese	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1100 - Molybdenum	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1105 - Nickel	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1125 - Potassium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1140 - Selenium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1150 - Silver	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1155 - Sodium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1160 - Strontium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1165 - Thallium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1175 - Tin	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1180 - Titanium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1185 - Vanadium	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1190 - Zinc	EPA 200.7, Rev.4.4	10013806	NELAP	PA
1000 - Aluminum	EPA 200.7	10014207	NELAP	PA
1005 - Antimony	EPA 200.7	10014207	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
1010 - Arsenic	EPA 200.7	10014207	NELAP	PA
1015 - Barium	EPA 200.7	10014207	NELAP	PA
1020 - Beryllium	EPA 200.7	10014207	NELAP	PA
1025 - Boron	EPA 200.7	10014207	NELAP	PA
1030 - Cadmium	EPA 200.7	10014207	NELAP	PA
1035 - Calcium	EPA 200.7	10014207	NELAP	PA
1040 - Chromium	EPA 200.7	10014207	NELAP	PA
1050 - Cobalt	EPA 200.7	10014207	NELAP	PA
1055 - Copper	EPA 200.7	10014207	NELAP	PA
1070 - Iron	EPA 200.7	10014207	NELAP	PA
1075 - Lead	EPA 200.7	10014207	NELAP	PA
1085 - Magnesium	EPA 200.7	10014207	NELAP	PA
1090 - Manganese	EPA 200.7	10014207	NELAP	PA
1100 - Molybdenum	EPA 200.7	10014207	NELAP	PA
1105 - Nickel	EPA 200.7	10014207	NELAP	PA
1125 - Potassium	EPA 200.7	10014207	NELAP	PA
1140 - Selenium	EPA 200.7	10014207	NELAP	PA
1150 - Silver	EPA 200.7	10014207	NELAP	PA
1155 - Sodium	EPA 200.7	10014207	NELAP	PA
1165 - Thallium	EPA 200.7	10014207	NELAP	PA
1175 - Tin	EPA 200.7	10014207	NELAP	PA
1185 - Vanadium	EPA 200.7	10014207	NELAP	PA
1190 - Zinc	EPA 200.7	10014207	NELAP	PA
1000 - Aluminum	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1005 - Antimony	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1010 - Arsenic	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1015 - Barium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1020 - Beryllium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1025 - Boron	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1030 - Cadmium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1035 - Calcium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1040 - Chromium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1050 - Cobalt	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1055 - Copper	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1070 - Iron	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1075 - Lead	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1085 - Magnesium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1090 - Manganese	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1100 - Molybdenum	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1105 - Nickel	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1125 - Potassium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1140 - Selenium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1150 - Silver	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1155 - Sodium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1160 - Strontium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1165 - Thallium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1175 - Tin	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1180 - Titanium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1185 - Vanadium	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1190 - Zinc	EPA 200.8, Rev.5.4	10014605	NELAP	PA
1045 - Chromium VI	EPA 218.6	10027802	NELAP	PA
1045 - Chromium VI	EPA 218.6, Rev.3.3	10028009	NELAP	PA
1095 - Mercury	EPA 245.1, Rev.3	10036609	NELAP	PA
1540 - Bromide	EPA 300.0	10053006	NELAP	PA
1730 - Fluoride	EPA 300.0	10053006	NELAP	PA
1810 - Nitrate as N	EPA 300.0	10053006	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
1540 - Bromide	EPA 300.0, Rev.2.1	10053200	NELAP	PA
1575 - Chloride	EPA 300.0, Rev.2.1	10053200	NELAP	PA
1730 - Fluoride	EPA 300.0, Rev.2.1	10053200	NELAP	PA
1810 - Nitrate as N	EPA 300.0, Rev.2.1	10053200	NELAP	PA
1835 - Nitrite	EPA 300.0, Rev.2.1	10053200	NELAP	PA
1840 - Nitrite as N	EPA 300.0, Rev.2.1	10053200	NELAP	PA
2000 - Sulfate	EPA 300.0, Rev.2.1	10053200	NELAP	PA
1505 - Alkalinity as CaCO3	EPA 310.1	10054601	NELAP	PA
1575 - Chloride	EPA 325.3	10057406	NELAP	PA
1645 - Total Cyanide	EPA 335.4	10061402	NELAP	PA
1515 - Ammonia as N	EPA 350.1, Rev.2	10063602	NELAP	PA
1515 - Ammonia as N	EPA 350.2	10063806	NELAP	PA
1515 - Ammonia as N	EPA 350.3	10064207	NELAP	PA
1795 - Kjeldahl nitrogen - total	EPA 351.2	10065006	NELAP	PA
1795 - Kjeldahl nitrogen - total	EPA 351.2, Rev.2	10065404	NELAP	PA
1810 - Nitrate as N	EPA 353.2	10067206	NELAP	PA
1840 - Nitrite as N	EPA 353.2	10067206	NELAP	PA
1825 - Total Nitrate+Nitrite	EPA 353.2	10067206	NELAP	PA
1810 - Nitrate as N	EPA 353.2, Rev.2	10067604	NELAP	PA
1820 - Nitrate-Nitrite	EPA 353.2, Rev.2	10067604	NELAP	PA
1840 - Nitrite as N	EPA 353.2, Rev.2	10067604	NELAP	PA
1880 - Oxygen, dissolved	EPA 360.1	10069008	NELAP	PA
1910 - Total Phosphorus	EPA 365.1, Rev.2	10070005	NELAP	PA
1870 - Orthophosphate as P	EPA 365.3	10070607	NELAP	PA
1870 - Orthophosphate as P	EPA 365.3	10070801	NELAP	PA
2000 - Sulfate	EPA 375.4	10073606	NELAP	PA
2005 - Sulfide	EPA 376.2	10074405	NELAP	PA
1555 - Carbonaceous BOD, CBOD	EPA 405.1	10075408	NELAP	PA
1565 - Chemical oxygen demand	EPA 410.1	10075806	NELAP	PA
1565 - Chemical oxygen demand	EPA 410.4	10077006	NELAP	PA
1565 - Chemical oxygen demand	EPA 410.4, Rev.2	10077404	NELAP	PA
2040 - Total Organic Carbon	EPA 415.1	10078203	NELAP	PA
2040 - Total Organic Carbon	EPA 415.1	10078407	NELAP	PA
1905 - Total Phenolics	EPA 420.4, Rev.1	10080203	NELAP	PA
2025 - Surfactants - MBAS	EPA 425.1	10080601	NELAP	PA
4375 - Benzene	EPA 602	10102202	NELAP	PA
4765 - Ethylbenzene	EPA 602	10102202	NELAP	PA
5000 - Methyl tert-butyl ether (MTBE)	EPA 602	10102202	NELAP	PA
5005 - Naphthalene	EPA 602	10102202	NELAP	PA
5100 - Styrene	EPA 602	10102202	NELAP	PA
5140 - Toluene	EPA 602	10102202	NELAP	PA
5260 - Xylene (total)	EPA 602	10102202	NELAP	PA
5250 - o-Xylene	EPA 602	10102202	NELAP	PA
5255 - p-Xylene	EPA 602	10102202	NELAP	PA
7355 - 4,4'-DDD	EPA 608	10103603	NELAP	PA
7360 - 4,4'-DDE	EPA 608	10103603	NELAP	PA
7365 - 4,4'-DDT	EPA 608	10103603	NELAP	PA
7025 - Aldrin	EPA 608	10103603	NELAP	PA
8880 - Aroclor-1016 (PCB-1016)	EPA 608	10103603	NELAP	PA
8885 - Aroclor-1221 (PCB-1221)	EPA 608	10103603	NELAP	PA
8890 - Aroclor-1232 (PCB-1232)	EPA 608	10103603	NELAP	PA
8895 - Aroclor-1242 (PCB-1242)	EPA 608	10103603	NELAP	PA
8900 - Aroclor-1248 (PCB-1248)	EPA 608	10103603	NELAP	PA
8905 - Aroclor-1254 (PCB-1254)	EPA 608	10103603	NELAP	PA
8910 - Aroclor-1260 (PCB-1260)	EPA 608	10103603	NELAP	PA
7250 - Chlordane (tech.)	EPA 608	10103603	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
7470 - Dieldrin	EPA 608	10103603	NELAP	PA
7510 - Endosulfan I	EPA 608	10103603	NELAP	PA
7515 - Endosulfan II	EPA 608	10103603	NELAP	PA
7520 - Endosulfan sulfate	EPA 608	10103603	NELAP	PA
7540 - Endrin	EPA 608	10103603	NELAP	PA
7530 - Endrin aldehyde	EPA 608	10103603	NELAP	PA
7685 - Heptachlor	EPA 608	10103603	NELAP	PA
7690 - Heptachlor epoxide	EPA 608	10103603	NELAP	PA
8250 - Toxaphene (Chlorinated camphene)	EPA 608	10103603	NELAP	PA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 608	10103603	NELAP	PA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 608	10103603	NELAP	PA
7120 - gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	EPA 608	10103603	NELAP	PA
7075 - Azinphos-methyl (Guthion)	EPA 622	10106806	NELAP	PA
7125 - Bolstar (Sulprofos)	EPA 622	10106806	NELAP	PA
7220 - Carbophenothion	EPA 622	10106806	NELAP	PA
7300 - Chlorpyrifos	EPA 622	10106806	NELAP	PA
7315 - Coumaphos	EPA 622	10106806	NELAP	PA
7395 - Demeton-o	EPA 622	10106806	NELAP	PA
7385 - Demeton-s	EPA 622	10106806	NELAP	PA
7410 - Diazinon	EPA 622	10106806	NELAP	PA
8610 - Dichlorovos (DDVP, Dichlorvos)	EPA 622	10106806	NELAP	PA
7495 - Dioxathion	EPA 622	10106806	NELAP	PA
8625 - Disulfoton	EPA 622	10106806	NELAP	PA
7550 - EPN	EPA 622	10106806	NELAP	PA
7565 - Ethion	EPA 622	10106806	NELAP	PA
7570 - Ethoprop	EPA 622	10106806	NELAP	PA
7580 - Famphur	EPA 622	10106806	NELAP	PA
7600 - Fensulfothion	EPA 622	10106806	NELAP	PA
7605 - Fenthion	EPA 622	10106806	NELAP	PA
7640 - Fonophos (Fonofos)	EPA 622	10106806	NELAP	PA
7770 - Malathion	EPA 622	10106806	NELAP	PA
7785 - Merphos	EPA 622	10106806	NELAP	PA
7795 - Methamidophos	EPA 622	10106806	NELAP	PA
7825 - Methyl parathion (Parathion, methyl)	EPA 622	10106806	NELAP	PA
7850 - Mevinphos	EPA 622	10106806	NELAP	PA
7880 - Monocrotophos	EPA 622	10106806	NELAP	PA
7905 - Naled	EPA 622	10106806	NELAP	PA
7955 - Parathion, ethyl	EPA 622	10106806	NELAP	PA
7985 - Phorate	EPA 622	10106806	NELAP	PA
8000 - Phosmet (Imidan)	EPA 622	10106806	NELAP	PA
8110 - Ronnel	EPA 622	10106806	NELAP	PA
8140 - Stirophos	EPA 622	10106806	NELAP	PA
8185 - Terbufos	EPA 622	10106806	NELAP	PA
8245 - Tokuthion (Prothiophos)	EPA 622	10106806	NELAP	PA
8275 - Trichloronate	EPA 622	10106806	NELAP	PA
5160 - 1,1,1-Trichloroethane	EPA 624	10107207	NELAP	PA
5110 - 1,1,2,2-Tetrachloroethane	EPA 624	10107207	NELAP	PA
5165 - 1,1,2-Trichloroethane	EPA 624	10107207	NELAP	PA
4630 - 1,1-Dichloroethane	EPA 624	10107207	NELAP	PA
4640 - 1,1-Dichloroethylene	EPA 624	10107207	NELAP	PA
4670 - 1,1-Dichloropropene	EPA 624	10107207	NELAP	PA
5150 - 1,2,3-Trichlorobenzene	EPA 624	10107207	NELAP	PA
4610 - 1,2-Dichlorobenzene	EPA 624	10107207	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 624	10107207	NELAP	PA
4655 - 1,2-Dichloropropane	EPA 624	10107207	NELAP	PA
4615 - 1,3-Dichlorobenzene	EPA 624	10107207	NELAP	PA
4660 - 1,3-Dichloropropane	EPA 624	10107207	NELAP	PA
4620 - 1,4-Dichlorobenzene	EPA 624	10107207	NELAP	PA
4480 - 1-Chlorobutane	EPA 624	10107207	NELAP	PA
4665 - 2,2-Dichloropropane	EPA 624	10107207	NELAP	PA
4500 - 2-Chloroethyl vinyl ether	EPA 624	10107207	NELAP	PA
4535 - 2-Chlorotoluene	EPA 624	10107207	NELAP	PA
6412 - 3+4 Methylphenol	EPA 624	10107207	NELAP	PA
100256 - 3,4-dichloro-1-butene	EPA 624	10107207	NELAP	PA
4540 - 4-Chlorotoluene	EPA 624	10107207	NELAP	PA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 624	10107207	NELAP	PA
4325 - Acrolein (Propenal)	EPA 624	10107207	NELAP	PA
4340 - Acrylonitrile	EPA 624	10107207	NELAP	PA
4355 - Allyl chloride (3-Chloropropene)	EPA 624	10107207	NELAP	PA
4375 - Benzene	EPA 624	10107207	NELAP	PA
4385 - Bromobenzene	EPA 624	10107207	NELAP	PA
4390 - Bromochloromethane	EPA 624	10107207	NELAP	PA
4395 - Bromodichloromethane	EPA 624	10107207	NELAP	PA
4397 - Bromoethane (Ethyl Bromide)	EPA 624	10107207	NELAP	PA
4398 - Bromoethene	EPA 624	10107207	NELAP	PA
4400 - Bromoform	EPA 624	10107207	NELAP	PA
4455 - Carbon tetrachloride	EPA 624	10107207	NELAP	PA
4475 - Chlorobenzene	EPA 624	10107207	NELAP	PA
4485 - Chloroethane (Ethyl chloride)	EPA 624	10107207	NELAP	PA
4505 - Chloroform	EPA 624	10107207	NELAP	PA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 624	10107207	NELAP	PA
4595 - Dibromomethane (Methylene bromide)	EPA 624	10107207	NELAP	PA
4725 - Diethyl ether	EPA 624	10107207	NELAP	PA
4737 - Divinylbenzene (vinylstyrene)	EPA 624	10107207	NELAP	PA
4755 - Ethyl acetate	EPA 624	10107207	NELAP	PA
4810 - Ethyl methacrylate	EPA 624	10107207	NELAP	PA
4765 - Ethylbenzene	EPA 624	10107207	NELAP	PA
4840 - Hexachloroethane	EPA 624	10107207	NELAP	PA
4870 - Iodomethane (Methyl iodide)	EPA 624	10107207	NELAP	PA
4900 - Isopropylbenzene	EPA 624	10107207	NELAP	PA
4925 - Methacrylonitrile	EPA 624	10107207	NELAP	PA
4950 - Methyl bromide (Bromomethane)	EPA 624	10107207	NELAP	PA
4960 - Methyl chloride (Chloromethane)	EPA 624	10107207	NELAP	PA
4975 - Methylene chloride (Dichloromethane)	EPA 624	10107207	NELAP	PA
5035 - Pentachloroethane	EPA 624	10107207	NELAP	PA
5080 - Propionitrile (Ethyl cyanide)	EPA 624	10107207	NELAP	PA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 624	10107207	NELAP	PA
5140 - Toluene	EPA 624	10107207	NELAP	PA
5170 - Trichloroethene (Trichloroethylene)	EPA 624	10107207	NELAP	PA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 624	10107207	NELAP	PA
5235 - Vinyl chloride	EPA 624	10107207	NELAP	PA
5260 - Xylene (total)	EPA 624	10107207	NELAP	PA
4705 - cis & trans-1,2-Dichloroethene	EPA 624	10107207	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
100290 - cis & trans-1,3-Dichloropropylene	EPA 624	10107207	NELAP	PA
4680 - cis-1,3-Dichloropropene	EPA 624	10107207	NELAP	PA
4435 - n-Butylbenzene	EPA 624	10107207	NELAP	PA
4855 - n-Hexane	EPA 624	10107207	NELAP	PA
5090 - n-Propylbenzene	EPA 624	10107207	NELAP	PA
4440 - sec-Butylbenzene	EPA 624	10107207	NELAP	PA
4445 - tert-Butylbenzene	EPA 624	10107207	NELAP	PA
100544 - total 1,3-dichloropropene	EPA 624	10107207	NELAP	PA
4700 - trans-1,2-Dichloroethylene	EPA 624	10107207	NELAP	PA
4685 - trans-1,3-Dichloropropylene	EPA 624	10107207	NELAP	PA
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 625	10107401	NELAP	PA
5155 - 1,2,4-Trichlorobenzene	EPA 625	10107401	NELAP	PA
4610 - 1,2-Dichlorobenzene	EPA 625	10107401	NELAP	PA
6220 - 1,2-Diphenylhydrazine	EPA 625	10107401	NELAP	PA
6800 - 1,3,5-Trichlorobenzene	EPA 625	10107401	NELAP	PA
4615 - 1,3-Dichlorobenzene	EPA 625	10107401	NELAP	PA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 625	10107401	NELAP	PA
4620 - 1,4-Dichlorobenzene	EPA 625	10107401	NELAP	PA
6165 - 1,4-Dinitrobenzene	EPA 625	10107401	NELAP	PA
5790 - 1-Chloronaphthalene	EPA 625	10107401	NELAP	PA
6380 - 1-Methylnaphthalene	EPA 625	10107401	NELAP	PA
9501 - 1-Methylphenanthrene	EPA 625	10107401	NELAP	PA
6735 - 2,3,4,6-Tetrachlorophenol	EPA 625	10107401	NELAP	PA
9363 - 2,3-Dichloroaniline	EPA 625	10107401	NELAP	PA
5983 - 2,3-Dichlorophenol	EPA 625	10107401	NELAP	PA
6835 - 2,4,5-Trichlorophenol	EPA 625	10107401	NELAP	PA
6840 - 2,4,6-Trichlorophenol	EPA 625	10107401	NELAP	PA
6000 - 2,4-Dichlorophenol	EPA 625	10107401	NELAP	PA
6130 - 2,4-Dimethylphenol	EPA 625	10107401	NELAP	PA
6175 - 2,4-Dinitrophenol	EPA 625	10107401	NELAP	PA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 625	10107401	NELAP	PA
5992 - 2,5-Dichlorophenol	EPA 625	10107401	NELAP	PA
6005 - 2,6-Dichlorophenol	EPA 625	10107401	NELAP	PA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 625	10107401	NELAP	PA
9322 - 2-Butoxyethanol	EPA 625	10107401	NELAP	PA
5795 - 2-Chloronaphthalene	EPA 625	10107401	NELAP	PA
5800 - 2-Chlorophenol	EPA 625	10107401	NELAP	PA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 625	10107401	NELAP	PA
6400 - 2-Methylphenol (o-Cresol)	EPA 625	10107401	NELAP	PA
6460 - 2-Nitroaniline	EPA 625	10107401	NELAP	PA
6490 - 2-Nitrophenol	EPA 625	10107401	NELAP	PA
6412 - 3+4 Methylphenol	EPA 625	10107401	NELAP	PA
5945 - 3,3'-Dichlorobenzidine	EPA 625	10107401	NELAP	PA
5997 - 3,4-Dichlorophenol	EPA 625	10107401	NELAP	PA
6397 - 3,5-Dichlorophenol	EPA 625	10107401	NELAP	PA
6405 - 3-Methylphenol (m-Cresol)	EPA 625	10107401	NELAP	PA
6465 - 3-Nitroaniline	EPA 625	10107401	NELAP	PA
6495 - 3-Nitrophenol	EPA 625	10107401	NELAP	PA
7355 - 4,4'-DDD	EPA 625	10107401	NELAP	PA
7360 - 4,4'-DDE	EPA 625	10107401	NELAP	PA
7365 - 4,4'-DDT	EPA 625	10107401	NELAP	PA
5660 - 4-Bromophenyl phenyl ether	EPA 625	10107401	NELAP	PA
5700 - 4-Chloro-3-methylphenol	EPA 625	10107401	NELAP	PA
5745 - 4-Chloroaniline	EPA 625	10107401	NELAP	PA
5825 - 4-Chlorophenyl phenylether	EPA 625	10107401	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
6410 - 4-Methylphenol (p-Cresol)	EPA 625	10107401	NELAP	PA
6470 - 4-Nitroaniline	EPA 625	10107401	NELAP	PA
6500 - 4-Nitrophenol	EPA 625	10107401	NELAP	PA
5500 - Acenaphthene	EPA 625	10107401	NELAP	PA
5505 - Acenaphthylene	EPA 625	10107401	NELAP	PA
5510 - Acetophenone	EPA 625	10107401	NELAP	PA
7025 - Aldrin	EPA 625	10107401	NELAP	PA
5545 - Aniline	EPA 625	10107401	NELAP	PA
5555 - Anthracene	EPA 625	10107401	NELAP	PA
8880 - Aroclor-1016 (PCB-1016)	EPA 625	10107401	NELAP	PA
8885 - Aroclor-1221 (PCB-1221)	EPA 625	10107401	NELAP	PA
8890 - Aroclor-1232 (PCB-1232)	EPA 625	10107401	NELAP	PA
8895 - Aroclor-1242 (PCB-1242)	EPA 625	10107401	NELAP	PA
8900 - Aroclor-1248 (PCB-1248)	EPA 625	10107401	NELAP	PA
8905 - Aroclor-1254 (PCB-1254)	EPA 625	10107401	NELAP	PA
8910 - Aroclor-1260 (PCB-1260)	EPA 625	10107401	NELAP	PA
7075 - Azinphos-methyl (Guthion)	EPA 625	10107401	NELAP	PA
5562 - Azobenzene	EPA 625	10107401	NELAP	PA
5595 - Benzidine	EPA 625	10107401	NELAP	PA
5575 - Benzo(a)anthracene	EPA 625	10107401	NELAP	PA
5580 - Benzo(a)pyrene	EPA 625	10107401	NELAP	PA
5585 - Benzo(b)fluoranthene	EPA 625	10107401	NELAP	PA
5590 - Benzo(g,h,i)perylene	EPA 625	10107401	NELAP	PA
5600 - Benzo(k)fluoranthene	EPA 625	10107401	NELAP	PA
5610 - Benzoic acid	EPA 625	10107401	NELAP	PA
5630 - Benzyl alcohol	EPA 625	10107401	NELAP	PA
5670 - Butyl benzyl phthalate	EPA 625	10107401	NELAP	PA
5680 - Carbazole	EPA 625	10107401	NELAP	PA
7220 - Carbophenothion	EPA 625	10107401	NELAP	PA
7250 - Chlordane (tech.)	EPA 625	10107401	NELAP	PA
7300 - Chlorpyrifos	EPA 625	10107401	NELAP	PA
5855 - Chrysene	EPA 625	10107401	NELAP	PA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 625	10107401	NELAP	LA
5925 - Di-n-butyl phthalate	EPA 625	10107401	NELAP	PA
6200 - Di-n-octyl phthalate	EPA 625	10107401	NELAP	PA
7410 - Diazinon	EPA 625	10107401	NELAP	PA
5895 - Dibenz(a,h) anthracene	EPA 625	10107401	NELAP	PA
5905 - Dibenzofuran	EPA 625	10107401	NELAP	PA
8610 - Dichlorovos (DDVP, Dichlorvos)	EPA 625	10107401	NELAP	PA
7470 - Dieldrin	EPA 625	10107401	NELAP	PA
6070 - Diethyl phthalate	EPA 625	10107401	NELAP	PA
6135 - Dimethyl phthalate	EPA 625	10107401	NELAP	PA
7495 - Dioxathion	EPA 625	10107401	NELAP	PA
6205 - Diphenylamine	EPA 625	10107401	NELAP	PA
8625 - Disulfoton	EPA 625	10107401	NELAP	PA
7550 - EPN	EPA 625	10107401	NELAP	PA
7510 - Endosulfan I	EPA 625	10107401	NELAP	PA
7515 - Endosulfan II	EPA 625	10107401	NELAP	PA
7520 - Endosulfan sulfate	EPA 625	10107401	NELAP	PA
7540 - Endrin	EPA 625	10107401	NELAP	PA
7530 - Endrin aldehyde	EPA 625	10107401	NELAP	PA
7535 - Endrin ketone	EPA 625	10107401	NELAP	PA
7565 - Ethion	EPA 625	10107401	NELAP	PA
7570 - Ethoprop	EPA 625	10107401	NELAP	PA
4769 - Ethylene glycol dimethacrylate	EPA 625	10107401	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
7580 - Famphur	EPA 625	10107401	NELAP	PA
6265 - Fluoranthene	EPA 625	10107401	NELAP	PA
6270 - Fluorene	EPA 625	10107401	NELAP	PA
7640 - Fonophos (Fonofos)	EPA 625	10107401	NELAP	PA
7685 - Heptachlor	EPA 625	10107401	NELAP	PA
7690 - Heptachlor epoxide	EPA 625	10107401	NELAP	PA
6275 - Hexachlorobenzene	EPA 625	10107401	NELAP	PA
4835 - Hexachlorobutadiene	EPA 625	10107401	NELAP	PA
6285 - Hexachlorocyclopentadiene	EPA 625	10107401	NELAP	PA
4840 - Hexachloroethane	EPA 625	10107401	NELAP	PA
6315 - Indeno(1,2,3-cd) pyrene	EPA 625	10107401	NELAP	PA
6320 - Isophorone	EPA 625	10107401	NELAP	PA
7770 - Malathion	EPA 625	10107401	NELAP	PA
7810 - Methoxychlor	EPA 625	10107401	NELAP	PA
7880 - Monocrotophos	EPA 625	10107401	NELAP	PA
5005 - Naphthalene	EPA 625	10107401	NELAP	PA
5015 - Nitrobenzene	EPA 625	10107401	NELAP	PA
6590 - Pentachlorobenzene	EPA 625	10107401	NELAP	PA
6605 - Pentachlorophenol	EPA 625	10107401	NELAP	PA
6615 - Phenanthrene	EPA 625	10107401	NELAP	PA
6625 - Phenol	EPA 625	10107401	NELAP	PA
7985 - Phorate	EPA 625	10107401	NELAP	PA
8000 - Phosmet (Imidan)	EPA 625	10107401	NELAP	PA
6665 - Pyrene	EPA 625	10107401	NELAP	PA
5095 - Pyridine	EPA 625	10107401	NELAP	PA
8185 - Terbufos	EPA 625	10107401	NELAP	PA
9662 - Total Tetrachlorobenzenes	EPA 625	10107401	NELAP	PA
1940 - Total residual chlorine	EPA 625	10107401	NELAP	PA
8250 - Toxaphene (Chlorinated camphene)	EPA 625	10107401	NELAP	PA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 625	10107401	NELAP	PA
7240 - alpha-Chlordane	EPA 625	10107401	NELAP	PA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 625	10107401	NELAP	PA
5760 - bis(2-Chloroethoxy)methane	EPA 625	10107401	NELAP	PA
5765 - bis(2-Chloroethyl) ether	EPA 625	10107401	NELAP	PA
5780 - bis(2-Chloroisopropyl) ether	EPA 625	10107401	NELAP	PA
6245 - bis(2-Ethoxyethyl) phthalate	EPA 625	10107401	NELAP	PA
6062 - bis(2-Ethylhexyl)adipate	EPA 625	10107401	NELAP	PA
6350 - bis(2-Methoxyethyl) phthalate	EPA 625	10107401	NELAP	PA
7105 - delta-BHC	EPA 625	10107401	NELAP	PA
7120 - gamma-BHC (Lindane, gamma-Hexachlorocyclohexane)	EPA 625	10107401	NELAP	PA
7245 - gamma-Chlordane	EPA 625	10107401	NELAP	PA
100149 - m+p chlorophenols	EPA 625	10107401	NELAP	PA
5875 - n-Decane	EPA 625	10107401	NELAP	PA
6545 - n-Nitrosodi-n-propylamine	EPA 625	10107401	NELAP	PA
6530 - n-Nitrosodimethylamine	EPA 625	10107401	NELAP	PA
6535 - n-Nitrosodiphenylamine	EPA 625	10107401	NELAP	PA
6565 - n-Nitrosopyrrolidine	EPA 625	10107401	NELAP	PA
6580 - n-Octadecane	EPA 625	10107401	NELAP	PA
9519 - 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 1613B	10120602	NELAP	PA
9516 - 1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 1613B	10120602	NELAP	PA
9426 - 1,2,3,4,6,7,8-Heptachlorodibenzo-p-	EPA 1613B	10120602	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
dioxin (1,2,3,4,6,7,8-hpcdd)				
9420 - 1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)	EPA 1613B	10120602	NELAP	PA
9423 - 1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)	EPA 1613B	10120602	NELAP	PA
9453 - 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)	EPA 1613B	10120602	NELAP	PA
9471 - 1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)	EPA 1613B	10120602	NELAP	PA
9456 - 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)	EPA 1613B	10120602	NELAP	PA
9474 - 1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)	EPA 1613B	10120602	NELAP	PA
9459 - 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)	EPA 1613B	10120602	NELAP	PA
9477 - 1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)	EPA 1613B	10120602	NELAP	PA
9540 - 1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)	EPA 1613B	10120602	NELAP	PA
9543 - 1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)	EPA 1613B	10120602	NELAP	PA
9480 - 2,3,4,6,7,8-Hexachlorodibenzofuran	EPA 1613B	10120602	NELAP	PA
9549 - 2,3,4,7,8-Pentachlorodibenzofuran	EPA 1613B	10120602	NELAP	PA
9612 - 2,3,7,8-Tetrachlorodibenzofuran	EPA 1613B	10120602	NELAP	PA
9438 - Total Hpcdd	EPA 1613B	10120602	NELAP	PA
9444 - Total Hpcdf	EPA 1613B	10120602	NELAP	PA
9468 - Total Hxcdd	EPA 1613B	10120602	NELAP	PA
9483 - Total Hxcdf	EPA 1613B	10120602	NELAP	PA
9555 - Total Pecdd	EPA 1613B	10120602	NELAP	PA
9552 - Total Pecdf	EPA 1613B	10120602	NELAP	PA
9609 - Total TCDD	EPA 1613B	10120602	NELAP	PA
9615 - Total TCDF	EPA 1613B	10120602	NELAP	PA
1860 - Oil & Grease	EPA 1664A	10127409	NELAP	PA
1860 - Oil & Grease	EPA 1664A (HEM)	10127807	NELAP	PA
2050 - Total Petroleum Hydrocarbons (TPH)	EPA 1664A (HEM)	10127807	NELAP	PA
8954 - 2,2',3,3'+2,3',4',6-Tetrachlorobiphenyl (BZ-40+71)	EPA 1668	10129201	NELAP	PA
8919 - 2,2',3,3',4,4'+2,3,4,4',5,6-Hexachlorobiphenyl (BZ-128+166)	EPA 1668	10129201	NELAP	PA
9105 - 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (BZ-209)	EPA 1668	10129201	NELAP	PA
9095 - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)	EPA 1668	10129201	NELAP	PA
9090 - 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)	EPA 1668	10129201	NELAP	PA
9102 - 2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)	EPA 1668	10129201	NELAP	PA
9101 - 2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)	EPA 1668	10129201	NELAP	PA
9103 - 2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)	EPA 1668	10129201	NELAP	PA
9065 - 2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)	EPA 1668	10129201	NELAP	PA

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
8916 - 2,2',3,3',4,4',6+2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-171+173)	EPA 1668	10129201	NELAP	PA
9104 - 2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)	EPA 1668	10129201	NELAP	PA
9106 - 2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)	EPA 1668	10129201	NELAP	PA
9020 - 2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)	EPA 1668	10129201	NELAP	PA
9114 - 2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)	EPA 1668	10129201	NELAP	PA
9112 - 2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)	EPA 1668	10129201	NELAP	PA
9115 - 2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)	EPA 1668	10129201	NELAP	PA
9117 - 2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)	EPA 1668	10129201	NELAP	PA
8922 - 2,2',3,3',4,5+2,2',3,4,4',5'+2,3,3',4',5,6-Hexachlorobiphenyl (BZ-129+138+163)	EPA 1668	10129201	NELAP	PA
9108 - 2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)	EPA 1668	10129201	NELAP	PA
8934 - 2,2',3,3',4,5,5',6+2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-198+199)	EPA 1668	10129201	NELAP	PA
9107 - 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)	EPA 1668	10129201	NELAP	PA
9110 - 2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)	EPA 1668	10129201	NELAP	PA
9116 - 2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)	EPA 1668	10129201	NELAP	PA
9111 - 2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)	EPA 1668	10129201	NELAP	PA
9113 - 2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)	EPA 1668	10129201	NELAP	PA
9118 - 2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)	EPA 1668	10129201	NELAP	PA
9120 - 2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)	EPA 1668	10129201	NELAP	PA
9119 - 2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)	EPA 1668	10129201	NELAP	PA
9121 - 2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)	EPA 1668	10129201	NELAP	PA
9122 - 2,2',3,3',4-Pentachlorobiphenyl (BZ-82)	EPA 1668	10129201	NELAP	PA
9123 - 2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)	EPA 1668	10129201	NELAP	PA
9124 - 2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)	EPA 1668	10129201	NELAP	PA
9125 - 2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)	EPA 1668	10129201	NELAP	PA
8927 - 2,2',3,3',5,6'+2,2',3,5,5',6-Hexachlorobiphenyls (BZ 135+151)	EPA 1668	10129201	NELAP	PA
9127 - 2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)	EPA 1668	10129201	NELAP	PA
9126 - 2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)	EPA 1668	10129201	NELAP	PA
9128 - 2,2',3,3',5,6-Hexachlorobiphenyl	EPA 1668	10129201	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
(BZ-134)				
9129 - 2,2',3,3',5-Pentachlorobiphenyl (BZ-83)	EPA 1668	10129201	NELAP	PA
9130 - 2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)	EPA 1668	10129201	NELAP	PA
9131 - 2,2',3,3',6-Pentachlorobiphenyl (BZ-84)	EPA 1668	10129201	NELAP	PA
9132 - 2,2',3,3'-Tetrachlorobiphenyl (BZ-40)	EPA 1668	10129201	NELAP	PA
9151 - 2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)	EPA 1668	10129201	NELAP	PA
9154 - 2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)	EPA 1668	10129201	NELAP	PA
8948 - 2,2',3,4',5+2,2',4,5,5'+2,3,3',5',6-Pentachlorobiphenyl (BZ-90+101+113)	EPA 1668	10129201	NELAP	PA
9080 - 2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)	EPA 1668	10129201	NELAP	PA
9144 - 2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)	EPA 1668	10129201	NELAP	PA
9147 - 2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)	EPA 1668	10129201	NELAP	PA
8929 - 2,2',3,4',5,6+2,2',3,4',5',6-Hexachlorobiphenyl (BZ-147+149)	EPA 1668	10129201	NELAP	PA
9146 - 2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)	EPA 1668	10129201	NELAP	PA
9149 - 2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)	EPA 1668	10129201	NELAP	PA
9155 - 2,2',3,4',5-Pentachlorobiphenyl (BZ-90)	EPA 1668	10129201	NELAP	PA
9159 - 2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)	EPA 1668	10129201	NELAP	PA
9157 - 2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)	EPA 1668	10129201	NELAP	PA
9160 - 2,2',3,4',6-Pentachlorobiphenyl (BZ-91)	EPA 1668	10129201	NELAP	PA
9162 - 2,2',3,4'-Tetrachlorobiphenyl (BZ-42)	EPA 1668	10129201	NELAP	PA
8942 - 2,2',3,4,4'+2,3,4,5,6-Pentachlorobiphenyl (BZ-85+116)	EPA 1668	10129201	NELAP	PA
9075 - 2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)	EPA 1668	10129201	NELAP	PA
9025 - 2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)	EPA 1668	10129201	NELAP	PA
8917 - 2,2',3,4,4',5,5'+2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-180+193)	EPA 1668	10129201	NELAP	PA
9133 - 2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)	EPA 1668	10129201	NELAP	PA
9134 - 2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)	EPA 1668	10129201	NELAP	PA
9136 - 2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)	EPA 1668	10129201	NELAP	PA
9135 - 2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)	EPA 1668	10129201	NELAP	PA
9137 - 2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)	EPA 1668	10129201	NELAP	PA
9138 - 2,2',3,4,4',5-Hexachlorobiphenyl	EPA 1668	10129201	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
(BZ-137)				
9140 - 2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)	EPA 1668	10129201	NELAP	PA
8928 - 2,2',3,4,4',6+2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-139+140)	EPA 1668	10129201	NELAP	PA
9139 - 2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)	EPA 1668	10129201	NELAP	PA
9141 - 2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)	EPA 1668	10129201	NELAP	PA
9142 - 2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)	EPA 1668	10129201	NELAP	PA
9150 - 2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)	EPA 1668	10129201	NELAP	PA
8975 - 2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)	EPA 1668	10129201	NELAP	PA
8946 - 2,2',3,4,5+2,2',3,4,5'+2,2',3,4',5'+2,3,3',4,5'+ 2,3',4,4'6+2,3',4',5'6-Pentachlorobiphenyl (BZ 86+87+97+108+119+125)	EPA 1668	10129201	NELAP	PA
9143 - 2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)	EPA 1668	10129201	NELAP	PA
9030 - 2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)	EPA 1668	10129201	NELAP	PA
9152 - 2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)	EPA 1668	10129201	NELAP	PA
9145 - 2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)	EPA 1668	10129201	NELAP	PA
9148 - 2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)	EPA 1668	10129201	NELAP	PA
9153 - 2,2',3,4,5-Pentachlorobiphenyl (BZ-86)	EPA 1668	10129201	NELAP	PA
9161 - 2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)	EPA 1668	10129201	NELAP	PA
9156 - 2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)	EPA 1668	10129201	NELAP	PA
9158 - 2,2',3,4,6-Pentachlorobiphenyl (BZ-88)	EPA 1668	10129201	NELAP	PA
9163 - 2,2',3,4-Tetrachlorobiphenyl (BZ-41)	EPA 1668	10129201	NELAP	PA
8957 - 2,2',3,5'+2,2',4,4'+2,3,5,6-Tetrachlorobiphenyl (BZ-44+47+65)	EPA 1668	10129201	NELAP	PA
9166 - 2,2',3,5',6-Pentachlorobiphenyl (BZ-95)	EPA 1668	10129201	NELAP	PA
8945 - 2,2',3,5'-Tetrachlorobiphenyl (BZ-44)	EPA 1668	10129201	NELAP	PA
9035 - 2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)	EPA 1668	10129201	NELAP	PA
9164 - 2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)	EPA 1668	10129201	NELAP	PA
9167 - 2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)	EPA 1668	10129201	NELAP	PA
8949 - 2,2',3,5,6+2,2',4,4',6-Pentachlorobiphenyl (BZ-93+100)	EPA 1668	10129201	NELAP	PA
9165 - 2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)	EPA 1668	10129201	NELAP	PA
9168 - 2,2',3,5,6-Pentachlorobiphenyl (BZ-	EPA 1668	10129201	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
93)				
9169 - 2,2',3,5-Tetrachlorobiphenyl (BZ-43)	EPA 1668	10129201	NELAP	PA
9171 - 2,2',3,6'-Tetrachlorobiphenyl (BZ-46)	EPA 1668	10129201	NELAP	PA
9170 - 2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)	EPA 1668	10129201	NELAP	PA
9172 - 2,2',3,6-Tetrachlorobiphenyl (BZ-45)	EPA 1668	10129201	NELAP	PA
9173 - 2,2',3-Trichlorobiphenyl (BZ-16)	EPA 1668	10129201	NELAP	PA
8931 - 2,2',4,4',5,5'+2,3',4,4',5',6-Hexachlorobiphenyl (BZ-153+168)	EPA 1668	10129201	NELAP	PA
9040 - 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)	EPA 1668	10129201	NELAP	PA
9174 - 2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)	EPA 1668	10129201	NELAP	PA
9175 - 2,2',4,4',5-Pentachlorobiphenyl (BZ-99)	EPA 1668	10129201	NELAP	PA
9176 - 2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)	EPA 1668	10129201	NELAP	PA
9177 - 2,2',4,4',6-Pentachlorobiphenyl (BZ-100)	EPA 1668	10129201	NELAP	PA
9178 - 2,2',4,4'-Tetrachlorobiphenyl (BZ-47)	EPA 1668	10129201	NELAP	PA
8959 - 2,2',4,5'+2,3',4,6-Tetrachlorobiphenyl (BZ-49+69)	EPA 1668	10129201	NELAP	PA
9179 - 2,2',4,5',6-Pentachlorobiphenyl (BZ-103)	EPA 1668	10129201	NELAP	PA
8950 - 2,2',4,5'-Tetrachlorobiphenyl (BZ-49)	EPA 1668	10129201	NELAP	PA
8980 - 2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)	EPA 1668	10129201	NELAP	PA
9180 - 2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)	EPA 1668	10129201	NELAP	PA
9181 - 2,2',4,5-Tetrachlorobiphenyl (BZ-48)	EPA 1668	10129201	NELAP	PA
9183 - 2,2',4,6'-Tetrachlorobiphenyl (BZ-51)	EPA 1668	10129201	NELAP	PA
8961 - 2,2',4,6+2,2',5,6'-Tetrachlorobiphenyl (BZ-50+53)	EPA 1668	10129201	NELAP	PA
9182 - 2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)	EPA 1668	10129201	NELAP	PA
9184 - 2,2',4,6-Tetrachlorobiphenyl (BZ-50)	EPA 1668	10129201	NELAP	PA
9185 - 2,2',4-Trichlorobiphenyl (BZ-17)	EPA 1668	10129201	NELAP	PA
8966 - 2,2',5+2,4,6-Trichlorobiphenyl (BZ-18+30)	EPA 1668	10129201	NELAP	PA
8955 - 2,2',5,5'-Tetrachlorobiphenyl (BZ-52)	EPA 1668	10129201	NELAP	PA
9186 - 2,2',5,6'-Tetrachlorobiphenyl (BZ-53)	EPA 1668	10129201	NELAP	PA
8930 - 2,2',5-Trichlorobiphenyl (BZ-18)	EPA 1668	10129201	NELAP	PA
9187 - 2,2',6,6'-Tetrachlorobiphenyl (BZ-54)	EPA 1668	10129201	NELAP	PA
9188 - 2,2',6-Trichlorobiphenyl (BZ-19)	EPA 1668	10129201	NELAP	PA
9189 - 2,2'-Dichlorobiphenyl (BZ-4)	EPA 1668	10129201	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
9224 - 2,3',4',5',6-Pentachlorobiphenyl (BZ-125)	EPA 1668	10129201	NELAP	PA
9229 - 2,3',4',5'-Tetrachlorobiphenyl (BZ-76)	EPA 1668	10129201	NELAP	PA
9222 - 2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)	EPA 1668	10129201	NELAP	PA
9230 - 2,3',4',5-Tetrachlorobiphenyl (BZ-70)	EPA 1668	10129201	NELAP	PA
9237 - 2,3',4',6-Tetrachlorobiphenyl (BZ-71)	EPA 1668	10129201	NELAP	PA
9239 - 2,3',4'-Trichlorobiphenyl (BZ-33)	EPA 1668	10129201	NELAP	PA
9218 - 2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)	EPA 1668	10129201	NELAP	PA
9000 - 2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)	EPA 1668	10129201	NELAP	PA
9055 - 2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)	EPA 1668	10129201	NELAP	PA
8995 - 2,3',4,4',5-Pentachlorobiphenyl (BZ-118)	EPA 1668	10129201	NELAP	PA
9220 - 2,3',4,4',6-Pentachlorobiphenyl (BZ-119)	EPA 1668	10129201	NELAP	PA
8960 - 2,3',4,4'-Tetrachlorobiphenyl (BZ-66)	EPA 1668	10129201	NELAP	PA
9226 - 2,3',4,5',6-Pentachlorobiphenyl (BZ-121)	EPA 1668	10129201	NELAP	PA
9231 - 2,3',4,5'-Tetrachlorobiphenyl (BZ-68)	EPA 1668	10129201	NELAP	PA
9223 - 2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)	EPA 1668	10129201	NELAP	PA
9232 - 2,3',4,5-Tetrachlorobiphenyl (BZ-67)	EPA 1668	10129201	NELAP	PA
9235 - 2,3',4,6-Tetrachlorobiphenyl (BZ-69)	EPA 1668	10129201	NELAP	PA
9240 - 2,3',4-Trichlorobiphenyl (BZ-25)	EPA 1668	10129201	NELAP	PA
9244 - 2,3',5',6-Tetrachlorobiphenyl (BZ-73)	EPA 1668	10129201	NELAP	PA
9246 - 2,3',5'-Trichlorobiphenyl (BZ-34)	EPA 1668	10129201	NELAP	PA
8969 - 2,3',5+2,4,5-Trichlorobiphenyl (BZ-26+29)	EPA 1668	10129201	NELAP	PA
9242 - 2,3',5,5'-Tetrachlorobiphenyl (BZ-72)	EPA 1668	10129201	NELAP	PA
8935 - 2,3',5-Trichlorobiphenyl (BZ-26)	EPA 1668	10129201	NELAP	PA
9248 - 2,3',6-Trichlorobiphenyl (BZ-27)	EPA 1668	10129201	NELAP	PA
9249 - 2,3'-Dichlorobiphenyl (BZ-6)	EPA 1668	10129201	NELAP	PA
9201 - 2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)	EPA 1668	10129201	NELAP	PA
9202 - 2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)	EPA 1668	10129201	NELAP	PA
9195 - 2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)	EPA 1668	10129201	NELAP	PA
9197 - 2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)	EPA 1668	10129201	NELAP	PA
9199 - 2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)	EPA 1668	10129201	NELAP	PA
9205 - 2,3,3',4',5-Pentachlorobiphenyl (BZ-107)	EPA 1668	10129201	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
8990 - 2,3,3',4',6-Pentachlorobiphenyl (BZ-110)	EPA 1668	10129201	NELAP	PA
9207 - 2,3,3',4'-Tetrachlorobiphenyl (BZ-56)	EPA 1668	10129201	NELAP	PA
9192 - 2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)	EPA 1668	10129201	NELAP	PA
9045 - 2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)	EPA 1668	10129201	NELAP	PA
8932 - 2,3,3',4,4',5+2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-156+157)	EPA 1668	10129201	NELAP	PA
9190 - 2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)	EPA 1668	10129201	NELAP	PA
9085 - 2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)	EPA 1668	10129201	NELAP	PA
9191 - 2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)	EPA 1668	10129201	NELAP	PA
9050 - 2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)	EPA 1668	10129201	NELAP	PA
9193 - 2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)	EPA 1668	10129201	NELAP	PA
8985 - 2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)	EPA 1668	10129201	NELAP	PA
9200 - 2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)	EPA 1668	10129201	NELAP	PA
9203 - 2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)	EPA 1668	10129201	NELAP	PA
9194 - 2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)	EPA 1668	10129201	NELAP	PA
9196 - 2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)	EPA 1668	10129201	NELAP	PA
9198 - 2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)	EPA 1668	10129201	NELAP	PA
9204 - 2,3,3',4,5-Pentachlorobiphenyl (BZ-106)	EPA 1668	10129201	NELAP	PA
9206 - 2,3,3',4,6-Pentachlorobiphenyl (BZ-109)	EPA 1668	10129201	NELAP	PA
9208 - 2,3,3',4-Tetrachlorobiphenyl (BZ-55)	EPA 1668	10129201	NELAP	PA
9212 - 2,3,3',5',6-Pentachlorobiphenyl (BZ-113)	EPA 1668	10129201	NELAP	PA
9213 - 2,3,3',5'-Tetrachlorobiphenyl (BZ-58)	EPA 1668	10129201	NELAP	PA
9209 - 2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)	EPA 1668	10129201	NELAP	PA
9210 - 2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)	EPA 1668	10129201	NELAP	PA
9211 - 2,3,3',5,6-Pentachlorobiphenyl (BZ-112)	EPA 1668	10129201	NELAP	PA
9214 - 2,3,3',5-Tetrachlorobiphenyl (BZ-57)	EPA 1668	10129201	NELAP	PA
9216 - 2,3,3'-Trichlorobiphenyl (BZ-20)	EPA 1668	10129201	NELAP	PA
9227 - 2,3,4',5,6-Pentachlorobiphenyl (BZ-117)	EPA 1668	10129201	NELAP	PA
9233 - 2,3,4',5-Tetrachlorobiphenyl (BZ-63)	EPA 1668	10129201	NELAP	PA
9236 - 2,3,4',6-Tetrachlorobiphenyl (BZ-	EPA 1668	10129201	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
64)				
9241 - 2,3,4'-Trichlorobiphenyl (BZ-22)	EPA 1668	10129201	NELAP	PA
8968 - 2,3,4+2,3',4'-Trichlorobiphenyl (BZ-21+33)	EPA 1668	10129201	NELAP	PA
9217 - 2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)	EPA 1668	10129201	NELAP	PA
9005 - 2,3,4,4',5-Pentachlorobiphenyl (BZ-114)	EPA 1668	10129201	NELAP	PA
9219 - 2,3,4,4',6-Pentachlorobiphenyl (BZ-115)	EPA 1668	10129201	NELAP	PA
9221 - 2,3,4,4'-Tetrachlorobiphenyl (BZ-60)	EPA 1668	10129201	NELAP	PA
8963 - 2,3,4,5+2,3',4',5+2,4,4',5+2,3',4',5'-Tetrachlorobiphenyls (BZ 61+70+74+76)	EPA 1668	10129201	NELAP	PA
9225 - 2,3,4,5,6-Pentachlorobiphenyl (BZ-116)	EPA 1668	10129201	NELAP	PA
9228 - 2,3,4,5-Tetrachlorobiphenyl (BZ-61)	EPA 1668	10129201	NELAP	PA
9234 - 2,3,4,6-Tetrachlorobiphenyl (BZ-62)	EPA 1668	10129201	NELAP	PA
9238 - 2,3,4-Trichlorobiphenyl (BZ-21)	EPA 1668	10129201	NELAP	PA
9243 - 2,3,5,6-Tetrachlorobiphenyl (BZ-65)	EPA 1668	10129201	NELAP	PA
9245 - 2,3,5-Trichlorobiphenyl (BZ-23)	EPA 1668	10129201	NELAP	PA
6742 - 2,3,5-Trichlorophenol	EPA 1668	10129201	NELAP	PA
9247 - 2,3,6-Trichlorobiphenyl (BZ-24)	EPA 1668	10129201	NELAP	PA
8920 - 2,3-Dichlorobiphenyl (BZ-5)	EPA 1668	10129201	NELAP	PA
8940 - 2,4',5-Trichlorobiphenyl (BZ-31)	EPA 1668	10129201	NELAP	PA
9255 - 2,4',6-Trichlorobiphenyl (BZ-32)	EPA 1668	10129201	NELAP	PA
9256 - 2,4'-Dichlorobiphenyl (BZ-8)	EPA 1668	10129201	NELAP	PA
9250 - 2,4,4',5-Tetrachlorobiphenyl (BZ-74)	EPA 1668	10129201	NELAP	PA
9251 - 2,4,4',6-Tetrachlorobiphenyl (BZ-75)	EPA 1668	10129201	NELAP	PA
9252 - 2,4,4'-Trichlorobiphenyl (BZ-28)	EPA 1668	10129201	NELAP	PA
9253 - 2,4,5-Trichlorobiphenyl (BZ-29)	EPA 1668	10129201	NELAP	PA
9254 - 2,4,6-Trichlorobiphenyl (BZ-30)	EPA 1668	10129201	NELAP	PA
9257 - 2,4-Dichlorobiphenyl (BZ-7)	EPA 1668	10129201	NELAP	PA
9258 - 2,5-Dichlorobiphenyl (BZ-9)	EPA 1668	10129201	NELAP	PA
9259 - 2,6-Dichlorobiphenyl (BZ-10)	EPA 1668	10129201	NELAP	PA
8915 - 2-Chlorobiphenyl (BZ-1)	EPA 1668	10129201	NELAP	PA
9060 - 3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)	EPA 1668	10129201	NELAP	PA
9015 - 3,3',4,4',5-Pentachlorobiphenyl (BZ-126)	EPA 1668	10129201	NELAP	PA
8965 - 3,3',4,4'-Tetrachlorobiphenyl (BZ-77)	EPA 1668	10129201	NELAP	PA
9261 - 3,3',4,5'-Tetrachlorobiphenyl (BZ-79)	EPA 1668	10129201	NELAP	PA
9260 - 3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)	EPA 1668	10129201	NELAP	PA
9262 - 3,3',4,5-Tetrachlorobiphenyl (BZ-78)	EPA 1668	10129201	NELAP	PA
9263 - 3,3',4-Trichlorobiphenyl (BZ-35)	EPA 1668	10129201	NELAP	PA
9264 - 3,3',5,5'-Tetrachlorobiphenyl (BZ-80)	EPA 1668	10129201	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
9265 - 3,3',5-Trichlorobiphenyl (BZ-36)	EPA 1668	10129201	NELAP	PA
8925 - 3,3'-Dichlorobiphenyl (BZ-11)	EPA 1668	10129201	NELAP	PA
9268 - 3,4',5-Trichlorobiphenyl (BZ-39)	EPA 1668	10129201	NELAP	PA
9269 - 3,4'-Dichlorobiphenyl (BZ-13)	EPA 1668	10129201	NELAP	PA
100098 - 3,4+3,4'-Dichlorobiphenyl (BZ-12+13)	EPA 1668	10129201	NELAP	PA
8970 - 3,4,4',5-Tetrachlorobiphenyl (BZ-81)	EPA 1668	10129201	NELAP	PA
9266 - 3,4,4'-Trichlorobiphenyl (BZ-37)	EPA 1668	10129201	NELAP	PA
9267 - 3,4,5-Trichlorobiphenyl (BZ-38)	EPA 1668	10129201	NELAP	PA
9270 - 3,4-Dichlorobiphenyl (BZ-12)	EPA 1668	10129201	NELAP	PA
9271 - 3,5-Dichlorobiphenyl (BZ-14)	EPA 1668	10129201	NELAP	PA
9272 - 3-Chlorobiphenyl (BZ-2)	EPA 1668	10129201	NELAP	PA
100368 - 3-Monochlorobiphenyl (BZ 2)	EPA 1668	10129201	NELAP	PA
9273 - 4,4'-Dichlorobiphenyl (BZ-15)	EPA 1668	10129201	NELAP	PA
9274 - 4-Chlorobiphenyl (BZ-3)	EPA 1668	10129201	NELAP	PA
8954 - 2,2',3,3'+2,3',4',6-Tetrachlorobiphenyl (BZ-40+71)	EPA 1668A	10129405	NELAP	PA
8919 - 2,2',3,3',4,4'+2,3,4,4',5,6-Hexachlorobiphenyl (BZ-128+166)	EPA 1668A	10129405	NELAP	PA
9105 - 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (BZ-209)	EPA 1668A	10129405	NELAP	PA
9095 - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)	EPA 1668A	10129405	NELAP	PA
9090 - 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)	EPA 1668A	10129405	NELAP	PA
9102 - 2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)	EPA 1668A	10129405	NELAP	PA
9101 - 2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)	EPA 1668A	10129405	NELAP	PA
9103 - 2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)	EPA 1668A	10129405	NELAP	PA
9065 - 2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)	EPA 1668A	10129405	NELAP	PA
8916 - 2,2',3,3',4,4',6+2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-171+173)	EPA 1668A	10129405	NELAP	PA
8933 - 2,2',3,3',4,4',6,6'+2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ 197+200)	EPA 1668A	10129405	NELAP	PA
9104 - 2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)	EPA 1668A	10129405	NELAP	PA
9106 - 2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)	EPA 1668A	10129405	NELAP	PA
9020 - 2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)	EPA 1668A	10129405	NELAP	PA
9114 - 2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)	EPA 1668A	10129405	NELAP	PA
9112 - 2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)	EPA 1668A	10129405	NELAP	PA
9115 - 2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)	EPA 1668A	10129405	NELAP	PA
9117 - 2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)	EPA 1668A	10129405	NELAP	PA
8922 - 2,2',3,3',4,5+2,2',3,4,4',5'+2,3,3',4',5,6-Hexachlorobiphenyl (BZ-129+138+163)	EPA 1668A	10129405	NELAP	PA
9108 - 2,2',3,3',4,5,5',6'-Octachlorobiphenyl	EPA 1668A	10129405	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
(BZ-199)				
8934 - 2,2',3,3',4,5,5',6+2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-198+199)	EPA 1668A	10129405	NELAP	PA
9107 - 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)	EPA 1668A	10129405	NELAP	PA
9109 - 2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)	EPA 1668A	10129405	NELAP	PA
9110 - 2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)	EPA 1668A	10129405	NELAP	PA
9116 - 2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)	EPA 1668A	10129405	NELAP	PA
9111 - 2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)	EPA 1668A	10129405	NELAP	PA
9113 - 2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)	EPA 1668A	10129405	NELAP	PA
9118 - 2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)	EPA 1668A	10129405	NELAP	PA
9120 - 2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)	EPA 1668A	10129405	NELAP	PA
9119 - 2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)	EPA 1668A	10129405	NELAP	PA
9121 - 2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)	EPA 1668A	10129405	NELAP	PA
9122 - 2,2',3,3',4-Pentachlorobiphenyl (BZ-82)	EPA 1668A	10129405	NELAP	PA
9123 - 2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)	EPA 1668A	10129405	NELAP	PA
9124 - 2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)	EPA 1668A	10129405	NELAP	PA
9125 - 2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)	EPA 1668A	10129405	NELAP	PA
8926 - 2,2',3,3',5,6'+2,2',3,5,5',6+2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-135+151+154)	EPA 1668A	10129405	NELAP	PA
9127 - 2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)	EPA 1668A	10129405	NELAP	PA
9126 - 2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)	EPA 1668A	10129405	NELAP	PA
9128 - 2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)	EPA 1668A	10129405	NELAP	PA
9129 - 2,2',3,3',5-Pentachlorobiphenyl (BZ-83)	EPA 1668A	10129405	NELAP	PA
9130 - 2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)	EPA 1668A	10129405	NELAP	PA
9131 - 2,2',3,3',6-Pentachlorobiphenyl (BZ-84)	EPA 1668A	10129405	NELAP	PA
9132 - 2,2',3,3'-Tetrachlorobiphenyl (BZ-40)	EPA 1668A	10129405	NELAP	PA
9151 - 2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)	EPA 1668A	10129405	NELAP	PA
9154 - 2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)	EPA 1668A	10129405	NELAP	PA
8948 - 2,2',3,4',5+2,2',4,5,5'+2,3,3',5',6-Pentachlorobiphenyl (BZ-90+101+113)	EPA 1668A	10129405	NELAP	PA
9080 - 2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)	EPA 1668A	10129405	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
9144 - 2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)	EPA 1668A	10129405	NELAP	PA
9147 - 2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)	EPA 1668A	10129405	NELAP	PA
8929 - 2,2',3,4',5,6+2,2',3,4',5',6-Hexachlorobiphenyl (BZ-147+149)	EPA 1668A	10129405	NELAP	PA
9146 - 2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)	EPA 1668A	10129405	NELAP	PA
9149 - 2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)	EPA 1668A	10129405	NELAP	PA
9155 - 2,2',3,4',5-Pentachlorobiphenyl (BZ-90)	EPA 1668A	10129405	NELAP	PA
8951 - 2,2',3,4',6'+2,2',4,5,6'-Pentachlorobiphenyl (BZ-98+102)	EPA 1668A	10129405	NELAP	PA
9159 - 2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)	EPA 1668A	10129405	NELAP	PA
9157 - 2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)	EPA 1668A	10129405	NELAP	PA
9160 - 2,2',3,4',6-Pentachlorobiphenyl (BZ-91)	EPA 1668A	10129405	NELAP	PA
9162 - 2,2',3,4'-Tetrachlorobiphenyl (BZ-42)	EPA 1668A	10129405	NELAP	PA
8941 - 2,2',3,4,4'+2,3,4,5,6+2,3,4',5,6-Pentachlorobiphenyl (BZ-85+116+117)	EPA 1668A	10129405	NELAP	PA
8918 - 2,2',3,4,4',5',6+2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-183+185)	EPA 1668A	10129405	NELAP	PA
9075 - 2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)	EPA 1668A	10129405	NELAP	PA
9025 - 2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)	EPA 1668A	10129405	NELAP	PA
8917 - 2,2',3,4,4',5,5'+2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-180+193)	EPA 1668A	10129405	NELAP	PA
9133 - 2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)	EPA 1668A	10129405	NELAP	PA
9134 - 2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)	EPA 1668A	10129405	NELAP	PA
9136 - 2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)	EPA 1668A	10129405	NELAP	PA
9135 - 2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)	EPA 1668A	10129405	NELAP	PA
9137 - 2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)	EPA 1668A	10129405	NELAP	PA
9138 - 2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)	EPA 1668A	10129405	NELAP	PA
9140 - 2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)	EPA 1668A	10129405	NELAP	PA
8928 - 2,2',3,4,4',6+2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-139+140)	EPA 1668A	10129405	NELAP	PA
9139 - 2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)	EPA 1668A	10129405	NELAP	PA
9141 - 2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)	EPA 1668A	10129405	NELAP	PA
9142 - 2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)	EPA 1668A	10129405	NELAP	PA
9150 - 2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)	EPA 1668A	10129405	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
8975 - 2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)	EPA 1668A	10129405	NELAP	PA
8944 - 2,2',3,4,5+2,2',3,4,5'+2,2',3,4',5'+2,2',4,4',6-Pentachlorobiphenyl (BZ-86+87+97+100)	EPA 1668A	10129405	NELAP	PA
8946 - 2,2',3,4,5+2,2',3,4,5'+2,2',3,4',5'+2,3,3',4,5'+2,3',4,4'6+2,3',4',5'6-Pentachlorobiphenyl (BZ 86+87+97+108+119+125)	EPA 1668A	10129405	NELAP	PA
9143 - 2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)	EPA 1668A	10129405	NELAP	PA
9030 - 2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)	EPA 1668A	10129405	NELAP	PA
9152 - 2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)	EPA 1668A	10129405	NELAP	PA
9145 - 2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)	EPA 1668A	10129405	NELAP	PA
9148 - 2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)	EPA 1668A	10129405	NELAP	PA
9153 - 2,2',3,4,5-Pentachlorobiphenyl (BZ-86)	EPA 1668A	10129405	NELAP	PA
9161 - 2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)	EPA 1668A	10129405	NELAP	PA
8947 - 2,2',3,4,6+2,2',3,4',6-Pentachlorobiphenyl (BZ-88+91)	EPA 1668A	10129405	NELAP	PA
9156 - 2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)	EPA 1668A	10129405	NELAP	PA
9158 - 2,2',3,4,6-Pentachlorobiphenyl (BZ-88)	EPA 1668A	10129405	NELAP	PA
9163 - 2,2',3,4-Tetrachlorobiphenyl (BZ-41)	EPA 1668A	10129405	NELAP	PA
8957 - 2,2',3,5'+2,2',4,4'+2,3,5,6-Tetrachlorobiphenyl (BZ-44+47+65)	EPA 1668A	10129405	NELAP	PA
9166 - 2,2',3,5',6-Pentachlorobiphenyl (BZ-95)	EPA 1668A	10129405	NELAP	PA
8945 - 2,2',3,5'-Tetrachlorobiphenyl (BZ-44)	EPA 1668A	10129405	NELAP	PA
8956 - 2,2',3,5+2,3',5',6-Tetrachlorobiphenyl (BZ-43+73)	EPA 1668A	10129405	NELAP	PA
9035 - 2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)	EPA 1668A	10129405	NELAP	PA
9164 - 2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)	EPA 1668A	10129405	NELAP	PA
9167 - 2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)	EPA 1668A	10129405	NELAP	PA
8949 - 2,2',3,5,6+2,2',4,4',6-Pentachlorobiphenyl (BZ-93+100)	EPA 1668A	10129405	NELAP	PA
9165 - 2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)	EPA 1668A	10129405	NELAP	PA
9168 - 2,2',3,5,6-Pentachlorobiphenyl (BZ-93)	EPA 1668A	10129405	NELAP	PA
9169 - 2,2',3,5-Tetrachlorobiphenyl (BZ-43)	EPA 1668A	10129405	NELAP	PA
9171 - 2,2',3,6'-Tetrachlorobiphenyl (BZ-46)	EPA 1668A	10129405	NELAP	PA
8958 - 2,2',3,6+2,2',4,6'-	EPA 1668A	10129405	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
Tetrachlorobiphenyls (BZ 45 + 51)				
9170 - 2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)	EPA 1668A	10129405	NELAP	PA
9172 - 2,2',3,6-Tetrachlorobiphenyl (BZ-45)	EPA 1668A	10129405	NELAP	PA
9173 - 2,2',3-Trichlorobiphenyl (BZ-16)	EPA 1668A	10129405	NELAP	PA
8931 - 2,2',4,4',5,5'+2,3',4,4',5',6-Hexachlorobiphenyl (BZ-153+168)	EPA 1668A	10129405	NELAP	PA
9040 - 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)	EPA 1668A	10129405	NELAP	PA
9174 - 2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)	EPA 1668A	10129405	NELAP	PA
9175 - 2,2',4,4',5-Pentachlorobiphenyl (BZ-99)	EPA 1668A	10129405	NELAP	PA
9176 - 2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)	EPA 1668A	10129405	NELAP	PA
9177 - 2,2',4,4',6-Pentachlorobiphenyl (BZ-100)	EPA 1668A	10129405	NELAP	PA
9178 - 2,2',4,4'-Tetrachlorobiphenyl (BZ-47)	EPA 1668A	10129405	NELAP	PA
8959 - 2,2',4,5'+2,3',4,6-Tetrachlorobiphenyl (BZ-49+69)	EPA 1668A	10129405	NELAP	PA
9179 - 2,2',4,5',6-Pentachlorobiphenyl (BZ-103)	EPA 1668A	10129405	NELAP	PA
8950 - 2,2',4,5'-Tetrachlorobiphenyl (BZ-49)	EPA 1668A	10129405	NELAP	PA
8980 - 2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)	EPA 1668A	10129405	NELAP	PA
9180 - 2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)	EPA 1668A	10129405	NELAP	PA
9181 - 2,2',4,5-Tetrachlorobiphenyl (BZ-48)	EPA 1668A	10129405	NELAP	PA
9183 - 2,2',4,6'-Tetrachlorobiphenyl (BZ-51)	EPA 1668A	10129405	NELAP	PA
8961 - 2,2',4,6+2,2',5,6'-Tetrachlorobiphenyl (BZ-50+53)	EPA 1668A	10129405	NELAP	PA
9182 - 2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)	EPA 1668A	10129405	NELAP	PA
9184 - 2,2',4,6-Tetrachlorobiphenyl (BZ-50)	EPA 1668A	10129405	NELAP	PA
9185 - 2,2',4-Trichlorobiphenyl (BZ-17)	EPA 1668A	10129405	NELAP	PA
8966 - 2,2',5+2,4,6-Trichlorobiphenyl (BZ-18+30)	EPA 1668A	10129405	NELAP	PA
8955 - 2,2',5,5'-Tetrachlorobiphenyl (BZ-52)	EPA 1668A	10129405	NELAP	PA
9186 - 2,2',5,6'-Tetrachlorobiphenyl (BZ-53)	EPA 1668A	10129405	NELAP	PA
8930 - 2,2',5-Trichlorobiphenyl (BZ-18)	EPA 1668A	10129405	NELAP	PA
9187 - 2,2',6,6'-Tetrachlorobiphenyl (BZ-54)	EPA 1668A	10129405	NELAP	PA
9188 - 2,2',6-Trichlorobiphenyl (BZ-19)	EPA 1668A	10129405	NELAP	PA
9189 - 2,2'-Dichlorobiphenyl (BZ-4)	EPA 1668A	10129405	NELAP	PA
9224 - 2,3',4',5',6-Pentachlorobiphenyl (BZ-125)	EPA 1668A	10129405	NELAP	PA
9229 - 2,3',4',5'-Tetrachlorobiphenyl (BZ-76)	EPA 1668A	10129405	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
8964 - 2,3',4',5+2,4,4',5+2,3',4',5'-Tetrachlorobiphenyl (BZ-70+74+76)	EPA 1668A	10129405	NELAP	PA
9222 - 2,3',4,5,5'-Pentachlorobiphenyl (BZ-124)	EPA 1668A	10129405	NELAP	PA
9230 - 2,3',4',5-Tetrachlorobiphenyl (BZ-70)	EPA 1668A	10129405	NELAP	PA
9237 - 2,3',4',6-Tetrachlorobiphenyl (BZ-71)	EPA 1668A	10129405	NELAP	PA
9239 - 2,3',4'-Trichlorobiphenyl (BZ-33)	EPA 1668A	10129405	NELAP	PA
9218 - 2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)	EPA 1668A	10129405	NELAP	PA
9000 - 2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)	EPA 1668A	10129405	NELAP	PA
9055 - 2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)	EPA 1668A	10129405	NELAP	PA
8995 - 2,3',4,4',5-Pentachlorobiphenyl (BZ-118)	EPA 1668A	10129405	NELAP	PA
9220 - 2,3',4,4',6-Pentachlorobiphenyl (BZ-119)	EPA 1668A	10129405	NELAP	PA
8960 - 2,3',4,4'-Tetrachlorobiphenyl (BZ-66)	EPA 1668A	10129405	NELAP	PA
9226 - 2,3',4,5',6-Pentachlorobiphenyl (BZ-121)	EPA 1668A	10129405	NELAP	PA
9231 - 2,3',4,5'-Tetrachlorobiphenyl (BZ-68)	EPA 1668A	10129405	NELAP	PA
9223 - 2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)	EPA 1668A	10129405	NELAP	PA
9232 - 2,3',4,5-Tetrachlorobiphenyl (BZ-67)	EPA 1668A	10129405	NELAP	PA
9235 - 2,3',4,6-Tetrachlorobiphenyl (BZ-69)	EPA 1668A	10129405	NELAP	PA
9240 - 2,3',4-Trichlorobiphenyl (BZ-25)	EPA 1668A	10129405	NELAP	PA
9244 - 2,3',5',6-Tetrachlorobiphenyl (BZ-73)	EPA 1668A	10129405	NELAP	PA
9246 - 2,3',5'-Trichlorobiphenyl (BZ-34)	EPA 1668A	10129405	NELAP	PA
8969 - 2,3',5+2,4,5-Trichlorobiphenyl (BZ-26+29)	EPA 1668A	10129405	NELAP	PA
9242 - 2,3',5,5'-Tetrachlorobiphenyl (BZ-72)	EPA 1668A	10129405	NELAP	PA
8935 - 2,3',5-Trichlorobiphenyl (BZ-26)	EPA 1668A	10129405	NELAP	PA
9248 - 2,3',6-Trichlorobiphenyl (BZ-27)	EPA 1668A	10129405	NELAP	PA
9249 - 2,3'-Dichlorobiphenyl (BZ-6)	EPA 1668A	10129405	NELAP	PA
8967 - 2,3,3'+2,4,4'-Trichlorobiphenyl (BZ-20+28)	EPA 1668A	10129405	NELAP	PA
9201 - 2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)	EPA 1668A	10129405	NELAP	PA
9202 - 2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)	EPA 1668A	10129405	NELAP	PA
8936 - 2,3,3',4',5+2,3',4',5,5'-Pentachlorobiphenyl (BZ-107+124)	EPA 1668A	10129405	NELAP	PA
9195 - 2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)	EPA 1668A	10129405	NELAP	PA
9197 - 2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)	EPA 1668A	10129405	NELAP	PA
9199 - 2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)	EPA 1668A	10129405	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
9205 - 2,3,3',4',5-Pentachlorobiphenyl (BZ-107)	EPA 1668A	10129405	NELAP	PA
8938 - 2,3,3',4',6+2,3,4,4',6-Pentachlorobiphenyl (BZ-110+115)	EPA 1668A	10129405	NELAP	PA
8990 - 2,3,3',4',6-Pentachlorobiphenyl (BZ-110)	EPA 1668A	10129405	NELAP	PA
9207 - 2,3,3',4'-Tetrachlorobiphenyl (BZ-56)	EPA 1668A	10129405	NELAP	PA
9192 - 2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)	EPA 1668A	10129405	NELAP	PA
9045 - 2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)	EPA 1668A	10129405	NELAP	PA
8932 - 2,3,3',4,4',5+2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-156+157)	EPA 1668A	10129405	NELAP	PA
9190 - 2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)	EPA 1668A	10129405	NELAP	PA
9085 - 2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)	EPA 1668A	10129405	NELAP	PA
9191 - 2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)	EPA 1668A	10129405	NELAP	PA
9050 - 2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)	EPA 1668A	10129405	NELAP	PA
9193 - 2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)	EPA 1668A	10129405	NELAP	PA
8985 - 2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)	EPA 1668A	10129405	NELAP	PA
9200 - 2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)	EPA 1668A	10129405	NELAP	PA
9203 - 2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)	EPA 1668A	10129405	NELAP	PA
9194 - 2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)	EPA 1668A	10129405	NELAP	PA
9196 - 2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)	EPA 1668A	10129405	NELAP	PA
9198 - 2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)	EPA 1668A	10129405	NELAP	PA
9204 - 2,3,3',4,5-Pentachlorobiphenyl (BZ-106)	EPA 1668A	10129405	NELAP	PA
9206 - 2,3,3',4,6-Pentachlorobiphenyl (BZ-109)	EPA 1668A	10129405	NELAP	PA
9208 - 2,3,3',4-Tetrachlorobiphenyl (BZ-55)	EPA 1668A	10129405	NELAP	PA
9212 - 2,3,3',5',6-Pentachlorobiphenyl (BZ-113)	EPA 1668A	10129405	NELAP	PA
9213 - 2,3,3',5'-Tetrachlorobiphenyl (BZ-58)	EPA 1668A	10129405	NELAP	PA
9209 - 2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)	EPA 1668A	10129405	NELAP	PA
9210 - 2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)	EPA 1668A	10129405	NELAP	PA
9211 - 2,3,3',5,6-Pentachlorobiphenyl (BZ-112)	EPA 1668A	10129405	NELAP	PA
9214 - 2,3,3',5-Tetrachlorobiphenyl (BZ-57)	EPA 1668A	10129405	NELAP	PA
8962 - 2,3,3',6+2,3,4,6+2,4,4',6-Tetrachlorobiphenyl (BZ-59+62+75)	EPA 1668A	10129405	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
9215 - 2,3,3',6-Tetrachlorobiphenyl (BZ-59)	EPA 1668A	10129405	NELAP	PA
9216 - 2,3,3'-Trichlorobiphenyl (BZ-20)	EPA 1668A	10129405	NELAP	PA
9227 - 2,3,4',5,6-Pentachlorobiphenyl (BZ-117)	EPA 1668A	10129405	NELAP	PA
9233 - 2,3,4',5-Tetrachlorobiphenyl (BZ-63)	EPA 1668A	10129405	NELAP	PA
9236 - 2,3,4',6-Tetrachlorobiphenyl (BZ-64)	EPA 1668A	10129405	NELAP	PA
9241 - 2,3,4'-Trichlorobiphenyl (BZ-22)	EPA 1668A	10129405	NELAP	PA
8968 - 2,3,4+2,3',4'-Trichlorobiphenyl (BZ-21+33)	EPA 1668A	10129405	NELAP	PA
9217 - 2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)	EPA 1668A	10129405	NELAP	PA
9005 - 2,3,4,4',5-Pentachlorobiphenyl (BZ-114)	EPA 1668A	10129405	NELAP	PA
9219 - 2,3,4,4',6-Pentachlorobiphenyl (BZ-115)	EPA 1668A	10129405	NELAP	PA
9221 - 2,3,4,4'-Tetrachlorobiphenyl (BZ-60)	EPA 1668A	10129405	NELAP	PA
8963 - 2,3,4,5+2,3',4',5+2,4,4',5+2,3',4',5'-Tetrachlorobiphenyls (BZ 61+70+74+76)	EPA 1668A	10129405	NELAP	PA
9225 - 2,3,4,5,6-Pentachlorobiphenyl (BZ-116)	EPA 1668A	10129405	NELAP	PA
9228 - 2,3,4,5-Tetrachlorobiphenyl (BZ-61)	EPA 1668A	10129405	NELAP	PA
9234 - 2,3,4,6-Tetrachlorobiphenyl (BZ-62)	EPA 1668A	10129405	NELAP	PA
9238 - 2,3,4-Trichlorobiphenyl (BZ-21)	EPA 1668A	10129405	NELAP	PA
9243 - 2,3,5,6-Tetrachlorobiphenyl (BZ-65)	EPA 1668A	10129405	NELAP	PA
9245 - 2,3,5-Trichlorobiphenyl (BZ-23)	EPA 1668A	10129405	NELAP	PA
9247 - 2,3,6-Trichlorobiphenyl (BZ-24)	EPA 1668A	10129405	NELAP	PA
8920 - 2,3-Dichlorobiphenyl (BZ-5)	EPA 1668A	10129405	NELAP	PA
8940 - 2,4',5-Trichlorobiphenyl (BZ-31)	EPA 1668A	10129405	NELAP	PA
9255 - 2,4',6-Trichlorobiphenyl (BZ-32)	EPA 1668A	10129405	NELAP	PA
9256 - 2,4'-Dichlorobiphenyl (BZ-8)	EPA 1668A	10129405	NELAP	PA
9250 - 2,4,4',5-Tetrachlorobiphenyl (BZ-74)	EPA 1668A	10129405	NELAP	PA
9251 - 2,4,4',6-Tetrachlorobiphenyl (BZ-75)	EPA 1668A	10129405	NELAP	PA
9252 - 2,4,4'-Trichlorobiphenyl (BZ-28)	EPA 1668A	10129405	NELAP	PA
9253 - 2,4,5-Trichlorobiphenyl (BZ-29)	EPA 1668A	10129405	NELAP	PA
9254 - 2,4,6-Trichlorobiphenyl (BZ-30)	EPA 1668A	10129405	NELAP	PA
9257 - 2,4-Dichlorobiphenyl (BZ-7)	EPA 1668A	10129405	NELAP	PA
9258 - 2,5-Dichlorobiphenyl (BZ-9)	EPA 1668A	10129405	NELAP	PA
9259 - 2,6-Dichlorobiphenyl (BZ-10)	EPA 1668A	10129405	NELAP	PA
8915 - 2-Chlorobiphenyl (BZ-1)	EPA 1668A	10129405	NELAP	PA
9060 - 3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)	EPA 1668A	10129405	NELAP	PA
9015 - 3,3',4,4',5-Pentachlorobiphenyl (BZ-126)	EPA 1668A	10129405	NELAP	PA
8965 - 3,3',4,4'-Tetrachlorobiphenyl (BZ-77)	EPA 1668A	10129405	NELAP	PA
9261 - 3,3',4,5'-Tetrachlorobiphenyl (BZ-79)	EPA 1668A	10129405	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
9260 - 3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)	EPA 1668A	10129405	NELAP	PA
9262 - 3,3',4,5-Tetrachlorobiphenyl (BZ-78)	EPA 1668A	10129405	NELAP	PA
9263 - 3,3',4-Trichlorobiphenyl (BZ-35)	EPA 1668A	10129405	NELAP	PA
9264 - 3,3',5,5'-Tetrachlorobiphenyl (BZ-80)	EPA 1668A	10129405	NELAP	PA
9265 - 3,3',5-Trichlorobiphenyl (BZ-36)	EPA 1668A	10129405	NELAP	PA
8925 - 3,3'-Dichlorobiphenyl (BZ-11)	EPA 1668A	10129405	NELAP	PA
9268 - 3,4',5-Trichlorobiphenyl (BZ-39)	EPA 1668A	10129405	NELAP	PA
9269 - 3,4'-Dichlorobiphenyl (BZ-13)	EPA 1668A	10129405	NELAP	PA
100098 - 3,4+3,4'-Dichlorobiphenyl (BZ-12+13)	EPA 1668A	10129405	NELAP	PA
8970 - 3,4,4',5-Tetrachlorobiphenyl (BZ-81)	EPA 1668A	10129405	NELAP	PA
9266 - 3,4,4'-Trichlorobiphenyl (BZ-37)	EPA 1668A	10129405	NELAP	PA
9267 - 3,4,5-Trichlorobiphenyl (BZ-38)	EPA 1668A	10129405	NELAP	PA
9270 - 3,4-Dichlorobiphenyl (BZ-12)	EPA 1668A	10129405	NELAP	PA
9271 - 3,5-Dichlorobiphenyl (BZ-14)	EPA 1668A	10129405	NELAP	PA
9272 - 3-Chlorobiphenyl (BZ-2)	EPA 1668A	10129405	NELAP	PA
9273 - 4,4'-Dichlorobiphenyl (BZ-15)	EPA 1668A	10129405	NELAP	PA
9274 - 4-Chlorobiphenyl (BZ-3)	EPA 1668A	10129405	NELAP	PA
8872 - PCB Aroclor Identification	EPA 1668A	10129405	NELAP	PA
8870 - PCBs	EPA 1668A	10129405	NELAP	PA
8875 - PCBs, as congeners	EPA 1668A	10129405	NELAP	PA
8876 - Total Dichlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8877 - Total Heptachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8888 - Total Hexachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8889 - Total Monochlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8891 - Total Nonachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8892 - Total Octachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8896 - Total Pentachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8893 - Total Tetrachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8894 - Total Trichlorobiphenyls	EPA 1668A	10129405	NELAP	PA
100003 - Acid Digestion of waters for Total Recoverable or Dissolved Metals	EPA 3005A	10133207	NELAP	PA
1401 - Acid Digestion of Aqueous samples and Extracts for Total Metals	EPA 3010	10133401	NELAP	PA
100004 - Acid Digestion of Aqueous samples and Extracts for Total Metals	EPA 3010A	10133605	NELAP	PA
100642 - Acid Digestion of Aqueous samples and Extracts for Total Metals (HNO3 only)	EPA 3020A	10134404	NELAP	PA
100005 - Acid Digestion of Aqueous samples and Extracts for Total Metals for Analysis by GFAA	EPA 3020A	10134404	NELAP	PA
1444 - Separatory Funnel Liquid-liquid extraction	EPA 3510C	10138202	NELAP	PA
1410 - Continuous Liquid-liquid extraction	EPA 3520	10138406	NELAP	PA
1406 - Purge and trap for aqueous phase samples	EPA 5030A	10153205	NELAP	PA
1000 - Aluminum	EPA 6010B	10155609	NELAP	PA
1005 - Antimony	EPA 6010B	10155609	NELAP	PA
1010 - Arsenic	EPA 6010B	10155609	NELAP	PA
1015 - Barium	EPA 6010B	10155609	NELAP	PA
1020 - Beryllium	EPA 6010B	10155609	NELAP	PA

Eurofins Lancaster Laboratories Inc
Issue Date: July 1, 2015 — **Certificate Number: 02055** — AI Number: 30729
Expiration Date: June 30, 2016

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Non Potable Water

Analyte	Method Name	Method Code	Type	AB
1025 - Boron	EPA 6010B	10155609	NELAP	PA
1030 - Cadmium	EPA 6010B	10155609	NELAP	PA
1035 - Calcium	EPA 6010B	10155609	NELAP	PA
1040 - Chromium	EPA 6010B	10155609	NELAP	PA
1050 - Cobalt	EPA 6010B	10155609	NELAP	PA
1055 - Copper	EPA 6010B	10155609	NELAP	PA
1070 - Iron	EPA 6010B	10155609	NELAP	PA
1075 - Lead	EPA 6010B	10155609	NELAP	PA
1080 - Lithium	EPA 6010B	10155609	NELAP	PA
1085 - Magnesium	EPA 6010B	10155609	NELAP	PA
1090 - Manganese	EPA 6010B	10155609	NELAP	PA
1100 - Molybdenum	EPA 6010B	10155609	NELAP	PA
1105 - Nickel	EPA 6010B	10155609	NELAP	PA
1125 - Potassium	EPA 6010B	10155609	NELAP	PA
1140 - Selenium	EPA 6010B	10155609	NELAP	PA
1150 - Silver	EPA 6010B	10155609	NELAP	PA
1155 - Sodium	EPA 6010B	10155609	NELAP	PA
1160 - Strontium	EPA 6010B	10155609	NELAP	PA
1165 - Thallium	EPA 6010B	10155609	NELAP	PA
1175 - Tin	EPA 6010B	10155609	NELAP	PA
1180 - Titanium	EPA 6010B	10155609	NELAP	PA
1185 - Vanadium	EPA 6010B	10155609	NELAP	PA
1190 - Zinc	EPA 6010B	10155609	NELAP	PA
1000 - Aluminum	EPA 6010C	10155803	NELAP	PA
1005 - Antimony	EPA 6010C	10155803	NELAP	PA
1010 - Arsenic	EPA 6010C	10155803	NELAP	PA
1015 - Barium	EPA 6010C	10155803	NELAP	PA
1020 - Beryllium	EPA 6010C	10155803	NELAP	PA
1025 - Boron	EPA 6010C	10155803	NELAP	PA
1030 - Cadmium	EPA 6010C	10155803	NELAP	PA
1035 - Calcium	EPA 6010C	10155803	NELAP	PA
1040 - Chromium	EPA 6010C	10155803	NELAP	PA
1050 - Cobalt	EPA 6010C	10155803	NELAP	PA
1055 - Copper	EPA 6010C	10155803	NELAP	PA
1070 - Iron	EPA 6010C	10155803	NELAP	PA
1075 - Lead	EPA 6010C	10155803	NELAP	PA
1080 - Lithium	EPA 6010C	10155803	NELAP	PA
1085 - Magnesium	EPA 6010C	10155803	NELAP	PA
1090 - Manganese	EPA 6010C	10155803	NELAP	PA
1100 - Molybdenum	EPA 6010C	10155803	NELAP	PA
1105 - Nickel	EPA 6010C	10155803	NELAP	PA
1125 - Potassium	EPA 6010C	10155803	NELAP	PA
1140 - Selenium	EPA 6010C	10155803	NELAP	PA
1150 - Silver	EPA 6010C	10155803	NELAP	PA
1155 - Sodium	EPA 6010C	10155803	NELAP	PA
1160 - Strontium	EPA 6010C	10155803	NELAP	PA
2017 - Sulfur	EPA 6010C	10155803	NELAP	PA
1165 - Thallium	EPA 6010C	10155803	NELAP	PA
1175 - Tin	EPA 6010C	10155803	NELAP	PA
1180 - Titanium	EPA 6010C	10155803	NELAP	PA
1185 - Vanadium	EPA 6010C	10155803	NELAP	PA
1190 - Zinc	EPA 6010C	10155803	NELAP	PA
1000 - Aluminum	EPA 6020	10156000	NELAP	PA
1005 - Antimony	EPA 6020	10156000	NELAP	PA
1010 - Arsenic	EPA 6020	10156000	NELAP	PA
1015 - Barium	EPA 6020	10156000	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
1020 - Beryllium	EPA 6020	10156000	NELAP	PA
1025 - Boron	EPA 6020	10156000	NELAP	PA
1030 - Cadmium	EPA 6020	10156000	NELAP	PA
1035 - Calcium	EPA 6020	10156000	NELAP	PA
1055 - Copper	EPA 6020	10156000	NELAP	PA
1075 - Lead	EPA 6020	10156000	NELAP	PA
1085 - Magnesium	EPA 6020	10156000	NELAP	PA
1090 - Manganese	EPA 6020	10156000	NELAP	PA
1100 - Molybdenum	EPA 6020	10156000	NELAP	PA
1105 - Nickel	EPA 6020	10156000	NELAP	PA
1125 - Potassium	EPA 6020	10156000	NELAP	PA
1140 - Selenium	EPA 6020	10156000	NELAP	PA
1150 - Silver	EPA 6020	10156000	NELAP	PA
1155 - Sodium	EPA 6020	10156000	NELAP	PA
1160 - Strontium	EPA 6020	10156000	NELAP	PA
1165 - Thallium	EPA 6020	10156000	NELAP	PA
1175 - Tin	EPA 6020	10156000	NELAP	PA
1180 - Titanium	EPA 6020	10156000	NELAP	PA
1185 - Vanadium	EPA 6020	10156000	NELAP	PA
1040 - Chromium	EPA 6020	10156204	NELAP	PA
1050 - Cobalt	EPA 6020	10156204	NELAP	PA
1070 - Iron	EPA 6020	10156204	NELAP	PA
1190 - Zinc	EPA 6020	10156204	NELAP	PA
1000 - Aluminum	EPA 6020A	10156408	NELAP	PA
1005 - Antimony	EPA 6020A	10156408	NELAP	PA
1010 - Arsenic	EPA 6020A	10156408	NELAP	PA
1015 - Barium	EPA 6020A	10156408	NELAP	PA
1020 - Beryllium	EPA 6020A	10156408	NELAP	PA
1025 - Boron	EPA 6020A	10156408	NELAP	PA
1030 - Cadmium	EPA 6020A	10156408	NELAP	PA
1035 - Calcium	EPA 6020A	10156408	NELAP	PA
1040 - Chromium	EPA 6020A	10156408	NELAP	PA
1050 - Cobalt	EPA 6020A	10156408	NELAP	PA
1055 - Copper	EPA 6020A	10156408	NELAP	PA
1070 - Iron	EPA 6020A	10156408	NELAP	PA
1075 - Lead	EPA 6020A	10156408	NELAP	PA
1085 - Magnesium	EPA 6020A	10156408	NELAP	PA
1090 - Manganese	EPA 6020A	10156408	NELAP	PA
1100 - Molybdenum	EPA 6020A	10156408	NELAP	PA
1105 - Nickel	EPA 6020A	10156408	NELAP	PA
1125 - Potassium	EPA 6020A	10156408	NELAP	PA
1140 - Selenium	EPA 6020A	10156408	NELAP	PA
1150 - Silver	EPA 6020A	10156408	NELAP	PA
1155 - Sodium	EPA 6020A	10156408	NELAP	PA
1160 - Strontium	EPA 6020A	10156408	NELAP	PA
1165 - Thallium	EPA 6020A	10156408	NELAP	PA
1175 - Tin	EPA 6020A	10156408	NELAP	PA
1180 - Titanium	EPA 6020A	10156408	NELAP	PA
1185 - Vanadium	EPA 6020A	10156408	NELAP	PA
1190 - Zinc	EPA 6020A	10156408	NELAP	PA
1045 - Chromium VI	EPA 7196A	10162400	NELAP	PA
1045 - Chromium VI	EPA 7199	10163005	NELAP	PA
1095 - Mercury	EPA 7470A	10165807	NELAP	PA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8011	10173009	NELAP	PA
4585 - 1,2-Dibromoethane (EDB, Ethylene	EPA 8011	10173009	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
dibromide)				
4750 - Ethanol	EPA 8015	10173203	NELAP	PA
4785 - Ethylene glycol	EPA 8015	10173203	NELAP	PA
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8015	10173203	NELAP	PA
4930 - Methanol	EPA 8015	10173203	NELAP	PA
4420 - tert-Butyl alcohol	EPA 8015	10173203	NELAP	PA
9369 - Diesel range organics (DRO)	EPA 8015B	10173601	NELAP	PA
4720 - Diethylene glycol	EPA 8015B	10173601	NELAP	PA
9408 - Gasoline range organics (GRO)	EPA 8015B	10173601	NELAP	PA
4875 - Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8015B	10173601	NELAP	PA
6657 - Propylene Glycol	EPA 8015B	10173601	NELAP	PA
4003 - Total Petroleum Hydrocarbons (Aviation Gasoline Range)	EPA 8015B	10173601	NELAP	PA
4004 - Total Petroleum Hydrocarbons (Jet Fuel Range)	EPA 8015B	10173601	NELAP	PA
9506 - Total Petroleum Hydrocarbons (Oil Range)	EPA 8015B	10173601	NELAP	PA
2050 - Total Petroleum Hydrocarbons (TPH)	EPA 8015B	10173601	NELAP	PA
9646 - Triethylene Glycol	EPA 8015B	10173601	NELAP	PA
4425 - n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8015B	10173601	NELAP	PA
5055 - n-Propanol (1-Propanol)	EPA 8015B	10173601	NELAP	PA
9369 - Diesel range organics (DRO)	EPA 8015C	10173805	NELAP	PA
9408 - Gasoline range organics (GRO)	EPA 8015C	10173805	NELAP	PA
4875 - Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8015C	10173805	NELAP	PA
1935 - Total recoverable petroleum hydrocarbons (TRPH)	EPA 8015C	10173805	NELAP	PA
4425 - n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8015C	10173805	NELAP	PA
5055 - n-Propanol (1-Propanol)	EPA 8015C	10173805	NELAP	PA
4375 - Benzene	EPA 8021B	10174808	NELAP	PA
4765 - Ethylbenzene	EPA 8021B	10174808	NELAP	PA
4900 - Isopropylbenzene	EPA 8021B	10174808	NELAP	PA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8021B	10174808	NELAP	PA
5005 - Naphthalene	EPA 8021B	10174808	NELAP	PA
5140 - Toluene	EPA 8021B	10174808	NELAP	PA
5260 - Xylene (total)	EPA 8021B	10174808	NELAP	PA
5245 - m-Xylene	EPA 8021B	10174808	NELAP	PA
5250 - o-Xylene	EPA 8021B	10174808	NELAP	PA
5255 - p-Xylene	EPA 8021B	10174808	NELAP	PA
7740 - Kepone	EPA 8081A	10178606	NELAP	PA
7355 - 4,4'-DDD	EPA 8081B	10178800	NELAP	PA
7360 - 4,4'-DDE	EPA 8081B	10178800	NELAP	PA
7365 - 4,4'-DDT	EPA 8081B	10178800	NELAP	PA
7025 - Aldrin	EPA 8081B	10178800	NELAP	PA
7250 - Chlordane (tech.)	EPA 8081B	10178800	NELAP	PA
7470 - Dieldrin	EPA 8081B	10178800	NELAP	PA
7510 - Endosulfan I	EPA 8081B	10178800	NELAP	PA
7515 - Endosulfan II	EPA 8081B	10178800	NELAP	PA
7520 - Endosulfan sulfate	EPA 8081B	10178800	NELAP	PA
7540 - Endrin	EPA 8081B	10178800	NELAP	PA
7530 - Endrin aldehyde	EPA 8081B	10178800	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
7535 - Endrin ketone	EPA 8081B	10178800	NELAP	PA
7685 - Heptachlor	EPA 8081B	10178800	NELAP	PA
7690 - Heptachlor epoxide	EPA 8081B	10178800	NELAP	PA
7740 - Kepone	EPA 8081B	10178800	NELAP	PA
7810 - Methoxychlor	EPA 8081B	10178800	NELAP	PA
8250 - Toxaphene (Chlorinated camphene)	EPA 8081B	10178800	NELAP	PA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	PA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	PA
7105 - delta-BHC	EPA 8081B	10178800	NELAP	PA
7120 - gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	EPA 8081B	10178800	NELAP	PA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082	10179007	NELAP	PA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082	10179007	NELAP	PA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082	10179007	NELAP	PA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082	10179007	NELAP	PA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082	10179007	NELAP	PA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082	10179007	NELAP	PA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082	10179007	NELAP	PA
8912 - Aroclor-1262 (PCB-1262)	EPA 8082	10179007	NELAP	PA
8913 - Aroclor-1268 (PCB-1268)	EPA 8082	10179007	NELAP	PA
7005 - Alachlor	EPA 8141	10181803	NELAP	PA
7065 - Atrazine	EPA 8141	10181803	NELAP	PA
7075 - Azinphos-methyl (Guthion)	EPA 8141	10181803	NELAP	PA
7125 - Bolstar (Sulprofos)	EPA 8141	10181803	NELAP	PA
7300 - Chlorpyrifos	EPA 8141	10181803	NELAP	PA
7315 - Coumaphos	EPA 8141	10181803	NELAP	PA
7395 - Demeton-o	EPA 8141	10181803	NELAP	PA
7385 - Demeton-s	EPA 8141	10181803	NELAP	PA
7410 - Diazinon	EPA 8141	10181803	NELAP	PA
8610 - Dichlorovos (DDVP, Dichlorvos)	EPA 8141	10181803	NELAP	PA
8625 - Disulfoton	EPA 8141	10181803	NELAP	PA
7550 - EPN	EPA 8141	10181803	NELAP	PA
7565 - Ethion	EPA 8141	10181803	NELAP	PA
7570 - Ethoprop	EPA 8141	10181803	NELAP	PA
7580 - Famphur	EPA 8141	10181803	NELAP	PA
7600 - Fensulfothion	EPA 8141	10181803	NELAP	PA
7770 - Malathion	EPA 8141	10181803	NELAP	PA
7785 - Merphos	EPA 8141	10181803	NELAP	PA
7825 - Methyl parathion (Parathion, methyl)	EPA 8141	10181803	NELAP	PA
7835 - Metolachlor	EPA 8141	10181803	NELAP	PA
7850 - Mevinphos	EPA 8141	10181803	NELAP	PA
7905 - Naled	EPA 8141	10181803	NELAP	PA
7955 - Parathion, ethyl	EPA 8141	10181803	NELAP	PA
7985 - Phorate	EPA 8141	10181803	NELAP	PA
8110 - Ronnel	EPA 8141	10181803	NELAP	PA
8125 - Simazine	EPA 8141	10181803	NELAP	PA
8140 - Stirophos	EPA 8141	10181803	NELAP	PA
8245 - Tokuthion (Prothiophos)	EPA 8141	10181803	NELAP	PA
8275 - Trichloronate	EPA 8141	10181803	NELAP	PA
7005 - Alachlor	EPA 8141A	10182000	NELAP	PA
7065 - Atrazine	EPA 8141A	10182000	NELAP	PA
7075 - Azinphos-methyl (Guthion)	EPA 8141A	10182000	NELAP	PA
7125 - Bolstar (Sulprofos)	EPA 8141A	10182000	NELAP	PA
7300 - Chlorpyrifos	EPA 8141A	10182000	NELAP	PA

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Non Potable Water

Analyte	Method Name	Method Code	Type	AB
7315 - Coumaphos	EPA 8141A	10182000	NELAP	PA
7395 - Demeton-o	EPA 8141A	10182000	NELAP	PA
7385 - Demeton-s	EPA 8141A	10182000	NELAP	PA
7410 - Diazinon	EPA 8141A	10182000	NELAP	PA
8610 - Dichlorovos (DDVP, Dichlorvos)	EPA 8141A	10182000	NELAP	PA
8625 - Disulfoton	EPA 8141A	10182000	NELAP	PA
7550 - EPN	EPA 8141A	10182000	NELAP	PA
7565 - Ethion	EPA 8141A	10182000	NELAP	PA
7570 - Ethoprop	EPA 8141A	10182000	NELAP	PA
7580 - Famphur	EPA 8141A	10182000	NELAP	PA
7600 - Fensulfothion	EPA 8141A	10182000	NELAP	PA
7770 - Malathion	EPA 8141A	10182000	NELAP	PA
7785 - Merphos	EPA 8141A	10182000	NELAP	PA
7825 - Methyl parathion (Parathion, methyl)	EPA 8141A	10182000	NELAP	PA
7835 - Metolachlor	EPA 8141A	10182000	NELAP	PA
7850 - Mevinphos	EPA 8141A	10182000	NELAP	PA
7905 - Naled	EPA 8141A	10182000	NELAP	PA
7955 - Parathion, ethyl	EPA 8141A	10182000	NELAP	PA
7985 - Phorate	EPA 8141A	10182000	NELAP	PA
8110 - Ronnel	EPA 8141A	10182000	NELAP	PA
8125 - Simazine	EPA 8141A	10182000	NELAP	PA
8140 - Stirophos	EPA 8141A	10182000	NELAP	PA
8245 - Tokuthion (Prothiophos)	EPA 8141A	10182000	NELAP	PA
8275 - Trichloronate	EPA 8141A	10182000	NELAP	PA
8655 - 2,4,5-T	EPA 8151	10183003	NELAP	PA
8545 - 2,4-D	EPA 8151	10183003	NELAP	PA
8560 - 2,4-DB	EPA 8151	10183003	NELAP	PA
8555 - Dalapon	EPA 8151	10183003	NELAP	PA
8595 - Dicamba	EPA 8151	10183003	NELAP	PA
8605 - Dichloroprop (Dichlorprop)	EPA 8151	10183003	NELAP	PA
7775 - MCPA	EPA 8151	10183003	NELAP	PA
7780 - MCPP	EPA 8151	10183003	NELAP	PA
6605 - Pentachlorophenol	EPA 8151	10183003	NELAP	PA
8645 - Picloram	EPA 8151	10183003	NELAP	PA
8650 - Silvex (2,4,5-TP)	EPA 8151	10183003	NELAP	PA
5105 - 1,1,1,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	PA
5160 - 1,1,1-Trichloroethane	EPA 8260B	10184802	NELAP	PA
5110 - 1,1,2,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	PA
5195 - 1,1,2-Trichloro-1,2,2-trifluoroethane	EPA 8260B	10184802	NELAP	PA
5185 - 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260B	10184802	NELAP	PA
5165 - 1,1,2-Trichloroethane	EPA 8260B	10184802	NELAP	PA
4630 - 1,1-Dichloroethane	EPA 8260B	10184802	NELAP	PA
4640 - 1,1-Dichloroethylene	EPA 8260B	10184802	NELAP	PA
4670 - 1,1-Dichloropropene	EPA 8260B	10184802	NELAP	PA
5150 - 1,2,3-Trichlorobenzene	EPA 8260B	10184802	NELAP	PA
5180 - 1,2,3-Trichloropropane	EPA 8260B	10184802	NELAP	PA
5155 - 1,2,4-Trichlorobenzene	EPA 8260B	10184802	NELAP	PA
5210 - 1,2,4-Trimethylbenzene	EPA 8260B	10184802	NELAP	PA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260B	10184802	NELAP	PA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260B	10184802	NELAP	PA
4610 - 1,2-Dichlorobenzene	EPA 8260B	10184802	NELAP	PA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 8260B	10184802	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
4655 - 1,2-Dichloropropane	EPA 8260B	10184802	NELAP	PA
5215 - 1,3,5-Trimethylbenzene	EPA 8260B	10184802	NELAP	PA
4615 - 1,3-Dichlorobenzene	EPA 8260B	10184802	NELAP	PA
4660 - 1,3-Dichloropropane	EPA 8260B	10184802	NELAP	PA
4620 - 1,4-Dichlorobenzene	EPA 8260B	10184802	NELAP	PA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8260B	10184802	NELAP	PA
4665 - 2,2-Dichloropropane	EPA 8260B	10184802	NELAP	PA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260B	10184802	NELAP	PA
4500 - 2-Chloroethyl vinyl ether	EPA 8260B	10184802	NELAP	PA
4535 - 2-Chlorotoluene	EPA 8260B	10184802	NELAP	PA
4860 - 2-Hexanone	EPA 8260B	10184802	NELAP	PA
5020 - 2-Nitropropane	EPA 8260B	10184802	NELAP	PA
4540 - 4-Chlorotoluene	EPA 8260B	10184802	NELAP	PA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 8260B	10184802	NELAP	PA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 8260B	10184802	NELAP	PA
4315 - Acetone	EPA 8260B	10184802	NELAP	PA
4320 - Acetonitrile	EPA 8260B	10184802	NELAP	PA
4325 - Acrolein (Propenal)	EPA 8260B	10184802	NELAP	PA
4340 - Acrylonitrile	EPA 8260B	10184802	NELAP	PA
4350 - Allyl alcohol	EPA 8260B	10184802	NELAP	PA
4355 - Allyl chloride (3-Chloropropene)	EPA 8260B	10184802	NELAP	PA
4375 - Benzene	EPA 8260B	10184802	NELAP	PA
5635 - Benzyl chloride	EPA 8260B	10184802	NELAP	PA
4385 - Bromobenzene	EPA 8260B	10184802	NELAP	PA
4390 - Bromochloromethane	EPA 8260B	10184802	NELAP	PA
4395 - Bromodichloromethane	EPA 8260B	10184802	NELAP	PA
4400 - Bromoform	EPA 8260B	10184802	NELAP	PA
4450 - Carbon disulfide	EPA 8260B	10184802	NELAP	PA
4455 - Carbon tetrachloride	EPA 8260B	10184802	NELAP	PA
4475 - Chlorobenzene	EPA 8260B	10184802	NELAP	PA
4575 - Chlorodibromomethane	EPA 8260B	10184802	NELAP	PA
4485 - Chloroethane (Ethyl chloride)	EPA 8260B	10184802	NELAP	PA
4505 - Chloroform	EPA 8260B	10184802	NELAP	PA
4525 - Chloroprene (2-Chloro-1,3-butadiene)	EPA 8260B	10184802	NELAP	PA
4555 - Cyclohexane	EPA 8260B	10184802	NELAP	PA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 8260B	10184802	NELAP	PA
4580 - Dibromochloropropane	EPA 8260B	10184802	NELAP	PA
4590 - Dibromofluoromethane	EPA 8260B	10184802	NELAP	PA
4595 - Dibromomethane (Methylene bromide)	EPA 8260B	10184802	NELAP	PA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 8260B	10184802	NELAP	PA
4745 - Epichlorohydrin (1-Chloro-2,3-epoxypropane)	EPA 8260B	10184802	NELAP	PA
4750 - Ethanol	EPA 8260B	10184802	NELAP	PA
4755 - Ethyl acetate	EPA 8260B	10184802	NELAP	PA
4810 - Ethyl methacrylate	EPA 8260B	10184802	NELAP	PA
4770 - Ethyl-t-butyl ether (ETBE) (2-Ethoxy-2-methylpropane)	EPA 8260B	10184802	NELAP	PA
4765 - Ethylbenzene	EPA 8260B	10184802	NELAP	PA
9408 - Gasoline range organics (GRO)	EPA 8260B	10184802	NELAP	PA
4835 - Hexachlorobutadiene	EPA 8260B	10184802	NELAP	PA
4870 - Iodomethane (Methyl iodide)	EPA 8260B	10184802	NELAP	PA
4875 - Isobutyl alcohol (2-Methyl-1-	EPA 8260B	10184802	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
propanol)				
4900 - Isopropylbenzene	EPA 8260B	10184802	NELAP	PA
4925 - Methacrylonitrile	EPA 8260B	10184802	NELAP	PA
4940 - Methyl acetate	EPA 8260B	10184802	NELAP	PA
4950 - Methyl bromide (Bromomethane)	EPA 8260B	10184802	NELAP	PA
4960 - Methyl chloride (Chloromethane)	EPA 8260B	10184802	NELAP	PA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8260B	10184802	NELAP	PA
4975 - Methylene chloride (Dichloromethane)	EPA 8260B	10184802	NELAP	PA
5005 - Naphthalene	EPA 8260B	10184802	NELAP	PA
5035 - Pentachloroethane	EPA 8260B	10184802	NELAP	PA
5080 - Propionitrile (Ethyl cyanide)	EPA 8260B	10184802	NELAP	PA
5100 - Styrene	EPA 8260B	10184802	NELAP	PA
4370 - T-amylmethylether (TAME)	EPA 8260B	10184802	NELAP	PA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 8260B	10184802	NELAP	PA
5120 - Tetrahydrofuran (THF)	EPA 8260B	10184802	NELAP	PA
5140 - Toluene	EPA 8260B	10184802	NELAP	PA
5170 - Trichloroethene (Trichloroethylene)	EPA 8260B	10184802	NELAP	PA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 8260B	10184802	NELAP	PA
5225 - Vinyl acetate	EPA 8260B	10184802	NELAP	PA
5235 - Vinyl chloride	EPA 8260B	10184802	NELAP	PA
5260 - Xylene (total)	EPA 8260B	10184802	NELAP	PA
4705 - cis & trans-1,2-Dichloroethene	EPA 8260B	10184802	NELAP	PA
4645 - cis-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	PA
4680 - cis-1,3-Dichloropropene	EPA 8260B	10184802	NELAP	PA
5240 - m+p-xylene	EPA 8260B	10184802	NELAP	PA
4425 - n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8260B	10184802	NELAP	PA
4435 - n-Butylbenzene	EPA 8260B	10184802	NELAP	PA
5085 - n-Propylamine	EPA 8260B	10184802	NELAP	PA
5090 - n-Propylbenzene	EPA 8260B	10184802	NELAP	PA
5250 - o-Xylene	EPA 8260B	10184802	NELAP	PA
4440 - sec-Butylbenzene	EPA 8260B	10184802	NELAP	PA
4420 - tert-Butyl alcohol	EPA 8260B	10184802	NELAP	PA
4445 - tert-Butylbenzene	EPA 8260B	10184802	NELAP	PA
4700 - trans-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	PA
4685 - trans-1,3-Dichloropropylene	EPA 8260B	10184802	NELAP	PA
4605 - trans-1,4-Dichloro-2-butene	EPA 8260B	10184802	NELAP	PA
6705 - 1,2,3,4-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	PA
6710 - 1,2,3,5-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	PA
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	PA
5155 - 1,2,4-Trichlorobenzene	EPA 8270C	10185805	NELAP	PA
4610 - 1,2-Dichlorobenzene	EPA 8270C	10185805	NELAP	PA
6220 - 1,2-Diphenylhydrazine	EPA 8270C	10185805	NELAP	PA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8270C	10185805	NELAP	PA
4615 - 1,3-Dichlorobenzene	EPA 8270C	10185805	NELAP	PA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8270C	10185805	NELAP	PA
4620 - 1,4-Dichlorobenzene	EPA 8270C	10185805	NELAP	PA
6165 - 1,4-Dinitrobenzene	EPA 8270C	10185805	NELAP	PA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8270C	10185805	NELAP	PA
6420 - 1,4-Naphthoquinone	EPA 8270C	10185805	NELAP	PA
6630 - 1,4-Phenylenediamine	EPA 8270C	10185805	NELAP	PA
5790 - 1-Chloronaphthalene	EPA 8270C	10185805	NELAP	PA
6380 - 1-Methylnaphthalene	EPA 8270C	10185805	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
6425 - 1-Naphthylamine	EPA 8270C	10185805	NELAP	PA
6735 - 2,3,4,6-Tetrachlorophenol	EPA 8270C	10185805	NELAP	PA
6835 - 2,4,5-Trichlorophenol	EPA 8270C	10185805	NELAP	PA
6840 - 2,4,6-Trichlorophenol	EPA 8270C	10185805	NELAP	PA
6000 - 2,4-Dichlorophenol	EPA 8270C	10185805	NELAP	PA
6130 - 2,4-Dimethylphenol	EPA 8270C	10185805	NELAP	PA
6175 - 2,4-Dinitrophenol	EPA 8270C	10185805	NELAP	PA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270C	10185805	NELAP	PA
6005 - 2,6-Dichlorophenol	EPA 8270C	10185805	NELAP	PA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270C	10185805	NELAP	PA
5515 - 2-Acetylaminofluorene	EPA 8270C	10185805	NELAP	PA
9322 - 2-Butoxyethanol	EPA 8270C	10185805	NELAP	PA
5795 - 2-Chloronaphthalene	EPA 8270C	10185805	NELAP	PA
5800 - 2-Chlorophenol	EPA 8270C	10185805	NELAP	PA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 8270C	10185805	NELAP	PA
5145 - 2-Methylaniline (o-Toluidine)	EPA 8270C	10185805	NELAP	PA
6385 - 2-Methylnaphthalene	EPA 8270C	10185805	NELAP	PA
6400 - 2-Methylphenol (o-Cresol)	EPA 8270C	10185805	NELAP	PA
6430 - 2-Naphthylamine	EPA 8270C	10185805	NELAP	PA
6460 - 2-Nitroaniline	EPA 8270C	10185805	NELAP	PA
6490 - 2-Nitrophenol	EPA 8270C	10185805	NELAP	PA
5050 - 2-Picoline (2-Methylpyridine)	EPA 8270C	10185805	NELAP	PA
5945 - 3,3'-Dichlorobenzidine	EPA 8270C	10185805	NELAP	PA
6120 - 3,3'-Dimethylbenzidine	EPA 8270C	10185805	NELAP	PA
6355 - 3-Methylcholanthrene	EPA 8270C	10185805	NELAP	PA
6405 - 3-Methylphenol (m-Cresol)	EPA 8270C	10185805	NELAP	PA
6465 - 3-Nitroaniline	EPA 8270C	10185805	NELAP	PA
5540 - 4-Aminobiphenyl	EPA 8270C	10185805	NELAP	PA
5660 - 4-Bromophenyl phenyl ether	EPA 8270C	10185805	NELAP	PA
5700 - 4-Chloro-3-methylphenol	EPA 8270C	10185805	NELAP	PA
5745 - 4-Chloroaniline	EPA 8270C	10185805	NELAP	PA
5825 - 4-Chlorophenyl phenylether	EPA 8270C	10185805	NELAP	PA
6105 - 4-Dimethyl aminoazobenzene	EPA 8270C	10185805	NELAP	PA
6410 - 4-Methylphenol (p-Cresol)	EPA 8270C	10185805	NELAP	PA
6470 - 4-Nitroaniline	EPA 8270C	10185805	NELAP	PA
6500 - 4-Nitrophenol	EPA 8270C	10185805	NELAP	PA
6510 - 4-Nitroquinoline 1-oxide	EPA 8270C	10185805	NELAP	PA
6570 - 5-Nitro-o-toluidine	EPA 8270C	10185805	NELAP	PA
6115 - 7,12-Dimethylbenz(a) anthracene	EPA 8270C	10185805	NELAP	PA
5500 - Acenaphthene	EPA 8270C	10185805	NELAP	PA
5505 - Acenaphthylene	EPA 8270C	10185805	NELAP	PA
5510 - Acetophenone	EPA 8270C	10185805	NELAP	PA
5545 - Aniline	EPA 8270C	10185805	NELAP	PA
5555 - Anthracene	EPA 8270C	10185805	NELAP	PA
5560 - Aramite	EPA 8270C	10185805	NELAP	PA
5567 - Benzenethiol	EPA 8270C	10185805	NELAP	PA
5595 - Benzidine	EPA 8270C	10185805	NELAP	PA
5575 - Benzo(a)anthracene	EPA 8270C	10185805	NELAP	PA
5580 - Benzo(a)pyrene	EPA 8270C	10185805	NELAP	PA
5585 - Benzo(b)fluoranthene	EPA 8270C	10185805	NELAP	PA
5590 - Benzo(g,h,i)perylene	EPA 8270C	10185805	NELAP	PA
5600 - Benzo(k)fluoranthene	EPA 8270C	10185805	NELAP	PA
5610 - Benzoic acid	EPA 8270C	10185805	NELAP	PA
5630 - Benzyl alcohol	EPA 8270C	10185805	NELAP	PA
5640 - Biphenyl	EPA 8270C	10185805	NELAP	PA

Eurofins Lancaster Laboratories Inc
Issue Date: July 1, 2015 **Certificate Number: 02055** AI Number: 30729
Expiration Date: June 30, 2016

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
5670 - Butyl benzyl phthalate	EPA 8270C	10185805	NELAP	PA
7180 - Caprolactam	EPA 8270C	10185805	NELAP	PA
5680 - Carbazole	EPA 8270C	10185805	NELAP	PA
7260 - Chlorobenzilate	EPA 8270C	10185805	NELAP	PA
5855 - Chrysene	EPA 8270C	10185805	NELAP	PA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 8270C	10185805	NELAP	PA
5925 - Di-n-butyl phthalate	EPA 8270C	10185805	NELAP	PA
6200 - Di-n-octyl phthalate	EPA 8270C	10185805	NELAP	PA
7405 - Diallate	EPA 8270C	10185805	NELAP	PA
9354 - Dibenz(a, h) acridine	EPA 8270C	10185805	NELAP	PA
5900 - Dibenz(a, j) acridine	EPA 8270C	10185805	NELAP	PA
5895 - Dibenz(a,h) anthracene	EPA 8270C	10185805	NELAP	PA
5905 - Dibenzofuran	EPA 8270C	10185805	NELAP	PA
7475 - Dimethoate	EPA 8270C	10185805	NELAP	PA
6135 - Dimethyl phthalate	EPA 8270C	10185805	NELAP	PA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8270C	10185805	NELAP	PA
6205 - Diphenylamine	EPA 8270C	10185805	NELAP	PA
8625 - Disulfoton	EPA 8270C	10185805	NELAP	PA
6260 - Ethyl methanesulfonate	EPA 8270C	10185805	NELAP	PA
7580 - Famphur	EPA 8270C	10185805	NELAP	PA
6265 - Fluoranthene	EPA 8270C	10185805	NELAP	PA
6270 - Fluorene	EPA 8270C	10185805	NELAP	PA
6275 - Hexachlorobenzene	EPA 8270C	10185805	NELAP	PA
4835 - Hexachlorobutadiene	EPA 8270C	10185805	NELAP	PA
6285 - Hexachlorocyclopentadiene	EPA 8270C	10185805	NELAP	PA
4840 - Hexachloroethane	EPA 8270C	10185805	NELAP	PA
6295 - Hexachloropropene	EPA 8270C	10185805	NELAP	PA
6312 - Indene	EPA 8270C	10185805	NELAP	PA
6315 - Indeno(1,2,3-cd) pyrene	EPA 8270C	10185805	NELAP	PA
7725 - Isodrin	EPA 8270C	10185805	NELAP	PA
6320 - Isophorone	EPA 8270C	10185805	NELAP	PA
6325 - Isosafrole	EPA 8270C	10185805	NELAP	PA
7740 - Kepone	EPA 8270C	10185805	NELAP	PA
6345 - Methapyrilene	EPA 8270C	10185805	NELAP	PA
6375 - Methyl methanesulfonate	EPA 8270C	10185805	NELAP	PA
7825 - Methyl parathion (Parathion, methyl)	EPA 8270C	10185805	NELAP	PA
5005 - Naphthalene	EPA 8270C	10185805	NELAP	PA
5015 - Nitrobenzene	EPA 8270C	10185805	NELAP	PA
7955 - Parathion, ethyl	EPA 8270C	10185805	NELAP	PA
6600 - Pentachloronitrobenzene	EPA 8270C	10185805	NELAP	PA
6605 - Pentachlorophenol	EPA 8270C	10185805	NELAP	PA
6610 - Phenacetin	EPA 8270C	10185805	NELAP	PA
6615 - Phenanthrene	EPA 8270C	10185805	NELAP	PA
6625 - Phenol	EPA 8270C	10185805	NELAP	PA
7985 - Phorate	EPA 8270C	10185805	NELAP	PA
6640 - Phthalic anhydride	EPA 8270C	10185805	NELAP	PA
6650 - Pronamide (Kerb)	EPA 8270C	10185805	NELAP	PA
6665 - Pyrene	EPA 8270C	10185805	NELAP	PA
5095 - Pyridine	EPA 8270C	10185805	NELAP	PA
6670 - Quinoline	EPA 8270C	10185805	NELAP	PA
6685 - Safrole	EPA 8270C	10185805	NELAP	PA
8155 - Sulfotepp	EPA 8270C	10185805	NELAP	PA
8210 - Tetraethyl pyrophosphate (TEPP)	EPA 8270C	10185805	NELAP	PA
8235 - Thionazin (Zinophos)	EPA 8270C	10185805	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
6750 - Thiophenol (Benzenethiol)	EPA 8270C	10185805	NELAP	PA
6755 - Tolualdehyde (1,2-Tolualdehyde)	EPA 8270C	10185805	NELAP	PA
6125 - a-a-Dimethylphenethylamine	EPA 8270C	10185805	NELAP	PA
5760 - bis(2-Chloroethoxy)methane	EPA 8270C	10185805	NELAP	PA
5765 - bis(2-Chloroethyl) ether	EPA 8270C	10185805	NELAP	PA
5780 - bis(2-Chloroisopropyl) ether	EPA 8270C	10185805	NELAP	PA
5025 - n-Nitroso-di-n-butylamine	EPA 8270C	10185805	NELAP	PA
6545 - n-Nitrosodi-n-propylamine	EPA 8270C	10185805	NELAP	PA
6525 - n-Nitrosodiethylamine	EPA 8270C	10185805	NELAP	PA
6530 - n-Nitrosodimethylamine	EPA 8270C	10185805	NELAP	PA
6535 - n-Nitrosodiphenylamine	EPA 8270C	10185805	NELAP	PA
6550 - n-Nitrosomethylethylamine	EPA 8270C	10185805	NELAP	PA
6555 - n-Nitrosomorpholine	EPA 8270C	10185805	NELAP	PA
6560 - n-Nitrosopiperidine	EPA 8270C	10185805	NELAP	PA
6565 - n-Nitrosopyrrolidine	EPA 8270C	10185805	NELAP	PA
8290 - o,o,o-Triethyl phosphorothioate	EPA 8270C	10185805	NELAP	PA
6105 - p-Dimethylaminoazobenzene	EPA 8270C	10185805	NELAP	PA
8310 - tris-(2,3-Dibromopropyl) phosphate (tris-BP)	EPA 8270C	10185805	NELAP	PA
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	PA
5155 - 1,2,4-Trichlorobenzene	EPA 8270D	10186002	NELAP	PA
4610 - 1,2-Dichlorobenzene	EPA 8270D	10186002	NELAP	PA
6220 - 1,2-Diphenylhydrazine	EPA 8270D	10186002	NELAP	PA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8270D	10186002	NELAP	PA
4615 - 1,3-Dichlorobenzene	EPA 8270D	10186002	NELAP	PA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8270D	10186002	NELAP	PA
4620 - 1,4-Dichlorobenzene	EPA 8270D	10186002	NELAP	PA
6165 - 1,4-Dinitrobenzene	EPA 8270D	10186002	NELAP	PA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8270D	10186002	NELAP	PA
6420 - 1,4-Naphthoquinone	EPA 8270D	10186002	NELAP	PA
6630 - 1,4-Phenylenediamine	EPA 8270D	10186002	NELAP	PA
5790 - 1-Chloronaphthalene	EPA 8270D	10186002	NELAP	PA
6380 - 1-Methylnaphthalene	EPA 8270D	10186002	NELAP	PA
6425 - 1-Naphthylamine	EPA 8270D	10186002	NELAP	PA
6735 - 2,3,4,6-Tetrachlorophenol	EPA 8270D	10186002	NELAP	PA
6835 - 2,4,5-Trichlorophenol	EPA 8270D	10186002	NELAP	PA
6840 - 2,4,6-Trichlorophenol	EPA 8270D	10186002	NELAP	PA
6000 - 2,4-Dichlorophenol	EPA 8270D	10186002	NELAP	PA
6130 - 2,4-Dimethylphenol	EPA 8270D	10186002	NELAP	PA
6175 - 2,4-Dinitrophenol	EPA 8270D	10186002	NELAP	PA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	10186002	NELAP	PA
6005 - 2,6-Dichlorophenol	EPA 8270D	10186002	NELAP	PA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	10186002	NELAP	PA
5515 - 2-Acetylaminofluorene	EPA 8270D	10186002	NELAP	PA
5795 - 2-Chloronaphthalene	EPA 8270D	10186002	NELAP	PA
5800 - 2-Chlorophenol	EPA 8270D	10186002	NELAP	PA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 8270D	10186002	NELAP	PA
5145 - 2-Methylaniline (o-Toluidine)	EPA 8270D	10186002	NELAP	PA
6385 - 2-Methylnaphthalene	EPA 8270D	10186002	NELAP	PA
6400 - 2-Methylphenol (o-Cresol)	EPA 8270D	10186002	NELAP	PA
6430 - 2-Naphthylamine	EPA 8270D	10186002	NELAP	PA
6460 - 2-Nitroaniline	EPA 8270D	10186002	NELAP	PA
6490 - 2-Nitrophenol	EPA 8270D	10186002	NELAP	PA
5050 - 2-Picoline (2-Methylpyridine)	EPA 8270D	10186002	NELAP	PA
5945 - 3,3'-Dichlorobenzidine	EPA 8270D	10186002	NELAP	PA

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
6120 - 3,3'-Dimethylbenzidine	EPA 8270D	10186002	NELAP	PA
6355 - 3-Methylcholanthrene	EPA 8270D	10186002	NELAP	PA
6405 - 3-Methylphenol (m-Cresol)	EPA 8270D	10186002	NELAP	PA
6465 - 3-Nitroaniline	EPA 8270D	10186002	NELAP	PA
5540 - 4-Aminobiphenyl	EPA 8270D	10186002	NELAP	PA
5660 - 4-Bromophenyl phenyl ether	EPA 8270D	10186002	NELAP	PA
5700 - 4-Chloro-3-methylphenol	EPA 8270D	10186002	NELAP	PA
5745 - 4-Chloroaniline	EPA 8270D	10186002	NELAP	PA
5825 - 4-Chlorophenyl phenylether	EPA 8270D	10186002	NELAP	PA
6410 - 4-Methylphenol (p-Cresol)	EPA 8270D	10186002	NELAP	PA
6470 - 4-Nitroaniline	EPA 8270D	10186002	NELAP	PA
6500 - 4-Nitrophenol	EPA 8270D	10186002	NELAP	PA
6510 - 4-Nitroquinoline 1-oxide	EPA 8270D	10186002	NELAP	PA
6570 - 5-Nitro-o-toluidine	EPA 8270D	10186002	NELAP	PA
6115 - 7,12-Dimethylbenz(a) anthracene	EPA 8270D	10186002	NELAP	PA
5500 - Acenaphthene	EPA 8270D	10186002	NELAP	PA
5505 - Acenaphthylene	EPA 8270D	10186002	NELAP	PA
5510 - Acetophenone	EPA 8270D	10186002	NELAP	PA
5545 - Aniline	EPA 8270D	10186002	NELAP	PA
5555 - Anthracene	EPA 8270D	10186002	NELAP	PA
5560 - Aramite	EPA 8270D	10186002	NELAP	PA
5567 - Benzenethiol	EPA 8270D	10186002	NELAP	PA
5595 - Benzidine	EPA 8270D	10186002	NELAP	PA
5575 - Benzo(a)anthracene	EPA 8270D	10186002	NELAP	PA
5580 - Benzo(a)pyrene	EPA 8270D	10186002	NELAP	PA
5585 - Benzo(b)fluoranthene	EPA 8270D	10186002	NELAP	PA
5590 - Benzo(g,h,i)perylene	EPA 8270D	10186002	NELAP	PA
5600 - Benzo(k)fluoranthene	EPA 8270D	10186002	NELAP	PA
5610 - Benzoic acid	EPA 8270D	10186002	NELAP	PA
5630 - Benzyl alcohol	EPA 8270D	10186002	NELAP	PA
5635 - Benzyl chloride	EPA 8270D	10186002	NELAP	PA
5670 - Butyl benzyl phthalate	EPA 8270D	10186002	NELAP	PA
7180 - Caprolactam	EPA 8270D	10186002	NELAP	PA
5680 - Carbazole	EPA 8270D	10186002	NELAP	PA
5855 - Chrysene	EPA 8270D	10186002	NELAP	PA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 8270D	10186002	NELAP	PA
5925 - Di-n-butyl phthalate	EPA 8270D	10186002	NELAP	PA
6200 - Di-n-octyl phthalate	EPA 8270D	10186002	NELAP	PA
7405 - Diallate	EPA 8270D	10186002	NELAP	PA
5895 - Dibenz(a,h) anthracene	EPA 8270D	10186002	NELAP	PA
5905 - Dibenzofuran	EPA 8270D	10186002	NELAP	PA
6135 - Dimethyl phthalate	EPA 8270D	10186002	NELAP	PA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8270D	10186002	NELAP	PA
6205 - Diphenylamine	EPA 8270D	10186002	NELAP	PA
8625 - Disulfoton	EPA 8270D	10186002	NELAP	PA
6260 - Ethyl methanesulfonate	EPA 8270D	10186002	NELAP	PA
7580 - Famphur	EPA 8270D	10186002	NELAP	PA
6265 - Fluoranthene	EPA 8270D	10186002	NELAP	PA
6270 - Fluorene	EPA 8270D	10186002	NELAP	PA
6275 - Hexachlorobenzene	EPA 8270D	10186002	NELAP	PA
4835 - Hexachlorobutadiene	EPA 8270D	10186002	NELAP	PA
6285 - Hexachlorocyclopentadiene	EPA 8270D	10186002	NELAP	PA
4840 - Hexachloroethane	EPA 8270D	10186002	NELAP	PA
6295 - Hexachloropropene	EPA 8270D	10186002	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
6315 - Indeno(1,2,3-cd) pyrene	EPA 8270D	10186002	NELAP	PA
7725 - Isodrin	EPA 8270D	10186002	NELAP	PA
6320 - Isophorone	EPA 8270D	10186002	NELAP	PA
6325 - Isosafrole	EPA 8270D	10186002	NELAP	PA
7740 - Kepone	EPA 8270D	10186002	NELAP	PA
6345 - Methapyrilene	EPA 8270D	10186002	NELAP	PA
6375 - Methyl methanesulfonate	EPA 8270D	10186002	NELAP	PA
7825 - Methyl parathion (Parathion, methyl)	EPA 8270D	10186002	NELAP	PA
5005 - Naphthalene	EPA 8270D	10186002	NELAP	PA
5015 - Nitrobenzene	EPA 8270D	10186002	NELAP	PA
7955 - Parathion, ethyl	EPA 8270D	10186002	NELAP	PA
6600 - Pentachloronitrobenzene	EPA 8270D	10186002	NELAP	PA
6605 - Pentachlorophenol	EPA 8270D	10186002	NELAP	PA
6610 - Phenacetin	EPA 8270D	10186002	NELAP	PA
6615 - Phenanthrene	EPA 8270D	10186002	NELAP	PA
6625 - Phenol	EPA 8270D	10186002	NELAP	PA
7985 - Phorate	EPA 8270D	10186002	NELAP	PA
6650 - Pronamide (Kerb)	EPA 8270D	10186002	NELAP	PA
5095 - Pyridine	EPA 8270D	10186002	NELAP	PA
6670 - Quinoline	EPA 8270D	10186002	NELAP	PA
6685 - Safrole	EPA 8270D	10186002	NELAP	PA
8155 - Sulfotepp	EPA 8270D	10186002	NELAP	PA
8235 - Thionazin (Zinophos)	EPA 8270D	10186002	NELAP	PA
6750 - Thiophenol (Benzenethiol)	EPA 8270D	10186002	NELAP	PA
6125 - a-a-Dimethylphenethylamine	EPA 8270D	10186002	NELAP	PA
5760 - bis(2-Chloroethoxy)methane	EPA 8270D	10186002	NELAP	PA
5765 - bis(2-Chloroethyl) ether	EPA 8270D	10186002	NELAP	PA
5780 - bis(2-Chloroisopropyl) ether	EPA 8270D	10186002	NELAP	PA
5025 - n-Nitroso-di-n-butylamine	EPA 8270D	10186002	NELAP	PA
6545 - n-Nitrosodi-n-propylamine	EPA 8270D	10186002	NELAP	PA
6525 - n-Nitrosodiethylamine	EPA 8270D	10186002	NELAP	PA
6530 - n-Nitrosodimethylamine	EPA 8270D	10186002	NELAP	PA
6535 - n-Nitrosodiphenylamine	EPA 8270D	10186002	NELAP	PA
6550 - n-Nitrosomethylethylamine	EPA 8270D	10186002	NELAP	PA
6555 - n-Nitrosomorpholine	EPA 8270D	10186002	NELAP	PA
6560 - n-Nitrosopiperidine	EPA 8270D	10186002	NELAP	PA
6565 - n-Nitrosopyrrolidine	EPA 8270D	10186002	NELAP	PA
8290 - o,o,o-Triethyl phosphorothioate	EPA 8270D	10186002	NELAP	PA
8310 - tris-(2,3-Dibromopropyl) phosphate (tris-BP)	EPA 8270D	10186002	NELAP	PA
9519 - 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 8290A	10187403	NELAP	PA
9516 - 1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 8290A	10187403	NELAP	PA
9426 - 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)	EPA 8290A	10187403	NELAP	PA
9420 - 1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)	EPA 8290A	10187403	NELAP	PA
9423 - 1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)	EPA 8290A	10187403	NELAP	PA
9453 - 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)	EPA 8290A	10187403	NELAP	PA
9471 - 1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)	EPA 8290A	10187403	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
9456 - 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)	EPA 8290A	10187403	NELAP	PA
9474 - 1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)	EPA 8290A	10187403	NELAP	PA
9459 - 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)	EPA 8290A	10187403	NELAP	PA
9477 - 1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)	EPA 8290A	10187403	NELAP	PA
9540 - 1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)	EPA 8290A	10187403	NELAP	PA
9543 - 1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)	EPA 8290A	10187403	NELAP	PA
9480 - 2,3,4,6,7,8-Hexachlorodibenzofuran	EPA 8290A	10187403	NELAP	PA
9549 - 2,3,4,7,8-Pentachlorodibenzofuran	EPA 8290A	10187403	NELAP	PA
9612 - 2,3,7,8-Tetrachlorodibenzofuran	EPA 8290A	10187403	NELAP	PA
9438 - Total Hpcdd	EPA 8290A	10187403	NELAP	PA
9444 - Total Hpcdf	EPA 8290A	10187403	NELAP	PA
9468 - Total Hxcdd	EPA 8290A	10187403	NELAP	PA
9483 - Total Hxcdf	EPA 8290A	10187403	NELAP	PA
9555 - Total Pecdd	EPA 8290A	10187403	NELAP	PA
9552 - Total Pecdf	EPA 8290A	10187403	NELAP	PA
9609 - Total TCDD	EPA 8290A	10187403	NELAP	PA
9615 - Total TCDF	EPA 8290A	10187403	NELAP	PA
5500 - Acenaphthene	EPA 8310	10187607	NELAP	PA
5505 - Acenaphthylene	EPA 8310	10187607	NELAP	PA
5555 - Anthracene	EPA 8310	10187607	NELAP	PA
5575 - Benzo(a)anthracene	EPA 8310	10187607	NELAP	PA
5580 - Benzo(a)pyrene	EPA 8310	10187607	NELAP	PA
5585 - Benzo(b)fluoranthene	EPA 8310	10187607	NELAP	PA
5590 - Benzo(g,h,i)perylene	EPA 8310	10187607	NELAP	PA
5600 - Benzo(k)fluoranthene	EPA 8310	10187607	NELAP	PA
5855 - Chrysene	EPA 8310	10187607	NELAP	PA
5895 - Dibenz(a,h) anthracene	EPA 8310	10187607	NELAP	PA
6265 - Fluoranthene	EPA 8310	10187607	NELAP	PA
6270 - Fluorene	EPA 8310	10187607	NELAP	PA
6315 - Indeno(1,2,3-cd) pyrene	EPA 8310	10187607	NELAP	PA
5005 - Naphthalene	EPA 8310	10187607	NELAP	PA
6615 - Phenanthrene	EPA 8310	10187607	NELAP	PA
6665 - Pyrene	EPA 8310	10187607	NELAP	PA
6110 - 2,5-Dimethylbenzaldehyde	EPA 8315	10187801	NELAP	PA
4300 - Acetaldehyde	EPA 8315	10187801	NELAP	PA
4325 - Acrolein (Propenal)	EPA 8315	10187801	NELAP	PA
5570 - Benzaldehyde	EPA 8315	10187801	NELAP	PA
4430 - Butylaldehyde (Butanal)	EPA 8315	10187801	NELAP	PA
4545 - Crotonaldehyde	EPA 8315	10187801	NELAP	PA
4815 - Formaldehyde	EPA 8315	10187801	NELAP	PA
3825 - Hexanaldehyde (Hexanal)	EPA 8315	10187801	NELAP	PA
6330 - Isovaleraldehyde	EPA 8315	10187801	NELAP	PA
3965 - Propionaldehyde (Propanal)	EPA 8315	10187801	NELAP	PA
4040 - Valeraldehyde (Pentanal, Pentanaldehyde)	EPA 8315	10187801	NELAP	PA
4300 - Acetaldehyde	EPA 8315A	10188008	NELAP	PA
4815 - Formaldehyde	EPA 8315A	10188008	NELAP	PA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8330	10189807	NELAP	PA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8330	10189807	NELAP	PA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8330	10189807	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8330	10189807	NELAP	PA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8330	10189807	NELAP	PA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8330	10189807	NELAP	PA
9507 - 2-Nitrotoluene	EPA 8330	10189807	NELAP	PA
9510 - 3-Nitrotoluene	EPA 8330	10189807	NELAP	PA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8330	10189807	NELAP	PA
9513 - 4-Nitrotoluene	EPA 8330	10189807	NELAP	PA
6415 - Methyl-2,4,6-trinitrophenylnitramine (tetryl)	EPA 8330	10189807	NELAP	PA
5015 - Nitrobenzene	EPA 8330	10189807	NELAP	PA
6485 - Nitroglycerin	EPA 8330	10189807	NELAP	PA
9522 - Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	EPA 8330	10189807	NELAP	PA
9558 - Pentaerythritoltetranitrate	EPA 8330	10189807	NELAP	PA
9432 - RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8330	10189807	NELAP	PA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8330A	10190008	NELAP	PA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8330A	10190008	NELAP	PA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8330A	10190008	NELAP	PA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8330A	10190008	NELAP	PA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8330A	10190008	NELAP	PA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8330A	10190008	NELAP	PA
9507 - 2-Nitrotoluene	EPA 8330A	10190008	NELAP	PA
9510 - 3-Nitrotoluene	EPA 8330A	10190008	NELAP	PA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8330A	10190008	NELAP	PA
9513 - 4-Nitrotoluene	EPA 8330A	10190008	NELAP	PA
6415 - Methyl-2,4,6-trinitrophenylnitramine (tetryl)	EPA 8330A	10190008	NELAP	PA
5015 - Nitrobenzene	EPA 8330A	10190008	NELAP	PA
6485 - Nitroglycerin	EPA 8330A	10190008	NELAP	PA
9522 - Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	EPA 8330A	10190008	NELAP	PA
9558 - Pentaerythritoltetranitrate	EPA 8330A	10190008	NELAP	PA
9432 - RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8330A	10190008	NELAP	PA
6485 - Nitroglycerin	EPA 8332	10190406	NELAP	PA
1645 - Total Cyanide	EPA 9012	10193201	NELAP	PA
1635 - Cyanide	EPA 9012A	10193405	NELAP	PA
1645 - Total Cyanide	EPA 9012A	10193405	NELAP	PA
1900 - pH	EPA 9040B	10197203	NELAP	PA
1625 - Corrosivity (pH)	EPA 9045	10197805	NELAP	PA
1900 - pH	EPA 9045	10197805	NELAP	PA
1610 - Conductivity	EPA 9050	10198604	NELAP	PA
1610 - Conductivity	EPA 9050A	10198808	NELAP	PA
1540 - Bromide	EPA 9056	10199005	NELAP	PA
1575 - Chloride	EPA 9056	10199005	NELAP	PA
1730 - Fluoride	EPA 9056	10199005	NELAP	PA
1805 - Nitrate	EPA 9056	10199005	NELAP	PA
1835 - Nitrite	EPA 9056	10199005	NELAP	PA
2000 - Sulfate	EPA 9056	10199005	NELAP	PA
1540 - Bromide	EPA 9056	10199209	NELAP	PA
1575 - Chloride	EPA 9056	10199209	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
1730 - Fluoride	EPA 9056	10199209	NELAP	PA
2000 - Sulfate	EPA 9056	10199209	NELAP	PA
1575 - Chloride	EPA 9056	10199403	NELAP	PA
1730 - Fluoride	EPA 9056	10199403	NELAP	PA
1805 - Nitrate	EPA 9056	10199403	NELAP	PA
1835 - Nitrite	EPA 9056	10199403	NELAP	PA
2000 - Sulfate	EPA 9056	10199403	NELAP	PA
1575 - Chloride	EPA 9056A	10199607	NELAP	PA
1730 - Fluoride	EPA 9056A	10199607	NELAP	PA
1805 - Nitrate	EPA 9056A	10199607	NELAP	PA
1835 - Nitrite	EPA 9056A	10199607	NELAP	PA
1840 - Nitrite as N	EPA 9056A	10199607	NELAP	PA
2000 - Sulfate	EPA 9056A	10199607	NELAP	PA
2040 - Total Organic Carbon	EPA 9060	10200201	NELAP	PA
1905 - Total Phenolics	EPA 9066	10200609	NELAP	PA
4747 - Ethane	EPA RSK-175 (GC/FID)	10212905	NELAP	PA
4752 - Ethene	EPA RSK-175 (GC/FID)	10212905	NELAP	PA
4926 - Methane	EPA RSK-175 (GC/FID)	10212905	NELAP	PA
100263 - Propane	EPA RSK-175 (GC/FID)	10212905	NELAP	PA
5007 - n-Butane	EPA RSK-175 (GC/FID)	10212905	NELAP	PA
5029 - n-Propane	EPA RSK-175 (GC/FID)	10212905	NELAP	PA
1095 - Mercury	EPA 1631E	10237204	NELAP	PA
1810 - Nitrate as N	EPA 353.2 (calc.)	10238809	NELAP	PA
6380 - 1-Methylnaphthalene	EPA 8270C SIM	10242407	NELAP	PA
5500 - Acenaphthene	EPA 8270C SIM	10242407	NELAP	PA
5505 - Acenaphthylene	EPA 8270C SIM	10242407	NELAP	PA
5555 - Anthracene	EPA 8270C SIM	10242407	NELAP	PA
5575 - Benzo(a)anthracene	EPA 8270C SIM	10242407	NELAP	PA
5580 - Benzo(a)pyrene	EPA 8270C SIM	10242407	NELAP	PA
5585 - Benzo(b)fluoranthene	EPA 8270C SIM	10242407	NELAP	PA
5590 - Benzo(g,h,i)perylene	EPA 8270C SIM	10242407	NELAP	PA
5600 - Benzo(k)fluoranthene	EPA 8270C SIM	10242407	NELAP	PA
5855 - Chrysene	EPA 8270C SIM	10242407	NELAP	PA
5895 - Dibenz(a,h) anthracene	EPA 8270C SIM	10242407	NELAP	PA
6265 - Fluoranthene	EPA 8270C SIM	10242407	NELAP	PA
6270 - Fluorene	EPA 8270C SIM	10242407	NELAP	PA
6315 - Indeno(1,2,3-cd) pyrene	EPA 8270C SIM	10242407	NELAP	PA
5005 - Naphthalene	EPA 8270C SIM	10242407	NELAP	PA
6615 - Phenanthrene	EPA 8270C SIM	10242407	NELAP	PA
6665 - Pyrene	EPA 8270C SIM	10242407	NELAP	PA
6380 - 1-Methylnaphthalene	EPA 8270D SIM	10242509	NELAP	PA
9501 - 1-Methylphenanthrene	EPA 8270D SIM	10242509	NELAP	PA
5500 - Acenaphthene	EPA 8270D SIM	10242509	NELAP	PA
5505 - Acenaphthylene	EPA 8270D SIM	10242509	NELAP	PA
5555 - Anthracene	EPA 8270D SIM	10242509	NELAP	PA
5575 - Benzo(a)anthracene	EPA 8270D SIM	10242509	NELAP	PA
5580 - Benzo(a)pyrene	EPA 8270D SIM	10242509	NELAP	PA
5585 - Benzo(b)fluoranthene	EPA 8270D SIM	10242509	NELAP	PA
5590 - Benzo(g,h,i)perylene	EPA 8270D SIM	10242509	NELAP	PA
5600 - Benzo(k)fluoranthene	EPA 8270D SIM	10242509	NELAP	PA
5855 - Chrysene	EPA 8270D SIM	10242509	NELAP	PA
5895 - Dibenz(a,h) anthracene	EPA 8270D SIM	10242509	NELAP	PA
6265 - Fluoranthene	EPA 8270D SIM	10242509	NELAP	PA
6270 - Fluorene	EPA 8270D SIM	10242509	NELAP	PA
6315 - Indeno(1,2,3-cd) pyrene	EPA 8270D SIM	10242509	NELAP	PA
5005 - Naphthalene	EPA 8270D SIM	10242509	NELAP	PA

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Analyte	Method Name	Method Code	Type	AB
6615 - Phenanthrene	EPA 8270D SIM	10242509	NELAP	PA
6665 - Pyrene	EPA 8270D SIM	10242509	NELAP	PA
1635 - Cyanide	EPA 9012B	10243206	NELAP	PA
1645 - Total Cyanide	EPA 9012B	10243206	NELAP	PA
1900 - pH	EPA 9040C	10244403	NELAP	PA
8946 - 2,2',3,4,5+2,2',3,4,5'+2,2',3,4',5'+2,3,3',4,5'+ 2,3',4,4'6+2,3',4',5'6-Pentachlorobiphenyl (BZ 86+87+97+108+119+125)	EPA 1668A	10262007	NELAP	PA
8958 - 2,2',3,6+2,2',4,6'-Tetrachlorobiphenyls (BZ 45 + 51)	EPA 1668A	10262007	NELAP	PA
8963 - 2,3,4,5+2,3',4',5+2,4,4',5+2,3',4',5'-Tetrachlorobiphenyls (BZ 61+70+74+76)	EPA 1668A	10262007	NELAP	PA
1575 - Chloride	EPA 300.0	10275408	NELAP	PA
1840 - Nitrite as N	EPA 300.0	10275408	NELAP	PA
2000 - Sulfate	EPA 300.0	10275408	NELAP	PA
1895 - Perchlorate	EPA 6850	10304606	NELAP	PA
1730 - Fluoride	SM 4500-F B	20012606	NELAP	PA
1605 - Color	SM 2120 B-1993, Online Edition	20039207	NELAP	PA
1500 - Acidity, as CaCO3	SM 2310 B, 20th ED	20044206	NELAP	PA
100410 - Alkalinity, bicarbonate	SM 2320 B, 18th ED	20044808	NELAP	LA
100411 - Alkalinity, carbonate	SM 2320 B, 18th ED	20044808	NELAP	LA
1505 - Alkalinity as CaCO3	SM 2320 B, 20th ED	20045209	NELAP	PA
1755 - Total hardness as CaCO3	SM 2340 B, 19th ED	20046008	NELAP	PA
1755 - Total hardness as CaCO3	SM 2340 B, 20th ED	20046202	NELAP	PA
1955 - Residue-filterable (TDS)	SM 2340 C, 20th ED	20047205	NELAP	PA
1610 - Conductivity	SM 2510 B, 20th ED	20048208	NELAP	PA
1610 - Conductivity	SM 2510 B, 21st ED	20048402	NELAP	PA
1950 - Residue-total	SM 2540 B, 20th ED	20049007	NELAP	PA
1950 - Residue-total	SM 2540 B-97, Online Edition	20049405	NELAP	PA
1955 - Residue-filterable (TDS)	SM 2540 C, 20th ED	20050004	NELAP	PA
1960 - Residue-nonfilterable (TSS)	SM 2540 D, 20th ED	20050800	NELAP	PA
1965 - Residue-settleable	SM 2540 F, 20th ED	20051803	NELAP	PA
2030 - Temperature, deg. C	SM 2550 B, 20th ED	20052806	NELAP	PA
1575 - Chloride	SM 4500-Cl¯ C, 20th ED	20084804	NELAP	PA
1940 - Total residual chlorine	SM 4500-Cl¯ F, 20th ED	20087201	NELAP	PA
1645 - Total Cyanide	SM 4500-CN¯ C, 20th ED	20091605	NELAP	PA
1635 - Cyanide	SM 4500-CN¯ E, 20th ED	20092404	NELAP	PA
1510 - Amenable cyanide	SM 4500-CN¯ G, 20th ED	20093203	NELAP	PA
1635 - Cyanide	SM 4500-CN¯ C, 21st ED	20095403	NELAP	PA
1730 - Fluoride	SM 4500-F¯ B, 20th ED	20101002	NELAP	PA
1730 - Fluoride	SM 4500-F¯ C, 20th ED	20102005	NELAP	OR
1730 - Fluoride	SM 4500-F C, 21st ED	20102209	NELAP	PA
1900 - pH	SM 4500-H+ B, 20th ED	20104807	NELAP	PA
1515 - Ammonia as N	SM 4500-NH3 B, 20th ED	20105606	NELAP	PA
1515 - Ammonia as N	SM 4500-NH3 C, 20th ED	20106405	NELAP	PA
1515 - Ammonia as N	SM 4500-NH3 D, 20th ED	20109006	NELAP	PA
1880 - Oxygen, dissolved	SM 4500-O G, 20th ED	20121204	NELAP	PA
1910 - Total Phosphorus	SM 4500-P B, 21st ED	20122809	NELAP	PA
1910 - Total Phosphorus	SM 4500-P B 5, 20th ED	20123200	NELAP	PA
1910 - Total Phosphorus	SM 4500-P E, 20th ED	20123802	NELAP	PA
1910 - Total Phosphorus	SM 4500-P F, 20th ED	20124601	NELAP	PA
2005 - Sulfide	SM 4500-S2¯ D, 20th ED	20125400	NELAP	PA
2005 - Sulfide	SM 4500-S2¯ F, 20th ED	20126209	NELAP	PA
1990 - Silica as SiO2	SM 4500-SiO2 C, 20th ED	20128205	NELAP	PA
2015 - Sulfite-SO3	SM 4500-SO3 B, 20th ED	20130205	NELAP	PA

Eurofins Lancaster Laboratories Inc — AI Number: 30729
Issue Date: July 1, 2015 — **Certificate Number: 02055** — Expiration Date: June 30, 2016

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Non Potable Water

Analyte	Method Name	Method Code	Type	AB
2015 - Sulfite-SO3	SM 4500-SO3 B, 21st ED	20130409	NELAP	PA
1530 - Biochemical oxygen demand	SM 5210 B, 20th ED	20134809	NELAP	PA
1555 - Carbonaceous BOD, CBOD	SM 5210 B, 20th ED	20134809	NELAP	PA
2040 - Total Organic Carbon	SM 5310 B, 20th ED	20137400	NELAP	PA
2040 - Total Organic Carbon	SM 5310 C, 20th ED	20138403	NELAP	PA
2025 - Surfactants - MBAS	SM 5540 C, 20th ED	20144609	NELAP	PA
1605 - Color	SM 2120 B, 20th ED	20224004	NELAP	PA
1645 - Total Cyanide	ASTM D7511-09	30032985	NELAP	PA
1523 - Available Cyanide	OIA 1677	60031405	NELAP	PA
1640 - Free cyanide	OIA 1677	60031405	NELAP	PA
6385 - 2-Methylnaphthalene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5500 - Acenaphthene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5505 - Acenaphthylene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5555 - Anthracene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5575 - Benzo(a)anthracene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5580 - Benzo(a)pyrene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5585 - Benzo(b)fluoranthene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5590 - Benzo(g,h,i)perylene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5600 - Benzo(k)fluoranthene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5855 - Chrysene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5895 - Dibenz(a,h) anthracene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6218 - EPH Aliphatic C19-C36	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6222 - EPH Aliphatic C9-C18	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6232 - EPH Aromatic C11-C22	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6234 - EPH Aromatic C11-C22 Unadjusted	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6265 - Fluoranthene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6270 - Fluorene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6315 - Indeno(1,2,3-cd) pyrene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5005 - Naphthalene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6615 - Phenanthrene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6665 - Pyrene	MADEP EPH, Rev.1.1	90017202	NELAP	PA
4375 - Benzene	MADEP VPH, Rev.1.1	90017406	NELAP	PA
4765 - Ethylbenzene	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5000 - Methyl tert-butyl ether (MTBE)	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5005 - Naphthalene	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5140 - Toluene	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5304 - VPH Aliphatic C5-C8	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5305 - VPH Aliphatic C5-C8 Unadjusted	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5306 - VPH Aliphatic C9-C12	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5307 - VPH Aliphatic C9-C12 Unadjusted	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5311 - VPH Aromatic C9-C10	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5240 - m+p-xylene	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5250 - o-Xylene	MADEP VPH, Rev.1.1	90017406	NELAP	PA
2050 - Total Petroleum Hydrocarbons (TPH)	TNRCC 1005, Rev.3	90019208	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
2050 - Total Petroleum Hydrocarbons (TPH)	Texas 1006	867	NELAP	PA
1540 - Bromide	EPA 300.0, Rev.2.1	10053200	NELAP	PA
1730 - Fluoride	EPA 300.0, Rev.2.1	10053200	NELAP	PA
1810 - Nitrate as N	EPA 300.0, Rev.2.1	10053200	NELAP	PA
1840 - Nitrite as N	EPA 300.0, Rev.2.1	10053200	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
2000 - Sulfate	EPA 300.0, Rev.2.1	10053200	NELAP	PA
1780 - Ignitability	EPA 1010	10116606	NELAP	PA
1466 - Toxicity Characteristic Leaching Procedure (TCLP)	EPA 1311	10118806	NELAP	PA
1460 - Synthetic Precipitation Leaching Procedure	EPA 1312	10119003	NELAP	PA
8954 - 2,2',3,3'+2,3',4',6-Tetrachlorobiphenyl (BZ-40+71)	EPA 1668	10129201	NELAP	PA
8919 - 2,2',3,3',4,4'+2,3,4,4',5,6-Hexachlorobiphenyl (BZ-128+166)	EPA 1668	10129201	NELAP	PA
9105 - 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (BZ-209)	EPA 1668	10129201	NELAP	PA
9095 - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)	EPA 1668	10129201	NELAP	PA
9090 - 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)	EPA 1668	10129201	NELAP	PA
9102 - 2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)	EPA 1668	10129201	NELAP	PA
9101 - 2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)	EPA 1668	10129201	NELAP	PA
9103 - 2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)	EPA 1668	10129201	NELAP	PA
9065 - 2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)	EPA 1668	10129201	NELAP	PA
8916 - 2,2',3,3',4,4',6+2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-171+173)	EPA 1668	10129201	NELAP	PA
8933 - 2,2',3,3',4,4',6,6'+2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ 197+200)	EPA 1668	10129201	NELAP	PA
9104 - 2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)	EPA 1668	10129201	NELAP	PA
9106 - 2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)	EPA 1668	10129201	NELAP	PA
9020 - 2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)	EPA 1668	10129201	NELAP	PA
9114 - 2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)	EPA 1668	10129201	NELAP	PA
9112 - 2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)	EPA 1668	10129201	NELAP	PA
9115 - 2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)	EPA 1668	10129201	NELAP	PA
9117 - 2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)	EPA 1668	10129201	NELAP	PA
8922 - 2,2',3,3',4,5+2,2',3,4,4',5'+2,3,3',4',5,6-Hexachlorobiphenyl (BZ-129+138+163)	EPA 1668	10129201	NELAP	PA
9108 - 2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)	EPA 1668	10129201	NELAP	PA
8934 - 2,2',3,3',4,5,5',6+2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-198+199)	EPA 1668	10129201	NELAP	PA
9107 - 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)	EPA 1668	10129201	NELAP	PA
9109 - 2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)	EPA 1668	10129201	NELAP	PA
9110 - 2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)	EPA 1668	10129201	NELAP	PA
9116 - 2,2',3,3',4,5,6'-Heptachlorobiphenyl	EPA 1668	10129201	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
(BZ-174)				
9111 - 2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)	EPA 1668	10129201	NELAP	PA
9113 - 2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)	EPA 1668	10129201	NELAP	PA
9118 - 2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)	EPA 1668	10129201	NELAP	PA
9120 - 2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)	EPA 1668	10129201	NELAP	PA
9119 - 2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)	EPA 1668	10129201	NELAP	PA
9121 - 2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)	EPA 1668	10129201	NELAP	PA
9122 - 2,2',3,3',4-Pentachlorobiphenyl (BZ-82)	EPA 1668	10129201	NELAP	PA
9123 - 2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)	EPA 1668	10129201	NELAP	PA
9124 - 2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)	EPA 1668	10129201	NELAP	PA
9125 - 2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)	EPA 1668	10129201	NELAP	PA
8926 - 2,2',3,3',5,6'+2,2',3,5,5',6+2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-135+151+154)	EPA 1668	10129201	NELAP	PA
8927 - 2,2',3,3',5,6'+2,2',3,5,5',6-Hexachlorobiphenyls (BZ 135+151)	EPA 1668	10129201	NELAP	PA
9127 - 2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)	EPA 1668	10129201	NELAP	PA
9126 - 2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)	EPA 1668	10129201	NELAP	PA
9128 - 2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)	EPA 1668	10129201	NELAP	PA
9129 - 2,2',3,3',5-Pentachlorobiphenyl (BZ-83)	EPA 1668	10129201	NELAP	PA
9130 - 2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)	EPA 1668	10129201	NELAP	PA
9131 - 2,2',3,3',6-Pentachlorobiphenyl (BZ-84)	EPA 1668	10129201	NELAP	PA
9132 - 2,2',3,3'-Tetrachlorobiphenyl (BZ-40)	EPA 1668	10129201	NELAP	PA
9151 - 2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)	EPA 1668	10129201	NELAP	PA
9154 - 2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)	EPA 1668	10129201	NELAP	PA
8948 - 2,2',3,4',5+2,2',4,5,5'+2,3,3',5',6-Pentachlorobiphenyl (BZ-90+101+113)	EPA 1668	10129201	NELAP	PA
9080 - 2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)	EPA 1668	10129201	NELAP	PA
9144 - 2,2',3,4',5,5'-Hexachlorobiphenyl (BZ-146)	EPA 1668	10129201	NELAP	PA
9147 - 2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)	EPA 1668	10129201	NELAP	PA
8929 - 2,2',3,4',5,6+2,2',3,4',5',6-Hexachlorobiphenyl (BZ-147+149)	EPA 1668	10129201	NELAP	PA
9146 - 2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)	EPA 1668	10129201	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
9149 - 2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)	EPA 1668	10129201	NELAP	PA
9155 - 2,2',3,4',5-Pentachlorobiphenyl (BZ-90)	EPA 1668	10129201	NELAP	PA
8951 - 2,2',3,4',6'+2,2',4,5,6'-Pentachlorobiphenyl (BZ-98+102)	EPA 1668	10129201	NELAP	PA
9159 - 2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)	EPA 1668	10129201	NELAP	PA
9157 - 2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)	EPA 1668	10129201	NELAP	PA
9160 - 2,2',3,4',6-Pentachlorobiphenyl (BZ-91)	EPA 1668	10129201	NELAP	PA
9162 - 2,2',3,4'-Tetrachlorobiphenyl (BZ-42)	EPA 1668	10129201	NELAP	PA
8941 - 2,2',3,4,4'+2,3,4,5,6+2,3,4',5,6-Pentachlorobiphenyl (BZ-85+116+117)	EPA 1668	10129201	NELAP	PA
8942 - 2,2',3,4,4'+2,3,4,5,6-Pentachlorobiphenyl (BZ-85+116)	EPA 1668	10129201	NELAP	PA
8918 - 2,2',3,4,4',5',6+2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-183+185)	EPA 1668	10129201	NELAP	PA
9075 - 2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)	EPA 1668	10129201	NELAP	PA
9025 - 2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)	EPA 1668	10129201	NELAP	PA
8917 - 2,2',3,4,4',5,5'+2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-180+193)	EPA 1668	10129201	NELAP	PA
9133 - 2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)	EPA 1668	10129201	NELAP	PA
9134 - 2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)	EPA 1668	10129201	NELAP	PA
9136 - 2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)	EPA 1668	10129201	NELAP	PA
9135 - 2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)	EPA 1668	10129201	NELAP	PA
9137 - 2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)	EPA 1668	10129201	NELAP	PA
9138 - 2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)	EPA 1668	10129201	NELAP	PA
9140 - 2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)	EPA 1668	10129201	NELAP	PA
8928 - 2,2',3,4,4',6+2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-139+140)	EPA 1668	10129201	NELAP	PA
9139 - 2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)	EPA 1668	10129201	NELAP	PA
9141 - 2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)	EPA 1668	10129201	NELAP	PA
9142 - 2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)	EPA 1668	10129201	NELAP	PA
9150 - 2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)	EPA 1668	10129201	NELAP	PA
8975 - 2,2',3,4,5'-Pentachlorobiphenyl (BZ-87)	EPA 1668	10129201	NELAP	PA
8944 - 2,2',3,4,5+2,2',3,4,5'+2,2',3,4',5'+2,2',4,4',6-Pentachlorobiphenyl (BZ-86+87+97+100)	EPA 1668	10129201	NELAP	PA
8946 -	EPA 1668	10129201	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
2,2',3,4,5+2,2',3,4,5'+2,2',3,4',5'+2,3,3',4,5'+ 2,3',4,4'6+2,3',4',5'6-Pentachlorobiphenyl (BZ 86+87+97+108+119+125)				
9143 - 2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)	EPA 1668	10129201	NELAP	PA
9030 - 2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)	EPA 1668	10129201	NELAP	PA
9152 - 2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)	EPA 1668	10129201	NELAP	PA
9145 - 2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)	EPA 1668	10129201	NELAP	PA
9148 - 2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)	EPA 1668	10129201	NELAP	PA
9153 - 2,2',3,4,5-Pentachlorobiphenyl (BZ-86)	EPA 1668	10129201	NELAP	PA
9161 - 2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)	EPA 1668	10129201	NELAP	PA
8947 - 2,2',3,4,6+2,2',3,4',6-Pentachlorobiphenyl (BZ-88+91)	EPA 1668	10129201	NELAP	PA
9156 - 2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)	EPA 1668	10129201	NELAP	PA
9158 - 2,2',3,4,6-Pentachlorobiphenyl (BZ-88)	EPA 1668	10129201	NELAP	PA
9163 - 2,2',3,4-Tetrachlorobiphenyl (BZ-41)	EPA 1668	10129201	NELAP	PA
8957 - 2,2',3,5'+2,2',4,4'+2,3,5,6-Tetrachlorobiphenyl (BZ-44+47+65)	EPA 1668	10129201	NELAP	PA
9166 - 2,2',3,5',6-Pentachlorobiphenyl (BZ-95)	EPA 1668	10129201	NELAP	PA
8945 - 2,2',3,5'-Tetrachlorobiphenyl (BZ-44)	EPA 1668	10129201	NELAP	PA
8956 - 2,2',3,5+2,3',5',6-Tetrachlorobiphenyl (BZ-43+73)	EPA 1668	10129201	NELAP	PA
9035 - 2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)	EPA 1668	10129201	NELAP	PA
9164 - 2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)	EPA 1668	10129201	NELAP	PA
9167 - 2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)	EPA 1668	10129201	NELAP	PA
8949 - 2,2',3,5,6+2,2',4,4',6-Pentachlorobiphenyl (BZ-93+100)	EPA 1668	10129201	NELAP	PA
9165 - 2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)	EPA 1668	10129201	NELAP	PA
9168 - 2,2',3,5,6-Pentachlorobiphenyl (BZ-93)	EPA 1668	10129201	NELAP	PA
9169 - 2,2',3,5-Tetrachlorobiphenyl (BZ-43)	EPA 1668	10129201	NELAP	PA
9171 - 2,2',3,6'-Tetrachlorobiphenyl (BZ-46)	EPA 1668	10129201	NELAP	PA
9170 - 2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)	EPA 1668	10129201	NELAP	PA
9172 - 2,2',3,6-Tetrachlorobiphenyl (BZ-45)	EPA 1668	10129201	NELAP	PA
9173 - 2,2',3-Trichlorobiphenyl (BZ-16)	EPA 1668	10129201	NELAP	PA
8931 - 2,2',4,4',5,5'+2,3',4,4',5',6-Hexachlorobiphenyl (BZ-153+168)	EPA 1668	10129201	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
9040 - 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)	EPA 1668	10129201	NELAP	PA
9174 - 2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)	EPA 1668	10129201	NELAP	PA
9175 - 2,2',4,4',5-Pentachlorobiphenyl (BZ-99)	EPA 1668	10129201	NELAP	PA
9176 - 2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)	EPA 1668	10129201	NELAP	PA
9177 - 2,2',4,4',6-Pentachlorobiphenyl (BZ-100)	EPA 1668	10129201	NELAP	PA
9178 - 2,2',4,4'-Tetrachlorobiphenyl (BZ-47)	EPA 1668	10129201	NELAP	PA
8959 - 2,2',4,5'+2,3',4,6-Tetrachlorobiphenyl (BZ-49+69)	EPA 1668	10129201	NELAP	PA
9179 - 2,2',4,5',6-Pentachlorobiphenyl (BZ-103)	EPA 1668	10129201	NELAP	PA
8950 - 2,2',4,5'-Tetrachlorobiphenyl (BZ-49)	EPA 1668	10129201	NELAP	PA
8980 - 2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)	EPA 1668	10129201	NELAP	PA
9180 - 2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)	EPA 1668	10129201	NELAP	PA
9181 - 2,2',4,5-Tetrachlorobiphenyl (BZ-48)	EPA 1668	10129201	NELAP	PA
9183 - 2,2',4,6'-Tetrachlorobiphenyl (BZ-51)	EPA 1668	10129201	NELAP	PA
8961 - 2,2',4,6+2,2',5,6'-Tetrachlorobiphenyl (BZ-50+53)	EPA 1668	10129201	NELAP	PA
9182 - 2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)	EPA 1668	10129201	NELAP	PA
9184 - 2,2',4,6-Tetrachlorobiphenyl (BZ-50)	EPA 1668	10129201	NELAP	PA
9185 - 2,2',4-Trichlorobiphenyl (BZ-17)	EPA 1668	10129201	NELAP	PA
8966 - 2,2',5+2,4,6-Trichlorobiphenyl (BZ-18+30)	EPA 1668	10129201	NELAP	PA
8955 - 2,2',5,5'-Tetrachlorobiphenyl (BZ-52)	EPA 1668	10129201	NELAP	PA
9186 - 2,2',5,6'-Tetrachlorobiphenyl (BZ-53)	EPA 1668	10129201	NELAP	PA
8930 - 2,2',5-Trichlorobiphenyl (BZ-18)	EPA 1668	10129201	NELAP	PA
9187 - 2,2',6,6'-Tetrachlorobiphenyl (BZ-54)	EPA 1668	10129201	NELAP	PA
9188 - 2,2',6-Trichlorobiphenyl (BZ-19)	EPA 1668	10129201	NELAP	PA
9189 - 2,2'-Dichlorobiphenyl (BZ-4)	EPA 1668	10129201	NELAP	PA
9224 - 2,3',4',5',6-Pentachlorobiphenyl (BZ-125)	EPA 1668	10129201	NELAP	PA
9229 - 2,3',4',5'-Tetrachlorobiphenyl (BZ-76)	EPA 1668	10129201	NELAP	PA
8964 - 2,3',4',5+2,4,4',5+2,3',4',5'-Tetrachlorobiphenyl (BZ-70+74+76)	EPA 1668	10129201	NELAP	PA
9222 - 2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)	EPA 1668	10129201	NELAP	PA
9230 - 2,3',4',5-Tetrachlorobiphenyl (BZ-70)	EPA 1668	10129201	NELAP	PA
9237 - 2,3',4',6-Tetrachlorobiphenyl (BZ-71)	EPA 1668	10129201	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
9239 - 2,3',4'-Trichlorobiphenyl (BZ-33)	EPA 1668	10129201	NELAP	PA
9218 - 2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)	EPA 1668	10129201	NELAP	PA
9000 - 2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)	EPA 1668	10129201	NELAP	PA
9055 - 2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)	EPA 1668	10129201	NELAP	PA
8995 - 2,3',4,4',5-Pentachlorobiphenyl (BZ-118)	EPA 1668	10129201	NELAP	PA
9220 - 2,3',4,4',6-Pentachlorobiphenyl (BZ-119)	EPA 1668	10129201	NELAP	PA
8960 - 2,3',4,4'-Tetrachlorobiphenyl (BZ-66)	EPA 1668	10129201	NELAP	PA
9226 - 2,3',4,5',6-Pentachlorobiphenyl (BZ-121)	EPA 1668	10129201	NELAP	PA
9231 - 2,3',4,5'-Tetrachlorobiphenyl (BZ-68)	EPA 1668	10129201	NELAP	PA
9223 - 2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)	EPA 1668	10129201	NELAP	PA
9232 - 2,3',4,5-Tetrachlorobiphenyl (BZ-67)	EPA 1668	10129201	NELAP	PA
9235 - 2,3',4,6-Tetrachlorobiphenyl (BZ-69)	EPA 1668	10129201	NELAP	PA
9240 - 2,3',4-Trichlorobiphenyl (BZ-25)	EPA 1668	10129201	NELAP	PA
9244 - 2,3',5',6-Tetrachlorobiphenyl (BZ-73)	EPA 1668	10129201	NELAP	PA
9246 - 2,3',5'-Trichlorobiphenyl (BZ-34)	EPA 1668	10129201	NELAP	PA
8969 - 2,3',5+2,4,5-Trichlorobiphenyl (BZ-26+29)	EPA 1668	10129201	NELAP	PA
9242 - 2,3',5,5'-Tetrachlorobiphenyl (BZ-72)	EPA 1668	10129201	NELAP	PA
8935 - 2,3',5-Trichlorobiphenyl (BZ-26)	EPA 1668	10129201	NELAP	PA
9248 - 2,3',6-Trichlorobiphenyl (BZ-27)	EPA 1668	10129201	NELAP	PA
9249 - 2,3'-Dichlorobiphenyl (BZ-6)	EPA 1668	10129201	NELAP	PA
8967 - 2,3,3'+2,4,4'-Trichlorobiphenyl (BZ-20+28)	EPA 1668	10129201	NELAP	PA
9201 - 2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)	EPA 1668	10129201	NELAP	PA
9202 - 2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)	EPA 1668	10129201	NELAP	PA
8936 - 2,3,3',4',5+2,3',4',5,5'-Pentachlorobiphenyl (BZ-107+124)	EPA 1668	10129201	NELAP	PA
9195 - 2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)	EPA 1668	10129201	NELAP	PA
9197 - 2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)	EPA 1668	10129201	NELAP	PA
9199 - 2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)	EPA 1668	10129201	NELAP	PA
9205 - 2,3,3',4',5-Pentachlorobiphenyl (BZ-107)	EPA 1668	10129201	NELAP	PA
8938 - 2,3,3',4',6+2,3,4,4',6-Pentachlorobiphenyl (BZ-110+115)	EPA 1668	10129201	NELAP	PA
8990 - 2,3,3',4',6-Pentachlorobiphenyl (BZ-110)	EPA 1668	10129201	NELAP	PA
9207 - 2,3,3',4'-Tetrachlorobiphenyl (BZ-56)	EPA 1668	10129201	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
9192 - 2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)	EPA 1668	10129201	NELAP	PA
9045 - 2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)	EPA 1668	10129201	NELAP	PA
8932 - 2,3,3',4,4',5+2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-156+157)	EPA 1668	10129201	NELAP	PA
9190 - 2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)	EPA 1668	10129201	NELAP	PA
9085 - 2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)	EPA 1668	10129201	NELAP	PA
9191 - 2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)	EPA 1668	10129201	NELAP	PA
9050 - 2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)	EPA 1668	10129201	NELAP	PA
9193 - 2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)	EPA 1668	10129201	NELAP	PA
8985 - 2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)	EPA 1668	10129201	NELAP	PA
9200 - 2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)	EPA 1668	10129201	NELAP	PA
9203 - 2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)	EPA 1668	10129201	NELAP	PA
9196 - 2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)	EPA 1668	10129201	NELAP	PA
9198 - 2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)	EPA 1668	10129201	NELAP	PA
9204 - 2,3,3',4,5-Pentachlorobiphenyl (BZ-106)	EPA 1668	10129201	NELAP	PA
9206 - 2,3,3',4,6-Pentachlorobiphenyl (BZ-109)	EPA 1668	10129201	NELAP	PA
9208 - 2,3,3',4-Tetrachlorobiphenyl (BZ-55)	EPA 1668	10129201	NELAP	PA
9212 - 2,3,3',5',6-Pentachlorobiphenyl (BZ-113)	EPA 1668	10129201	NELAP	PA
9213 - 2,3,3',5'-Tetrachlorobiphenyl (BZ-58)	EPA 1668	10129201	NELAP	PA
9209 - 2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)	EPA 1668	10129201	NELAP	PA
9210 - 2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)	EPA 1668	10129201	NELAP	PA
9211 - 2,3,3',5,6-Pentachlorobiphenyl (BZ-112)	EPA 1668	10129201	NELAP	PA
9214 - 2,3,3',5-Tetrachlorobiphenyl (BZ-57)	EPA 1668	10129201	NELAP	PA
8962 - 2,3,3',6+2,3,4,6+2,4,4',6-Tetrachlorobiphenyl (BZ-59+62+75)	EPA 1668	10129201	NELAP	PA
9215 - 2,3,3',6-Tetrachlorobiphenyl (BZ-59)	EPA 1668	10129201	NELAP	PA
9216 - 2,3,3'-Trichlorobiphenyl (BZ-20)	EPA 1668	10129201	NELAP	PA
9227 - 2,3,4',5,6-Pentachlorobiphenyl (BZ-117)	EPA 1668	10129201	NELAP	PA
9233 - 2,3,4',5-Tetrachlorobiphenyl (BZ-63)	EPA 1668	10129201	NELAP	PA
9236 - 2,3,4',6-Tetrachlorobiphenyl (BZ-64)	EPA 1668	10129201	NELAP	PA
9241 - 2,3,4'-Trichlorobiphenyl (BZ-22)	EPA 1668	10129201	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
8968 - 2,3,4+2,3',4'-Trichlorobiphenyl (BZ-21+33)	EPA 1668	10129201	NELAP	PA
9217 - 2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)	EPA 1668	10129201	NELAP	PA
9005 - 2,3,4,4',5-Pentachlorobiphenyl (BZ-114)	EPA 1668	10129201	NELAP	PA
9219 - 2,3,4,4',6-Pentachlorobiphenyl (BZ-115)	EPA 1668	10129201	NELAP	PA
9221 - 2,3,4,4'-Tetrachlorobiphenyl (BZ-60)	EPA 1668	10129201	NELAP	PA
8963 - 2,3,4,5+2,3',4',5+2,4,4',5+2,3',4',5'-Tetrachlorobiphenyls (BZ 61+70+74+76)	EPA 1668	10129201	NELAP	PA
9225 - 2,3,4,5,6-Pentachlorobiphenyl (BZ-116)	EPA 1668	10129201	NELAP	PA
9228 - 2,3,4,5-Tetrachlorobiphenyl (BZ-61)	EPA 1668	10129201	NELAP	PA
9234 - 2,3,4,6-Tetrachlorobiphenyl (BZ-62)	EPA 1668	10129201	NELAP	PA
9238 - 2,3,4-Trichlorobiphenyl (BZ-21)	EPA 1668	10129201	NELAP	PA
9243 - 2,3,5,6-Tetrachlorobiphenyl (BZ-65)	EPA 1668	10129201	NELAP	PA
9245 - 2,3,5-Trichlorobiphenyl (BZ-23)	EPA 1668	10129201	NELAP	PA
9247 - 2,3,6-Trichlorobiphenyl (BZ-24)	EPA 1668	10129201	NELAP	PA
8920 - 2,3-Dichlorobiphenyl (BZ-5)	EPA 1668	10129201	NELAP	PA
8940 - 2,4',5-Trichlorobiphenyl (BZ-31)	EPA 1668	10129201	NELAP	PA
9255 - 2,4',6-Trichlorobiphenyl (BZ-32)	EPA 1668	10129201	NELAP	PA
9256 - 2,4'-Dichlorobiphenyl (BZ-8)	EPA 1668	10129201	NELAP	PA
9250 - 2,4,4',5-Tetrachlorobiphenyl (BZ-74)	EPA 1668	10129201	NELAP	PA
9251 - 2,4,4',6-Tetrachlorobiphenyl (BZ-75)	EPA 1668	10129201	NELAP	PA
9252 - 2,4,4'-Trichlorobiphenyl (BZ-28)	EPA 1668	10129201	NELAP	PA
9253 - 2,4,5-Trichlorobiphenyl (BZ-29)	EPA 1668	10129201	NELAP	PA
9254 - 2,4,6-Trichlorobiphenyl (BZ-30)	EPA 1668	10129201	NELAP	PA
9257 - 2,4-Dichlorobiphenyl (BZ-7)	EPA 1668	10129201	NELAP	PA
9258 - 2,5-Dichlorobiphenyl (BZ-9)	EPA 1668	10129201	NELAP	PA
9259 - 2,6-Dichlorobiphenyl (BZ-10)	EPA 1668	10129201	NELAP	PA
8915 - 2-Chlorobiphenyl (BZ-1)	EPA 1668	10129201	NELAP	PA
9060 - 3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)	EPA 1668	10129201	NELAP	PA
9015 - 3,3',4,4',5-Pentachlorobiphenyl (BZ-126)	EPA 1668	10129201	NELAP	PA
8965 - 3,3',4,4'-Tetrachlorobiphenyl (BZ-77)	EPA 1668	10129201	NELAP	PA
9261 - 3,3',4,5'-Tetrachlorobiphenyl (BZ-79)	EPA 1668	10129201	NELAP	PA
9260 - 3,3',4,5,5'-Pentachlorobiphenyl (BZ-127)	EPA 1668	10129201	NELAP	PA
9262 - 3,3',4,5-Tetrachlorobiphenyl (BZ-78)	EPA 1668	10129201	NELAP	PA
9263 - 3,3',4-Trichlorobiphenyl (BZ-35)	EPA 1668	10129201	NELAP	PA
9264 - 3,3',5,5'-Tetrachlorobiphenyl (BZ-80)	EPA 1668	10129201	NELAP	PA
9265 - 3,3',5-Trichlorobiphenyl (BZ-36)	EPA 1668	10129201	NELAP	PA
8925 - 3,3'-Dichlorobiphenyl (BZ-11)	EPA 1668	10129201	NELAP	PA
9268 - 3,4',5-Trichlorobiphenyl (BZ-39)	EPA 1668	10129201	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
9269 - 3,4'-Dichlorobiphenyl (BZ-13)	EPA 1668	10129201	NELAP	PA
100098 - 3,4+3,4'-Dichlorobiphenyl (BZ-12+13)	EPA 1668	10129201	NELAP	PA
8970 - 3,4,4',5-Tetrachlorobiphenyl (BZ-81)	EPA 1668	10129201	NELAP	PA
9266 - 3,4,4'-Trichlorobiphenyl (BZ-37)	EPA 1668	10129201	NELAP	PA
9267 - 3,4,5-Trichlorobiphenyl (BZ-38)	EPA 1668	10129201	NELAP	PA
9270 - 3,4-Dichlorobiphenyl (BZ-12)	EPA 1668	10129201	NELAP	PA
9271 - 3,5-Dichlorobiphenyl (BZ-14)	EPA 1668	10129201	NELAP	PA
9272 - 3-Chlorobiphenyl (BZ-2)	EPA 1668	10129201	NELAP	PA
100368 - 3-Monochlorobiphenyl (BZ 2)	EPA 1668	10129201	NELAP	PA
9273 - 4,4'-Dichlorobiphenyl (BZ-15)	EPA 1668	10129201	NELAP	PA
9274 - 4-Chlorobiphenyl (BZ-3)	EPA 1668	10129201	NELAP	PA
8954 - 2,2',3,3'+2,3',4',6-Tetrachlorobiphenyl (BZ-40+71)	EPA 1668A	10129405	NELAP	PA
8919 - 2,2',3,3',4,4'+2,3,4,4',5,6-Hexachlorobiphenyl (BZ-128+166)	EPA 1668A	10129405	NELAP	PA
9105 - 2,2',3,3',4,4',5,5',6,6'-Decachlorobiphenyl (BZ-209)	EPA 1668A	10129405	NELAP	PA
9095 - 2,2',3,3',4,4',5,5',6-Nonachlorobiphenyl (BZ-206)	EPA 1668A	10129405	NELAP	PA
9090 - 2,2',3,3',4,4',5,5'-Octachlorobiphenyl (BZ-194)	EPA 1668A	10129405	NELAP	PA
9102 - 2,2',3,3',4,4',5,6'-Octachlorobiphenyl (BZ-196)	EPA 1668A	10129405	NELAP	PA
9101 - 2,2',3,3',4,4',5,6,6'-Nonachlorobiphenyl (BZ-207)	EPA 1668A	10129405	NELAP	PA
9103 - 2,2',3,3',4,4',5,6-Octachlorobiphenyl (BZ-195)	EPA 1668A	10129405	NELAP	PA
9065 - 2,2',3,3',4,4',5-Heptachlorobiphenyl (BZ-170)	EPA 1668A	10129405	NELAP	PA
8916 - 2,2',3,3',4,4',6+2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-171+173)	EPA 1668A	10129405	NELAP	PA
8933 - 2,2',3,3',4,4',6,6'+2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ 197+200)	EPA 1668A	10129405	NELAP	PA
9104 - 2,2',3,3',4,4',6,6'-Octachlorobiphenyl (BZ-197)	EPA 1668A	10129405	NELAP	PA
9106 - 2,2',3,3',4,4',6-Heptachlorobiphenyl (BZ-171)	EPA 1668A	10129405	NELAP	PA
9020 - 2,2',3,3',4,4'-Hexachlorobiphenyl (BZ-128)	EPA 1668A	10129405	NELAP	PA
9114 - 2,2',3,3',4,5',6'-Heptachlorobiphenyl (BZ-177)	EPA 1668A	10129405	NELAP	PA
9112 - 2,2',3,3',4,5',6,6'-Octachlorobiphenyl (BZ-201)	EPA 1668A	10129405	NELAP	PA
9115 - 2,2',3,3',4,5',6-Heptachlorobiphenyl (BZ-175)	EPA 1668A	10129405	NELAP	PA
9117 - 2,2',3,3',4,5'-Hexachlorobiphenyl (BZ-130)	EPA 1668A	10129405	NELAP	PA
8922 - 2,2',3,3',4,5+2,2',3,4,4',5'+2,3,3',4',5,6-Hexachlorobiphenyl (BZ-129+138+163)	EPA 1668A	10129405	NELAP	PA
9108 - 2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-199)	EPA 1668A	10129405	NELAP	PA
8934 - 2,2',3,3',4,5,5',6+2,2',3,3',4,5,5',6'-Octachlorobiphenyl (BZ-198+199)	EPA 1668A	10129405	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
9107 - 2,2',3,3',4,5,5',6,6'-Nonachlorobiphenyl (BZ-208)	EPA 1668A	10129405	NELAP	PA
9109 - 2,2',3,3',4,5,5',6-Octachlorobiphenyl (BZ-198)	EPA 1668A	10129405	NELAP	PA
9110 - 2,2',3,3',4,5,5'-Heptachlorobiphenyl (BZ-172)	EPA 1668A	10129405	NELAP	PA
9116 - 2,2',3,3',4,5,6'-Heptachlorobiphenyl (BZ-174)	EPA 1668A	10129405	NELAP	PA
9111 - 2,2',3,3',4,5,6,6'-Octachlorobiphenyl (BZ-200)	EPA 1668A	10129405	NELAP	PA
9113 - 2,2',3,3',4,5,6-Heptachlorobiphenyl (BZ-173)	EPA 1668A	10129405	NELAP	PA
9118 - 2,2',3,3',4,5-Hexachlorobiphenyl (BZ-129)	EPA 1668A	10129405	NELAP	PA
9120 - 2,2',3,3',4,6'-Hexachlorobiphenyl (BZ-132)	EPA 1668A	10129405	NELAP	PA
9119 - 2,2',3,3',4,6,6'-Heptachlorobiphenyl (BZ-176)	EPA 1668A	10129405	NELAP	PA
9121 - 2,2',3,3',4,6-Hexachlorobiphenyl (BZ-131)	EPA 1668A	10129405	NELAP	PA
9122 - 2,2',3,3',4-Pentachlorobiphenyl (BZ-82)	EPA 1668A	10129405	NELAP	PA
9123 - 2,2',3,3',5,5',6,6'-Octachlorobiphenyl (BZ-202)	EPA 1668A	10129405	NELAP	PA
9124 - 2,2',3,3',5,5',6-Heptachlorobiphenyl (BZ-178)	EPA 1668A	10129405	NELAP	PA
9125 - 2,2',3,3',5,5'-Hexachlorobiphenyl (BZ-133)	EPA 1668A	10129405	NELAP	PA
8926 - 2,2',3,3',5,6'+2,2',3,5,5',6+2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-135+151+154)	EPA 1668A	10129405	NELAP	PA
8927 - 2,2',3,3',5,6'+2,2',3,5,5',6-Hexachlorobiphenyls (BZ 135+151)	EPA 1668A	10129405	NELAP	PA
9127 - 2,2',3,3',5,6'-Hexachlorobiphenyl (BZ-135)	EPA 1668A	10129405	NELAP	PA
9126 - 2,2',3,3',5,6,6'-Heptachlorobiphenyl (BZ-179)	EPA 1668A	10129405	NELAP	PA
9128 - 2,2',3,3',5,6-Hexachlorobiphenyl (BZ-134)	EPA 1668A	10129405	NELAP	PA
9129 - 2,2',3,3',5-Pentachlorobiphenyl (BZ-83)	EPA 1668A	10129405	NELAP	PA
9130 - 2,2',3,3',6,6'-Hexachlorobiphenyl (BZ-136)	EPA 1668A	10129405	NELAP	PA
9131 - 2,2',3,3',6-Pentachlorobiphenyl (BZ-84)	EPA 1668A	10129405	NELAP	PA
9132 - 2,2',3,3'-Tetrachlorobiphenyl (BZ-40)	EPA 1668A	10129405	NELAP	PA
9151 - 2,2',3,4',5',6-Hexachlorobiphenyl (BZ-149)	EPA 1668A	10129405	NELAP	PA
9154 - 2,2',3,4',5'-Pentachlorobiphenyl (BZ-97)	EPA 1668A	10129405	NELAP	PA
8948 - 2,2',3,4',5+2,2',4,5,5'+2,3,3',5',6-Pentachlorobiphenyl (BZ-90+101+113)	EPA 1668A	10129405	NELAP	PA
9080 - 2,2',3,4',5,5',6-Heptachlorobiphenyl (BZ-187)	EPA 1668A	10129405	NELAP	PA
9144 - 2,2',3,4',5,5'-Hexachlorobiphenyl	EPA 1668A	10129405	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
(BZ-146)				
9147 - 2,2',3,4',5,6'-Hexachlorobiphenyl (BZ-148)	EPA 1668A	10129405	NELAP	PA
8929 - 2,2',3,4',5,6+2,2',3,4',5',6-Hexachlorobiphenyl (BZ-147+149)	EPA 1668A	10129405	NELAP	PA
9146 - 2,2',3,4',5,6,6'-Heptachlorobiphenyl (BZ-188)	EPA 1668A	10129405	NELAP	PA
9149 - 2,2',3,4',5,6-Hexachlorobiphenyl (BZ-147)	EPA 1668A	10129405	NELAP	PA
9155 - 2,2',3,4',5-Pentachlorobiphenyl (BZ-90)	EPA 1668A	10129405	NELAP	PA
8951 - 2,2',3,4',6'+2,2',4,5,6'-Pentachlorobiphenyl (BZ-98+102)	EPA 1668A	10129405	NELAP	PA
9159 - 2,2',3,4',6'-Pentachlorobiphenyl (BZ-98)	EPA 1668A	10129405	NELAP	PA
9157 - 2,2',3,4',6,6'-Hexachlorobiphenyl (BZ-150)	EPA 1668A	10129405	NELAP	PA
9160 - 2,2',3,4',6-Pentachlorobiphenyl (BZ-91)	EPA 1668A	10129405	NELAP	PA
9162 - 2,2',3,4'-Tetrachlorobiphenyl (BZ-42)	EPA 1668A	10129405	NELAP	PA
8941 - 2,2',3,4,4'+2,3,4,5,6+2,3,4',5,6-Pentachlorobiphenyl (BZ-85+116+117)	EPA 1668A	10129405	NELAP	PA
8918 - 2,2',3,4,4',5',6+2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-183+185)	EPA 1668A	10129405	NELAP	PA
9075 - 2,2',3,4,4',5',6-Heptachlorobiphenyl (BZ-183)	EPA 1668A	10129405	NELAP	PA
9025 - 2,2',3,4,4',5'-Hexachlorobiphenyl (BZ-138)	EPA 1668A	10129405	NELAP	PA
8917 - 2,2',3,4,4',5,5'+2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-180+193)	EPA 1668A	10129405	NELAP	PA
9133 - 2,2',3,4,4',5,5',6-Octachlorobiphenyl (BZ-203)	EPA 1668A	10129405	NELAP	PA
9134 - 2,2',3,4,4',5,5'-Heptachlorobiphenyl (BZ-180)	EPA 1668A	10129405	NELAP	PA
9136 - 2,2',3,4,4',5,6'-Heptachlorobiphenyl (BZ-182)	EPA 1668A	10129405	NELAP	PA
9135 - 2,2',3,4,4',5,6,6'-Octachlorobiphenyl (BZ-204)	EPA 1668A	10129405	NELAP	PA
9137 - 2,2',3,4,4',5,6-Heptachlorobiphenyl (BZ-181)	EPA 1668A	10129405	NELAP	PA
9138 - 2,2',3,4,4',5-Hexachlorobiphenyl (BZ-137)	EPA 1668A	10129405	NELAP	PA
9140 - 2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-140)	EPA 1668A	10129405	NELAP	PA
8928 - 2,2',3,4,4',6+2,2',3,4,4',6'-Hexachlorobiphenyl (BZ-139+140)	EPA 1668A	10129405	NELAP	PA
9139 - 2,2',3,4,4',6,6'-Heptachlorobiphenyl (BZ-184)	EPA 1668A	10129405	NELAP	PA
9141 - 2,2',3,4,4',6-Hexachlorobiphenyl (BZ-139)	EPA 1668A	10129405	NELAP	PA
9142 - 2,2',3,4,4'-Pentachlorobiphenyl (BZ-85)	EPA 1668A	10129405	NELAP	PA
9150 - 2,2',3,4,5',6-Hexachlorobiphenyl (BZ-144)	EPA 1668A	10129405	NELAP	PA
8975 - 2,2',3,4,5'-Pentachlorobiphenyl	EPA 1668A	10129405	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
(BZ-87)				
8944 - 2,2',3,4,5+2,2',3,4,5'+2,2',3,4',5'+2,2',4,4',6-Pentachlorobiphenyl (BZ-86+87+97+100)	EPA 1668A	10129405	NELAP	PA
8946 - 2,2',3,4,5+2,2',3,4,5'+2,2',3,4',5'+2,3,3',4,5'+2,3',4,4'6+2,3',4',5'6-Pentachlorobiphenyl (BZ 86+87+97+108+119+125)	EPA 1668A	10129405	NELAP	PA
9143 - 2,2',3,4,5,5',6-Heptachlorobiphenyl (BZ-185)	EPA 1668A	10129405	NELAP	PA
9030 - 2,2',3,4,5,5'-Hexachlorobiphenyl (BZ-141)	EPA 1668A	10129405	NELAP	PA
9152 - 2,2',3,4,5,6'-Hexachlorobiphenyl (BZ-143)	EPA 1668A	10129405	NELAP	PA
9145 - 2,2',3,4,5,6,6'-Heptachlorobiphenyl (BZ-186)	EPA 1668A	10129405	NELAP	PA
9148 - 2,2',3,4,5,6-Hexachlorobiphenyl (BZ-142)	EPA 1668A	10129405	NELAP	PA
9153 - 2,2',3,4,5-Pentachlorobiphenyl (BZ-86)	EPA 1668A	10129405	NELAP	PA
9161 - 2,2',3,4,6'-Pentachlorobiphenyl (BZ-89)	EPA 1668A	10129405	NELAP	PA
8947 - 2,2',3,4,6+2,2',3,4',6-Pentachlorobiphenyl (BZ-88+91)	EPA 1668A	10129405	NELAP	PA
9156 - 2,2',3,4,6,6'-Hexachlorobiphenyl (BZ-145)	EPA 1668A	10129405	NELAP	PA
9158 - 2,2',3,4,6-Pentachlorobiphenyl (BZ-88)	EPA 1668A	10129405	NELAP	PA
9163 - 2,2',3,4-Tetrachlorobiphenyl (BZ-41)	EPA 1668A	10129405	NELAP	PA
8957 - 2,2',3,5'+2,2',4,4'+2,3,5,6-Tetrachlorobiphenyl (BZ-44+47+65)	EPA 1668A	10129405	NELAP	PA
9166 - 2,2',3,5',6-Pentachlorobiphenyl (BZ-95)	EPA 1668A	10129405	NELAP	PA
8945 - 2,2',3,5'-Tetrachlorobiphenyl (BZ-44)	EPA 1668A	10129405	NELAP	PA
8956 - 2,2',3,5+2,3',5',6-Tetrachlorobiphenyl (BZ-43+73)	EPA 1668A	10129405	NELAP	PA
9035 - 2,2',3,5,5',6-Hexachlorobiphenyl (BZ-151)	EPA 1668A	10129405	NELAP	PA
9164 - 2,2',3,5,5'-Pentachlorobiphenyl (BZ-92)	EPA 1668A	10129405	NELAP	PA
9167 - 2,2',3,5,6'-Pentachlorobiphenyl (BZ-94)	EPA 1668A	10129405	NELAP	PA
8949 - 2,2',3,5,6+2,2',4,4',6-Pentachlorobiphenyl (BZ-93+100)	EPA 1668A	10129405	NELAP	PA
9165 - 2,2',3,5,6,6'-Hexachlorobiphenyl (BZ-152)	EPA 1668A	10129405	NELAP	PA
9168 - 2,2',3,5,6-Pentachlorobiphenyl (BZ-93)	EPA 1668A	10129405	NELAP	PA
9169 - 2,2',3,5-Tetrachlorobiphenyl (BZ-43)	EPA 1668A	10129405	NELAP	PA
9171 - 2,2',3,6'-Tetrachlorobiphenyl (BZ-46)	EPA 1668A	10129405	NELAP	PA
8958 - 2,2',3,6+2,2',4,6'-Tetrachlorobiphenyls (BZ 45 + 51)	EPA 1668A	10129405	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
9170 - 2,2',3,6,6'-Pentachlorobiphenyl (BZ-96)	EPA 1668A	10129405	NELAP	PA
9172 - 2,2',3,6-Tetrachlorobiphenyl (BZ-45)	EPA 1668A	10129405	NELAP	PA
9173 - 2,2',3-Trichlorobiphenyl (BZ-16)	EPA 1668A	10129405	NELAP	PA
8931 - 2,2',4,4',5,5'+2,3',4,4',5',6-Hexachlorobiphenyl (BZ-153+168)	EPA 1668A	10129405	NELAP	PA
9040 - 2,2',4,4',5,5'-Hexachlorobiphenyl (BZ-153)	EPA 1668A	10129405	NELAP	PA
9174 - 2,2',4,4',5,6'-Hexachlorobiphenyl (BZ-154)	EPA 1668A	10129405	NELAP	PA
9175 - 2,2',4,4',5-Pentachlorobiphenyl (BZ-99)	EPA 1668A	10129405	NELAP	PA
9176 - 2,2',4,4',6,6'-Hexachlorobiphenyl (BZ-155)	EPA 1668A	10129405	NELAP	PA
9177 - 2,2',4,4',6-Pentachlorobiphenyl (BZ-100)	EPA 1668A	10129405	NELAP	PA
9178 - 2,2',4,4'-Tetrachlorobiphenyl (BZ-47)	EPA 1668A	10129405	NELAP	PA
8959 - 2,2',4,5'+2,3',4,6-Tetrachlorobiphenyl (BZ-49+69)	EPA 1668A	10129405	NELAP	PA
9179 - 2,2',4,5',6-Pentachlorobiphenyl (BZ-103)	EPA 1668A	10129405	NELAP	PA
8950 - 2,2',4,5'-Tetrachlorobiphenyl (BZ-49)	EPA 1668A	10129405	NELAP	PA
8980 - 2,2',4,5,5'-Pentachlorobiphenyl (BZ-101)	EPA 1668A	10129405	NELAP	PA
9180 - 2,2',4,5,6'-Pentachlorobiphenyl (BZ-102)	EPA 1668A	10129405	NELAP	PA
9181 - 2,2',4,5-Tetrachlorobiphenyl (BZ-48)	EPA 1668A	10129405	NELAP	PA
9183 - 2,2',4,6'-Tetrachlorobiphenyl (BZ-51)	EPA 1668A	10129405	NELAP	PA
8961 - 2,2',4,6+2,2',5,6'-Tetrachlorobiphenyl (BZ-50+53)	EPA 1668A	10129405	NELAP	PA
9182 - 2,2',4,6,6'-Pentachlorobiphenyl (BZ-104)	EPA 1668A	10129405	NELAP	PA
9184 - 2,2',4,6-Tetrachlorobiphenyl (BZ-50)	EPA 1668A	10129405	NELAP	PA
9185 - 2,2',4-Trichlorobiphenyl (BZ-17)	EPA 1668A	10129405	NELAP	PA
8966 - 2,2',5+2,4,6-Trichlorobiphenyl (BZ-18+30)	EPA 1668A	10129405	NELAP	PA
8955 - 2,2',5,5'-Tetrachlorobiphenyl (BZ-52)	EPA 1668A	10129405	NELAP	PA
9186 - 2,2',5,6'-Tetrachlorobiphenyl (BZ-53)	EPA 1668A	10129405	NELAP	PA
8930 - 2,2',5-Trichlorobiphenyl (BZ-18)	EPA 1668A	10129405	NELAP	PA
9187 - 2,2',6,6'-Tetrachlorobiphenyl (BZ-54)	EPA 1668A	10129405	NELAP	PA
9188 - 2,2',6-Trichlorobiphenyl (BZ-19)	EPA 1668A	10129405	NELAP	PA
9189 - 2,2'-Dichlorobiphenyl (BZ-4)	EPA 1668A	10129405	NELAP	PA
9224 - 2,3',4',5',6-Pentachlorobiphenyl (BZ-125)	EPA 1668A	10129405	NELAP	PA
9229 - 2,3',4',5'-Tetrachlorobiphenyl (BZ-76)	EPA 1668A	10129405	NELAP	PA
8964 - 2,3',4',5+2,4,4',5+2,3',4',5'-	EPA 1668A	10129405	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
Tetrachlorobiphenyl (BZ-70+74+76)				
9222 - 2,3',4',5,5'-Pentachlorobiphenyl (BZ-124)	EPA 1668A	10129405	NELAP	PA
9230 - 2,3',4',5-Tetrachlorobiphenyl (BZ-70)	EPA 1668A	10129405	NELAP	PA
9237 - 2,3',4',6-Tetrachlorobiphenyl (BZ-71)	EPA 1668A	10129405	NELAP	PA
9239 - 2,3',4'-Trichlorobiphenyl (BZ-33)	EPA 1668A	10129405	NELAP	PA
9218 - 2,3',4,4',5',6-Hexachlorobiphenyl (BZ-168)	EPA 1668A	10129405	NELAP	PA
9000 - 2,3',4,4',5'-Pentachlorobiphenyl (BZ-123)	EPA 1668A	10129405	NELAP	PA
9055 - 2,3',4,4',5,5'-Hexachlorobiphenyl (BZ-167)	EPA 1668A	10129405	NELAP	PA
8995 - 2,3',4,4',5-Pentachlorobiphenyl (BZ-118)	EPA 1668A	10129405	NELAP	PA
9220 - 2,3',4,4',6-Pentachlorobiphenyl (BZ-119)	EPA 1668A	10129405	NELAP	PA
8960 - 2,3',4,4'-Tetrachlorobiphenyl (BZ-66)	EPA 1668A	10129405	NELAP	PA
9226 - 2,3',4,5',6-Pentachlorobiphenyl (BZ-121)	EPA 1668A	10129405	NELAP	PA
9231 - 2,3',4,5'-Tetrachlorobiphenyl (BZ-68)	EPA 1668A	10129405	NELAP	PA
9223 - 2,3',4,5,5'-Pentachlorobiphenyl (BZ-120)	EPA 1668A	10129405	NELAP	PA
9232 - 2,3',4,5-Tetrachlorobiphenyl (BZ-67)	EPA 1668A	10129405	NELAP	PA
9235 - 2,3',4,6-Tetrachlorobiphenyl (BZ-69)	EPA 1668A	10129405	NELAP	PA
9240 - 2,3',4-Trichlorobiphenyl (BZ-25)	EPA 1668A	10129405	NELAP	PA
9244 - 2,3',5',6-Tetrachlorobiphenyl (BZ-73)	EPA 1668A	10129405	NELAP	PA
9246 - 2,3',5'-Trichlorobiphenyl (BZ-34)	EPA 1668A	10129405	NELAP	PA
8969 - 2,3',5+2,4,5-Trichlorobiphenyl (BZ-26+29)	EPA 1668A	10129405	NELAP	PA
9242 - 2,3',5,5'-Tetrachlorobiphenyl (BZ-72)	EPA 1668A	10129405	NELAP	PA
8935 - 2,3',5-Trichlorobiphenyl (BZ-26)	EPA 1668A	10129405	NELAP	PA
9248 - 2,3',6-Trichlorobiphenyl (BZ-27)	EPA 1668A	10129405	NELAP	PA
9249 - 2,3'-Dichlorobiphenyl (BZ-6)	EPA 1668A	10129405	NELAP	PA
8967 - 2,3,3'+2,4,4'-Trichlorobiphenyl (BZ-20+28)	EPA 1668A	10129405	NELAP	PA
9201 - 2,3,3',4',5',6-Hexachlorobiphenyl (BZ-164)	EPA 1668A	10129405	NELAP	PA
9202 - 2,3,3',4',5'-Pentachlorobiphenyl (BZ-122)	EPA 1668A	10129405	NELAP	PA
8936 - 2,3,3',4',5+2,3',4',5,5'-Pentachlorobiphenyl (BZ-107+124)	EPA 1668A	10129405	NELAP	PA
9195 - 2,3,3',4',5,5',6-Heptachlorobiphenyl (BZ-193)	EPA 1668A	10129405	NELAP	PA
9197 - 2,3,3',4',5,5'-Hexachlorobiphenyl (BZ-162)	EPA 1668A	10129405	NELAP	PA
9199 - 2,3,3',4',5,6-Hexachlorobiphenyl (BZ-163)	EPA 1668A	10129405	NELAP	PA
9205 - 2,3,3',4',5-Pentachlorobiphenyl	EPA 1668A	10129405	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
(BZ-107)				
8938 - 2,3,3',4',6+2,3,4,4',6-Pentachlorobiphenyl (BZ-110+115)	EPA 1668A	10129405	NELAP	PA
8990 - 2,3,3',4',6-Pentachlorobiphenyl (BZ-110)	EPA 1668A	10129405	NELAP	PA
9207 - 2,3,3',4'-Tetrachlorobiphenyl (BZ-56)	EPA 1668A	10129405	NELAP	PA
9192 - 2,3,3',4,4',5',6-Heptachlorobiphenyl (BZ-191)	EPA 1668A	10129405	NELAP	PA
9045 - 2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-157)	EPA 1668A	10129405	NELAP	PA
8932 - 2,3,3',4,4',5+2,3,3',4,4',5'-Hexachlorobiphenyl (BZ-156+157)	EPA 1668A	10129405	NELAP	PA
9190 - 2,3,3',4,4',5,5',6-Octachlorobiphenyl (BZ-205)	EPA 1668A	10129405	NELAP	PA
9085 - 2,3,3',4,4',5,5'-Heptachlorobiphenyl (BZ-189)	EPA 1668A	10129405	NELAP	PA
9191 - 2,3,3',4,4',5,6-Heptachlorobiphenyl (BZ-190)	EPA 1668A	10129405	NELAP	PA
9050 - 2,3,3',4,4',5-Hexachlorobiphenyl (BZ-156)	EPA 1668A	10129405	NELAP	PA
9193 - 2,3,3',4,4',6-Hexachlorobiphenyl (BZ-158)	EPA 1668A	10129405	NELAP	PA
8985 - 2,3,3',4,4'-Pentachlorobiphenyl (BZ-105)	EPA 1668A	10129405	NELAP	PA
9200 - 2,3,3',4,5',6-Hexachlorobiphenyl (BZ-161)	EPA 1668A	10129405	NELAP	PA
9203 - 2,3,3',4,5'-Pentachlorobiphenyl (BZ-108)	EPA 1668A	10129405	NELAP	PA
9194 - 2,3,3',4,5,5',6-Heptachlorobiphenyl (BZ-192)	EPA 1668A	10129405	NELAP	PA
9196 - 2,3,3',4,5,5'-Hexachlorobiphenyl (BZ-159)	EPA 1668A	10129405	NELAP	PA
9198 - 2,3,3',4,5,6-Hexachlorobiphenyl (BZ-160)	EPA 1668A	10129405	NELAP	PA
9204 - 2,3,3',4,5-Pentachlorobiphenyl (BZ-106)	EPA 1668A	10129405	NELAP	PA
9206 - 2,3,3',4,6-Pentachlorobiphenyl (BZ-109)	EPA 1668A	10129405	NELAP	PA
9208 - 2,3,3',4-Tetrachlorobiphenyl (BZ-55)	EPA 1668A	10129405	NELAP	PA
9212 - 2,3,3',5',6-Pentachlorobiphenyl (BZ-113)	EPA 1668A	10129405	NELAP	PA
9213 - 2,3,3',5'-Tetrachlorobiphenyl (BZ-58)	EPA 1668A	10129405	NELAP	PA
9209 - 2,3,3',5,5',6-Hexachlorobiphenyl (BZ-165)	EPA 1668A	10129405	NELAP	PA
9210 - 2,3,3',5,5'-Pentachlorobiphenyl (BZ-111)	EPA 1668A	10129405	NELAP	PA
9211 - 2,3,3',5,6-Pentachlorobiphenyl (BZ-112)	EPA 1668A	10129405	NELAP	PA
9214 - 2,3,3',5-Tetrachlorobiphenyl (BZ-57)	EPA 1668A	10129405	NELAP	PA
8962 - 2,3,3',6+2,3,4,6+2,4,4',6-Tetrachlorobiphenyl (BZ-59+62+75)	EPA 1668A	10129405	NELAP	PA
9215 - 2,3,3',6-Tetrachlorobiphenyl (BZ-	EPA 1668A	10129405	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
59)				
9216 - 2,3,3'-Trichlorobiphenyl (BZ-20)	EPA 1668A	10129405	NELAP	PA
9227 - 2,3,4',5,6-Pentachlorobiphenyl (BZ-117)	EPA 1668A	10129405	NELAP	PA
9233 - 2,3,4',5-Tetrachlorobiphenyl (BZ-63)	EPA 1668A	10129405	NELAP	PA
9236 - 2,3,4',6-Tetrachlorobiphenyl (BZ-64)	EPA 1668A	10129405	NELAP	PA
9241 - 2,3,4'-Trichlorobiphenyl (BZ-22)	EPA 1668A	10129405	NELAP	PA
8968 - 2,3,4+2,3',4'-Trichlorobiphenyl (BZ-21+33)	EPA 1668A	10129405	NELAP	PA
9217 - 2,3,4,4',5,6-Hexachlorobiphenyl (BZ-166)	EPA 1668A	10129405	NELAP	PA
9005 - 2,3,4,4',5-Pentachlorobiphenyl (BZ-114)	EPA 1668A	10129405	NELAP	PA
9219 - 2,3,4,4',6-Pentachlorobiphenyl (BZ-115)	EPA 1668A	10129405	NELAP	PA
9221 - 2,3,4,4'-Tetrachlorobiphenyl (BZ-60)	EPA 1668A	10129405	NELAP	PA
8963 - 2,3,4,5+2,3',4',5+2,4,4',5+2,3',4',5'-Tetrachlorobiphenyls (BZ 61+70+74+76)	EPA 1668A	10129405	NELAP	PA
9225 - 2,3,4,5,6-Pentachlorobiphenyl (BZ-116)	EPA 1668A	10129405	NELAP	PA
9228 - 2,3,4,5-Tetrachlorobiphenyl (BZ-61)	EPA 1668A	10129405	NELAP	PA
9234 - 2,3,4,6-Tetrachlorobiphenyl (BZ-62)	EPA 1668A	10129405	NELAP	PA
9238 - 2,3,4-Trichlorobiphenyl (BZ-21)	EPA 1668A	10129405	NELAP	PA
9243 - 2,3,5,6-Tetrachlorobiphenyl (BZ-65)	EPA 1668A	10129405	NELAP	PA
9245 - 2,3,5-Trichlorobiphenyl (BZ-23)	EPA 1668A	10129405	NELAP	PA
9247 - 2,3,6-Trichlorobiphenyl (BZ-24)	EPA 1668A	10129405	NELAP	PA
8920 - 2,3-Dichlorobiphenyl (BZ-5)	EPA 1668A	10129405	NELAP	PA
8940 - 2,4',5-Trichlorobiphenyl (BZ-31)	EPA 1668A	10129405	NELAP	PA
9255 - 2,4',6-Trichlorobiphenyl (BZ-32)	EPA 1668A	10129405	NELAP	PA
9256 - 2,4'-Dichlorobiphenyl (BZ-8)	EPA 1668A	10129405	NELAP	PA
9250 - 2,4,4',5-Tetrachlorobiphenyl (BZ-74)	EPA 1668A	10129405	NELAP	PA
9251 - 2,4,4',6-Tetrachlorobiphenyl (BZ-75)	EPA 1668A	10129405	NELAP	PA
9252 - 2,4,4'-Trichlorobiphenyl (BZ-28)	EPA 1668A	10129405	NELAP	PA
9253 - 2,4,5-Tricblorobiphenyl (BZ-29)	EPA 1668A	10129405	NELAP	PA
9254 - 2,4,6-Trichlorobiphenyl (BZ-30)	EPA 1668A	10129405	NELAP	PA
9257 - 2,4-Dichlorobiphenyl (BZ-7)	EPA 1668A	10129405	NELAP	PA
9258 - 2,5-Dichlorobiphenyl (BZ-9)	EPA 1668A	10129405	NELAP	PA
9259 - 2,6-Dichlorobiphenyl (BZ-10)	EPA 1668A	10129405	NELAP	PA
8915 - 2-Chlorobiphenyl (BZ-1)	EPA 1668A	10129405	NELAP	PA
9060 - 3,3',4,4',5,5'-Hexachlorobiphenyl (BZ-169)	EPA 1668A	10129405	NELAP	PA
9015 - 3,3',4,4',5-Pentachlorobiphenyl (BZ-126)	EPA 1668A	10129405	NELAP	PA
8965 - 3,3',4,4'-Tetrachlorobiphenyl (BZ-77)	EPA 1668A	10129405	NELAP	PA
9261 - 3,3',4,5'-Tetrachlorobiphenyl (BZ-79)	EPA 1668A	10129405	NELAP	PA
9260 - 3,3',4,5,5'-Pentachlorobiphenyl	EPA 1668A	10129405	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
(BZ-127)				
9262 - 3,3',4,5-Tetrachlorobiphenyl (BZ-78)	EPA 1668A	10129405	NELAP	PA
9263 - 3,3',4-Trichlorobiphenyl (BZ-35)	EPA 1668A	10129405	NELAP	PA
9264 - 3,3',5,5'-Tetrachlorobiphenyl (BZ-80)	EPA 1668A	10129405	NELAP	PA
9265 - 3,3',5-Trichlorobiphenyl (BZ-36)	EPA 1668A	10129405	NELAP	PA
8925 - 3,3'-Dichlorobiphenyl (BZ-11)	EPA 1668A	10129405	NELAP	PA
9268 - 3,4',5-Trichlorobiphenyl (BZ-39)	EPA 1668A	10129405	NELAP	PA
9269 - 3,4'-Dichlorobiphenyl (BZ-13)	EPA 1668A	10129405	NELAP	PA
100098 - 3,4+3,4'-Dichlorobiphenyl (BZ-12+13)	EPA 1668A	10129405	NELAP	PA
8970 - 3,4,4',5-Tetrachlorobiphenyl (BZ-81)	EPA 1668A	10129405	NELAP	PA
9266 - 3,4,4'-Trichlorobiphenyl (BZ-37)	EPA 1668A	10129405	NELAP	PA
9267 - 3,4,5-Trichlorobiphenyl (BZ-38)	EPA 1668A	10129405	NELAP	PA
9270 - 3,4-Dichlorobiphenyl (BZ-12)	EPA 1668A	10129405	NELAP	PA
9271 - 3,5-Dichlorobiphenyl (BZ-14)	EPA 1668A	10129405	NELAP	PA
9272 - 3-Chlorobiphenyl (BZ-2)	EPA 1668A	10129405	NELAP	PA
9273 - 4,4'-Dichlorobiphenyl (BZ-15)	EPA 1668A	10129405	NELAP	PA
9274 - 4-Chlorobiphenyl (BZ-3)	EPA 1668A	10129405	NELAP	PA
8872 - PCB Aroclor Identification	EPA 1668A	10129405	NELAP	PA
8870 - PCBs	EPA 1668A	10129405	NELAP	PA
8875 - PCBs, as congeners	EPA 1668A	10129405	NELAP	PA
8876 - Total Dichlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8877 - Total Heptachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8888 - Total Hexachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8889 - Total Monochlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8891 - Total Nonachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8892 - Total Octachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8896 - Total Pentachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8893 - Total Tetrachlorobiphenyls	EPA 1668A	10129405	NELAP	PA
8894 - Total Trichlorobiphenyls	EPA 1668A	10129405	NELAP	PA
100007 - Acid Digestion of Sediments, Sludges, and soils	EPA 3050B	10135601	NELAP	PA
1402 - Alkaline Digestion for Hexavalent Chromium	EPA 3060A	10136604	NELAP	PA
1444 - Separatory Funnel Liquid-liquid extraction	EPA 3510C	10138202	NELAP	PA
1452 - Soxhlet Extraction	EPA 3540C	10140202	NELAP	PA
1428 - Microwave Extraction	EPA 3546	10141205	NELAP	PA
1468 - Ultrasonic Extraction	EPA 3550C	10142004	NELAP	PA
1456 - Sulfur Clean-Up	EPA 3660B	10148400	NELAP	PA
2020 - Sulfuric acid/permanganate clean-up	EPA 3665	10148604	NELAP	PA
2020 - Sulfuric acid/permanganate clean-up	EPA 3665A	10148808	NELAP	PA
100017 - Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples	EPA 5030	10153001	NELAP	PA
1406 - Purge and trap for aqueous phase samples	EPA 5030	10153001	NELAP	PA
100017 - Closed-System Purge-and-Trap and Extraction for Volatile Organics in Soil and Waste Samples	EPA 5035	10154004	NELAP	PA
1145 - Silicon	EPA 6010	10155201	NELAP	PA
1000 - Aluminum	EPA 6010B	10155609	NELAP	PA
1005 - Antimony	EPA 6010B	10155609	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
1010 - Arsenic	EPA 6010B	10155609	NELAP	PA
1015 - Barium	EPA 6010B	10155609	NELAP	PA
1020 - Beryllium	EPA 6010B	10155609	NELAP	PA
1025 - Boron	EPA 6010B	10155609	NELAP	PA
1030 - Cadmium	EPA 6010B	10155609	NELAP	PA
1035 - Calcium	EPA 6010B	10155609	NELAP	PA
1040 - Chromium	EPA 6010B	10155609	NELAP	PA
1050 - Cobalt	EPA 6010B	10155609	NELAP	PA
1055 - Copper	EPA 6010B	10155609	NELAP	PA
1070 - Iron	EPA 6010B	10155609	NELAP	PA
1075 - Lead	EPA 6010B	10155609	NELAP	PA
1080 - Lithium	EPA 6010B	10155609	NELAP	PA
1085 - Magnesium	EPA 6010B	10155609	NELAP	PA
1090 - Manganese	EPA 6010B	10155609	NELAP	PA
1100 - Molybdenum	EPA 6010B	10155609	NELAP	PA
1105 - Nickel	EPA 6010B	10155609	NELAP	PA
1125 - Potassium	EPA 6010B	10155609	NELAP	PA
1140 - Selenium	EPA 6010B	10155609	NELAP	PA
1150 - Silver	EPA 6010B	10155609	NELAP	PA
1155 - Sodium	EPA 6010B	10155609	NELAP	PA
1160 - Strontium	EPA 6010B	10155609	NELAP	PA
1165 - Thallium	EPA 6010B	10155609	NELAP	PA
1175 - Tin	EPA 6010B	10155609	NELAP	PA
1180 - Titanium	EPA 6010B	10155609	NELAP	PA
1185 - Vanadium	EPA 6010B	10155609	NELAP	PA
1190 - Zinc	EPA 6010B	10155609	NELAP	PA
1000 - Aluminum	EPA 6010C	10155803	NELAP	PA
1005 - Antimony	EPA 6010C	10155803	NELAP	PA
1010 - Arsenic	EPA 6010C	10155803	NELAP	PA
1015 - Barium	EPA 6010C	10155803	NELAP	PA
1020 - Beryllium	EPA 6010C	10155803	NELAP	PA
1025 - Boron	EPA 6010C	10155803	NELAP	PA
1030 - Cadmium	EPA 6010C	10155803	NELAP	PA
1035 - Calcium	EPA 6010C	10155803	NELAP	PA
1040 - Chromium	EPA 6010C	10155803	NELAP	PA
1050 - Cobalt	EPA 6010C	10155803	NELAP	PA
1055 - Copper	EPA 6010C	10155803	NELAP	PA
1070 - Iron	EPA 6010C	10155803	NELAP	PA
1075 - Lead	EPA 6010C	10155803	NELAP	PA
1080 - Lithium	EPA 6010C	10155803	NELAP	PA
1085 - Magnesium	EPA 6010C	10155803	NELAP	PA
1090 - Manganese	EPA 6010C	10155803	NELAP	PA
1100 - Molybdenum	EPA 6010C	10155803	NELAP	PA
1105 - Nickel	EPA 6010C	10155803	NELAP	PA
1125 - Potassium	EPA 6010C	10155803	NELAP	PA
1140 - Selenium	EPA 6010C	10155803	NELAP	PA
1150 - Silver	EPA 6010C	10155803	NELAP	PA
1155 - Sodium	EPA 6010C	10155803	NELAP	PA
1160 - Strontium	EPA 6010C	10155803	NELAP	PA
2017 - Sulfur	EPA 6010C	10155803	NELAP	PA
1165 - Thallium	EPA 6010C	10155803	NELAP	PA
1175 - Tin	EPA 6010C	10155803	NELAP	PA
1180 - Titanium	EPA 6010C	10155803	NELAP	PA
1185 - Vanadium	EPA 6010C	10155803	NELAP	PA
1190 - Zinc	EPA 6010C	10155803	NELAP	PA
1000 - Aluminum	EPA 6020	10156000	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
1005 - Antimony	EPA 6020	10156000	NELAP	PA
1010 - Arsenic	EPA 6020	10156000	NELAP	PA
1015 - Barium	EPA 6020	10156000	NELAP	PA
1020 - Beryllium	EPA 6020	10156000	NELAP	PA
1030 - Cadmium	EPA 6020	10156000	NELAP	PA
1035 - Calcium	EPA 6020	10156000	NELAP	PA
1040 - Chromium	EPA 6020	10156000	NELAP	PA
1050 - Cobalt	EPA 6020	10156000	NELAP	PA
1055 - Copper	EPA 6020	10156000	NELAP	PA
1070 - Iron	EPA 6020	10156000	NELAP	PA
1075 - Lead	EPA 6020	10156000	NELAP	PA
1085 - Magnesium	EPA 6020	10156000	NELAP	PA
1090 - Manganese	EPA 6020	10156000	NELAP	PA
1100 - Molybdenum	EPA 6020	10156000	NELAP	PA
1105 - Nickel	EPA 6020	10156000	NELAP	PA
1125 - Potassium	EPA 6020	10156000	NELAP	PA
1140 - Selenium	EPA 6020	10156000	NELAP	PA
1150 - Silver	EPA 6020	10156000	NELAP	PA
1155 - Sodium	EPA 6020	10156000	NELAP	PA
1160 - Strontium	EPA 6020	10156000	NELAP	PA
1165 - Thallium	EPA 6020	10156000	NELAP	PA
1175 - Tin	EPA 6020	10156000	NELAP	PA
1185 - Vanadium	EPA 6020	10156000	NELAP	PA
1190 - Zinc	EPA 6020	10156000	NELAP	PA
1155 - Sodium	EPA 6020	10156204	NELAP	PA
1000 - Aluminum	EPA 6020A	10156408	NELAP	PA
1005 - Antimony	EPA 6020A	10156408	NELAP	PA
1010 - Arsenic	EPA 6020A	10156408	NELAP	PA
1015 - Barium	EPA 6020A	10156408	NELAP	PA
1020 - Beryllium	EPA 6020A	10156408	NELAP	PA
1030 - Cadmium	EPA 6020A	10156408	NELAP	PA
1035 - Calcium	EPA 6020A	10156408	NELAP	PA
1040 - Chromium	EPA 6020A	10156408	NELAP	PA
1050 - Cobalt	EPA 6020A	10156408	NELAP	PA
1055 - Copper	EPA 6020A	10156408	NELAP	PA
1070 - Iron	EPA 6020A	10156408	NELAP	PA
1075 - Lead	EPA 6020A	10156408	NELAP	PA
1085 - Magnesium	EPA 6020A	10156408	NELAP	PA
1090 - Manganese	EPA 6020A	10156408	NELAP	PA
1100 - Molybdenum	EPA 6020A	10156408	NELAP	PA
1105 - Nickel	EPA 6020A	10156408	NELAP	PA
1125 - Potassium	EPA 6020A	10156408	NELAP	PA
1140 - Selenium	EPA 6020A	10156408	NELAP	PA
1150 - Silver	EPA 6020A	10156408	NELAP	PA
1155 - Sodium	EPA 6020A	10156408	NELAP	PA
1160 - Strontium	EPA 6020A	10156408	NELAP	PA
1165 - Thallium	EPA 6020A	10156408	NELAP	PA
1175 - Tin	EPA 6020A	10156408	NELAP	PA
1180 - Titanium	EPA 6020A	10156408	NELAP	PA
1185 - Vanadium	EPA 6020A	10156408	NELAP	PA
1190 - Zinc	EPA 6020A	10156408	NELAP	PA
1045 - Chromium VI	EPA 7196A	10162400	NELAP	PA
1045 - Chromium VI	EPA 7199	10163005	NELAP	PA
1095 - Mercury	EPA 7471A	10166208	NELAP	PA
1095 - Mercury	EPA 7471B	10166402	NELAP	PA
9369 - Diesel range organics (DRO)	EPA 8015B	10173601	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
4750 - Ethanol	EPA 8015B	10173601	NELAP	PA
4785 - Ethylene glycol	EPA 8015B	10173601	NELAP	PA
9408 - Gasoline range organics (GRO)	EPA 8015B	10173601	NELAP	PA
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8015B	10173601	NELAP	PA
4930 - Methanol	EPA 8015B	10173601	NELAP	PA
9369 - Diesel range organics (DRO)	EPA 8015C	10173805	NELAP	PA
4750 - Ethanol	EPA 8015C	10173805	NELAP	PA
4785 - Ethylene glycol	EPA 8015C	10173805	NELAP	PA
9408 - Gasoline range organics (GRO)	EPA 8015C	10173805	NELAP	PA
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8015C	10173805	NELAP	PA
4930 - Methanol	EPA 8015C	10173805	NELAP	PA
4375 - Benzene	EPA 8021B	10174808	NELAP	PA
4765 - Ethylbenzene	EPA 8021B	10174808	NELAP	PA
4900 - Isopropylbenzene	EPA 8021B	10174808	NELAP	PA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8021B	10174808	NELAP	PA
5005 - Naphthalene	EPA 8021B	10174808	NELAP	PA
5140 - Toluene	EPA 8021B	10174808	NELAP	PA
5260 - Xylene (total)	EPA 8021B	10174808	NELAP	PA
5245 - m-Xylene	EPA 8021B	10174808	NELAP	PA
5250 - o-Xylene	EPA 8021B	10174808	NELAP	PA
5255 - p-Xylene	EPA 8021B	10174808	NELAP	PA
7355 - 4,4'-DDD	EPA 8081A	10178606	NELAP	PA
7360 - 4,4'-DDE	EPA 8081A	10178606	NELAP	PA
7365 - 4,4'-DDT	EPA 8081A	10178606	NELAP	PA
7025 - Aldrin	EPA 8081A	10178606	NELAP	PA
7250 - Chlordane (tech.)	EPA 8081A	10178606	NELAP	PA
7470 - Dieldrin	EPA 8081A	10178606	NELAP	PA
7510 - Endosulfan I	EPA 8081A	10178606	NELAP	PA
7515 - Endosulfan II	EPA 8081A	10178606	NELAP	PA
7520 - Endosulfan sulfate	EPA 8081A	10178606	NELAP	PA
7540 - Endrin	EPA 8081A	10178606	NELAP	PA
7530 - Endrin aldehyde	EPA 8081A	10178606	NELAP	PA
7535 - Endrin ketone	EPA 8081A	10178606	NELAP	PA
7685 - Heptachlor	EPA 8081A	10178606	NELAP	PA
7690 - Heptachlor epoxide	EPA 8081A	10178606	NELAP	PA
7740 - Kepone	EPA 8081A	10178606	NELAP	PA
7810 - Methoxychlor	EPA 8081A	10178606	NELAP	PA
7870 - Mirex	EPA 8081A	10178606	NELAP	PA
8250 - Toxaphene (Chlorinated camphene)	EPA 8081A	10178606	NELAP	PA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081A	10178606	NELAP	PA
7240 - alpha-Chlordane	EPA 8081A	10178606	NELAP	PA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081A	10178606	NELAP	PA
7105 - delta-BHC	EPA 8081A	10178606	NELAP	PA
7120 - gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	EPA 8081A	10178606	NELAP	PA
7245 - gamma-Chlordane	EPA 8081A	10178606	NELAP	PA
7355 - 4,4'-DDD	EPA 8081B	10178800	NELAP	PA
7360 - 4,4'-DDE	EPA 8081B	10178800	NELAP	PA
7365 - 4,4'-DDT	EPA 8081B	10178800	NELAP	PA
7025 - Aldrin	EPA 8081B	10178800	NELAP	PA
7250 - Chlordane (tech.)	EPA 8081B	10178800	NELAP	PA
7470 - Dieldrin	EPA 8081B	10178800	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
7510 - Endosulfan I	EPA 8081B	10178800	NELAP	PA
7515 - Endosulfan II	EPA 8081B	10178800	NELAP	PA
7520 - Endosulfan sulfate	EPA 8081B	10178800	NELAP	PA
7540 - Endrin	EPA 8081B	10178800	NELAP	PA
7530 - Endrin aldehyde	EPA 8081B	10178800	NELAP	PA
7535 - Endrin ketone	EPA 8081B	10178800	NELAP	PA
7685 - Heptachlor	EPA 8081B	10178800	NELAP	PA
7690 - Heptachlor epoxide	EPA 8081B	10178800	NELAP	PA
7740 - Kepone	EPA 8081B	10178800	NELAP	PA
7810 - Methoxychlor	EPA 8081B	10178800	NELAP	PA
7870 - Mirex	EPA 8081B	10178800	NELAP	PA
8250 - Toxaphene (Chlorinated camphene)	EPA 8081B	10178800	NELAP	PA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	PA
7240 - alpha-Chlordane	EPA 8081B	10178800	NELAP	PA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081B	10178800	NELAP	PA
7105 - delta-BHC	EPA 8081B	10178800	NELAP	PA
7120 - gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	EPA 8081B	10178800	NELAP	PA
7245 - gamma-Chlordane	EPA 8081B	10178800	NELAP	PA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082	10179007	NELAP	PA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082	10179007	NELAP	PA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082	10179007	NELAP	PA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082	10179007	NELAP	PA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082	10179007	NELAP	PA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082	10179007	NELAP	PA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082	10179007	NELAP	PA
8912 - Aroclor-1262 (PCB-1262)	EPA 8082	10179007	NELAP	PA
8913 - Aroclor-1268 (PCB-1268)	EPA 8082	10179007	NELAP	PA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082A	10179201	NELAP	PA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082A	10179201	NELAP	PA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082A	10179201	NELAP	PA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082A	10179201	NELAP	PA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082A	10179201	NELAP	PA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082A	10179201	NELAP	PA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082A	10179201	NELAP	PA
8912 - Aroclor-1262 (PCB-1262)	EPA 8082A	10179201	NELAP	PA
8913 - Aroclor-1268 (PCB-1268)	EPA 8082A	10179201	NELAP	PA
7600 - Fensulfothion	EPA 8141	10181803	NELAP	PA
7785 - Merphos	EPA 8141	10181803	NELAP	PA
8140 - Stirophos	EPA 8141	10181803	NELAP	PA
7005 - Alachlor	EPA 8141A	10182000	NELAP	PA
7065 - Atrazine	EPA 8141A	10182000	NELAP	PA
7075 - Azinphos-methyl (Guthion)	EPA 8141A	10182000	NELAP	PA
7125 - Bolstar (Sulprofos)	EPA 8141A	10182000	NELAP	PA
7220 - Carbophenothion	EPA 8141A	10182000	NELAP	PA
7300 - Chlorpyrifos	EPA 8141A	10182000	NELAP	PA
7395 - Demeton-o	EPA 8141A	10182000	NELAP	PA
7385 - Demeton-s	EPA 8141A	10182000	NELAP	PA
7410 - Diazinon	EPA 8141A	10182000	NELAP	PA
8610 - Dichlorovos (DDVP, Dichlorvos)	EPA 8141A	10182000	NELAP	PA
8625 - Disulfoton	EPA 8141A	10182000	NELAP	PA
7550 - EPN	EPA 8141A	10182000	NELAP	PA
7565 - Ethion	EPA 8141A	10182000	NELAP	PA
7570 - Ethoprop	EPA 8141A	10182000	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
7580 - Famphur	EPA 8141A	10182000	NELAP	PA
7600 - Fensulfothion	EPA 8141A	10182000	NELAP	PA
7605 - Fenthion	EPA 8141A	10182000	NELAP	PA
7770 - Malathion	EPA 8141A	10182000	NELAP	PA
7785 - Merphos	EPA 8141A	10182000	NELAP	PA
7825 - Methyl parathion (Parathion, methyl)	EPA 8141A	10182000	NELAP	PA
7850 - Mevinphos	EPA 8141A	10182000	NELAP	PA
7905 - Naled	EPA 8141A	10182000	NELAP	PA
7955 - Parathion, ethyl	EPA 8141A	10182000	NELAP	PA
7985 - Phorate	EPA 8141A	10182000	NELAP	PA
8110 - Ronnel	EPA 8141A	10182000	NELAP	PA
8125 - Simazine	EPA 8141A	10182000	NELAP	PA
8140 - Stirophos	EPA 8141A	10182000	NELAP	PA
7005 - Alachlor	EPA 8141B	10182204	NELAP	PA
7065 - Atrazine	EPA 8141B	10182204	NELAP	PA
7075 - Azinphos-methyl (Guthion)	EPA 8141B	10182204	NELAP	PA
7125 - Bolstar (Sulprofos)	EPA 8141B	10182204	NELAP	PA
7220 - Carbophenothion	EPA 8141B	10182204	NELAP	PA
7300 - Chlorpyrifos	EPA 8141B	10182204	NELAP	PA
7395 - Demeton-o	EPA 8141B	10182204	NELAP	PA
7385 - Demeton-s	EPA 8141B	10182204	NELAP	PA
7410 - Diazinon	EPA 8141B	10182204	NELAP	PA
8610 - Dichlorovos (DDVP, Dichlorvos)	EPA 8141B	10182204	NELAP	PA
8625 - Disulfoton	EPA 8141B	10182204	NELAP	PA
7550 - EPN	EPA 8141B	10182204	NELAP	PA
7565 - Ethion	EPA 8141B	10182204	NELAP	PA
7570 - Ethoprop	EPA 8141B	10182204	NELAP	PA
7580 - Famphur	EPA 8141B	10182204	NELAP	PA
7600 - Fensulfothion	EPA 8141B	10182204	NELAP	PA
7605 - Fenthion	EPA 8141B	10182204	NELAP	PA
7770 - Malathion	EPA 8141B	10182204	NELAP	PA
7785 - Merphos	EPA 8141B	10182204	NELAP	PA
7825 - Methyl parathion (Parathion, methyl)	EPA 8141B	10182204	NELAP	PA
7850 - Mevinphos	EPA 8141B	10182204	NELAP	PA
7905 - Naled	EPA 8141B	10182204	NELAP	PA
7955 - Parathion, ethyl	EPA 8141B	10182204	NELAP	PA
7985 - Phorate	EPA 8141B	10182204	NELAP	PA
8110 - Ronnel	EPA 8141B	10182204	NELAP	PA
8125 - Simazine	EPA 8141B	10182204	NELAP	PA
8655 - 2,4,5-T	EPA 8151	10183003	NELAP	PA
8545 - 2,4-D	EPA 8151	10183003	NELAP	PA
8560 - 2,4-DB	EPA 8151	10183003	NELAP	PA
8555 - Dalapon	EPA 8151	10183003	NELAP	PA
8595 - Dicamba	EPA 8151	10183003	NELAP	PA
8605 - Dichloroprop (Dichlorprop)	EPA 8151	10183003	NELAP	PA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8151	10183003	NELAP	PA
7775 - MCPA	EPA 8151	10183003	NELAP	PA
7780 - MCPP	EPA 8151	10183003	NELAP	PA
6605 - Pentachlorophenol	EPA 8151	10183003	NELAP	PA
8645 - Picloram	EPA 8151	10183003	NELAP	PA
8650 - Silvex (2,4,5-TP)	EPA 8151	10183003	NELAP	PA
8655 - 2,4,5-T	EPA 8151A	10183207	NELAP	PA
8545 - 2,4-D	EPA 8151A	10183207	NELAP	PA
8560 - 2,4-DB	EPA 8151A	10183207	NELAP	PA
8555 - Dalapon	EPA 8151A	10183207	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
8595 - Dicamba	EPA 8151A	10183207	NELAP	PA
8605 - Dichloroprop (Dichlorprop)	EPA 8151A	10183207	NELAP	PA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8151A	10183207	NELAP	PA
7775 - MCPA	EPA 8151A	10183207	NELAP	PA
7780 - MCPP	EPA 8151A	10183207	NELAP	PA
6605 - Pentachlorophenol	EPA 8151A	10183207	NELAP	PA
8645 - Picloram	EPA 8151A	10183207	NELAP	PA
8650 - Silvex (2,4,5-TP)	EPA 8151A	10183207	NELAP	PA
5105 - 1,1,1,2-Tetrachloroethane	EPA 8260	10184404	NELAP	PA
5160 - 1,1,1-Trichloroethane	EPA 8260	10184404	NELAP	PA
5110 - 1,1,2,2-Tetrachloroethane	EPA 8260	10184404	NELAP	PA
5185 - 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260	10184404	NELAP	PA
5165 - 1,1,2-Trichloroethane	EPA 8260	10184404	NELAP	PA
4630 - 1,1-Dichloroethane	EPA 8260	10184404	NELAP	PA
4640 - 1,1-Dichloroethylene	EPA 8260	10184404	NELAP	PA
4670 - 1,1-Dichloropropene	EPA 8260	10184404	NELAP	PA
5150 - 1,2,3-Trichlorobenzene	EPA 8260	10184404	NELAP	PA
5180 - 1,2,3-Trichloropropane	EPA 8260	10184404	NELAP	PA
5155 - 1,2,4-Trichlorobenzene	EPA 8260	10184404	NELAP	PA
5210 - 1,2,4-Trimethylbenzene	EPA 8260	10184404	NELAP	PA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260	10184404	NELAP	PA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260	10184404	NELAP	PA
4610 - 1,2-Dichlorobenzene	EPA 8260	10184404	NELAP	PA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 8260	10184404	NELAP	PA
4655 - 1,2-Dichloropropane	EPA 8260	10184404	NELAP	PA
5215 - 1,3,5-Trimethylbenzene	EPA 8260	10184404	NELAP	PA
4615 - 1,3-Dichlorobenzene	EPA 8260	10184404	NELAP	PA
4660 - 1,3-Dichloropropane	EPA 8260	10184404	NELAP	PA
4620 - 1,4-Dichlorobenzene	EPA 8260	10184404	NELAP	PA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8260	10184404	NELAP	PA
4665 - 2,2-Dichloropropane	EPA 8260	10184404	NELAP	PA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260	10184404	NELAP	PA
4500 - 2-Chloroethyl vinyl ether	EPA 8260	10184404	NELAP	PA
4535 - 2-Chlorotoluene	EPA 8260	10184404	NELAP	PA
4860 - 2-Hexanone	EPA 8260	10184404	NELAP	PA
4540 - 4-Chlorotoluene	EPA 8260	10184404	NELAP	PA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 8260	10184404	NELAP	PA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 8260	10184404	NELAP	PA
4315 - Acetone	EPA 8260	10184404	NELAP	PA
4320 - Acetonitrile	EPA 8260	10184404	NELAP	PA
4325 - Acrolein (Propenal)	EPA 8260	10184404	NELAP	PA
4340 - Acrylonitrile	EPA 8260	10184404	NELAP	PA
4355 - Allyl chloride (3-Chloropropene)	EPA 8260	10184404	NELAP	PA
4375 - Benzene	EPA 8260	10184404	NELAP	PA
5635 - Benzyl chloride	EPA 8260	10184404	NELAP	PA
4385 - Bromobenzene	EPA 8260	10184404	NELAP	PA
4390 - Bromochloromethane	EPA 8260	10184404	NELAP	PA
4395 - Bromodichloromethane	EPA 8260	10184404	NELAP	PA
4400 - Bromoform	EPA 8260	10184404	NELAP	PA
4450 - Carbon disulfide	EPA 8260	10184404	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
4455 - Carbon tetrachloride	EPA 8260	10184404	NELAP	PA
4475 - Chlorobenzene	EPA 8260	10184404	NELAP	PA
4575 - Chlorodibromomethane	EPA 8260	10184404	NELAP	PA
4485 - Chloroethane (Ethyl chloride)	EPA 8260	10184404	NELAP	PA
4505 - Chloroform	EPA 8260	10184404	NELAP	PA
4525 - Chloroprene (2-Chloro-1,3-butadiene)	EPA 8260	10184404	NELAP	PA
4555 - Cyclohexane	EPA 8260	10184404	NELAP	PA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 8260	10184404	NELAP	PA
4580 - Dibromochloropropane	EPA 8260	10184404	NELAP	PA
4595 - Dibromomethane (Methylene bromide)	EPA 8260	10184404	NELAP	PA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 8260	10184404	NELAP	PA
4750 - Ethanol	EPA 8260	10184404	NELAP	PA
4755 - Ethyl acetate	EPA 8260	10184404	NELAP	PA
4810 - Ethyl methacrylate	EPA 8260	10184404	NELAP	PA
4770 - Ethyl-t-butyl ether (ETBE) (2-Ethoxy-2-methylpropane)	EPA 8260	10184404	NELAP	PA
4765 - Ethylbenzene	EPA 8260	10184404	NELAP	PA
9408 - Gasoline range organics (GRO)	EPA 8260	10184404	NELAP	PA
4835 - Hexachlorobutadiene	EPA 8260	10184404	NELAP	PA
4875 - Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260	10184404	NELAP	PA
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8260	10184404	NELAP	PA
4900 - Isopropylbenzene	EPA 8260	10184404	NELAP	PA
4925 - Methacrylonitrile	EPA 8260	10184404	NELAP	PA
4950 - Methyl bromide (Bromomethane)	EPA 8260	10184404	NELAP	PA
4960 - Methyl chloride (Chloromethane)	EPA 8260	10184404	NELAP	PA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8260	10184404	NELAP	PA
4965 - Methylcyclohexane	EPA 8260	10184404	NELAP	PA
4975 - Methylene chloride (Dichloromethane)	EPA 8260	10184404	NELAP	PA
5005 - Naphthalene	EPA 8260	10184404	NELAP	PA
5035 - Pentachloroethane	EPA 8260	10184404	NELAP	PA
5080 - Propionitrile (Ethyl cyanide)	EPA 8260	10184404	NELAP	PA
5100 - Styrene	EPA 8260	10184404	NELAP	PA
4370 - T-amylmethylether (TAME)	EPA 8260	10184404	NELAP	PA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 8260	10184404	NELAP	PA
5140 - Toluene	EPA 8260	10184404	NELAP	PA
5170 - Trichloroethene (Trichloroethylene)	EPA 8260	10184404	NELAP	PA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 8260	10184404	NELAP	PA
5225 - Vinyl acetate	EPA 8260	10184404	NELAP	PA
5235 - Vinyl chloride	EPA 8260	10184404	NELAP	PA
5260 - Xylene (total)	EPA 8260	10184404	NELAP	PA
4680 - cis-1,3-Dichloropropene	EPA 8260	10184404	NELAP	PA
5240 - m+p-xylene	EPA 8260	10184404	NELAP	PA
4425 - n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8260	10184404	NELAP	PA
4435 - n-Butylbenzene	EPA 8260	10184404	NELAP	PA
5090 - n-Propylbenzene	EPA 8260	10184404	NELAP	PA
5250 - o-Xylene	EPA 8260	10184404	NELAP	PA
4440 - sec-Butylbenzene	EPA 8260	10184404	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
4420 - tert-Butyl alcohol	EPA 8260	10184404	NELAP	PA
4445 - tert-Butylbenzene	EPA 8260	10184404	NELAP	PA
4700 - trans-1,2-Dichloroethylene	EPA 8260	10184404	NELAP	PA
4685 - trans-1,3-Dichloropropylene	EPA 8260	10184404	NELAP	PA
4605 - trans-1,4-Dichloro-2-butene	EPA 8260	10184404	NELAP	PA
5105 - 1,1,1,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	PA
5160 - 1,1,1-Trichloroethane	EPA 8260B	10184802	NELAP	PA
5110 - 1,1,2,2-Tetrachloroethane	EPA 8260B	10184802	NELAP	PA
5195 - 1,1,2-Trichloro-1,2,2-trifluoroethane	EPA 8260B	10184802	NELAP	PA
5185 - 1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260B	10184802	NELAP	PA
5165 - 1,1,2-Trichloroethane	EPA 8260B	10184802	NELAP	PA
4630 - 1,1-Dichloroethane	EPA 8260B	10184802	NELAP	PA
4640 - 1,1-Dichloroethylene	EPA 8260B	10184802	NELAP	PA
4670 - 1,1-Dichloropropene	EPA 8260B	10184802	NELAP	PA
5150 - 1,2,3-Trichlorobenzene	EPA 8260B	10184802	NELAP	PA
5180 - 1,2,3-Trichloropropane	EPA 8260B	10184802	NELAP	PA
5155 - 1,2,4-Trichlorobenzene	EPA 8260B	10184802	NELAP	PA
5210 - 1,2,4-Trimethylbenzene	EPA 8260B	10184802	NELAP	PA
4570 - 1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260B	10184802	NELAP	PA
4585 - 1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260B	10184802	NELAP	PA
4610 - 1,2-Dichlorobenzene	EPA 8260B	10184802	NELAP	PA
4635 - 1,2-Dichloroethane (Ethylene dichloride)	EPA 8260B	10184802	NELAP	PA
4655 - 1,2-Dichloropropane	EPA 8260B	10184802	NELAP	PA
5215 - 1,3,5-Trimethylbenzene	EPA 8260B	10184802	NELAP	PA
4615 - 1,3-Dichlorobenzene	EPA 8260B	10184802	NELAP	PA
4660 - 1,3-Dichloropropane	EPA 8260B	10184802	NELAP	PA
4620 - 1,4-Dichlorobenzene	EPA 8260B	10184802	NELAP	PA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8260B	10184802	NELAP	PA
4665 - 2,2-Dichloropropane	EPA 8260B	10184802	NELAP	PA
4410 - 2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260B	10184802	NELAP	PA
4500 - 2-Chloroethyl vinyl ether	EPA 8260B	10184802	NELAP	PA
4535 - 2-Chlorotoluene	EPA 8260B	10184802	NELAP	PA
4860 - 2-Hexanone	EPA 8260B	10184802	NELAP	PA
4368 - 2-methyl-2-butanol (tert-Amyl alcohol)	EPA 8260B	10184802	NELAP	PA
4540 - 4-Chlorotoluene	EPA 8260B	10184802	NELAP	PA
4910 - 4-Isopropyltoluene (p-Cymene)	EPA 8260B	10184802	NELAP	PA
4995 - 4-Methyl-2-pentanone (MIBK)	EPA 8260B	10184802	NELAP	PA
4315 - Acetone	EPA 8260B	10184802	NELAP	PA
4320 - Acetonitrile	EPA 8260B	10184802	NELAP	PA
4325 - Acrolein (Propenal)	EPA 8260B	10184802	NELAP	PA
4340 - Acrylonitrile	EPA 8260B	10184802	NELAP	PA
4355 - Allyl chloride (3-Chloropropene)	EPA 8260B	10184802	NELAP	PA
4375 - Benzene	EPA 8260B	10184802	NELAP	PA
5635 - Benzyl chloride	EPA 8260B	10184802	NELAP	PA
4380 - Bromoacetone	EPA 8260B	10184802	NELAP	PA
4385 - Bromobenzene	EPA 8260B	10184802	NELAP	PA
4390 - Bromochloromethane	EPA 8260B	10184802	NELAP	PA
4395 - Bromodichloromethane	EPA 8260B	10184802	NELAP	PA
4400 - Bromoform	EPA 8260B	10184802	NELAP	PA
4450 - Carbon disulfide	EPA 8260B	10184802	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
4455 - Carbon tetrachloride	EPA 8260B	10184802	NELAP	PA
4475 - Chlorobenzene	EPA 8260B	10184802	NELAP	PA
4575 - Chlorodibromomethane	EPA 8260B	10184802	NELAP	PA
4485 - Chloroethane (Ethyl chloride)	EPA 8260B	10184802	NELAP	PA
4505 - Chloroform	EPA 8260B	10184802	NELAP	PA
4525 - Chloroprene (2-Chloro-1,3-butadiene)	EPA 8260B	10184802	NELAP	PA
4555 - Cyclohexane	EPA 8260B	10184802	NELAP	PA
4560 - Cyclohexanone	EPA 8260B	10184802	NELAP	PA
9375 - Di-isopropylether (DIPE) (Isopropyl ether)	EPA 8260B	10184802	NELAP	PA
4580 - Dibromochloropropane	EPA 8260B	10184802	NELAP	PA
4595 - Dibromomethane (Methylene bromide)	EPA 8260B	10184802	NELAP	PA
4625 - Dichlorodifluoromethane (Freon-12)	EPA 8260B	10184802	NELAP	PA
4745 - Epichlorohydrin (1-Chloro-2,3-epoxypropane)	EPA 8260B	10184802	NELAP	PA
4750 - Ethanol	EPA 8260B	10184802	NELAP	PA
4755 - Ethyl acetate	EPA 8260B	10184802	NELAP	PA
4810 - Ethyl methacrylate	EPA 8260B	10184802	NELAP	PA
4770 - Ethyl-t-butyl ether (ETBE) (2-Ethoxy-2-methylpropane)	EPA 8260B	10184802	NELAP	PA
4765 - Ethylbenzene	EPA 8260B	10184802	NELAP	PA
9408 - Gasoline range organics (GRO)	EPA 8260B	10184802	NELAP	PA
4835 - Hexachlorobutadiene	EPA 8260B	10184802	NELAP	PA
4870 - Iodomethane (Methyl iodide)	EPA 8260B	10184802	NELAP	PA
4875 - Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260B	10184802	NELAP	PA
4895 - Isopropyl alcohol (2-Propanol, Isopropanol)	EPA 8260B	10184802	NELAP	PA
4900 - Isopropylbenzene	EPA 8260B	10184802	NELAP	PA
4925 - Methacrylonitrile	EPA 8260B	10184802	NELAP	PA
4940 - Methyl acetate	EPA 8260B	10184802	NELAP	PA
4950 - Methyl bromide (Bromomethane)	EPA 8260B	10184802	NELAP	PA
4960 - Methyl chloride (Chloromethane)	EPA 8260B	10184802	NELAP	PA
5000 - Methyl tert-butyl ether (MTBE)	EPA 8260B	10184802	NELAP	PA
4965 - Methylcyclohexane	EPA 8260B	10184802	NELAP	PA
4975 - Methylene chloride (Dichloromethane)	EPA 8260B	10184802	NELAP	PA
5005 - Naphthalene	EPA 8260B	10184802	NELAP	PA
5035 - Pentachloroethane	EPA 8260B	10184802	NELAP	PA
5080 - Propionitrile (Ethyl cyanide)	EPA 8260B	10184802	NELAP	PA
5100 - Styrene	EPA 8260B	10184802	NELAP	PA
4370 - T-amylmethylether (TAME)	EPA 8260B	10184802	NELAP	PA
5115 - Tetrachloroethylene (Perchloroethylene)	EPA 8260B	10184802	NELAP	PA
5140 - Toluene	EPA 8260B	10184802	NELAP	PA
5170 - Trichloroethene (Trichloroethylene)	EPA 8260B	10184802	NELAP	PA
5175 - Trichlorofluoromethane (Fluorotrichloromethane, Freon 11)	EPA 8260B	10184802	NELAP	PA
5225 - Vinyl acetate	EPA 8260B	10184802	NELAP	PA
5235 - Vinyl chloride	EPA 8260B	10184802	NELAP	PA
5260 - Xylene (total)	EPA 8260B	10184802	NELAP	PA
4705 - cis & trans-1,2-Dichloroethene	EPA 8260B	10184802	NELAP	PA
4645 - cis-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	PA
4680 - cis-1,3-Dichloropropene	EPA 8260B	10184802	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
5240 - m+p-xylene	EPA 8260B	10184802	NELAP	PA
4425 - n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8260B	10184802	NELAP	PA
4435 - n-Butylbenzene	EPA 8260B	10184802	NELAP	PA
5090 - n-Propylbenzene	EPA 8260B	10184802	NELAP	PA
5250 - o-Xylene	EPA 8260B	10184802	NELAP	PA
4440 - sec-Butylbenzene	EPA 8260B	10184802	NELAP	PA
4420 - tert-Butyl alcohol	EPA 8260B	10184802	NELAP	PA
4445 - tert-Butylbenzene	EPA 8260B	10184802	NELAP	PA
4700 - trans-1,2-Dichloroethylene	EPA 8260B	10184802	NELAP	PA
4685 - trans-1,3-Dichloropropylene	EPA 8260B	10184802	NELAP	PA
4605 - trans-1,4-Dichloro-2-butene	EPA 8260B	10184802	NELAP	PA
5510 - Acetophenone	EPA 8270	10185203	NELAP	PA
5560 - Aramite	EPA 8270	10185203	NELAP	PA
5900 - Dibenz(a, j) acridine	EPA 8270	10185203	NELAP	PA
5765 - bis(2-Chloroethyl) ether	EPA 8270	10185203	NELAP	PA
6550 - n-Nitrosomethylethylamine	EPA 8270	10185203	NELAP	PA
6703 - 1,1'-Biphenyl (BZ-0)	EPA 8270C	10185805	NELAP	PA
6705 - 1,2,3,4-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	PA
6710 - 1,2,3,5-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	PA
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270C	10185805	NELAP	PA
5155 - 1,2,4-Trichlorobenzene	EPA 8270C	10185805	NELAP	PA
4610 - 1,2-Dichlorobenzene	EPA 8270C	10185805	NELAP	PA
6155 - 1,2-Dinitrobenzene	EPA 8270C	10185805	NELAP	PA
6220 - 1,2-Diphenylhydrazine	EPA 8270C	10185805	NELAP	PA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8270C	10185805	NELAP	PA
4615 - 1,3-Dichlorobenzene	EPA 8270C	10185805	NELAP	PA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8270C	10185805	NELAP	PA
4620 - 1,4-Dichlorobenzene	EPA 8270C	10185805	NELAP	PA
6165 - 1,4-Dinitrobenzene	EPA 8270C	10185805	NELAP	PA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8270C	10185805	NELAP	PA
6420 - 1,4-Naphthoquinone	EPA 8270C	10185805	NELAP	PA
6630 - 1,4-Phenylenediamine	EPA 8270C	10185805	NELAP	PA
5790 - 1-Chloronaphthalene	EPA 8270C	10185805	NELAP	PA
6380 - 1-Methylnaphthalene	EPA 8270C	10185805	NELAP	PA
6425 - 1-Naphthylamine	EPA 8270C	10185805	NELAP	PA
6735 - 2,3,4,6-Tetrachlorophenol	EPA 8270C	10185805	NELAP	PA
6835 - 2,4,5-Trichlorophenol	EPA 8270C	10185805	NELAP	PA
6840 - 2,4,6-Trichlorophenol	EPA 8270C	10185805	NELAP	PA
6000 - 2,4-Dichlorophenol	EPA 8270C	10185805	NELAP	PA
6130 - 2,4-Dimethylphenol	EPA 8270C	10185805	NELAP	PA
6175 - 2,4-Dinitrophenol	EPA 8270C	10185805	NELAP	PA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270C	10185805	NELAP	PA
6005 - 2,6-Dichlorophenol	EPA 8270C	10185805	NELAP	PA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270C	10185805	NELAP	PA
5515 - 2-Acetylaminofluorene	EPA 8270C	10185805	NELAP	PA
5795 - 2-Chloronaphthalene	EPA 8270C	10185805	NELAP	PA
5800 - 2-Chlorophenol	EPA 8270C	10185805	NELAP	PA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 8270C	10185805	NELAP	PA
5145 - 2-Methylaniline (o-Toluidine)	EPA 8270C	10185805	NELAP	PA
6385 - 2-Methylnaphthalene	EPA 8270C	10185805	NELAP	PA
6400 - 2-Methylphenol (o-Cresol)	EPA 8270C	10185805	NELAP	PA
6430 - 2-Naphthylamine	EPA 8270C	10185805	NELAP	PA
6460 - 2-Nitroaniline	EPA 8270C	10185805	NELAP	PA
6490 - 2-Nitrophenol	EPA 8270C	10185805	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
5050 - 2-Picoline (2-Methylpyridine)	EPA 8270C	10185805	NELAP	PA
6412 - 3+4 Methylphenol	EPA 8270C	10185805	NELAP	PA
5945 - 3,3'-Dichlorobenzidine	EPA 8270C	10185805	NELAP	PA
6100 - 3,3'-Dimethoxybenzidine	EPA 8270C	10185805	NELAP	PA
6120 - 3,3'-Dimethylbenzidine	EPA 8270C	10185805	NELAP	PA
6355 - 3-Methylcholanthrene	EPA 8270C	10185805	NELAP	PA
6405 - 3-Methylphenol (m-Cresol)	EPA 8270C	10185805	NELAP	PA
6465 - 3-Nitroaniline	EPA 8270C	10185805	NELAP	PA
6365 - 4,4'-Methylenebis(2-chloroaniline)	EPA 8270C	10185805	NELAP	PA
5540 - 4-Aminobiphenyl	EPA 8270C	10185805	NELAP	PA
5660 - 4-Bromophenyl phenyl ether	EPA 8270C	10185805	NELAP	PA
5700 - 4-Chloro-3-methylphenol	EPA 8270C	10185805	NELAP	PA
5745 - 4-Chloroaniline	EPA 8270C	10185805	NELAP	PA
5825 - 4-Chlorophenyl phenylether	EPA 8270C	10185805	NELAP	PA
6410 - 4-Methylphenol (p-Cresol)	EPA 8270C	10185805	NELAP	PA
6470 - 4-Nitroaniline	EPA 8270C	10185805	NELAP	PA
6500 - 4-Nitrophenol	EPA 8270C	10185805	NELAP	PA
6510 - 4-Nitroquinoline 1-oxide	EPA 8270C	10185805	NELAP	PA
6570 - 5-Nitro-o-toluidine	EPA 8270C	10185805	NELAP	PA
6115 - 7,12-Dimethylbenz(a) anthracene	EPA 8270C	10185805	NELAP	PA
5500 - Acenaphthene	EPA 8270C	10185805	NELAP	PA
5505 - Acenaphthylene	EPA 8270C	10185805	NELAP	PA
5510 - Acetophenone	EPA 8270C	10185805	NELAP	PA
4330 - Acrylamide	EPA 8270C	10185805	NELAP	PA
5545 - Aniline	EPA 8270C	10185805	NELAP	PA
5555 - Anthracene	EPA 8270C	10185805	NELAP	PA
5560 - Aramite	EPA 8270C	10185805	NELAP	PA
7065 - Atrazine	EPA 8270C	10185805	NELAP	PA
5570 - Benzaldehyde	EPA 8270C	10185805	NELAP	PA
5567 - Benzenethiol	EPA 8270C	10185805	NELAP	PA
5595 - Benzidine	EPA 8270C	10185805	NELAP	PA
5575 - Benzo(a)anthracene	EPA 8270C	10185805	NELAP	PA
5580 - Benzo(a)pyrene	EPA 8270C	10185805	NELAP	PA
5585 - Benzo(b)fluoranthene	EPA 8270C	10185805	NELAP	PA
5590 - Benzo(g,h,i)perylene	EPA 8270C	10185805	NELAP	PA
5600 - Benzo(k)fluoranthene	EPA 8270C	10185805	NELAP	PA
5610 - Benzoic acid	EPA 8270C	10185805	NELAP	PA
5630 - Benzyl alcohol	EPA 8270C	10185805	NELAP	PA
5670 - Butyl benzyl phthalate	EPA 8270C	10185805	NELAP	PA
7180 - Caprolactam	EPA 8270C	10185805	NELAP	PA
5680 - Carbazole	EPA 8270C	10185805	NELAP	PA
7260 - Chlorobenzilate	EPA 8270C	10185805	NELAP	PA
5855 - Chrysene	EPA 8270C	10185805	NELAP	PA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 8270C	10185805	NELAP	PA
5925 - Di-n-butyl phthalate	EPA 8270C	10185805	NELAP	PA
6200 - Di-n-octyl phthalate	EPA 8270C	10185805	NELAP	PA
7405 - Diallate	EPA 8270C	10185805	NELAP	PA
9354 - Dibenz(a, h) acridine	EPA 8270C	10185805	NELAP	PA
5900 - Dibenz(a, j) acridine	EPA 8270C	10185805	NELAP	PA
5895 - Dibenz(a,h) anthracene	EPA 8270C	10185805	NELAP	PA
5905 - Dibenzofuran	EPA 8270C	10185805	NELAP	PA
6070 - Diethyl phthalate	EPA 8270C	10185805	NELAP	PA
7475 - Dimethoate	EPA 8270C	10185805	NELAP	PA
6135 - Dimethyl phthalate	EPA 8270C	10185805	NELAP	PA
8620 - Dinoseb (2-sec-butyl-4,6-	EPA 8270C	10185805	NELAP	PA

Eurofins Lancaster Laboratories Inc
Issue Date: July 1, 2015 | **Certificate Number: 02055** | AI Number: 30729 | Expiration Date: June 30, 2016

Clients and Customers are urged to verify the laboratory's current certification status with the Louisiana Environmental Laboratory Accreditation Program.

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
dinitrophenol, DNBP)				
6205 - Diphenylamine	EPA 8270C	10185805	NELAP	PA
8625 - Disulfoton	EPA 8270C	10185805	NELAP	PA
6260 - Ethyl methanesulfonate	EPA 8270C	10185805	NELAP	PA
7580 - Famphur	EPA 8270C	10185805	NELAP	PA
6265 - Fluoranthene	EPA 8270C	10185805	NELAP	PA
6270 - Fluorene	EPA 8270C	10185805	NELAP	PA
6275 - Hexachlorobenzene	EPA 8270C	10185805	NELAP	PA
4835 - Hexachlorobutadiene	EPA 8270C	10185805	NELAP	PA
6285 - Hexachlorocyclopentadiene	EPA 8270C	10185805	NELAP	PA
4840 - Hexachloroethane	EPA 8270C	10185805	NELAP	PA
6295 - Hexachloropropene	EPA 8270C	10185805	NELAP	PA
6312 - Indene	EPA 8270C	10185805	NELAP	PA
6315 - Indeno(1,2,3-cd) pyrene	EPA 8270C	10185805	NELAP	PA
7725 - Isodrin	EPA 8270C	10185805	NELAP	PA
6320 - Isophorone	EPA 8270C	10185805	NELAP	PA
6325 - Isosafrole	EPA 8270C	10185805	NELAP	PA
7740 - Kepone	EPA 8270C	10185805	NELAP	PA
6345 - Methapyrilene	EPA 8270C	10185805	NELAP	PA
6375 - Methyl methanesulfonate	EPA 8270C	10185805	NELAP	PA
7825 - Methyl parathion (Parathion, methyl)	EPA 8270C	10185805	NELAP	PA
5005 - Naphthalene	EPA 8270C	10185805	NELAP	PA
5015 - Nitrobenzene	EPA 8270C	10185805	NELAP	PA
7955 - Parathion, ethyl	EPA 8270C	10185805	NELAP	PA
6590 - Pentachlorobenzene	EPA 8270C	10185805	NELAP	PA
6600 - Pentachloronitrobenzene	EPA 8270C	10185805	NELAP	PA
6605 - Pentachlorophenol	EPA 8270C	10185805	NELAP	PA
6610 - Phenacetin	EPA 8270C	10185805	NELAP	PA
6615 - Phenanthrene	EPA 8270C	10185805	NELAP	PA
6625 - Phenol	EPA 8270C	10185805	NELAP	PA
7985 - Phorate	EPA 8270C	10185805	NELAP	PA
6640 - Phthalic anhydride	EPA 8270C	10185805	NELAP	PA
6650 - Pronamide (Kerb)	EPA 8270C	10185805	NELAP	PA
6665 - Pyrene	EPA 8270C	10185805	NELAP	PA
5095 - Pyridine	EPA 8270C	10185805	NELAP	PA
6670 - Quinoline	EPA 8270C	10185805	NELAP	PA
6685 - Safrole	EPA 8270C	10185805	NELAP	PA
8235 - Thionazin (Zinophos)	EPA 8270C	10185805	NELAP	PA
6125 - a-a-Dimethylphenethylamine	EPA 8270C	10185805	NELAP	PA
5760 - bis(2-Chloroethoxy)methane	EPA 8270C	10185805	NELAP	PA
5765 - bis(2-Chloroethyl) ether	EPA 8270C	10185805	NELAP	PA
5780 - bis(2-Chloroisopropyl) ether	EPA 8270C	10185805	NELAP	PA
6245 - bis(2-Ethoxyethyl) phthalate	EPA 8270C	10185805	NELAP	PA
6062 - bis(2-Ethylhexyl)adipate	EPA 8270C	10185805	NELAP	PA
5025 - n-Nitroso-di-n-butylamine	EPA 8270C	10185805	NELAP	PA
6545 - n-Nitrosodi-n-propylamine	EPA 8270C	10185805	NELAP	PA
6525 - n-Nitrosodiethylamine	EPA 8270C	10185805	NELAP	PA
6530 - n-Nitrosodimethylamine	EPA 8270C	10185805	NELAP	PA
6535 - n-Nitrosodiphenylamine	EPA 8270C	10185805	NELAP	PA
6550 - n-Nitrosomethylethylamine	EPA 8270C	10185805	NELAP	PA
6555 - n-Nitrosomorpholine	EPA 8270C	10185805	NELAP	PA
6560 - n-Nitrosopiperidine	EPA 8270C	10185805	NELAP	PA
6565 - n-Nitrosopyrrolidine	EPA 8270C	10185805	NELAP	PA
8290 - o,o,o-Triethyl phosphorothioate	EPA 8270C	10185805	NELAP	PA
8310 - tris-(2,3-Dibromopropyl) phosphate (tris-BP)	EPA 8270C	10185805	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
6703 - 1,1'-Biphenyl (BZ-0)	EPA 8270D	10186002	NELAP	PA
6705 - 1,2,3,4-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	PA
6710 - 1,2,3,5-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	PA
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270D	10186002	NELAP	PA
5155 - 1,2,4-Trichlorobenzene	EPA 8270D	10186002	NELAP	PA
4610 - 1,2-Dichlorobenzene	EPA 8270D	10186002	NELAP	PA
6155 - 1,2-Dinitrobenzene	EPA 8270D	10186002	NELAP	PA
6220 - 1,2-Diphenylhydrazine	EPA 8270D	10186002	NELAP	PA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8270D	10186002	NELAP	PA
4615 - 1,3-Dichlorobenzene	EPA 8270D	10186002	NELAP	PA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8270D	10186002	NELAP	PA
4620 - 1,4-Dichlorobenzene	EPA 8270D	10186002	NELAP	PA
6165 - 1,4-Dinitrobenzene	EPA 8270D	10186002	NELAP	PA
4735 - 1,4-Dioxane (1,4- Diethyleneoxide)	EPA 8270D	10186002	NELAP	PA
6420 - 1,4-Naphthoquinone	EPA 8270D	10186002	NELAP	PA
6630 - 1,4-Phenylenediamine	EPA 8270D	10186002	NELAP	PA
5790 - 1-Chloronaphthalene	EPA 8270D	10186002	NELAP	PA
6380 - 1-Methylnaphthalene	EPA 8270D	10186002	NELAP	PA
6425 - 1-Naphthylamine	EPA 8270D	10186002	NELAP	PA
6735 - 2,3,4,6-Tetrachlorophenol	EPA 8270D	10186002	NELAP	PA
6835 - 2,4,5-Trichlorophenol	EPA 8270D	10186002	NELAP	PA
6840 - 2,4,6-Trichlorophenol	EPA 8270D	10186002	NELAP	PA
6000 - 2,4-Dichlorophenol	EPA 8270D	10186002	NELAP	PA
6130 - 2,4-Dimethylphenol	EPA 8270D	10186002	NELAP	PA
6175 - 2,4-Dinitrophenol	EPA 8270D	10186002	NELAP	PA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8270D	10186002	NELAP	PA
6005 - 2,6-Dichlorophenol	EPA 8270D	10186002	NELAP	PA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8270D	10186002	NELAP	PA
5515 - 2-Acetylaminofluorene	EPA 8270D	10186002	NELAP	PA
5795 - 2-Chloronaphthalene	EPA 8270D	10186002	NELAP	PA
5800 - 2-Chlorophenol	EPA 8270D	10186002	NELAP	PA
6360 - 2-Methyl-4,6-dinitrophenol (4,6-Dinitro-2-methylphenol)	EPA 8270D	10186002	NELAP	PA
5145 - 2-Methylaniline (o-Toluidine)	EPA 8270D	10186002	NELAP	PA
6385 - 2-Methylnaphthalene	EPA 8270D	10186002	NELAP	PA
6400 - 2-Methylphenol (o-Cresol)	EPA 8270D	10186002	NELAP	PA
6430 - 2-Naphthylamine	EPA 8270D	10186002	NELAP	PA
6460 - 2-Nitroaniline	EPA 8270D	10186002	NELAP	PA
6490 - 2-Nitrophenol	EPA 8270D	10186002	NELAP	PA
5050 - 2-Picoline (2-Methylpyridine)	EPA 8270D	10186002	NELAP	PA
6412 - 3+4 Methylphenol	EPA 8270D	10186002	NELAP	PA
5945 - 3,3'-Dichlorobenzidine	EPA 8270D	10186002	NELAP	PA
6100 - 3,3'-Dimethoxybenzidine	EPA 8270D	10186002	NELAP	PA
6120 - 3,3'-Dimethylbenzidine	EPA 8270D	10186002	NELAP	PA
6355 - 3-Methylcholanthrene	EPA 8270D	10186002	NELAP	PA
6405 - 3-Methylphenol (m-Cresol)	EPA 8270D	10186002	NELAP	PA
6465 - 3-Nitroaniline	EPA 8270D	10186002	NELAP	PA
6365 - 4,4'-Methylenebis(2-chloroaniline)	EPA 8270D	10186002	NELAP	PA
5540 - 4-Aminobiphenyl	EPA 8270D	10186002	NELAP	PA
5660 - 4-Bromophenyl phenyl ether	EPA 8270D	10186002	NELAP	PA
5700 - 4-Chloro-3-methylphenol	EPA 8270D	10186002	NELAP	PA
5745 - 4-Chloroaniline	EPA 8270D	10186002	NELAP	PA
5825 - 4-Chlorophenyl phenylether	EPA 8270D	10186002	NELAP	PA
6410 - 4-Methylphenol (p-Cresol)	EPA 8270D	10186002	NELAP	PA
6470 - 4-Nitroaniline	EPA 8270D	10186002	NELAP	PA
6500 - 4-Nitrophenol	EPA 8270D	10186002	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
6510 - 4-Nitroquinoline 1-oxide	EPA 8270D	10186002	NELAP	PA
6570 - 5-Nitro-o-toluidine	EPA 8270D	10186002	NELAP	PA
6115 - 7,12-Dimethylbenz(a) anthracene	EPA 8270D	10186002	NELAP	PA
5500 - Acenaphthene	EPA 8270D	10186002	NELAP	PA
5505 - Acenaphthylene	EPA 8270D	10186002	NELAP	PA
5510 - Acetophenone	EPA 8270D	10186002	NELAP	PA
4330 - Acrylamide	EPA 8270D	10186002	NELAP	PA
5545 - Aniline	EPA 8270D	10186002	NELAP	PA
5555 - Anthracene	EPA 8270D	10186002	NELAP	PA
5560 - Aramite	EPA 8270D	10186002	NELAP	PA
7065 - Atrazine	EPA 8270D	10186002	NELAP	PA
5570 - Benzaldehyde	EPA 8270D	10186002	NELAP	PA
5567 - Benzenethiol	EPA 8270D	10186002	NELAP	PA
5595 - Benzidine	EPA 8270D	10186002	NELAP	PA
5575 - Benzo(a)anthracene	EPA 8270D	10186002	NELAP	PA
5580 - Benzo(a)pyrene	EPA 8270D	10186002	NELAP	PA
5585 - Benzo(b)fluoranthene	EPA 8270D	10186002	NELAP	PA
5590 - Benzo(g,h,i)perylene	EPA 8270D	10186002	NELAP	PA
5600 - Benzo(k)fluoranthene	EPA 8270D	10186002	NELAP	PA
5610 - Benzoic acid	EPA 8270D	10186002	NELAP	PA
5630 - Benzyl alcohol	EPA 8270D	10186002	NELAP	PA
5670 - Butyl benzyl phthalate	EPA 8270D	10186002	NELAP	PA
7180 - Caprolactam	EPA 8270D	10186002	NELAP	PA
5680 - Carbazole	EPA 8270D	10186002	NELAP	PA
7260 - Chlorobenzilate	EPA 8270D	10186002	NELAP	PA
5855 - Chrysene	EPA 8270D	10186002	NELAP	PA
6065 - Di(2-ethylhexyl) phthalate (bis(2-Ethylhexyl)phthalate, DEHP)	EPA 8270D	10186002	NELAP	PA
5925 - Di-n-butyl phthalate	EPA 8270D	10186002	NELAP	PA
6200 - Di-n-octyl phthalate	EPA 8270D	10186002	NELAP	PA
7405 - Diallate	EPA 8270D	10186002	NELAP	PA
9354 - Dibenz(a, h) acridine	EPA 8270D	10186002	NELAP	PA
5900 - Dibenz(a, j) acridine	EPA 8270D	10186002	NELAP	PA
5895 - Dibenz(a,h) anthracene	EPA 8270D	10186002	NELAP	PA
5905 - Dihenzofuran	EPA 8270D	10186002	NELAP	PA
6070 - Diethyl phthalate	EPA 8270D	10186002	NELAP	PA
7475 - Dimethoate	EPA 8270D	10186002	NELAP	PA
6135 - Dimethyl phthalate	EPA 8270D	10186002	NELAP	PA
8620 - Dinoseb (2-sec-butyl-4,6-dinitrophenol, DNBP)	EPA 8270D	10186002	NELAP	PA
6205 - Diphenylamine	EPA 8270D	10186002	NELAP	PA
8625 - Disulfoton	EPA 8270D	10186002	NELAP	PA
6260 - Ethyl methanesulfonate	EPA 8270D	10186002	NELAP	PA
7580 - Famphur	EPA 8270D	10186002	NELAP	PA
6265 - Fluoranthene	EPA 8270D	10186002	NELAP	PA
6270 - Fluorene	EPA 8270D	10186002	NELAP	PA
6275 - Hexachlorobenzene	EPA 8270D	10186002	NELAP	PA
4835 - Hexachlorobutadiene	EPA 8270D	10186002	NELAP	PA
6285 - Hexachlorocyclopentadiene	EPA 8270D	10186002	NELAP	PA
4840 - Hexachloroethane	EPA 8270D	10186002	NELAP	PA
6295 - Hexachloropropene	EPA 8270D	10186002	NELAP	PA
6312 - Indene	EPA 8270D	10186002	NELAP	PA
6315 - Indeno(1,2,3-cd) pyrene	EPA 8270D	10186002	NELAP	PA
6320 - Isophorone	EPA 8270D	10186002	NELAP	PA
6325 - Isosafrole	EPA 8270D	10186002	NELAP	PA
6345 - Methapyrilene	EPA 8270D	10186002	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
6375 - Methyl methanesulfonate	EPA 8270D	10186002	NELAP	PA
7825 - Methyl parathion (Parathion, methyl)	EPA 8270D	10186002	NELAP	PA
5005 - Naphthalene	EPA 8270D	10186002	NELAP	PA
5015 - Nitrobenzene	EPA 8270D	10186002	NELAP	PA
7955 - Parathion, ethyl	EPA 8270D	10186002	NELAP	PA
6590 - Pentachlorobenzene	EPA 8270D	10186002	NELAP	PA
6600 - Pentachloronitrobenzene	EPA 8270D	10186002	NELAP	PA
6605 - Pentachlorophenol	EPA 8270D	10186002	NELAP	PA
6610 - Phenacetin	EPA 8270D	10186002	NELAP	PA
6615 - Phenanthrene	EPA 8270D	10186002	NELAP	PA
6625 - Phenol	EPA 8270D	10186002	NELAP	PA
7985 - Phorate	EPA 8270D	10186002	NELAP	PA
6640 - Phthalic anhydride	EPA 8270D	10186002	NELAP	PA
6650 - Pronamide (Kerb)	EPA 8270D	10186002	NELAP	PA
6665 - Pyrene	EPA 8270D	10186002	NELAP	PA
5095 - Pyridine	EPA 8270D	10186002	NELAP	PA
6670 - Quinoline	EPA 8270D	10186002	NELAP	PA
6685 - Safrole	EPA 8270D	10186002	NELAP	PA
8235 - Thionazin (Zinophos)	EPA 8270D	10186002	NELAP	PA
6750 - Thiophenol (Benzenethiol)	EPA 8270D	10186002	NELAP	PA
6125 - a-a-Dimethylphenethylamine	EPA 8270D	10186002	NELAP	PA
5760 - bis(2-Chloroethoxy)methane	EPA 8270D	10186002	NELAP	PA
5765 - bis(2-Chloroethyl) ether	EPA 8270D	10186002	NELAP	PA
5780 - bis(2-Chloroisopropyl) ether	EPA 8270D	10186002	NELAP	PA
6062 - bis(2-Ethylhexyl)adipate	EPA 8270D	10186002	NELAP	PA
5025 - n-Nitroso-di-n-butylamine	EPA 8270D	10186002	NELAP	PA
6545 - n-Nitrosodi-n-propylamine	EPA 8270D	10186002	NELAP	PA
6525 - n-Nitrosodiethylamine	EPA 8270D	10186002	NELAP	PA
6530 - n-Nitrosodimethylamine	EPA 8270D	10186002	NELAP	PA
6535 - n-Nitrosodiphenylamine	EPA 8270D	10186002	NELAP	PA
6550 - n-Nitrosomethylethylamine	EPA 8270D	10186002	NELAP	PA
6555 - n-Nitrosomorpholine	EPA 8270D	10186002	NELAP	PA
6560 - n-Nitrosopiperidine	EPA 8270D	10186002	NELAP	PA
6565 - n-Nitrosopyrrolidine	EPA 8270D	10186002	NELAP	PA
8290 - o,o,o-Triethyl phosphorothioate	EPA 8270D	10186002	NELAP	PA
8310 - tris-(2,3-Dibromopropyl) phosphate (tris-BP)	EPA 8270D	10186002	NELAP	PA
9519 - 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 8290	10187209	NELAP	PA
9516 - 1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 8290	10187209	NELAP	PA
9426 - 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)	EPA 8290	10187209	NELAP	PA
9420 - 1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)	EPA 8290	10187209	NELAP	PA
9423 - 1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)	EPA 8290	10187209	NELAP	PA
9453 - 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)	EPA 8290	10187209	NELAP	PA
9471 - 1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)	EPA 8290	10187209	NELAP	PA
9456 - 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)	EPA 8290	10187209	NELAP	PA
9474 - 1,2,3,6,7,8-Hexachlorodibenzofuran	EPA 8290	10187209	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
(1,2,3,6,7,8-Hxcdf)				
9459 - 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)	EPA 8290	10187209	NELAP	PA
9477 - 1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)	EPA 8290	10187209	NELAP	PA
9540 - 1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)	EPA 8290	10187209	NELAP	PA
9543 - 1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)	EPA 8290	10187209	NELAP	PA
9480 - 2,3,4,6,7,8-Hexachlorodibenzofuran	EPA 8290	10187209	NELAP	PA
9549 - 2,3,4,7,8-Pentachlorodibenzofuran	EPA 8290	10187209	NELAP	PA
9618 - 2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)	EPA 8290	10187209	NELAP	PA
9612 - 2,3,7,8-Tetrachlorodibenzofuran	EPA 8290	10187209	NELAP	PA
9438 - Total Hpcdd	EPA 8290	10187209	NELAP	PA
9444 - Total Hpcdf	EPA 8290	10187209	NELAP	PA
9468 - Total Hxcdd	EPA 8290	10187209	NELAP	PA
9483 - Total Hxcdf	EPA 8290	10187209	NELAP	PA
9555 - Total Pecdd	EPA 8290	10187209	NELAP	PA
9552 - Total Pecdf	EPA 8290	10187209	NELAP	PA
9609 - Total TCDD	EPA 8290	10187209	NELAP	PA
9615 - Total TCDF	EPA 8290	10187209	NELAP	PA
9519 - 1,2,3,4,6,7,8,9-Octachlorodibenzo-p-dioxin (OCDD)	EPA 8290A	10187403	NELAP	PA
9516 - 1,2,3,4,6,7,8,9-Octachlorodibenzofuran (OCDF)	EPA 8290A	10187403	NELAP	PA
9426 - 1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxin (1,2,3,4,6,7,8-hpcdd)	EPA 8290A	10187403	NELAP	PA
9420 - 1,2,3,4,6,7,8-Heptachlorodibenzofuran (1,2,3,4,6,7,8-hpcdf)	EPA 8290A	10187403	NELAP	PA
9423 - 1,2,3,4,7,8,9-Heptachlorodibenzofuran (1,2,3,4,7,8,9-hpcdf)	EPA 8290A	10187403	NELAP	PA
9453 - 1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin (1,2,3,4,7,8-Hxcdd)	EPA 8290A	10187403	NELAP	PA
9471 - 1,2,3,4,7,8-Hexachlorodibenzofuran (1,2,3,4,7,8-Hxcdf)	EPA 8290A	10187403	NELAP	PA
9456 - 1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin(1,2,3,6,7,8-Hxcdd)	EPA 8290A	10187403	NELAP	PA
9474 - 1,2,3,6,7,8-Hexachlorodibenzofuran (1,2,3,6,7,8-Hxcdf)	EPA 8290A	10187403	NELAP	PA
9459 - 1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin (1,2,3,7,8,9-Hxcdd)	EPA 8290A	10187403	NELAP	PA
9477 - 1,2,3,7,8,9-Hexachlorodibenzofuran (1,2,3,7,8,9-Hxcdf)	EPA 8290A	10187403	NELAP	PA
9540 - 1,2,3,7,8-Pentachlorodibenzo-p-dioxin (1,2,3,7,8-Pecdd)	EPA 8290A	10187403	NELAP	PA
9543 - 1,2,3,7,8-Pentachlorodibenzofuran (1,2,3,7,8-Pecdf)	EPA 8290A	10187403	NELAP	PA
9480 - 2,3,4,6,7,8-Hexachlorodibenzofuran	EPA 8290A	10187403	NELAP	PA
9549 - 2,3,4,7,8-Pentachlorodibenzofuran	EPA 8290A	10187403	NELAP	PA
9618 - 2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD)	EPA 8290A	10187403	NELAP	PA
9612 - 2,3,7,8-Tetrachlorodibenzofuran	EPA 8290A	10187403	NELAP	PA
9438 - Total Hpcdd	EPA 8290A	10187403	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
9444 - Total Hpcdf	EPA 8290A	10187403	NELAP	PA
9468 - Total Hxcdd	EPA 8290A	10187403	NELAP	PA
9483 - Total Hxcdf	EPA 8290A	10187403	NELAP	PA
9555 - Total Pecdd	EPA 8290A	10187403	NELAP	PA
9552 - Total Pecdf	EPA 8290A	10187403	NELAP	PA
9609 - Total TCDD	EPA 8290A	10187403	NELAP	PA
9615 - Total TCDF	EPA 8290A	10187403	NELAP	PA
6110 - 2,5-Dimethylbenzaldehyde	EPA 8315	10187801	NELAP	PA
4300 - Acetaldehyde	EPA 8315	10187801	NELAP	PA
4325 - Acrolein (Propenal)	EPA 8315	10187801	NELAP	PA
5570 - Benzaldehyde	EPA 8315	10187801	NELAP	PA
4430 - Butylaldehyde (Butanal)	EPA 8315	10187801	NELAP	PA
4545 - Crotonaldehyde	EPA 8315	10187801	NELAP	PA
4815 - Formaldehyde	EPA 8315	10187801	NELAP	PA
3825 - Hexanaldehyde (Hexanal)	EPA 8315	10187801	NELAP	PA
6330 - Isovaleraldehyde	EPA 8315	10187801	NELAP	PA
3965 - Propionaldehyde (Propanal)	EPA 8315	10187801	NELAP	PA
6755 - Tolualdehyde (1,2-Tolualdehyde)	EPA 8315	10187801	NELAP	PA
5125 - m-Tolualdehyde (1,3-Tolualdehyde)	EPA 8315	10187801	NELAP	PA
6760 - p-Tolualdehyde (1,4-Tolualdehyde)	EPA 8315	10187801	NELAP	PA
7710 - 3-Hydroxycarbofuran	EPA 8318	10188406	NELAP	PA
7010 - Aldicarb (Temik)	EPA 8318	10188406	NELAP	PA
7015 - Aldicarb sulfone	EPA 8318	10188406	NELAP	PA
7195 - Carbaryl (Sevin)	EPA 8318	10188406	NELAP	PA
7205 - Carbofuran (Furaden)	EPA 8318	10188406	NELAP	PA
7800 - Methiocarb (Mesurol)	EPA 8318	10188406	NELAP	PA
7805 - Methomyl (Lannate)	EPA 8318	10188406	NELAP	PA
8080 - Propoxur (Baygon)	EPA 8318	10188406	NELAP	PA
7710 - 3-Hydroxycarbofuran	EPA 8318A	10188600	NELAP	PA
7010 - Aldicarb (Temik)	EPA 8318A	10188600	NELAP	PA
7015 - Aldicarb sulfone	EPA 8318A	10188600	NELAP	PA
7195 - Carbaryl (Sevin)	EPA 8318A	10188600	NELAP	PA
7205 - Carbofuran (Furaden)	EPA 8318A	10188600	NELAP	PA
7800 - Methiocarb (Mesurol)	EPA 8318A	10188600	NELAP	PA
7805 - Methomyl (Lannate)	EPA 8318A	10188600	NELAP	PA
8080 - Propoxur (Baygon)	EPA 8318A	10188600	NELAP	PA
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8330	10189807	NELAP	PA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8330	10189807	NELAP	PA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8330	10189807	NELAP	PA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8330	10189807	NELAP	PA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8330	10189807	NELAP	PA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8330	10189807	NELAP	PA
9507 - 2-Nitrotoluene	EPA 8330	10189807	NELAP	PA
9510 - 3-Nitrotoluene	EPA 8330	10189807	NELAP	PA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8330	10189807	NELAP	PA
9513 - 4-Nitrotoluene	EPA 8330	10189807	NELAP	PA
6415 - Methyl-2,4,6-trinitrophenylnitramine (tetryl)	EPA 8330	10189807	NELAP	PA
5015 - Nitrobenzene	EPA 8330	10189807	NELAP	PA
9522 - Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	EPA 8330	10189807	NELAP	PA
9558 - Pentaerythritoltetranitrate	EPA 8330	10189807	NELAP	PA
9432 - RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8330	10189807	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
6885 - 1,3,5-Trinitrobenzene (1,3,5-TNB)	EPA 8330A	10190008	NELAP	PA
6160 - 1,3-Dinitrobenzene (1,3-DNB)	EPA 8330A	10190008	NELAP	PA
9651 - 2,4,6-Trinitrotoluene (2,4,6-TNT)	EPA 8330A	10190008	NELAP	PA
6185 - 2,4-Dinitrotoluene (2,4-DNT)	EPA 8330A	10190008	NELAP	PA
6190 - 2,6-Dinitrotoluene (2,6-DNT)	EPA 8330A	10190008	NELAP	PA
9303 - 2-Amino-4,6-dinitrotoluene (2-am-dnt)	EPA 8330A	10190008	NELAP	PA
9507 - 2-Nitrotoluene	EPA 8330A	10190008	NELAP	PA
9510 - 3-Nitrotoluene	EPA 8330A	10190008	NELAP	PA
9306 - 4-Amino-2,6-dinitrotoluene (4-am-dnt)	EPA 8330A	10190008	NELAP	PA
9513 - 4-Nitrotoluene	EPA 8330A	10190008	NELAP	PA
6415 - Methyl-2,4,6-trinitrophenylnitramine (tetryl)	EPA 8330A	10190008	NELAP	PA
5015 - Nitrobenzene	EPA 8330A	10190008	NELAP	PA
9522 - Octahydro-1,3,5,7-tetranitro-1,3,5,7-tetrazocine (HMX)	EPA 8330A	10190008	NELAP	PA
9558 - Pentaerythritoltetranitrate	EPA 8330A	10190008	NELAP	PA
9432 - RDX (hexahydro-1,3,5-trinitro-1,3,5-triazine)	EPA 8330A	10190008	NELAP	PA
1645 - Total Cyanide	EPA 9012A	10193405	NELAP	PA
1615 - Corrosivity	EPA 9045C	10198400	NELAP	PA
1900 - pH	EPA 9045C	10198400	NELAP	PA
1610 - Conductivity	EPA 9050	10198604	NELAP	PA
1610 - Conductivity	EPA 9050A	10198808	NELAP	PA
1905 - Total Phenolics	EPA 9066	10200609	NELAP	PA
1860 - Oil & Grease	EPA 9071B	10201602	NELAP	PA
1560 - Cation exchange capacity	EPA 9081	10203404	NELAP	PA
1780 - Ignitability	EPA 1010A	10234807	NELAP	PA
6380 - 1-Methylnaphthalene	EPA 8270C SIM	10242407	NELAP	PA
5500 - Acenaphthene	EPA 8270C SIM	10242407	NELAP	PA
5505 - Acenaphthylene	EPA 8270C SIM	10242407	NELAP	PA
5555 - Anthracene	EPA 8270C SIM	10242407	NELAP	PA
5575 - Benzo(a)anthracene	EPA 8270C SIM	10242407	NELAP	PA
5580 - Benzo(a)pyrene	EPA 8270C SIM	10242407	NELAP	PA
5585 - Benzo(b)fluoranthene	EPA 8270C SIM	10242407	NELAP	PA
5590 - Benzo(g,h,i)perylene	EPA 8270C SIM	10242407	NELAP	PA
5600 - Benzo(k)fluoranthene	EPA 8270C SIM	10242407	NELAP	PA
5855 - Chrysene	EPA 8270C SIM	10242407	NELAP	PA
5895 - Dibenz(a,h) anthracene	EPA 8270C SIM	10242407	NELAP	PA
6265 - Fluoranthene	EPA 8270C SIM	10242407	NELAP	PA
6270 - Fluorene	EPA 8270C SIM	10242407	NELAP	PA
6315 - Indeno(1,2,3-cd) pyrene	EPA 8270C SIM	10242407	NELAP	PA
5005 - Naphthalene	EPA 8270C SIM	10242407	NELAP	PA
6615 - Phenanthrene	EPA 8270C SIM	10242407	NELAP	PA
6665 - Pyrene	EPA 8270C SIM	10242407	NELAP	PA
6380 - 1-Methylnaphthalene	EPA 8270D SIM	10242509	NELAP	PA
5500 - Acenaphthene	EPA 8270D SIM	10242509	NELAP	PA
5505 - Acenaphthylene	EPA 8270D SIM	10242509	NELAP	PA
5555 - Anthracene	EPA 8270D SIM	10242509	NELAP	PA
5575 - Benzo(a)anthracene	EPA 8270D SIM	10242509	NELAP	PA
5580 - Benzo(a)pyrene	EPA 8270D SIM	10242509	NELAP	PA
5585 - Benzo(b)fluoranthene	EPA 8270D SIM	10242509	NELAP	PA
5590 - Benzo(g,h,i)perylene	EPA 8270D SIM	10242509	NELAP	PA
5600 - Benzo(k)fluoranthene	EPA 8270D SIM	10242509	NELAP	PA
5855 - Chrysene	EPA 8270D SIM	10242509	NELAP	PA

Solid Chemical Materials

Analyte	Method Name	Method Code	Type	AB
5895 - Dibenz(a,h) anthracene	EPA 8270D SIM	10242509	NELAP	PA
6265 - Fluoranthene	EPA 8270D SIM	10242509	NELAP	PA
6270 - Fluorene	EPA 8270D SIM	10242509	NELAP	PA
6315 - Indeno(1,2,3-cd) pyrene	EPA 8270D SIM	10242509	NELAP	PA
5005 - Naphthalene	EPA 8270D SIM	10242509	NELAP	PA
6615 - Phenanthrene	EPA 8270D SIM	10242509	NELAP	PA
6665 - Pyrene	EPA 8270D SIM	10242509	NELAP	PA
1900 - pH	EPA 9040C	10244403	NELAP	PA
4870 - Iodomethane (Methyl iodide)	EPA 8260C	10307003	NELAP	PA
1950 - Residue-total	SM 2540 G, 21st Ed	20006206	NELAP	PA
6218 - EPH Aliphatic C19-C36	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6222 - EPH Aliphatic C9-C18	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6232 - EPH Aromatic C11-C22	MADEP EPH, Rev.1.1	90017202	NELAP	PA
6234 - EPH Aromatic C11-C22 Unadjusted	MADEP EPH, Rev.1.1	90017202	NELAP	PA
5304 - VPH Aliphatic C5-C8	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5305 - VPH Aliphatic C5-C8 Unadjusted	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5306 - VPH Aliphatic C9-C12	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5307 - VPH Aliphatic C9-C12 Unadjusted	MADEP VPH, Rev.1.1	90017406	NELAP	PA
5311 - VPH Aromatic C9-C10	MADEP VPH, Rev.1.1	90017406	NELAP	PA
9369 - Diesel range organics (DRO)	TNRCC 1005, Rev.3	90019208	NELAP	PA
2050 - Total Petroleum Hydrocarbons (TPH)	TNRCC 1005, Rev.3	90019208	NELAP	PA

Biological Tissue

Analyte	Method Name	Method Code	Type	AB
1000 - Aluminum	EPA 6010	10155201	NELAP	LA
1005 - Antimony	EPA 6010	10155201	NELAP	LA
1010 - Arsenic	EPA 6010	10155201	NELAP	LA
1015 - Barium	EPA 6010	10155201	NELAP	LA
1020 - Beryllium	EPA 6010	10155201	NELAP	LA
1025 - Boron	EPA 6010	10155201	NELAP	LA
1030 - Cadmium	EPA 6010	10155201	NELAP	LA
1035 - Calcium	EPA 6010	10155201	NELAP	LA
1040 - Chromium	EPA 6010	10155201	NELAP	LA
1050 - Cobalt	EPA 6010	10155201	NELAP	LA
1055 - Copper	EPA 6010	10155201	NELAP	LA
1070 - Iron	EPA 6010	10155201	NELAP	LA
1075 - Lead	EPA 6010	10155201	NELAP	LA
1085 - Magnesium	EPA 6010	10155201	NELAP	LA
1090 - Manganese	EPA 6010	10155201	NELAP	LA
1100 - Molybdenum	EPA 6010	10155201	NELAP	LA
1105 - Nickel	EPA 6010	10155201	NELAP	LA
1125 - Potassium	EPA 6010	10155201	NELAP	LA
1140 - Selenium	EPA 6010	10155201	NELAP	LA
1150 - Silver	EPA 6010	10155201	NELAP	LA
1155 - Sodium	EPA 6010	10155201	NELAP	LA
1160 - Strontium	EPA 6010	10155201	NELAP	LA
1165 - Thallium	EPA 6010	10155201	NELAP	LA
1175 - Tin	EPA 6010	10155201	NELAP	LA
1180 - Titanium	EPA 6010	10155201	NELAP	LA
1185 - Vanadium	EPA 6010	10155201	NELAP	LA
1190 - Zinc	EPA 6010	10155201	NELAP	LA
1005 - Antimony	EPA 6020	10156000	NELAP	LA
1010 - Arsenic	EPA 6020	10156000	NELAP	LA

Biological Tissue

Analyte	Method Name	Method Code	Type	AB
1020 - Beryllium	EPA 6020	10156000	NELAP	LA
1030 - Cadmium	EPA 6020	10156000	NELAP	LA
1040 - Chromium	EPA 6020	10156000	NELAP	LA
1055 - Copper	EPA 6020	10156000	NELAP	LA
1075 - Lead	EPA 6020	10156000	NELAP	LA
1105 - Nickel	EPA 6020	10156000	NELAP	LA
1140 - Selenium	EPA 6020	10156000	NELAP	LA
1165 - Thallium	EPA 6020	10156000	NELAP	LA
1095 - Mercury	EPA 7471	10166004	NELAP	LA
7355 - 4,4'-DDD	EPA 8081	10178402	NELAP	LA
7360 - 4,4'-DDE	EPA 8081	10178402	NELAP	LA
7365 - 4,4'-DDT	EPA 8081	10178402	NELAP	LA
7025 - Aldrin	EPA 8081	10178402	NELAP	LA
7250 - Chlordane (tech.)	EPA 8081	10178402	NELAP	LA
7470 - Dieldrin	EPA 8081	10178402	NELAP	LA
7685 - Heptachlor	EPA 8081	10178402	NELAP	LA
7690 - Heptachlor epoxide	EPA 8081	10178402	NELAP	LA
8250 - Toxaphene (Chlorinated camphene)	EPA 8081	10178402	NELAP	LA
7110 - alpha-BHC (alpha-Hexachlorocyclohexane)	EPA 8081	10178402	NELAP	LA
7115 - beta-BHC (beta-Hexachlorocyclohexane)	EPA 8081	10178402	NELAP	LA
7105 - delta-BHC	EPA 8081	10178402	NELAP	LA
7120 - gamma-BHC (Lindane, gamma-HexachlorocyclohexanE)	EPA 8081	10178402	NELAP	LA
8880 - Aroclor-1016 (PCB-1016)	EPA 8082	10179007	NELAP	LA
8885 - Aroclor-1221 (PCB-1221)	EPA 8082	10179007	NELAP	LA
8890 - Aroclor-1232 (PCB-1232)	EPA 8082	10179007	NELAP	LA
8895 - Aroclor-1242 (PCB-1242)	EPA 8082	10179007	NELAP	LA
8900 - Aroclor-1248 (PCB-1248)	EPA 8082	10179007	NELAP	LA
8905 - Aroclor-1254 (PCB-1254)	EPA 8082	10179007	NELAP	LA
8910 - Aroclor-1260 (PCB-1260)	EPA 8082	10179007	NELAP	LA
6715 - 1,2,4,5-Tetrachlorobenzene	EPA 8270	10185203	NELAP	LA
6400 - 2-Methylphenol (o-Cresol)	EPA 8270	10185203	NELAP	LA
6405 - 3-Methylphenol (m-Cresol)	EPA 8270	10185203	NELAP	LA
6410 - 4-Methylphenol (p-Cresol)	EPA 8270	10185203	NELAP	LA
5855 - Chrysene	EPA 8270	10185203	NELAP	LA
6275 - Hexachlorobenzene	EPA 8270	10185203	NELAP	LA
4835 - Hexachlorobutadiene	EPA 8270	10185203	NELAP	LA
6285 - Hexachlorocyclopentadiene	EPA 8270	10185203	NELAP	LA
4840 - Hexachloroethane	EPA 8270	10185203	NELAP	LA
6290 - Hexachlorophene	EPA 8270	10185203	NELAP	LA
6590 - Pentachlorobenzene	EPA 8270	10185203	NELAP	LA
6605 - Pentachlorophenol	EPA 8270	10185203	NELAP	LA
5095 - Pyridine	EPA 8270	10185203	NELAP	LA
5025 - n-Nitroso-di-n-butylamine	EPA 8270	10185203	NELAP	LA
6525 - n-Nitrosodiethylamine	EPA 8270	10185203	NELAP	LA

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Details on method quality control (QC) processes are provided in the individual Analytical Procedures. QC limits are maintained in the LIMS. This appendix provides an overview for representative methodology.
NOTE: This appendix is not applicable to OH VAP work. See the OH VAP approved SOPs for QC information.

SW - 846
Quality Control
GC/MS Volatiles Method 8260

Type	Frequency	Corrective Action
Surrogates: Toluene-d_8 Bromofluorobenzene 1,2-Dichloroethane-d_4 Dibromofluoromethane	Each sample, MS, MSD, LCS, and blank	Reanalyze sample if outside limits; if reanalysis confirms original, document on report and/or case narrative
Matrix Spikes: Spike all compounds of interest	Each group ($\leq$20) of samples per matrix/level	Evaluation in conjunction with acceptable LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD.
Laboratory Control Samples: Spike all compounds of interest	Each group ($\leq$20) of samples per matrix/level	Reanalyze LCS and associated samples for compounds outside acceptance limits that are also outside MS/MSD acceptance limits. Compounds that fail high in the LCS and are ND in the samples, can be reported.
Matrix Spike Duplicates (RPD): Spike all compounds of interest	Each group ($\leq$20) of samples per matrix/level	Evaluated by analyst in relationship to other QC results
Blanks:	Once for each 12-hour time period or $\leq$20 samples	Reanalyze blank and associated samples if blank outside limits
Internal Standards (ISTD): Fluorobenzene Chlorobenzene-d_5 1,4-Dichlorobenzene-d_4 tert-Butyl alcohol-d10	Each sample, MS, MSD, LCS, and blank	Reanalyze samples; if reanalysis confirms original, document on report or case narrative

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

SW - 846
Quality Control
GC/MS Semivolatiles Method 8270

Type	Frequency	Corrective Action
Surrogate: Nitrobenzene-d_5 2-Fluorobiphenyl Terphenyl-d_{14} Phenol-d_6 2-Fluorophenol 2,4,6-Tribromophenol	Each sample, MS, MSD, LCS, and blank	Repeat extraction and analysis; if reanalysis confirms original, document on report and/or case narrative
Matrix Spikes: Spike all compounds of interest	Each group (≤20) of samples per matrix/level	Evaluation in conjunction with acceptable LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD.
Laboratory Control Sample: Spike all compounds of interest	Each group (≤20) of samples per matrix/level	Re-extract and reanalyze LCS and associated samples for compounds outside acceptance limits. Compounds that fail high in the LCS and are ND in the samples, can be reported.
Matrix Spike Duplicates (RPD): Same as for matrix spikes	Each group (≤20) of samples per matrix/level	Evaluated by analyst in relationship to other QC results
Blanks:	Once per extraction group (≤20) of samples, each matrix, level	Re-extract and reanalyze blank and associated samples
Internal Standards (ISTD): 1,4-Dichlorobenzene-d_4 Naphthalene-d_8 Acenaphthene-d_{10} Phenanthrene-d_{10} Chrysene-d_{12} Perylene-d_{12}	Each sample, MS, MSD, LCS, and blank	Reanalyze samples; if reanalysis confirms original, document on report and/or case narrative

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

SW - 846
Quality Control
GC/MS Semivolatiles Method 8270 SIM

Type	Frequency	Corrective Action
Surrogate: **1-Methylnaphthalene-d10** **Fluoranthene-d10** **Benzo(a)pyrene-d12**	Each sample, MS, MSD, LCS, and blank	Repeat extraction and analysis; if reanalysis confirms original, document on report and/or case narrative
Matrix Spikes: Spike all compounds of interest	Each group (≤20) of samples per matrix/level	Evaluation in conjunction with acceptable LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD.
Laboratory Control Sample: Spike all compounds of interest	Each group (≤20) of samples per matrix/level	Re-extract and reanalyze LCS and associated samples for compounds outside acceptance limits. Compounds that fail high in the LCS and are ND in the samples, can be reported.
Matrix Spike Duplicates (RPD): Same as for matrix spikes	Each group (≤20) of samples per matrix/level	Evaluated by analyst in relationship to other QC results
Blanks:	Once per extraction group (≤20) of samples, each matrix, level	Re-extract and reanalyze blank and associated samples
Internal Standards (ISTD): 1,4-Dichlorobenzene-d_4 Naphthalene-d_8 Acenaphthene-d_{10} Phenanthrene-d_{10} Chrysene-d_{12} Perylene-d_{12}	Each sample, MS, MSD, LCS, and blank	Reanalyze samples; if reanalysis confirms original, document on report and/or case narrative

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

SW - 846
Quality Control
Dioxins/Furans Method 8290

Type	Frequency	Corrective Action
Labeled Compounds: 13C Labeled Isotope of each of 17 Toxic PCDD/PCDF	Each sample, OPR, and blank	Repeat extraction and analysis; if reanalysis confirms original, document on report and/or case narrative
Ongoing Precision and Recovery Standard (OPR): Spike all compounds of interest	Each group (≤20) of samples per matrix/level	Reanalyze OPR and associated samples for compounds outside acceptance limits that are also outside MS/MSD acceptance limits. Compounds that fail high in the OPR and are ND in the samples, can be reported.
Blanks:	Once for each 12-hour time period or ≤20 samples	Reanalyze blank and associated samples if blank outside limits
Internal Standards (ISTD): 13C12-1234-TCDD 13C12-123468-HxCDD	Each sample, OPR, and blank	RT ± 15 secs of retention time in initial calibration.

Quality Control
Dioxins/Furans Method 1613B

Type	Frequency	Corrective Action
Labeled Compounds: 13C Labeled Isotope of each of 17 Toxic PCDD/PCDF	Each sample, OPR, and blank	Repeat extraction and analysis; if reanalysis confirms original, document on report and/or case narrative
Ongoing Precision and Recovery Standard (OPR): Spike all compounds of interest	Each group (≤20) of samples per matrix/level	Reanalyze OPR and associated samples for compounds outside acceptance limits that are also outside MS/MSD acceptance limits. Compounds that fail high in the OPR and are ND in the samples, can be reported.
Blanks:	Once for each 12-hour time period or ≤20 samples	Reanalyze blank and associated samples if blank outside limits
Internal Standards (ISTD): 13C12-1234-TCDD 13C12-123468-HxCDD	Each sample, OPR, and blank	RT ± 15 secs of retention time in initial calibration.

Quality Control Congeners Method 1668		
Type	**Frequency**	**Corrective Action**
Labeled Compounds: 13C Labeled Isotope of each of 18 Toxic PCBs	Each sample, OPR, and blank	Repeat extraction and analysis; if reanalysis confirms original, document on report and/or case narrative
Ongoing Precision and Recovery Standard (OPR): Spike all compounds of interest	Each group (≤20) of samples per matrix/level	Reanalyze OPR and associated samples for compounds outside acceptance limits that are also outside MS/MSD acceptance limits. Compounds that fail high in the OPR and are ND in the samples, can be reported.
Blanks:	Once for each 12-hour time period or ≤20 samples	Reanalyze blank and associated samples if blank outside limits
Internal Standards (ISTD): 13C12-PCB70 13C12-PCB111 13C12-PCB141 13C12-PCB170	Each sample, OPR, and blank	RT ± 15 secs of retention time in initial calibration.

SW-846
Quality Control
Pesticides/PCBs Methods 8081; 8082; 8141; 8151

Type	Frequency	Corrective Action
Surrogate: Organochlorine Pesticides & PCBs Decachlorobiphenyl (DCB) Tetrachloro-*m*-xylene (TCMX) Herbicides: Dichloroacetic acid (DCAA) Organophosphorous Pesticides: 2-nitro-*m*-xylene (2NMX)	Added to each sample, MS/MSD, blank, LCS/LCSD during the extraction phase	Repeat extraction and analysis. If reanalysis confirms original result, report results and comment in case narrative
Matrix Spikes: Organochlorine Pesticides: Spike all compounds of interest, except PCBs, chlordane, and toxaphene Herbicides & Organophosphorous Pesticides: all compounds of interest PCBs: Aroclor 1016 & Aroclor 1260	Each extraction group (≤20) of samples per matrix/level	Evaluation in conjunction with acceptable LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD.
Laboratory Control Sample: Organochlorine Pesticides: Spike all compounds of interest, except PCBs, chlordane, and toxaphene Herbicides & Organophosphorous Pesticides: all compounds of interest PCBs: Aroclor 1016 & Aroclor 1260	Each group (≤20) when MS/MSD falls outside established limits	Re-extract and reanalyze LCS and associated samples for compounds outside acceptance limits. Compounds that fail high in the LCS and are ND in the samples can be reported.

SW-846 Quality Control Pesticides/PCBs Methods 8081; 8082; 8141; 8151 (continued)		
Type	**Frequency**	**Corrective Action**
Matrix Spike Duplicates (RPD): Organochlorine Pesticides: Spike all compounds of interest, except PCBs, chlordane, and toxaphene Herbicides & Organophosphorous Pesticides: all compounds of interest PCBs: Aroclor 1016 & Aroclor 1260	Each extraction group (≤20) of samples per matrix/level	Evaluated in conjunction with acceptable LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD.
Blanks:	Once per extraction group (≤20) of samples, each matrix, level	Inject a hexane or solvent blank first to be sure the analytical system is clean then reinject the blank itself. If the reinjected blank is acceptable, any samples extracted with this blank should be reinjected if they, too, contain the analyte which was contaminating the blank. If the reinjected blank is unacceptable, any affected samples must be reextracted.
Internal Standards (ISTD): Herbicides: 4,4'-dibromo octafluorobiphenyl (DBOB)	Each sample, MS, MSD, LCS, and blank	Internal standard criteria is advisory only.

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

SW-846
Quality Control
Volatiles by GC
8021

Type	Frequency	Corrective Action
Surrogates: Aromatics; α,α,α-Trifluorotoluene (TFT)	Each sample, MS, MSD, LCS and blank	Reanalyze if the surrogate recovery is outside the limits unless matrix-related problems are evident.
Matrix Spikes: Spike all compounds of interest	Each group of samples (≤20) of similar matrix/level each method	Evaluation in conjunction with acceptable LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD.
Laboratory Control Sample: Spike all compounds of interest	Each group (≤20); LCSD is analyzed if sufficient volume is not available for MS/MSD	Reanalyze LCS and associated samples for compounds outside of acceptance limits. Compounds that fail high in the LCS and are ND in the samples can be reported.
Internal Standard (ISTD): Aromatics; 1-chloro-3-fluorobenzene	Each sample, LCS , MS, MSD, blank, and standard	Reanalyze samples; if reanalysis confirms original, document on report and/or case narrative. In cases where the sample matrix is elevating the ISTD recovery, a dilution and reanalysis may be performed.
Matrix Spike Duplicate (RPD): Same compounds as matrix spikes	Each group (≤20) of samples per matrix/level	Evaluated by analyst in relationship to other QC results
Blanks:	At least once per batch (≤20 samples) and once per 24 hours	Reanalyze blank and associated samples if blank is outside limits

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

SW-846 Quality Control TPH-DRO 8015B		
Type	**Frequency**	**Corrective Action**
Surrogate: *o*-Terphenyl	Added to each sample, MS/MSD, blank, LCS/LCSD during the extraction phase	Repeat extraction and analysis. If reanalysis confirms original result, report results and comment in case narrative.
Matrix Spike: # 2 Fuel	Each group (≤20) of samples per matrix/level	Reinject if surrogates appear low. If still out of spec, evaluate for matrix effect. If matrix effect, accept based on LCS data. If no matrix effect, repeat batch.
Laboratory Control Sample: # 2 Fuel	Each group (≤20) of samples per matrix/level	Reinject if surrogates appear low. If still out of spec, reextract batch. LCS that fails high and DRO is ND in the samples can be reported.
Laboratory Control Duplicates (RPD): # 2 Fuel	Each group (≤20) of samples per matrix/level	Evaluated by analyst in relationship to other QC results
Blanks:	Once per extraction group (≤20) of samples, each matrix, level	Inject a solvent blank first to be sure the analytical system is clean then reinject the blank itself. If the reinjected blank is acceptable, any samples extracted with this blank should be reinjected, if they, too, contain the analyte which was contaminating the blank. If the reinjected blank is unacceptable, any affected samples must be re-extracted.

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

SW-846
Quality Control
TPH-GRO
8015B

Type	Frequency	Corrective Action
Surrogate: Trifluorotoluene (FID)	Each sample, MS/MSD, LCS, and blank	Reanalyze if the surrogate recovery is outside the limits unless matrix-related problems are evident
Matrix Spike: Gasoline standard	Each group of samples of similar matrix/level (≤20) each method	Evaluation in conjunction with acceptable LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD.
Laboratory Control Sample Gasoline standard	Each group (≤20) of samples. LCSD analyzed if sufficient volume is not available for MS/MSD.	Reanalyze LCS and associated samples. LCS that fails high and GRO is ND in the samples can be reported.
Matrix Spike Duplicate (RPD): Same compounds as matrix spikes	Each group (≤20) of samples per matrix/level	Evaluated by analyst in relationship to other QC results
Blanks:	At least one per 20 samples and at least once per 24 hours.	Reanalyze blank and associated samples if blank is outside limits

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change

SW-846
Quality Control*
Inorganics (Metals)

Type	Frequency	Corrective Action
Internal Standard (ICP & ICP/MS only):	Each sample, standard and QC (Unspiked, Dup., MS, MSD, LCS, dilution, post digestion spike and blank)	If the internal standard response falls outside the specified range, then the samples would be reanalyzed.
Matrix Spikes:	Each group of samples of similar matrix/level (≤20) each method	Analyze post-digestion spike sample
Matrix Spike Duplicate (RPD):	Each group of samples of similar matrix/level (20) each method	Analyze post-digestion spike sample if not already run for MS, flag the data
Duplicates (RPD):	Each group of samples of similar matrix/level (≤20) each method	Flag the data

SW-846 Quality Control* Inorganics (Metals)		
Type	**Frequency**	**Corrective Action**
Blanks: Initial Calibration (ICB) Continuing Calibration (CCB)	Each element immediately after calibration verification at 10% frequency or every 2 hours (beginning and end of run min.)	Correct problem, recalibrate, and rerun
Preparation Blank	Each SDG or batch (≤20 samples)	Redigest and reanalyze blank and associated samples if sample result is greater than the LOQ and <20× blank result
Serial Dilutions (ICP, ICP/MS only):	Each group of (≤20) of similar matrix/level	Flag the data
Interference Check Sample (ICP, ICP/MS only):	Each element after Initial Calibration Verification at beginning and end of the run or min. of 2× per 8 hour	Correct for interference, recalibrate the instrument
Laboratory Control Sample:	Each SDG or batch (≤20 samples), each method	Redigest and reanalyze LCS and associated samples. Elements in the LCS that fail high and are ND in the samples can be reported.
Post Digestion Spike:	When matrix spikes are outside 75 % - 125% range, or the statistical window (whichever is tighter).	Flag the data

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

QC Table for SW-846 Miscellaneous Water Tests			
Test	**QC Type**	**Frequency**	**Corrective Action**
Sulfide	Blank	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze.
	Laboratory Control Sample	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze. LCSs that fail high (and associated samples are ND) can be reported.
	Duplicate	Each group of samples of similar matrix (≤20)	Ensure that LCS meets acceptance criteria.
	Matrix Spike/ Matrix Spike Duplicate	Each group of samples of similar matrix (≤20)	Ensure that LCS meets acceptance criteria.
	Blank	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze.

Bromide (IC) **Chloride (IC)** **Cyanide (total)** **Fluoride (IC)** **Nitrate/Nitrite (IC)** **Sulfate (IC)**	Laboratory Control Sample	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze. LCSs that fail high (and associated samples are ND) can be reported.
	Duplicate	Each group of samples of similar matrix (≤10)	Ensure that LCS meets acceptance criteria.
	Matrix Spike	Each group of samples of similar matrix (≤10)	Ensure that LCS meets acceptance criteria.
Phenols **TOC Quad**	Blank	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze.
	Laboratory Control Sample	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze. LCSs that fail high (and associated samples are ND) can be reported.
	Matrix Spike/ Matrix Spike Duplicate	Each group of samples of similar matrix (≤10)	Ensure that LCS meets acceptance criteria.
pH **Moisture**	Laboratory Control Sample	Each group of samples of similar matrix (≤20)	Re-analyze samples.
	Duplicate	Each group of samples of similar matrix (≤10)	Ensure that LCS meets acceptance criteria.
Microbiology	Organism control	Each lot of media (minimum of one per month)	Investigate cause
	Negative control	Each lot of media (minimum of one per month)	Investigate cause

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

Drinking Water
Quality Control
Inorganics (Metals)

Type	Frequency	Corrective Action
Internal Standard (ICP & ICP/MS only):	Each sample, standard and QC (Unspiked, Dup., MS, LFB, Post Digestion Spike, dilution and blank)	If the internal standard response falls outside the specified range, then the samples would be reanalyzed.
Matrix Spikes:	Each group of samples of similar matrix/level (≤10) each method	Analyze post-digestion spike sample
Duplicates (RPD):	Each group of samples of similar matrix/level (≤10) each method	Flag the data
Blanks: Initial Calibration (ICB) Continuing Calibration (CCB)	Each wavelength immediately after calibration verification at 10% frequency	Correct problem, recalibrate, and rerun
Preparation Blank	Each batch (≤10 samples)	Redigest and reanalyze blank and associated samples if sample result <10 times blank result or >LOQ
Laboratory Fortified Blank (LFB):	Each batch (≤10 samples)	Redigest and reanalyze LFB and associated samples. Elements that fail high in the LFB and are ND in the samples can be reported.
Post Digestion Spike:	When matrix spikes are outside range	Flag the data

Drinking Water EPA Method 525.2 Quality Control		
Type	**Frequency**	**Corrective Action**
Lab Reagent Blank (LRB):	One per extraction batch of (≤20) samples	Re-extract and reanalyze blank and associated samples
Lab Fortified Blank (LFB): Spike all compounds of interest	One per extraction batch of (≤20) samples	Re-extract and reanalyze LFB and associated samples for compounds outside acceptance limits. Compounds that fail high in the LFB and are ND in the samples can be reported.
Matrix Spike/Matrix Spike Duplicate (MS/MSD): Spike all compounds of interest	One per extraction batch of (≤20) samples	Recoveries for LFB must be within criteria. If there is insufficient sample for MSD, then a duplicate (extraction and analysis) of another sample in the batch must be performed.
Surrogates: 1,3-Dimethyl-2-nitrobenzene Perylene-d_{12} Triphenylphosphate	Each sample, LFB, MS, MSD, and blank	Re-extract and reanalyze the sample
Internal Standards (ISTD): Acenaphthene-d_{10} Phenanthrene-d_{10} Chrysene-d_{12}	Each sample, LFB, MS, MSD, and blank	Reanalyze samples

QC Table for Miscellaneous Water Tests

Test	QC Type	Frequency	Corrective Action
Alkalinity **Ammonia (ISE)** **Ammonia (Distill)** **Dissolved Solids** **Fluoride (ISE)** **Hardness** **Sulfate (TURB)** **Sulfide** **Total Solids** **Turbidity**	Blank	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze.
	Laboratory Fortified Blank	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze.*
	Duplicate	Each group of samples of similar matrix (≤20) Alkalinity, Dissolved Solids, Total Solids, Turbidity each group of similar matrix (≤10)	Ensure that LFB meets acceptance criteria.
	Matrix Spike/ Matrix Spike Duplicate	Each group of samples of similar matrix (≤20) (not for Turbidity)	Ensure that LFB meets acceptance criteria.
Bromide (IC) **Chloride (IC)** **Cyanide (total & free)** **Fluoride (IC)** **Nitrogen (TKN)** **Nitrate/Nitrite** **Sulfate (IC)** **Total Phosphorus** **TOC**	Blank	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze.
	Laboratory Fortified Blank	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze.*
	Duplicate	Each group of samples of similar matrix (≤10)	Ensure that LFB meets acceptance criteria.
	Matrix Spike	Each group of samples of similar matrix (≤10)	Ensure that LFB meets acceptance criteria.
Phenols	Blank	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze.
	Laboratory Fortified Blank/Laboratory Control Sample	Each group of samples of similar matrix (≤20)	Prepare the entire batch again and re-analyze.*
	Matrix Spike/ Matrix Spike Duplicate	Each group of samples of similar matrix (≤10)	Ensure that LFB meets acceptance criteria.
pH **Moisture**	Laboratory Fortified Blank	Each group of samples of similar matrix (≤20)	Re-analyze samples.
	Duplicate	Each group of samples of similar matrix (≤10)	Ensure that LFB meets acceptance criteria.
Microbiology	Organism control (+)	Each lot of media (minimum of one per month)	Investigate cause
	Negative control (-)	Each lot of media (minimum of one per month)	Investigate cause

*LFBs that fail high and associated samples are ND can be reported.

QC Table for Drinking Water Methods: 507, 515.1, 531.1		
Type of QC	**Frequency**	**Corrective Action**
Blank	Each batch of (≤20) samples	Inject a solvent blank to check for analytical system contamination. Re-inject the blank. If the re-injected blank is acceptable then any samples with positive results must be re-injected. If the re-injected blank is unacceptable, all associated samples must be re-extracted.
Surrogate 507 – 2-NMX 515 – DCAA 531 – BDMC	Added to each field and QC sample during the extraction.	Recovery must be within specifications unless matrix-related problems are evident, in which case report results and comment.
Matrix Spike/Matrix Spike Duplicate Spike all compounds of interest, except multipeak compounds	Each batch (≤20) of samples if sample volume is available.	Evaluate in conjunction with the LFB.
Laboratory Fortified Blank (LFB) Spike all compounds of interest, rotate multipeak compounds	Each batch of (≤20) samples. LCSD may be used if insufficient sample for MS/MSD is submitted.	If LFB compounds are outside of acceptance limits, re-extract and re-analyze the batch. Compounds that fail high in the LFB and are ND in the samples can be reported.

QC Table for Drinking Water Method: 524.2		
Type of QC	**Frequency**	**Corrective Action**
Blank	One blank for each 12-hour period or batch of ≤20 samples	Reanalyze blank and associated samples if blank is unacceptable.
Surrogate 4-Bromofluorobenzene 1,2-Dichlorobenzene-d_4	Added to each field and QC sample prior to analysis	Reanalyze sample if outside limits. If reanalysis confirms original, document on report.
Matrix Spike/Matrix Spike Duplicate Spike all compounds of interest	At client request.	Evaluate in conjunction with the LFB.
Laboratory Fortified Blank (LFB) Spike all compounds of interest	One LFB for each 12 hour period.	If target compounds are outside of acceptance limits, re-analyze the LFB. If second LFB fails, recalibrate instrument, re-analyze LFB and any associated samples. Compounds that fail high in the LFB and are ND in the samples can be reported.
Internal standard (ISTD) Fluorobenzene	Added to each field and QC sample prior to analysis	Reanalyze sample if outside limits. If reanalysis confirms original, document on report.

EPA 624
Quality Control
GC/MS Volatiles

Type	Frequency	Corrective Action
Surrogates: 4-Bromofluorobenzene 1,2-Dichloroethane-d_4 Fluorobenzene	Each sample, MS, MSD, LCS, and blank	Reanalyze sample if outside limits; if reanalysis is within limits, the reanalysis data is reported. If surrogates confirm original, document on report and/or case narrative
Matrix Spikes: Spike all compounds of interest	Each batch (≤20) of samples	Evaluated by analyst in conjunction with the LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD.
Laboratory Control Samples: Spike all compounds of interest	Each batch (≤20) of samples	Reanalyze LCS and associated samples for compounds outside acceptance limits that are also outside MS/MSD acceptance limits. Compounds that fail high in the LCS and are ND in the samples can be reported.
Matrix Spike Duplicates (RPD): Spike all compounds of interest	Each batch (≤20) of samples	Evaluated by analyst in relationship to other QC results
Blanks:	Once every 24-hour tune period and/or 20 samples, whichever comes first	Reanalyze blank and associated samples if blank outside QC limits
Internal Standards (ISTD): Bromochloromethane 2-Bromo-1-chloropropane 1,4-Difluorobenzene	Each sample, MS, MSD, LCS, and blank	Reanalyze sample if outside limits; if reanalysis is within limits, the reanalysis data is reported. If internals confirm original, document on report and/or case narrative

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

EPA 625
Quality Control
GC/MS Semivolatiles

Type	Frequency	Corrective Action
Surrogate: Nitrobenzene-d_5 2-Fluorobiphenyl Terphenyl-d_{14} Phenol-d_6 2-Fluorophenol 2,4,6-Tribromophenol	Each sample, MS, MSD, LCS, and blank	Re-extract and reanalyze if more than one surrogate out per fraction (acid/base) or any recovery <10%; if re-extraction and reanalysis confirms originals, document on report and/or case narrative
Matrix Spikes: Spike all compounds of interest	Each group (≤20) of samples per matrix/level	Evaluate in conjunction with the LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD.
Laboratory Control Sample: Spike all compounds of interest	Each group (≤20) of samples per matrix/level	Re-extract and reanalyze LCS and associated samples for compounds outside acceptance limits. Compounds that fail high in the LCS and are ND in the samples can be reported.
Matrix Spike Duplicates (RPD): Same as for matrix spikes	Each group (≤20) of samples per matrix/level	Evaluated by analyst in relationship to other QC results
Blanks:	Once per extraction group (≤20) of samples, each matrix, level, instrument	Re-extract and reanalyze blank and associated samples
Internal Standards (ISTD): 1,4-Dichlorobenzene-d_4 2-Fluoronaphthalene Acenaphthene-d_{10} Phenanthrene-d_{10} Chrysene-d_{12} Perylene-d_{12}	Each sample, MS, MSD, LCS, and blank	Reanalyze samples; if reanalysis confirms original, document on report and/or case narrative

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

EPA 608 Quality Control Pesticides/PCBs		
Type	**Frequency**	**Corrective Action**
Surrogate: Organochlorine Pesticides & PCBs DCB TCMX	Each sample, MS, MSD, LCS, and blank	Repeat extraction and analysis if reanalysis confirms original report results and comment in case narrative
Matrix Spikes: Organochlorine Pesticides: Spike all compounds of interest, except PCBs, chlordane, and toxaphene PCBs: Aroclor 1016 and Aroclor 1260	Each batch (≤20) of samples	Evaluate in conjunction with LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD.
Matrix Spike Duplicates (RPD): Organochlorine Pesticides: Spike all compounds of interest, except PCBs, chlordane, and toxaphene PCBs: Aroclor 1016 and Aroclor 1260	Each batch (≤20) of samples	Evaluated by analyst in relationship to other QC results
Laboratory Control Sample: Organochlorine Pesticides: Spike all compounds of interest, except PCBs, chlordane, and toxaphene PCBs: Aroclor 1016 and Aroclor 1260	Each batch (≤20) of samples	Re-extract and reanalyze LCS and associated samples for compounds outside acceptance limits. Compounds in the LCS that fail high and are ND in the samples can be reported.
Blanks:	Each batch (≤20) of samples	Inject a hexane or solvent blank first to be sure the analytical system is clean then reinject the blank itself. If the reinjected blank is acceptable, any samples extracted with this blank should be reinjected if they, too, contain the analyte which was contaminating the blank. If the reinjected blank is unacceptable, any affected samples must be reextracted.

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

EPA Method 602
Petroleum Analysis
Acceptance Criteria

Type	Frequency	Corrective Action
Surrogate: α,α,α-Trifluorotoluene (PID)	Each sample, MS, MSD, LCS, and blank	Reanalyze if the surrogate recovery is outside the limits unless matrix-related problems are evident.
Matrix Spike: Spike all compounds of interest	Each group (≤20) of samples	Evaluate in conjunction with LCS. Acceptable LCS would be indicative of matrix effects on the MS/MSD.
Laboratory Control Sample: Spike all compounds of interest	Each group (≤20) of samples. LCSD analyzed if sufficient volume is not available for MS/MSD	Reanalyze LCS and associated samples for compounds outside acceptance limits. Compounds in the LCS that fail high and are ND in the samples can be reported.
Matrix Spike Duplicates (RPD): Same compounds as the matrix spike	Each group (≤20) of samples	Evaluated by an analyst in relationship to other QC results
Blanks:	At least once per 24 hours	Reanalyze blank and associated samples if blank is outside limits
Internal Standards (ISTD): 1-Chloro-3-fluorobenzene (PID)	Each sample, MS, MSD, LCS, and blank	Reanalyze samples; if reanalysis confirms original result, document on report or case narrative. In cases where the sample matrix is elevating the ISTD recovery, a dilution and reanalysis may be performed.

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change

EPA Method 600 Series (Method 200.8 for ICP/MS) Quality Control Inorganics (Metals)		
Type	**Frequency**	**Corrective Action**
Internal Standard:	Each sample, standard and QC (Unspiked, Dup., MS, LCS, dilution, Post Digestion Spike and blank)	If the internal standard response falls outside the specified range, then the samples would be reanalyzed.
Matrix Spikes:	Each group of samples of similar matrix/level (≤10) each method	Analyze post-digestion spike sample
Matrix Spike Duplicate (RPD):	Not required	N/A
Duplicates (RPD):	Each group of samples of similar matrix/level (≤10) each method	Flag the data
Blanks: Initial Calibration (ICB) Continuing Calibration (CCB)	Each wavelength immediately after calibration verification at 10% frequency or every 2 hours (beginning and end of run min.)	Correct problem, recalibrate, and rerun
Preparation Blank	Each SDG or batch (≤10 samples)	Redigest and reanalyze blank and associated samples if sample result is greater than the LOQ and <10× blank result
Serial Dilutions:	Each group of (≤10) of similar matrix/level	Flag the data
Interference Check Sample:	Each wavelength after Initial Calibration Verification at beginning and end of the run or min. of 2 times per 8 hour	Correct for interference, recalibrate the instrument
Laboratory Control Sample:	Each SDG or batch (≤10 samples), each method	Redigest and reanalyze LCS and associated samples. Elements in the LCS that fail high and are ND in the samples can be reported.
Post Digestion Spike:	When matrix spikes are outside 70% to 130% range or within the statistical window (whichever is tighter)	Flag the data
Analytical Spike:	One per 10 field samples	ICP-MS – flag the data

Quality Control for Miscellaneous 600 Series Water Tests

Test	QC Type	Frequency	Corrective Action
Alkalinity **Ammonia (ISE)** **Ammonia (Distill.)** **Dissolved Solids** **Fluoride (ISE)** **Hardness** **Sulfate (turb)** **Sulfide** **Total Solids** **Turbidity**	Blank	Each batch (≤20) of samples	Prepare the entire batch again and re-analyze.
	Laboratory Control Sample	Each batch (≤20) of samples	Prepare the entire batch again and re-analyze.*
	Duplicate	Each batch (≤20) of samples	Ensure that LCS meets acceptance criteria.
	Matrix Spike/ Matrix Spike Duplicate	Each batch (≤20) of samples (not for turbidity)	Ensure that LCS meets acceptance criteria.
Bromide (IC) **Chloride (IC)** **Sulfate (IC)** **Cyanide (total & free)** **Fluoride (IC)** **Nitrogen (TKN)** **Nitrate/Nitrite** **Total Phosphorus** **TOC**	Blank	Each batch (≤20) of samples	Prepare the entire batch again and re-analyze.
	Laboratory Control Sample	Each batch (≤20) of samples	Prepare the entire batch again and re-analyze.*
	Duplicate	Each batch (≤10) of samples	Ensure that LCS meets acceptance criteria.
	Matrix Spike	Each batch (≤10) of samples	Ensure that LCS meets acceptance criteria.
Phenols	Blank	Each batch (≤20) of samples	Prepare the entire batch again and re-analyze.
	Laboratory Control Sample	Each batch (≤20) of samples	Prepare the entire batch again and re-analyze.*
	Matrix Spike/ Matrix Spike Duplicate	Each batch (≤10) of samples	Ensure that LCS meets acceptance criteria.

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

*LCSs that fail high and associated samples are ND can be reported.

TO-15 Volatile Organics in Air		
Type	**Frequency**	**Corrective Action**
Laboratory Control Sample: Spike all compounds of interest	Each group (≤20) of samples	Reanalyze LCS and associated samples for compounds outside acceptance limits. Compounds that fail high in the LCS and are ND in the samples, can be reported.
Blanks:	Once for each 24-hour time period or ≤20 samples	Reanalyze blank and associated samples if blank outside limits
Internal Standards (ISTD): Bromochloromethane 1,4-Difluorobenzene Chlorobenzene-d_5	Each sample, LCS, and blank	Reanalyze samples; if reanalysis confirms original, document on report and/or case narrative

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

TO-14A Volatile Organics in Air		
Type	**Frequency**	**Corrective Action**
Laboratory Control Sample: Spike all compounds of interest	Each group (≤20) of samples	Reanalyze LCS and associated samples for compounds outside acceptance limits. Compounds that fail high in the LCS and are ND in the samples, can be reported.
Blanks:	Once for each 24-hour time period or ≤20 samples	Reanalyze blank and associated samples if blank outside limits
Internal Standards (ISTD): Bromochloromethane 1,4-Difluorobenzene Chlorobenzene-d_5	Each sample, LCS, and blank	Reanalyze samples; if reanalysis confirms original, document on report and/or case narrative

Acceptance limits are based on statistical evaluation of laboratory data and are subject to change.

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MICROBIOLOGICAL TESTING

1. MICROBIOLOGICAL SAMPLE HANDLING

1.1. Microbiological Sample Collection

The containers for environmental microbiology are typically sterile, screw-cap plastic bottles. A minimum of 100 mL of sample is required. The sampling containers are purchased with a sterility certification. The sterility, absence of autofluoresence, and volume of each purchased lot of containers is verified by randomly selecting a container from each purchased lot and inoculating it with approximately 100 mL of sterile tryptic soy broth and placing it in incubation for 24 hours at 35° ± 0.5°C. Each lot of bottles is also checked for absence of autofluoresence with a 366-nm UV light with a 6-Watt bulb. The 100-mL calibration line on the container is verified using a 100-mL Class A graduated cylinder to 2.5% tolerance.

Samples collected for microbiological analyses must follow a specific protocol:

- The sampling taps are to be free of aerators, strainers, hose attachments, and purification devices; they should not be mixing type faucets, and avoid leaky faucets.
- Maintain a steady water flow for 3 to 5 minutes before collecting the sample.
- Using aseptic techniques, fill the container to just above the 100-mL mark on the container. This will allow for mixing and chlorine residual analysis.
- Do not overfill the container.
- If another environmental microbial analysis is required, or if the water is discolored (to act as a color standard), a separate container will be required.

1.2. Microbiological Sample Storage

Because sample integrity can be compromised by improper storage, the environmental microbiology samples are refrigerated with the temperature monitored until requested by the microbiologist for analysis.

Holding times for samples are monitored and analysis is scheduled accordingly. For Safe Drinking Water Act (SDWA) compliance purposes, no sample (for total coliform analysis) with over 30 hours elapsed time from collection will be analyzed. HPC samples from SDWA surface water systems must be tested within 8 hours of collection. Fecal coliform tests on effluents for National Pollutant Discharge Elimination System (NPDES) compliance purposes must be transported to the laboratory within 6 hours of collection. Samples that arrive past 6 hours of when they were collected cannot be tested. Whenever possible, the sample should be tested within 2 hours of receipt.

1.3. Microbiological Sample Return/Disposal

All solid wastes generated from the microbiological analyses are disposed of in bags designated as “BioHazard”, sterilized via autoclave and disposed of by incineration. The laboratory uses a sophisticated, laboratory information management system (LIMS), which includes programming to assist in the identification of hazardous wastes at time of discard. In most cases, a sample for coliform testing is collected in a container that will also be the test vessel. When this occurs, samples are discarded in the laboratory immediately after analysis is completed. When samples are not tested in the sample container, the sample containers are returned to sample storage for disposal.

2. MICROBIOLOGICAL TECHNICAL REQUIREMENTS AND TRACEABILITY OF MEASUREMENTS

2.1. Media

- Within the microbiology laboratory, procedures are in place to address preparation, labeling, storage, expiration, documentation, and quality/sterility evaluation requirements for these materials. Only commercially prepared or manufactured dehydrated media is used for SDWA water work. Media may not be formulated from basic ingredients. Each new lot of dehydrated or commercially prepared medium is checked against positive and negative culture controls. Each purchased lot of MMO-MUG media is tested for performance using *E. coli*, *K. pneumoniae*, and *Ps. aeruginosa*, or equivalent organisms following a standard operating procedure. The positive/negative organism check is performed on each new lot of purchased or prepared media for QC purposes.

- Each analytical method includes a list of media needed for the test. These are fully described, including name, purity, and description of preparation. Where applicable, shelf life and storage conditions are also listed.

- The Microbiology Department is responsible for maintaining an inventory of the media needed. New supplies of media are checked by the Purchasing Department to ensure that they match the purchase order. The laboratory is responsible for checking that new supplies meet the method requirements.

- In addition to the name and concentration, the media containers are labeled with the storage conditions, the date opened, and an expiration or re-evaluation date. Subsequent media preparations at the laboratory are fully documented in a logbook and are traceable to, or labeled to include:

    1. Name of media
    2. Concentration, as appropriate
    3. Date prepared
    4. Name of analyst preparing or reference to logbook
    5. Storage conditions
    6. Expiration/re-evaluation date
    7. Manufacturer name and lot #
    8. Sterilization time and temperature
    9. Final pH, where required
    10. Sterility check result

2.2. Microbiological Standard Sources, Calibration, and Preparation

Microbial Control Species - Where required, laboratory cultures are obtained from the American Type Culture Collection (ATCC). Cultures used in testing are no more than five transfers from ATCC freeze-dried cultures.

2.3. Microbiological Equipment Maintenance

Equipment maintenance and calibration is addressed in instrument-specific Operation, Maintenance, and Calibration Procedures (OMC) or instrument-specific instruction manuals located within the department.

The general process for sterilization procedures are outlined below:

2.3.1. All autoclaving is done at 121° ± 1°C, with times as specified below (in minutes):

Carbohydrate media	25
Rinse water	60
Contaminated materials	minimum of 70

2.3.2. Sterile disposable single use membrane filter units or sterile glass filter funnels are used for methods that require filtration.

2.4. Microbiological Labware Cleaning

Sterile disposable plastic ware is primarily used for microbiological analysis. However, procedures are in place to outline the washing process for each type of labware used in the laboratory. Most glassware is machine-washed. Labware that is washed by hand is either air dried or dried in specifically designed ovens and sterilized appropriately. Each new lot, or at least annually, of detergents used to wash glassware for Environmental Microbiology labware, is tested using the Inhibitory Residue Test, as outlined in SM20 9020.B.4.a.2).

MICROBIOLOGICAL INTERNAL QUALITY CONTROL CHECKS

2.5. Microbiological Laboratory Quality Control Samples and Acceptance Criteria

Quality control (QC) samples are analyzed with each batch of samples or new lot of reagents, as required by the referenced methods, to demonstrate that all aspects of the analysis are in control within established limits of precision and accuracy. Chromofluorogenic media QC tests are lot-specific and performed on each newly received lot.

Each laboratory analytical method specifies (or includes cross-references to) the type of QC sample, frequency of analysis, acceptance criteria for QC sample results, and corrective action to be taken if QC sample results fall outside of the acceptance range. The handling of QC data is described in section 9.2 of the Environmental Quality Policy Manual. The types of QC samples and the information each provides are discussed in the following paragraphs.

2.5.1. Negative System Control - The QC on this is method specific and can be found in 1-P-QM-PRO-9018209, Quality Control/Quality Assurance Procedure for Environmental Microbiology.

2.5.2. Positive and Negative Organism Controls - Each lot/batch of media is tested using positive and negative organism controls.

2.5.3. Duplicate Counting (Test Variability/Reproducibility) - duplicate counting is performed monthly on HPC and fecal MF plates. Each analyst who counted samples for a month, counts the plates and their results are evaluated. Counts must be within 10% difference of the total average for all analysts to be acceptable.

2.5.4. Duplicates - For heterotrophic plate count samples, a duplicate is a second aliquot of a sample that is treated identically to the original to determine precision of the test. The plate counts are averaged.

2.5.5. Serial Dilutions - Fecal coliform, biosolids analyses, and heterotrophic plate counts may require serial dilution of the sample.

2.6. Microbiological Quality Control Sample Frequency and Corrective Action

Each analytical method defines the frequency for the required QC samples, where appropriate. The corrective action required when a QC result fails to meet the acceptance criteria is also given, where appropriate.

The QC acceptance criteria are available to analysts in the laboratory. If the results are not within the acceptance criteria, corrective action suitable to the situation must be taken. This may include, but is not limited to, checking calculations, examining other quality control analyzed with the same batch of samples, qualifying results with a comment stating the observed deviation, and invalidating results. It should be noted that resampling may be required in the case of invalidated results for SDWA, Environmental Protection Agency (EPA), Pennsylvania Department of Environmental Protection (PADEP), or Pennsylvania Department of Health (DOH) compliance samples due to the short hold-times in microbiological analysis.

2.7. Microbiological Water Systems

Laboratory Reagent Water Suitability Testing - On an annual basis, a sample is sent to a PADEP certified laboratory for suitability analyses. These serve as confirmation of our analyses, as well as to supply additional data on the water suitability.

2.8. Microbiological Reporting Limits

For microbiological analysis, the limits are method-specified and/or project-specific. This information is programmed into the LIMS for reporting purposes.

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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

MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES POTABLE WATER
All approved analytes are listed below:

Bacteriology

Coliform, Total / E. coli (Qualitative)	Colilert
Heterotrophic Plate Count	SM 18-22 9215B (-04)

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

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 200.7 Rev. 4.4
	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 200.7 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

Metals I

Manganese, Total	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
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
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 200.7 Rev. 4.4

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

Methylcarbamate Pesticides

3-Hydroxy Carbofuran	EPA 531.1
Aldicarb	EPA 531.1
Aldicarb Sulfone	EPA 531.1

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Methylcarbamate Pesticides

Aldicarb Sulfoxide	EPA 531.1
Carbaryl	EPA 531.1
Carbofuran	EPA 531.1
Methomyl	EPA 531.1
Oxamyl	EPA 531.1

Microextractibles

1,2-Dibromo-3-chloropropane	EPA 504.1
1,2-Dibromoethane	EPA 504.1

Miscellaneous

2,3,7,8-Tetrachlorodibenzo-p-dioxin	EPA 1613B
Benzo(a)pyrene	EPA 525.2
Bis(2-ethylhexyl) phthalate	EPA 525.2
Di (2-ethylhexyl) adipate	EPA 525.2
Hexachlorobenzene	EPA 525.2
Hexachlorocyclopentadiene	EPA 525.2
Methyl iodide	EPA 524.2
Organic Carbon, Total	SM 21-22 5310C (-00)
Surfactant (MBAS)	SM 18-22 5540C (-00)
Turbidity	SM 18-22 2130 B (-01)
	EPA 180.1 Rev. 2.0

Non-Metals

Alkalinity	SM 18-22 2320B (-97)
Calcium Hardness	SM 18-22 2340C (-97)
	SM 18-22 2340B (-97)

Non-Metals

Chloride	EPA 300.0 Rev. 2.1
Color	SM 18-22 2120B (-01)
Cyanide	EPA 335.4 Rev. 1.0
Fluoride, Total	EPA 300.0 Rev. 2.1
	SM 18-22 4500-F C (-97)
Nitrate (as N)	EPA 353.2 Rev. 2.0
	EPA 300.0 Rev. 2.1
Nitrite (as N)	EPA 353.2 Rev. 2.0
	EPA 300.0 Rev. 2.1
Orthophosphate (as P)	SM 18-22 4500-P E (-99)
Silica, Dissolved	SM 20-22 4500-SiO2 C (-97)
Solids, Total Dissolved	SM 18-22 2540C (-97)
Specific Conductance	SM 18-22 2510B (-97)
Sulfate (as SO4)	EPA 300.0 Rev. 2.1

Organohalide Pesticides

Alachlor	EPA 525.2
Atrazine	EPA 525.2
Butachlor	EPA 525.2
Dieldrin	EPA 525.2
Endrin	EPA 525.2
Heptachlor	EPA 525.2
Heptachlor epoxide	EPA 525.2
Lindane	EPA 525.2
Methoxychlor	EPA 525.2
Metolachlor	EPA 525.2

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Organohalide Pesticides	
Metribuzin	EPA 525.2
Propachlor	EPA 525.2
Simazine	EPA 525.2
Perfluorinated Alkyl Acids	
Perfluorooctanesulfonic acid (PFOS)	EPA 537
Perfluorooctanoic acid (PFOA)	EPA 537
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
4-Chlorotoluene	EPA 524.2
Benzene	EPA 524.2
Bromobenzene	EPA 524.2
Volatile Aromatics	
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
2,2-Dichloropropane	EPA 524.2

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Volatile Halocarbons

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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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
2,3-Dichloroaniline	EPA 625.1
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 625.1
	EPA 8270D
Carbazole	EPA 625.1
	EPA 8270D
Diphenylamine	EPA 8270D

Amines

Methapyrilene	EPA 8270D
Pronamide	EPA 8270D
Propionitrile	EPA 8260C
Pyridine	EPA 625.1
	EPA 8270D

Bacteriology

Coliform, Fecal	SM 9222D-2006

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

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Chlorinated Hydrocarbon Pesticides	
alpha-Chlordane	EPA 8081B
beta-BHC	EPA 8081B
	EPA 608.3
Chlordane Total	EPA 8081B
	EPA 608.3
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

Chlorinated Hydrocarbon Pesticides	
Isodrin	EPA 8270D
Kepone	EPA 8081B
	EPA 8270D
Lindane	EPA 8081B
	EPA 608.3
Methoxychlor	EPA 8081B
	EPA 608.3
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
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

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Chlorinated Hydrocarbons	
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
2,4-DB	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dichloroprop	EPA 8151A
Dinoseb	EPA 8151A
	EPA 8270D
Pentachlorophenol	EPA 8151A
Demand	
Biochemical Oxygen Demand	SM 5210B-2011
Chemical Oxygen Demand	EPA 410.4, Rev. 2.0 (1993)
Dioxins and Furans	
1,2,3,4,6,7,8,9-Octachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-diox	EPA 8290A
	EPA 1613B
1,2,3,4,6,7,8-Heptachlorodibenzofuran	EPA 8290A

Dioxins and Furans	
1,2,3,4,6,7,8-Heptachlorodibenzofuran	EPA 1613B
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxi	EPA 8290A
	EPA 1613B
1,2,3,4,7,8,9-Heptachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,4,7,8-Hexachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	EPA 8290A
	EPA 1613B
1,2,3,6,7,8-Hexachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	EPA 8290A
	EPA 1613B
1,2,3,7,8,9-Hexachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	EPA 8290A
	EPA 1613B
1,2,3,7,8-Pentachlorodibenzofuran	EPA 8290A
	EPA 1613B
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	EPA 8290A
	EPA 1613B
2,3,4,6,7,8-Hexachlorodibenzofuran	EPA 8290A
	EPA 1613B
2,3,4,7,8-Pentachlorodibenzofuran	EPA 8290A
	EPA 1613B
2,3,7,8-Tetrachlorodibenzofuran	EPA 8290A

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MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

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All approved analytes are listed below:

Dioxins and Furans

2,3,7,8-Tetrachlorodibenzofuran	EPA 1613B
2,3,7,8-Tetrachlorodibenzo-p-dioxin	EPA 8290A
	EPA 1613B

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
Ethanol	EPA 1671
	EPA 8260C
	EPA 8015D
	EPA 8015C
Methyl tert-butyl ether	EPA 8260C
	EPA 8021B
tert-amyl alcohol	EPA 8260C
tert-amyl methyl ether (TAME)	EPA 8260C
tert-butyl alcohol	EPA 8260C
tert-butyl ethyl ether (ETBE)	EPA 8260C

Haloethers

2,2'-Oxybis(1-chloropropane)	EPA 625.1
	EPA 8270D

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 Halocarbons

1,2-Dibromo-3-chloropropane, Low Level	EPA 8011
1,2-Dibromoethane, Low Level	EPA 8011

Low Level Polynuclear Aromatics

Acenaphthene Low Level	EPA 8270D SIM
Acenaphthylene Low Level	EPA 8270D SIM
Anthracene Low Level	EPA 8270D SIM
Benzo(a)anthracene Low Level	EPA 8270D SIM
Benzo(a)pyrene Low Level	EPA 8270D SIM
Benzo(b)fluoranthene Low Level	EPA 8270D SIM
Benzo(g,h,i)perylene Low Level	EPA 8270D SIM
Benzo(k)fluoranthene Low Level	EPA 8270D SIM
Chrysene Low Level	EPA 8270D SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270D SIM
Fluoranthene Low Level	EPA 8270D SIM
Fluorene Low Level	EPA 8270D SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D SIM

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Low Level Polynuclear Aromatics

Naphthalene Low Level	EPA 8270D SIM
Phenanthrene Low Level	EPA 8270D SIM
Pyrene Low Level	EPA 8270D SIM

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
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
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	SM 3500-Fe B-2011

Metals I

Iron, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
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
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Manganese, Total	EPA 200.7, Rev. 4.4 (1994)
	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
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Silver, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

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Metals I

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

Metals II

Aluminum, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	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
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Beryllium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C

Metals II

Beryllium, Total	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)
	EPA 6010C
	EPA 6020A

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Metals III	
Cobalt, Total	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
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Titanium, Total	EPA 200.7, Rev. 4.4 (1994)
	EPA 6010C
	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Uranium (Mass)	EPA 6020A
	EPA 200.8, Rev. 5.4 (1994)
Mineral	
Acidity	SM 2310B-2011
Alkalinity	SM 2320B-2011
Chloride	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-Cl- C-2011
	EPA 9056A
Mineral	
Fluoride, Total	EPA 300.0, Rev. 2.1 (1993)
	SM 4500-F C-2011
	EPA 9056A
Hardness, Total	SM 2340C-2011
	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 6020A
	EPA 200.8, Rev. 5.4 (1994)
Bromide	EPA 300.0, Rev. 2.1 (1993)
	EPA 9056A
Color	SM 2120B-2011
Cyanide, Available	OIA-1677-09
	SM 4500-CN G-2011
Cyanide, Free	OIA-1677-09
Cyanide, Total	EPA 335.4, Rev. 1.0 (1993)
	EPA 9012B
	ASTM D7511-12
Formaldehyde	EPA 8315A
Oil and Grease Total Recoverable (HEM)	EPA 1664A
	EPA 1664B
Organic Carbon, Total	SM 5310C-2011

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Miscellaneous

Organic Carbon, Total	EPA 9060A
Perchlorate	EPA 6850
Phenols	EPA 420.4, Rev. 1.0 (1993)
	EPA 9066
Silica, Dissolved	SM 4500-SiO2 C-2011
Specific Conductance	SM 2510B-2011
	EPA 9050A
Sulfide (as S)	SM 4500-S2- F-2011
	SM 4500-S2- D-2011
Surfactant (MBAS)	SM 5540C-2011
Turbidity	EPA 180.1, Rev. 2.0 (1993)

Nitroaromatics and Isophorone

1,3,5-Trinitrobenzene	EPA 8270D
	EPA 8330A
1,3-Dinitrobenzene	EPA 8270D
	EPA 8330A
1,4-Naphthoquinone	EPA 8270D
2,4,6-Trinitrotoluene	EPA 8330A
2,4-Dinitrotoluene	EPA 625.1
	EPA 8270D
	EPA 8330A
2,6-Dinitrotoluene	EPA 625.1
	EPA 8270D
	EPA 8330A
2-Amino-4,6-dinitrotoluene	EPA 8330A

Nitroaromatics and Isophorone

2-Amino-4,6-dinitrotoluene	EPA 8330B
2-Nitrotoluene	EPA 8330A
3,5-Dinitroaniline	EPA 8330B
3-Nitrotoluene	EPA 8330A
4-Amino-2,6-dinitrotoluene	EPA 8330A
4-Nitroquinoline-1-oxide	EPA 8270D
4-Nitrotoluene	EPA 8330A
Hexahydro-1,3,5-trinitro-1,3,5-triazine	EPA 8330A
Isophorone	EPA 625.1
	EPA 8270D
Methyl-2,4,6-trinitrophenylnitramine	EPA 8330A
Nitrobenzene	EPA 625.1
	EPA 8270D
	EPA 8330A
Nitroglycerine	EPA 8330B
Octahydro-tetranitro-tetrazocine	EPA 8330A
Pentaerythritol tetranitrate	EPA 8330B

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

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Nitrosoamines

N-Nitrosodiphenylamine	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)
	SM 4500-NH3 D-2011 or E-2011
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
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 365.3 (Issued 1978)
	SM 4500-P E-2011
Phosphorus, Total	EPA 365.1, Rev. 2.0 (1993)
	SM 4500-P (F-H)-2011

Organophosphate Pesticides

Atrazine	EPA 8141B
	EPA 8270D
Azinphos methyl	EPA 8141B
Chlorpyriphos	EPA 8141B

Organophosphate Pesticides

Demeton-O	EPA 8141B
Demeton-S	EPA 8141B
Diazinon	EPA 8141B
Dimethoate	EPA 8270D
Disulfoton	EPA 8141B
	EPA 8270D
Famphur	EPA 8141B
	EPA 8270D
Malathion	EPA 8141B
Parathion ethyl	EPA 8141B
	EPA 8270D
Parathion methyl	EPA 8141B
	EPA 8270D
Phorate	EPA 8141B
	EPA 8270D
Simazine	EPA 8141B
Sulfotepp	EPA 8270D
Thionazin	EPA 8270D

Petroleum Hydrocarbons

Diesel Range Organics	EPA 8015D
	EPA 8015C
Gasoline Range Organics	EPA 8015D
	EPA 8015C

Phthalate Esters

Benzyl butyl phthalate	EPA 625.1

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Phthalate Esters

Benzyl butyl phthalate	EPA 8270D
Bis(2-ethylhexyl) phthalate	EPA 625.1
	EPA 8270D
Diethyl phthalate	EPA 625.1
	EPA 8270D
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

PCB 1	EPA 1668A
PCB 10	EPA 1668A
PCB 100	EPA 1668A
PCB 101	EPA 1668A
PCB 102	EPA 1668A
PCB 103	EPA 1668A
PCB 104	EPA 1668A
PCB 105	EPA 1668A
PCB 106	EPA 1668A
PCB 107	EPA 1668A
PCB 108	EPA 1668A
PCB 109	EPA 1668A
PCB 11	EPA 1668A

Polychlorinated Biphenyls

PCB 110	EPA 1668A
PCB 111	EPA 1668A
PCB 112	EPA 1668A
PCB 113	EPA 1668A
PCB 114	EPA 1668A
PCB 115	EPA 1668A
PCB 116	EPA 1668A
PCB 117	EPA 1668A
PCB 118	EPA 1668A
PCB 119	EPA 1668A
PCB 12	EPA 1668A
PCB 120	EPA 1668A
PCB 121	EPA 1668A
PCB 122	EPA 1668A
PCB 123	EPA 1668A
PCB 124	EPA 1668A
PCB 125	EPA 1668A
PCB 126	EPA 1668A
PCB 127	EPA 1668A
PCB 128	EPA 1668A
PCB 129	EPA 1668A
PCB 13	EPA 1668A
PCB 130	EPA 1668A
PCB 131	EPA 1668A
PCB 132	EPA 1668A
PCB 133	EPA 1668A

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Polychlorinated Biphenyls	
PCB 134	EPA 1668A
PCB 135	EPA 1668A
PCB 136	EPA 1668A
PCB 137	EPA 1668A
PCB 138	EPA 1668A
PCB 139	EPA 1668A
PCB 14	EPA 1668A
PCB 140	EPA 1668A
PCB 141	EPA 1668A
PCB 142	EPA 1668A
PCB 143	EPA 1668A
PCB 144	EPA 1668A
PCB 145	EPA 1668A
PCB 146	EPA 1668A
PCB 147	EPA 1668A
PCB 148	EPA 1668A
PCB 149	EPA 1668A
PCB 15	EPA 1668A
PCB 150	EPA 1668A
PCB 151	EPA 1668A
PCB 152	EPA 1668A
PCB 153	EPA 1668A
PCB 154	EPA 1668A
PCB 155	EPA 1668A
PCB 156	EPA 1668A
PCB 157	EPA 1668A

Polychlorinated Biphenyls	
PCB 158	EPA 1668A
PCB 159	EPA 1668A
PCB 16	EPA 1668A
PCB 160	EPA 1668A
PCB 161	EPA 1668A
PCB 162	EPA 1668A
PCB 163	EPA 1668A
PCB 164	EPA 1668A
PCB 165	EPA 1668A
PCB 166	EPA 1668A
PCB 167	EPA 1668A
PCB 168	EPA 1668A
PCB 169	EPA 1668A
PCB 17	EPA 1668A
PCB 170	EPA 1668A
PCB 171	EPA 1668A
PCB 172	EPA 1668A
PCB 173	EPA 1668A
PCB 174	EPA 1668A
PCB 175	EPA 1668A
PCB 176	EPA 1668A
PCB 177	EPA 1668A
PCB 178	EPA 1668A
PCB 179	EPA 1668A
PCB 18	EPA 1668A
PCB 180	EPA 1668A

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Polychlorinated Biphenyls	
PCB 181	EPA 1668A
PCB 182	EPA 1668A
PCB 183	EPA 1668A
PCB 184	EPA 1668A
PCB 185	EPA 1668A
PCB 186	EPA 1668A
PCB 187	EPA 1668A
PCB 188	EPA 1668A
PCB 189	EPA 1668A
PCB 19	EPA 1668A
PCB 190	EPA 1668A
PCB 191	EPA 1668A
PCB 192	EPA 1668A
PCB 193	EPA 1668A
PCB 194	EPA 1668A
PCB 195	EPA 1668A
PCB 196	EPA 1668A
PCB 197	EPA 1668A
PCB 198	EPA 1668A
PCB 199	EPA 1668A
PCB 2	EPA 1668A
PCB 20	EPA 1668A
PCB 200	EPA 1668A
PCB 201	EPA 1668A
PCB 202	EPA 1668A
PCB 203	EPA 1668A

Polychlorinated Biphenyls	
PCB 204	EPA 1668A
PCB 205	EPA 1668A
PCB 206	EPA 1668A
PCB 207	EPA 1668A
PCB 208	EPA 1668A
PCB 209	EPA 1668A
PCB 21	EPA 1668A
PCB 22	EPA 1668A
PCB 23	EPA 1668A
PCB 24	EPA 1668A
PCB 25	EPA 1668A
PCB 26	EPA 1668A
PCB 27	EPA 1668A
PCB 28	EPA 1668A
PCB 29	EPA 1668A
PCB 3	EPA 1668A
PCB 30	EPA 1668A
PCB 31	EPA 1668A
PCB 32	EPA 1668A
PCB 33	EPA 1668A
PCB 34	EPA 1668A
PCB 35	EPA 1668A
PCB 36	EPA 1668A
PCB 37	EPA 1668A
PCB 38	EPA 1668A
PCB 39	EPA 1668A

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MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES NON POTABLE WATER
All approved analytes are listed below:

Polychlorinated Biphenyls		**Polychlorinated Biphenyls**	
PCB 4	EPA 1668A	PCB 63	EPA 1668A
PCB 40	EPA 1668A	PCB 64	EPA 1668A
PCB 41	EPA 1668A	PCB 65	EPA 1668A
PCB 42	EPA 1668A	PCB 66	EPA 1668A
PCB 43	EPA 1668A	PCB 67	EPA 1668A
PCB 44	EPA 1668A	PCB 68	EPA 1668A
PCB 45	EPA 1668A	PCB 69	EPA 1668A
PCB 46	EPA 1668A	PCB 7	EPA 1668A
PCB 47	EPA 1668A	PCB 70	EPA 1668A
PCB 48	EPA 1668A	PCB 71	EPA 1668A
PCB 49	EPA 1668A	PCB 72	EPA 1668A
PCB 5	EPA 1668A	PCB 73	EPA 1668A
PCB 50	EPA 1668A	PCB 74	EPA 1668A
PCB 51	EPA 1668A	PCB 75	EPA 1668A
PCB 52	EPA 1668A	PCB 76	EPA 1668A
PCB 53	EPA 1668A	PCB 77	EPA 1668A
PCB 54	EPA 1668A	PCB 78	EPA 1668A
PCB 55	EPA 1668A	PCB 79	EPA 1668A
PCB 56	EPA 1668A	PCB 8	EPA 1668A
PCB 57	EPA 1668A	PCB 80	EPA 1668A
PCB 58	EPA 1668A	PCB 81	EPA 1668A
PCB 59	EPA 1668A	PCB 82	EPA 1668A
PCB 6	EPA 1668A	PCB 83	EPA 1668A
PCB 60	EPA 1668A	PCB 84	EPA 1668A
PCB 61	EPA 1668A	PCB 85	EPA 1668A
PCB 62	EPA 1668A	PCB 86	EPA 1668A

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Polychlorinated Biphenyls

PCB 87	EPA 1668A
PCB 88	EPA 1668A
PCB 89	EPA 1668A
PCB 9	EPA 1668A
PCB 90	EPA 1668A
PCB 91	EPA 1668A
PCB 92	EPA 1668A
PCB 93	EPA 1668A
PCB 94	EPA 1668A
PCB 95	EPA 1668A
PCB 96	EPA 1668A
PCB 97	EPA 1668A
PCB 98	EPA 1668A
PCB 99	EPA 1668A
PCB-1016	EPA 8082A
	EPA 608.3
PCB-1221	EPA 8082A
	EPA 608.3
PCB-1232	EPA 8082A
	EPA 608.3
PCB-1242	EPA 8082A
	EPA 608.3
PCB-1248	EPA 8082A
	EPA 608.3
PCB-1254	EPA 8082A
	EPA 608.3

Polychlorinated Biphenyls

PCB-1260	EPA 8082A
	EPA 608.3
PCB-1262	EPA 8082A
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
Benzo(b)fluoranthene	EPA 625.1
	EPA 8270D
Benzo(ghi)perylene	EPA 625.1
	EPA 8270D
Benzo(k)fluoranthene	EPA 625.1
	EPA 8270D
Chrysene	EPA 625.1

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Polynuclear Aromatics

Chrysene	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 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

Priority Pollutant Phenols

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
3-Methylphenol	EPA 8270D
4-Chloro-3-methylphenol	EPA 625.1
	EPA 8270D
4-Methylphenol	EPA 8270D
4-Nitrophenol	EPA 625.1
	EPA 8270D
Pentachlorophenol	EPA 625.1
	EPA 8270D
Phenol	EPA 625.1
	EPA 8270D

Residue

Settleable Solids	SM 2540 F-2011
Solids, Total	SM 2540 B-2011
Solids, Total Dissolved	SM 2540 C-2011

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Residue	
Solids, Total Suspended	SM 2540 D-2011
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 625.1
	EPA 8270D
alpha-Terpineol	EPA 625.1
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
	EPA 8315A
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

Semi-Volatile Organics	
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
	EPA 624.1
2-Chlorotoluene	EPA 8260C
4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
	EPA 8021B
	EPA 624.1
	EPA 602
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
	EPA 624.1
Ethyl benzene	EPA 8260C
	EPA 8021B
	EPA 624.1

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Volatile Aromatics

Ethyl benzene	EPA 602
Isopropylbenzene	EPA 8260C
	EPA 8021B
m/p-Xylenes	EPA 8260C
	EPA 624.1
	EPA 602
Naphthalene, Volatile	EPA 8260C
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
	EPA 624.1
	EPA 602
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
	EPA 624.1
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
	EPA 8021B
	EPA 624.1
	EPA 602
Total Xylenes	EPA 8260C
	EPA 8021B
	EPA 624.1
	EPA 602

Volatile Chlorinated Organics

Benzyl chloride	EPA 8260C
Epichlorohydrin	EPA 8260C

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
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

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Volatile Halocarbons

2,2-Dichloropropane	EPA 8260C
2-Chloro-1,3-butadiene (Chloroprene)	EPA 8260C
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

Volatile Halocarbons

Dibromomethane	EPA 8260C
Dichlorodifluoromethane	EPA 8260C
	EPA 624.1
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 8260C SIM
	EPA 8270D
2-Butanone (Methylethyl ketone)	EPA 8260C

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Volatiles Organics

2-Hexanone	EPA 8260C
2-Nitropropane	EPA 8260C
4-Methyl-2-Pentanone	EPA 8260C
Acetone	EPA 8260C
Acetonitrile	EPA 1671
	EPA 8260C
Carbon Disulfide	EPA 8260C
Cyclohexane	EPA 8260C
Di-ethyl ether	EPA 8260C
Diethylamine	EPA 1671
Dimethyl sulfoxide	EPA 1671
Ethyl Acetate	EPA 1666
	EPA 8260C
Ethylene Glycol	EPA 8015C
Isobutyl alcohol	EPA 8260C
	EPA 8015D
	EPA 8015C
Isobutyraldehyde	EPA 1666
Isopropanol	EPA 8260C
Isopropyl Acetate	EPA 1666
Methanol	EPA 1671
	EPA 8015D
	EPA 8015C
Methyl acetate	EPA 8260C
Methyl cellosolve (2-Methoxyethanol)	EPA 1671
Methyl cyclohexane	EPA 8260C

Volatiles Organics

Methyl formate	EPA 1666
n-Amyl Acetate	EPA 1666
n-Amyl alcohol	EPA 1666
n-Butanol	EPA 8260C
n-Butyl Acetate	EPA 1666
n-Propanol	EPA 1671
o-Toluidine	EPA 8270D
Tetrahydrofuran	EPA 1666
Triethylamine	EPA 1671
Vinyl acetate	EPA 8260C
	EPA 624.1

Sample Preparation Methods

SM 4500-P B(5)-2011
EPA 5030C
EPA 200.2
EPA 3010A
EPA 3005A
EPA 3510C
EPA 3520C
EPA 3020A
SM 4500-NH3 B-2011
SM 4500-F B-2011

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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
4,4'-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

Benzidines

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

Benzidines

Benzidine	EPA 8270D

Carbamate Pesticides

Aldicarb	EPA 8318A
Aldicarb Sulfone	EPA 8318A
Carbofuran	EPA 8318A

Characteristic Testing

Corrosivity	EPA 9045D
Free Liquids	EPA 9095B
Ignitability	EPA 1010A
Synthetic Precipitation Leaching Proc.	EPA 1312
TCLP	EPA 1311

Chlorinated Hydrocarbon Pesticides

2,4'-DDD (Mitotane)	EPA 8081B
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

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Chlorinated Hydrocarbon Pesticides

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
Isodrin	EPA 8270D
Kepone	EPA 8081B
	EPA 8270D
Lindane	EPA 8081B
Methoxychlor	EPA 8081B
Mirex	EPA 8081B
Pentachloronitrobenzene	EPA 8270D
Simazine	EPA 8141B
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

Chlorinated Hydrocarbons

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
2,4-DB	EPA 8151A
Dalapon	EPA 8151A
Dicamba	EPA 8151A
Dichloroprop	EPA 8151A
Dinoseb	EPA 8151A
MCPA	EPA 8151A
MCPP	EPA 8151A
Pentachlorophenol	EPA 8151A

Dioxins and Furans

1,2,3,4,6,7,8,9-Octachlorodibenzofuran	EPA 8290A
1,2,3,4,6,7,8,9-Octachlorodibenzo-p-diox	EPA 8290A
1,2,3,4,6,7,8-Heptachlorodibenzofuran	EPA 8290A
1,2,3,4,6,7,8-Heptachlorodibenzo-p-dioxi	EPA 8290A
1,2,3,4,7,8,9-Heptachlorodibenzofuran	EPA 8290A

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Dioxins and Furans

1,2,3,4,7,8-Hexachlorodibenzofuran	EPA 8290A
1,2,3,4,7,8-Hexachlorodibenzo-p-dioxin	EPA 8290A
1,2,3,6,7,8-Hexachlorodibenzofuran	EPA 8290A
1,2,3,6,7,8-Hexachlorodibenzo-p-dioxin	EPA 8290A
1,2,3,7,8,9-Hexachlorodibenzofuran	EPA 8290A
1,2,3,7,8,9-Hexachlorodibenzo-p-dioxin	EPA 8290A
1,2,3,7,8-Pentachlorodibenzofuran	EPA 8290A
1,2,3,7,8-Pentachlorodibenzo-p-dioxin	EPA 8290A
2,3,4,6,7,8-Hexachlorodibenzofuran	EPA 8290A
2,3,4,7,8-Pentachlorodibenzofuran	EPA 8290A
2,3,7,8-Tetrachlorodibenzofuran	EPA 8290A
2,3,7,8-Tetrachlorodibenzo-p-dioxin	EPA 8290A

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 SIM
Acenaphthylene Low Level	EPA 8270D SIM
Anthracene Low Level	EPA 8270D SIM
Benzo(a)anthracene Low Level	EPA 8270D SIM
Benzo(a)pyrene Low Level	EPA 8270D SIM
Benzo(b)fluoranthene Low Level	EPA 8270D SIM

Low Level Polynuclear Aromatic Hydrocarbons

Benzo(g,h,i)perylene Low Level	EPA 8270D SIM
Benzo(k)fluoranthene Low Level	EPA 8270D SIM
Chrysene Low Level	EPA 8270D SIM
Dibenzo(a,h)anthracene Low Level	EPA 8270D SIM
Fluoranthene Low Level	EPA 8270D SIM
Fluorene Low Level	EPA 8270D SIM
Indeno(1,2,3-cd)pyrene Low Level	EPA 8270D SIM
Naphthalene Low Level	EPA 8270D SIM
Phenanthrene Low Level	EPA 8270D SIM
Pyrene Low Level	EPA 8270D SIM

Metals I

Barium, Total	EPA 6010C
	EPA 6020A
Cadmium, Total	EPA 6010C
	EPA 6020A
Calcium, Total	EPA 6010C
	EPA 6020A
Chromium, Total	EPA 6010C
	EPA 6020A
Copper, Total	EPA 6010C
	EPA 6020A
Iron, Total	EPA 6010C
	EPA 6020A
Lead, Total	EPA 6010C
	EPA 6020A

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

MR. DUANE LUCKENBILL
EUROFINS LANCASTER LABORATORIES ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Metals I

Magnesium, Total	EPA 6010C
	EPA 6020A
Manganese, Total	EPA 6010C
	EPA 6020A
Nickel, Total	EPA 6010C
	EPA 6020A
Potassium, Total	EPA 6010C
	EPA 6020A
Silver, Total	EPA 6010C
	EPA 6020A
Sodium, Total	EPA 6010C
	EPA 6020A
Strontium, Total	EPA 6010C
	EPA 6020A

Metals II

Aluminum, Total	EPA 6010C
	EPA 6020A
Antimony, Total	EPA 6010C
	EPA 6020A
Arsenic, Total	EPA 6010C
	EPA 6020A
Beryllium, Total	EPA 6010C
	EPA 6020A
Chromium VI	EPA 7196A
	EPA 7199

Metals II

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
	EPA 6020A
Titanium, Total	EPA 6010C
	EPA 6020A

Miscellaneous

Boron, Total	EPA 6010C
	EPA 6020A
Cyanide, Total	EPA 9012B
Formaldehyde	EPA 8315A

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Miscellaneous	
Organic Carbon, Total	Lloyd Kahn Method
	EPA 9060A
Perchlorate	EPA 6850
Phenols	EPA 9066
Specific Conductance	EPA 9050A
Nitroaromatics and Isophorone	
1,2-Dinitrobenzene	EPA 8270D
1,3,5-Trinitrobenzene	EPA 8270D
	EPA 8330A
1,3-Dinitrobenzene	EPA 8270D
	EPA 8330A
1,4-Dinitrobenzene	EPA 8270D
1,4-Naphthoquinone	EPA 8270D
2,4,6-Trinitrotoluene	EPA 8330A
	EPA 8330B
2,4-Dinitrotoluene	EPA 8270D
	EPA 8330A
	EPA 8330B
2,6-Dinitrotoluene	EPA 8270D
	EPA 8330A
	EPA 8330B
2-Amino-4,6-dinitrotoluene	EPA 8330A
2-Nitrotoluene	EPA 8330A
3,5-Dinitroaniline	EPA 8330B
3-Nitrotoluene	EPA 8330A
Nitroaromatics and Isophorone	
4-Amino-2,6-dinitrotoluene	EPA 8330A
4-Dimethylaminoazobenzene	EPA 8270D
4-Nitroquinoline-1-oxide	EPA 8270D
4-Nitrotoluene	EPA 8330A
Hexahydro-1,3,5-trinitro-1,3,5-triazine	EPA 8330A
Isophorone	EPA 8270D
Methyl-2,4,6-trinitrophenylnitramine	EPA 8330A
Nitrobenzene	EPA 8270D
	EPA 8330A
Nitroglycerine	EPA 8330B
Octahydro-tetranitro-tetrazocine	EPA 8330A
Pentaerythritol tetranitrate	EPA 8330B
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
Organophosphate Pesticides	
Azinphos methyl	EPA 8141B

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Organophosphate Pesticides	
Bolstar	EPA 8141B
Carbophenothion	EPA 8141B
Chlorpyriphos	EPA 8141B
Coumaphos	EPA 8141B
Demeton-O	EPA 8141B
Demeton-S	EPA 8141B
Diazinon	EPA 8141B
Dichlorvos	EPA 8141B
Dimethoate	EPA 8270D
Disulfoton	EPA 8141B
	EPA 8270D
EPN	EPA 8141B
Ethion	EPA 8141B
Ethoprop	EPA 8141B
Famphur	EPA 8141B
	EPA 8270D
Fensulfothion	EPA 8141B
Fenthion	EPA 8141B
Malathion	EPA 8141B
Mevinphos	EPA 8141B
NALED	EPA 8141B
Parathion ethyl	EPA 8141B
	EPA 8270D
Parathion methyl	EPA 8141B
	EPA 8270D
Phorate	EPA 8141B

Organophosphate Pesticides	
Phorate	EPA 8270D
Ronnel	EPA 8141B
Sulfotepp	EPA 8270D
Thionazin	EPA 8270D
Tokuthion	EPA 8141B
Trichloronate	EPA 8141B
Petroleum Hydrocarbons	
Diesel Range Organics	EPA 8015D
	EPA 8015C
Gasoline Range Organics	EPA 8015D
	EPA 8015C
Oil and Grease Total Recoverable (HEM)	EPA 9071B (Solvent:Hexane)
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	
PCB 1	EPA 1668A
PCB 10	EPA 1668A
PCB 100	EPA 1668A
PCB 101	EPA 1668A

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Polychlorinated Biphenyls	
PCB 102	EPA 1668A
PCB 103	EPA 1668A
PCB 104	EPA 1668A
PCB 105	EPA 1668A
PCB 106	EPA 1668A
PCB 107	EPA 1668A
PCB 108	EPA 1668A
PCB 109	EPA 1668A
PCB 11	EPA 1668A
PCB 110	EPA 1668A
PCB 111	EPA 1668A
PCB 112	EPA 1668A
PCB 113	EPA 1668A
PCB 114	EPA 1668A
PCB 115	EPA 1668A
PCB 116	EPA 1668A
PCB 117	EPA 1668A
PCB 118	EPA 1668A
PCB 119	EPA 1668A
PCB 12	EPA 1668A
PCB 120	EPA 1668A
PCB 121	EPA 1668A
PCB 122	EPA 1668A
PCB 123	EPA 1668A
PCB 124	EPA 1668A
PCB 125	EPA 1668A

Polychlorinated Biphenyls	
PCB 126	EPA 1668A
PCB 127	EPA 1668A
PCB 128	EPA 1668A
PCB 129	EPA 1668A
PCB 13	EPA 1668A
PCB 130	EPA 1668A
PCB 131	EPA 1668A
PCB 132	EPA 1668A
PCB 133	EPA 1668A
PCB 134	EPA 1668A
PCB 135	EPA 1668A
PCB 136	EPA 1668A
PCB 137	EPA 1668A
PCB 138	EPA 1668A
PCB 139	EPA 1668A
PCB 14	EPA 1668A
PCB 140	EPA 1668A
PCB 141	EPA 1668A
PCB 142	EPA 1668A
PCB 143	EPA 1668A
PCB 144	EPA 1668A
PCB 145	EPA 1668A
PCB 146	EPA 1668A
PCB 147	EPA 1668A
PCB 148	EPA 1668A
PCB 149	EPA 1668A

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Polychlorinated Biphenyls		Polychlorinated Biphenyls	
PCB 15	EPA 1668A	PCB 173	EPA 1668A
PCB 150	EPA 1668A	PCB 174	EPA 1668A
PCB 151	EPA 1668A	PCB 175	EPA 1668A
PCB 152	EPA 1668A	PCB 176	EPA 1668A
PCB 153	EPA 1668A	PCB 177	EPA 1668A
PCB 154	EPA 1668A	PCB 178	EPA 1668A
PCB 155	EPA 1668A	PCB 179	EPA 1668A
PCB 156	EPA 1668A	PCB 18	EPA 1668A
PCB 157	EPA 1668A	PCB 180	EPA 1668A
PCB 158	EPA 1668A	PCB 181	EPA 1668A
PCB 159	EPA 1668A	PCB 182	EPA 1668A
PCB 16	EPA 1668A	PCB 183	EPA 1668A
PCB 160	EPA 1668A	PCB 184	EPA 1668A
PCB 161	EPA 1668A	PCB 185	EPA 1668A
PCB 162	EPA 1668A	PCB 186	EPA 1668A
PCB 163	EPA 1668A	PCB 187	EPA 1668A
PCB 164	EPA 1668A	PCB 188	EPA 1668A
PCB 165	EPA 1668A	PCB 189	EPA 1668A
PCB 166	EPA 1668A	PCB 19	EPA 1668A
PCB 167	EPA 1668A	PCB 190	EPA 1668A
PCB 168	EPA 1668A	PCB 191	EPA 1668A
PCB 169	EPA 1668A	PCB 192	EPA 1668A
PCB 17	EPA 1668A	PCB 193	EPA 1668A
PCB 170	EPA 1668A	PCB 194	EPA 1668A
PCB 171	EPA 1668A	PCB 195	EPA 1668A
PCB 172	EPA 1668A	PCB 196	EPA 1668A

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Polychlorinated Biphenyls	
PCB 197	EPA 1668A
PCB 198	EPA 1668A
PCB 199	EPA 1668A
PCB 2	EPA 1668A
PCB 20	EPA 1668A
PCB 200	EPA 1668A
PCB 201	EPA 1668A
PCB 202	EPA 1668A
PCB 203	EPA 1668A
PCB 204	EPA 1668A
PCB 205	EPA 1668A
PCB 206	EPA 1668A
PCB 207	EPA 1668A
PCB 208	EPA 1668A
PCB 209	EPA 1668A
PCB 21	EPA 1668A
PCB 22	EPA 1668A
PCB 23	EPA 1668A
PCB 24	EPA 1668A
PCB 25	EPA 1668A
PCB 26	EPA 1668A
PCB 27	EPA 1668A
PCB 28	EPA 1668A
PCB 29	EPA 1668A
PCB 3	EPA 1668A
PCB 30	EPA 1668A

Polychlorinated Biphenyls	
PCB 31	EPA 1668A
PCB 32	EPA 1668A
PCB 33	EPA 1668A
PCB 34	EPA 1668A
PCB 35	EPA 1668A
PCB 36	EPA 1668A
PCB 37	EPA 1668A
PCB 38	EPA 1668A
PCB 39	EPA 1668A
PCB 4	EPA 1668A
PCB 40	EPA 1668A
PCB 41	EPA 1668A
PCB 42	EPA 1668A
PCB 43	EPA 1668A
PCB 44	EPA 1668A
PCB 45	EPA 1668A
PCB 46	EPA 1668A
PCB 47	EPA 1668A
PCB 48	EPA 1668A
PCB 49	EPA 1668A
PCB 5	EPA 1668A
PCB 50	EPA 1668A
PCB 51	EPA 1668A
PCB 52	EPA 1668A
PCB 53	EPA 1668A
PCB 54	EPA 1668A

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Polychlorinated Biphenyls	
PCB 55	EPA 1668A
PCB 56	EPA 1668A
PCB 57	EPA 1668A
PCB 58	EPA 1668A
PCB 59	EPA 1668A
PCB 6	EPA 1668A
PCB 60	EPA 1668A
PCB 61	EPA 1668A
PCB 62	EPA 1668A
PCB 63	EPA 1668A
PCB 64	EPA 1668A
PCB 65	EPA 1668A
PCB 66	EPA 1668A
PCB 67	EPA 1668A
PCB 68	EPA 1668A
PCB 69	EPA 1668A
PCB 7	EPA 1668A
PCB 70	EPA 1668A
PCB 71	EPA 1668A
PCB 72	EPA 1668A
PCB 73	EPA 1668A
PCB 74	EPA 1668A
PCB 75	EPA 1668A
PCB 76	EPA 1668A
PCB 77	EPA 1668A
PCB 78	EPA 1668A

Polychlorinated Biphenyls	
PCB 79	EPA 1668A
PCB 8	EPA 1668A
PCB 80	EPA 1668A
PCB 81	EPA 1668A
PCB 82	EPA 1668A
PCB 83	EPA 1668A
PCB 84	EPA 1668A
PCB 85	EPA 1668A
PCB 86	EPA 1668A
PCB 87	EPA 1668A
PCB 88	EPA 1668A
PCB 89	EPA 1668A
PCB 9	EPA 1668A
PCB 90	EPA 1668A
PCB 91	EPA 1668A
PCB 92	EPA 1668A
PCB 93	EPA 1668A
PCB 94	EPA 1668A
PCB 95	EPA 1668A
PCB 96	EPA 1668A
PCB 97	EPA 1668A
PCB 98	EPA 1668A
PCB 99	EPA 1668A
PCB-1016	EPA 8082A
PCB-1221	EPA 8082A
PCB-1232	EPA 8082A

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Polychlorinated Biphenyls

PCB-1242	EPA 8082A
PCB-1248	EPA 8082A
PCB-1254	EPA 8082A
PCB-1260	EPA 8082A
PCB-1262	EPA 8082A
PCB-1268	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(ghi)perylene	EPA 8270D
Benzo(k)fluoranthene	EPA 8270D
Chrysene	EPA 8270D
Dibenzo(a,h)anthracene	EPA 8270D
Dibenzo(a,j)acridine	EPA 8270D
Fluoranthene	EPA 8270D
Fluorene	EPA 8270D
Indeno(1,2,3-cd)pyrene	EPA 8270D
Naphthalene	EPA 8270D

Polynuclear Aromatic Hydrocarbons

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
1,2-Dichlorobenzene, Semi-volatile	EPA 8270D
1,3-Dichlorobenzene, Semi-volatile	EPA 8270D
1,4-Dichlorobenzene, Semi-volatile	EPA 8270D

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Semi-Volatile Organics

2-Methylnaphthalene	EPA 8270D
2-Picoline	EPA 8270D
4-Amino biphenyl	EPA 8270D
Acetophenone	EPA 8270D
Aramite	EPA 8270D
Benzaldehyde	EPA 8270D
	EPA 8315A
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

Volatile Aromatics

4-Chlorotoluene	EPA 8260C
Benzene	EPA 8260C
	EPA 8021B
Bromobenzene	EPA 8260C
Chlorobenzene	EPA 8260C
Ethyl benzene	EPA 8260C
	EPA 8021B
Isopropylbenzene	EPA 8260C
	EPA 8021B
m/p-Xylenes	EPA 8260C
Naphthalene, Volatile	EPA 8260C
	EPA 8021B
n-Butylbenzene	EPA 8260C
n-Propylbenzene	EPA 8260C
o-Xylene	EPA 8260C
	EPA 8021B
p-Isopropyltoluene (P-Cymene)	EPA 8260C
sec-Butylbenzene	EPA 8260C
Styrene	EPA 8260C
tert-Butylbenzene	EPA 8260C
Toluene	EPA 8260C
	EPA 8021B
Total Xylenes	EPA 8260C
	EPA 8021B

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EUROFINS LANCASTER LABORATORIES
ENVIRONMENTAL LLC
2425 NEW HOLLAND PIKE
LANCASTER, PA 17601-5994

NY Lab Id No: 10670

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2003) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Volatile Chlorinated Organics

Benzyl chloride	EPA 8260C
Epichlorohydrin	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
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

Volatile Halocarbons

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
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 8260C SIM
	EPA 8270D
	EPA 8270D SIM
2-Butanone (Methylethyl ketone)	EPA 8260C

Serial No.: 58381

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2019
Issued April 01, 2018
Revised June 01, 2018

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All approved analytes are listed below:

Volatile Organics

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
Ethyl Acetate	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
	EPA 8021B
n-Butanol	EPA 8260C
o-Toluidine	EPA 8270D
Propionitrile	EPA 8260C
tert-butyl alcohol	EPA 8260C
Vinyl acetate	EPA 8260C

Sample Preparation Methods

EPA 5035A-L
EPA 5035A-H
EPA 3010A
EPA 3005A

Sample Preparation Methods

EPA 3050B
EPA 3550C
EPA 3540C
EPA 3020A
EPA 3546
EPA 5035
EPA 3060A

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All approved analytes are listed below:

Acrylates

Acetonitrile	EPA TO-15
Acrylonitrile	EPA TO-15
Ethyl acrylate	EPA TO-15
Methyl methacrylate	EPA TO-15

Chlorinated Hydrocarbons

1,2,4-Trichlorobenzene	EPA TO-14A
	EPA TO-15
Hexachlorobutadiene	EPA TO-14A
	EPA TO-15
Hexachloroethane	EPA TO-15

Polynuclear Aromatics

Naphthalene	EPA TO-15

Purgeable Aromatics

1,2,4-Trimethylbenzene	EPA TO-14A
	EPA TO-15
1,2-Dichlorobenzene	EPA TO-14A
	EPA TO-15
1,3,5-Trimethylbenzene	EPA TO-14A
	EPA TO-15
1,3-Dichlorobenzene	EPA TO-14A
	EPA TO-15
1,4-Dichlorobenzene	EPA TO-14A
	EPA TO-15
2-Chlorotoluene	EPA TO-15

Purgeable Aromatics

Benzene	EPA TO-14A
	EPA TO-15
Chlorobenzene	EPA TO-14A
	EPA TO-15
Ethyl benzene	EPA TO-14A
	EPA TO-15
Isopropylbenzene	EPA TO-15
m/p-Xylenes	EPA TO-15
o-Xylene	EPA TO-15
Styrene	EPA TO-14A
	EPA TO-15
Toluene	EPA TO-14A
	EPA TO-15
Total Xylenes	EPA TO-14A
	EPA TO-15

Purgeable Halocarbons

1,1,1-Trichloroethane	EPA TO-14A
	EPA TO-15
1,1,2,2-Tetrachloroethane	EPA TO-14A
	EPA TO-15
1,1,2-Trichloro-1,2,2-Trifluoroethane	EPA TO-14A
	EPA TO-15
1,1,2-Trichloroethane	EPA TO-14A
	EPA TO-15
1,1-Dichloroethane	EPA TO-14A

Serial No.: 57509

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WADSWORTH CENTER

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All approved analytes are listed below:

Purgeable Halocarbons	
1,1-Dichloroethane	EPA TO-15
1,1-Dichloroethene	EPA TO-14A
	EPA TO-15
1,2-Dibromo-3-chloropropane	EPA TO-15
1,2-Dibromoethane	EPA TO-14A
	EPA TO-15
1,2-Dichloroethane	EPA TO-14A
	EPA TO-15
1,2-Dichloropropane	EPA TO-14A
	EPA TO-15
3-Chloropropene (Allyl chloride)	EPA TO-15
Bromodichloromethane	EPA TO-14A
	EPA TO-15
Bromoform	EPA TO-15
Bromomethane	EPA TO-14A
	EPA TO-15
Carbon tetrachloride	EPA TO-14A
	EPA TO-15
Chloroethane	EPA TO-14A
	EPA TO-15
Chloroform	EPA TO-14A
	EPA TO-15
Chloromethane	EPA TO-14A
	EPA TO-15
cis-1,2-Dichloroethene	EPA TO-14A
	EPA TO-15
Purgeable Halocarbons	
cis-1,3-Dichloropropene	EPA TO-14A
	EPA TO-15
Dibromochloromethane	EPA TO-15
Dichlorodifluoromethane	EPA TO-14A
	EPA TO-15
Methylene chloride	EPA TO-14A
	EPA TO-15
Tetrachloroethene	EPA TO-14A
	EPA TO-15
trans-1,2-Dichloroethene	EPA TO-14A
	EPA TO-15
trans-1,3-Dichloropropene	EPA TO-14A
	EPA TO-15
Trichloroethene	EPA TO-14A
	EPA TO-15
Trichlorofluoromethane	EPA TO-14A
	EPA TO-15
Vinyl bromide	EPA TO-15
Vinyl chloride	EPA TO-14A
	EPA TO-15
Volatile Chlorinated Organics	
Benzyl chloride	EPA TO-14A
	EPA TO-15
Volatile Organics	
1,2-Dichlorotetrafluoroethane	EPA TO-14A

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All approved analytes are listed below:

Volatile Organics

1,2-Dichlorotetrafluoroethane	EPA TO-15
1,3-Butadiene	EPA TO-15
1,4-Dioxane	EPA TO-15
2,2,4-Trimethylpentane	EPA TO-15
2-Butanone (Methylethyl ketone)	EPA TO-15
4-Methyl-2-Pentanone	EPA TO-15
Acetone	EPA TO-15
Acrolein (Propenal)	EPA TO-15
Carbon Disulfide	EPA TO-15
Cyclohexane	EPA TO-15
Hexane	EPA TO-15
Isopropanol	EPA TO-15
Methyl iodide	EPA TO-15
Methyl tert-butyl ether	EPA TO-15
n-Heptane	EPA TO-15
tert-butyl alcohol	EPA TO-15
Vinyl acetate	EPA TO-15

Serial No.: 57509

APPENDIX B

Site-Specific Health and Safety Plan

Geosyntec consultants

engineers | scientists | innovators

APPENDIX B
HEALTH AND SAFETY PLAN

PRE-DESIGN INVESTIGATION WORK PLAN
PENNSYLVANIA LINES LLC, ELMIRA 5TH STREET YARD SITE
152 EAST 5TH STREET
CITY OF ELMIRA, CHEMUNG COUNTY, NY

NYSDEC PROJECT C808050

Prepared for
New York State Department of Environmental Conservation
Division of Environmental Remediation, Region 8
6274 East Avon-Lima Road
Avon, New York 14414-9519

Prepared by
Geosyntec Consultants, Inc. and Its Affiliate
Beech and Bonaparte Engineering, PC
10211 Wincopin Circle, 4th Floor
Columbia, Maryland 21044

Geosyntec Project Number: MR1502
Geosyntec Document Number: MD18049
NS Project Number: ENVREM-3

March 2018

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LIST OF APPENDICES

1. INTRODUCTION

On behalf of Norfolk Southern Railway Company (NSRC), Geosyntec Consultants, Inc. and its New York affiliate Beech and Bonaparte Engineering, P.C. (together, Geosyntec) has prepared this HASP for the for the Pennsylvania Lines LLC, Elmira 5th Street Yard (the Site) in Elmira, New York. This HASP was prepared as a component (i.e., **Appendix B**) of the Pre-Design Investigation (PDI) Work Plan, which was prepared to describe the field investigation that will be conducted to collect the information necessary to effectively design the Selected Remedy in the Decision Document (NYSDEC, 2016) and prepare a Remedial Action Work Plan (RAWP). Specifically, this HASP was prepared to identify the anticipated health and safety (H&S) hazards and presents procedures and equipment required for worker protection while performing field investigation activities prescribed in PDI Work Plan and associated Field Sampling Plan (FSP)/Quality Assurance Project Plan (QAPP). This HASP was also prepared to meet the requirements specified in Occupational Safety and Health (OSHA) Hazardous Waste Operations Emergency and Response (HAZWOPER) program, Geosyntec Consultants, Inc. (Geosyntec)'s H&S Procedure HS 301, and the H&S requirements of the Group.

2. SIGNATURES

2.1 Preparers and Reviewers

This HASP must be maintained on-site when field work is being performed. The Site Health and Safety Officer (SHSO) can change or amend this document, in agreement with the Health and Safety Manager (HSM) or Project Manager (PM). Amendments (e.g., changes in personal protective equipment, addition of tasks, etc.) must be documented in Section 19 and in **Appendix B.1**. This HASP must be reviewed and amended on an annual basis for projects lasting more than one year.

Prepared by:	Stephanie Jones - SHSO	03/22/2018 Date
Reviewed by:	Adam Gray - Project Manager	03/22/2018 Date
Reviewed by:	Mark Malchik, CIH, CSP - Regional Health and Safety Manager	03/22/2018 Date
Approved by:	James Wang - Principal	03/22/2018 Date

This HASP has been given to the following H&S approved subcontractor(s).

Subcontractor	Representative	Date
Subcontractor	Representative	Date
Subcontractor	Representative	Date
Subcontractor	Representative	Date
Subcontractor	Representative	Date
Subcontractor	Representative	Date

2.2 Site Workers

This HASP must be reviewed by personnel prior to site work. Workers not in attendance at the initial meeting must be trained by the SHSO on the information covered in the pre-entry briefing. After reading the HASP and attending a pre-entry briefing, Geosyntec employees and other parties covered under this HASP must sign the following acknowledgment statement.

"I have read, understand, and will perform my work in accordance with the information set forth in this HASP."

Signature	Printed Name	Date

3. EMERGENCY CONTACT INFORMATION

Contact	Telephone Numbers	
	Office	Alternate (Type)
Fire Department	911	N/A
Police Department	911	N/A
Site Emergency Response (if applicable)	N/A	N/A
Hospital – St. Joseph's Hospital	(607) 733-6541	N/A
Director of H&S – Dale Prokopchak	(804) 332-6376	(804) 349-8067 (Cell)
H&S Regional Manager – Mark P. Malchik	(978) 206-5777	(781) 392-5440 (Cell)
Project Manager – Adam Gray	(410 910-7610	(301) 379-0933 (Cell)
Site Health & Safety Officer – Stephanie Jones	(410) 910-7635	(240) 319-5569 (Cell)
H&S Coordinator – Michael Hansen	(410) 910-7640	(443) 812-1430 (Cell)
Principal- or Associate-in-Charge – Paul Botek	(410) 381-4333	(443) 745-0881 (Cell)
Utility Emergencies –	811	N/A
Work Care –	(888) 449-7787	(714) 978-7488
Facility Contact – Chris Hunsicker, Norfolk Southern	(412) 893-7242	(412) 445-4456
Client Contact – Scott Pittenger, Norfolk Southern	(404) 582-4236	(470) 925-6728
Other –	N/A	N/A

4. APPLICABILITY OF THIS HASP

This HASP was prepared in accordance with Geosyntec's H&S Procedures for use by Geosyntec project staff and subcontractors. Subcontractors, at a minimum, shall ensure that their employees, and those of its lower tier subcontractors, comply with these procedures and other health, safety, and security provisions in the Subcontract. Compliance with this HASP shall represent the minimum requirements to be met by subcontractors, who shall be responsible for examining all requirements and determining whether additional or more stringent health, safety, and security provisions are appropriate for their portion of the work and implementing them accordingly. Therefore, for firms executing all or any portion of the work, this document and its contents should not be used without a thorough peer review by their health and safety managers. Prior to commencing work, such firms are responsible for reviewing and supplementing the HASP to add appropriate procedures specific to their portion of the work.

5. SITE/TASK/HAZARD DESCRIPTION

5.1 Site Description

The following is a brief description of the Site, including information as to the location, approximate size, and previous and current usage. A more detailed description of the Site, including the Selected Remedy is provided in the Decision Document (NYSDEC, 2016) and the approved *Remedial Investigation/Remedial Alternatives Report* (RI/RAR) (Gannett Fleming, 2013).

The Site (NYSDEC Site No. C808050) is located at 152 East Fifth Street in Elmira, New York on Tax Parcel 89.15-4-1.11. The Site consists of an approximate 13-acre property that is currently inactive, vacant, and secured with a locked fence. The Site is bounded by Clemens Center Parkway to the east, and East Fifth Street and East Second Street to the north and south, respectively. The western property line runs parallel to elevated railroad tracks operated by NSRC. Booth Electric Supply is located along the south-southeast property boundary, and Bouille Electric is located along the north-northeast property boundary. Land use surrounding the Site is primarily industrial/commercial. The Site location, surrounding vicinity, and site features are shown on **Figures 5.1, 5.2, and 5.3**, respectively.

Railway operations were reportedly established at the Site as early as 1850 and continued until at least the mid-1970s. Preliminary investigations were conducted at the Site in

1996-97 and discovered the presence of underground storage tanks (USTs), buried drums, solid wastes including railroad ties, scrap metal, tires, electrical components and switches. A 2001 cleanup effort at the Site included excavation and removal for appropriate disposal of: two USTs with 63 gallons of heating oil and 330 tons of petroleum-impacted soil; two intact drums containing liquids exceeding hazardous waste threshold for lead; and a large quantity of scrap metal.

5.2 Previous Investigation Findings

Several invesgations were conducted at the Site between 2002 and 2010. Results of those investigation activities were presented in the RI/RAR (Gannett Fleming, 2013), which indicated the following regarding contaminated media.

Onsite Soil: Volatile organic compounds (VOCs) were not found in soil at concentrations above the protection of groundwater soil cleanup objectives (SCOs). The Site related contaminants of concern (COCs) in soil include arsenic, polychlorinated biphenyls (PCBs), benzo(a)pyrene, and mercury in surface soils down to 1 foot bgs. Mercury concentrations exceeding SCOs were also detected in subsurface soils down to 6 feet bgs in an isolated area in the central portion of the Site. Arsenic concentrations ranged from non-detect to 1,130 parts per million (ppm). For comparison purposes, the New York Codes, Rules and Regulations (NYCCR) Part 375 restricted industrial (RI) SCO for arsenic is 16 ppm. PCB concentrations ranged from non-detect to 36.8 ppm (RI SCO 25 ppm). Benzo(a)pyrene concentrations ranged from non-detect to 3.3 ppm (RI SCO 1.1 ppm), and mercury concentrations ranged from non-detect to 330 ppm (RI SCO 5.7 ppm). Groundwater impacts related to Site soil COCs were not identified.

Offsite Soil: Arsenic and PCB contaminated surface soil was identified in a small unpaved area used for equipment and commercial materials storage on the adjoining Bouille Electric property. Arsenic concentrations ranged from 6.0 to 36.9 ppm and PCBs from non-detect to 1.7 ppm in this area. Unrestricted SCOs for arsenic and PCBs are 13 and 0.1 ppm, respectively. NYSDEC reviewed records for Bouille Electric, which revealed that the detected PCBs in this area may be related to Bouille Electric operations. Because of those findings, PCB-contaminated soil at the Bouille Electric property was not considered to be related to the Site.

Shallow Groundwater: The COCs in Site groundwater are tetrachloroethene (PCE) and trichloroethene (TCE). PCE concentrations ranged from non-detect to 77 parts per billion (ppb). TCE concentrations ranged from non-detect to 8 ppb. Based on analytical data to date, a low-concentration groundwater contamination plume originates onsite and extends to the eastern property line. PCE and TCE concentrations were below the Technical and Operational Guidance Series (TOGS) 1.1.1 Ambient Water Quality Standards in an offsite groundwater monitoring well (MW-100) located on the east side of Clemens Center Parkway

In summary, previous investigations have revealed that several organic and inorganic compounds are present in environmental media at the Site. Care must be taken by site-workers to protect themselves from inhalation, ingestion, and dermal contact hazards associated with the findings summarized above.

5.3 Task Descriptions

Summary descriptions of tasks to be performed at the Site under this HASP are provided below. Detailed descriptions of work to be performed are presented in the FSP (**Appendix C** of the RDWP). Task Hazard Analyses (THAs) associated with each task listed below are presented in **Appendix B.2** of this HASP.

Task 1: Soil Sampling

Pre-excavation confirmation and waste characterization soil samples will be collected via hand auger or direct push technology (DPT), and submitted for laboratory analysis. Pre-excavation confirmation soil samples will be analyzed for the COCs around and beneath each excavaton area.

Task 2: Groundwater Sampling

Groundwater samples will be collected from monitoring wells using low-flow sampling techniques to evaluate COC concentration and general groundwater geochemistry. Water levels will be measured in monitoring wells to assess groundwater flow direction and gradient.

5.4 Chemical Hazards

The classes of chemicals that are known or suspected to be present that may be encountered while performing site work include the following:

- Chlorinated volatile organic compounds (VOCs)
- Polychlorinated biphenyls (PCBs)
- Polyaromatic Hydrocarbons
- Hazardous metals

Controls for those hazards, as applicable to each task, are presented in the THAs included in **Appendix B.2** of this HASP. A summary of the chemical hazards associated with the compounds is presented in **Appendix B.3** of this HASP.

5.5 Physical Hazards

The following physical hazards have been identified associated with the work to be performed and the site conditions.

The following physical hazards have been identified associated with the work to be performed and the site conditions.

- Cold stress
- Compressed gases
- Drilling (including indoor)
- Drum and container handling
- Excavation/Trenching
- Eye injury
- Hand/Foot injury
- Heat stress
- Heavy equipment
- Knives/Blades

- Lifting heavy loads
- Loud noise/Vibration
- Slips, trips, and falls
- Urban environments
- Utility protection

Controls for these hazards, as applicable to each task, are presented in the THAs included in **Appendix B.2** of this HASP.

5.6 Biological Hazards

The following biological hazards have been identified associated with the work to be performed and the site conditions.

- Allergic reaction to poisonous plants
- Biting/stinging insects
- Rats/vermin
- Snakes
- Heavy vegetation and allergic reaction to poisonous plants

Controls for these hazards, as applicable to each task, are presented in the THAs included in **Appendix B.2** of this HASP.

6. GENERAL SAFE WORK PRACTICES

The following general safe work practices must be adhered to while performing site work:

- Basic personal protective equipment (PPE) shall be worn, including hard hats, safety glasses, hard-toed boots, and high-visibility vests. If conditions allow, the requirement for hard hats and hard-toed boots may be reduced with approval of the SHSO and PM.
- Minimize contact with impacted materials. Do not sit, kneel, or place equipment directly on potentially contaminated surfaces.

- Smoking, eating, or drinking after entering the work zone and before personal decontamination is not allowed. Employees who are suspected of being under the influence of illegal drugs or alcohol will be removed from the site. Workers taking prescribed medication that may cause drowsiness shall not operate heavy equipment and are prohibited from performing tasks where Level C or B PPE is required.
- Practice good housekeeping.
- The following conditions must be observed when operating a motor vehicle:
    - Wearing of seat belts is mandatory.
    - The use of headlights is mandatory during periods of rain, fog, or other adverse weather or low-light conditions.
    - A backup warning system or use of vehicle horn is mandatory when the vehicle is engaged in a backward motion.
    - Posted traffic signs and directions from flagmen must be observed.
    - Equipment and/or samples transported in vehicles must be secured from movement.
    - The use of vehicles acquired by Geosyntec by non-Geosyntec personnel is prohibited.
- In an unknown situation, always assume the worst reasonable conditions.
- Be observant of your immediate surroundings and the surroundings of others. It is a team effort to notice and warn of dangerous situations. Withdrawal from a hazardous situation to reassess procedures is the preferred course of action.
- Conflicting situations may arise concerning safety requirements and working conditions. These must be addressed and resolved rapidly by the SHSO and PM to relieve motivations or pressures to circumvent established safety policies.
- Unauthorized breaches of specified safety protocols are not allowed. Workers unwilling or unable to comply with established procedures will be asked to leave the work site.

7. EMERGENCY RESPONSE

This section discusses emergency response procedures and response equipment to be maintained on-site. An Emergency Evacuation Plan with a pre-determined rally point is provided as **Figure 5.2** of this HASP. A table presenting a list of contacts and telephone numbers for the applicable local and off-site emergency responders is provided in Section 3 of this HASP.

7.1 Injury and Emergency Response Procedures

In the event of an injury to an employee, the instructions for injury response and reporting, located in **Appendix B.4** of this HASP, must be implemented immediately. In the event that an emergency develops, the following procedures are to be implemented:

- The SHSO, or designated alternate, should be immediately notified via the on-site communication system. The SHSO assumes control and general oversight of the emergency response; control will be relinquished to external responders who will assume 'incident command' responsibilities, as appropriate .
- If applicable, the SHSO must immediately notify off-site emergency responders (e.g., fire department, hospital, police department, etc.) and must inform the response team of the nature and location of the emergency on-site.
- If applicable, the SHSO may call for evacuation of the site. Site workers should move to their respective refuge stations using the evacuation routes provided on **Figure 5.2**.
- For small fires, flames should be extinguished using the appropriate type of fire extinguisher. Large fires should be handled by the local fire department.
- After an incident has stabilized, the procedures presented in "Instructions for Incident Reporting," located in **Appendix B.4** of this HASP, must be followed.

7.2 Emergency Response Equipment

Emergency response equipment will be maintained in the work area, or available to Site personnel, as necessary for this project. Emergency response equipment will include first aid kits, fire extinguishers (Type ABC), eyewash bottles, and any additional site-specific equipment required by the SHSO based on site conditions and operations.

8. KEY PERSONNEL AND HEALTH AND SAFETY RESPONSIBILITIES

Project personnel and their responsibilities in regard to health and safety concerns on this project are as follows:

Project Manager (PM): Adam Gray

- Approve this HASP and amendments, if any;
- Monitor the field logbooks for H&S work practices employed;
- Coordinate with SHSO so that emergency response procedures are implemented;
- Check that corrective actions are implemented;
- Check and document that qualified personnel receive this plan and are aware of its provisions and potential hazards associated with site operations, and that they are instructed in safe work practices and familiar with emergency response procedures; and
- Provide for appropriate monitoring, PPE, and decontamination materials.

Site Health and Safety Officer (SHSO): Stephanie Jones

- Prepare and implement project HASP and amendments, if any, and report to the PM for action if deviations from the anticipated conditions exist and authorize the cessation of work if necessary;
- Check that site personnel meet the training and medical requirements;
- Conduct pre-entry briefing and daily tailgate safety meetings;
- Check that monitoring equipment and PPE are operating correctly according to manufacturer's instructions and such equipment is utilized by on-site personnel. Calibrate or check calibration of monitoring equipment and record results;
- Check that decontamination procedures are being implemented;
- Implement site emergency response and follow-up procedures;
- Notify the HSM in the event an emergency occurs; and
- Perform and document weekly inspections.

Corporate Health and Safety Regional Manager: Mark Malchik, CIH, CSP

- Review and audit HASP and amendments;

- Assist with the implementation of the corporate H&S program; and
- Consult with staff on H&S issues.

Site Workers: Geosyntec Staff

- Provide verification of required H&S training and medical surveillance prior to arriving at the Site;
- Notify supervisors of workplace accomodation requirements as the result of physical limitations or medical conditions;
- Attend pre-entry briefings and daily tailgate safety meetings;
- Immediately report accidents and/or unsafe conditions to the SHSO; and
- Be familiar with and abide by the HASP.

9. WORKER TRAINING AND MEDICAL SURVEILLANCE

Personnel involved in field activities subject to OSHA HAZWOPER 29 Code of Federal Regulations (CFR) 1910.120 will be required to participate in both a H&S training program that complies with criteria primarily set forth by the OSHA HAZWOPER in 29 CFR 1910.120(e) and a medical surveillance program covered under 29 CFR 1910.120(f), or equivalent regulations based on the jurisdiction in which the project is performed. Additionally, all Geosyntec employees, subcontractors, visitors, etc. must comply with NSRC health and safety programs and policies.

9.1 OSHA Training

9.1.1 Pre-Assignment and Annual Refresher Training

Prior to arrival on-site, the Geosyntec PM will be responsible for monitoring that their staff meet the requirements of pre-assignment training (40/24 hours per Procedure HS 301). In addition, personnel must be able to document dates of attendance at an annual 8-hour refresher and three (3) days of fieldwork under a qualified supervisor. Failure to provide this documentation will prohibit entry to the work area(s) where intrusive work is being performed. Non-intrusive activities will not require this level of training.

9.1.2 Site Supervisor Training

Consistent with OSHA 29 CFR 1910.120 (e)(4), prior to arrival on-site, individuals designated as site supervisors require an additional eight (8) hours of specialized site supervisor training. If working alone, each indivudal conducting instrusive work activies must have Site Supervisor Training.

9.2 Initial Site Safety Orientation and HASP Review

In addition to complying with 29 CFR 1910(e), site personnel will attend an initial safety orientation, presented by the SHSO, during which the HASP and applicable THAs will be reviewed prior to initiating field activities. This review will include the following:

- Understanding the lines of authority regarding H&S and site personnel roles and responsibilities;
- Information of specific hazard agents related to the Site and Site operations will be discussed, such as health hazards of Site chemicals and specific safety hazards of processes, tools, and equipment;
- Training in the proper use, maintenance, and decontamination protocol of PPE and Level(s) of Protection;
- Appropriate work practices and engineering controls to reduce/eliminate exposures to Site hazards;
- Personnel will be informed of means for normal site and emergency communication(s);
- Air monitoring strategies will be discussed to include the frequency/types, action levels, sampling techniques, pre/post calibration techniques;
- Unique/Site specific medical surveillance requirements that need to be considered based on site contaminants;
- Understanding Site control measures, work zones, and proper decontamination procedures for personnel/tools/vehicles, etc. to reduce the potential for both on-/off-site contamination;
- Personnel will be trained to respond quickly and properly in the event of an emergency; and

- Personnel involved in specific hazardous activities, such as confined space entry, drum handling, sampling unknowns, etc. will receive specialized training on the appropriate safe work practices prior to commencing these operations.

9.3 Medical Surveillance

Workers engaged in work activities in either an Exclusion Zone or Contamination Reduction Zone (see section 10.4 of this HASP) will be actively engaged in a medical surveillance program, and up-to-date with their periodic medical exams as discussed in this section.

9.3.1 Baseline MedicalExam

The baseline medical examination is used to identify physical capabilities and certain medical limitations that may have an impact on the candidate's ability to perform in the position and/or job activity for which he/she is being considered, as well as to establish certain baseline medical parameters. The initial test results can then be compared against future periodic or project-specific monitoring results.

9.3.2 Biennial Medical Exam

At a minimum, a biennial medical examination will be used to evaluate an employee's continued fitness for duty and to assess possible impact(s) occupational exposures may have had on their health status. The biennial examination will include an update to the medical and work history, results of previous occupational exposure assessments, and a detailed medical exam tailored to the job description.

9.3.3 Exposure/Activity/Project-Specific Medical Testing

There are no exporsure/activitiy/project-specific medical testing requirements for this project.

9.3.4 Exit Exam

An exit medical examination is offered when an employee leaves the medical surveillance program, either because of termination of employment with Geosyntec or because of reassignment to a position not designated or identified to participate in the medical surveillance program. This optional exit examination may be used to assess potential changes in medical status that have occurred during the course of employees' previous work activities, and to establish a medical baseline at the time of departure.

9.4 Norfolk Southern Operating Guidelines for Contractors

Geosyntec employees, subcontractors, visitors, etc. must comply with NSRC health and safety programs and policies. For reference, a copy of NSRC's Operating Guidelines for Contractors is included in **Appendix B.5**.

NSRC Roadway Worker Training (RWT) and Federal Railroad Administration (FRA) training are not required for this project because work is not planned with 25 feet of the railway.

NSRC requires that all individuals working on their property must possess current eRailsafe credentials. The eRailsafe identification card must be visible on the worker's person at all times. It is the responsibility of each individual worker to know the status of his or her training, both internal and client required, and each worker must resign himself from the Site if any training is not current. The individual who resigns must also notify Geosyntec's Project Manager immediately once it is determined that any training is not current.

10. MAPS AND SITE CONTROL

10.1 Routes to Hospital and Urgent Care Facility

A hospital and an urgent care facility near the site have been identified. Maps and written directions to the hospital and urgent care are provided in **Appendix B.4** of this HASP. The name and phone number of each facility are included with the maps and directions. The route to the hospital should be posted in the Site support facilities, or with the SHSO field documents.

10.2 Site Maps

Site maps depicting the site vincinty and evacuation plan and existing features **Figures 5.2 and 5.3,** respectively. The site maps are intended to show the location of the work zone(s), to provide on-site orientation, and to delineate evacuation routes. Changes may be made to the site maps by the SHSO based on changing site conditions. The site maps should be accessible in the work area.

10.3 Buddy System

The buddy system is required for all site work. The buddy system includes maintaining regular contact with one (1) or more onsite Geosyntec personnel, clients, and/or contractors to periodically check on the condition of site workers such that each employee in the work group is observed by (or in verbal contact with) at least one (1) other employee in the work group. For field visits that consist of non-intrusive activity only, the buddy system can be implemented by one (1) employee via periodic telephone contact with offsite Geosyntec personnel. The purpose of the buddy system is to provide rapid assistance to employees in the event of an emergency.

10.4 Controlled Work Zones

APPLIES TO TASK: ☒① ☐② ☐③ ☐④ ☐⑤ ☐⑥ ☐⑦ ☐ NOT APPLICABLE

Three controlled work zones, including an Exclusion Zone, a Contaminant Reduction Zone (CRZ), and a Support Zone, are required for the task(s) indicated above. Geosyntec employees must not be allowed into the CRZ or Exclusion Zone or the Work Zone until they have received the proper personal protective equipment (PPE) and they have read, understand, and meet the requirements outlined in this HASP. The Exclusion Zone is defined as the area on site where contamination is suspected and tasks are to be performed. The CRZ is defined as the area where equipment and workers are to be decontaminated as they leave the Exclusion Zone. The Support Zone is defined as the command area and may serve as a staging and storage area for supplies. The location and extent of the work zones may be modified as necessary as site investigation information becomes available. For sites that do not require the three controlled work zones, the area(s) where work is to be performed shall be called the Work Zone.

The Site is controlled by a locked fence, which will contain the Exclusion Zone, Contaminant Reduction Zone, and Support Zone for this project. The boundaries of the Exclusion Zone, CRZ, and Support Zone, or the Work Zone, will be marked using appropriate methods, that may include but not limited to warning tape, signs, traffic cones, fencing, or other appropriate means when necessary.

10.5 Site Access and Entry

Prior to Site visits, the PM or SHSO must be notified that Geosyntec personnel or contractors will be at the Site and informed of the purpose of the work. Access to the Site will be allowed during daylight hours between 6:30 a.m. and 6:30 p.m. during normal workdays, unless alternative times are approved by the PM or SHSO. Site access is controlled by Site-wide fencing and cannot be readily accessed by trespassers. If trespassers are observed during field activities, the local police will be called (i.e., 911) to report the incident and request assistance. Personnel will not approach trespassers.

10.6 Inspections

☐ APPLICABLE ☒ NOT APPLICABLE

Based on the hazards identified for the project, periodic H&S inspections will not be performed.

11. TAILGATE MEETINGS

Tailgate meetings must be held daily prior to starting work to discuss important H&S issues concerning tasks to be performed during that shift. Non-Geosyntec site workers should also communicate H&S concerns associated with the tasks they will be performing. Topics discussed in the tailgate meetings must be documented.

12. STOP WORK AUTHORITY

In accordance with the Company's Procedure HS 203 – Stop Work Authority, Geosyntec personnel and subcontractor personnel have the authority and responsibility to issue a Stop Work Order if unsafe actions and/or conditions are identified. The Stop Work Authority (SWA) process involves a stop, notify, correct, and resume approach for resolving observed unsafe work actions or conditions. The person issuing the work stoppage will first notify workers engaged in or affected by the unsafe activity or condition and require that associated work be stopped. After this Stop Work Order is issued, the Geosyntec PM and the supervisors for affected or concerned contractors will also be notified. The Geosyntec PM will document the issuance of the Stop Work Order on the form provided in Procedure HS 203. Work will not resume until the issues and concerns of the Stop Work Order have been adequately addressed.

13. AIR MONITORING

APPLIES TO TASK: ☒① ☒② ☐③ ☐④ ☐⑤ ☐⑥ ☐⑦ ☐ NOT APPLICABLE

Air monitoring will be performed to evaluate airborne chemical and/or dust exposure levels within the breathing zone of site workers to ensure that the designated PPE (See Section 14) is appropriate. Hazardous conditions may include concentrations that may cause acute or chronic illness, potential oxygen deficient environments, or potential explosive environments. Air monitoring will be "real-time" (e.g., the instrument provides immediate results at the project), using multi-gas meters, photoionization detectors (PIDs), or colorimetric tubes. Personal monitoring may also be performed by collecting samples and forwarding to a laboratory for analysis and quantification.

The type(s) of air monitoring equipment required and associated action levels are outlined in **Appendix B.6** of this HASP, and summarized below. Monitoring equipment must be calibrated based on the manufacturer's requirements. Calibration results and air monitoring measurements must be documented. Based on the results noted and site activities or scope of work changes, the frequency of air monitoring may be adjusted on Site by the SHSO with the consent of the PM and communication with the HSM.

13.1 Equipment

The selection of methods and equipment for air monitoring will be dependent on the nature of work and associated potential hazards. Direct reading (real-time) monitoring equipment that may be used during various work activities include, but will not be limited to:

- Photoionization Detector (PID) with a lamp energy of 10.6 electron volts; and
- Dust meter capable of measuring particulate matter less than 10 micrometers in size (PM-10), as well as total dust.

13.2 Action Levels

The on-Site worker breathing zone action levels for total VOCs as measured by a PID for sustained exposure durations (greater than one minute), or repeated exceedances, are:

- <5 parts per million (ppm) – monitor, continue work

- >5 ppm - halt site activities, exercise emission controls, and evacuate. Consider amending HASP to use Level C protection to execute work.

The on-Site worker breathing zone action levels for dust for sustained exposure durations (greater than 15 minutes), or repeated exceedances, are:

For PM10 Fraction:

- <100 micrograms per cubic meter ($\mu g/m^3$) – continue work
- >100 $\mu g/m^3$- implement procedures outlined in Section 4.6.2 of the PDI Work Plan to protect worker and community health and safety.

For Total Dust:

- <1000 $\mu g/m^3$ – continue work
- >1000 $\mu g/m^3$- implement dust suppression procedures, engineering controls, and/or stop work.

14. PERSONAL PROTECTIVE EQUIPMENT

The levels of PPE required for each task are summarized in **Appendix B.7** of this HASP. Required equipment and types of protective clothing materials, as well as an indication of the initial level of protection to be utilized, are detailed below. The level of protection may be upgraded or downgraded by the SHSO according to controls requirements in **Appendix B.7** of this HASP, or according to action levels provided in **Appendix B.6** of this HASP and summarized above in Section 13.

If respirators are worn, workers must abide by the company's Respiratory Protection Program in accordance with company's Respiratory Protection Program (HS 112).

14.1 Modified Level D Protection

Personnel who will be working in areas with potential skin contamination (i.e. performing work in an Exclusion Zone or Contamination Reduction Zone) will use Modified Level D protection. The following equipment will comprise Modified Level D:

1. Work clothing as prescribed by weather.

2. Coveralls or long pants, unless otherwise directed
3. Safety toe boots (recommended, but not required for non-intrusive activities).
4. Hard-hat.
5. Hearing protection, as necessary.
6. Gloves: Nitrile gloves at a minimum for all hazardous or potentially hazardous material handling activities. Heavy gloves (i.e., leather gloves) are recommended for intrusive or non-intrusive work not requiring the handling of hazardous materials. Heavy gloves will protect the hands from vegetation, falls, and other physical hazards.
7. Safety glasses or goggles.

14.2 Level C Protection

Level C protection, required when working in areas that pose a respiratory hazard, is not expected for the proposed work. If PPE beyond modified level D is required, the HASP will be amended.

15. DECONTAMINATION

The SHSO and PM will determine the type and level of decontamination procedures for both personnel and equipment based on evaluation of specific work activities in the controlled work zones. Medical treatment will take precedence over decontamination in the event of a life threatening and/or serious injury/illness. Personnel will perform decontamination in designated and identified areas upon leaving “hot zones” where the potential exists for exposure to hazardous chemical, biological, or environmental conditions.

Decontamination of personnel in Level D (modified) will consist of proper containerization and disposal of coveralls, disposable boots, and gloves (if applicable).

Decontamination of personnel in Level C, is not applicable under the proposed scope of work.

Hand tools and sampling equipment shall be decontaminated as detailed in the FSP/QAPP provided as **Appendix A** of the PDI Work Plan. Wash solutions and PPE will be disposed as indicated in the FSP/QAPP.

16. SPILL CONTAINMENT

The task(s) for this project may involve the handling of drums and/or containers with stored chemicals, hazardous materials, and/or wastes. The drums and/or containers may be spilled/dislodged during site activities due to compromised construction of the drum/container, transportation accidents, improper packaging practices, and improper handling of hazardous materials during on/off loading. Containers will be inspected and their integrity assured prior to being moved and/or handled. If the integrity of the container is in question, the container will be over packed or its contents transferred. Operations will be organized and coordinated to minimize movement of such containers. Where spills, leaks, or ruptures may potentially occur, a supply of sorbents shall be located in the immediate area. Additional preventative measures include:

- Un-approved 55-gallon drums, bins, and/or Baker tanks will be inspected for visible defects upon delivery to the site;
- Un-approved 55-galon drums will also be inspected to ensure each drum includes a resealable lid with a small resealable sampling port near the top, or on the side of the drum and that the enclosure is not deformed and/or distorted;
- Drums will not be completely filled to allow for possible expansion of liquid and will be set on wooden pallets to facilitate transport by forklift;
- The storage area will be weekly inspected to check for leaks while the containers are being filled and immediately after a relocation to a temporary on-site storage area; and
- Flat areas will be selected for temporary storage away from high-traffic work areas/zones and storm/sewer drains.

In the event of an unplanned release or spill of unknown or hazardous substances, the Site supervisor will inform the PM of the spill and will designate personnel who will support the spill containment, control, and/or clean-up procedures. The team will request additional off-site emergency response assistance if necessary based on the type of spill, volume, potential toxicity, etc.

The spill area will be isolated and restricted to only authorized personnel designated to assist with the containment, control, or clean-up activity. Authorized personnel will be trained to contain and clean spills from typical materials and quantities used at the project location. Physical barriers will be set up to warn unauthorized personnel to stay clear and evacuate the affected area. The spill, leak, or incident will be assessed by the team and characterized to determine the appropriate course(s) of action(s) to consider:

- Small spills (i.e., maximum volume of 55 gallons of a liquid or 100 pounds of a solid) may be remediated using absorbent materials by designated personnel;
- Large spills (i.e., liquid volumes greater than 55 gallons or solid weights greater than 100 pounds) and/or spills of highly toxic materials may require assistance by off-site hazardous materials (HAZMAT) teams;
- Attempts will be made to identify and stop the source(s) of spillage immediately while donning proper PPE (based on action levels and the air monitoring program) and performing air monitoring;
- The Site supervisor or other qualified personnel will direct spill-response operations and stay at the spill area until it has been cleaned, inspected, and cleared for re-entry; and

17. CONFINED SPACE ENTRY

☐ APPLICABLE ☒ NOT APPLICABLE

The task(s) for this project involve confined-space entry. Workers must abide by the company's Confined Space Entry Program (Procedure HS 118).

18. GLOBALLY-HARMONIZED SYSTEM (GHS) FOR HAZARD COMMUNICATION

☒ APPLICABLE ☐ NOT APPLICABLE

The following procedures must be followed for chemicals <u>brought onto the site</u> by Geosyntec personnel or by subcontractors (i.e., decontamination solution, sampling preservatives, investigation derived materials, etc.) while performing the tasks of this project:

- Labels on primary chemical containers must not be defaced;
- Chemicals must be stored in appropriate storage containers;

- Secondary containment and storage cabinets must be correctly and clearly labeled;
- Chemicals incompatible with each other must not be stored together;
- Workers must receive training on the chemical hazards; and
- Safety Data Sheets (SDSs) must be added to **Appendix B.8** of this HASP.

When chemicals are used on-site, workers must abide by Geosyntec's GHS Hazard Communication Program (Procedure HS 115).

19. HASP AMENDMENTS

Over the course of this project, it is possible that the project-specific hazards and working conditions will change. This HASP may be reviewed and amended as necessary to effectively describe the changing working conditions and measures to mitigate the potential H&S issues that may arise during the project. Amendments to the HASP should be briefly described in the following spaces provided. The full text of the amendments should be provided in **Appendix B.1** of this HASP and/or additional THAs should be added to **Appendix B.2** of this HASP.

AMENDMENT 1:

Date: __________ Project Manager: ________________ HSM: _____________

Brief Description of Amendment:

____

____

____

____

____

AMENDMENT 2:

Date: __________ Project Manager: ________________ HSM: ______________

Brief Description of Amendment:

AMENDMENT 3:

Date: __________ Project Manager: ________________ HSM: ______________

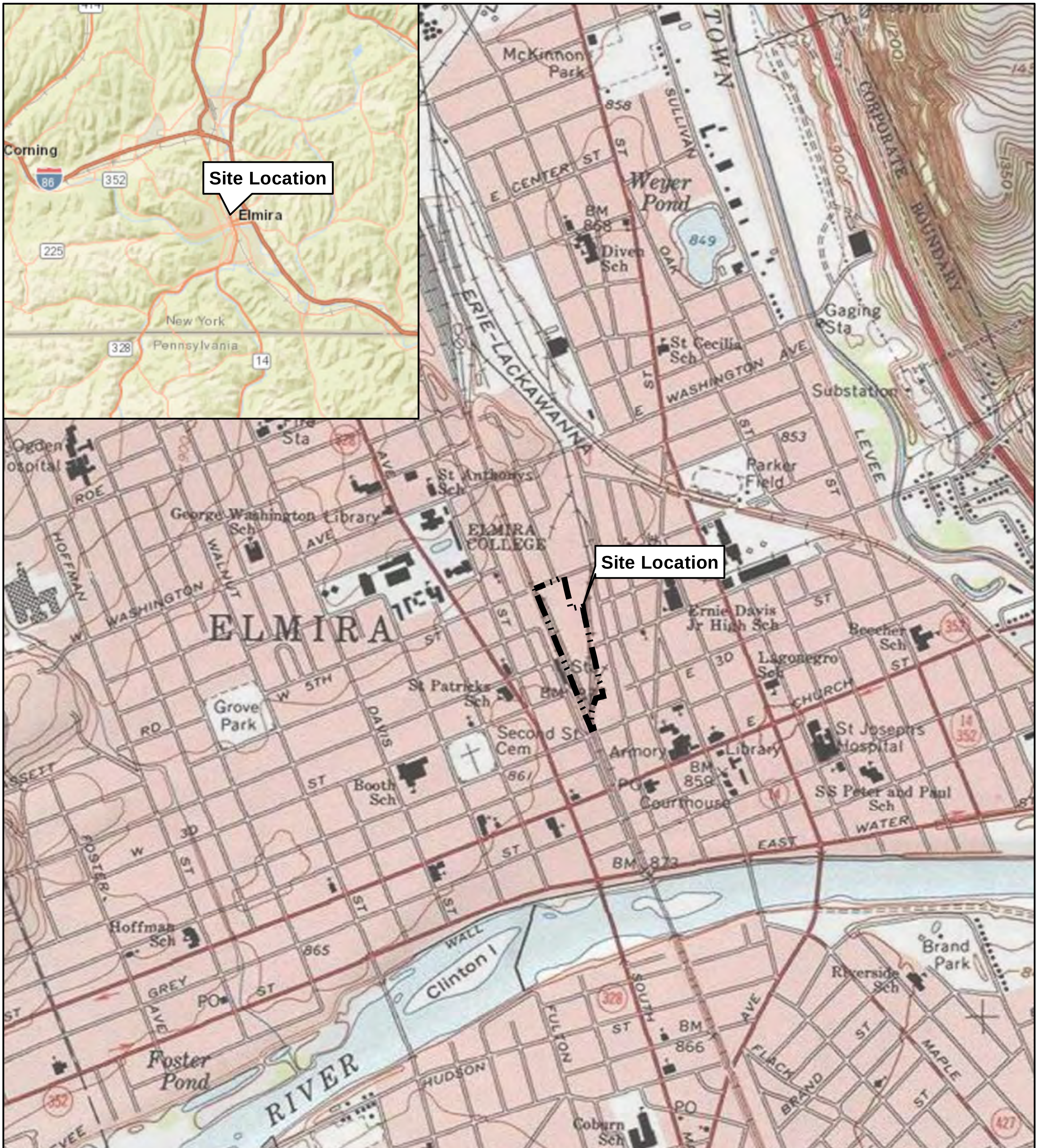
Brief Description of Amendment:

20. REFERENCES

Gannett Fleming, Inc., 2013, Final Remedial Investigation/Remedial Alternatives Report, 5th Street Yard, Elmira, New York (NYSDEC Site # V00446)), December 2013.

NYSDEC, 2018, Brownfield Cleanup Agreement for the Pennsylvania Lines, LLC, Elmira 5th Street Yard Site (NYSDEC Project # C808050), City of Elmira, Chemung County, February 21, 2018.

FIGURES



Legend

Site Boundary

N

0 2,000 Feet

Sources: Esri, HERE, DeLorme, USGS, Intermap,

Site Location Map

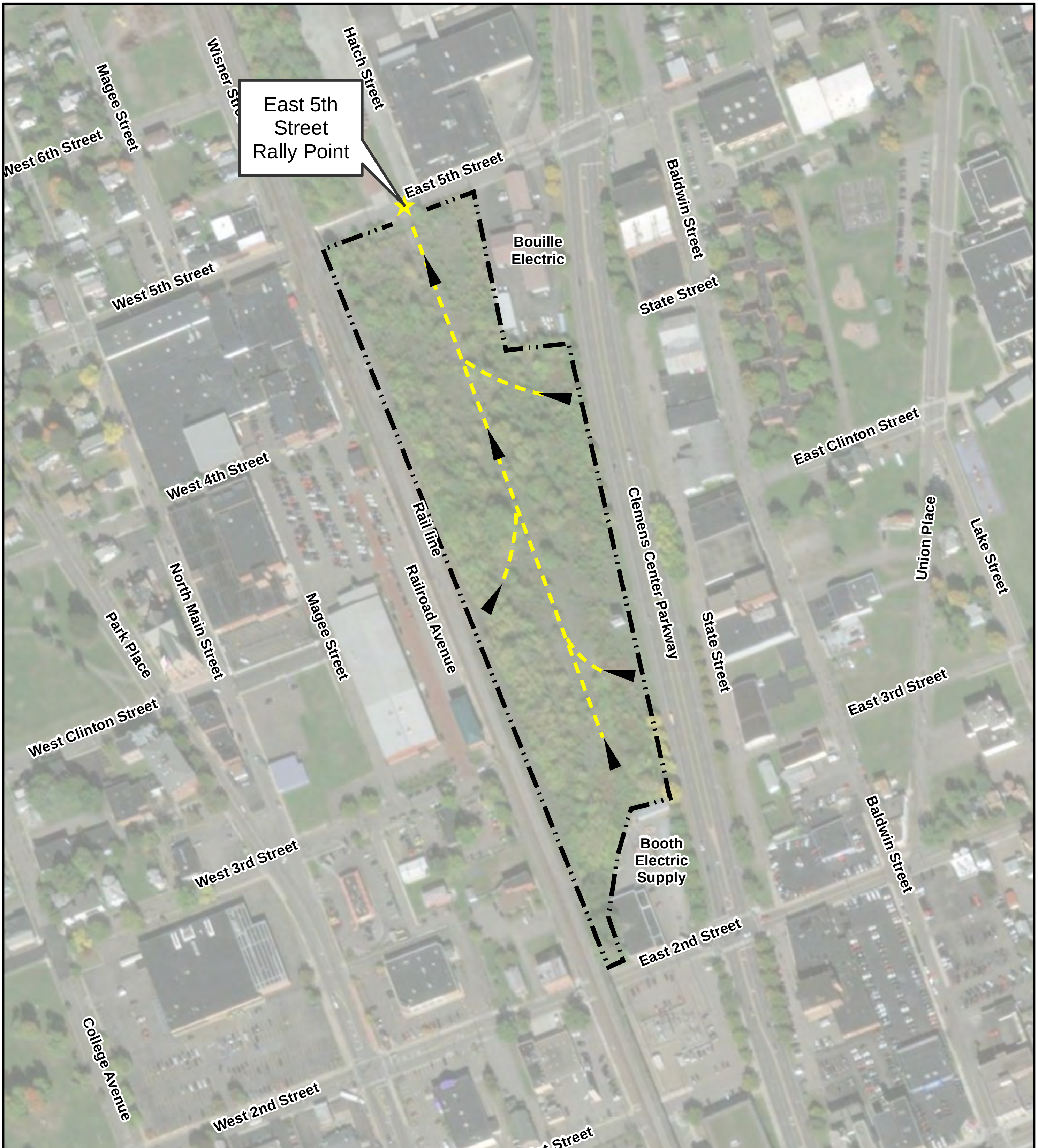
5th Street Yard
Elmira, New York

Geosyntec consultants

Columbia, Maryland | March 2018

Figure 5.1

P:\GIS\Fifth Street Yard\Report 2 - PDI Work Plan\Figure 2.1_Site Location Map.mxd 3/8/2018 1:06:08 PM



Legend

Site Boundary

Evacuation Route

Evacuation Rally Point

Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

0 400 Feet

N

Site Vicinity Map and Evacuation Plan

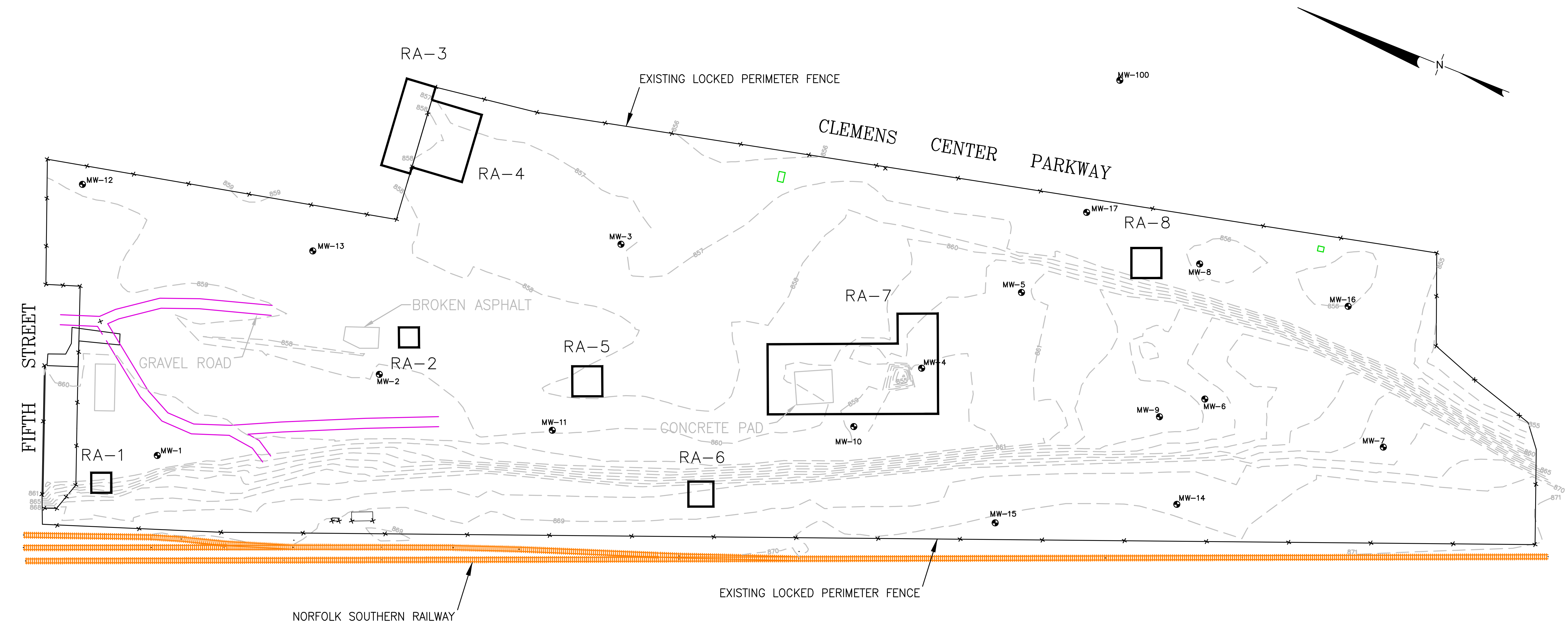
5th Street Yard
Elmira, New York

Geosyntec consultants

Figure 5.2

Columbia, Maryland | March 2018

P:\GIS\Fifth Street Yard\Report 2 - PDI Work Plan\Figure 5.2_Site Vicinity Map & Evacuation Plan.mxd 3/14/2018 2:56:30 PM



PROPOSED EXCAVATION AREA

MONITORING WELL

0 100' 200'

SCALE IN FEET

SITE PLAN

5TH STREET YARD
ELMIRA, NEW YORK

Geosyntec consultants

COLUMBIA, MARYLAND | MARCH 2018

FIGURE 5.3

P:\CADD\1502-ELMIRA\1502F01

Appendix B.1: HASP Amendments

Discuss details of amendments to this HASP here. Include amendment number, date, and details of amendments.

Appendix B.2: Task Hazard Analyses

TASKS	
① Soil Sampling	
② Groundwater Sampling	

THAs for these tasks are presented in the following pages.

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TASK HAZARD ANALYSIS

Geosyntec HS Procedures referenced herein are available on Geosyntec's H&S SharePoint site and should be consulted, as appropriate, per project-specific needs. This THA prepared per HS-106-Accident Prevention Program, HS-204-Task Hazard Analysis, and meets the requirements for a "Site-Specific Health and Safety Plan" per Geosyntec HS Procedures and regulations referenced herein (see Section B.14.).

PART A – SITE SAFETY PLAN

A.1. PROJECT/TASK INFORMATION

TASK 2:	Groundwater Sampling		
Project Name:	Elmira 5th Street Yard	**Project Number/Org:**	MR1502
Project Address:	152 East 5th Street, Elmira, New York		
Description of Task & Worksite:	Groundwater samples will be collected from monitoring wells using low-flow sampling techniques to evaluate COC concentration and general groundwater geochemistry. Water levels will be measured in monitoring wells to assess groundwater flow direction and gradient.		

Geosyntec Personnel	Name	Desktop Office Phone	Cell Phone
Site Lead/HS Officer	Stephanie Jones	(410) 910-7635	(240) 319-5569
Project Manager	Adam Gray	(410) 910-7610	(301) 379-0933
Project Director	Paul Botek	(410) 910-7643	(410) 461-7888
HS Coordinator	Stephanie Jones	(410) 910-7635	(240) 319-5569
Regional HS Mngr.	Michael Hansen	(410) 910-7640	(443) 812-1430
Corp. HS Director	Dale Prokopchak	(804) 665-2811	(804) 349-8067
Client Contact(s):	Scott Pittenger	(404) 582-4236	(470) 925-6728
Subcontractor(s):	☒ Not Applicable ☐ Applicable, provide contact information below:		

A.2. EMERGENCY RESPONSE

Based on analysis of worksite factors, client/regulatory requirements, availability of emergency services.

Consider all Relevant Risk Factors & Response Procedures *(fire/explosion, medical, chemicals/spills, security, site factors, weather, communications).*
EXPLANATORY NOTES, CLARIFICATIONS:
In case of life-threatening emergency, immediately dial 911. Once the situation is stabilized, contact the Geosyntec project manager. Evacuation of the site will be done through the exit on East 5th Street. A map showing the evacuation plan and rally point is provided in the HASP.

Available Means of Jobsite Emergency Communication/Alerting	☒ Verbal ☒ Cell Phone ☐ Land Line ☐ 2-Way Radio ☐ On-site alarm/signal system ☐ Other:	
To Summon Emergency Services Police, Fire, Ambulance	☒ **DIAL 911**, for external responders ☐ **Other**:	
Other Emergency Contacts, as needed *(such as security, spill responder, utility):*	Electric and Gas Utility: NYSEG: 1 (800) 572-1131 Unknown Utility: 811	
Nearest Emergency Medical Services	Hospital Name: St. Joseph's Hospital	
	Address: 555 St Joseph's Blvd, Elmira, NY 14901	
	Phone #: (607) 733-6541	☒ See Attached Directions
For **Non-Emergency Urgent Care**	☒ Contact WorkCare, 24/7 at: 888-449-7787 ☐ Other:	
Job-site **Evacuation** Procedure, Rally Point, Place of refuge:	A map showing the evacuation plan and rally point is provided in the HASP.	
Special Emergency Equipment/Procedures	No special procedures	

IMPORTANT: After initial emergency response actions and incident stabilization, contact appropriate project personnel listed in Part A.1.

A.3. SUMMARY OF WORK STEPS, HAZARDS, CONTROLS Based on **PART B, "HAZARD ANALYSIS,"** and worksite/client/project factors.

Task 1 – Travel to Site

Travel to the site and arrives at 152 E 5th Street.

Task 2 - Equipment Calibration

Calibrate the photoionization detector (PID) using isobutylene span cal gas. Calibrates the water quality meter using calibration standard solutions. Spent calibration fluid and water is contained in a 5-gallon bucket and disposed of with decontmaintion fluid and purge water (See Task 5).

Task 3 – Initial Well Identification and Water Level Measurements

Open the well cover with hand tools and collects a water level measurement using a water level meter. A PID will be used to monitor air quality when monitoring wells are opened. The depth to bottom is also measured. The water level meter is decontaminated between each well (See Task 6)

Task 4 – Purge and sample monitoring wells

The submersible or bladder pump is prepared for groundwater purging and sampling. Tubing is cut to size and hooked up to the pump. At each well, groundwater is extracted through the pump/water quality meter and purged into a container and staged at the monitoring well. Once water quality parameters have stabilized, the flow-through cell is removed, and groundwater samples are collected for analyses in lab-provided sample bottles.

Task 5 – Purge water containerization

Purge water in 5-gallon buckets are containerized in a 55-gallon drum. The drum is sealed, labelled and stored onsite until pickup.

Task 6 – Equipment Decontamination

Equipment exposed to groundwater is decontaminated with soap solution and water. Decon fluid is drummed with purge water.

Task 7 – Sample Transport Prep

Groundwater samples are packed in a cooler on ice and prepared for either shipment or pick up by the laboratory.

Task 8 –Demobilization

Well covers are replaced. Calibrated equipment is cal-checked. Equipment is packed into the field vehicle.

Task 9 – Travel off site

Geosyntec travels offsite.

Safety "Key Words or Phrases"

- Driving safety (Task 1, 9)
- Pinch points (Task 2-8)
- Air monitoring (Task 2-4)
- Eye protection (Task 2-8)
- Foot protection (Task 2-8)
- Hand protection (Tasks 2-8)
- Heavy lifting (Task 2-8)
- Electrical safety (Task 4)
- Compressed gases (Task 2-8)
- Exposure to contaminants (Task 3-7)
- Exposure to sample preservatives (Task 3-7)

For Hazard Control Measures, See Parts B and C, below.

A.4. H&S EQUIPMENT LIST List worksite equipment for worker protection; provide details in Explanatory Notes, Clarifications.

EXPLANATORY NOTES, CLARIFICATIONS: High vis vest, hard-toed boots, and safety glasses must be worn at all times by onsite personnel. Nitrile gloves must be worn when handling groundwater, decon fluids, and equipment exposed to groundwater. Geosyntec will have a first aid kit, emergency eyewash, and fire extinguisher onhand. Sun screen and an easy-up tent will be used when weather conditions warrant their use. A PID will be used to monitor air quality when monitoring wells are opened.

☒	**ROUTINE PPE**	☒ Standard work clothes appropriate for task ☒ Hard-toed boots/shoes ☒ Hardhat ☒ Safety glasses	☒ Work gloves appropriate for task ☐ Noise/hearing protection ☒ High-visibility/reflective vest ☐ Ice creepers (boot attachments)	
		☒ Basic PPE for protection from low-hazard chemical contact & dust (nitrile gloves).		
☒	**ROUTINE H&S EQUIPMENT/GEAR**	☒ First Aid Kit ☒ Fire extinguisher ☒ Emergency eyewash bottle(s) ☒ Insect control (repellant, wasp spray, other) ☐ Caution tape	☒ Sun protection (sunscreen, shade canopy, other) ☒ Project-supplied drinking water and/or hygiene facilities ☐ Poison ivy skin wash (Technu or similar) ☐ Vehicle emergency kit (flares, lights, reflective device) ☒ Traffic control warning devices (cones, or similar)	
		☐ Other:		
☐	**NON-ROUTINE PERSONAL PROTECTIVE EQUIPMENT (PPE)** (Indicate specific types of PPE in Explanatory Notes, Clarifications)	☐ Goggles and/or face shield ☐ Chemical protective gloves ☐ Coveralls (Tyvek, or other) ☐ Outer boots, boot covers	☐ Disposable n-95 dust mask ☐ Half-face respirator (APR), cartridges ☐ Full-face respirator (APR), cartridges ☐ Personal flotation device	☐ Fire retardant clothing ☐ Arc Flash Protection ☐ Electrical-Hazard-rated boots, gloves ☐ Personal fall apparatus
		☐ Other:		
☐	**SPECIAL HAZARD CONTROLS**	☐ Portable GFCI	☐ Lockout/tagout equipment	☐ Ventilation equipment (fan, blower)
		☐ Eyewash - 15 min. flow	☐ Emergency deluge shower	☐ Air horn, alarm
		☐ Other:		
	DECON,	☒ Receptacle for disposable PPE	☐ Hand washing provisions	☒ Decon solution, related supplies

☒	**PPE DISPOSAL**	☐ Other:
☒	**AIR MONITORING EQUIPMENT, OTHER EQUIPMENT FOR WORKER EXPOSURE TESTING**	List equipment/devices to be brought to worksite; Use in accordance with procedures in Part C: PID

PART B – HAZARD ANALYSIS and CONTROLS *Complete Section B.1., then subsequent sections as applicable to the task(s).*

B.1. ROUTINE HAZARD PREPAREDNESS **This section required for all tasks.**

Explanatory Notes, Clarifications: High vis vest, hard-toed boots, and safety glasses must be worn at all times by onsite personnel. Nitrile gloves must be worn when handling groundwater, decontamination fluids, and equipment exposed to groundwater. Good housekeeping must be maintained to minimize trip hazards. Proper lifting techniques must be followed when moving sampling equipment and coolers. Anything greater than 50 lbs. requires a two-person lift. Cut-resistant protective gloves must be worn when cutting tubing. Tubing cutters should be used when cutting tubing. Protective gloves should be worn when lifting heavy equipment, opening or closing drum lids, and opening manhole covers. Sampling crews must adhere to the 30/30 rule for lightning and must seek shelter in a field vehicle. Crews must monitor for heat stress and drink plenty of fluids throughout the course of the day. Seek shade when needed and set up a canopy over the monitoring well if warranted due to high temperatures.

General Safety, Wellness, Preparedness – **Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.**

☒ **General premises** hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location.

☒ **Weather/climate-related hazards** – heat stress/cold stress measures, sun screen, severe weather shelter/refuge, "30/30 rule" for lightning

☒ **Plant/Insect/Animal Hazards** - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions.

☒ **Worksite traffic hazards** – Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures). At offsite location (MW-100) use traffic cones or other maintence of traffic devices to protect work area.

☐ **Illumination hazards/night work** - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate.

☒ **Lifting, manual material handling** – use proper lifting procedures, seek help for >50 lbs.

Geosyntec Procedures: *HS-124-Heat Stress, HS-125-Cold Stress, HS-127-Ticks, HS-208-Housekeeping, HS-210-Walking and Working Surfaces, HS-401-Back Injury Prevention, HS 517 Traffic Safety*

Routine Personal Protection – **Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.**

☒ **Head protection from overhead hazards** - Wear hardhat or "bump cap" as appropriate for hazard.

☒ **Hand protection** - Wear protective work gloves appropriate for the hazard and work tasks.

☒ **Eye protection** - Wear safety glasses (with side shield or wrap around, either clear or shaded for sun protection), or another appropriate eye protection.

☒ **Foot protection, rough terrain** - Wear work boots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions.

☐ **Hearing protection** – use earplugs, earmuffs (or both) as appropriate for conditions; at a minimum where noise levels exceed 85dBA.

☒ **Dust, unsanitary conditions** – For general protection against minimal non-specific hazards, use protective clothing and/or disposable dust mask, as needed.

Geosyntec Procedures: *HS-109-Hearing Conservation, HS 112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-207-Working Alone, HS-105-Driver and Vehicle Safety*

Tools, Equipment, Machinery – **Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.**

☒ **Manual hand tools -** proper tool for the job, maintain in good condition, use vise/clamp to hold work piece, proper follow through, stay clear of "line of fire."

☒ **Knives, cutting tools -** Utility/folding/collapsible knives and fixed open-bladed knives/cutting tools are _not_ permitted, unless specifically authorized. Cutting tools with automatically-retracting blades, or with enclosed/guarded blades are permitted. See HS-502-*Manual Hand Tools* for additional Information.

☐ ***Working near*** **powered tools/equipment/machinery** – safe distance, heed warning signs, stay out of "line of fire," use PPE (for eye/hearing/dust protection).

☐ ***Operation/use of*** **powered tools/equipment/machinery – See Section B.5.**

HS-502-Manual Hand Tools

Security– **Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.**

☒ **High crime, urban** – Use appropriate measures for personal security (such as buddy system, security service, work scheduling, other measures)

☒ **Working alone** - Establish "check in" procedure with supervisor/project manager.

Geosyntec Procedures: *HS-207-Working Alone*

Routine Driving Hazards – **Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.**

☒ **Routine work travel** - Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, no texting, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate).

☒ **Unfamiliar location** - Plan travel route before driving (assemble maps, enter destination in GPS).

☒ **Long Distance or During Sleep Hours** – Minimize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean windshield.

☒ **Unfamiliar vehicle** – Become familiar with vehicle operational controls and handling characteristics before operating vehicle.

Geosyntec Procedures: *HS-105-Driver and Vehicle Safety*

B.2. SPECIAL DRIVING/TRAFFIC/TRANSPORTATION HAZARDS ☒Applicable ☒ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☒	**SPECIAL DRIVING HAZARDS** Off-Road Driving or use of non-typical vehicle, heavy vehicle, van, golf/utility cart, ATV Hazards: Worker injury due to vehicle collision, rollover	☒ For off road driving, do not exceed capability of vehicle, beware of wet conditions, speed low, avoid unsafe orientation on slopes. ☐ Follow ATV specific procedures for training, safety equipment, operation, manufacturer's instructions. ☐ Special Skills Required for Vehicle type - For vehicles requiring special skills (such as windowless van, heavy work vehicle, utility vehicle, similar) ensure operator is provided training and/or has appropriate operator skills through experience. ***Geosyntec Procedure(s):*** *HS-510-All Terrain Vehicles*
☐	**TRANSPORTING MATERIALS, TOWING/HAULING LOADS** Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment.	☐ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. ☐ Slings, chains, strap, rope and related equipment used for towing, hauling, load-securing shall be appropriate for use and used in a manner as to prevent an unsafe condition. ☐ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure.
☐	**WORKSITE TRAFFIC HAZARDS** Where the project worksite is located in/near vehicle thoroughfare. Hazards: Worker injury from being struck by vehicle traveling in thoroughfare.	☐ Wear reflective vests where exposed to traffic hazards. ☐ Where possible, park vehicles as protective shield from oncoming traffic. ☐ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☐ Use DOT signal devices to re-route vehicles around work area, site entrances/exits. ☐ Use DOT-trained flaggers or police detail where appropriate or required. ***Geosyntec Procedure(s):*** *HS-517-Traffic Safety*
☐	**RAILROAD HAZARD** Hazard: Worker injury from being struck by train in R.R. right-of-way	☐ Coordinate with rail company and implement required safety and security measures. ☐ Site workers to receive safety training for railroad work. **Geosyntec Procedure(s):** HS-305-Rail Operations
☐	**WATER TRANSPORTATION**	☐ Follow HS 312 "Water Transportation Safety," and Section B.3., "Water/Boating Hazards." **Geosyntec Procedure(s):** HS-312-Water Transportation Safety
☐	**AIRPORT, AIRCRAFT** Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with Airport personnel and implement required safety measures. ☐ Site workers to receive safety training for railroad/airport work. ☐ Follow provisions of applicable Geosyntec HS Procedures, below: ***Geosyntec Procedure(s):*** *HS-310-Helicopter Safety, HS 311-General Aviation (Small Aircraft) Safety*
☐	**TRAFFIC/VEHICLE HAZARDS REALATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES**	☐ See Section B.7., "Construction, Heavy Equipment, Lift Equipment"

B.3. WATER/BOATING HAZARDS ☐ Applicable ☒ Not Applicable or Not Anticipated

B.4. FALL HAZARDS ☐ Applicable ☒ Not Applicable, Not Anticipated

B.5. POWERED TOOLS, EQUIPMENT, MACHINERY ☐ Applicable ☒ Not Applicable, Not Anticipated

B.6. DRILLING ☐ Applicable ☒ Not Applicable, Not Anticipated

B.7. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT ☐ Applicable ☒ Not Applicable, Not Anticipated

B.8. ELECTRICAL HAZARDS ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:
Sampling crews must be cognizant of electrical hazards associated with extension cords and wet locations while using electrical powered sampling pumps.

☒	**BASIC ELECTRICAL HAZARDS TO SKILLED NON-ELECTRICAL WORKERS** Equipment/tool use/operation, use of extension cords, working near electrical equipment. Hazards: Electrical shock, secondary hazards (falls, other injuries).	☒ Follow safe work practices: • Control water-related/wet-location hazards in a manner appropriate for the job tasks/equipment/tool. • Never touch electrical equipment if you are wet or standing in water or on wet surfaces. • Use extension cords/power cords properly, prevent damage, take out of service if damaged. • Inspect tool/equipment/extension cords/power cords/welding cables before each use; do not use if damaged. • Use GFCI-protected outlet or portable GFCI in wet locations, outdoors, basements, concrete floors. • Ensure live parts are guarded, enclosures secure. • Enclosures, circuits properly labeled. ***Geosyntec Procedure(s):*** *HS-121-Electrical Safety*
☐	**HANDS-ON ELECTRICAL WORK BY ELECTRICAL WORKER/TECHNICIAN:** ☐ Voltage < 50 v ☐ Voltage 50-600v ☐ Voltage > 600v ☐ AC ☐ DC ☐ 3-phase ☐ Battery and/or solar power ☐ Capacitor/transformer	☐ Implement electrical safe work practices pertaining to: • Worker training/qualification (Level 1, Level 2, Level 3) • General electrical safe work practices, grounding, use of GFCIs • Safe work practices during diagnostics/troubleshooting, maintenance, repair • Safe design features for electrical equipment • Arc flash protection ***Geosyntec Procedure(s):*** *HS-121-Electrical Safety, HS-129-High Voltage Electricity Safety*
☐	**LOCKOUT/TAGOUT OF ELECTRICAL ENERGY**	☐ Implement control-of-hazardous-energy practices (lockout/tagout), provide lockout/tagout locks and devices, training workers, designate "authorized" personnel, notify "affected" personnel. ***Geosyntec Procedure(s):*** *HS-119-Lockout Tagout, HS-121-Electrical Safety*

☐	**IMPORTANT!** This work may/will include close proximity to electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"

B.9. UTILITY RELATED HAZARDS ☐ Applicable ☒ Not Applicable, Not Anticipated

B.10. CONFINED SPACE ENTRY, HAZARDOUS ENCLOSED SPACES ☐ Applicable ☒ Not Applicable, Not Anticipated

B.11. STORAGE OF BULK MATERIALS ☐ Applicable ☒ Not Applicable, Not Anticipated

B.12. INFECTIOUS / ALLERGENIC BIOHAZARDS ☐ Applicable ☒ Not Applicable, Not Anticipated

B.13. COMMERCIAL CHEMICAL PRODUCTS ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

Isobutylene will be used to calibrate the PID. These gas cylinders will be used in a well-ventilated area. The cylinders will be emptied outdoors after use. Small amounts of HCL and HNO3 will be used as preservative in bottle ware for analysis. Care will be taken by Geosyntec to avoid overfilling bottles and contacting acid with skin or clothing, and an eyewash bottle should be available at each sampling location (where acid-preserved containers are opened and closed) in case of eye contact with acid preservative.

☒	**PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD**	☒ Safety Data Sheets available, either on site or readily available within same work shift, containers labelled properly, workers trained/oriented on hazards ☐ For subcontractor use of chemical products, coordinate/discuss during safety meetings. ☐ Conduct air monitoring, as appropriate (see Part C," Air Monitoring, Worker Exposure Monitoring").
☒	**COMPRESSED GAS (flammable or nonflammable)**	☐ Secure cylinders upright, caps on when not in use, handle with care, prevent damage. ☐ Propane cylinders not in use must be stored outdoors in cage or similar secure enclosure. ☐ Ensure acetylene cylinders NOT secured to steel arc welding bench. ☒ Store/use in a manner to prevent asphyxiation hazard. ☐ Segregate oxygen and fuel gases by distance (20') or barrier. ☐ Control ignition sources. ☐ "No smoking" signage at cylinder storage area for flammable gases. ☐ Use/store in a manner to control inhalation exposure hazards, PPE, air monitoring.
☐	**FLAMMABLE/COMBUSTIBLE LIQUIDS**	☐ Proper storage (flam. storage cabinets, other storage precautions). ☐ Use proper fuel safety can (metal fuel can have preferred). ☐ Control ignition sources. ☐ Grounding and bonding where appropriate.
☒	**ACIDS, CAUSTICS, OTHER CORROSIVES**	☒ Handle with care, use appropriate eye/face/skin protection. ☒ Eyewash, deluge shower, drench hose, hand washing (with water), as appropriate.
☐	**TOXIC**	☐ For toxic substances, use/store in a manner to control exposure hazards (inhalation, ingestion, skin contact, skin absorption); use PPE as appropriate, conduct air monitoring as appropriate.
☐	**EMISSIONS FROM FUEL COMBUSTION, INDUSTRIAL PROCESSES** ☐ Gasoline ☐ Diesel ☐ Propane/Natural Gas ☐ Welding/cutting/hot work ☐ Vehicle/equipment exhaust ☐ Other	☐ Position outdoor personnel upwind of exhaust source. ☐ Use blowers, fans to provide fresh air to work area and dissipate atmospheric hazards. ☐ Use respiratory protection for high levels of smoke, exhaust particulates, soot. ☐ Conduct air monitoring as appropriate (see Part C," Air Monitoring").
☐	**OTHER HAZARDS**	☐ Describe other hazardous substances and safety measures under "Explanatory Notes, Clarifications," above.
☐	**CHEMICAL/HAZMAT STORAGE** Check this when jobsite requirements include special provisions for chemical storage.	☐ Chemical storage cabinet, cage, storage room, or similar. ☐ Ensure incompatible chemicals are segregated. ☐ Provide secondary containment. ☐ Locate special safety equipment near chemical storage

Geosyntec Procedures: *HS-115-Hazard Communication, HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, Others as applicable*

B.14. SITE CONTAMINANTS, CHEMICAL WASTES ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

Low-level VOC, PCB and metals contamination is present in groundwater.

CHECK ALL THAT APPLY. Provide explanatory notes above.

☒ Soil/groundwater contaminants (historical release)	☐ Oxygen deficiency	☒ Corrosive, acids/caustics, strong irritants
☐ Recent release, known high concentrations	☒ Chlorinated volatile organic compounds (VOCs)	☐ Sulfides, hydrogen sulfide (H_2S)
☐ Former chemical disposal site, landfill	☐ BTEX, petroleum derived VOCs	☐ Cyanides, hydrogen cyanide (HCN)
☐ Urban fill, residual contaminants	☐ Fuel oils, petroleum, waste oil, lubricants	☐ Asbestos

☐ Containerized waste (drums, process equipment)	☒ Metals, metal compounds, metal dusts	☐ Lead paint
☐ Buried drums (known or potential)	☐ Elemental mercury	☐ Pesticides, herbicides, fungicides
☐ Large containers, potential for spills	☐ Polyaromatic hydrocarbons (PAHs)	☐ Sensitizers
☐ Contaminated building surfaces	☒ Polychlorinated biphenyls (PCBs)	☐ Radioactive contaminants
☐ Unexploded ordnance	☐ Potential for flammable vapors	☐ Other (see Explanatory Notes, above)
☐ Explosive dust	☐ Potential for flammable gas (methane)	

☒ **FOR WORK CONSISTING OF CLEANUP OPERATIONS, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATIONS at an "UNCONTROLLED HAZ. WASTE SITE" (per HAZWOPER, 29 CFR 1910.120), implement the following as applicable to the work:**

- Implement site control plan via Exclusion Zone(s), Contaminant Reduction Zone(s) and Support Zone (aka EZ, CRZ, SZ)
- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard.
- Include site map/figure depicting work locations and other relevant site-specific information.
- Site workers in EZ or CRZ to have OSHA 40-hour training, current 8-hour refresher, 3 days supervised field experience.
- Site supervisor(s) required to have 8-hr. Supervisor training.
- Site workers in EZ or CRZ to participate in Medical Monitoring program, as applicable.
- Implement site-specific procedures for worker protection via engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination procedures, spill containment, emergency preparedness and response.
- Conduct air monitoring, as appropriate (see Part C," Air Monitoring, Worker Exposure Monitoring").

IMPORTANT: Provide supplemental information to sufficiently detail site-specific procedures for the above elements, as appropriate for the work.

Geosyntec Procedures: *HS-301-HAZWOPER, HS-108-Medical Monitoring Surveillance, HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, HS-115-Hazard Communication, HS-405-Drum Sampling, Others as applicable*

☐ **FOR SITE WITH CHEMICAL CONTAMINANTS OR WASTE BUT NOT REGULATED BY HAZWOPER**

- Workers to be knowledgeable/aware of chemical hazards thru safety training/orientation and availability of hazard information
- Implement controls to minimize worker exposure through engineering controls, work practices, PPE, as appropriate.
- Conduct air monitoring/sampling to monitor/evaluate worker exposure, as applicable.

Geosyntec Procedures: *HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, HS-115-Hazard Communication, Others as applicable*

☐	**OFF-SITE MIGRATION OF CONTAMINANTS**	☐ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.) ☐ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan.
☐	**SPILL CONTAINMENT, CONTAINERS**	☐ Describe above any site-specific procedures for spill containment, container handling, as applicable. ***Geosyntec Procedures**: HS-406-Unknown Hazardous Waste Drum Handling*

B.15. RADIATION HAZARDS (Other than Sunlight) ☐ Applicable ☒ Not Applicable, Not Anticipated

B.16. HAZMAT/DANGEROUS GOODS SHIPPING/TRANSPORTATION ☐ Applicable ☒ Not Applicable, Not Anticipated

PART C – AIR MONITORING, WORKER EXPOSURE MONITORING

C.1. AIR MONITORING (Direct-Reading Instruments) ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:
See HASP and Community Air Monitor Plan in PDI Work Plan for action level response actions.

☒	**AIR-TESTING PARAMETERS**	☒ VOCs, GASES ☒ PID, Lamp energy: 10.6 eV ☐ FID ☐ Carbon monoxide ☐ Hydrogen sulfide	☐ Oxygen (O_2) ☐ Flammable gas (LEL) ☐ Particulate (dust) ☒ Calibration kit for each parameter ☐ Other:

☐	**ACTION LEVELS FOR O2/LEL**	☐ Oxygen	<19.5% - stop work. Evacuate area 19.5 – 23.5 – Continue to work with caution. >23.5% - Stop work. Evacuate the area.
		☐ LEL	1 - 10% LEL - Continue with caution. ≥10% LEL- Stop work. Evacuate the area. If upon return, concentration still exceeds 10% LEL, ventilate until concentration is back to <10% LEL.

☒	**ACTION LEVELS FOR TOXICS** (sustained breathing zone concentrations)	**Parameters**	**Level D, Modified D***	**Use levels C or B*, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D*.**
		☒ VOCs	< 5 ppm	> 5 ppm - Stop work. Evacuate the area. If upon return, levels still exceed the action level, stop work and implement engineering controls.
		☐ Carbon Monoxide	< __ ppm	≥ __ ppm - Level B (air-supplied respirator)
		☐ Hydrogen Sulfide	< 10 ppm	≥10 ppm - Stop work. Evacuate the area. If upon return, levels still exceed 10 ppm, stop work and implement engineering controls.
		☐ Total Dust	< _ µg/m³	>__ µg/m³ – implement dust suppression procedures outlined in Section 4.6.2 of the PDI Work Plan to worker and community health and safety
		☐		
		☐		

*** Levels of Protection:**	**Level D** (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection) **Modified Level D** (chemical protective clothing in addition to standard work clothes, no respiratory protection) **Level C** (air purifying respirator or dust mask, in addition to chemical protective clothing) **Level B or A** (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)
	Geosyntec Procedures: *HS-111-Air Monitoring*

C.2. OTHER WORKER EXPOSURE MONITORING ☐ Applicable ☒ Not Applicable, Not Anticipated

TASK HAZARD ANALYSIS

Geosyntec HS Procedures referenced herein are available on Geosyntec's H&S SharePoint site and should be consulted, as appropriate, per project-specific needs. This THA prepared per HS-106-Accident Prevention Program, HS-204-Task Hazard Analysis, and meets the requirements for a "Site-Specific Health and Safety Plan" per Geosyntec HS Procedures and regulations referenced herein (see Section B.14.).

PART A – SITE SAFETY PLAN

A.1. PROJECT/TASK INFORMATION

TASK 1:	Soil Sampling		
Project Name:	Elmira 5th Street Yard	**Project Number/Org:**	MR1502
Project Address:	152 East 5th Street, Elmira, New York		
Description of Task & Worksite:	Pre-excavation confirmation and waste characterization soil samples will be collected via hand auger or direct push technology (DPT), and submitted for laboratory analysis. Pre-excavation confirmation soil samples will be analyzed for the COCs around and beneath each excavaton area.		

Geosyntec Personnel	Name	Desktop Office Phone	Cell Phone
Site Lead/HS Officer	Stephanie Jones	(410) 910-7635	(240) 319-5569
Project Manager	Adam Gray	(410) 910-7610	(301) 379-0933
Project Director	Paul Botek	(410) 910-7643	(410) 461-7888
HS Coordinator	Mike Hansen	(410) 381-4333	(443) 812-1430
Regional HS Mngr.	Mark P. Malchik	978-206-5777	781-392-5440
Corp. HS Director	Dale Prokopchak	804-332-6376	804-349-8067
Client Contact(s):	Scott Pittenger	(404) 582-4236	(470) 925-6728
Subcontractor(s):	☒ Not Applicable ☐ Applicable, provide contact information below:		

A.2. EMERGENCY RESPONSE
Based on analysis of worksite factors, client/regulatory requirements, availability of emergency services.

Consider all Relevant Risk Factors & Response Procedures *(fire/explosion, medical, chemicals/spills, security, site factors, weather, communications)*.

EXPLANATORY NOTES, CLARIFICATIONS:

In case of life-threatening emergency, immediately dial 911. Once the situation is stabilized, contact the Geosyntec project manager. Evacuation of the site will be done through the exit on East 5th Street. A map showing the evacuation plan and rally point is provided in the HASP.

Available Means of Jobsite Emergency Communication/Alerting	☒ Verbal ☒ Cell Phone ☐ Land Line ☐ 2-Way Radio ☐ On-site alarm/signal system ☐ Other:
To Summon Emergency Services Police, Fire, Ambulance	☒ **DIAL 911**, for external responders ☐ **Other**:
Other Emergency Contacts, as needed *(such as security, spill responder, utility):*	Electric and Gas Utility: NYSEG: 1 (800) 572-1131 Unknown Utility: 811
Nearest Emergency Medical Services	Hospital Name: St. Joseph's Hospital Address: 555 St Joseph's Blvd, Elmira, NY 14901 Phone #: (607) 733-6541 ☒ See Attached Directions
For **Non-Emergency Urgent Care**	☒ Contact WorkCare, 24/7 at: 888-449-7787 ☐ Other:
Job-site **Evacuation** Procedure, Rally Point, Place of refuge:	A map showing the evacuation plan and rally point is provided in the HASP.
Special Emergency Equipment/Procedures	No special procedures
IMPORTANT: After initial emergency response actions and incident stabilization, contact appropriate project personnel listed in Part A.1.	

A.3. SUMMARY OF WORK STEPS, HAZARDS, CONTROLS Based on **PART B, "HAZARD ANALYSIS,"** and worksite/client/project factors.

Task 1 – Travel to Site

Travel to the site and arrive at 152 E 5th Street.

Task 2 - Equipment Calibration

Calibrate air monitoring equipment, which includes a photoionization detector (PID) and dust meter.

Task 3 – Soil Sampling

For direct push boreholes, a continuous soil core will be collected starting from ground surface. With hand augering, the borehole will be advanced until the desired sample depth is reached. Soil cores will be visually logged for soil type, and inspected for staining, debris or other evidence of anthropogenic materials. Samples will be collected from soil cores and submitted to the fixed laboratory for analysis. A PID and dust meter will be used to monitor air quality in the breathing zone during sampling activites. Bore holes will be abandoned with bentonite chips. Sampling equipment will be decontaminated between sampling location (See Task 5)

Task 4 – IDM Management

Solid investigation-derived materials (IDM) and liquid IDM that will be generated (by decontamination) will be stored in on-site 55-gallon drums for waste characterization (if necessary). The drums are sealed, labelled and stored onsite until pickup.

Task 5 – Equipment Decontamination

Equipment exposed to soil will be decontaminated with soap solution and water. Decontamination fluid will be drummed (See Task 4).

Task 6 – Sample Transport Prep

Soil samples will be packed in a cooler on ice and prepared for either shipment or pick up by the laboratory.

Task 7 –Demobilization

Air monitoring equipment is cal-checked. All equipment is packed into the field vehicle. Geosyntec leaves site.

Task 8 – Travel off site

Geosyntec travels offsite.

Safety "Key Words or Phrases"

- Driving safety (Task 1, 8)
- Pinch points (Task 2-7)
- Air monitoring (Task 3)
- Eye protection (Task 2-7)
- Foot protection (Task 2-7)
- Hand protection (Tasks 2-7)
- Heavy lifting (Task 2-7)
- Compressed gases (Task 2,3,7)
- Exposure to contaminants (Task 3-6)

For Hazard Control Measures, See Parts B and C, below.

A.4. H&S EQUIPMENT LIST List worksite equipment for worker protection; provide details in Explanatory Notes, Clarifications.

EXPLANATORY NOTES, CLARIFICATIONS: High vis vest, hard-toed boots, and safety glasses must be worn at all times by onsite personnel. Nitrile gloves must be worn when handling soil, decon fluids, and equipment exposed to soil. Geosyntec will have a first aid kit, emergency eyewash, and fire extinguisher onhand. Sun screen and an easy-up tent will be used when weather conditions warrant their use. A PID and dust meter will be used to monitor air quality in the breathing zone during sampling activities, and dust suppression implemented as needed.

☒	**ROUTINE PPE**	☒ Standard work clothes appropriate for task ☒ Hard-toed boots/shoes ☒ Hardhat ☒ Safety glasses	☒ Work gloves appropriate for task ☒ Noise/hearing protection ☒ High-visibility/reflective vest ☐ Ice creepers (boot attachments)	
		☒ Basic PPE for protection from low-hazard chemical contact & dust (nitrile gloves and dust mask, as necessary).		
☒	**ROUTINE H&S EQUIPMENT/GEAR**	☒ First Aid Kit ☒ Fire extinguisher ☒ Emergency eyewash bottle(s) ☒ Insect control (repellant, wasp spray, other) ☐ Caution tape	☒ Sun protection (sunscreen, shade canopy, other) ☒ Project-supplied drinking water and/or hygiene facilities ☒ Poison ivy skin wash (Technu or similar) ☐ Vehicle emergency kit (flares, lights, reflective device) ☒ Traffic control warning devices (cones, or similar)	
		☐ Other:		
☐	**NON-ROUTINE PERSONAL PROTECTIVE EQUIPMENT (PPE)** (Indicate specific types of PPE in Explanatory Notes, Clarifications)	☐ Goggles and/or face shield ☐ Chemical protective gloves ☐ Coveralls (Tyvek, or other) ☐ Outer boots, boot covers	☐ Disposable n-95 dust mask ☐ Half-face respirator (APR), cartridges ☐ Full-face respirator (APR), cartridges ☐ Personal flotation device	☐ Fire retardant clothing ☐ Arc Flash Protection ☐ Electrical-Hazard-rated boots, gloves ☐ Personal fall apparatus
		☐ Other:		
☒	**SPECIAL HAZARD CONTROLS**	☐ Portable GFCI	☐ Lockout/tagout equipment	☐ Ventilation equipment (fan, blower)
		☐ Eyewash - 15 min. flow	☐ Emergency deluge shower	☐ Air horn, alarm
		☒ Other: Dust suppression (water spray) as needed, based on airborne dust readings.		
☒	**DECON, PPE DISPOSAL**	☒ Receptacle for disposable PPE	☐ Hand washing provisions	☒ Decon solution, related supplies
		☐ Other:		

☒	**AIR MONITORING EQUIPMENT, OTHER EQUIPMENT FOR WORKER EXPOSURE TESTING**	List equipment/devices to be brought to worksite; Use in accordance with procedures in Part C: PID and Dust Meter

PART B – HAZARD ANALYSIS and CONTROLS *Complete Section B.1., then subsequent sections as applicable to the task(s).*

B.1. ROUTINE HAZARD PREPAREDNESS **This section required for all tasks.**

Explanatory Notes, Clarifications: High vis vest, hard-toed boots, and safety glasses must be worn at all times by onsite personnel. Nitrile gloves must be worn when handling soil, decontamination fluids, and equipment exposed to soil. Good housekeeping must be maintained to minimize trip hazards. Proper lifting techniques must be followed when moving sampling equipment and coolers. Anything greater than 50 lbs. requires a two-person lift. Cut-resistant protective gloves must be worn when cutting plastic sheeting and tubing. Tubing cutters should be used when cutting tubing. Protective gloves should be worn when lifting heavy equipment, and opening or closing drum lids. Sampling crews must adhere to the 30/30 rule for lightning and must seek shelter in a field vehicle. Crews must monitor for heat stress and drink plenty of fluids throughout the course of the day. Seek shade when needed and set up a canopy over if warranted due to elevated temperatures.

General Safety, Wellness, Preparedness – **Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.**

☒ **General premises** hazards - housekeeping, rough terrain, trip hazards, steep slope, remote location.
☒ **Weather/climate-related hazards** – heat stress/cold stress measures, sun screen, severe weather shelter/refuge, "30/30 rule" for lightning
☒ **Plant/Insect/Animal Hazards** - Precautions: poison ivy wash; insect repellant; check for ticks; hornet nest spray; animal precautions.
☐ **Worksite traffic hazards** – Implement measures to protect personnel (high visibility/reflective clothing, on-person lighting, traffic control measures).
☐ **Illumination hazards/night work** - Illuminate work areas and/or access routes, use reflective/hi-visibility clothing or on-person lighting, as appropriate.
☒ **Lifting, manual material handling** – use proper lifting procedures, seek help for >50 lbs.

Geosyntec Procedures: *HS-124-Heat Stress, HS-125-Cold Stress, HS-127-Ticks, HS-208-Housekeeping, HS-210-Walking and Working Surfaces, HS-401-Back Injury Prevention, HS 517 Traffic Safety*

Routine Personal Protection – **Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.**

☒ **Head protection from overhead hazards** - Wear hardhat or "bump cap" as appropriate for hazard.
☒ **Hand protection** - Wear protective work gloves appropriate for the hazard and work tasks.
☒ **Eye protection** - Wear safety glasses (with side shield or wrap around, either clear or shaded for sun protection), or another appropriate eye protection.
☒ **Foot protection, rough terrain** - Wear work boots/shoes with hard toes, ankle support, puncture resistance, traction, as appropriate for conditions.
☒ **Hearing protection** – use earplugs, earmuffs (or both) as appropriate for conditions; at a minimum where noise levels exceed 85dBA.
☒ **Dust, unsanitary conditions** – For general protection against minimal non-specific hazards, use protective clothing and/or disposable dust mask, as needed.

Geosyntec Procedures: *HS-109-Hearing Conservation, HS 112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-207-Working Alone, HS-105-Driver and Vehicle Safety*

Tools, Equipment, Machinery – **Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.**

☒ **Manual hand tools -** proper tool for the job, maintain in good condition, use vise/clamp to hold work piece, proper follow through, stay clear of "line of fire."
☒ **Knives, cutting tools -** Utility/folding/collapsible knives and fixed open-bladed knives/cutting tools are *not* permitted, unless specifically authorized. Cutting tools with automatically-retracting blades, or with enclosed/guarded blades are permitted. See HS-502-*Manual Hand Tools* for additional Information.
☒ ***Working near*** **powered tools/equipment/machinery** – safe distance, heed warning signs, stay out of "line of fire," use PPE (for eye/hearing/dust protection).
☐ ***Operation/use of*** **powered tools/equipment/machinery – See Section B.5.**

HS-502-Manual Hand Tools

Security– **Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.**

☒ **High crime, urban** – Use appropriate measures for personal security (such as buddy system, security service, work scheduling, other measures)
☒ **Working alone** - Establish "check in" procedure with supervisor/project manager.

Geosyntec Procedures: *HS-207-Working Alone*

Routine Driving Hazards – **Delineate site-specific HS aspects, as appropriate, in "Explanatory Notes, Clarifications," above.**

☒ **Routine work travel** - Use routine safe/defensive driving practices (seat belts, safe speeds, eyes ahead, no tailgating, limit distractions, safe cell phone use, no texting, clear windows, account for weather/road conditions, adequate sleep, other measures as appropriate).
☒ **Unfamiliar location** - Plan travel route before driving (assemble maps, enter destination in GPS).
☒ **Long Distance or During Sleep Hours** – Minimize fatigue: rest breaks, light snacks (avoid heavy meals), stay hydrated, fresh air, no loud music, clean windshield.
☒ **Unfamiliar vehicle** – Become familiar with vehicle operational controls and handling characteristics before operating vehicle.

Geosyntec Procedures: *HS-105-Driver and Vehicle Safety*

B.2. SPECIAL DRIVING/TRAFFIC/TRANSPORTATION HAZARDS ☒Applicable ☒ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:

☒	**SPECIAL DRIVING HAZARDS** Off-Road Driving or use of non-typical vehicle, heavy vehicle, van, golf/utility cart, ATV Hazards: Worker injury due to vehicle collision, rollover	☒ For off road driving, do not exceed capability of vehicle, beware of wet conditions, speed low, avoid unsafe orientation on slopes. ☐ Follow ATV specific procedures for training, safety equipment, operation, manufacturer's instructions. ☐ Special Skills Required for Vehicle type - For vehicles requiring specific skills (such as windowless van, heavy work vehicle, utility vehicle, similar) ensure operator is provided training and/or has appropriate operator skills through experience. ***Geosyntec Procedure(s):*** *HS-510-All Terrain Vehicles*
☐	**TRANSPORTING MATERIALS, TOWING/HAULING LOADS** Hazards: Vehicle accident, occupant injury from shifting load, unsafe equipment.	☐ Ensure load is firmly secured (rope, straps, load configuration) to prevent shifting during travel. ☐ Slings, chains, strap, rope and related equipment used for towing, hauling, load-securing shall be appropriate for use and used in a manner as to prevent an unsafe condition. ☐ For trailer use, verify signal/braking lights operational, rear-view mirrors effective, hitch/safety chains secure.
☐	**WORKSITE TRAFFIC HAZARDS** Where the project worksite is located in/near vehicle thoroughfare. Hazards: Worker injury from being struck by vehicle traveling in thoroughfare.	☐ Wear reflective vests where exposed to traffic hazards. ☐ Where possible, park vehicles as protective shield from oncoming traffic. ☐ Configure work area and support vehicles to minimize worker exposure to traffic hazards. ☐ Use DOT signal devices to re-route vehicles around work area, site entrances/exits. ☐ Use DOT-trained flaggers or police detail where appropriate or required. ***Geosyntec Procedure(s):*** *HS-517-Traffic Safety*
☐	**RAILROAD HAZARD** Hazard: Worker injury from being struck by train in R.R. right-of-way	☐ Coordinate with rail company and implement required safety and security measures. ☐ Site workers to receive safety training for railroad work. **Geosyntec Procedure(s):** HS-305-Rail Operations
☐	**WATER TRANSPORTATION**	☐ Follow HS 312 "Water Transportation Safety," and Section B.3., "Water/Boating Hazards." **Geosyntec Procedure(s):** HS-312-Water Transportation Safety
☐	**AIRPORT, AIRCRAFT** Worker injury when working on/near airport runway, or use of helicopter, light aircraft	☐ Coordinate safety requirements with Airport personnel and implement required safety measures. ☐ Site workers to receive safety training for railroad/airport work. ☐ Follow provisions of applicable Geosyntec HS Procedures, below: ***Geosyntec Procedure(s):*** *HS-310-Helicopter Safety, HS 311-General Aviation (Small Aircraft) Safety*
☐	**TRAFFIC/VEHICLE HAZARDS REALATED TO HEAVY EQUIPMENT, CONSTRUCTION SITE ACTIVITIES**	☐ See Section B.7., "Construction, Heavy Equipment, Lift Equipment"

B.3. WATER/BOATING HAZARDS ☐ Applicable ☒ Not Applicable or Not Anticipated

B.4. FALL HAZARDS ☐ Applicable ☒ Not Applicable, Not Anticipated

B.5. POWERED TOOLS, EQUIPMENT, MACHINERY ☐ Applicable ☒ Not Applicable, Not Anticipated

B.6. DRILLING ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS: During DPT testing, safe work practices will be followed to mitigate hazards.

☒	**DRILLING** Hazards: Struck-by, run-over, caught between (pinch points), manual lifting, roll over, fluid leaks, fuel hazards, suspended equipment	☒ Follow safe work practices, as applicable: • Non-essential personnel to stay clear of drilling work zone when drill rig in operation. • Equipment inspected daily upon mobilization; maintained in good repair, backup alarms. • Leaks or defective safety equipment should be repaired before use. • Establish eye contact with operator and use hand signals prior to approaching near equipment. • PPE used near operating rig (eye/head/hearing/hand/foot protection, high visibility vests or equivalent). • Contractor inspects drill rig daily before use, verify daily that emergency stop is functional. • Drill rig to be equipped with operational emergency stop, equipment in good repair, machine guards in place, whip checks on high pressure lines. • Park personal/support vehicles in a location as to not obstruct travel lanes or other site operations. • Operators/helpers maintain safe distance from moving parts; secure loose hair, loose clothing, equipment. • Drill rigs will only be moved with masts lowered. • Max. safe slope for rig will be followed, drill rig leveled, appropriate blocking/cribbing as needed. • Use safety practices for refueling, fuel handling/storage/transport. • Spill equipment is available for fuel and hydraulic fluid leaks. • Verify mechanical lift/rigging equipment (cables, sheaves, boom, attachments) is in proper working order. • Ventilate and conduct air monitoring, as appropriate, when drilling indoors. ***Geosyntec Procedure(s):*** *HS-403-Drilling, Others as applicable*
☒	**IMPORTANT!** This work may/will include close proximity to overhead electric utility lines.	☐ Follow safe work practices per Section B.9., "Utility Related Hazards"

B.7. CONSTRUCTION, HEAVY EQUIPMENT, LIFT EQUIPMENT ☐ Applicable ☒ Not Applicable, Not Anticipated

B.8. ELECTRICAL HAZARDS ☐ Applicable ☒ Not Applicable, Not Anticipated

B.9. UTILITY RELATED HAZARDS ☒ Applicable		☐ Not Applicable, Not Anticipated
EXPLANATORY NOTES, CLARIFICATIONS: Prior to DPT testing overhead, above-ground, and underground utilities will be cleared.		
☒	**OVERHEAD, ABOVE-GROUND UTILITIES**	☐ Maintain proper clearance, employ other appropriate precautions for the conditions. ***Geosyntec Procedure(s):*** *HS-304-Overhead Electrical Lines*
☒	**UNDERGROUND UTILITIES**	☐ Confirm appropriate underground utility clearance procedures have been completed prior to ground penetrations, and employ other utility clearance/locator practices, as appropriate for conditions. ☐ Hand digging or vacuum post-holing within 3' of utility locations or other high-risk condition.

B.10. CONFINED SPACE ENTRY, HAZARDOUS ENCLOSED SPACES ☐ Applicable	☒ Not Applicable, Not Anticipated
B.11. STORAGE OF BULK MATERIALS ☐ Applicable	**☒ Not Applicable, Not Anticipated**
B.12. INFECTIOUS / ALLERGENIC BIOHAZARDS ☐ Applicable	**☒ Not Applicable, Not Anticipated**

B.13. COMMERCIAL CHEMICAL PRODUCTS ☒ Applicable		☐ Not Applicable, Not Anticipated
EXPLANATORY NOTES, CLARIFICATIONS: Isobutylene will be used to calibrate the PID. These gas cylinders will be used in a well-ventilated area. The cylinders will be emptied outdoors after use.		
☒	**PRODUCTS REGULATED BY HAZARD COMMUNICATION STANDARD**	☒ Safety Data Sheets available, either on site or readily available within same work shift, containers labelled properly, workers trained/oriented on hazards ☐ For subcontractor use of chemical products, coordinate/discuss during safety meetings. ☐ Conduct air monitoring, as appropriate (see Part C," Air Monitoring, Worker Exposure Monitoring").
☒	**COMPRESSED GAS (flammable or nonflammable)**	☐ Secure cylinders upright, caps on when not in use, handle with care, prevent damage. ☐ Propane cylinders not in use must be stored outdoors in cage or similar secure enclosure. ☐ Ensure acetylene cylinders NOT secured to steel arc welding bench. ☒ Store/use in a manner to prevent asphyxiation hazard. ☐ Segregate oxygen and fuel gases by distance (20') or barrier. ☐ Control ignition sources. ☐ "No smoking" signage at cylinder storage area for flammable gases. ☐ Use/store in a manner to control inhalation exposure hazards, PPE, air monitoring.
☐	**FLAMMABLE/COMBUSTIBLE LIQUIDS**	☐ Proper storage (flam. storage cabinets, other storage precautions). ☐ Use proper fuel safety can (metal fuel can preferred). ☐ Control ignition sources. ☐ Grounding and bonding where appropriate.
☐	**ACIDS, CAUSTICS, OTHER CORROSIVES**	☐ Handle with care, use appropriate eye/face/skin protection. ☐ Eyewash, deluge shower, drench hose, hand washing (with water), as appropriate.
☐	**TOXIC**	☐ For toxic substances, use/store in a manner to control exposure hazards (inhalation, ingestion, skin contact, skin absorption); use PPE as appropriate, conduct air monitoring as appropriate.
☐	**EMISSIONS FROM FUEL COMBUSTION, INDUSTRIAL PROCESSES** ☐ Gasoline ☐ Diesel ☐ Propane/Natural Gas ☐ Welding/cutting/hot work ☐ Vehicle/equipment exhaust ☐ Other	☐ Position outdoor personnel upwind of exhaust source. ☐ Use blowers, fans to provide fresh air to work area and dissipate atmospheric hazards. ☐ Use respiratory protection for high levels of smoke, exhaust particulates, soot. ☐ Conduct air monitoring as appropriate (see Part C," Air Monitoring").
☐	**OTHER HAZARDS**	☐ Describe other hazardous substances and safety measures under "Explanatory Notes, Clarifications," above.
☐	**CHEMICAL/HAZMAT STORAGE** Check this when jobsite requirements include special provisions for chemical storage.	☐ Chemical storage cabinet, cage, storage room, or similar. ☐ Ensure incompatible chemicals are segregated. ☐ Provide secondary containment. ☐ Locate special safety equipment near chemical storage
Geosyntec Procedures: *HS-115-Hazard Communication, HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, Others as applicable*		

B.14. SITE CONTAMINANTS, CHEMICAL WASTES ☒ Applicable		☐ Not Applicable, Not Anticipated
EXPLANATORY NOTES, CLARIFICATIONS: Soils are anticipated to be impacted with PCBs and metals.		
CHECK ALL THAT APPLY. Provide explanatory notes above.		
☒ Soil/groundwater contaminants (historical release) ☐ Recent release, known high concentrations ☐ Former chemical disposal site, landfill ☐ Urban fill, residual contaminants	☐ Oxygen deficiency ☐ Chlorinated volatile organic compounds (VOCs) ☐ BTEX, petroleum derived VOCs ☐ Fuel oils, petroleum, waste oil, lubricants	☐ Corrosive, acids/caustics, strong irritants ☐ Sulfides, hydrogen sulfide (H_2S) ☐ Cyanides, hydrogen cyanide (HCN) ☐ Asbestos

☐ Containerized waste (drums, process equipment) ☐ Buried drums (known or potential) ☐ Large containers, potential for spills ☐ Contaminated building surfaces ☐ Unexploded ordnance ☐ Explosive dust	☒ Metals, metal compounds, metal dusts ☐ Elemental mercury ☒ Polyaromatic hydrocarbons (PAHs) ☒ Polychlorinated biphenyls (PCBs) ☐ Potential for flammable vapors ☐ Potential for flammable gas (methane)	☐ Lead paint ☐ Pesticides, herbicides, fungicides ☐ Sensitizers ☐ Radioactive contaminants ☐ Other (see Explanatory Notes, above)

☒ **FOR WORK CONSISTING OF CLEANUP OPERATIONS, CORRECTIVE ACTIONS, PRELIMINARY INVESTIGATIONS at an "UNCONTROLLED HAZ. WASTE SITE" (per HAZWOPER, 29 CFR 1910.120), implement the following as applicable to the work:**

- Implement site control plan via Exclusion Zone(s), Contaminant Reduction Zone(s) and Support Zone (aka EZ, CRZ, SZ)
- Workers to be aware of and trained on hazards per OSHA Hazard Communication Standard.
- Include site map/figure depicting work locations and other relevant site-specific information.
- Site workers in EZ or CRZ to have OSHA 40-hour training, current 8-hour refresher, 3 days supervised field experience.
- Site supervisor(s) required to have 8-hr. Supervisor training.
- Site workers in EZ or CRZ to participate in Medical Monitoring program, as applicable.
- Implement site-specific procedures for worker protection via engineering controls, work practices, personal protective equipment (PPE), air monitoring, decontamination procedures, spill containment, emergency preparedness and response.
- Conduct air monitoring, as appropriate (see Part C," Air Monitoring, Worker Exposure Monitoring").

IMPORTANT: Provide supplemental information to sufficiently detail site-specific procedures for the above elements, as appropriate for the work.

Geosyntec Procedures: *HS-301-HAZWOPER, HS-108-Medical Monitoring Surveillance, HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, HS-115-Hazard Communication, HS-405-Drum Sampling, Others as applicable*

☐ **FOR SITE WITH CHEMICAL CONTAMINANTS OR WASTE BUT NOT REGULATED BY HAZWOPER**

- Workers to be knowledgeable/aware of chemical hazards thru safety training/orientation and availability of hazard information
- Implement controls to minimize worker exposure through engineering controls, work practices, PPE, as appropriate.
- Conduct air monitoring/sampling to monitor/evaluate worker exposure, as applicable.

Geosyntec Procedures: *HS-111-Air Monitoring, HS-112-Respiratory Protection, HS-113-Personal Protective Equipment, HS-114-Safety Training Programs, HS-115-Hazard Communication, Others as applicable*

☐	**OFF-SITE MIGRATION OF CONTAMINANTS**	☐ Implement controls to minimize hazard migration (dust suppression, covers, foam, etc.) ☐ Community/perimeter air monitoring to be conducted per perimeter air monitoring plan.
☐	**SPILL CONTAINMENT, CONTAINERS**	☐ Describe above any site-specific procedures for spill containment, container handling, as applicable. ***Geosyntec Procedures***: *HS-406-Unknown Hazardous Waste Drum Handling*

B.15. RADIATION HAZARDS (Other than Sunlight) ☐ Applicable ☒ Not Applicable, Not Anticipated

B.16. HAZMAT/DANGEROUS GOODS SHIPPING/TRANSPORTATION ☐ Applicable ☒ Not Applicable, Not Anticipated

PART C – AIR MONITORING, WORKER EXPOSURE MONITORING

C.1. AIR MONITORING (Direct-Reading Instruments) ☒ Applicable ☐ Not Applicable, Not Anticipated

EXPLANATORY NOTES, CLARIFICATIONS:
See HASP and Community Air Monitor Plan in PDI Work Plan for action level response actions.

☒	**AIR-TESTING PARAMETERS**	☒ VOCs, GASES ☒ PID, Lamp energy: 10.6 eV ☐ FID ☐ Carbon monoxide ☐ Hydrogen sulfide ☐ Oxygen (O_2)	☐ Flammable gas (LEL) ☒ Particulate (dust) ☒ Calibration kit for each parameter ☐ Other:

☐	**ACTION LEVELS FOR O2/LEL**	☐ Oxygen	<19.5% - stop work. Evacuate area 19.5 – 23.5 – Continue to work with caution. >23.5% - Stop work. Evacuate the area.
		☐ LEL	1 - 10% LEL - Continue with caution. ≥10% LEL- Stop work. Evacuate the area. If upon return, concentration still exceeds 10% LEL, ventilate until concentration is back to <10% LEL.

		Parameters	Level D, Modified D*	Use levels C or B*, as indicated below, OR take action to reduce breathing zone level to concentration acceptable for Level D*.
☒	**ACTION LEVELS FOR TOXICS** (sustained breathing zone concentrations)	☒ VOCs	< 5 ppm	> 5 ppm - Stop work. Evacuate the area. If upon return, levels still exceed the action level, stop work and implement engineering controls.
		☐ Carbon Monoxide	< __ ppm	> __ ppm - Level B (air-supplied respirator)
		☐ Hydrogen Sulfide	< 10 ppm	≥10 ppm - Stop work. Evacuate the area. If upon return, levels still exceed 10 ppm, stop work and implement engineering controls.
		☒ FINE Dust (PM-10)	< 100 µg/m^3	> 100 µg/m^3 – implement dust suppression procedures outlined in Section 4.6.2 of the PDI Work Plan to protect worker and community health and safety
		☒ TOTAL Dust	< 1000 µg/m^3	> 1000 µg/m^3 – implement dust suppression procedures, engineering controls, and/or stop work.

		☐		

*** Levels of Protection:**	**Level D** (standard work clothes, basic personal protective wear, no chemical protective clothing, no respiratory protection) **Modified Level D** (chemical protective clothing in addition to standard work clothes, no respiratory protection) **Level C** (air purifying respirator or dust mask, in addition to chemical protective clothing) **Level B or A** (air supplied respirator, chemical protective suit; fully-encapsulating suit for Level A)

Geosyntec Procedures: *HS-111-Air Monitoring*

C.2. OTHER WORKER EXPOSURE MONITORING ☐ Applicable ☒ Not Applicable, Not Anticipated

Appendix B.3: Summary of Chemical Hazards

Polycyclic Aromatic Hydrocarbons (PAHs)

PAHs are produced during combustion events due to inadequate oxidation of fuel. PAHs in the pure state are yellowish crystalline solids. They are found in coal tar and in products of incomplete combustion. These chemicals have varying degrees of potency for causing cancer, with benzo(a)pyrene being among the most potent. The PAHs are evaluated collectively as COAL TAR PITCH VOLATILES. Coal tar pitch volatiles may cause photo-sensitization and a rash where sunlight strikes the skin. Exposure may also cause cancer of lungs, skin, bladder or kidneys. Benzo(b)fluoranthene, benzo(j)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, chrysene, and indeno(1,2,3,c,d)pyrene have been identified as carcinogenic.

This information on PAH compounds is presented for site contaminant awareness. While the potential for site personnel sustaining significant inhalation exposures to volatilized PAH compounds during the site activities of this project is minimal, there is the potential for inhalation of PAH-contaminated dust, and handling of contaminated soils presents skin exposure hazards. Use of dust suppression techniques (as appropriate) and the proper use of the PPE will adequately protect personnel. Some significant PAH compounds include: anthracene, benzo(a)pyrene, benzo(a)anthracene, chrysene benzo(b)fluoranthene, fluoranthene benzo(k)fluoranthene, fluorene benzo(g,h,i)perylene, indeno(1,2,3,c,d)pyrene benzo(d,e,f)phenanthrene, and phenanthrene. OSHA PEL for coal tar pitch volatiles is 0.2 mg/m^3 and NIOSH REL is 0.1 mg/m^3, TLV 0.2 mg/m^3 is for 8 hour time weighted average (TWA).

PCBs

PCBs are carcinogenic chlorinated hydrocarbons. Potential exposure routes are through inhalation, skin absorption, ingestion and skin or eye contact and may irritate eyes, cause acne, cause liver damage or have reproductive effects. Carcinogenic effects such as tumors and leukemia have been observed in animals. The OSHA permissible exposure limit (PEL) for 8-hour time-weighted average (TWA) is 1 mg/m^3 (for 42% chlorine) and 0.5 mg/m^3 (for 54% chlorine), both with the "skin notation". The NIOSH REL is 0.001 mg/m^3 for all forms.

RCRA Metals

These metals include arsenic, barium, cadmium, chrome, mercury, selenium, and silver. Heavy metals are known to cause neurologic effects (lead, mercury), kidney damage (cadmium), and respiratory damage (arsenic, cadmium). Oral and respiratory exposures should be minimized. The table below summarizes exposure limits.

Chemical Name	PEL[1]	TLV[2]
Arsenic	0.01	0.01
Lead	0.05	0.05

Mercury	0.1	0.025

[1] OSHA Permissible Exposure Limit (PEL) in units of milligrams per cubic meter (mg/M[3])
[2] ACGIH Threshold Limit Value (TLV) in mg/M[3]

Chlorinated Solvents/Volatile Organic Compounds (VOCs)

Chlorinated VOCs are widely used as solvents in industrial operations such as degreasing, manufacturing, cleaning and dry cleaning, and are also present in household products and automotive fluids. They readily form vapors which can accumulate in indoor air spaces (i.e., via migration through the subsurface) and react with ozone to form sub-micron sized particles with the potential to cause adverse respiratory health effects. Free product releases (via surface or subsurface discharges or inadequate disposal) can migrate downward to significant depths and through fine-grained deposits to groundwater, and can persist as wide-scale sources of vapor plumes for long periods of time.

Several chlorinated hydrocarbons have been identified in soil, indoor air vapor, and groundwater at the site including perchloroethylene (PCE), trichloroethylene (TCE), and 1,2-dichloroethane (DCA). The likely routes of exposure to chlorinated solvents include inhalation, ingestion and direct contact with the skin or eye. The toxicity of chlorinated solvents varies; many affect the CNS and some are identified as carcinogens. PCE can affect the CNS and cause irritation of the skin, eyes, and upper respiratory tract. TCE can depress the CNS, affect kidneys, liver, and lungs and can cause rapid and irregular heartbeat. Toxic effects are increased when combined with alcohol, caffeine, and other drugs. DCA can cause CNS depression and damage to the liver, kidneys, heart, and digestive system. Eye contact with DCA can cause irritation and serious injury if not removed promptly. DCA and TCE are flammable liquids; the LEL of both solvents are approximately 6% and their flash points are less than 100°F. PCE is not considered flammable. These chlorinated solvents are only slightly soluble in water.

Exposure levels will be maintained below OSHA PEL or ACHIH TLV as shown in the table below.

Chemical Name	PEL[1]	TLV[2]
1,2 DCA	50	10
TCE	100	10
PCE	100	25

[1] OSHA Permissible Exposure Limit (PEL) in parts per million
[2] ACGIH Threshold Limit Value (TLV) in parts per million
Ca = Carcinogenic.

Acids/Bases

Strong acids and bases (such as hydrochloric acid, nitric acid, sodium hydroxide, potassium hydroxide) are potentially present at the site, in sample preservatives, or in decontamination solutions.

Such substances expose the personnel to the following risks:

- Irritations and caustic injuries (chemical burns). Acids and bases, have a noxious power which varies in strength with the tissue these substances come in contact with. Some compounds (for example sodium hydroxide) may be responsible for very bad injuries to the skin, the eyes and, in case of accidental ingestion, to the upper digestive system. Furthermore, irritating gases and vapors (such as gaseous chlorine) may develop during different reactions.
- Acute intoxications. Intoxication may occur as a result of accidental ingestion or inhalation or, less frequently, as a result of skin contact.
- Chronic intoxications. These may arise as a consequence of prolonged exposure to relatively small doses, unable to produce acute effects. The most frequently reported toxic effects include liver disease, nephropathy, coagulation disorders and nervous system disorders.

Geosyntec consultants

Appendix B.4 - Incident Response Procedures and Routes to Emergency Facilities

H&S INCIDENT RESPONSE PROCEDURES

CHOOSE THE RIGHT PATH

Life-Threatening Emergency → Immediately dial 911 or the local emergency number → Transport to medical facility → Notify H&S team → Notify your manager → Manager completes and files Incident Report within 24 hours

Non Life-Threatening Incident or Emergency → Notify your manager and the H&S team → If H&S team cannot be reached, notify WorkCare, 888-449-7787 → H&S or WorkCare will help determine the appropriate level of care → Seek out care or apply first aid → Manager completes and files Incident Report within 24 hours

Near Miss Incident → File Near Miss Report within 24 hours

For more Information:
All work-related injuries, illnesses, and near-miss situations, to include vehicle accidents and general liability claims, must be documented and reported to the Health and Safety (H&S) team

Visit the H&S team on the intranet:
http://home.geosyntec.com/Corp/EHS/.

Dale Prokopchak
804-349-8067
West Region

Ersin Yalcin
404-435-4722
Southern Region

Mark Malchik
781-392-5440
North Region

Geosyntec
consultants

ROUTE TO HOSPITAL

Approximate Travel Time from Site to Hospital: 1 mile, 5 minutes

ST. JOSEPH'S HOSPITAL
(607) 733-6541
555 E. Market Street
Elmira, NY 14901

DIRECTIONS TO HOSPITAL FROM SITE

1. Turn right onto RT-14/Clemens Center Parkway (0.5 miles)
2. Turn left onto RT-352 West/East Church Street (0.4 miles)
3. Turn right onto High Street (354 feet)
4. Arrive at **St. Joesph's Hospital**

ROUTE TO URGENT CARE FACILITY

Approximate Travel Time from Site to Urgent Care Facility: 1.1 miles, 4 minutes

ELMIRA URGENT CARE
(607) 732-1100
360 W Water Street
Elmira, NY 14905

DIRECTIONS TO URGENT CARE FACILITY FROM SITE

1. Turn right onto RT-14/Clemens Center Parkway (0.7 miles)
2. Turn right onto RT-352 East/E Water Street (0.4 miles)
3. Arrive at **Elmira Urgent Care**

Appendix B.5 - Norfolk Southern Operating Guidelines for Contractors

CLASS 420 ITEM 223420

NORFOLK SOUTHERN
OPERATING GUIDELINES
FOR CONTRACTORS

EFFECTIVE: April 19, 2010

CONTRACTOR SAFETY

Numbers to call to report conditions or obtain further information:

Norfolk Southern Police	
Communication Center	800-453-2530
Atlanta, GA	Microwave: 7-589-2677 (COPS)
(including highway crossing gate failures)	
Safety Department	404-582-4865
Atlanta, GA	
Environmental Department	404-582-4645
Atlanta, GA	
Material Management Department	540-981-3883
Roanoke, VA	
Engineering Department	
Atlanta, GA	
Maintenance of Way & Structures (MW&S)	404-529-1470
Communications & Signals (C&S)	404-529-1216
Design & Construction (D&C)	404-529-1463
Transportation Department	
General Managers Office	
Western Region (Atlanta, GA)	404-529-1827
Eastern Region (Atlanta, GA)	404-529-1964
Northern Region (Harrisburg, PA)	717-541-2215
Mechanical Department	404-582-6725
Atlanta, GA	

CONTENTS

CONTRACTOR* SAFETY
STATEMENT OF POLICY
SAFETY

Norfolk Southern Corporation and its corporate affiliates (hereinafter collectively called "Norfolk Southern") are committed to the principle that safety is good business.

Responsibility for safety and environmental stewardship cannot be transferred. Each contractor is held accountable for his/her actions on the job.

1. All injuries can be prevented.

2. All exposures can be safeguarded.

3. Prevention of injuries and accidents is the responsibility of each contractor.

4. Training is essential for good safety performance.

5. Safety is a condition of continued contractual relations with Norfolk Southern Corporation.

6. Safety is good business.

*As used herein contractor refers to the contractor and his/her employees, agents and subcontractors.

INTRODUCTION

This document will help you understand and comply with Norfolk Southern safety requirements: these safety requirements apply to you and your employees while you are on Norfolk Southern property. It is extremely important that you understand and adhere to each of these rules.

The terms “contractor” or “contractors”, as used in the rules which follow, include the employees, agents, and subcontractors of any contractor.

Contractors are responsible to know the applicability of governing local, county, state and federal laws and regulations, and any special provisions imposed by the Federal Railroad Administration (FRA) or other regulatory agencies, including fall protection and Roadway Worker Protection. Contractors are encouraged to ask a Norfolk Southern supervisor for assistance regarding questions on safety.

The safety rules contained in these guidelines are not and cannot be all inclusive. Each contractor must adopt and enforce such additional rules or practices as may be necessary for the safe performance of the work.

Remember: safety is a condition of working on Norfolk Southern property. Responsibility for safety cannot be transferred. Each contractor is responsible, and will be held accountable, for the safe performance of the work he/she has contracted to do. The contractor must take the appropriate steps to assure compliance by his/her employees with applicable safety rules.

Questions concerning intermodal operations are covered in the Norfolk Southern Railway Intermodal Operations Manual, safety section pages 1–76.

These rules do not prohibit contractors from adopting more restrictive rules and instructions for the government of their employees than those contained herein.

If you have any questions regarding safety or safety matters contact any designated NS employee or the Norfolk Southern Safety Department at 404-582-4865.

CONTRACTOR EMPLOYEE SECURITY

Contractor must secure background investigations of its employees through e-VERIFILE.com. Contractor employees successfully undergoing the background investigation will be issued a picture identification card which will be required for the Contractor's employees to enter and work on NS property or perform services for NS. Contractor employees without the identification card will not be allowed to work on NS property. Employees leaving the employment of Contractor must surrender the identification card to either Contractor or to NS. While NS has negotiated on the behalf of Contractor standard volume rates with e-VERIFILE.com for the investigations, identifications cards and other products, all charges incurred in the use of e-VERIFILE services and products are the sole responsibility of Contractor. Where a contract permits Contractor to charge travel and business expenses to NS, the e-VERIFILE.com charges are not included among such recoverable expenses. Contractor may include such charges as a part of its overhead costs in determining its price proposals. Contractor must execute e-VERIFILE.com's standard Subscriber Agreement. The contact information for e-VERIFILE.com is as follows: www.e-railsafe.com or 770-859-9899 Ext 1.

In the event that NS ceases the use of e-VERIFILE.com for background investigations or switches to another similar service, Contractor will be notified by NS of the termination and/or transfer. In the event that NS switches to another vendor for similar services the requirements of this Section will apply to Contractor with regard to the use of the alternative vendor's services.

NS does not warrant or guarantee either the accuracy or completeness of the services performed by e-VERIFILE.com; and NS shall have no responsibility to Contractor for the services performed by e-VERIFILE.com. Contractor uses such services as between NS and Contractor solely at the risk of Contractor. NS leaves it to the sole discretion of Contractor as to performing other background investigations of Contractor's employees.

CONTRACTOR INSURANCE REQUIREMENTS

Insurance requirements: Contractor may not begin work prior to being notified by Railway that all insurance documents have been approved by Railway's Risk Management group. Contractor, shall at it's expense, obtain and maintain during the period of this contract, in a form and with companies satisfactory to the Railway, the following insurance coverage at levels required by the contract:

1) Workers' Compensation Insurance
2) Employers' Liability Insurance
3) Commercial General Liability Insurance
4) Automobile Liability Insurance

GENERAL RULES FOR CONTRACTORS' SAFETY

1.1 Contractors have the sole responsibility of controlling the means and manner of the work done by their employees, of ensuring the compliance by their employees with the rules and procedures set forth in this manual, and for the safe performance of their employees during the time they are on or about the property or equipment of Norfolk Southern.

1.2 Contractors whose duties are prescribed by these rules must be provided with a copy by Norfolk Southern Contract Services Department when a contract is consummated. Contractors are responsible for maintaining a copy of the rules and providing them to their employees.

1.3 When any person is injured as result of an accident, emergency medical assistance must be called if needed.

1.4 Contractors must immediately report all accidents and injuries to their supervisor and the designated Norfolk Southern employee (**NOTE:** "designated Norfolk Southern employee" or "designated railroad employee" means the project or work item supervisor or any other employee designated to have oversight responsibility related to the project or work being performed by the Contractor).

1.5 The report must include the name and address of each injured person and describe the extent of injury. Names and addresses of all persons at the scene are required, whether or not they admit knowledge of the accident.

1.6 Contractors must be conversant with and obey the rules and any special instructions issued to them by Norfolk Southern. If in doubt as to their meaning, contractors must consult with the designated Norfolk Southern employee for an explanation.

1.7 Accidents, defects in track, bridges, signals or highway crossing warning devices, fires on or near the right of way, or any unusual condition that may affect the safe operation of the railroad that becomes known to the contractor must be reported to the Norfolk Southern designated employee or any other railroad employee by the quickest means of communication.

1.8 A contractor or contractor employee who reports for duty under the influence of alcohol or other intoxicant, cannabis in any form, an amphetamine, a narcotic drug, a hallucinogenic drug, any controlled substance (as defined by federal law), or a derivative or combination of any of these, or who uses any of the foregoing while on duty, will not be allowed to remain on Norfolk Southern property. Possession of any of the foregoing while on duty, or possession, use, or being under the influence of any of the foregoing while on Company property or occupying facilities provided by the Company, is prohibited.

1.9 Firearms are not allowed on Norfolk Southern property unless given special permission in writing by the head of the Norfolk Southern Police Department.

1.10 In case of danger to, loss of, or damage to railroad property by fire, theft, or other causes, contractors must immediately notify the designated Norfolk Southern employee.

Unauthorized possession, removal, or disposal of any material from railroad property or property served by the railroad is prohibited.

All articles of value found on railroad property must be cared for and promptly reported to the designated Norfolk Southern employee.

1.11 Some platforms, bridges and other structures, switch stands and tunnels will not clear a person on the top or side of a car or engine. Contractors must become familiar with these and other places and protect themselves from injury.

1.12 Contractors must not do any work in a manner that will jeopardize their own safety or the safety of others. They must know that appliances, tools, supplies, and facilities used in performing their duties are in proper condition. If not, they must have them put in order before using them. It is the duty of every contractor to examine them to determine their condition.

1.13 Contractors must expect the movement of trains, engines or cars at any time, on any track, in either direction.

1.14 When equipment, tools, or appliances are involved in any way in an injury or death on Norfolk Southern property, a report must be made promptly to the designated Norfolk Southern employee.

1.15 Photography on Company property without proper authority is prohibited.

1.16 Contractors must follow and observe all FHWA or FRA Regulations applicable to their operations.

GENERAL REGULATIONS

2.1 All rules and instructions apply equally to men and women. All words of gender used in the rules and instructions mean both genders.

2.2 All Contractors must follow Norfolk Southern safety guidelines and perform all duties efficiently and safely while on Norfolk Southern property.

2.3 Contractors must notify designated Norfolk Southern employee as to their whereabouts while performing work on company property.

2.4 Contractors are not expected to inspect passing trains but if a defect is noted or there are other reasons to stop a train the following methods can be used:

To give a STOP signal, move the hand, flag, lamp or fusee back and forth horizontally, at right angles to the track, until acknowledged by a short blast of the engine whistle or other response from the train crew.

If a dangerous condition is observed in a passing train and its crew cannot be notified to stop by hand signal, notify the designated Norfolk Southern employee or nearest Norfolk Southern employee.

2.5 Contractors must not ride on rail equipment except when authorized and in the performance of duty.

2.6 Contractors must not sit, stand or step on any parts of railroad equipment except when authorized and in the performance of duty.

2.7 Contractors must not step on rails, guard rails, switches or frogs. Does not apply when loading, unloading, or installing rail or track material.

2.8 Contractors must not cross over between coupled cars unless duties require, then must maintain secure handhold and use a sill (end) platform if possible.

2.9 Contractors must not stand on track in front of closely approaching equipment, or step between coupled moving cars or engines, for any reason. They must not step between or immediately in front of standing cars or engines.

2.10 Contractors must keep premises and work areas subject to their control neat and clean. Buildings, facilities and equipment must not be defaced.

2.11 Contractors must exercise care to prevent loss by fires. Frequent inspections must be made of the work area, and fire hazards found must be promptly corrected or reported to the proper railroad officer. No burning, welding, heating or use of open flame is permitted without permission of designated Norfolk Southern employee.

2.12 The Company's communication facilities must not be used for personal calls and must be confined to emergencies and communication in connection with work being performed.

2.13 No steel tape or chain is to be allowed to cross or touch the rails without permission of the designated railroad employee.

2.14 Truck and tractor operators must reduce speed and sound alarm when approaching persons, doorways, passageways, corners or places where persons are likely to step out.

2.15 Posted speed restrictions must be observed.

GENERAL SAFETY RULES

3.1 Contractors must wear suitable clothing and footwear to perform their duties safely and as prescribed by government regulations.

3.2 Working in shorts is prohibited. Shirts must cover shoulders, upper arms, back and abdomen. Performing work in oily, greasy, torn, loose or frayed clothing is not permitted. **Exception:** Underwater divers and other occupations approved by Norfolk Southern may be excepted from this rule.

3.3 Contractors who work around moving equipment, tracks or uneven ground will wear shoes that provide ankle support. Any footwear chosen must provide firm ankle support, prevent slipping and be of substantial construction.

3.4 Safety equipment such as hard hats, eye and hearing protection, protective footwear, steel insoles, ice creepers, belts, lanyards, protective clothing, gloves, spats, guards, full body harness, metatarsal protection, masks and respirators prescribed by Federal and/or State regulations and Norfolk Southern practices and procedures must be worn in specified areas, jobs or conditions. Contractors should contact the Norfolk Southern designated employee to obtain copies of Norfolk Southern practices and procedures if needed.

3.5 Contractors are responsible for ensuring employees have proper protective equipment. They are responsible to see that it is kept in good order, properly fitted, and available for their use when needed.

3.6 Contractors who handle materials or work around machinery, cars or other equipment, must not wear rings and must not wear other adornments or clothing that may be snagged.

3.7 Contractors must comply with all regulations pertaining to lockout tagout when working on electrical circuits, machinery, pressure lines, energy storing devices, etc.

3.8 Standing near or in line with a cable, rope or chain under tension when a pull is being made, or standing under a load, bucket or magnet handled by hoisting equipment, is prohibited. All machinery used to pull cables or chains must have safety shields.

3.9 Use of handrails on stairs where provided is required.

3.10 When practicable, equipment or material that would obstruct the view of the track must be left at least 100 feet from highway grade crossings.

3.11 Climbing or jumping over obstructions or across openings is prohibited. Use authorized paths or routes where provided.

3.12 Contractors are prohibited from passing over or under safety valves or automatic blow down valves on stationary boilers or steam generators under pressure.

3.13 Operating any type of internal combustion engine in an enclosed space without adequate ventilation is prohibited. Contractors must not enter confined spaces unless appropriate steps have been taken in accordance with Contractors and Norfolk Southern confined space entry program to ensure the safety of everyone.

3.14 Smoking is prohibited inside of Norfolk Southern buildings and is permitted only in designated areas.

3.15 Scuffling, horseplay, practical jokes, and conduct of a similar nature, while on Norfolk Southern property, is prohibited.

3.16 Running is prohibited in shop areas, buildings or on structures.

3.17 Contractors should warn those who handle trash for disposal when glass, sharp metal, or pointed objects are placed in trash receptacles. Contractors whose responsibilities include emptying trash receptacles should wear work gloves and expect the presence of glass, sharp metal or pointed objects. Accordingly, contractors performing such work should either dump the receptacle or lift out the liner (if used).

WORKING ON OR ABOUT TRACKS

4.1 Contractors must not walk or stand between the rails of a track or foul a live track without proper authority.

4.2 Contractors working adjacent to a track upon which movements are being made must maintain vigilant lookout for approaching movements.

4.3 Contractors must not operate valves, controls or switches to energize power circuits or to cause equipment or machinery to move until they know that no one is in position to be injured.

4.4 Contractors who perform any work in the general vicinity of railroad tracks and who are under contract to the railroad must provide On-Track safety protection as required by FRA Roadway Worker Protection regulations. Contractors must ensure that all employees working in the foul of the track are trained in Roadway Worker Protection rules.

DERAILS AND SWITCHES

5.1 Contractors must not operate any switch or derail unless under the direction and supervision of the Norfolk Southern designated employee.

EQUIPMENT

6.1 Contractors must see that ladders are in good condition and of adequate length and meet all applicable laws and regulatory guidelines for their use and design. Contractors must see that scaffolds are properly constructed or assembled, are strong enough for the load, and the contractor is responsible to see that the scaffolding meets all applicable laws and regulatory guidelines. Only ladders, scaffolds, manlifts, etc. that meet applicable laws and regulatory guidelines should be used.

6.2 Except when a scaffold or ladder is used, a safety harness, belt, net, or guard rope must be used during work:

- A. Outside a window above ground level.
- B. On a steep pitched roof.
- C. On a steep hillside, cliff, or embankment.
- D. In dangerous positions when working on railroad bridge or other structures and as prescribed by FRA regulations.
- E. In any other situation specified by the contractor or Norfolk Southern.

6.3 Moving scaffolds or ladders from point to point while people are on them is prohibited.

6.4 Leaning out, or reaching out more than an arm's length from edge of ladder, scaffold, or elevated platform is prohibited.

6.5 Contractors must maintain adequate clearance between work equipment and energized power.

6.6 Scaffolds and ladders in use at locations where persons or vehicles could collide with them must be protected. Rope barriers or other means must be used to protect persons from falling objects.

6.7 Contractors will use fall-protection equipment in accordance with OSHA regulations when working on towers and masts, and FRA regulations when working on bridges.

6.8 No equipment is allowed within 25 feet of centerline of track without specific permission of the designated railroad employee.

6.9 Trucks, tractors, or other equipment is not to touch ballast line without specific permission of the designated railroad employee.

6.10 All operating equipment within 25 feet of nearest rail must halt operations when a train is passing. All other operating equipment may be halted by the designated railroad employee if such railroad employee views the operation of the equipment to be dangerous to the passing train.

6.11 While clearing and grubbing, no vegetation is to be removed from a railroad embankment with heavy equipment without permission of the designated railroad employee.

6.12 No equipment is to be parked or material stored on railroad property without permission of the designated railroad employee.

6.13 All unattended equipment left parked on railroad property is to be effectively immobilized so that it cannot be moved by unauthorized persons.

HANDLING MATERIAL

7.1 Material and equipment must be kept a safe distance from tracks, walkways, trucking spaces and edges of platforms, and must be secure against movement.

7.2 When unloading poles or similar lading, use caution to prevent lading from becoming dislodged unexpectedly. Tag lines must be used if conditions warrant.

7.3 Throwing, dropping or roughly handling loaded or empty oxygen, acetylene or other gas cylinders, or carboys, is prohibited.

7.4 Hoisting gas cylinders without prescribed cradle is prohibited. Gas cylinders must not be handled by a magnet.

7.5 Contractors are to supply the manufacturers Material Safety Data Sheet (MSDS), when handling chemicals, materials, or other substances that could cause irritation or illness.

7.6 Contractors are to warn their employees of the hazards of treated wood.

7.7 Overloading or unsafe loading of trucks and trailers is prohibited.

7.8 Contractors are prohibited from standing on or working from a platform on a forklift truck or similar device, unless the platform is in accordance with applicable laws and regulatory guidelines.

7.9 Always look in both directions before crossing platforms or trucking spaces. Crossing closely in front of moving trucks or tractors is prohibited.

7.10 Before a tractor or forklift enters a truck, trailer, or railway car, the operator must know that the equipment is secured against movement and that the floor is in safe condition.

7.11 Before leaving a forklift truck, tractor, or other equipment unattended for any reason, contractors must see that controls are neutralized, power is shut off, and brakes are set. If the truck or tractor is parked on an incline, wheels must be blocked. Trucks, tractors or other equipment must be left clear of tracks.

7.12 Contractors must take care that materials do not fall from scaffolds, locomotive running boards, end sills, tops of cars, or other elevations.

USING TOOLS AND MACHINERY

8.1 Contractors must not use tools, machinery or appliances that are improperly assembled, detective or improvised, nor use them for other than their intended purposes.

8.2 Tools, machinery and appliances not in use must be properly protected. Sharp points or edges must not be left exposed. Laying down a power tool with motor running is prohibited.

8.3 Operating machines or appliances without safety guards in proper position is prohibited.

8.4 Reaching between, going between, or touching moving belts, chains and cables, or shifting them by hand is prohibited.

8.5 Lockout-Tagout — Repairing or cleaning machinery while it is in motion is prohibited except for adjustments that require the machine to be running. If driven by individual motor, the motor must be stopped and control switch properly tagged before such work is performed. Mechanical locking devices, where provided, must be applied before adjusting or repairing machine. A machine in motion must not be oiled if a contractor could contact or be caught by moving parts.

8.6 Using pneumatic grinding tools not equipped with a speed governor in working and safe order is prohibited.

8.7 Pointing pneumatic hammers or other power-actuated tools at a person is prohibited.

8.8 Contractors must take care that tools do not fall from scaffolds, locomotive running boards, end sills, tops of cars, or other elevations.

ELECTRICAL AND LINE WORK, WELDING, AND CONFINED SPACE ENTRY

9.1 Only qualified contractors shall work on electric wires and apparatus, climb poles or towers, enter power plants or energized substation enclosures, perform welding, or perform work in confined spaces. Qualified contractors performing such work must comply with all federal, state and local regulations applicable to such work.

9.2 Before climbing a pole, tower or other structure, contractors must first examine and test it and know that it will support the weight of individuals working on the pole, tower, or structure. A defective pole must not be climbed until it has been made safe, either by pike poles or lashing it to a new pole in the event of replacement. A defective tower or other structure must be suitably reinforced before it is climbed. When ascending or descending wooden pole, observe the pole surface and avoid setting climbing gaffs where they come in contact with cracks, holes, knots, or any other obstacles that might cause gaffs to cut out. Before commencing work on wooden poles, assure that gaffs have been recently gauged and are in safe condition for climbing.

9.3 Contractors must not stand, sit, or lean on a crossarm while working on a pole until they are positive that the arm is strong enough to safely support their weight.

9.4 When working on or handling wire, rope, or cable, on curves or at corners, contractors must not place themselves in the inside angle of the curve or corner unless they are properly protected.

9.5 When cutting wire, contractors must take particular care to secure loose ends. Contractors must use care to prevent injury when removing insulation or metal sheeting from wire and cable.

9.6 Use both hands when ascending or descending ladders, poles, or structures. Body belts, shoulder straps, or pockets must be used to carry small tools or material. Hand lines must be used for heavier items.

9.7 Two or more contractors must not climb up or down the same pole at the same time. A contractor following another must wait until the preceding contractor is either in position on the pole with safety belt fastened around the pole, or in the clear at the bottom.

9.8 The use of matches, cigarette lighters, or other open flames to light torches is prohibited. Operator should light his own torch using only a friction spark lighter or hot metal.

9.9 Always close cylinder valves when moving equipment from one job location to another or when leaving equipment unattended.

CRANES, PULLERS, HOISTS AND DERRICKS

10.1 Contractors must see that capacity of crane is not exceeded, that rail clamps and outriggers are properly used when required and that hooks, chains, cables, ropes and slings used for hoisting are of the proper size and in condition to handle the load safely. **NOTE:** Rail clamps are an appurtenance of On-Track equipment.

10.2 Before using cranes, pullers, hoists, derricks, or similar equipment, the operator must know that the equipment is in safe condition.

10.3 Cables, chains, pulleys, drums, and hooks must be inspected as required by applicable laws and regulations, and brakes and limit switches must be tested periodically as required by applicable laws and regulations to ensure that they are in proper condition and operate as intended. The operator must know the lifting capacity of the equipment.

10.4 Warning must be given to alert anyone in or near the path of a moving load or load handling equipment. Movement must stop unless everyone is clear.

10.5 No crane or boom equipment is allowed within 25 feet of nearest rail without specific permission of the designated railroad employee.

10.6 No crane or boom equipment is allowed to foul track or lift a load over the track without permission of the designated railroad employee.

10.7 All contractors are to stay with their machines when crane or boom equipment is pointed toward track.

10.8 All cranes and boom equipment under load (to include pile driving) and other operating equipment within 25 feet of nearest rail must stop work when a train is passing. All other operating equipment may be halted by the Norfolk Southern designated employee when a train is passing if such railroad employee views the operation of the equipment to be dangerous to the passing train.

10.9 Swinging loads must be secured to prevent movement while train is passing.

10.10 No loads are to be suspended above a moving train.

10.11 All contractor cranes and boom equipment is to be turned away from track after each work day or whenever equipment is unattended by operator.

USE OF FLAMMABLE GAS FLAMMABLE LIQUIDS AND FUELS

11.1 Smoking or open flames shall not be allowed within 25 feet of areas where fuel is being dispensed.

11.2 If necessary to transport gasoline or other flammable liquids, contractors must:

A. Use SAFETY CANS bearing Underwriters Laboratories or Factory Mutual logos.
B. Have a fire extinguisher readily available.
C. Maintain ventilation, and
D. Ensure protection against fire.

OFFICE SAFETY

12.1 Stand or walk clear of doors. Open doors slowly. Do not push on glass panels of doors. When opening or closing doors, use knob or handle, where provided, and keep hands off door edges and facing.

FIRE PROTECTION

13.1 ALARMS

A. Know where the nearest fire alarm box is located.
B. Know how to turn in an alarm.
C. Know alarm, evacuation, and disaster signals for your area, along with the proper exit route.

13.2 EXTINGUISHERS

A. Know where the nearest fire extinguisher is located.
B. Know how to operate it. Know the type of fire on which it should be used. Check label.
C. Return extinguishers for servicing promptly after use.

13.3 COMBUSTIBLES

A. Combustible material must be kept away from steam lines, radiators, heaters, and service lines.
B. Combustible material under or near welding and burning operations must be moved a safe distance away, or covered with fire retardant material. Where this is not possible, all sparks and slag must be contained in an approved spark catcher.

13.4 ORDERLINESS

Work areas must be orderly and maintained free of trash and scrap as necessary to help prevent fires.

13.5 REFUELING

Equipment must not be refueled while running or when hot.

13.6 SMOKING

Smoking is not permitted in:

- All office facilities, including Norfolk Southern's General Offices in Roanoke, Atlanta, and Norfolk, yard offices, agencies, division offices, sales offices, offices within shop facilities, and non-office work areas within shop facilities.

- Classrooms and offices in Norfolk Southern's Technical Training Center.

- Meeting rooms and Norfolk Southern-sponsored meetings held off the property.

- Locomotive engine cabs and cabooses

- Sleeping cars or trailers, office cars, dining cars, camp cars or dormitories

- Locker rooms, restrooms, lunch rooms, or tool rooms

Appendix B.6: Air Monitoring

Applies to Task: ☒ ① ☒ ②

☒ *Photoionization Detector (PID)*	☐ *Oxygen (O_2) Meter*	☒ *Explosimeter*
Brand/Model No.: MiniRae 3000 or MultiGas eV: 10.6 **Monitoring Frequency: 15 minutes, or less, as needed**	**Brand/Model No.:**________ **Monitoring Frequency:**________	**Brand/Model No.:**________ **Monitoring Frequency:**________
Breathing Zone Reading (ppm) / **Action** 0 to 5 — Modified Level D PPE Greater than 5 — Stop work. Evacuate the area. If upon return, levels still exceed the action level, stop work and implement engineering controls. **Note:** 1 minute sustainted reading	**Reading (%)** / **Action** Less than 19.5 — Stop work. Evacuate the area. 19.5 to 23.5 — Continue to work with caution. Greater than 23.5 — Stop work. Evacuate the area. **Note:** ________	**Source (% LEL)** **Reading** / **Action** 1 to 10 — Continue with caution. Greater than 10 — Stop work. Evacuate the area. If upon return, concentration still exceeds 10% LEL, ventilate until concentration is back to <10% LEL. **Note:** ________
☒ *Dust Meter*	☐ *Chemical Detector Tube*	☐ *Hydrogen Sulfide*
Brand/Model No.: MIE Personal Data Ram 1000 or equivalent Monitoring Frequency: ________	**Brand/Model No.:**________**Monitoring Frequency:**________	**Brand/Model No.:**________**Monitoring Frequency:**________
Breathing Zone Reading (µg/m³) for PM10 / **Breathing Zone Reading (µg/m³) for TOTAL dust** / **Action** 0 to 100 / 0 to 1000 — Level D PPE Greater than 100 / Greater than 1000 — Stop work. Implement procedures outlined in Section 4.6.2 of the PDI Work Plan **Note:** 15 minute average	**Breathing Zone Reading (ppm)** / **Action** ____ to ____ — Level D PPE ____ to ____ — Level C PPE Greater than ____ — Stop work. Evacuate the area. If upon return, levels still exceed ____, stop work and implement engineering controls. **Note:** ________	**Breathing Zone Reading (ppm)** / **Action** 0 to 10 — Modified Level D PPE Greater than 10 — Stop work. Evacuate the area. If upon return, levels still exceed 10 ppm, stop work and implement engineering controls. **Note:** ________

Appendix B.7: Personal Protective Equipment

	Task ①	Task ②					
Minimum PPE Level per Task:	☒ Mod. D ☐ C	☒ Mod. D ☐ C					

Modified Level D		***Level C***	
Equipment	***Material/Type***	***Equipment***	***Material/Type***
☒Safety glasses	ANSI approved	☐Full-face air-purifying respirator	Cartridge Type:
☒Hard-toed boots	Leather or Composite	☐Half-mask air-purifying respirator	Cartridge Type: Organic Vapor
☒Protective clothing	Coveralls or long pants	☐Safety glasses	ANSI approved
☒Hard hat*	ANSI approved	☐Hard-toed boots	Leather or Composite
☒Hearing protection*	Ear plugs or muffs	☐Protective clothing	Coveralls or long pants
☒High-visibility vest*	Minimum ANSI Class 2	☐Hard hat	ANSI approved
☐Outer boots*		☐Hearing protection*	Ear plugs or muffs
☒Outer gloves*	Nitrile and Work gloves	☐High-visibility vest*	Minimum ANSI Class 2
☐Tyvek*		☐Outer boots*	Chemical resistant
		☐Outer gloves*	Nitrile
		☐Inner gloves*	Latex or Nitrile
		☐Tyvek*	

*PPE items may be downgraded (only with concurrence of SHSO and PM).

Appendix B.8: Safety Data Sheets

Included in this HASP	Chemical
☐	Acetone
☒	Alconox
☐	Ammonia
☒	Bentonite
☐	Diesel Fuel Oil No. 2-D
☐	Gasoline
☐	Helium
☐	Hexane
☒	Hydrochloric Acid
☐	Hydrogen
☒	Isobutylene/Oxygen/Nitrogen Calibration Gas
☐	Isopropyl Alcohol
☐	KB-1
☐	Methane Calibration Gas
☒	Nitric Acid
☐	Permanganate
☐	Portland Cement
☐	Sulfuric Acid
☐	Other: _____
☐	Other: _____
☐	Other: _____
☐	Other: _____

Note: SDSs are for chemicals that used to perform project work, not site contaminants.

INSERT SDSs HERE

ALCONOX MSDS

Section 1 : MANUFACTURER INFORMATION

Product name: Alconox

Supplier: Same as manufacturer.

Manufacturer: Alconox, Inc.
30 Glenn St.
Suite 309
White Plains, NY 10603.

Manufacturer emergency phone number: 800-255-3924.
813-248-0585 (outside of the United States).

Manufacturer: Alconox, Inc.
30 Glenn St.
Suite 309
White Plains, NY 10603.

Supplier MSDS date: 2009/04/20

D.O.T. Classification: Not regulated.

Section 2 : HAZARDOUS INGREDIENTS

C.A.S.	CONCENTRATION %	Ingredient Name	T.L.V.	LD/50	LC/50
25155-30-0	10-30	SODIUM DODECYLBENZENESULFONATE	NOT AVAILABLE	438 MG/KG RAT ORAL 1330 MG/KG MOUSE ORAL	NOT AVAILABLE
497-19-8	7-13	SODIUM CARBONATE	NOT AVAILABLE	4090 MG/KG RAT ORAL 6600 MG/KG MOUSE ORAL	2300 MG/M3/2H RAT INHALATION 1200 MG/M3/2H MOUSE INHALATION
7722-88-5	10-30	TETRASODIUM PYROPHOSPHATE	5 MG/M3	4000 MG/KG RAT ORAL 2980 MG/KG MOUSE ORAL	NOT AVAILABLE
7758-29-4	10-30	SODIUM PHOSPHATE	NOT AVAILABLE	3120 MG/KG RAT ORAL 3100 MG/KG MOUSE ORAL >4640 MG/KG RABBIT DERMAL	NOT AVAILABLE

Section 2A : ADDITIONAL INGREDIENT INFORMATION

Note: (supplier).
CAS# 497-19-8: LD50 4020 mg/kg - rat oral.
CAS# 7758-29-4: LD50 3100 mg/kg - rat oral.

Section 3 : PHYSICAL / CHEMICAL CHARACTERISTICS

Physical state: Solid

Appearance & odor: Almost odourless.
White granular powder.

Odor threshold (ppm): Not available.

Vapour pressure (mmHg): Not applicable.

Vapour density (air=1): Not applicable.

By weight: Not available.

Evaporation rate (butyl acetate = 1): Not applicable.

Boiling point (°C): Not applicable.

Freezing point (°C): Not applicable.

pH: (1% aqueous solution).
9.5

Specific gravity @ 20 °C: (water = 1).
0.85 - 1.10

Solubility in water (%): 100 - > 10% w/w

Coefficient of water\oil dist.: Not available.

VOC: None

Section 4 : FIRE AND EXPLOSION HAZARD DATA

Flammability: Not flammable.

Conditions of flammability: Surrounding fire.

Extinguishing media: Carbon dioxide, dry chemical, foam.
Water
Water fog.

Special procedures: Self-contained breathing apparatus required.
Firefighters should wear the usual protective gear.

Auto-ignition temperature: Not available.

Flash point (°C), method: None

Lower flammability limit (% vol): Not applicable.

Upper flammability limit (% vol): Not applicable.

Not available.

Sensitivity to mechanical impact: Not applicable.

Hazardous combustion products: Oxides of carbon (COx).
Hydrocarbons.

Rate of burning: Not available.

Explosive power: None

Section 5 : REACTIVITY DATA

Chemical stability:	Stable under normal conditions.
Conditions of instability:	None known.
Hazardous polymerization:	Will not occur.
Incompatible substances:	Strong acids. Strong oxidizers.
Hazardous decomposition products:	See hazardous combustion products.

Section 6 : HEALTH HAZARD DATA

Route of entry:	Skin contact, eye contact, inhalation and ingestion.
<u>Effects of Acute Exposure</u>	
Eye contact:	May cause irritation.
Skin contact:	Prolonged contact may cause irritation.
Inhalation:	Airborne particles may cause irritation.
Ingestion:	May cause vomiting and diarrhea. May cause abdominal pain. May cause gastric distress.
Effects of chronic exposure:	Contains an ingredient which may be corrosive.
LD50 of product, species & route:	> 5000 mg/kg rat oral.
LC50 of product, species & route:	Not available for mixture, see the ingredients section.
Exposure limit of material:	Not available for mixture, see the ingredients section.
Sensitization to product:	Not available.
Carcinogenic effects:	Not listed as a carcinogen.
Reproductive effects:	Not available.
Teratogenicity:	Not available.
Mutagenicity:	Not available.
Synergistic materials:	Not available.
Medical conditions aggravated by exposure:	Not available.
<u>First Aid</u>	
Skin contact:	Remove contaminated clothing. Wash thoroughly with soap and water. Seek medical attention if irritation persists.
Eye contact:	Check for and remove contact lenses. Flush eyes with clear, running water for 15 minutes while holding eyelids open: if irritation persists, consult a physician.
Inhalation:	Remove victim to fresh air. Seek medical attention if symptoms persist.
Ingestion:	Dilute with two glasses of water. Never give anything by mouth to an unconscious person. Do not induce vomiting, seek immediate medical attention.

Section 7 : PRECAUTIONS FOR SAFE HANDLING AND USE

Leak / Spill: Contain the spill.
Recover uncontaminated material for re-use.
Wear appropriate protective equipment.
Contaminated material should be swept or shoveled into appropriate waste container for disposal.

Waste disposal: In accordance with municipal, provincial and federal regulations.

Handling procedures and equipment: Protect against physical damage.
Avoid breathing dust.
Wash thoroughly after handling.
Keep out of reach of children.
Avoid contact with skin, eyes and clothing.
Launder contaminated clothing prior to reuse.

Storage requirements: Keep containers closed when not in use.
Store away from strong acids or oxidizers.
Store in a cool, dry and well ventilated area.

Section 8 : CONTROL MEASURES

Precautionary Measures

Gloves / Type:

Neoprene or rubber gloves.

Respiratory / Type:

If exposure limit is exceeded, wear a NIOSH approved respirator.

Eye / Type:

Safety glasses with side-shields.

Footwear / Type: Safety shoes per local regulations.

Clothing / Type: As required to prevent skin contact.

Other / Type: Eye wash capability should be in close proximity.

Ventilation requirements: Local exhaust at points of emission.

SIGMA-ALDRICH

Material Safety Data Sheet

Version 3.0
Revision Date 12/29/2008
Print Date 06/16/2009

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Bentonite

Product Number : 285234
Brand : Sigma-Aldrich

Company : Sigma-Aldrich Canada, Ltd
2149 Winston Park Drive
OAKVILLE ON L6H 6J8
CANADA
Telephone : +1 9058299500
Fax : +1 9058299292
Emergency Phone # : 800-424-9300

2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : Montmorillonite

Formula : H2Al2O6Si
Molecular Weight : 180.1 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Bentonite a colloidal clay. consist primarily of montmorillonite			
1302-78-9	215-108-5	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

Target Organs

Lungs

WHMIS Classification
Not WHMIS controlled. Not WHMIS controlled.

HMIS Classification
Health Hazard: 0
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

Potential Health Effects

Inhalation May be harmful if inhaled. May cause respiratory tract irritation.
Skin May be harmful if absorbed through skin. May cause skin irritation.
Eyes May cause eye irritation.
Ingestion May be harmful if swallowed.

4. FIRST AID MEASURES

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration

In case of skin contact
Wash off with soap and plenty of water.

In case of eye contact
Flush eyes with water as a precaution.

If swallowed
Never give anything by mouth to an unconscious person. Rinse mouth with water.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	not applicable
Ignition temperature	no data available

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Avoid dust formation.

Environmental precautions
Do not let product enter drains.

Methods for cleaning up
Sweep up and shovel. Keep in suitable, closed containers for disposal.

7. HANDLING AND STORAGE

Handling
Provide appropriate exhaust ventilation at places where dust is formed. Normal measures for preventive fire protection.

Storage
Keep container tightly closed in a dry and well-ventilated place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Contains no substances with occupational exposure limit values.

Personal protective equipment

Respiratory protection
Respiratory protection is not required. Where protection from nuisance levels of dusts are desired, use type N95 (US) or type P1 (EN 143) dust masks. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
For prolonged or repeated contact use protective gloves.

Eye protection
Safety glasses

Hygiene measures
General industrial hygiene practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	granules
Colour	grey, beige

Safety data

pH	6.0 - 9.0
Melting point	no data available
Boiling point	no data available
Flash point	not applicable
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Density	2.400 g/cm3
Water solubility	no data available

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions.

Materials to avoid
Strong acids

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - Aluminum oxide, silicon oxides

11. TOXICOLOGICAL INFORMATION

Acute toxicity

LD50 Intravenous - rat - 35 mg/kg
Remarks: Lungs, Thorax, or Respiration:Acute pulmonary edema.

Irritation and corrosion

no data available

Sensitisation

no data available

Chronic exposure

Carcinogenicity - mouse - Oral
Tumorigenic:Equivocal tumorigenic agent by RTECS criteria. Liver:Tumors.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

Signs and Symptoms of Exposure

Lung irritation, Asthma

Potential Health Effects

Inhalation	May be harmful if inhaled. May cause respiratory tract irritation.
Skin	May be harmful if absorbed through skin. May cause skin irritation.
Eyes	May cause eye irritation.
Ingestion	May be harmful if swallowed.
Target Organs	Lungs,

Additional Information

RTECS: CT9450000

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish	LC50 - Oncorhynchus mykiss (rainbow trout) - 19,000 mg/l - 96 h

Further information on ecology

no data available

13. DISPOSAL CONSIDERATIONS

Product

Observe all federal, state, and local environmental regulations.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

Not dangerous goods

IMDG

Not dangerous goods

IATA

Not dangerous goods

15. REGULATORY INFORMATION

DSL Status

All components of this product are on the Canadian DSL list.

WHMIS Classification

Not WHMIS controlled. Not WHMIS controlled.

16. OTHER INFORMATION

Further information

AIR LIQUIDE

MATERIAL SAFETY DATA SHEET

Prepared to U.S. OSHA, CMA, ANSI and Canadian WHMIS Standards

1. PRODUCT IDENTIFICATION

CHEMICAL NAME; CLASS: NONFLAMMABLE GAS MIXTURE

Containing One or More of the Following Components in a Nitrogen Balance Gas:
Oxygen 0-23.5%; Isobutylene, 0.0005-0.9%

SYNONYMS: Not Applicable **CHEMICAL FAMILY NAME:** Not Applicable **FORMULA:** Not Applicable

Document Number: 50054

Note: The Material Safety Data Sheet is for this gas mixture supplied in cylinders with 33 cubic feet (935 liters) or less gas capacity (DOT - 39 cylinders). This MSDS has been developed for various gas mixtures with the composition of components within the ranges listed in Section 2 (Composition and Information on Ingredients). Refer to the product label for information on the actual composition of the product.

PRODUCT USE:	Calibration of Monitoring and Research Equipment
U.S. SUPPLIER/MANUFACTURER'S NAME:	CALGAZ
ADDRESS:	821 Chesapeake Drive Cambridge, MD 21613
BUSINESS PHONE:	1-410-228-6400 (8 a.m. to 5 p.m. U.S. EST)
General MSDS Information**:**	1-713-868-0440
Fax on Demand:	1-800-231-1366
EMERGENCY PHONE:	
Chemtrec: United States/Canada/Puerto Rico:	1-800-424-9300 [24-hours]
Chemtrec International:	1-703-527-3887 [24-hours]

2. COMPOSITION and INFORMATION ON INGREDIENTS

CHEMICAL NAME	CAS #	mole %	EXPOSURE LIMITS IN AIR					
			ACGIH-TLV		OSHA-PEL		NIOSH	OTHER
			TWA	STEL	TWA	STEL	IDLH	
			ppm	ppm	ppm	ppm	ppm	ppm
Isobutylene	115-11-7	0.0005-0.9%	There are no specific exposure limits for Isobutylene.					
Oxygen	7782-44-7	0-23.5%	There are no specific exposure limits for Oxygen.					
Nitrogen	7727-37-9	Balance	There are no specific exposure limits for Nitrogen. Nitrogen is a simple asphyxiant (SA). Oxygen levels should be maintained above 19.5%.					

NE = Not Established. See Section 16 for Definitions of Terms Used.

NOTE (1): ALL WHMIS required information is included in appropriate sections based on the ANSI Z400.1-1998 format. This gas mixture has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

3. HAZARD IDENTIFICATION

EMERGENCY OVERVIEW: This is a colorless, odorless gas mixture. Releases of this gas mixture may produce oxygen-deficient atmospheres (especially in confined spaces or other poorly-ventilated environments); individuals in such atmospheres may be asphyxiated. Isobutylene, a component of this gas mixture, may cause drowsiness and other central nervous system effects in high concentrations; however, due to its low concentration in this gas mixture, this is unlikely to occur.

SYMPTOMS OF OVER-EXPOSURE BY ROUTE OF EXPOSURE: The most significant route of over-exposure for this gas mixture is by inhalation.

INHALATION: Due to the small size of an individual cylinder of this gas mixture, no unusual health effects from over-exposure to the product are anticipated under routine circumstances of use. The chief health hazard associated with this gas mixture is when this gas mixture contains less than 19.5% Oxygen and is released in a small, poorly-ventilated area (i.e. an enclosed or confined space). Under this circumstance, an oxygen-deficient environment may occur. Individuals breathing such an atmosphere may experience symptoms which include headaches, ringing in ears, dizziness, drowsiness, unconsciousness, nausea, vomiting, and depression of all the senses. Under some circumstances of over-exposure, death may occur. The effects associated with various levels of oxygen are as follows:

CONCENTRATION OF OXYGEN	OBSERVED EFFECT
12-16% Oxygen:	Breathing and pulse rate increase, muscular coordination slightly disturbed.
10-14% Oxygen:	Emotional upset, abnormal fatigue, disturbed respiration.
6-10% Oxygen:	Nausea, vomiting, collapse, or loss of consciousness.
Below 6%:	Convulsive movements, possible respiratory collapse, and death.

HEALTH EFFECTS OR RISKS FROM EXPOSURE: An Explanation in Lay Terms. Over-exposure to this gas mixture may cause the following health effects:

ACUTE: Due to the small size of the individual cylinder of this gas mixture, no unusual health effects from exposure to the product are anticipated under routine circumstances of use. The most significant hazard associated with this gas mixture when it contains less than 19.5% oxygen is the potential for exposure to oxygen-deficient atmospheres. Symptoms of oxygen deficiency include respiratory difficulty, ringing in ears, headaches, shortness of breath, wheezing, headache, dizziness, indigestion, nausea, unconsciousness, and death. The skin of a victim of over-exposure may have a blue color. Additionally, Isobutylene, a component of this gas mixture, may cause drowsiness or central nervous system effects in high concentrations; however, due to its low concentration in this gas mixture, this is unlikely to occur.

CHRONIC: Chronic exposure to oxygen-deficient atmospheres (below 18% oxygen in air) may affect the heart and nervous system.

TARGET ORGANS: ACUTE: Respiratory system, eyes. CHRONIC: Heart, cardiovascular system, central nervous system.

HAZARDOUS MATERIAL IDENTIFICATION SYSTEM

HEALTH HAZARD	(BLUE)	1
FLAMMABILITY HAZARD	(RED)	0
PHYSICAL HAZARD	(YELLOW)	0

PROTECTIVE EQUIPMENT

EYES	RESPIRATORY	HANDS	BODY
See Section 8			

For Routine Industrial Use and Handling Applications

4. FIRST-AID MEASURES

RESCUERS SHOULD NOT ATTEMPT TO RETRIEVE VICTIMS OF EXPOSURE TO THIS GAS MIXTURE WITHOUT ADEQUATE PERSONAL PROTECTIVE EQUIPMENT. At a minimum, Self-Contained Breathing Apparatus must be worn.

No unusual health effects are anticipated after exposure to this gas mixture, due to the small cylinder size. If any adverse symptom develops after over-exposure to this gas mixture, remove victim(s) to fresh air as quickly as possible. Only trained personnel should administer supplemental oxygen and/or cardio-pulmonary resuscitation if necessary. Victim(s) who experience any adverse effect after over-exposure to this gas mixture must be taken for medical attention. Rescuers should be taken for medical attention if necessary. Take a copy of the label and the MSDS to physician or other health professional with victim(s).

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Acute or chronic respiratory conditions may be aggravated by over-exposure to this gas mixture.

RECOMMENDATIONS TO PHYSICIANS: Administer oxygen, if necessary; treat symptoms and eliminate exposure.

5. FIRE-FIGHTING MEASURES

FLASH POINT: Not applicable.

AUTOIGNITION TEMPERATURE: Not applicable.

FLAMMABLE LIMITS (in air by volume, %):

Lower (LEL): Not applicable.
Upper (UEL): Not applicable.

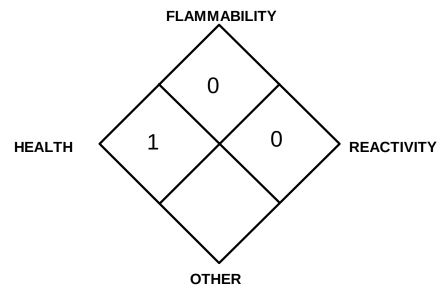
FIRE EXTINGUISHING MATERIALS: Non-flammable gas mixture. Use extinguishing media appropriate for surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARDS: This gas mixture is not flammable; however, containers, when involved in fire, may rupture or burst in the heat of the fire.

Explosion Sensitivity to Mechanical Impact: Not sensitive.
Explosion Sensitivity to Static Discharge: Not sensitive.

SPECIAL FIRE-FIGHTING PROCEDURES: Structural firefighters must wear Self-Contained Breathing Apparatus and full protective equipment.

NFPA RATING



6. ACCIDENTAL RELEASE MEASURES

LEAK RESPONSE: Due to the small size and content of the cylinder, an accidental release of this gas mixture presents significantly less risk of an oxygen deficient environment and other safety hazards than a similar release from a larger cylinder. However, as with any chemical release, extreme caution must be used during emergency response procedures. In the event of a release in which the atmosphere is unknown, and in which other chemicals are potentially involved, evacuate immediate area. Such releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a leak, clear the affected area, protect people, and respond with trained personnel.

Allow the gas mixture to dissipate. If necessary, monitor the surrounding area (and the original area of the release) for oxygen. Oxygen levels must be above 19.5% before non-emergency personnel are allowed to re-enter area.

If leaking incidentally from the cylinder, contact your supplier.

7. HANDLING and USE

WORK PRACTICES AND HYGIENE PRACTICES: Be aware of any signs of dizziness or fatigue; exposures to fatal concentrations of this gas mixture could occur without any significant warning symptoms, due to oxygen deficiency. Do not attempt to repair, adjust, or in any other way modify the cylinders containing this gas mixture. If there is a malfunction or another type of operational problem, contact nearest distributor immediately.

STORAGE AND HANDLING PRACTICES: Cylinders should be firmly secured to prevent falling or being knocked-over. Cylinders must be protected from the environment, and preferably kept at room temperature (approximately 21°C [70°F]). Cylinders should be stored in dry, well-ventilated areas, away from sources of heat, ignition, and direct sunlight. Protect cylinders against physical damage. Full and empty cylinders should be segregated. Use a first-in, first-out inventory system to prevent full containers from being stored for long periods of time. These cylinders are not refillable. **WARNING! Do not refill DOT 39 cylinders. To do so may cause personal injury or property damage.**

SPECIAL PRECAUTIONS FOR HANDLING GAS CYLINDERS: WARNING! Compressed gases can present significant safety hazards. During cylinder use, use equipment designed for these specific cylinders. Ensure all lines and equipment are rated for proper service pressure.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use product in areas where adequate ventilation is provided.

8. EXPOSURE CONTROLS - PERSONAL PROTECTION

VENTILATION AND ENGINEERING CONTROLS: No special ventilation systems or engineering controls are needed under normal circumstances of use. As with all chemicals, use this gas mixture in well-ventilated areas. If this gas mixture is used in a poorly-ventilated area, install automatic monitoring equipment to detect the levels of Nitrous Oxide and Oxygen.

RESPIRATORY PROTECTION: No special respiratory protection is required under normal circumstances of use. Maintain oxygen levels above 19.5% in the workplace. Use supplied air respiratory protection when oxygen levels are below 19.5%, or during emergency response to a release of this gas mixture. During an emergency situation, before entering the area, check the concentration of Methane and Oxygen. If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134), applicable U.S. State regulations, or the Canadian CSA Standard Z94.4-93 and applicable standards of Canadian Provinces. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use of a full-facepiece pressure/demand SCBA or a full facepiece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998).

EYE PROTECTION: Safety glasses. If necessary, refer to U.S. OSHA 29 CFR 1910.133 or appropriate Canadian Standards.

HAND PROTECTION: Wear leather gloves when handling cylinders. Chemically resistant gloves should be worn when using this gas mixture. If necessary, refer to U.S. OSHA 29 CFR 1910.138 or appropriate Standards of Canada.

BODY PROTECTION: No special protection is needed under normal circumstances of use. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

9. PHYSICAL and CHEMICAL PROPERTIES

The following information is for Nitrogen, a main component of this gas mixture.

GAS DENSITY @ 32°F (0°C) and 1 atm: 0.072 lbs/ ft^3 (1.153 kg/m^3)
BOILING POINT: -195.8°C (-320.4°F)
FREEZING/MELTING POINT @ 10 psig: -210°C (-345.8°F)
SPECIFIC GRAVITY (air = 1) @ 70°F (21.1°C): 0.906
pH: Not applicable.
SOLUBILITY IN WATER vol/vol @ 32°F (0°C) and 1 atm: 0.023
MOLECULAR WEIGHT: 28.01
EVAPORATION RATE (nBuAc = 1): Not applicable.
EXPANSION RATIO: Not applicable.
ODOR THRESHOLD: Not applicable.
SPECIFIC VOLUME (ft^3/lb): 13.8
VAPOR PRESSURE @ 70°F (21.1°C) psig: Not applicable.
COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

The following information is for Oxygen, a main component of this gas mixture.

GAS DENSITY @ 32°F (0°C) and 1 atm: 0.083 lb/cu ft (1.326 kg/m^3)
FREEZING/MELTING POINT @ 10 psig: -218.8°C (-361.8°F)
BOILING POINT: -183.0°C (-297.4°F)
SPECIFIC GRAVITY (air = 1) @ 70°F (21.1°C): 1.105
pH: Not applicable.
SOLUBILITY IN WATER vol/vol at 32°F (0°C) and 1 atm: 0.04.91
MOLECULAR WEIGHT: 32.00
EVAPORATION RATE (nBuAc = 1): Not applicable.
EXPANSION RATIO: Not applicable.
ODOR THRESHOLD: Not applicable.
VOLUME (ft^3/lb): 12.1
VAPOR PRESSURE @ 70°F (21.1°C) psig: Not applicable.
COEFFICIENT WATER/OIL DISTRIBUTION: Not applicable.

The following information is for the gas mixture.

APPEARANCE AND COLOR: This is a colorless, odorless gas mixture.

HOW TO DETECT THIS SUBSTANCE (warning properties): There are no unusual warning properties associated with a release of this gas mixture. In terms of leak detection, fittings and joints can be painted with a soap solution to detect leaks, which will be indicated by a bubble formation.

10. STABILITY and REACTIVITY

STABILITY: Normally stable in gaseous state.
DECOMPOSITION PRODUCTS: The thermal decomposition products of Isobutylene include carbon oxides. The other components of this gas mixture do not decompose, per se, but can react with other compounds in the heat of a fire.
MATERIALS WITH WHICH SUBSTANCE IS INCOMPATIBLE: Titanium will burn in the Nitrogen component of this gas mixture. Lithium reacts slowly with Nitrogen at ambient temperatures. The Isobutylene component of this gas mixture is also incompatible with strong oxidizers (i.e. chlorine, bromine pentafluoride, oxygen difluoride, and nitrogen trifluoride).
HAZARDOUS POLYMERIZATION: Will not occur.
CONDITIONS TO AVOID: Contact with incompatible materials. Cylinders exposed to high temperatures or direct flame can rupture or burst.

11. TOXICOLOGICAL INFORMATION

TOXICITY DATA: The following toxicology data are available for the components of this gas mixture:

ISOBUTYLENE:
LC_{50} (inhalation, rat) = 620,000 mg/kg/4 hours
LC_{50} (inhalation, mouse) = 415,000 mg/kg
NITROGEN:
There are no specific toxicology data for Nitrogen. Nitrogen is a simple asphyxiant, which acts to displace oxygen in the environment.

SUSPECTED CANCER AGENT: The components of this gas mixture are not found on the following lists: FEDERAL OSHA Z LIST, NTP, CAL/OSHA, and IARC; therefore, they are not considered to be, nor suspected to be, cancer-causing agents by these agencies.
IRRITANCY OF PRODUCT: Contact with rapidly expanding gases can be irritating to exposed skin and eyes.
SENSITIZATION TO THE PRODUCT: The components of this gas mixture are not known to cause human skin or respiratory sensitization.
REPRODUCTIVE TOXICITY INFORMATION: Listed below is information concerning the effects of this gas mixture and its components on the human reproductive system.
Mutagenicity: No mutagenicity effects have been described for the components in this gas mixture.
Embryotoxcity: No embryotoxic effects have been described for the components in this gas mixture.
Teratogenicity: No teratogenicity effects have been described for the components in this gas mixture.
Reproductive Toxicity: No reproductive toxicity effects have been described for the components in gas mixture.
A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generation lines. An embryotoxin is a chemical which causes damage to a developing embryo (i.e. within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing fetus, but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.
BIOLOGICAL EXPOSURE INDICES (BEIs): Currently, Biological Exposure Indices (BEIs) are not applicable for the components of this gas mixture.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL STABILITY: The components of this gas mixture occur naturally in the atmosphere. The gas will be dissipated rapidly in well-ventilated areas. The following environmental data are applicable to the components of this gas mixture.
OXYGEN: Water Solubility = 1 volume Oxygen/32 volumes water at 20°C. Log K_{ow} = -0.65
NITROGEN: Water Solubility = 2.4 volumes Nitrogen/100 volumes water at 0°C. 1.6 volumes Nitrogen/100 volumes water at 20°C.
EFFECT OF MATERIAL ON PLANTS or ANIMALS: No evidence is currently available on the effects of this gas mixture on plant and animal life.
EFFECT OF CHEMICAL ON AQUATIC LIFE: No evidence is currently available on the effects of this gas mixture on aquatic life.

13. DISPOSAL CONSIDERATIONS

PREPARING WASTES FOR DISPOSAL PREPARING WASTES FOR DISPOSAL: Waste disposal must be in accordance with appropriate Federal, State, and local regulations. Cylinders with undesired residual product may be safely vented outdoors with the proper regulator. For further information, refer to Section 16 (Other Information).

14. TRANSPORTATION INFORMATION

THIS GAS MIXTURE IS HAZARDOUS AS DEFINED BY 49 CFR 172.101 BY THE U.S. DEPARTMENT OF TRANSPORTATION.
PROPER SHIPPING NAME: Compressed gases, n.o.s. (*Oxygen, Nitrogen)*or the gas component with the next highest concentration next to Nitrogen.
HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)
UN IDENTIFICATION NUMBER: UN 1956
PACKING GROUP: Not applicable.
DOT LABEL(S) REQUIRED: Class 2.2 (Non-Flammable Gas)
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126
MARINE POLLUTANT: The components of this gas mixture are not classified by the DOT as Marine Pollutants (as defined by 49 CFR 172.101, Appendix B).
SPECIAL SHIPPING INFORMATION: Cylinders should be transported in a secure position, in a well-ventilated vehicle. The transportation of compressed gas cylinders in automobiles or in closed-body vehicles can present serious safety hazards. If transporting these cylinders in vehicles, ensure these cylinders are not exposed to extremely high temperatures (as may occur in an enclosed vehicle on a hot day). Additionally, the vehicle should be well-ventilated during transportation.
Note: DOT 39 Cylinders ship in a strong outer carton (outer package). Pertinent shipping information goes on the outside of the outer package. DOT 39 Cylinders do not have transportation information on the cylinder itself.
TRANSPORT CANADA TRANSPORTATION OF DANGEROUS GOODS REGULATIONS: This gas is considered as Dangerous Goods, per regulations of Transport Canada.
PROPER SHIPPING NAME: Compressed gases, n.o.s. (*Oxygen, Nitrogen)*or the gas component with the next highest concentration next to Nitrogen.
HAZARD CLASS NUMBER and DESCRIPTION: 2.2 (Non-Flammable Gas)
UN IDENTIFICATION NUMBER: UN 1956
PACKING GROUP: Not Applicable
HAZARD LABEL: Class 2.2 (Non-Flammable Gas)
SPECIAL PROVISIONS: None
EXPLOSIVE LIMIT AND LIMITED QUANTITY INDEX: 0.12
ERAP INDEX: None
PASSENGER CARRYING SHIP INDEX: None
PASSENGER CARRYING ROAD VEHICLE OR PASSENGER CARRYING RAILWAY VEHICLE INDEX: 75
NORTH AMERICAN EMERGENCY RESPONSE GUIDEBOOK NUMBER (2000): 126
NOTE: Shipment of compressed gas cylinders via Public Passenger Road Vehicle is a violation of Canadian law (Transport Canada Transportation of Dangerous Goods Act, 1992).

15. REGULATORY INFORMATION

ADDITIONAL U.S. REGULATIONS:
U.S. SARA REPORTING REQUIREMENTS: The components of this gas mixture are not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.
U.S. SARA THRESHOLD PLANNING QUANTITY: There are no specific Threshold Planning Quantities for this gas mixture. The default Federal MSDS submission and inventory requirement filing threshold of 10,000 lb (4,540 kg) may apply, per 40 CFR 370.20.
U.S. TSCA INVENTORY STATUS: The components of this gas mixture are listed on the TSCA Inventory.
U.S. CERCLA REPORTABLE QUANTITY (RQ): Not applicable.
OTHER U.S. FEDERAL REGULATIONS:
- No component of this gas mixture is subject to the requirements of CFR 29 1910.1000 (under the 1989 PELs).
- Isobutylene is subject to the reporting requirements of Section 112(r) of the Clean Air Act. The Threshold Quantity for this gas is 10,000 pounds.
- The regulations of the Process Safety Management of Highly Hazardous Chemicals are not applicable (29 CFR 1910.119).
- This gas mixture does not contain any Class I or Class II ozone depleting chemicals (40 CFR Part 82).

- Nitrogen and Oxygen are not listed as Regulated Substances, per 40 CFR, Part 68, of the Risk Management for Chemical Releases. Isobutylene is listed under this regulation in Table 3 as Regulated Substances (Flammable Substances), in quantities of 10,000 lbs (4,554 kg) or greater.

U.S. STATE REGULATORY INFORMATION: The components of this gas mixture are covered under the following specific State regulations:

Alaska - Designated Toxic and Hazardous Substances: No.
California - Permissible Exposure Limits for Chemical Contaminants: Nitrogen.
Florida - Substance List: Oxygen, Isobutylene.
Illinois - Toxic Substance List: No.
Kansas - Section 302/313 List: No.
Massachusetts - Substance List: Oxygen, Isobutylene.
Michigan - Critical Materials Register: No.
Minnesota - List of Hazardous Substances: No.
Missouri - Employer Information/Toxic Substance List: No.
New Jersey - Right to Know Hazardous Substance List: Oxygen, Nitrogen, Isobutylene.
North Dakota - List of Hazardous Chemicals, Reportable Quantities: No.
Pennsylvania - Hazardous Substance List: Oxygen, Nitrogen, Isobutylene.
Rhode Island - Hazardous Substance List: Oxygen, Nitrogen.
Texas - Hazardous Substance List: No.
West Virginia - Hazardous Substance List: No.
Wisconsin - Toxic and Hazardous Substances: : No.

CALIFORNIA SAFE DRINKING WATER AND TOXIC ENFORCEMENT ACT (PROPOSITION 65): No component of this gas mixture is on the California Proposition 65 lists.

ADDITIONAL CANADIAN REGULATIONS:
CANADIAN DSL/NDSL INVENTORY STATUS: The components of this gas mixture are listed on the DSL Inventory.
CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA) PRIORITIES SUBSTANCES LISTS: The components of this gas mixture are not on the CEPA Priorities Substances Lists.
CANADIAN WHMIS REGULATIONS: This gas mixture is categorized as a Controlled Product, Hazard Class A, as per the Controlled Product Regulations.

16. OTHER INFORMATION

INFORMATION ABOUT DOT-39 NRC (Non-Refillable Cylinder) PRODUCTS

DOT 39 cylinders ship as hazardous materials when full. Once the cylinders are relieved of pressure (empty) they are not considered hazardous material or waste. Residual gas in this type of cylinder is not an issue because toxic gas mixtures are prohibited. Calibration gas mixtures typically packaged in these cylinders are Nonflammable n.o.s., UN 1956. A small percentage of calibration gases packaged in DOT 39 cylinders are flammable or oxidizing gas mixtures.

For disposal of used DOT-39 cylinders, it is acceptable to place them in a landfill if local laws permit. Their disposal is no different than that employed with other DOT containers such as spray paint cans, household aerosols, or disposable cylinders of propane (for camping, torch etc.). When feasible, we recommended recycling for scrap metal content. CALGAZ will do this for any customer that wishes to return cylinders to us prepaid. All that is required is a phone call to make arrangements so we may anticipate arrival. Scrapping cylinders involves some preparation before the metal dealer may accept them. We perform this operation as a service to valued customers who want to participate.

MIXTURES: When two or more gases or liquefied gases are mixed, their hazardous properties may combine to create additional, unexpected hazards. Obtain and evaluate the safety information for each component before you produce the mixture. Consult an Industrial Hygienist or other trained person when you make your safety evaluation of the end product. Remember, gases and liquids have properties which can cause serious injury or death.

Further information about the handling of compressed gases can be found in the following pamphlets published by: Compressed Gas Association Inc. (CGA), 1725 Jefferson Davis Highway, Suite 1004, Arlington, VA 22202-4102. Telephone: (703) 412-0900.

P-1 *"Safe Handling of Compressed Gases in Containers"*
AV-1 *"Safe Handling and Storage of Compressed Gases"*
"Handbook of Compressed Gases"

AIR LIQUIDE™

Fisher Scientific

Material Safety Data Sheet

Hydrochloric acid

MSDS# 94460

Section 1 - Chemical Product and Company Identification

MSDS Name:	Hydrochloric acid
Catalog Numbers:	SA5-5, SA50-1, SA50-20, SA50-4, SA52-20, SA52-500, SA54-1, SA54-10, SA54-20, SA54-4, SA60-1, SA62-1
Synonyms:	Chlorohydric acid; Hydrogen chloride; Muriatic acid; Spirits of salt; Hydrochloride.

Company Identification:	Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410
For information in the US, call:	201-796-7100
Emergency Number US:	201-796-7100
CHEMTREC Phone Number, US:	800-424-9300

Section 2 - Composition, Information on Ingredients

Risk Phrases: 34 37

CAS#:	7647-01-0
Chemical Name:	Hydrochloric acid
%:	<2.0
EINECS#:	231-595-7
Hazard Symbols:	C

Risk Phrases:

CAS#:	7732-18-5
Chemical Name:	Water
%:	>98
EINECS#:	231-791-2
Hazard Symbols:	

Text for R-phrases: see Section 16

Hazard Symbols:	None listed
Risk Phrases:	None listed

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! May cause eye, skin, and respiratory tract irritation. Target Organs: No data found.

Potential Health Effects

Eye:	May cause eye irritation.
Skin:	May cause skin irritation.
Ingestion:	May cause irritation of the digestive tract.
Inhalation:	May cause respiratory tract irritation. Exposure to the mist and vapor may erode exposed teeth.
Chronic:	Prolonged or repeated skin contact may cause dermatitis. Repeated exposure may cause erosion of teeth. Repeated exposure to low concentrations of HCl vapor or mist may cause bleeding of nose and gums. Chronic bronchitis and gastritis have also been reported.

Section 4 - First Aid Measures

Eyes:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
Skin:	In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical aid immediately. Wash clothing before reuse.
Ingestion:	If swallowed, do NOT induce vomiting. Get medical aid immediately. If victim is fully conscious, give a cupful of water. Never give anything by mouth to an unconscious person.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician:	Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Not flammable, but reacts with most metals to form flammable hydrogen gas. Use water spray to keep fire-exposed containers cool. Containers may explode when heated.
Extinguishing Media:	Substance is nonflammable; use agent most appropriate to extinguish surrounding fire.
Autoignition Temperature:	Not applicable.
Flash Point:	Not applicable.
Explosion Limits: Lower:	Not available
Explosion Limits: Upper:	Not available
NFPA Rating:	health: 1; flammability: 0; instability: 1;

Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:	Avoid runoff into storm sewers and ditches which lead to waterways. Clean up spills immediately, observing precautions in the Protective Equipment section. Provide ventilation. Cover with dry earth, dry sand, or other non-combustible material followed with plastic sheet to minimize spreading and contact with water.

Section 7 - Handling and Storage

Handling:	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Use only in a well-ventilated area. Avoid contact with eyes, skin, and clothing. Keep container tightly closed. Avoid ingestion and inhalation. Discard contaminated shoes.
Storage:	Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Do not store in metal containers. Store away from alkalies.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Hydrochloric acid	2 ppm Ceiling	50 ppm IDLH	5 ppm Ceiling; 7 mg/m3 Ceiling
Water	none listed	none listed	none listed

OSHA Vacated PELs: Hydrochloric acid: None listed Water: None listed

Engineering Controls:

Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Personal Protective Equipment

Eyes:	Wear appropriate protective eyeglasses or chemical safety goggles as described by OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard EN166.

Skin:	Wear neoprene or polyvinyl chloride gloves to prevent exposure.
Clothing:	Wear appropriate protective clothing to prevent skin exposure.
Respirators:	A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State:	Clear liquid
Color:	colorless to slight yellow
Odor:	Not available
pH:	0.10 (1.0N soln)
Vapor Pressure:	Not available
Vapor Density:	Not available
Evaporation Rate:	Not available
Viscosity:	Not available
Boiling Point:	Not available
Freezing/Melting Point:	Not available
Decomposition Temperature:	Not available
Solubility in water:	Soluble
Specific Gravity/Density:	Not available.
Molecular Formula:	HCl
Molecular Weight:	36.46

Section 10 - Stability and Reactivity

Chemical Stability:	Stable under normal temperatures and pressures.
Conditions to Avoid:	Excess heat.
Incompatibilities with Other Materials	Bases.
Hazardous Decomposition Products	Hydrogen chloride.
Hazardous Polymerization	Will not occur.

Section 11 - Toxicological Information

RTECS#:	CAS# 7647-01-0: MW4025000 MW4031000 CAS# 7732-18-5: ZC0110000
LD50/LC50:	RTECS: **CAS# 7647-01-0:** Inhalation, mouse: LC50 = 1108 ppm/1H; Inhalation, mouse: LC50 = 20487 mg/m3/5M; Inhalation, mouse: LC50 = 3940 mg/m3/30M; Inhalation, mouse: LC50 = 8300 mg/m3/30M; Inhalation, rat: LC50 = 3124 ppm/1H; Inhalation, rat: LC50 = 60938 mg/m3/5M; Inhalation, rat: LC50 = 7004 mg/m3/30M; Inhalation, rat: LC50 = 45000 mg/m3/5M; Inhalation, rat: LC50 = 8300 mg/m3/30M; Oral, rabbit: LD50 = 900 mg/kg; . RTECS: **CAS# 7732-18-5:** Oral, rat: LD50 = >90 mL/kg; .
Carcinogenicity:	Hydrochloric acid - IARC: Group 3 (not classifiable) Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.
Other:	Rinsed with water test: Administration into the eye (rabbit) = 5 mg/30sec (Mild).

Section 12 - Ecological Information

Ecotoxicity:	Fish: Bluegill/Sunfish: 3.6 mg/L; 48 Hr; Lethal (unspecified) Fish: Bluegill/Sunfish: LD50; 96 Hr; pH 3.0-3.5

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: HYDROCHLORIC ACID
Hazard Class: 8
UN Number: UN1789
Packing Group: II
Canada TDG
Shipping Name: Not regulated as a hazardous material
Hazard Class:
UN Number:
Packing Group:

USA RQ: CAS# 7647-01-0: 5000 lb final RQ; 2270 kg final RQ

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols:Not available

Risk Phrases:

Safety Phrases:

S 24/25 Avoid contact with skin and eyes.

WGK (Water Danger/Protection)

CAS# 7647-01-0: 1

CAS# 7732-18-5: Not available

Canada

CAS# 7647-01-0 is listed on Canada's DSL List

CAS# 7732-18-5 is listed on Canada's DSL List

Canadian WHMIS Classifications: Not controlled.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 7647-01-0 is listed on Canada's Ingredient Disclosure List

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 7647-01-0 is listed on the TSCA Inventory.

CAS# 7732-18-5 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 12/19/2007

Revision #2 Date 7/20/2009

The information above is believed to be accurate and represents the best information currently available to us. However, we make no warranty of merchantibility or any other warranty, express or implied, with respect to such information, and we assume no liability resulting from its use. Users should make their own investigations to determine the suitability of the information for their particular purposes. In no event shall the company be liable for any claims, losses, or damages of any third party or for lost profits or any special, indirect, incidental, consequential, or exemplary damages howsoever arising, even if the company has been advised of the possibility of such damages.

SIGMA-ALDRICH

Material Safety Data Sheet

Version 3.0
Revision Date 05/12/2009
Print Date 06/23/2009

1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Nitric acid

Product Number : 258121
Brand : Sigma-Aldrich

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA
Telephone : +1 800-325-5832
Fax : +1 800-325-5052
Emergency Phone # : (314) 776-6555

2. COMPOSITION/INFORMATION ON INGREDIENTS

Formula : HNO3

CAS-No.	EC-No.	Index-No.	Concentration
Nitric acid			
7697-37-2	231-714-2	007-004-00-1	>= 90 %
Water			
7732-18-5	231-791-2	-	<= 10 %

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards
Target Organ Effect, Corrosive

Target Organs

Lungs, Teeth., Cardiovascular system.

HMIS Classification
Health Hazard: 3
Chronic Health Hazard: *
Flammability: 0
Physical hazards: 0

NFPA Rating
Health Hazard: 3
Fire: 0
Reactivity Hazard: 3
Special hazard.: OX

Potential Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	May be harmful if swallowed. Causes burns.

4. FIRST AID MEASURES

General advice
Consult a physician. Show this safety data sheet to the doctor in attendance.Move out of dangerous area.

If inhaled
If breathed in, move person into fresh air. If not breathing give artificial respiration Consult a physician.

In case of skin contact
Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

In case of eye contact
Continue rinsing eyes during transport to hospital.Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed
Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point	no data available
Ignition temperature	no data available

Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Special protective equipment for fire-fighters
Wear self contained breathing apparatus for fire fighting if necessary.

Further information
Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions
Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

Environmental precautions
Do not let product enter drains.

Methods for cleaning up
Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

Handling
Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Keep away from combustible material.

Storage
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Components with workplace control parameters

Components	CAS-No.	Value	Control parameters	Update	Basis
Nitric acid	7697-37-2	TWA	2 ppm	2007-01-01	USA. ACGIH Threshold Limit Values (TLV)
Remarks	Eye & Upper Respiratory Tract irritation Dental erosion				
		STEL	4 ppm	2007-01-01	USA. ACGIH Threshold Limit Values (TLV)
	Eye & Upper Respiratory Tract irritation Dental erosion				
		TWA	2 ppm 5 mg/m3	1989-01-19	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		STEL	4 ppm 10 mg/m3	1989-01-19	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	2 ppm 5 mg/m3	1997-08-04	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
	The value in mg/m3 is approximate.				

Personal protective equipment

Respiratory protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection
Handle with gloves.

Eye protection
Safety glasses

Skin and body protection
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Colour	colourless

Safety data

pH	< 1 at 20 °C (68 °F)
Melting point	no data available
Boiling point	100 °C (212 °F) at 1,013 hPa (760 mmHg)
Flash point	no data available
Ignition temperature	no data available
Lower explosion limit	no data available
Upper explosion limit	no data available
Vapour pressure	11 hPa (8 mmHg) at 20 °C (68 °F)
Density	1.4 g/cm3
Water solubility	completely soluble

10. STABILITY AND REACTIVITY

Storage stability
Stable under recommended storage conditions. Stable under recommended storage conditions.

Conditions to avoid
May discolor on exposure to air and light.

Materials to avoid
Alkali metals, Organic materials, Acetic anhydride, Acetonitrile, Alcohols, Acrylonitrile

Hazardous decomposition products
Hazardous decomposition products formed under fire conditions. - nitrogen oxides (NOx)

11. TOXICOLOGICAL INFORMATION

Acute toxicity

no data available

Irritation and corrosion

Skin - rabbit - Extremely corrosive and destructive to tissue. - Draize Test

Sensitisation

no data available

Chronic exposure

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as

a known or anticipated carcinogen by NTP.

OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Developmental Toxicity - rat - Oral
Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus).

Reproductive toxicity - rat - Oral
Effects on Newborn: Biochemical and metabolic.

Signs and Symptoms of Exposure

burning sensation, Cough, wheezing, laryngitis, Shortness of breath, spasm, inflammation and edema of the larynx, spasm, inflammation and edema of the bronchi, pneumonitis, pulmonary edema, Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin.

Potential Health Effects

Inhalation	May be harmful if inhaled. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract.
Skin	May be harmful if absorbed through skin. Causes skin burns.
Eyes	Causes eye burns.
Ingestion	May be harmful if swallowed. Causes burns.
Target Organs	Lungs, Teeth., Cardiovascular system.,

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

no data available

Ecotoxicity effects

Toxicity to fish	LC50 - Asterias rubens - 100 - 330 mg/l - 48 h

Further information on ecology

May be harmful to aquatic organisms due to the shift of the pH.

13. DISPOSAL CONSIDERATIONS

Product
Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

Contaminated packaging
Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)
UN-Number: 2031 Class: 8 (5.1) Packing group: I
Proper shipping name: Nitric acid
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG
UN-Number: 2031 Class: 8 (5.1) Packing group: I EMS-No: F-A, S-Q
Proper shipping name: NITRIC ACID
Marine pollutant: No

IATA
UN-Number: 2031 Class: 8 (5.1) Packing group: I
Proper shipping name: Nitric acid
IATA Passenger: Not permitted for transport

15. REGULATORY INFORMATION

OSHA Hazards
Target Organ Effect, Corrosive

DSL Status
All components of this product are on the Canadian DSL list.

SARA 302 Components

	CAS-No.	Revision Date
Nitric acid	7697-37-2	2007-07-01

SARA 313 Components

	CAS-No.	Revision Date
Nitric acid	7697-37-2	2007-07-01

SARA 311/312 Hazards
Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

	CAS-No.	Revision Date
Nitric acid	7697-37-2	2007-07-01

Pennsylvania Right To Know Components

	CAS-No.	Revision Date
Water	7732-18-5	
Nitric acid	7697-37-2	2007-07-01

New Jersey Right To Know Components

	CAS-No.	Revision Date
Water	7732-18-5	
Nitric acid	7697-37-2	2007-07-01

California Prop. 65 Components
This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further information

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

Fisher Scientific

Material Safety Data Sheet

Isopropyl alcohol 70% in water

MSDS# 89530

Section 1 - Chemical Product and Company Identification

MSDS Name:	Isopropyl alcohol 70% in water
Catalog Numbers:	AC613190040, AC613245000, A459-1, A459-20, A459-4, A459-500, NC9761180
Synonyms:	Isopropanol; Dimethylcarbinol; sec-Propyl alcohol; Rubbing alcohol; Petrohol; 1-Methylethanol; 1-Methylethyl alcohol; 2-Hydroxypropane; 2-Propyl alcohol; Isopropyl alcohol; Propan-2-ol; IPA; 2-Propanol.
Company Identification:	Fisher Scientific One Reagent Lane Fair Lawn, NJ 07410
For information in the US, call:	201-796-7100
Emergency Number US:	201-796-7100
CHEMTREC Phone Number, US:	800-424-9300

Section 2 - Composition, Information on Ingredients

Risk Phrases: 11 36 67

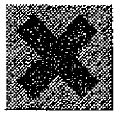
CAS#:	67-63-0
Chemical Name:	Isopropyl alcohol
%:	70
EINECS#:	200-661-7
Hazard Symbols:	F XI

Risk Phrases:

CAS#:	7732-18-5
Chemical Name:	Water
%:	30
EINECS#:	231-791-2
Hazard Symbols:	

Text for R-phrases: see Section 16

Hazard Symbols: XI F



Risk Phrases: 11 36 67

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Warning! Flammable liquid and vapor. Prolonged or repeated contact causes defatting of the skin with irritation, dryness, and cracking. May cause central nervous system depression. Aspiration hazard if swallowed. Can enter lungs and cause damage. Breathing vapors may cause drowsiness and dizziness. Causes eye and respiratory tract irritation. Target Organs: Central nervous system, respiratory system, eyes, skin.

Potential Health Effects

Eye:	Produces irritation, characterized by a burning sensation, redness, tearing, inflammation, and possible corneal injury. May cause transient corneal injury.
Skin:	May cause irritation with pain and stinging, especially if the skin is abraded. Isopropanol has a low potential to cause allergic skin reactions; however, rare cases of allergic contact dermatitis have been reported. May be absorbed through intact skin.
Ingestion:	Causes gastrointestinal irritation with nausea, vomiting and diarrhea. May cause kidney damage. May cause central nervous system depression, characterized by excitement, followed by headache, dizziness, drowsiness, and nausea. Advanced stages may cause collapse, unconsciousness, coma and possible death due to respiratory failure. Aspiration of material into the lungs may cause chemical pneumonitis, which may be fatal.
Inhalation:	Inhalation of high concentrations may cause central nervous system effects characterized by nausea, headache, dizziness, unconsciousness and coma. May cause narcotic effects in high concentration. Causes upper respiratory tract irritation. Inhalation of vapors may cause drowsiness and dizziness.
Chronic:	Prolonged or repeated skin contact may cause defatting and dermatitis.

Section 4 - First Aid Measures

Eyes:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Get medical aid.
Skin:	In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
Ingestion:	Potential for aspiration if swallowed. Get medical aid immediately. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. If vomiting occurs naturally, have victim lean forward.
Inhalation:	If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
Notes to Physician:	Urine acetone test may be helpful in diagnosis. Hemodialysis should be considered in severe intoxication. Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information:	As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Vapors may form an explosive mixture with air. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.
Extinguishing Media:	Water may be ineffective. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray. For small fires, use carbon dioxide, dry chemical, dry sand, or alcohol-resistant foam. Cool containers with flooding quantities of water until well after fire is out.
Autoignition Temperature:	399 deg C (750.20 deg F)
Flash Point:	18 deg C (64.40 deg F)
Explosion Limits: Lower:	2.0 vol %
Explosion Limits: Upper:	12.7 @ 93.3°C
NFPA Rating:	health: 1; flammability: 3; instability: 0;

Section 6 - Accidental Release Measures

General Information:	Use proper personal protective equipment as indicated in Section 8.
Spills/Leaks:	Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Use water spray to dilute spill to a non-flammable mixture. Clean up spills immediately, observing precautions in the Protective Equipment section. Remove all sources of ignition. Use a spark-proof tool. Provide ventilation. A vapor suppressing foam may be used to reduce vapors.

Section 7 - Handling and Storage

Handling:	Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous.

Take precautionary measures against static discharges. Keep container tightly closed. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing vapor or mist.

Storage: Keep away from sources of ignition. Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances.

Section 8 - Exposure Controls, Personal Protection

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Isopropyl alcohol	200 ppm; 400 ppm STEL	400 ppm TWA; 980 mg/m3 TWA 2000 ppm IDLH (10% LEL)	400 ppm TWA; 980 mg/m3 TWA
Water	none listed	none listed	none listed

OSHA Vacated PELs: Isopropyl alcohol: 400 ppm TWA; 980 mg/m3 TWA Water: None listed

Engineering Controls:

Use explosion-proof ventilation equipment. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.

Exposure Limits

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

Respirators: A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI Z88.2 requirements or European Standard EN 149 must be followed whenever workplace conditions warrant respirator use.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Color: colorless
Odor: alcohol-like
pH: Not available
Vapor Pressure: 33 mm Hg @ 20 deg C
Vapor Density: 2.1 (Air=1)
Evaporation Rate: 1.7 (n-butyl acetate=1)
Viscosity: 2.27 mPas @ 20 deg C
Boiling Point: 82 deg C @ 760 mm Hg (179.60°F)
Freezing/Melting Point: -88 deg C (-126.40°F)
Decomposition Temperature: Not available
Solubility in water: Miscible
Specific Gravity/Density: 0.7850 (water=1)
Molecular Formula: C3H8O
Molecular Weight: 60.09

Section 10 - Stability and Reactivity

Chemical Stability: Stable.

Conditions to Avoid: Ignition sources, excess heat.

Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, strong bases, amines, ammonia, ethylene oxide, isocyanates, acetaldehyde, chlorine, phosgene, Attacks some forms of plastics, rubbers, and coatings., aluminum at high temperatures.

Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.

Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 67-63-0: NT8050000
CAS# 7732-18-5: ZC0110000

LD50/LC50:
RTECS:
CAS# 67-63-0: Draize test, rabbit, eye: 100 mg Severe;
Draize test, rabbit, eye: 10 mg Moderate;
Draize test, rabbit, eye: 100 mg/24H Moderate;
Draize test, rabbit, skin: 500 mg Mild;
Inhalation, mouse: LC50 = 53000 mg/m3;
Inhalation, rat: LC50 = 16000 ppm/8H;
Inhalation, rat: LC50 = 72600 mg/m3;
Oral, mouse: LD50 = 3600 mg/kg;
Oral, mouse: LD50 = 3600 mg/kg;
Oral, rabbit: LD50 = 6410 mg/kg;
Oral, rat: LD50 = 5045 mg/kg;
Oral, rat: LD50 = 5000 mg/kg;
Skin, rabbit: LD50 = 12800 mg/kg;

RTECS:
CAS# 7732-18-5: Oral, rat: LD50 = >90 mL/kg;

Carcinogenicity:
Isopropyl alcohol - IARC: Group 3 (not classifiable)
Water - Not listed as a carcinogen by ACGIH, IARC, NTP, or CA Prop 65.

Other: See actual entry in RTECS for complete information.

Section 12 - Ecological Information

Ecotoxicity:
Fish: Fathead Minnow: >1000 ppm; 96h; LC50
Daphnia: >1000 ppm; 96h; LC50
Fish: Gold orfe: 8970-9280 ppm; 48h; LC50

Section 13 - Disposal Considerations

Dispose of in a manner consistent with federal, state, and local regulations.

Section 14 - Transport Information

US DOT
Shipping Name: ISOPROPANOL
Hazard Class: 3
UN Number: UN1219
Packing Group: II
Canada TDG
Shipping Name: ISOPROPANOL
Hazard Class: 3
UN Number: UN1219
Packing Group: II

Section 15 - Regulatory Information

European/International Regulations

European Labeling in Accordance with EC Directives

Hazard Symbols: XI F

Risk Phrases:

R 11 Highly flammable.

R 36 Irritating to eyes.

R 67 Vapours may cause drowsiness and dizziness.

Safety Phrases:

S 7 Keep container tightly closed.

S 16 Keep away from sources of ignition - No smoking.

S 24/25 Avoid contact with skin and eyes.

S 26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

WGK (Water Danger/Protection)

CAS# 67-63-0: 1

CAS# 7732-18-5: Not available

Canada

CAS# 67-63-0 is listed on Canada's DSL List

CAS# 7732-18-5 is listed on Canada's DSL List

Canadian WHMIS Classifications: B2, D2B

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

CAS# 67-63-0 is listed on Canada's Ingredient Disclosure List

CAS# 7732-18-5 is not listed on Canada's Ingredient Disclosure List.

US Federal

TSCA

CAS# 67-63-0 is listed on the TSCA Inventory.

CAS# 7732-18-5 is listed on the TSCA Inventory.

Section 16 - Other Information

MSDS Creation Date: 7/27/1999

Revision #12 Date 7/20/2009
