



May 19, 2022

Kevin Dana
Oregon Department of Environmental Quality, Northwest Region
700 NE Multnomah Street
Portland, Oregon 97232

Regarding: Remedial Injection Work Plan
Oregon DEQ ECSI Site No. 2424
3720 NW Yeon Avenue
Portland, Oregon
PBS Project 20125.011

Dear Mr. Dana:

PBS Engineering and Environmental Inc. (PBS) is submitting this work plan to conduct remedial injection and groundwater monitoring activities at the property located at 3720 NW Yeon Avenue in Portland, Oregon (site), in support of regulatory closure. Elevated concentrations of solvents are present in groundwater at the site, some of which exceed Oregon Department of Environmental Quality (DEQ) risk-based screening levels. The site is listed in DEQ's Environmental Cleanup Site Inventory (ECSI) database as site number 2424.

The purpose of this scope of work is to complete remedial action by conducting targeted chemical treatment at two remedial action areas (RAAs) that have been previously defined. The objective of the action is to reduce overall contaminant mass and, therefore, reduce dissolved concentrations of halogenated solvents.

BACKGROUND

The following section presents an abbreviated background for the site. More detailed information can be found in PBS' Feasibility Study (FS)¹ for the site and from DEQ's ECSI database.

Site Description and Ownership

The site is located within Multnomah County in the NE ¼ of the NW ¼ of Section 29 of Township 1 North, Range 1 East of the Willamette Meridian. A site vicinity map is included as Figure 1. A 57,750-square-foot (sf) warehouse building is currently situated on the site, occupied by Convoy Supply Ltd., a roofing, siding, and fencing distributor (Figure 2). The property has been owned by Conax Properties USA Inc. since 2010. Don Wirfs & Associates owned the property from 1998 to 2010, prior to which, the property was owned by Schnitzer Investments beginning in at least 1971.

The site was first developed and occupied by Willard Storage Battery Company in 1946, which operated at the site until 1958 when Great Western Chemical occupied the site (1958 to 1971). The site was then occupied by Ace Hardware (warehouse for hardware goods, 1971 to 1976); Barker Manufacturing (furniture manufacturer, 1976 to 1978); Chase Bag (paper bag manufacturer, 1978 to 1992); Daisy Kingdom (textile and craft manufacturer, 1992 to 1997); and DWA Trade Show & Exposition Services (storage of trade show displays and related items; 1997 to

¹ PBS Engineering and Environmental Inc. (2016). *Feasibility Study Report, Wirfs Property, 3720 NW Yeon Avenue, Portland, Oregon 97210*. Prepared for Don Wirfs. PBS Project 20125.008.

March 2010). The site has been used since 2010 for storage and distribution of roofing, siding, and fencing supplies.

Site Hydrogeology

The subject property is in the Guilds Lake area. This area was an intermittent lake and marsh until extensive filling and grading occurred in preparation for the 1905 Lewis and Clark Exposition, which was constructed on the lake and grounds south and southeast of the lake. Additional filling and grading occurred through the 1940s to create land for industrial use. Fill materials included incinerator ash in some locations. Underlying the site is an undetermined amount of fill with possible subordinate amounts of gravel.

Underlying fill at a depth of 20 to 30 feet are fine-grained to sand-sized periglacial deposits from the glacial outburst floods of Glacial Lake Missoula. Beneath the flood deposits are poorly consolidated sands and gravelly sands of the Troutdale Formation. Underlying the Troutdale Formation are approximately 200 feet of siltstone, sandstone, and mudstone of the Sandy River Mudstone. Basalt lava flows of the Columbia River Basalt Group are at depth.

The shallowest occurrence of groundwater is expected to be at approximately 5 to 10 feet below the ground surface (bgs). The shallow groundwater flow direction varies, ranging to the south at a relatively flat hydraulic gradient (relative water level differences ranged from 0.08 to 0.40 feet higher on the subject property over four monitoring events). Groundwater flow varies at a cleanup site to the west. Topography suggests relatively flat gradients across this large level area of historical fill at the base of Willamette Heights, so shallow groundwater flow direction varies based on location. Deeper groundwater would be expected to flow to the north/northeast toward the Willamette River.

Previous Environmental Assessments

Multiple historical investigations have been conducted at the site. These include:

- *Bridgewater Group, 2000. Preliminary Assessment, Wirfs Property, 3720 NW Yeon Avenue. February 29, 2000*
- *DEQ, 2000. No Further Action Determination Letter, Hill Investment (3322 NW 35th Avenue, LUST 326-89-0280), September 19, 2000*
- *PBS, 2010a. Phase I Environmental Site Assessment, 3720 NW Yeon Avenue, Portland, Oregon. January 2010*
- *PBS, 2010b. Subsurface Remedial Investigation, 3720 NW Yeon Avenue, Portland, Oregon 97030. July 2010*
- *PBS, 2012a. Additional Phase II Investigation, 3720 NW Yeon Avenue, Portland Oregon 97030. May 2012*
- *PBS, 2012b. First and Second Quarter 2012 Groundwater Monitoring and Analysis, 3720 NW Yeon Avenue, Portland, Oregon. August 30, 2012*
- *PBS, 2013. Fourth Quarter 2012 Groundwater Monitoring and Analysis, 3720 NW Yeon Avenue, Portland, Oregon. March 27, 2013*
- *PBS, 2015a. Third Quarter 2014 Groundwater Monitoring and Analysis, 3720 NW Yeon Avenue, Portland, Oregon. February 3, 2015*
- *PBS, 2015b. Phase II Remedial Investigation, 3720 NW Yeon Avenue, Portland, Oregon 97030. February 2015*

- PBS, 2015c. *Fourth Quarter 2014 Groundwater Monitoring and Analysis*, 3720 NW Yeon Avenue, Portland, Oregon. May 5, 2015
- PBS, 2016. *Feasibility Study Report, Wirfs Property*, 3720 NW Yeon Avenue, Portland, Oregon 97210. July 2016

A detailed summary of these prior investigations is included in the PBS Feasibility Study (FS) Report, which evaluated several potential remedial alternatives for implementation at the site. As noted in prior communication from DEQ and in a Draft Record of Decision prepared by DEQ on December 19, 2019, the preferred remedy selected in the FS document, utilizing institutional controls to mitigate risk of exposure to future receptors was agreed as protective of the site. However, subsequent refusal of the south-adjacent property owner to implement an Easement and Equitable Servitudes agreement resulted in an inability to implement this remedy. Historical boring and monitoring well locations are shown on Figure 2.

Based on a review of alternative remedies presented in the FS document, DEQ selected Alternative 2 as the preferred remedy for the site. This remedial action consisted of the following:

- In-situ treatment of contaminated soil and groundwater
- Compliance groundwater monitoring

REMEDIAL SITE INVESTIGATION

MiHpt Probing

In July 2020, prior to initiating remediation efforts at the site, PBS completed a supplemental investigation to better understand subsurface site conditions and improve future targeted chemical injection. Cone penetrometer testing (CPT) probes equipped with membrane interface hydraulic profiling tool (MiHpt) were utilized to identify previously unknown deeper zones of contamination along the western portion of the site. MiHpt tooling of the CPT probes provided field staff a real-time, continuous logging of lithology, hydrostratigraphy, as well as the estimated concentration of VOCs using flame ionization detector (FID), photoionization detector (PID), electrical conductivity detector (ECD), and halogen specific detector (XSD).

A total of 14 MIP borings were completed at the site using a direct-push drill rig operated by Cascade Drilling of Clackamas, Oregon.

Geologic Interpretation of Electrical Conductivity

Electrical conductivity (EC) measurements collected by the MiHpt tool indicated the presence of a laminated zone of fine-grained material, typically less than 1 foot in thickness on the east side of the site at depths of 10 to 11 feet bgs. In the southeast corner of the site along the property boundary, this zone occurred at 9 to 12 feet bgs (MIP-11). A deeper interval of fine-grained material was noted to occur in this same area at thicknesses ranging from less than 1 foot to 4 feet, beginning at 20 feet bgs. The MIP borings located within this area include MIP-2, MIP-3, and MIP-10 through MIP-14. Shallow laminated zones of fine-grained material were absent on the western portion of the site. The deeper interval of fine-grained material observed on the east side was also present on the west side but generally occurred at a greater thickness (6 to 8 feet) and started at more shallow depths of 16 to 18 feet bgs.

Four MIP borings (MIP-7, MIP-8, MIP-9, and MIP-11) were completed to greater depth intervals of 36 to 40 feet bgs to provide deeper delineation of detected zones of potential contamination observed during advancement. EC measurements in those borings indicated a consistent zone of fine-grained material beginning at 32 feet bgs.

The vertical extent of that interval was not determined but extended to the maximum depth explored of 40 feet bgs.

Interpretation of ECD, XSD, PID, and FID

Comparing the data from the four detectors used in the investigation to evaluate the potential presence of contaminants indicated that halogenated compounds and petroleum hydrocarbons were present. The results indicated the presence of halogenated compounds at multiple locations in two distinctly different depth intervals on the east and west sides of the site. The results indicated a previously unidentified zone of halogenated compounds on the west side of the site, generally limited to the zone of fine-grained material noted above occurring at depths of 22 to 26 feet bgs, and the general absence of halogenated compounds known to be present in shallow intervals on the east side of the site.

FID measurements indicated the presence of a comingled petroleum hydrocarbon plume in most MIP borings that generally occurred in similar intervals of where halogenated compounds were detected, with a few exceptions. Petroleum hydrocarbons were noted to be potentially present with an absence of halogenated compounds in MIP-1, MIP-6, MIP-10, MIP-11, MIP-12, MIP-13, MIP-14. In MIP-10, MIP-11, MIP-13, and MIP-14, TPH presence/halogenated compound absence conditions were limited to a deeper, 22- to 26-foot bgs interval.

PBS has generally interpreted the results discussed above as indicative of numerous small to larger historical releases of halogenated solvents and petroleum hydrocarbons across the area of study. While halogenated compounds were only identified at greater depths on the west side of the site, narrow shallow intervals of fine-grained material present on the east side of the site likely limited vertical migration of dense non-aqueous phase liquid (DNAPL). MIP results indicated that in general, halogenated compounds appear to be entrained to fine-grained intervals and are often not present in the adjacent coarse-grained material.

The shallow silt intervals identified on the east side of the site may be indicative of either natural or manmade deposition events, as historical filling of the larger Guild's Lake area has been noted and discussed in prior reports. The deeper interval of fine-grained material encountered at depths greater than 20 feet is likely a native depositional surface. The absence of shallow silt intervals on the west side of the site is not fully understood, but construction that occurred on the site in the 1940s associated with temporary wartime housing included the installation of a large diameter sewer line running north to south through this area. Construction associated with that sewer line possibly removed a significant portion of the shallow fine-grained intervals in that area.

A full copy of Cascade's Final Data Report is included in Appendix A.

Deep Monitoring Well Installation and Development

From June 23 through June 25, 2021, PBS installed five deep monitoring wells (MW-5 through MW-9) and three deep borings (B-33 through B-35) on the subject property. Boring B-34 was converted to a permanent monitoring well (MW-9) when DNAPL was encountered by field staff. The monitoring wells and borings were completed at the western side of the site to investigate suspected elevated contaminant concentrations that were identified during PBS' July 2020 MiHpt probing investigation. See Figure 2 for boring and monitoring well locations. The monitoring wells and borings were completed using a track-mounted direct-push sampling rig operated by Pacific Soil and Water, LLC, of Tigard, Oregon. The wells were constructed with 2-inch schedule 40 PVC casing with 0.010 factory-slotted screens. The screens had factory-constructed filter packs using size 20/40 sand. A bentonite seal was installed from ground surface to approximately 19 feet bgs and well sand was installed from 19 to 30 feet bgs. Each well was installed with a heavy-duty flush-mount well monument due to heavy site traffic. Locations are shown on Figure 2; well construction details are also provided on boring logs included in Appendix C.

Soil samples were collected during the investigation from each boring and monitoring well at the depth indicating highest levels of field evidence. Samples were placed into laboratory-provided containers that included 4-ounce glass jars with Teflon lid liners and methanol-preserved volatile organic analysis (VOA). Soil samples were submitted to Pace Analytical of Mt. Juliet, Tennessee, for analysis by gasoline-range petroleum hydrocarbons (NWTPH-Gx), diesel-range petroleum hydrocarbons (NWTPH-Dx), and volatile organic compounds (VOCs) by EPA Method 8260D.

Well development activities occurred on June 29, 2021. PBS followed the SOP for well development (provided in Appendix B) to develop the five permanent monitoring wells. Wells were developed using a whale pump to purge groundwater from each well and a steel bailer was used to surge the wells. Purged water was captured and stored in 55-gallon drums.

A minimum of 10 borehole volumes of water was removed from each well. Final turbidity readings ranged from approximately 23.0 to 90.8 nephelometric turbidity units (NTUs) and water visually appeared to significantly clear up at each well.

Groundwater Monitoring Event

Prior to sample collection, depth to water measurements were obtained from the wells. Depth to groundwater readings were recorded after allowing ample time for the wells to equilibrate with atmospheric pressure by removing the well caps and waiting between 10 and 15 minutes. Measurements were collected from the top of the well casing at the nearest 1/100th of a foot.

On July 1, 2021, PBS completed groundwater monitoring activities at the site. Groundwater samples were collected from the newly installed deep interval wells (MW-5 through MW-9) and the previously installed shallow interval wells (MW-1 through MW-4). PBS personnel wore new, disposable nitrile gloves when completing groundwater monitoring tasks at each well.

Each monitoring well was purged and sampled using a peristaltic pump and dedicated polyethylene tubing, utilizing low-flow sampling methodology. A YSI Pro multi-parameter water quality meter was used to record temperature, specific conductivity, dissolved oxygen (DO), pH, and oxidation reduction potential (ORP) during sampling. Visual turbidity readings were also recorded, with a final turbidity measurement taken before sampling using an HF Scientific Micro TPW turbidity meter. Samples were collected after measuring field parameters and the depth to groundwater stabilized in accordance with the PBS SOP for Sampling Groundwater Monitoring Wells (Appendix B).

Groundwater samples were placed into laboratory-provided 40-mL VOA vials and 100-mL amber glass containers that were preserved with hydrochloric acid. The containers were labeled and stored in an ice chest for the duration of the site work. The groundwater samples were submitted to Pace Analytical for analysis for VOCs by EPA Method 8260D and 1,4-Dioxane by EPA Method 8270E-SIM. Copies of laboratory reports and sample chain-of-custody forms are presented in Appendix E. Groundwater field forms with water quality field parameter data are included in Appendix D.

SAMPLE ANALYTICAL RESULTS

Soil and groundwater analytical results are summarized in the attached Tables 1 and 2, respectively.

Soil Analytical Results

Soil samples were collected from each boring and well location during installation at depths representative of the most impacted soil, typically at depths of 20 to 21 feet bgs, with the exception of samples collected from boring B-34, which were collected from depths of 23 and 29 feet bgs. An additional deeper sample was collected from this boring location due to the strong odor and visual DNAPL observed on the macrocore sleeve during recovery.

Halogenated VOCs, including PCE and its breakdown products TCE, cis-1,2-DCE, 1,1-DCE, and vinyl chloride, were detected in all soil samples except for the sample collected from boring B-33 (B33-21). Boring B-33 was completed to address the suspected presence of VOCs in this area indicated by MIP-9 during the previously conducted MiHpt investigation.

PCE was identified in six of eight soil samples ranging between 0.11 milligrams per kilogram (mg/kg) (B34-29) to 237 mg/kg (B34-23). The detection noted in B34-23 was an order of magnitude higher in concentration than the next highest concentrations of 17.7 (MW7-21) and 20.3 mg/kg (MW-5-21) located west and northwest, respectively.

TCE, the initial breakdown product of PCE, was detected along with PCE in soil samples at concentrations ranging from 0.00207 mg/kg to 19.9 mg/kg. The ratio of TCE to PCE was noted to increase and the presence of additional PCE dichlorination breakdown products including TCE and were noted in most soil samples at varying percentages in relation to PCE concentrations.

The highest concentrations of TCE identified in soil samples ranged between 0.124 mg/kg (B34-29) to 19.9 mg/kg (B34-23). The ratio of TCE to PCE in soil samples was highest at B35-21 (353%), which was the southernmost detection of these compounds. The TCE/PCE ratio in soil samples collected from MW5-21 (41%) and MW6-21 (33%) were relatively similar, while the ratio in MW7-21 (85%) was twice as large, indicating that the most active area of initial PCE dechlorination activity is likely occurring in the area of MW-7.

Secondary breakdown products of TCE, primarily cis-1,2-DCE and vinyl chloride, were detected at their highest levels in soil samples MW5-21 (147.77 mg/kg), MW6-21 (83.3 mg/kg), and MW7-21 (335.20 mg/kg). Concentrations of these compounds in the collected soil sample B34-23 to the east were much lower (vinyl chloride was not detected).

In addition to halogenated VOCs, TPH occurring in gasoline, diesel, and/or heavy oil ranges were detected in soil samples with the exception of B33-21 at total concentrations ranging from 0.1671 to 335.2 mg/kg. While the source of this TPH is unknown, several historical USTs and ASTs have been in use at the site that were previously decommissioned, which may have contributed to the presence of petroleum hydrocarbons.

Groundwater Analytical Results

Grab groundwater samples were collected from each boring and well location during installation from 20 to 30 feet bgs at the screened interval. Following well development, existing and new monitoring wells MW-1 through MW-9 were sampled.

Grab Groundwater Samples

Halogenated VOCs, including PCE and its breakdown products TCE, cis-1,2-DCE, 1,1-DCE, and vinyl chloride, were detected in all groundwater samples except for a sample collected from boring B-33.

PCE was identified in four of seven groundwater samples ranging between 4.86 micrograms per liter ($\mu\text{g/L}$) in boring B35 to 9,390 $\mu\text{g/L}$ in MW-7. The only other significant concentration of PCE from grab samples was a detection of 6,760 $\mu\text{g/L}$ from MW-9.

TCE was detected at the same locations noted above for PCE detections, with the exception of the sample collected from MW-6. The results of that grab sample indicated an absence of both PCE and TCE but the presence of secondary dichlorination breakdown products (noted below). The ratio of TCE to PCE in these grab samples was highest in B-35 at 465%. The TCE/PCE ratio in samples collected from MW-5 (110%), MW-7 (22%), and MW-9 (8.6%) did not correspond to the ratios measured in soil samples with the highest level of PCE breakdown activity likely occurring in the area of MW-5.

Secondary total breakdown products of PCE and TCE, primarily cis-1,2-DCE and vinyl chloride, were detected at their highest levels in groundwater samples collected from MW-5 (9,730 $\mu\text{g/L}$), MW-6 (1,576 $\mu\text{g/L}$) and MW-7 (6,400 $\mu\text{g/L}$). Similar to the soil sample collected from B-34/MW-9, total breakdown products, while present (484 $\mu\text{g/L}$) were much lower in this area. Concentrations of these compounds in the collected soil sample B34-23 to the east were much lower (vinyl chloride was not detected).

Groundwater Monitoring Event

Halogenated VOCs, including PCE and its breakdown products TCE, cis-1,2-DCE, 1,1-DCE, and vinyl chloride, were detected in groundwater samples collected from MW-3, MW-4, and each of the deep monitoring wells (MW-5 through MW-9).

PCE was identified in groundwater samples collected from MW-3 through MW-9 at concentrations ranging between 8.76 $\mu\text{g/L}$ in MW-8 to 9,670 $\mu\text{g/L}$ in MW-7. Significant concentrations of PCE were also detected in groundwater samples collected from MW-5 (3,490 $\mu\text{g/L}$), MW-3 (3,150 $\mu\text{g/L}$) and MW-4 (1,840 $\mu\text{g/L}$).

TCE was detected at the same locations noted above for PCE detections. The ratio of TCE to PCE in the groundwater samples was highest in MW-6 at 545%. The TCE/PCE ratios of groundwater samples collected from MW-7 and MW-9 were generally consistent with the ratios observed in the grab groundwater samples. Other TCE/PCE ratios did not correspond to the ratios observed during the grab groundwater monitoring.

Secondary total breakdown products of PCE and TCE, including cis-1,2-DCE and vinyl chloride, were detected at their highest levels in groundwater samples collected from MW-6 (44,800 $\mu\text{g/L}$), MW-5 (35,100 $\mu\text{g/L}$) and MW-7 (11,190 $\mu\text{g/L}$). Breakdown products were also present in MW-8 and MW-9 but at much lower concentrations (86.7 and 106.2 $\mu\text{g/L}$, respectively). PBS noted that concentrations of breakdown products detected in samples from MW-5 through MW-7 increased significantly following the development of the wells when comparing the results to the grab water sample results.

REMEDIAL SITE INVESTIGATION FINDINGS

Deep monitoring wells and borings were installed into a deeper saturated zone of soil than existing monitoring wells and identified a previously unidentified zone of halogenated solvent contamination located west of previous areas of focus. In general, the investigation was successful in delineating the extent of soil and groundwater impacts with the exception of groundwater impacts that may extend west to the property boundary. However, PBS noted that the west portion of the contaminant plume consisted primarily of PCE/TCE breakdown products that is indicative of the edge of a contaminant plume that is experiencing dechlorination. As groundwater flow is indicated to be to in a southerly direction, additional assessment to determine extent of groundwater impacts in

this direction is not currently proposed, as remedial injections are anticipated to resolve in a significant reduction of contaminant concentrations.

REMEDIAL INJECTION SCOPE OF WORK

The following scope of work is proposed to assess site conditions.

Preparatory Activities

A site-specific health and safety plan (HASP) was previously prepared for the site—the HASP will be updated to reflect new activities and personnel slated for this project. The HASP will include a map to the hospital, will be reviewed with field personnel on a daily basis, and will be maintained on site throughout the duration of field activities. Work will be conducted by experienced PBS personnel and supervised by an Oregon registered geologist (RG).

Field Activities

The following section describes the proposed field activities.

- *Pre-Injection Monitoring.* In order to provide baseline analytical data that will be utilized to evaluate the effectiveness of the remedial injections, PBS will collect groundwater samples from the on-site monitoring wells using low-flow purging methods. Samples will be collected into laboratory-provided sample bottles, stored at approximately 4 degrees Celsius, and submitted to Apex Laboratories of Tigard, Oregon, for analysis of VOCs by EPA Method 8260B. Sampling will be conducted consistent with PBS Standard Operating Procedure (SOP; Appendix B).
- *Remedial Injection.* Drilling and waste hauling services will be procured, and PBS will coordinate public and private utility locating to clear direct-push injection locations of subsurface utilities.
 - o PBS will oversee injection of a mixture of three remedial compounds, 3D Microemulsion (3DME), Sulfidated Zero Valen Iron (S-MZVI) and Bio-Dechlor INOCULUM PLUS (BDI Plus). 3DME is an electron donor compound that provides a sustained release of lactic acids and fatty acids into treated areas to enhance microbial degradation of contaminants by providing beneficial bacteria with a food source. S-MZVI is designed to destroy contaminants by providing beneficial bacteria with a food source. S-MZVI is designed to destroy contaminants abiotically and provide optimum conditions for anaerobic biological degradation. BDI Plus is an enriched, natural microbial consortium containing species of Dehalococcocoides sp. (DHC), which are capable of completely dechlorinating contaminants during in situ anaerobic bioremediation processes.
 - o The remedial injections will be completed at 31 gridded locations in an approximately 5,000-sf area of the western portion of the site to address the deeper zone of contaminated media and at 22 gridded locations in an approximately 3,500-sf area in the eastern portion of the site to address the shallow groundwater impacts. Chemicals will be injected via top-down technique using a direct-push drill rig. It is expected that the chemicals can be injected into the subsurface under 100 to 400 pounds per square inch (psi) pressure. Vertical depths of injection will be consistent with depth intervals determined by observation during well and boring installation as well as MiHpt results. The approximate extents of the deep remedial action area and the shallow remedial action area, including proposed direct-push injection locations, are reflected in Figure 3. The following table summarizes the remedial injections:

	Deep Remedial Action Zone	Shallow Remedial Action Zone
Treatment Type	Grid/Top down	Grid/Top down
Treatment Areal Extent (square feet)	5,000	3,503
Total Injection Points	31	22
Spacing Within Rows (feet)	9	9
Spacing Between Rows (feet)	18	18
Estimated Radius of Injection (feet)	4.3	4.3
Top Application Depth (feet bgs)	18	9
Bottom Application Depth (feet bgs)	28	17
Vertical Depth Per Injection Interval (feet)	2	2
Injection Volume per Interval (gallons)	71.7	58.67
Total Injection Volume per Point (gallons)	502	311
Total Injection Volume per Treatment Area (gallons)	13,563	6,160

- *Post-Injection Monitoring.* Following completion of the remedial injections, PBS will conduct four quarterly groundwater monitoring events utilizing the on-site monitoring wells to evaluate the effectiveness of the injections. The monitoring will follow the same procedures and protocols as the pre-injection monitoring event. Similar to the pre-injection monitoring event, groundwater samples collected during each quarterly monitoring event will be analyzed for VOCs by EPA Method 8260B.

Quality Assurance/Quality Control (QA/QC)

DEQ has a guidance document specifying required quality control samples to be collected during sampling events.² One sample of each of the following will be collected:

- Monitoring well groundwater duplicate sample
- Equipment blank
- Trip blank

The QA/QC samples will be analyzed for VOCs.

Investigation-Derived Waste

Investigation-derived waste (IDW) consisting of purge water and decontamination wash water will be containerized in drums that will be left on site pending receipt of laboratory results. After waste profiling, the IDW will be removed from the site for appropriate disposal. Disposable items such as tubing, personal protective equipment, and other materials will be disposed of as municipal solid waste. Any water generated during the investigation will be evaluated as potential F002-listed hazardous waste and disposed appropriately.

Reporting

A summary report will be prepared that includes a discussion of the remedial injection activities and observations and groundwater monitoring activities and results. Assuming remedial injection is successful in reduction of

² Oregon Department of Environmental Quality. (July 31, 2015). *Quality Assurance for the Environmental Cleanup Programs*.

contaminant concentrations to levels acceptable to DEQ and EPA by the fourth post-injection sampling event, PBS will request for regulatory closure.

If you have any questions, please contact me at 503.417.7610 or nick.thornton@pbsusa.com.

Sincerely,

Nick Thornton
Project Scientist
PBS Engineering and Environmental Inc.

Dennis Terzian, RG
Senior Geologist
PBS Engineering and Environmental Inc.

Attachments: Figure 1. Site Vicinity Map
Figure 2. Monitoring Well and Historical Boring Locations
Figure 3. Remedial Injection Plan
Table 1. Soil Analytical Results (June 2021 Deep Zone Investigation) (PBS, 2021)
Table 2. Groundwater Analytical Results (PBS, 2021)
Appendix A. Cascade Drilling August 2020 Final Data Report
Appendix B. Standard Operating Procedures
Appendix C. June 2021 Deep Zone Investigation Boring Logs
Appendix D. Water Quality Parameter Sheets
Appendix E. June 2021 Deep Zone Investigation Laboratory Analytical

cc: Conax Properties, Inc.
Davis Wright Tremaine LLP

NT:DT:rg

Figures

Figure 1. Site Vicinity Map

Figure 2. Monitoring Well and Historical Boring Locations

Figure 3. Remedial Injection Plan

SITE

PORTLAND

★ SALEM

• EUGENE

OREGON



3720 NORTHWEST YEON AVENUE
PORTLAND, OREGON

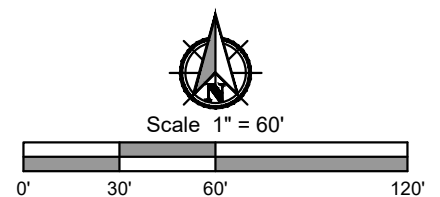
1



LEGEND

-  MW-1 MONITORING WELL NUMBER AND LOCATION
-  MIP-1 MEMBRANE INTERFACE HYDRAULIC PROFILING TOOL SAMPLE LOCATION
-  MW-3/B-10 PREVIOUSLY DECOMMISSIONED MONITORING WELL AND RELATED BORING NUMBER AND LOCATION
-  B-1 BORING NUMBER AND LOCATION (PBS, 2010)

SOURCE: © 2015 GOOGLE EARTH PRO



PREPARED FOR: CONAX



MONITORING WELL AND HISTORICAL BORING LOCATIONS

3720 NORTHWEST YEON AVENUE
PORTLAND, OREGON

MAY 2022
20125.011

FIGURE

2



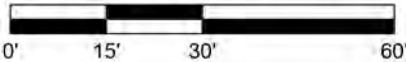
SOURCE: ESRI WORLD IMAGERY (2022).

LEGEND

- PROPOSED INJECTION POINTS
- ⊙ MEMBRANE INTERFACE HYDRAULIC PROFILING TOOL SAMPLE LOCATION
- ⊕ MONITORING WELL LOCATION
- ⊕ BORING LOCATION
- SHALLOW REMEDIAL ACTION AREA
- DEEP REMEDIAL ACTION AREA



SCALE: 1" = 30' (8.5X11 SHEET)



PREPARED FOR: CONAX



PROPOSED INJECTION POINTS
3720 NORTHWEST YEON AVENUE
PORTLAND, OREGON

MAY 2022
20125.011

FIGURE

3

Tables

Table 1. Soil Analytical Results (June 2021 Deep Zone Investigation) (PBS, 2021)

Table 2. Groundwater Analytical Results (PBS, 2021)

Table 1. Soil Analytical Results

3720 NW Yeon Avenue
Portland, Oregon

Sample ID	Sample Date	Sample Depth	Volatile Organic Compounds (detections only)										Total Petroleum Hydrocarbons		
			Benzene	Carbon Disulfide	Carbon Tetrachloride	1,1-Dichloroethene	Cis-1,2-Dichloroethene	Trans-1,2-Dichloroethene	Tetrachloroethene	Toluene	Trichloroethene	Vinyl Chloride	Diesel	Heavy Oil	Gasoline
		feet bgs	mg/kg												
MW8-20	06/23/2021	20	<0.0704	<0.0704	<0.0704	<0.0704	<0.0704	<0.0704	<0.0704	0.734	<0.0704	0.0721	88.9	166	<7.04
B35-21	06/23/2021	21	<0.00131	<0.00131	<0.00131	0.00665	6.25	0.0346	0.342	<0.00655	1.21	4.53	<5.24	<13.1	7.61
MW7-21	06/23/2021	21	0.00443	0.0026	<0.00159	0.0155	312	0.188	17.7	0.032	15.2	23.2	41	66.6	195
MW5-21	06/23/2021	21	0.00217	0.00215	<0.00146	0.0275	139	0.219	20.3	0.00755	8.39	8.77	36	57.6	94.1
MW6-21	06/24/2021	21	0.00318	0.00152	<0.00109	0.00294	57.6	0.112	0.00632	0.00714	0.00207	25.7	25.3	38.8	9.95
B33-21	06/24/2021	21	<0.00135	<0.00135	<0.00135	<0.00135	<0.00135	<0.00135	<0.00135	<0.00677	<0.00135	<0.00135	8.9	15.7	0.177
B34-23	06/24/2021	23	<3.49	<3.49	<3.49	<3.49	13.3	<3.49	237	<17.4	19.9	<3.49	<5.36	<13.4	114
B34-29	06/24/2021	29	<0.00147	<0.00147	<0.00147	<0.00147	0.11	<0.00147	4.54	<0.00737	0.124	0.0571	<5.90	<14.7	0.748
Oregon DEQ RBC ¹ - Ingestion, Dermal Contact, & Inhalation			37	NS	34	29,000	2,300	23,000	1000	88,000	51	4.4	14,000	>Max	>Max
Oregon DEQ RBC ¹ - Volatilization to Outdoor Air			50	NS	65	>Csat	>Max	>Max	>Csat	>Csat	96	89	>Max	>Max	>Max
Oregon DEQ RBC ¹ - Vapor Intrusion into Buildings			2.1	NS	1.6	680	>Max	>Max	36	>Csat	2.3	2.2	>Max	>Max	>Max
Oregon DEQ RBC ¹ - Leaching to Groundwater			0.1	NS	0.058	32	4.5	51	1.9	490	0.087	0.01	>Max	>Max	>Max

Only detected compounds reported, see laboratory report for

¹Oregon Risk-Based Decision-Making for the Remediation of Petroleum-Contaminated Sites, Oregon DEQ Sept. 2003, Revised Risk-Based Concentrations (RBCs) June 7, 2012.

Bold text indicates an exceedance of one or more of the cleanup levels (cleanup levels exceeded are bolded as well)

bgs: below ground surface

mg/kg: milligrams per kilogram

>Csat: Soil RBC exceeds the limit of three phase equilibrium partitioning.

>Max: The RBC for this pathway is greater than 1,000,000 mg/kg. This substance is not deemed to pose a risk in this scenario.

Table 2. Groundwater Analytical Results
3720 NW Yeon Avenue
Portland, Oregon

Sample ID	Sample Date	Well Screen Interval	Volatile Organic Compounds (detections only)													1,4-Dioxane	Total Petroleum Hydrocarbons		
			Benzene	SEC-Butylbenzene	Ethylbenzene	1,1-Dichloroethene	cis-1,2 Dichloroethene	trans-1,2 Dichloroethene	Tetrachloroethene (PCE)	Toluene	Trichloroethene (TCE)	1,2,4-Trimethylbenzene	1,2,3-Trimethylbenzene	Vinyl Chloride	Total Xylenes		Gasoline	Diesel	Heavy Oil
		feet bgs																	
MW-1	10/07/11	5-15	<0.25	<1.00	<0.5	<0.500	1.32	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	12/13/11		<0.25	<1.00	<0.5	<0.500	0.75	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	03/07/12		<0.25	<1.00	<0.5	<0.500	0.84	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	06/25/12		<0.25	<1.00	<0.5	<0.500	0.68	<0.5	0.65	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	10/03/12		<0.25	<1.00	<0.5	<0.500	2.56	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	12/28/12		<0.25	<1.00	<0.5	<0.500	0.93	<0.5	0.68	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	07/07/20		<0.20	<1.00	<0.50	<0.500	2.14	<0.40	<0.40	<1.00	<0.40	<1.00	--	2.39	<1.0	--	--	--	--
	07/01/21		<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	3.79	<1.00	--	--	--	--
MW-2	10/07/11	5-15	<0.25	<1.00	<0.5	<0.500	<1.0	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	12/13/11		<0.25	<1.00	<0.5	<0.500	<0.5	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	03/07/12		<0.25	<1.00	<0.5	<0.500	<0.5	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	06/25/12		<0.25	<1.00	<0.5	<0.500	0.89	<0.5	<0.5	<1.00	<0.5	<1.00	--	0.8	<0.5	--	--	--	--
	10/03/12		<0.25	<1.00	<0.5	<0.500	<0.5	<0.5	<0.5	<1.00	<0.8 ^f	<1.00	--	<0.5	<0.5	--	--	--	--
	12/28/12		<0.25	<1.00	<0.5	<0.500	<0.5	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	07/07/20		<0.20	<1.00	<0.50	<0.500	<0.40	<0.40	<0.40	<1.00	<0.40	<1.00	--	<0.40	<1.0	--	--	--	--
	07/01/21		<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.00	<0.400	--	--	--
MW-3	10/07/11	5-15	<2.5	<10.0	<5	<5.00	45.3	<5.0	2,730	<10.0	287	<10.0	--	34.4	<5	--	--	--	--
	12/13/11		<5	<20.0	<10	<10.0	21.2	<10	2,290	<20.0	172	<20.0	--	21	<10	--	--	--	--
	03/07/12		<5	<20.0	<10	<10.0	21.4	<10	1,330	<20.0	81.6	<20.0	--	<10	<10	--	--	--	--
	06/25/12		<5	<20.0	<10	<10.0	24.8	<10	2,090	<20.0	296	<20.0	--	16.4	<10	--	--	--	--
	10/03/12		<5	<20.0	<10	<10.0	68.0	<10	2,050	<20.0	456	<20.0	--	29.8	<10	--	--	--	--
	12/28/12		13.2	<20.0	<10	<10.0	29.4	<10	1,710	<20.0	99.2	<20.0	--	41.4	<10	--	--	--	--
	07/07/20		<2.0	<10.0	<5.0	<10.0	35.8	<4.0	3,530	<10.0	262.0	<10.0	--	15.8	<10.0	--	--	--	--
	07/01/21		<1.00	<1.00	<1.00	<1.00	90.5	<1.00	3150	<1.00	333	<1.00	<1.00	59.3	<3.00	<0.412	--	--	--
MW-4	10/07/11	5-15	<2.5	<10.0	<5	<5.00	1,980	33.7	11,700	<10.0	3,940	<10.0	--	143	<5	--	--	--	--
	12/13/11		<25	<100	<50	<50.0	1,730	<50	14,100	<100	4,160	<100	--	117	<50	--	--	--	--
	03/07/12		<25	<100	<50	<50.0	2,380	<50	16,000	<100	5,040	<100	--	67	<50	--	--	--	--
	06/25/12		<25	<100	<50	<50.0	1,760	<50	19,600	<100	4,270	<100	--	<50	<50	--	--	--	--
	10/03/12		<25	<100	<50	<50.0	2,770	<50	16,000	<100	5,900	<100	--	<50	<50	--	--	--	--
	12/28/12		<25	<100	56.0	<50.0	1,650	<50	15,000	<100	3,910	<100	--	96	310	--	--	--	--
	07/07/20		<2.0	<10.0	<5.0	4.12	4,390	76.5	7,550	<10.0	6,890	<10.0	--	125	<10.0	--	--	--	--
	07/01/21		<1.00	1.56	<1.00	2.46	907	17.4	1840	<1.00	1710	<1.00	<1.00	32	<3.00	0.435	--	--	--

Table 2. Groundwater Analytical Results

3720 NW Yeon Avenue
Portland, Oregon

Sample ID	Sample Date	Well Screen Interval	Volatile Organic Compounds (detections only)													1,4-Dioxane	Total Petroleum Hydrocarbons		
			Benzene	SEC-Butylbenzene	Ethylbenzene	1,1-Dichloroethene	cis-1,2 Dichloroethene	trans-1,2 Dichloroethene	Tetrachloroethene (PCE)	Toluene	Trichloroethene (TCE)	1,2,4-Trimethylbenzene	1,2,3-Trimethylbenzene	Vinyl Chloride	Total Xylenes		Gasoline	Diesel	Heavy Oil
		feet bgs																	
MW-1 (3322)*	02/16/10	4.5-19.5	<0.25	<1.00	<0.5	<0.500	<0.5	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<1	--	--	--	--
	10/03/12		<0.25	<1.00	<0.5	<0.500	<0.5	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	12/28/12		<0.25	<1.00	<0.5	<0.500	<0.5	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
MW-2 (3322)*	02/06/10		<0.25	--	<0.5	--	54.9	0.99	105	--	13.3	--	--	37.3	<1	--	--	--	--
	10/03/12		<0.25	<1.00	<0.5	<0.500	17.1	<0.5	29.9	<1.00	21.4	<1.00	--	2.16	<0.5	--	--	--	--
	12/28/12		<0.25	<1.00	<0.5	<0.500	10.2	<0.5	173	<1.00	14.3	<1.00	--	1.01	<0.5	--	--	--	--
MW-6 (3322)*	02/16/10		<0.25	--	<0.5	--	<0.5	<0.5	<0.5	--	<0.5	--	--	<0.5	<1	--	--	--	--
	10/03/12		<0.25	<1.00	<0.5	<0.500	<0.5	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
	12/28/12		<0.25	<1.00	<0.5	<0.500	<0.5	<0.5	<0.5	<1.00	<0.5	<1.00	--	<0.5	<0.5	--	--	--	--
MW-5 (grab sample)	06/24/21	20-30	<1.00	<1.00	<1.00	5.27	5890	37.7	196	1.57	217	<1.00	<1.00	3,840	<3.00	<0.400	--	--	--
MW-6 (grab sample)	06/24/21	20-30	<1.00	<1.00	<1.00	<1.00	687	8.99	<100	<1.00	<100	<1.00	<1.00	889	<3.00	<0.400	--	--	--
MW-7 (grab sample)	06/24/21	20-30	<1.00	<1.00	<1.00	4.93	2,650	15.6	9,390	5.88	2,100	1.48	1.61	3,750	<3.00	<0.400	--	--	--
MW-8 (grab sample)	06/23/21	20-30	<1.00	<1.00	<1.00	<1.00	46.9	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	46	<3.00	<0.400	--	--	--
MW-9 (grab sample)	06/25/21	20-30	<1.00	<1.00	<1.00	1.43	414	2.53	6,760	1.07	581	<1.00	<1.00	70.3	<3.00	<0.800	2,450	<100	<250
B33-GW	06/24/21	20-30	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<1.00	<3.00	<0.400	--	--	--
B35-GW	06/23/21	20-30	<1.00	<1.00	<1.00	<1.00	31.6	<1.00	4.86	<1.00	22.6	<1.00	<1.00	28.5	<3.00	<0.400	--	--	--
MW-5	07/01/21	20-30	<20.0	<20.0	<20.0	<20.0	19,300	67	3,490	<20.0	1,410	<20.0	<20.0	15,800	<60.0	<0.400	--	--	--
MW-6	07/01/21	20-30	<10.0	<10.0	<10.0	<10.0	20,200	159	31.9	<10.0	174	26.3	<10.0	24,600	<30.0	<0.400	--	--	--
MW-7	07/01/21	20-30	<5.00	<5.00	<5.00	<5.00	3,610	12.4	9,670	<5.00	2,540	6.68	<5.00	7,580	<15.0	<0.400	--	--	--
MW-8	07/01/21	20-30	<1.00	<1.00	<1.00	<1.00	43.9	<1.00	8.76	<1.00	3.79	<1.00	<1.00	42.8	<3.00	<0.400	--	--	--
MW-9	07/01/21	20-30	<1.00	<1.00	<1.00	<1.00	74	<1.00	360	<1.00	31.1	<1.00	<1.00	32.2	<3.00	<0.400	--	--	--
Oregon RBC - Volatilization to Outdoor Air (Occupational) ¹			14,000	NS	41,000	2,400,000	>S (4.9E+19)	1,800,000	210,000	>S	19,000	>S	NS	6,800	>S (3.9E+6)	4,500,000	>S	>S	>S
Oregon RBC - Vapor Intrusion into Buildings (Occupational) ¹			2,800	NS	7,400	360,000	>S (1.2E+17)	350,000	32,000	>S	3,300	>S	NS	910	>S (740,000)	4,500,000	>S	>S	>S
Oregon RBC - Groundwater in Excavation (Construction & Excavation Worker) ¹			1,700	NS	4,400	44,000	24,000	14,000	5,400	220,000	430	6,300	NS	1,200	23,000	3,400	14,000	>S	>S

Only detected compounds reported, see laboratory report for full list of analytes.

¹Oregon Risk-Based Decision-Making for the Remediation of Petroleum-Contaminated Sites, Oregon DEQ Sept. 2003, Revised Risk-Based Concentrations (RBCs) May 2018.

Bold text indicates an exceedance of one or more of the cleanup levels (cleanup levels exceeded are bolded as well)

bgs: below ground surface

µg/L: micrograms per liter

>S - RBC value is greater than the solubility limit

*: Monitoring well located on south adjoining property (3322 NW 35th Avenue)

¹: Lab narrative indicating that the reporting limit was raised due to suspect lab contamination identified in the method blank

ND: Analyte was not included in EPA 8260B list

Appendix A

Cascade Drilling August 2020 Final Data Report



08/19/2020

FINAL DATA REPORT

High Resolution Site Characterization

Membrane Interface Probe – Hydraulic Profiling Tool (MIHPT)

NW Yeon Avenue Site

Portland, Oregon

306201045

Prepared for:

PBS Engineering and Environmental Inc.
Chris Sheridan, R.G.
4412 S Corbett Ave
Portland, OR 97239

TABLE OF CONTENTS

Program Narrative	1
QA/QC Summary Table	2
Project Details	3
Cascade Personnel	3
Cascade Equipment	3
Interpretation and Recommendations	4
Data Interpretation	4
Recommendations	4
Reference Material	5
HPT System Overview	5
HPT Data Interpretation	6
EC Data Interpretation	7
MIP System Overview	7
MIP Data Interpretation	10
Site Plan	
Investigation Data Plots	
Investigation Data Plots – Common Scale	

PROGRAM NARRATIVE

Cascade Technical Services (Cascade) is pleased to present this data report to PBS Engineering and Environmental Inc. (PBS) for the Membrane Interface Probe – Hydraulic Profiling Tool (MIHPT) services provided between 28 and 31 July 2020 at the Convoy Supply Site in Portland, Oregon.

In total, Cascade advanced 14 MIHPT investigation borings to depths up to approximately 26 to 39 feet below ground surface (bgs). The locations are shown on Figure 1. For each of these locations, Cascade generated a continuous log of the electrical conductivity (EC), relative permeability (“Estimated K”), and relative (semi-quantitative) concentration of volatile organic compounds versus depth. Those logs are attached to this report.

All field work, including the operation of the MIP, HPT, and EC probes, was conducted by trained professionals and all quality assurance/quality control (QA/QC) measurements associated with these data were found to be within the tolerances set forth in the Standard Operating Procedures with the following exception:

- During the advancement of MIP-10, a leak developed in the HPT water line inside the connection tube. Accordingly, the HPT data from that location was not correct and has been discarded.

Additional information regarding the MIP, HPT, and EC systems is provided in the reference material included in this report.

I certify that the data package is in compliance with the terms and conditions of the contract and meets Cascade’s data quality standards, with the exceptions detailed above (if any). Release of the data contained in this package has been authorized by the data manager or his/her designee, as verified by the following signature.



Brad Carlson
Regional Manager, Site Characterization

QA/QC SUMMARY TABLE

Provided below is a summary of QA/QC information and any deviations from the standard operating procedure that occurred during the field activities.

Location	Date	Time	Total Depth (ft bgs)	Response Test	Comments / Deviations
MIP-1	July 28, 2020	14:29:56	26.10	Pass	None
MIP-2	July 28, 2020	16:08:20	26.65	Pass	None
MIP-3	July 28, 2020	17:22:27	26.60	Pass	None
MIP-4	July 29, 2020	11:09:40	26.65	Pass	None
MIP-5	July 29, 2020	12:16:33	26.65	Pass	None
MIP-6	July 29, 2020	13:55:36	26.70	Pass	None
MIP-7	July 29, 2020	15:45:16	34.70	Pass	None
MIP-8	July 29, 2020	17:30:33	38.70	Pass	None
MIP-9	July 30, 2020	11:09:51	32.90	Pass	None
MIP-10	July 30, 2020	13:00:49	30.65	Pass	Water line leak destroyed HPT data set
MIP-11	July 30, 2020	15:40:14	30.75	Pass	None
MIP-12	July 30, 2020	17:14:12	30.70	Pass	None
MIP-13	July 31, 2020	11:07:39	30.70	Pass	None
MIP-14	July 31, 2020	12:29:58	26.70	Pass	None

PROJECT DETAILS

This section provides information regarding the Cascade personnel present at the site during the field activities and the specific equipment used during field activities.

Cascade Personnel

The following personnel were present during field activities at the Site:

- Igor Kochnev, HRSC Specialist
- Jesse Blakeney, DPT Rig Operator

Cascade Equipment

The following HRSC equipment was utilized during field activities at the Site:

- Geoprobe 77-Series direct push drill rig
- 1.75-inch O.D. MH6534 MIHPT probe
- Geoprobe MP6500 MIP Controller (Nitrogen Flow and Heater)
- Geoprobe K6300 HPT Controller
- Geoprobe FI 6000 Computer
- HP 5890 gas chromatograph
- Electrical conductivity diode
- Electron Capture Detector (ECD)
- Halogen Specific Detector (XSD)
- Photoionization Detector (PID) with 10.6 eV lamp
- Flame Ionization Detector (FID)
- 150-foot MIHPT trunkline
- 1.75-inch O.D. drive rods
- Ultra-high purity nitrogen
- Ultra-high purity hydrogen

INTERPRETATION AND RECOMMENDATIONS

This section provides a summary of the data collected during this investigation program, Cascade's recommendations for updating the conceptual site model, and suggestions for next steps in the site management process, including remediation, if appropriate.

Data Interpretation

In general, the EC values are inversely proportional to the estimated K data for a given location, and thus a good proxy for that data above the water table. While many of the borings were terminated around 26 feet bgs, those that were not show the presence of a high K layer beneath that depth. It does not appear that significant VOCs mass, if any, resides in that higher K zone.

The majority of chlorinated VOCs detections, as evidenced by responses on the ECD and XSD logs appears along the southern and southeastern borders of the study area. The impacted interval appears to be encountered shallower in the southeastern locations MIP-2, -10, -11, and -14, typically first encountered around 10 feet bgs. Moving to the west, MIP-12 does not exhibit significant impact, then at MIP-3 the impact is distributed into two distinct layers, one approximately 11 to 13 feet bgs and another at roughly 19 to 12 feet bgs. Both of these zones in MIP-3 are primarily ECD responses with a minimal XSD component suggesting lower concentrations of CVOCs than seen in the southeast corner. Extending this review westward to MIP-8, the shallower interval of impact is not present, and the first significant CVOC impact is seen around 22 feet bgs. This deeper CVOC zone is overlain by, and possibly comingled with, a petroleum hydrocarbon response beginning around 16 feet bgs. Finally, in MIP-4, located on the western extent of the study area but north of MIP-8, the CVOCs response from roughly 16 to 24 feet bgs is more consistent with the magnitude seen in MIP-3.

Some of the northwestern locations (MIP-1, -5, -6, --7) and MIP-9 exhibited responses on the FID log without corresponding responses on the VOCs-only detectors. This is usually indicative of the presence of combustible compounds, such as petroleum hydrocarbons.

Recommendations

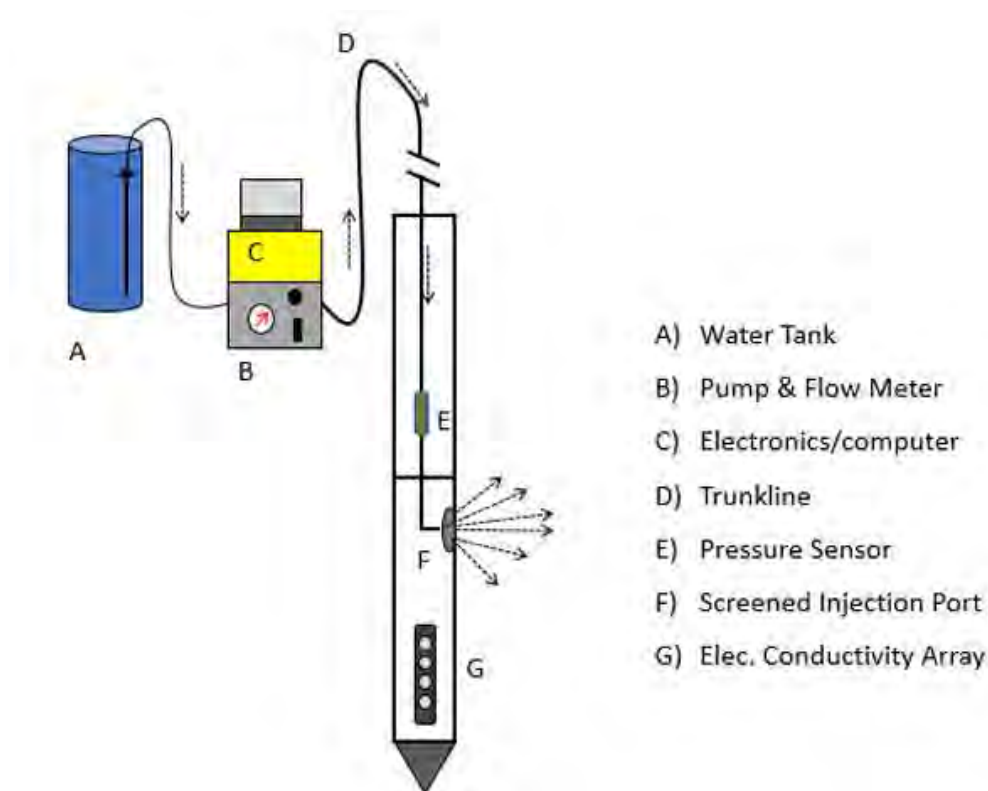
Additional recommendations were not included in this scope of work. Please contact the Cascade Project Manager if you would like to discuss further investigation or remediation alternatives. We would be excited to continue to learn about this site and assist you in meeting your site management goals.

REFERENCE MATERIAL

This section provides information useful in understanding and interpreting the data logs generated as part of this HRSC investigation.

HPT System Overview

The hydraulic profiling tool creates a log of the relative formation permeability versus depth in real time as the probe is advanced into the subsurface. It operates by injecting clean water at a constant flow rate from an aboveground reservoir through the direct push rods and out into the surrounding soil via an injection port on the side of the probe. Simultaneously, sensors record the flow rate, the back pressure required by the pump to maintain that flow rate, and the current depth of the probe. These measurements are collected by the onboard software and an estimated hydraulic conductivity (K) value is calculated and plotted alongside the other measurements in real time.



Generalized schematic of the HPT tool. Source: Geoprobe HPT Standard Operating Procedure

Reference Testing and Dissipation Tests

Reference testing is conducted to ensure that the HPT pressure transducer is working correctly and to evaluate the condition of the HPT injection screen. The HPT reference test also calculates atmospheric pressure which is required to obtain static water level readings and to determine the estimated K values for the log. The reference test utilizes an apparatus consisting of a tube with a valve located 6 inches above the HPT injection screen and the top of the tube located another 6 inches above the valve. When the tube is filled completely with water, the 12 inches of water will supply an additional 0.433 pounds per square inch (psi) of pressure on the injection screen (in addition to atmospheric pressure). When the valve is opened that additional pressure drops to 0.217 psi at the HPT injection screen. The accuracy of the pressure transducer can be assessed by comparing the pressure readings when the tube is filled and when the tube is filled only to the valve; this is done both with and without the pump running. A tolerance of plus or minus 10 percent is applied for a passing test.

Dissipation tests are conducted to determine the hydrostatic pressure of the water column above the transducer during logging. To conduct a dissipation test, advancement of the tooling is stopped, the HPT pump is stopped, and flow drops to zero. The pressure applied to the HPT pressure transducer by the injection of water into the formation begins to dissipate. This pressure should dissipate to a value equal to atmospheric pressure plus the hydrostatic pressure applied by water in the formation. In post-processing of the HPT log, the dissipation value and the atmospheric pressure determined during reference testing can be used to remove the influence of atmospheric and hydrostatic pressures from the values recorded by the transducer. These adjustments result in the corrected HPT pressure log which is a measure of the properties of the subsurface material.

HPT Data Interpretation

An HPT log typically includes several types of data, many of which are reduced by the software to generate the estimated K values. The dissipation testing results conducted by the operator during the advancement of the tool are used to adjust the HPT back pressure values to account for the hydrostatic pressure of the water column above the probe during advancement. This adjustment results in the corrected HPT pressure data set. Subsequently, the corrected HPT pressure and the HPT flow data sets are used to calculate the estimated K values.

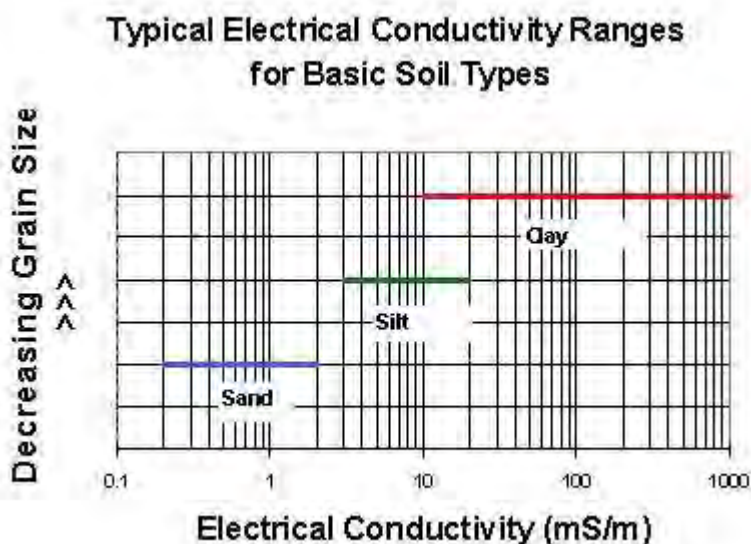
The most useful measurement from the HPT is the estimated K log, which as noted above, is a measure of the relative permeability of the formation versus depth. Despite the fact that these data are presented in units typical of traditional hydraulic conductivity (feet per day), they are not traditional K values and should not be used in many of the applications where a traditional K value would be appropriate. The accuracy of the estimated K values is typically one to two orders of magnitude, which would clearly generate a significant amount of uncertainty if used for any seepage velocity or risk-based calculations. The estimated K values are, however, extremely useful for understanding what zones of the subsurface are exhibiting higher or lower relative permeability.

As a secondary data set from this tool, the HPT back pressure can be helpful in the design of injected remedies. The back pressure is a measure of the level of difficulty faced injecting the

clean water from the HPT system into the formation; this is analogous to level of success an injection may achieve at the same depths.

EC Data Interpretation

In a general sense, the electrical conductivity of a soil varies with grain size. This correlation can be utilized to gather an understanding of the subsurface from the EC data. The EC measured in the subsurface can also vary based on changes in mineralogy, groundwater geochemistry, and contamination. It is important, then, to confirm the accuracy of the EC data for this use by collecting confirmatory soil borings from your site.



Relationship between electrical conductivity and grain size. Source: Geoprobe Electrical Conductivity System Standard Operating Procedure

MIP System Overview

The MIP is commonly used for quickly determining the locations of volatile organic compound (VOC) source zones and plumes. The MIP is most valuable in terms of its ability to provide “spatial correspondence”, meaning that where the MIP detector responses show peaks, there is likely to be elevated soil and groundwater concentrations. The MIP can also be used to provide extremely valuable data to streamline subsequent investigative tasks and improve the overall efficiency and accuracy of the site investigation. Vertical profiles, cross-sectional views and three-dimensional images of contaminant distribution can all be produced from the electronic data generated by the MIP logs. The capability of providing reliable, real-time information allows for informed and timely decision making in the field. The MIP works by heating the soils and groundwater adjacent to the probe to 120 degrees Celsius. This volatilizes the VOCs and allows them to transfer through a Teflon membrane via a combination of concentration and pressure gradients. These VOC are then swept into a nitrogen gas loop that carries them to a series of detectors housed at ground surface. Continuous chemical profiles are generated from each hole. The electrical conductivity of the soil is also measured, and these logs can be compared to the chemical logs to better understand the relationship between the lithology and the contaminant distribution. The MIP is also commonly deployed with an integrated Hydraulic

CASCADE HIGH RESOLUTION SITE CHARACTERIZATION

Profiling Tool (HPT) which uses an injection logging system to generate a continuous log of relative formation permeability versus depth. The following section discusses the various detection systems that are commonly used with the MIP system.



An MIHPT probe and trunkline. Source: Geoprobe

Halogen Specific Detector

Responds to halogenated compounds (i.e., chlorinated, fluorinated, brominated) only.

The XSD converts compounds containing halogens to their oxidation products and free halogen atoms by oxidative pyrolysis. These halogen atoms are adsorbed onto the activated platinum surface of the detector probe assembly resulting in an increase thermionic emission. This emission current provides a corresponding voltage that is measured via an electrometer circuit in the detector controller.

Electron Capture Detector

Responds to halogenated compounds (i.e., chlorinated, fluorinated, brominated) only, and is more sensitive to compounds that are more highly halogenated. This results in a greater response to compounds like tetrachloroethene and trichloroethene versus cis-1,2-dichloroethene and vinyl chloride.

The ECD uses a radioactive beta emitter to ionize some of the carrier gas and produce a current between a biased pair of electrodes. When organic molecules contain electronegative functional groups, such as halogens, phosphorous, and nitro groups pass by the detector, they capture some of the electrons and reduce the current measured between the electrodes.

Photoionization Detector

Responds to all VOCs, including chlorinated compounds and petroleum hydrocarbons.

The PID sample stream flows through the detector's reaction chamber where it is continuously irradiated with high energy ultraviolet light. When compounds are present that have a lower ionization potential than that of the irradiation energy (10.6 electron volts with standard lamp), they are ionized. The ions formed are collected in an electrical field, producing an ion current that is proportional to compound concentration. The ion current is amplified and output by the gas chromatograph's electrometer.

Flame Ionization Detector

Responds to combustible VOCs only (i.e., petroleum hydrocarbons).

The FID consists of a hydrogen / air flame and a collector plate. The effluent from the gas chromatograph (trunkline) passes through the flame, which breaks down organic molecules and produces ions. The ions are collected on a biased electrode and produce an electric signal.

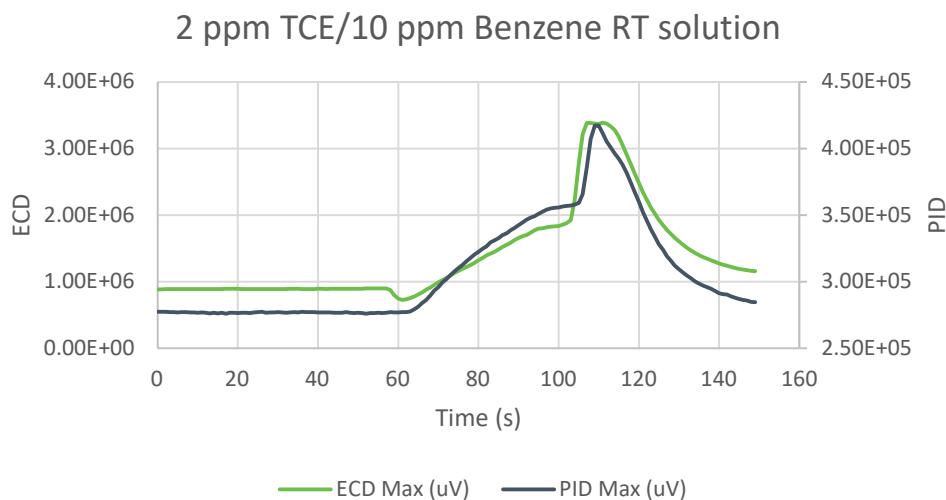
Response Testing

Response testing (RT) is an integral part of ensuring the quality of data from the MIP system. Response testing is conducted before and after each log to ensure the validity of the data and the integrity of the system. The RT provides a traceable indication that the MIP system detectors are adequately responding and allows the carrier gas trip time to be calculated on the physical components of the system.

Cascade uses acceptance criteria to evaluate the RTs as described in the manufacturer's SOP. The acceptable criteria for an RT is defined for specified concentrations of RT solution and a specified carrier gas trunkline flow rate. Documenting the RTs provides a level of quality assurance for each MIP project and allows operators and data reviewers to identify systems in need of maintenance.

CASCADE HIGH RESOLUTION SITE CHARACTERIZATION

The trip time is measured by recording the time between the moment when the testing vial is placed over the membrane and the response of the detectors, as viewed on the MIP data acquisition unit. The baseline and peak response value are also recorded for comparison with other MIP response tests. The trip time is entered manually into the data acquisition system account for the time it takes for compounds in the subsurface to travel the length of the trunkline during the MIP boring, thereby increasing the accuracy of depth measurements.



An example response test for trichloroethene and benzene

MIP Data Interpretation

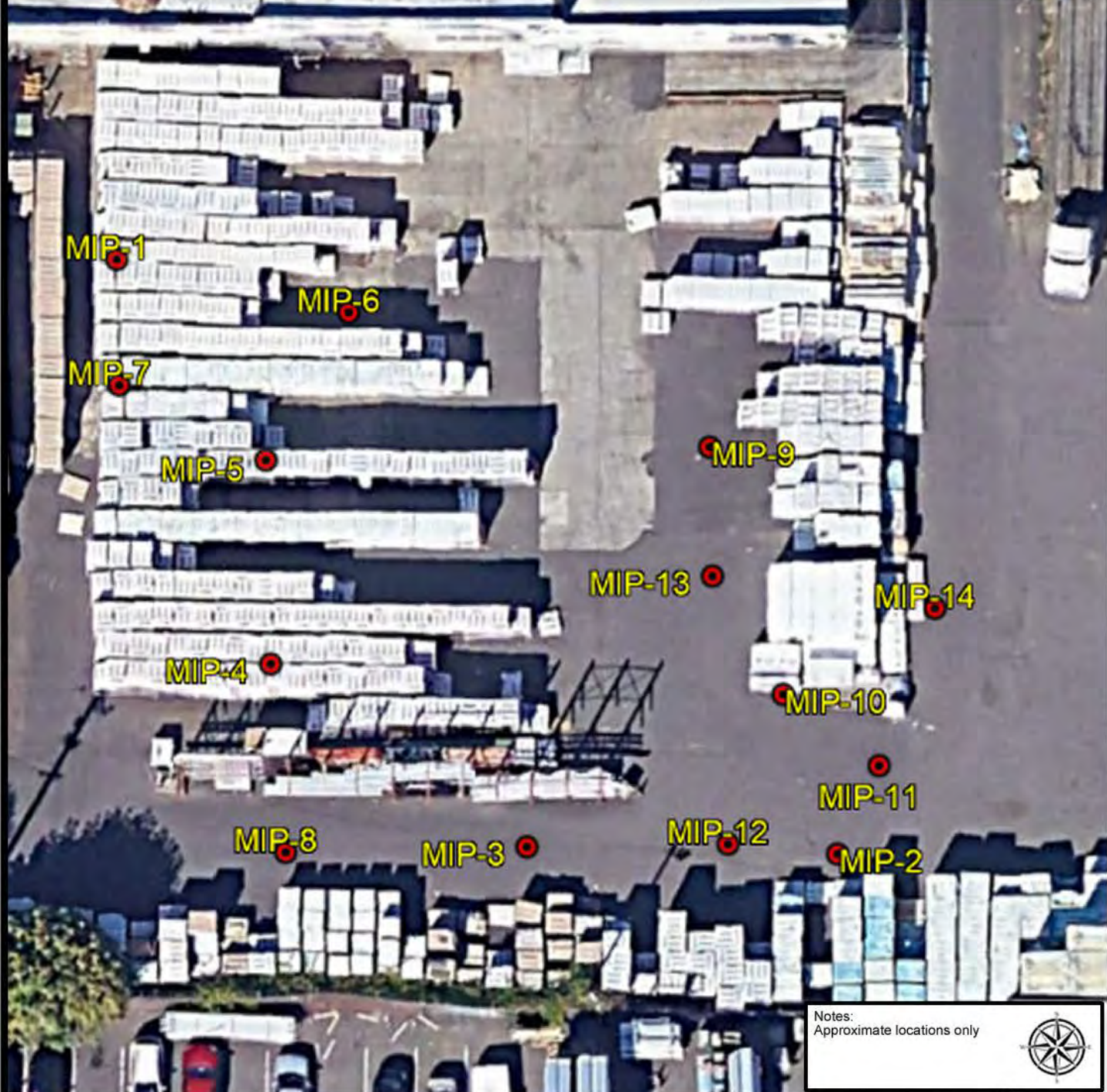
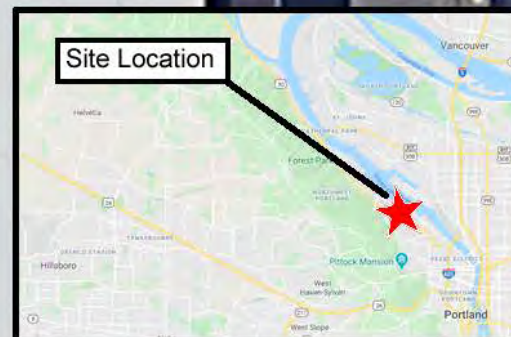
Detector responses, measured in microVolts (μV), are a semi-quantitative indication of relative contaminant concentrations. Minimum and maximum detector responses are collected at each depth interval. A comparison of the responses of the four detectors at each interval is necessary to gather the most information about the compounds present. In general, responses on the XSD, ECD, and PID indicate the presence of chlorinated compounds (i.e., no response on the FID). Responses only on the PID and FID indicate that petroleum hydrocarbons are present. In some cases, comparison of the magnitudes of the XSD and ECD responses can indicate whether the mix of chlorinated compounds is more degraded (e.g., lower ECD responses than those on the XSD) or more source-enriched (e.g., higher ECD responses than those on the XSD). Similar comparison can be accomplished with the PID and FID data: higher responses on the FID indicate the presence of a higher percentage of combustible hydrocarbon compounds.

Confirmatory soil borings are recommended following each MIP investigation. The confirmatory program should be designed to include a small number of boring locations advanced in the immediate vicinity of the MIP locations. The design of this confirmatory boring program will be dependent on the goals of the overall investigation and the specific site conditions. Generally, areas with high detector responses should be targeted for soil sample collection, as well as areas on the boundary of the impacted zone where there are important considerations (nearby receptors, property boundaries, important design considerations for future remediation, etc.).



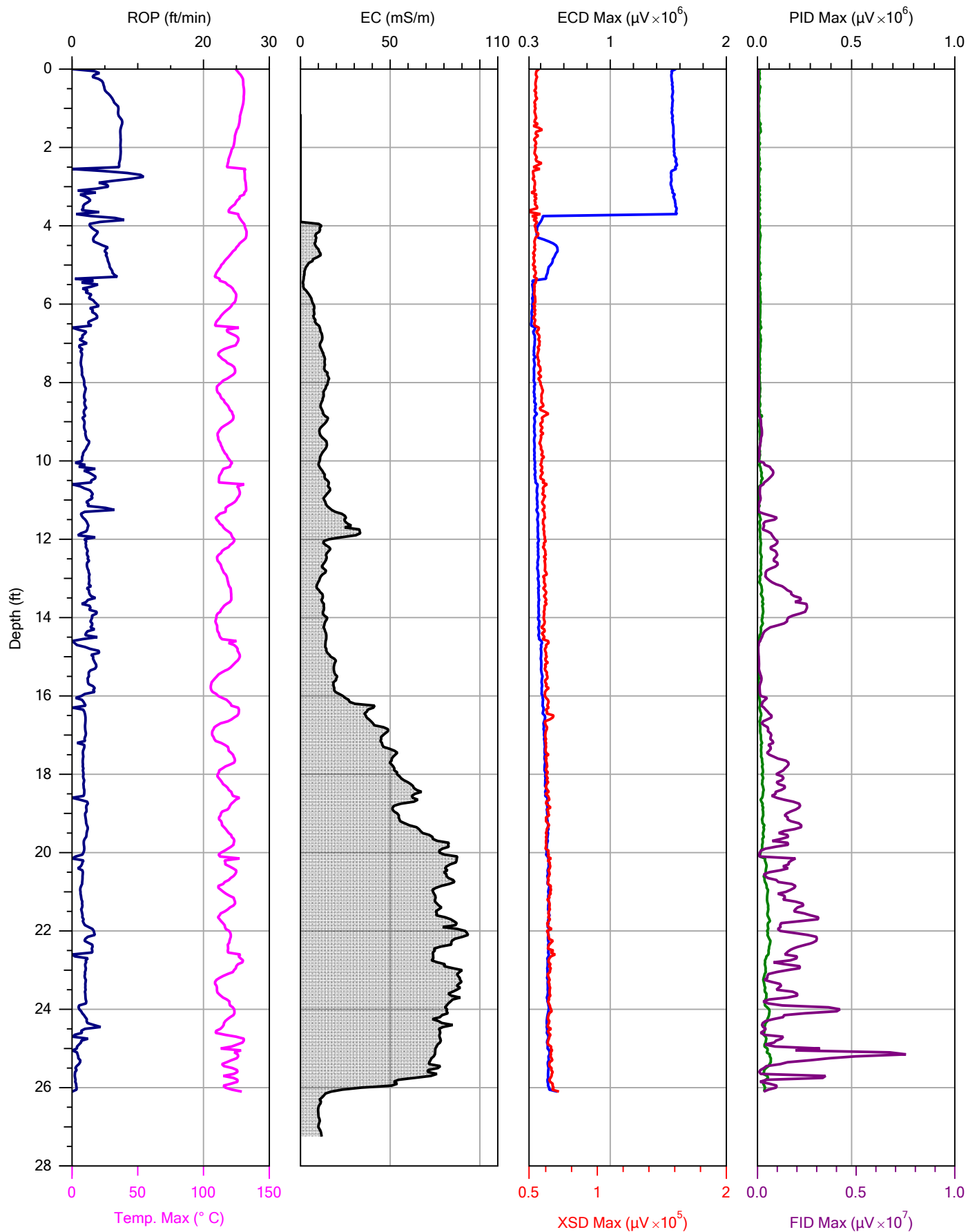
SITE PLAN

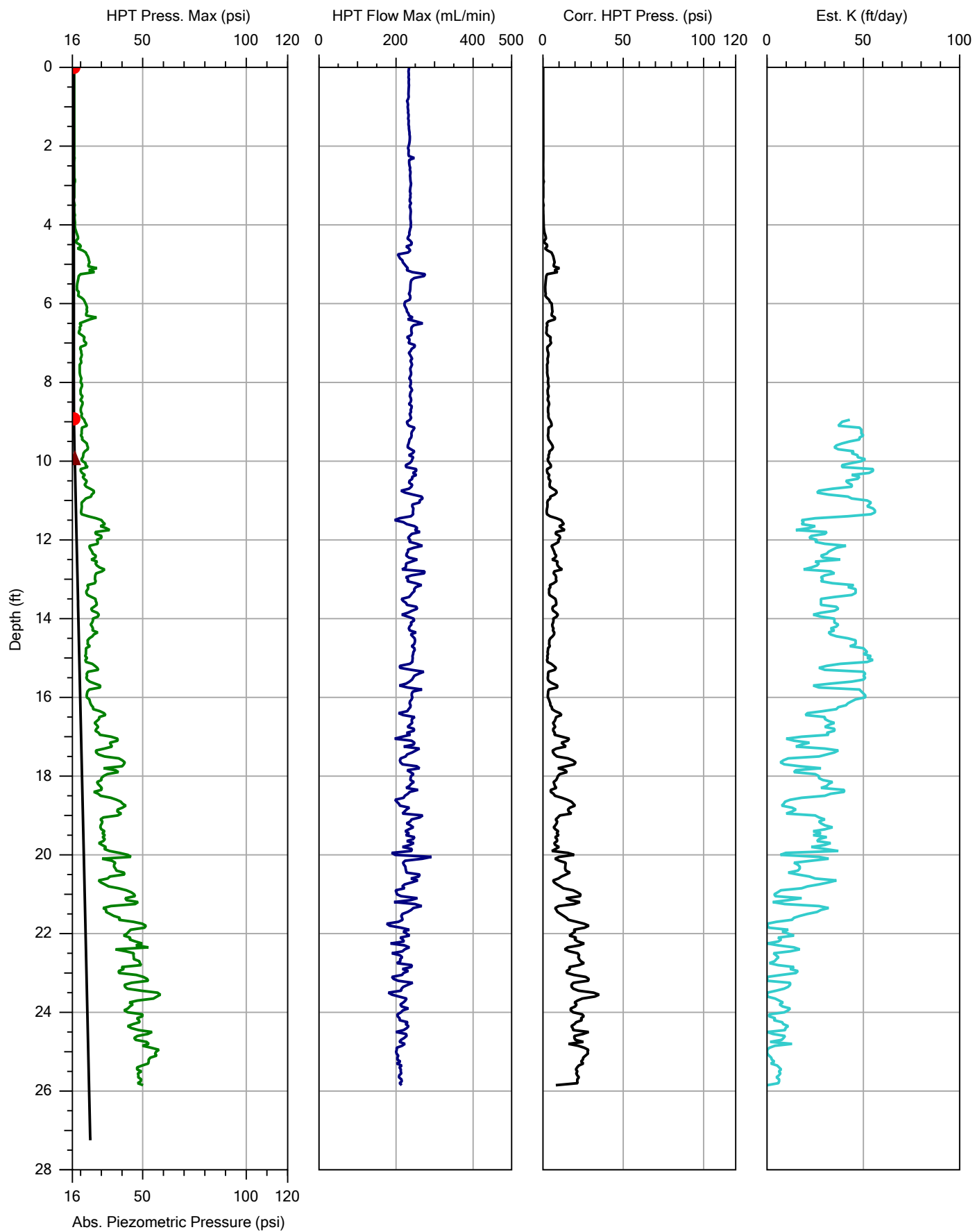
● MIHPT Boring Location

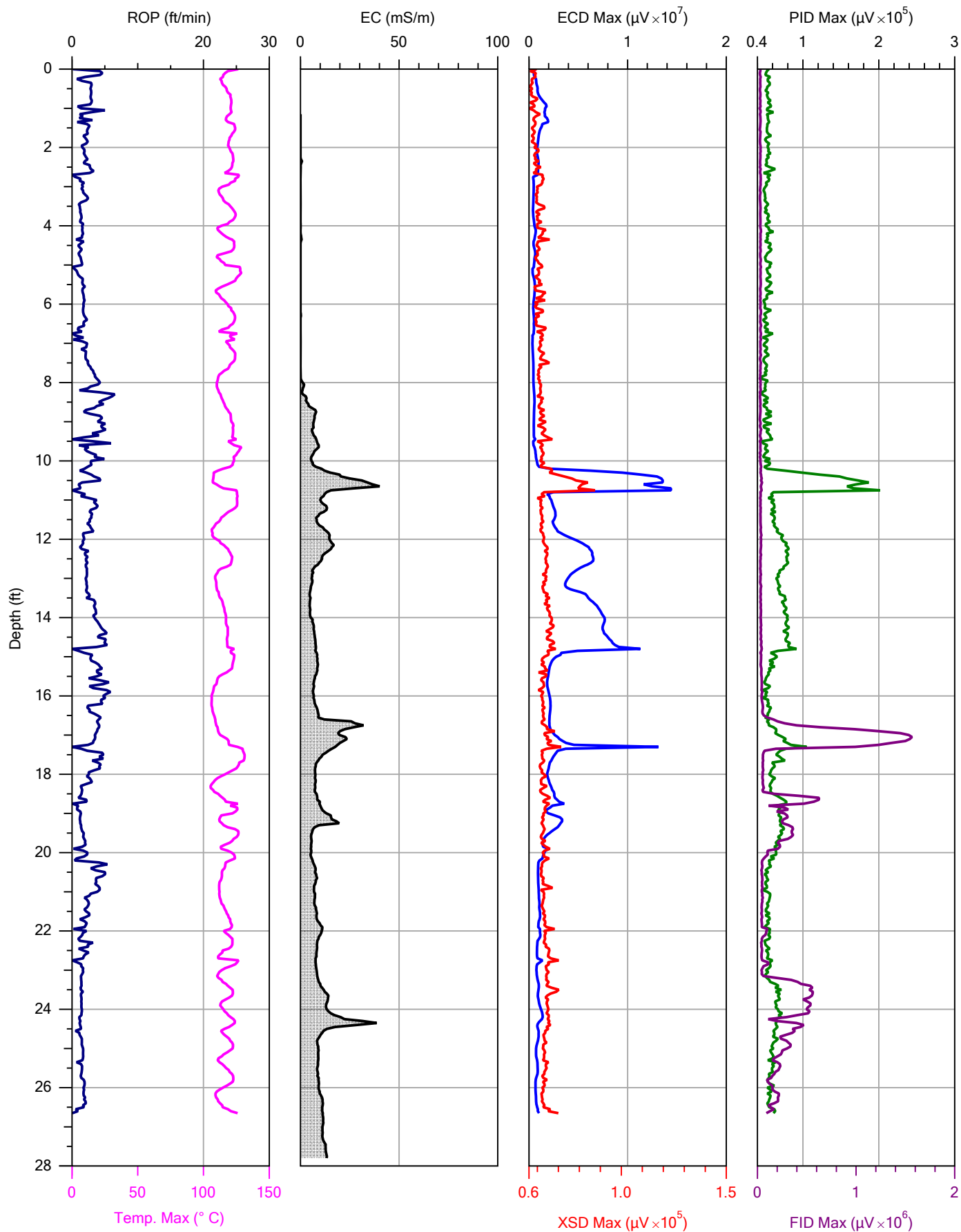




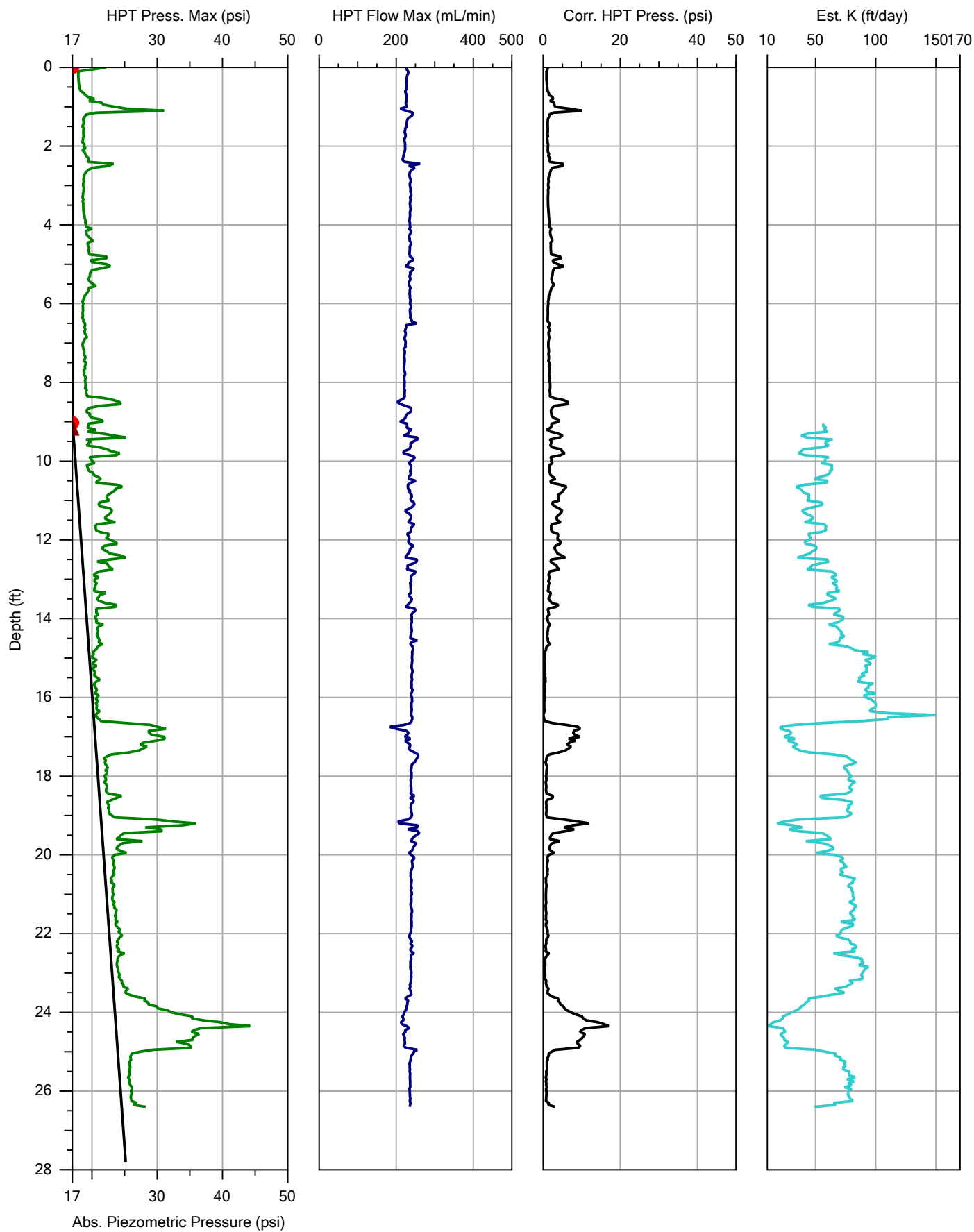
INVESTIGATION DATA PLOTS

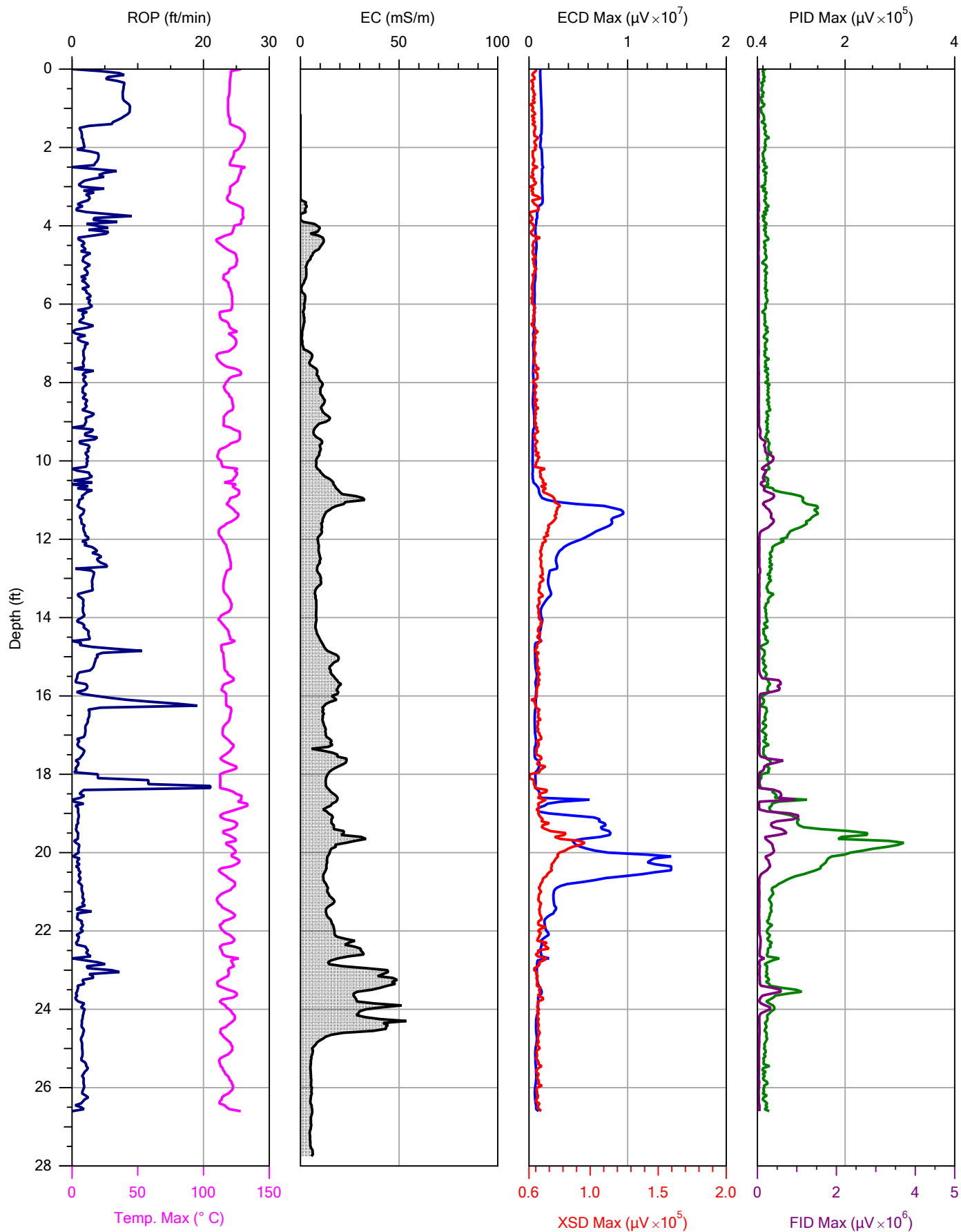


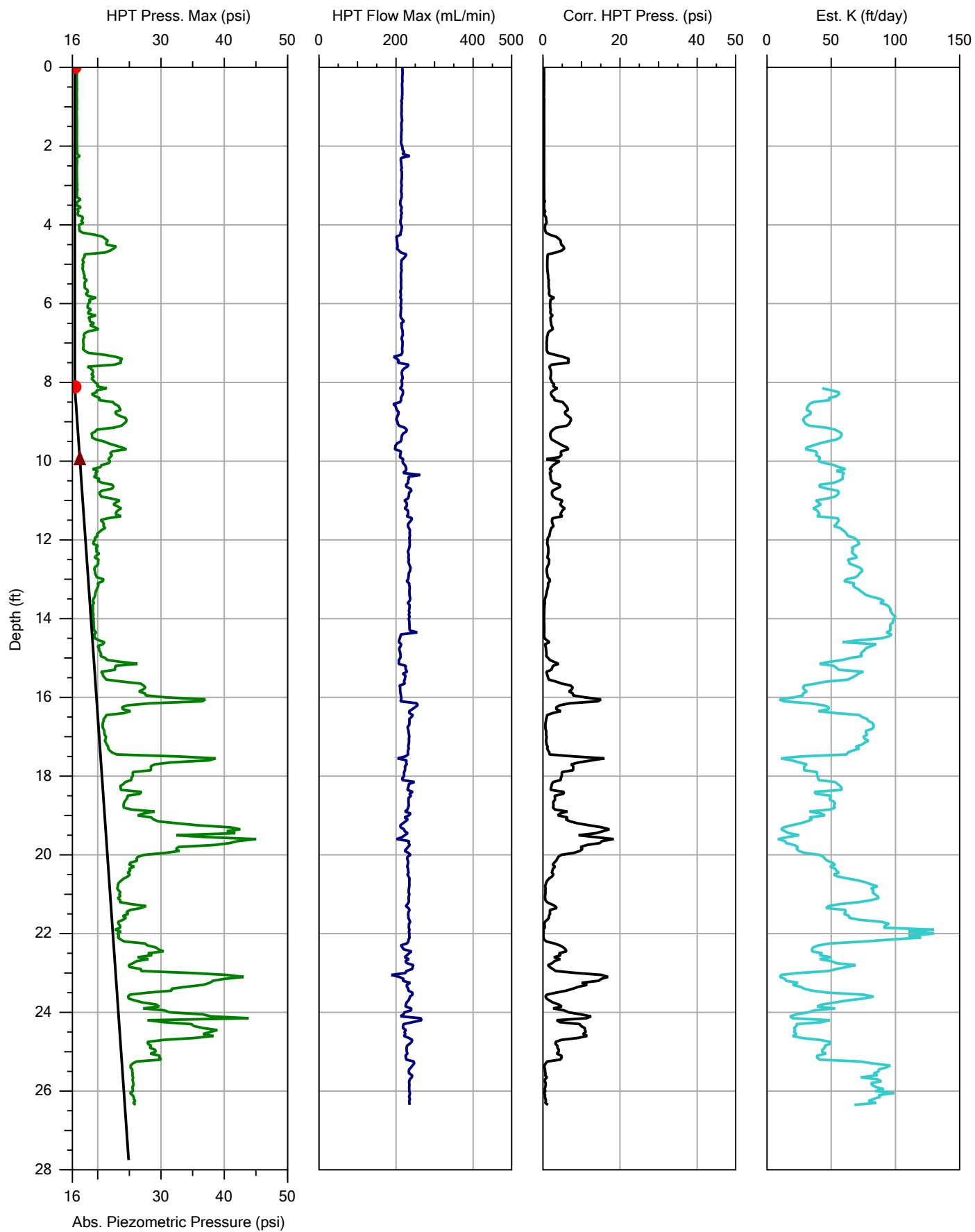


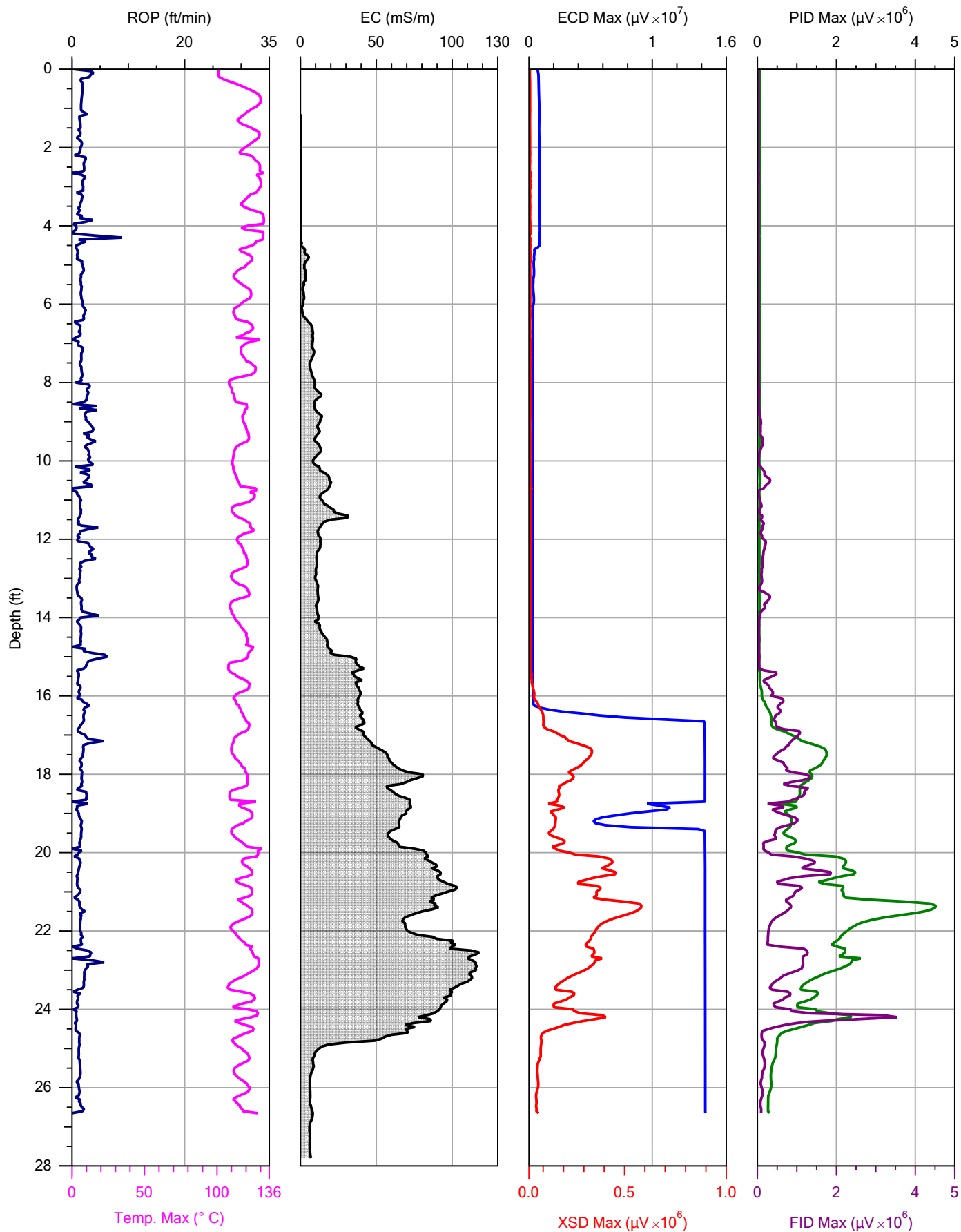


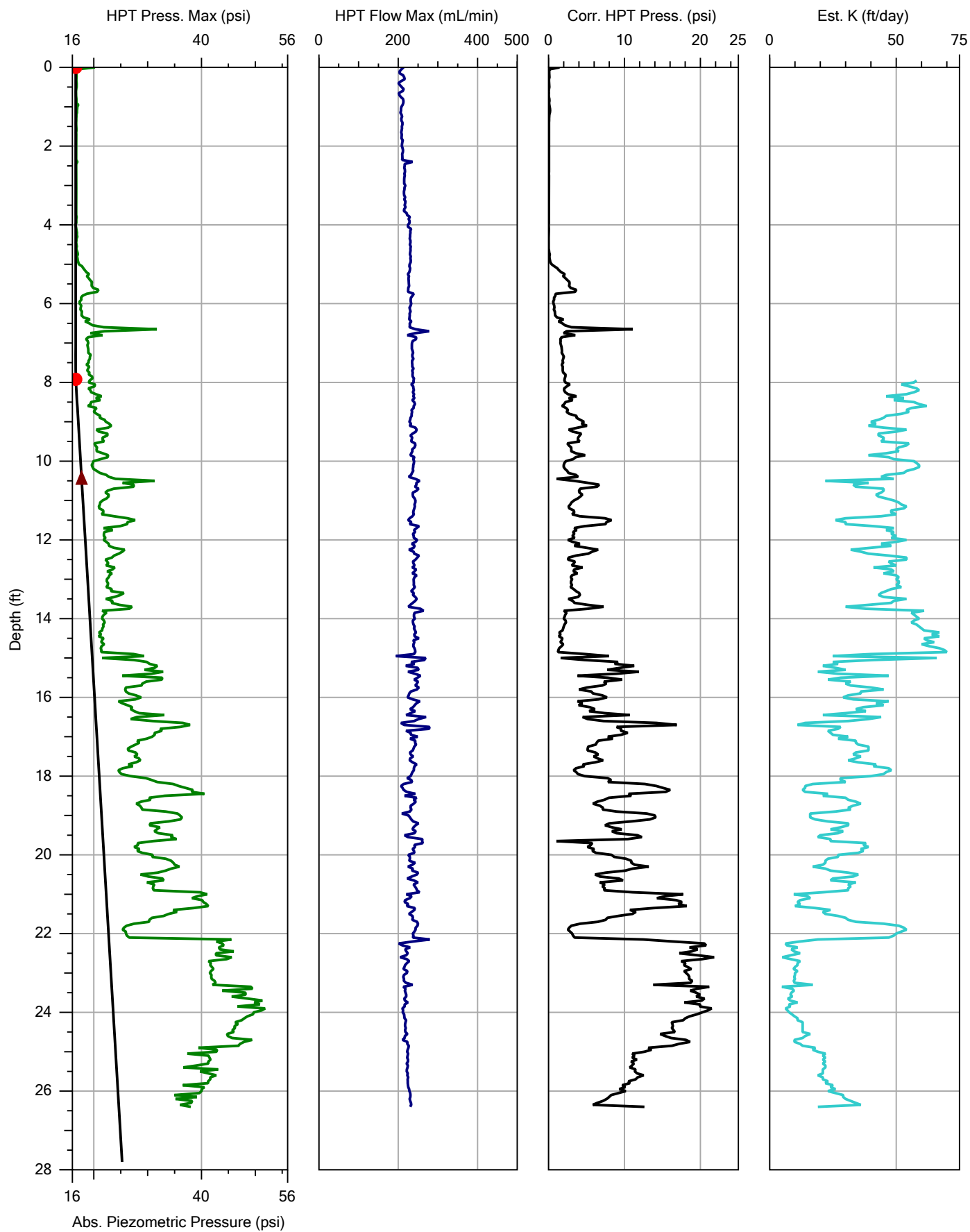
Company:	Cascade	Operator:	Kochnev	File:	MIP-2.MHP
Project ID:	Convoy Supply Site	Client:	PBS Engineering and Environmental	Date:	07/28/20
				Location:	Portland, OR

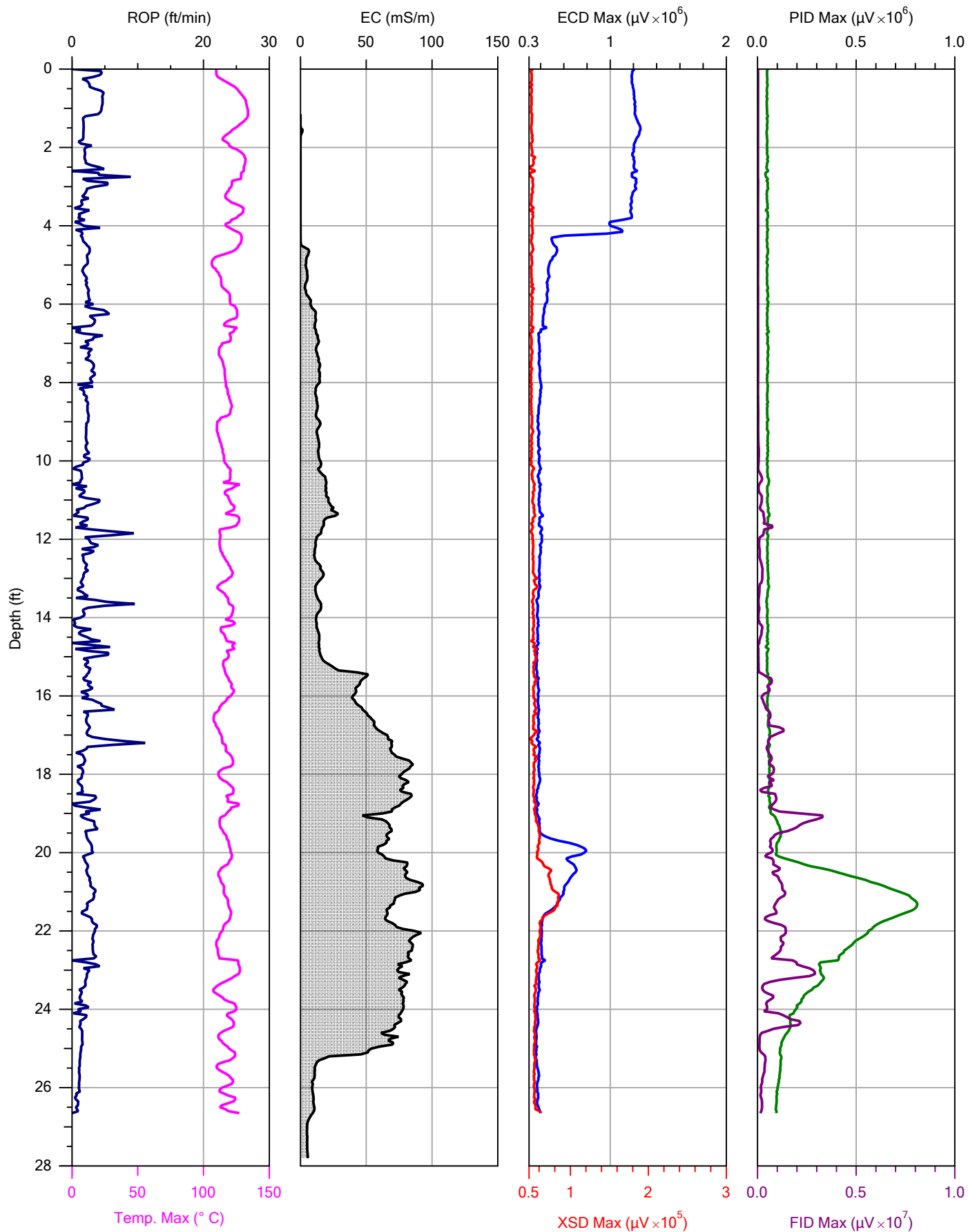


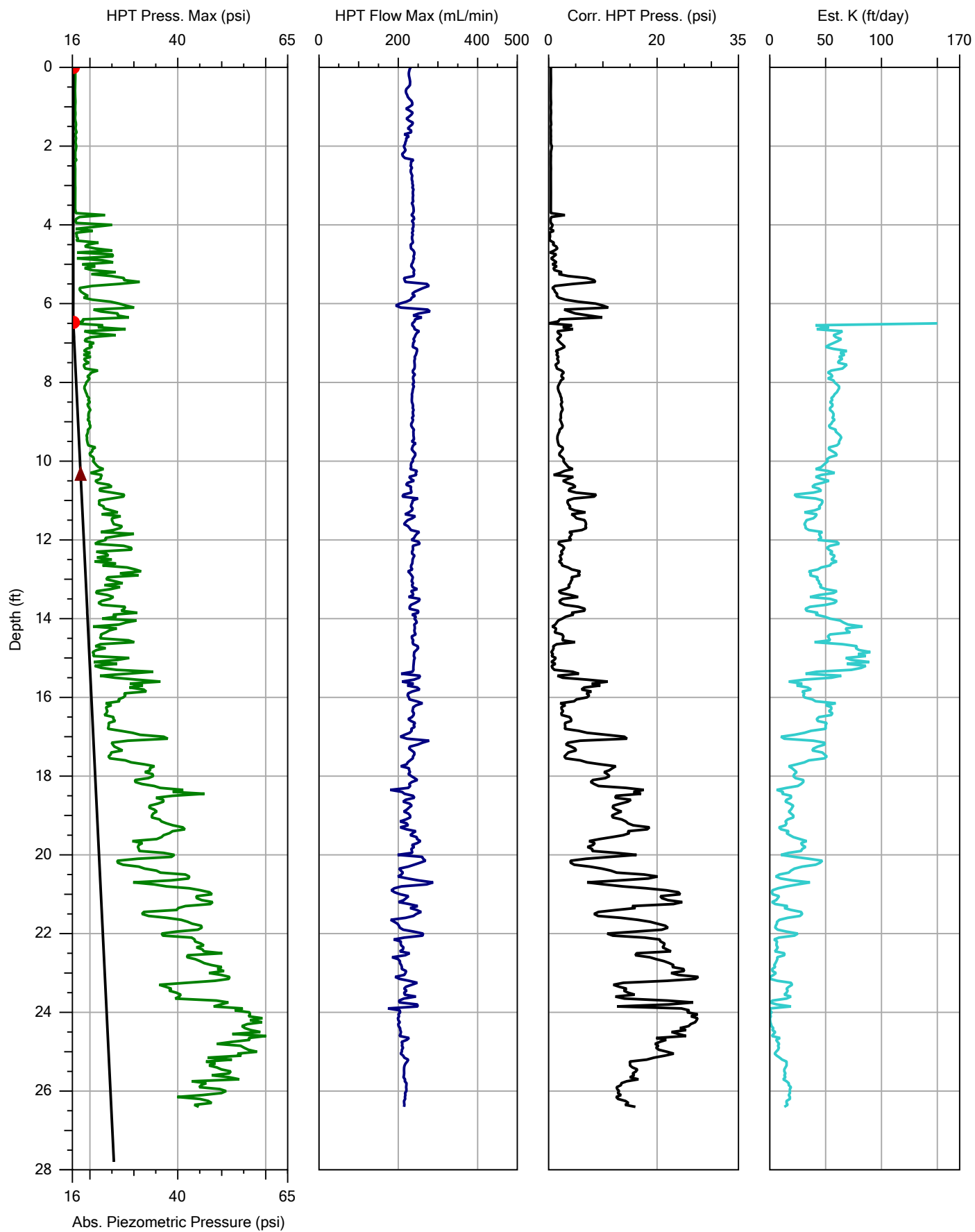


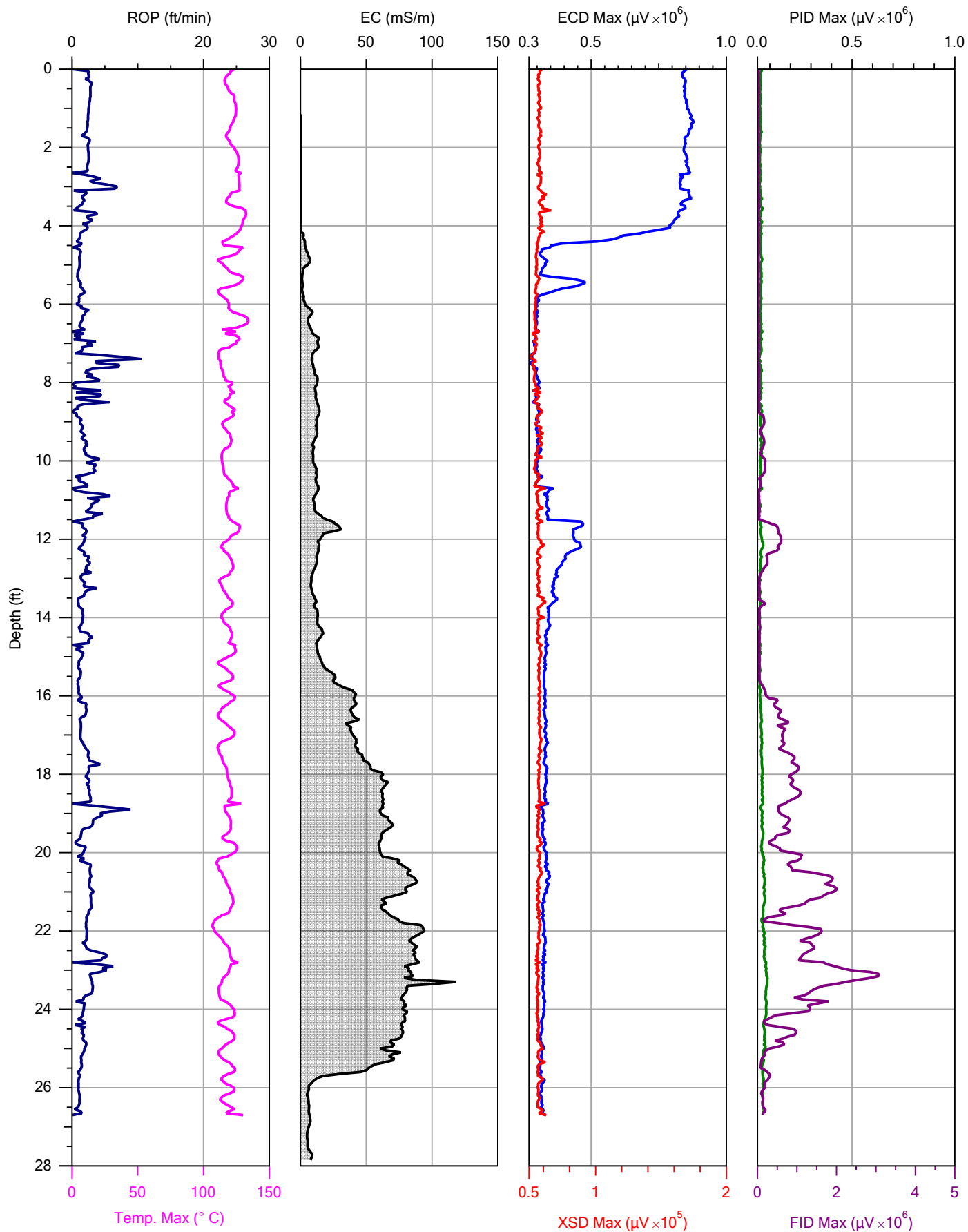


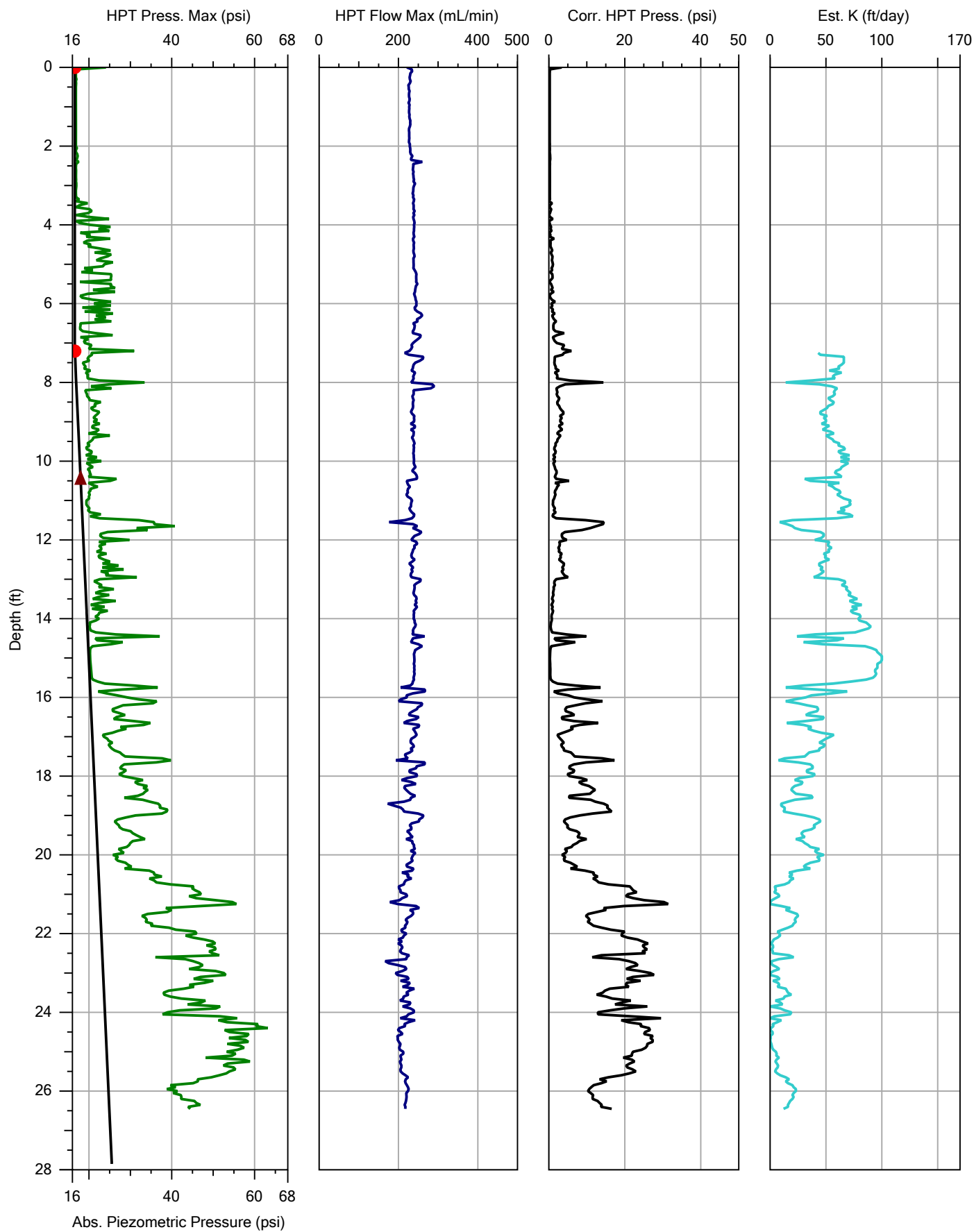


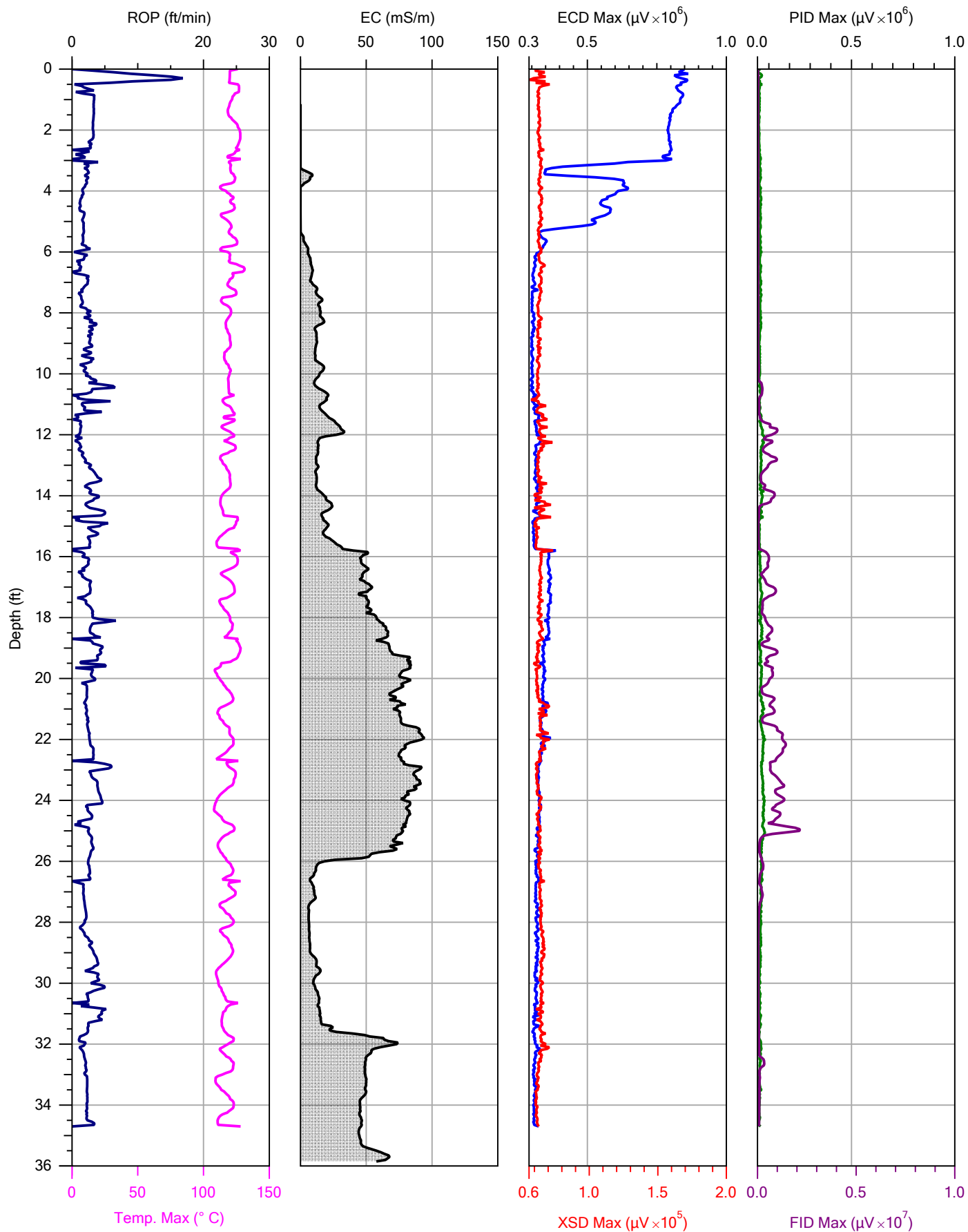


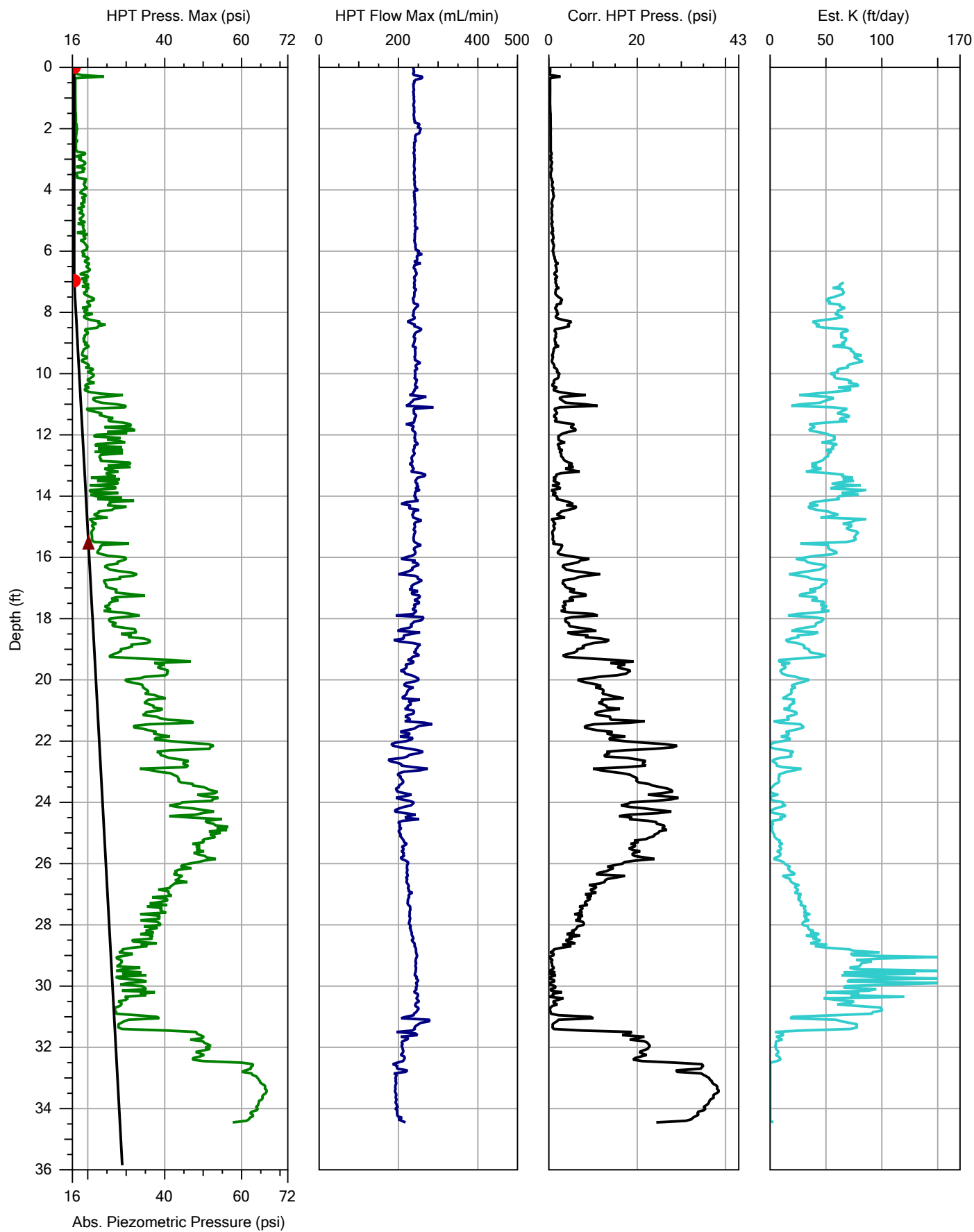


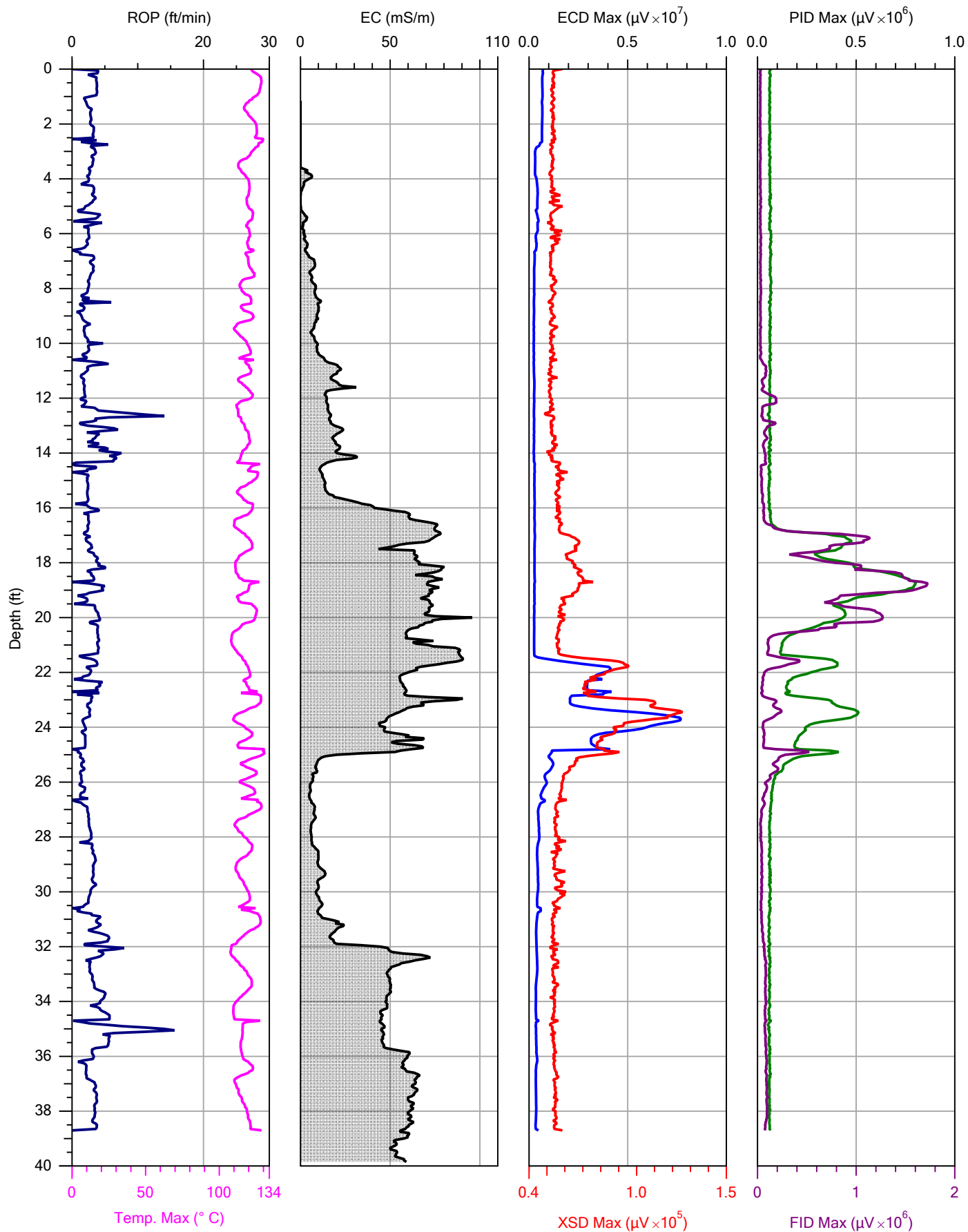


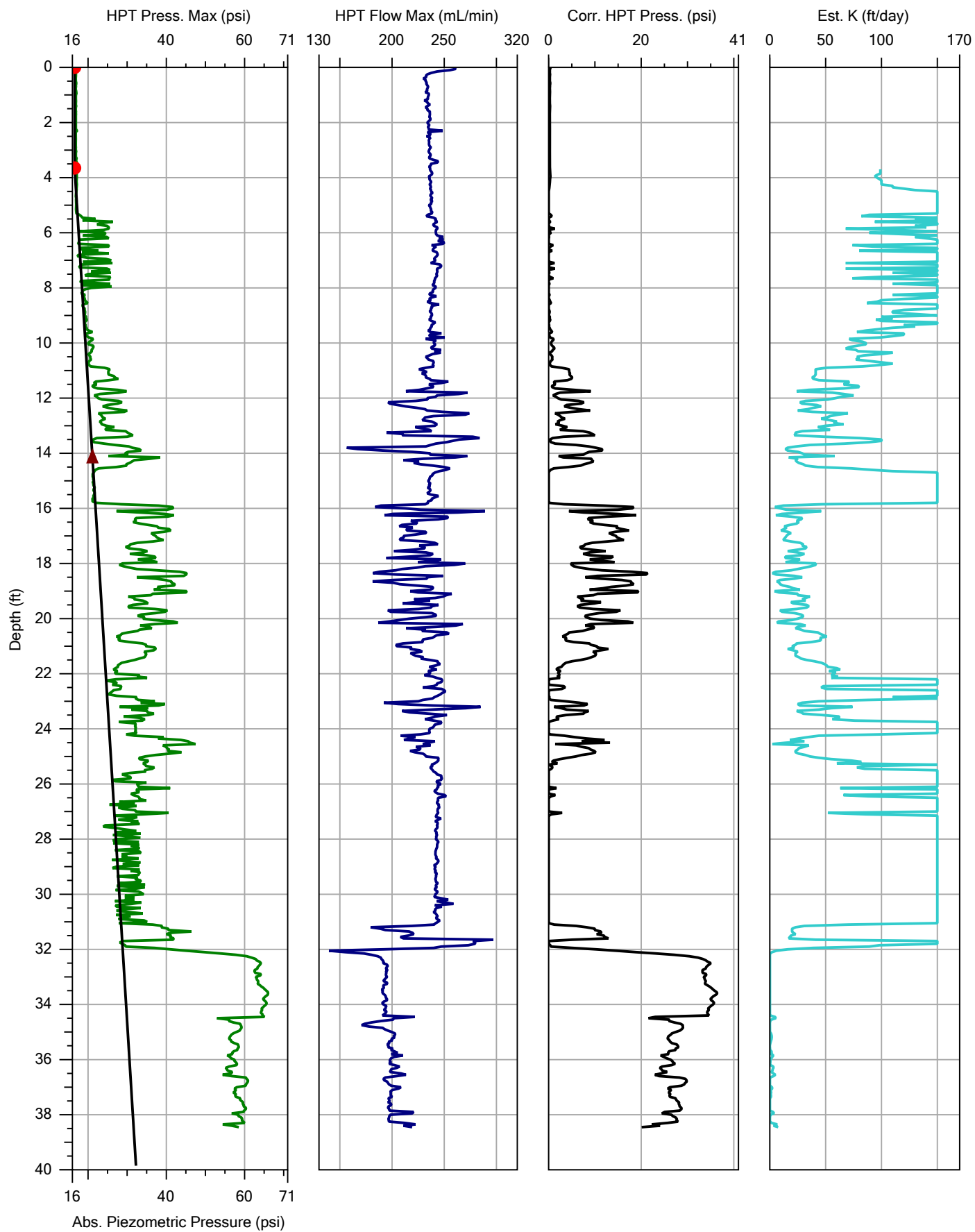


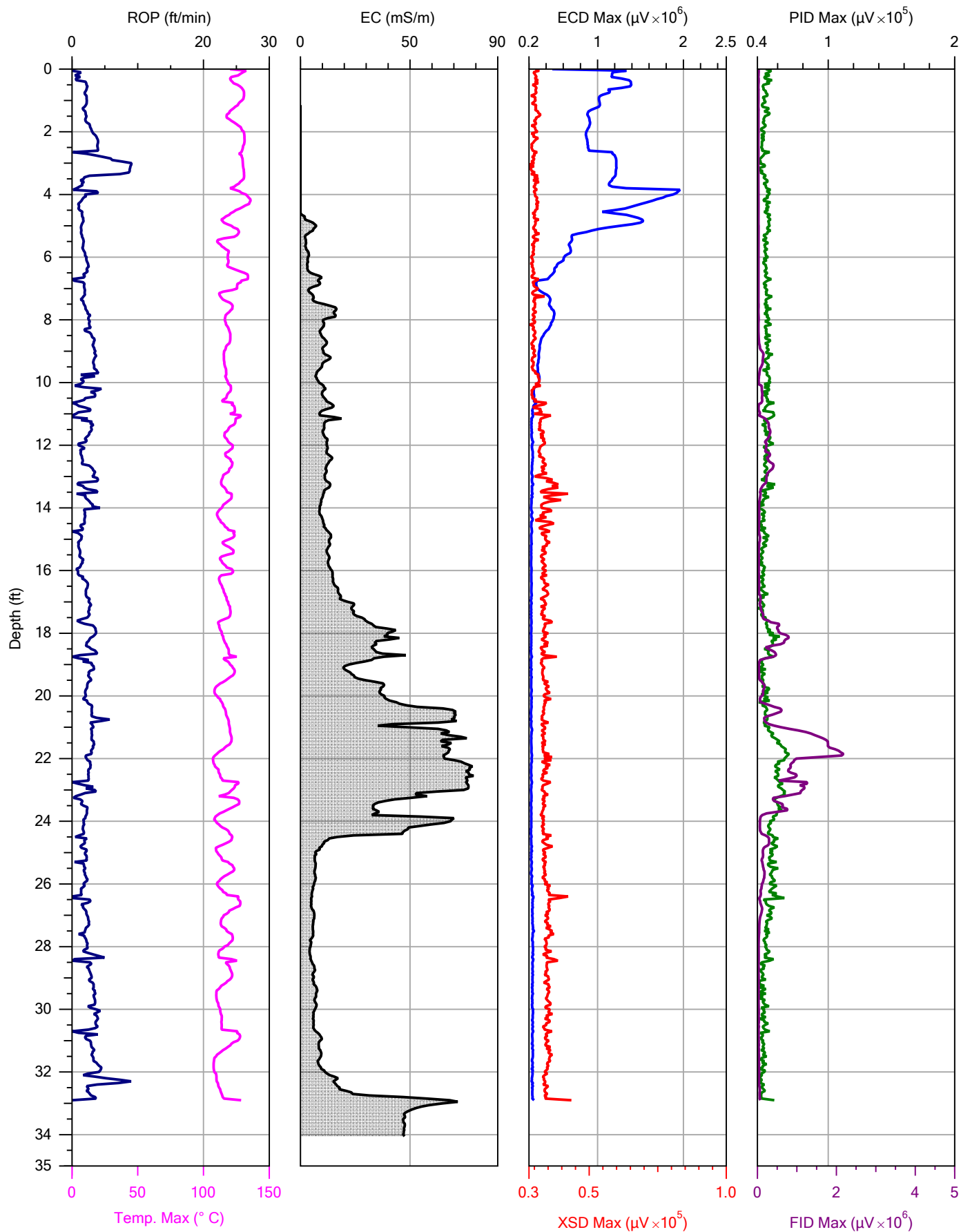


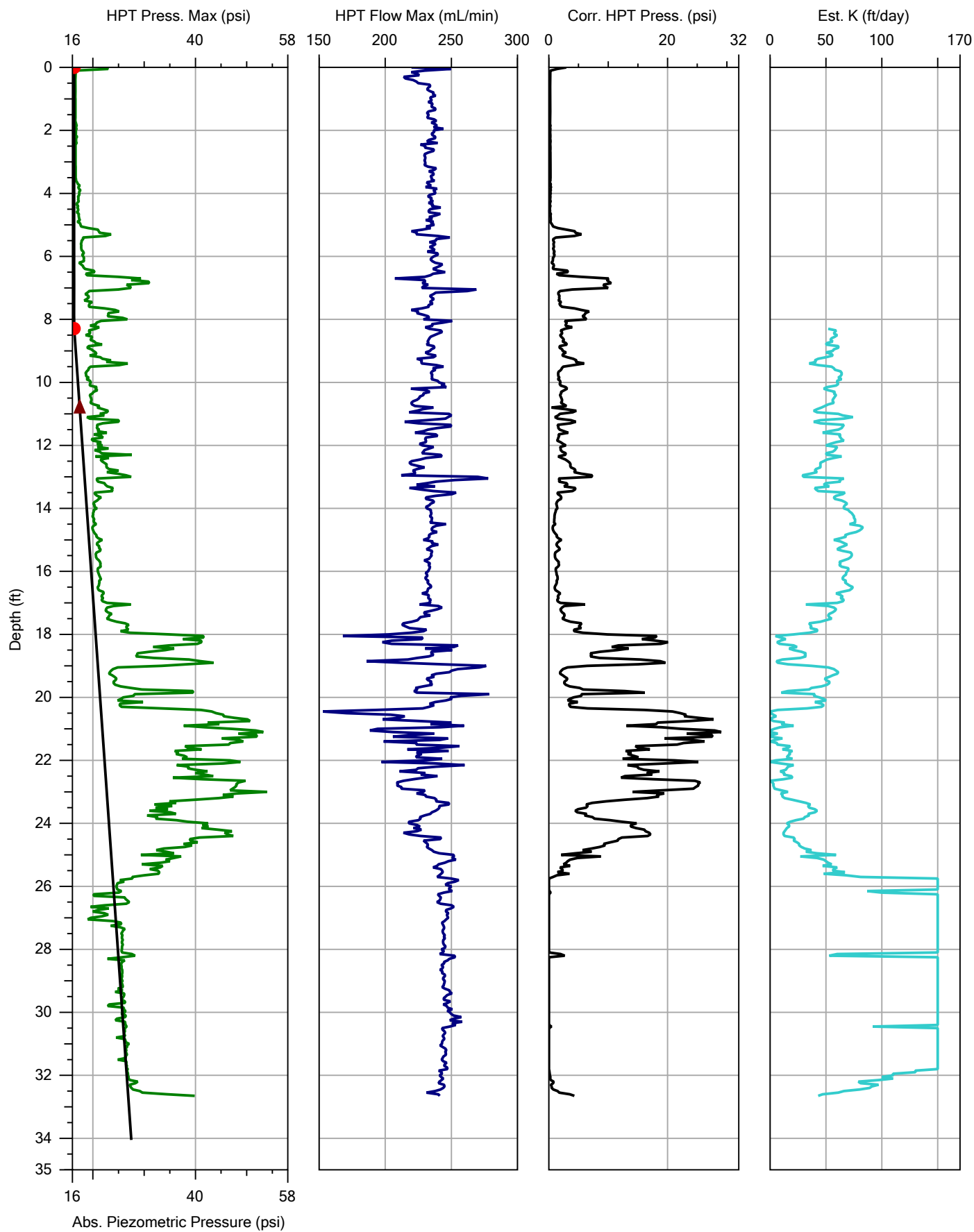


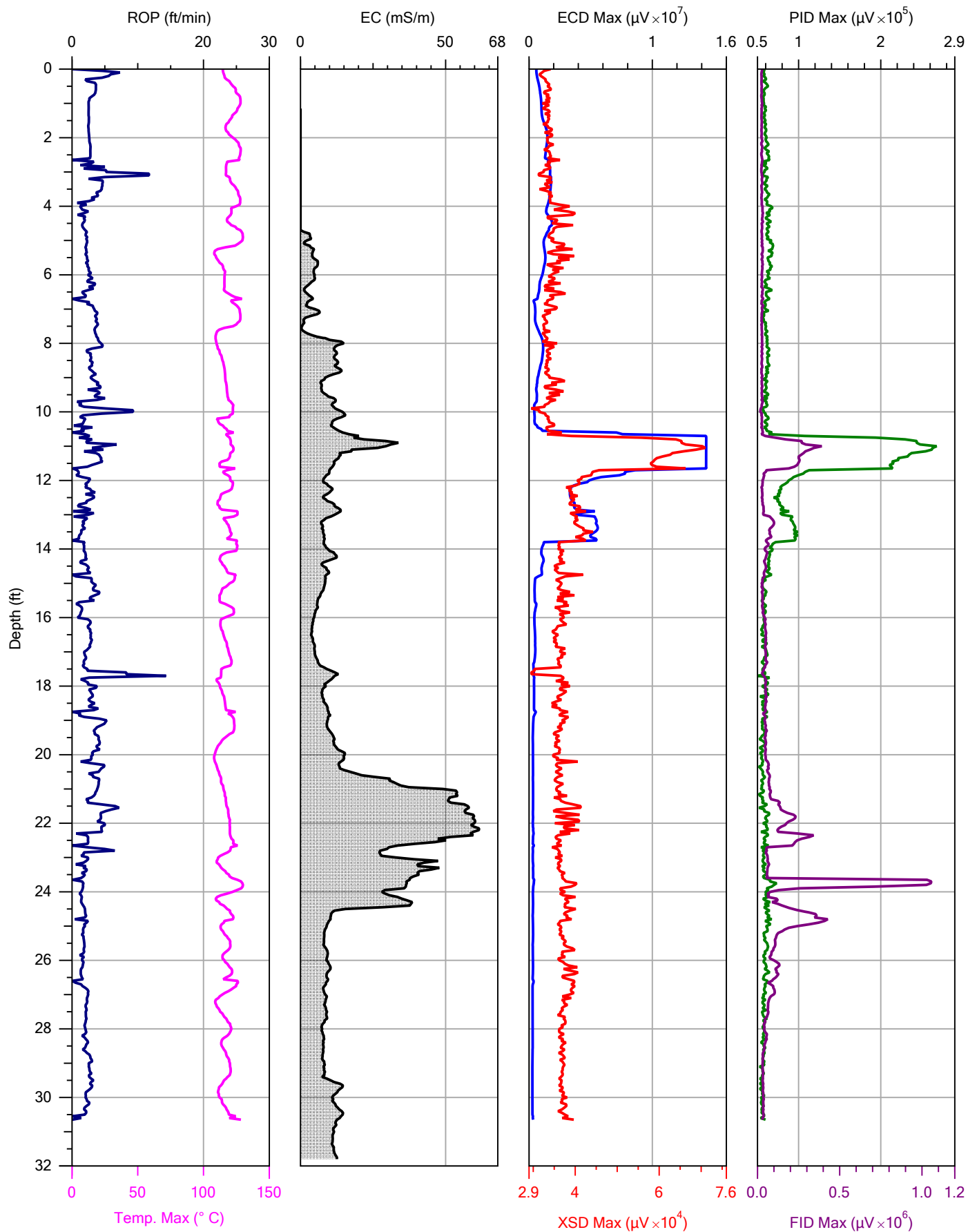


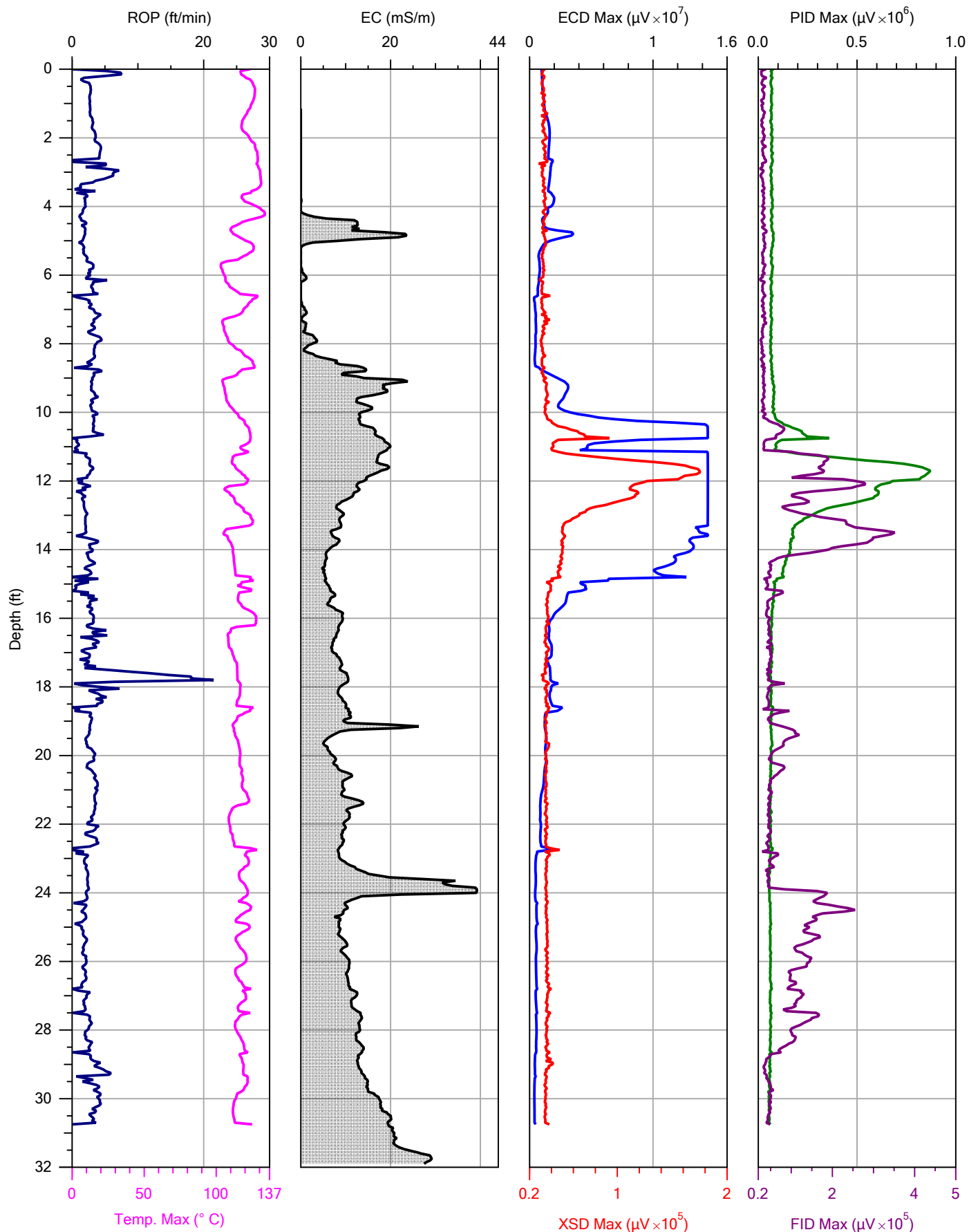


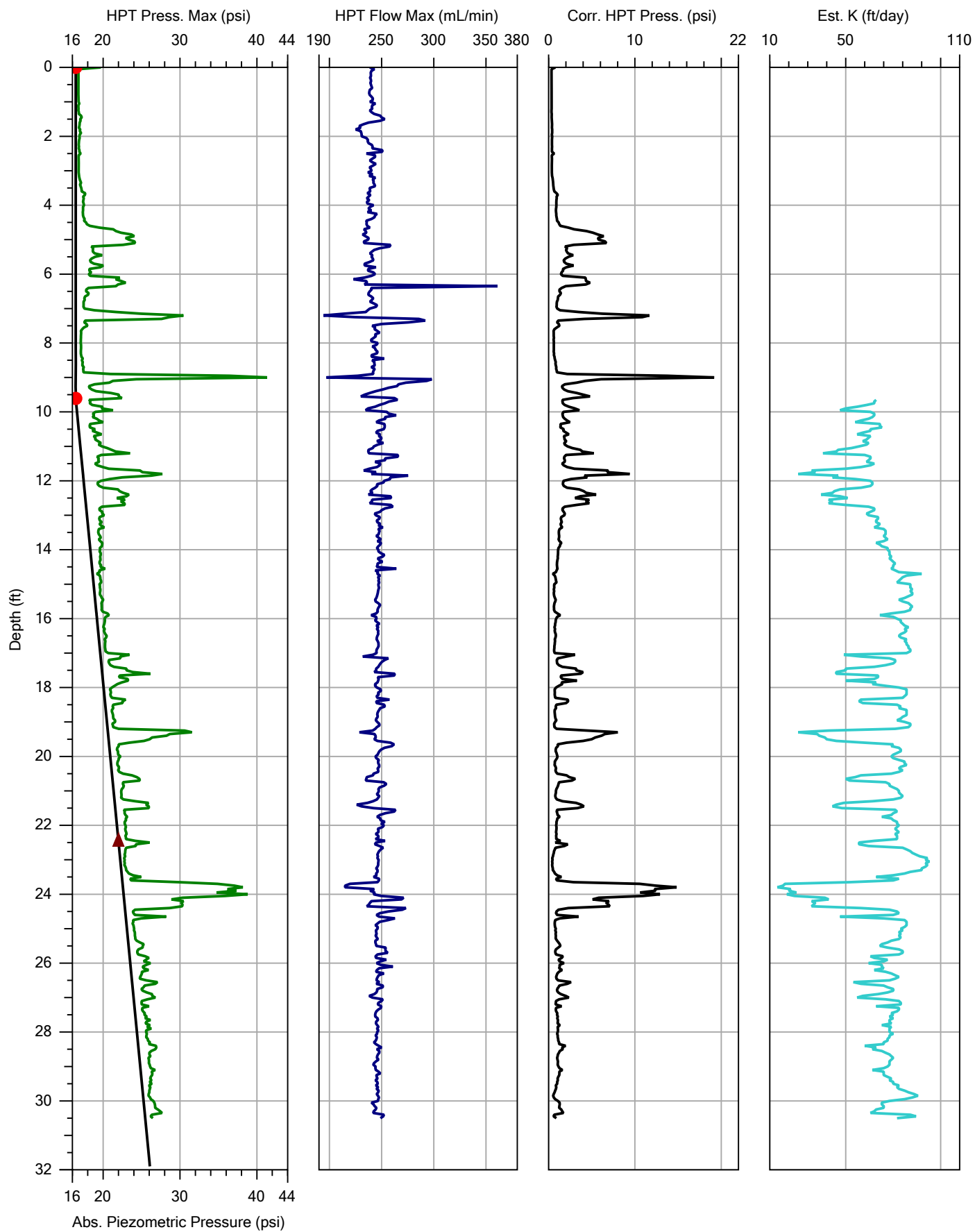


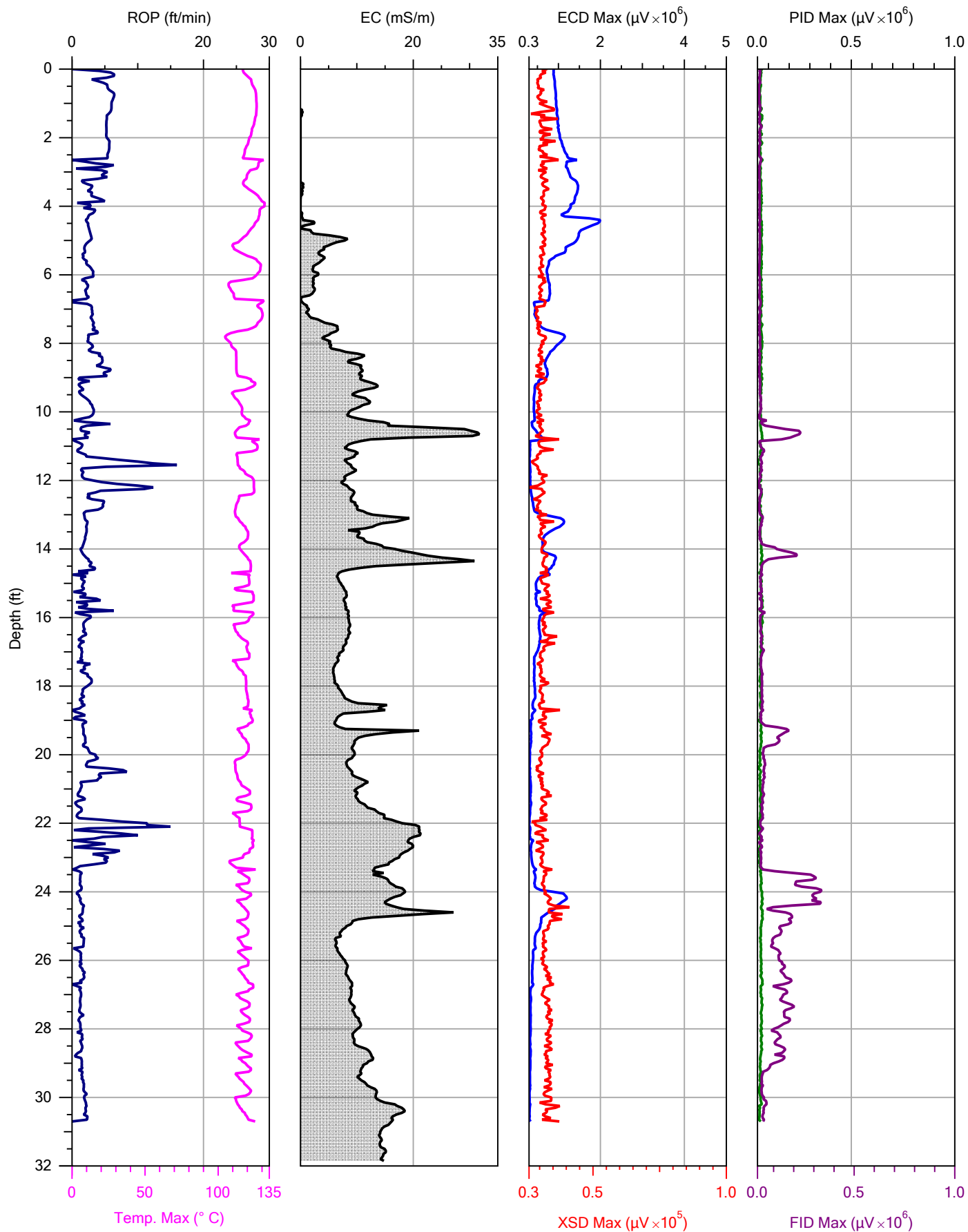


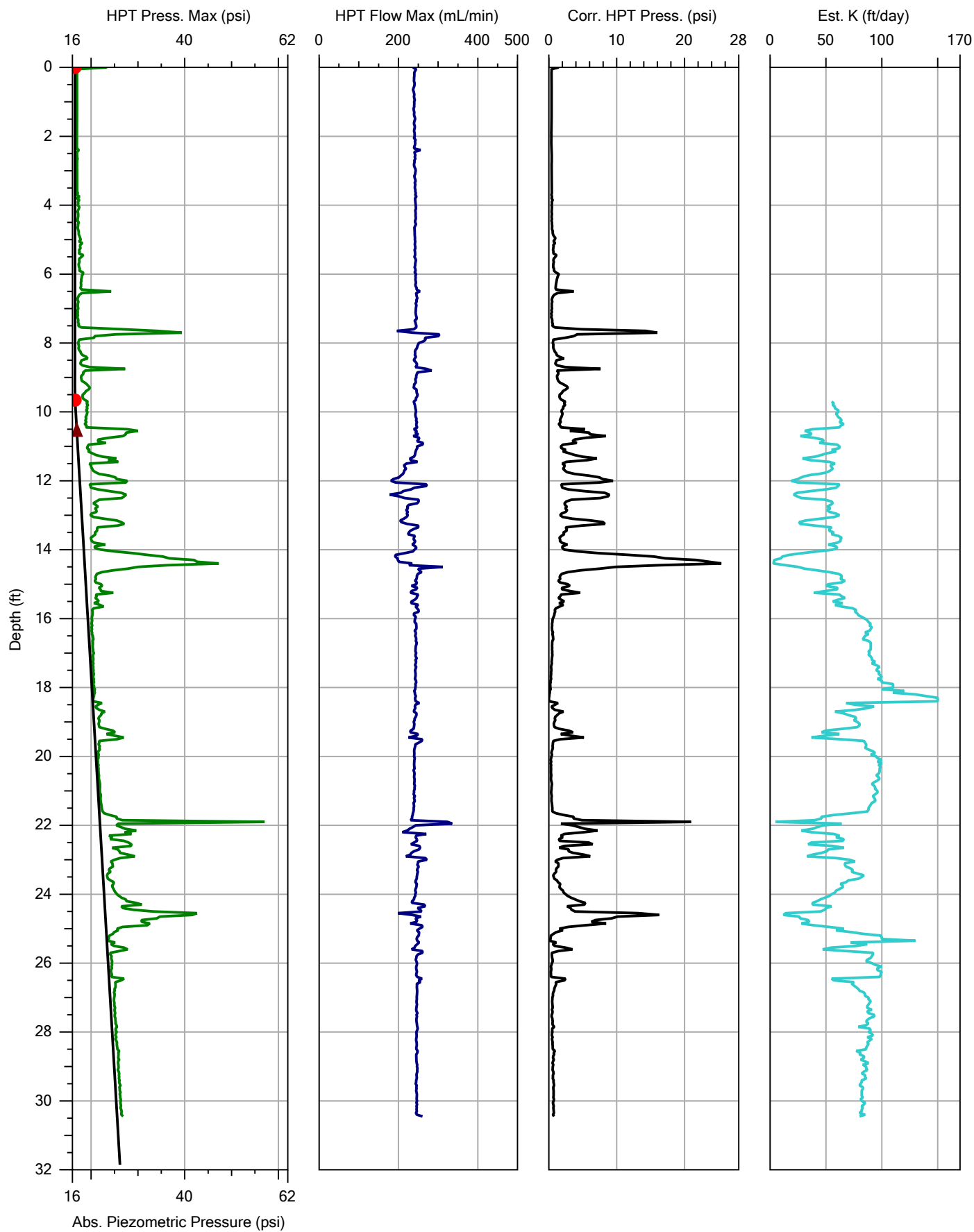


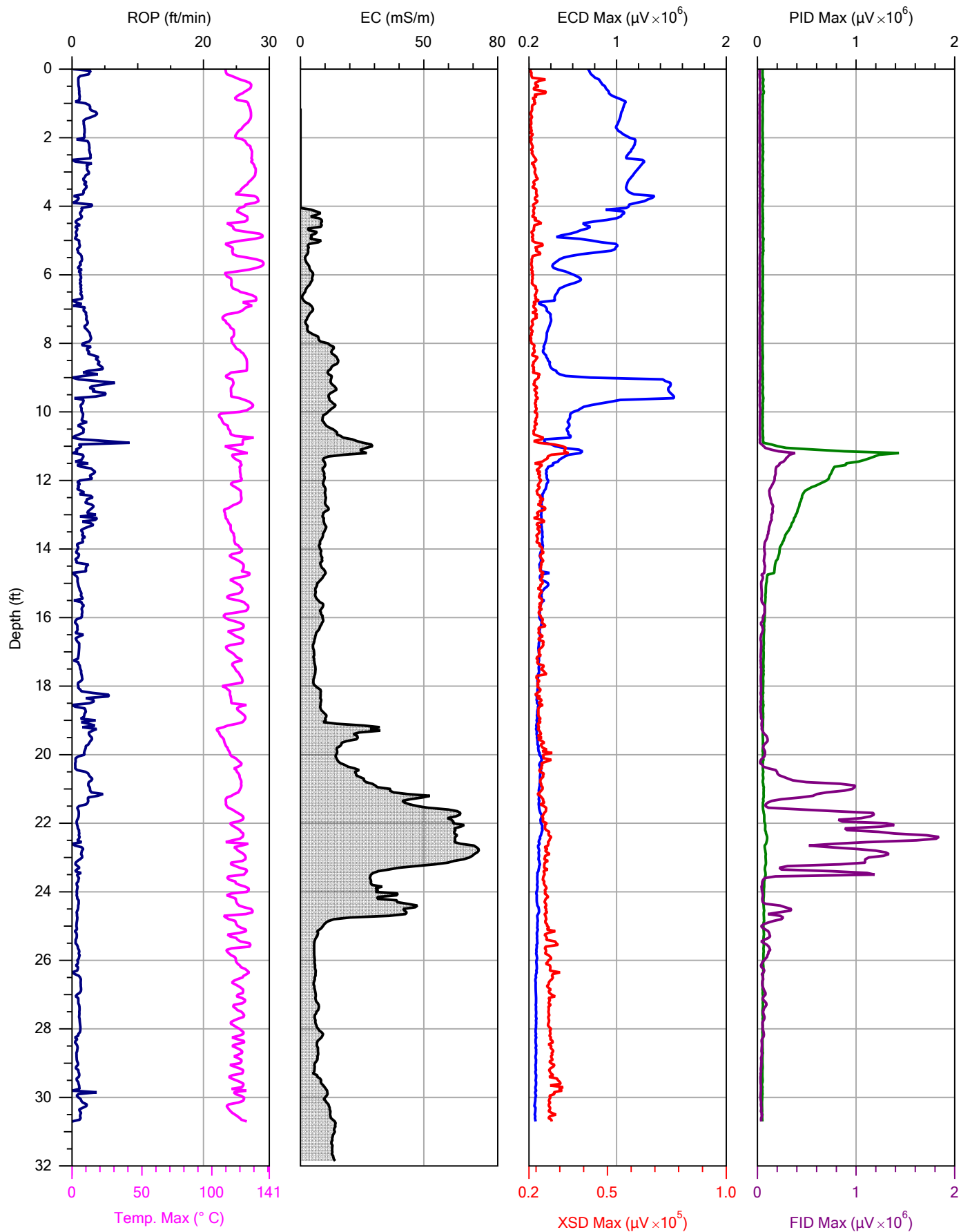


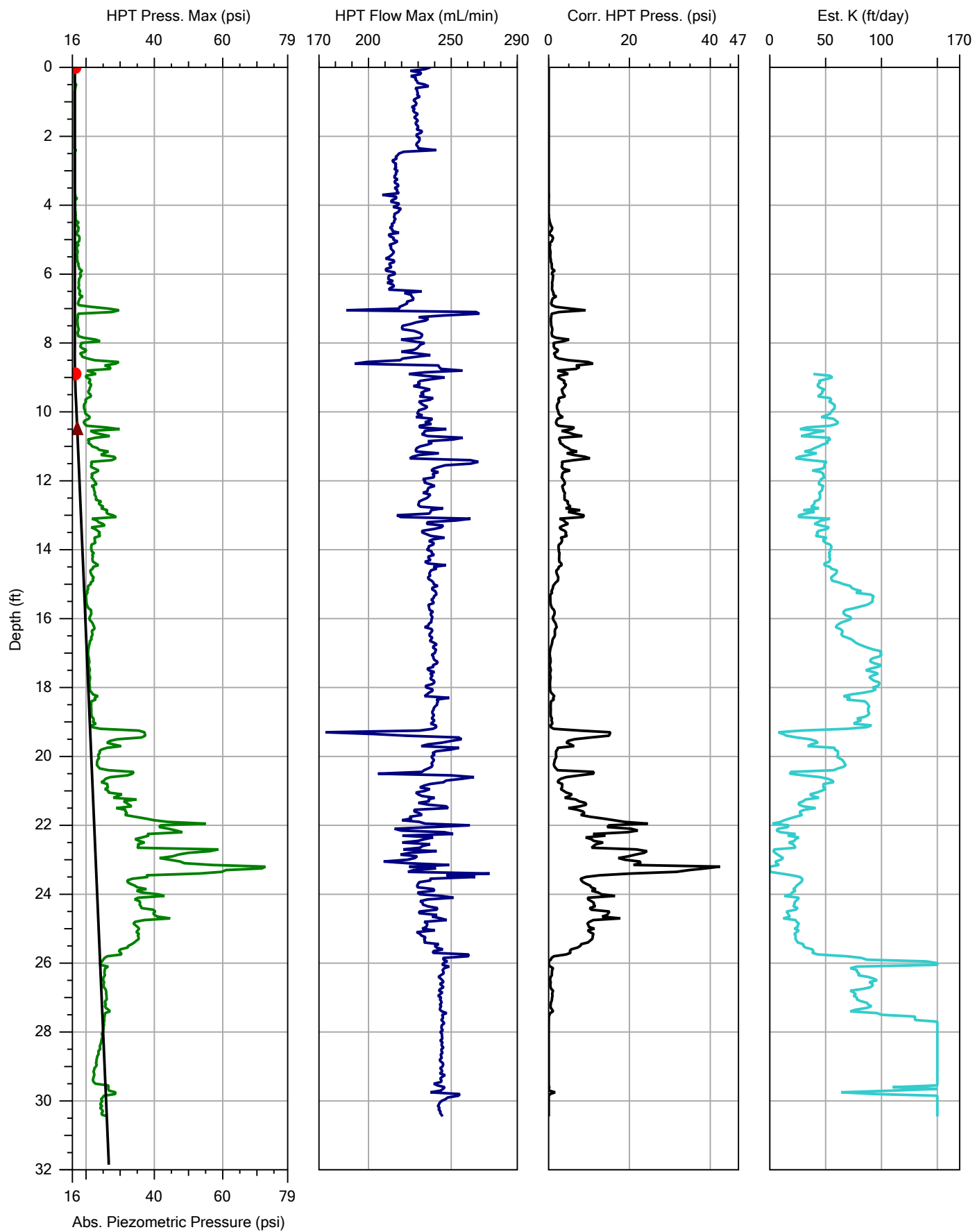












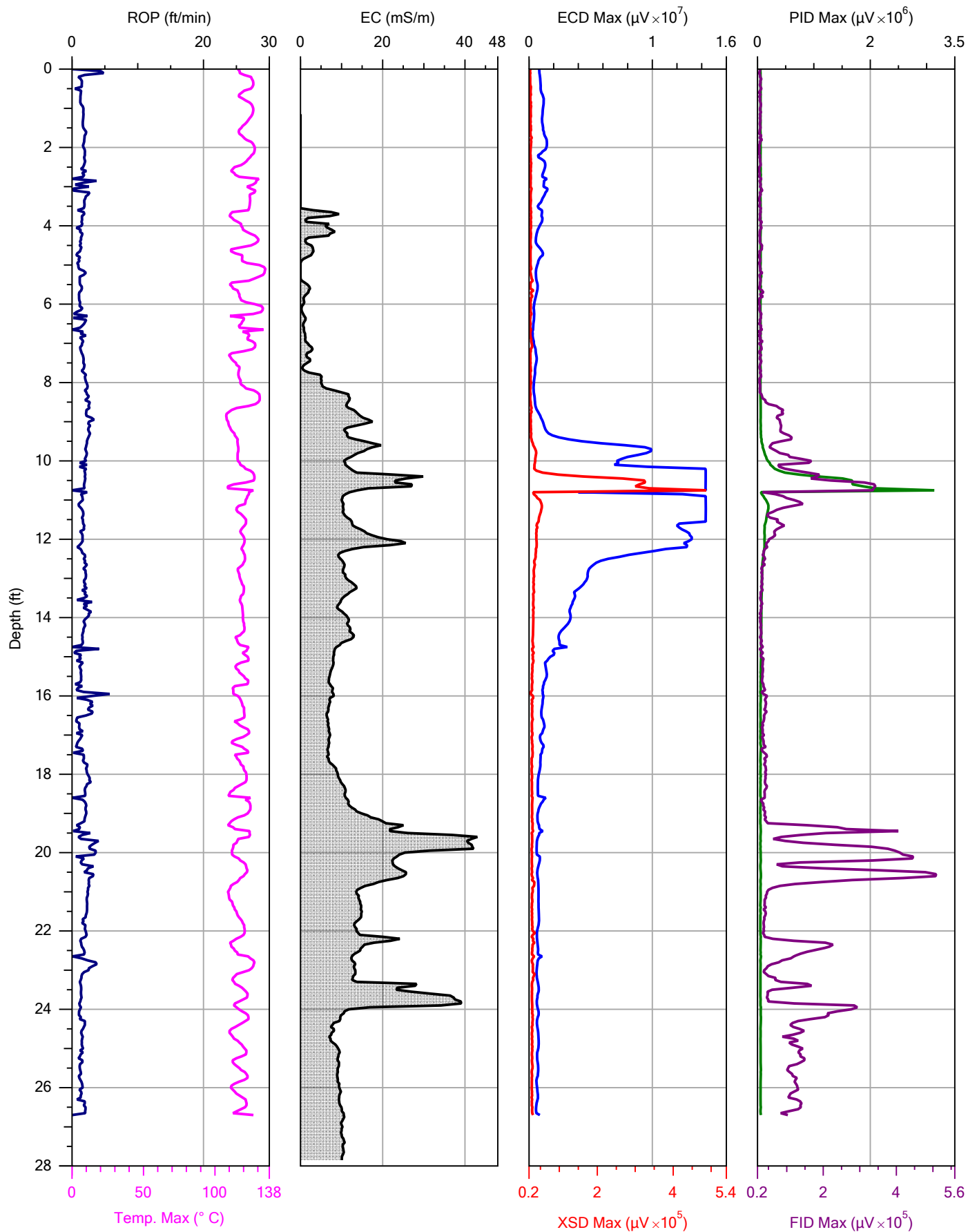
Abs. Piezometric Pressure (psi)

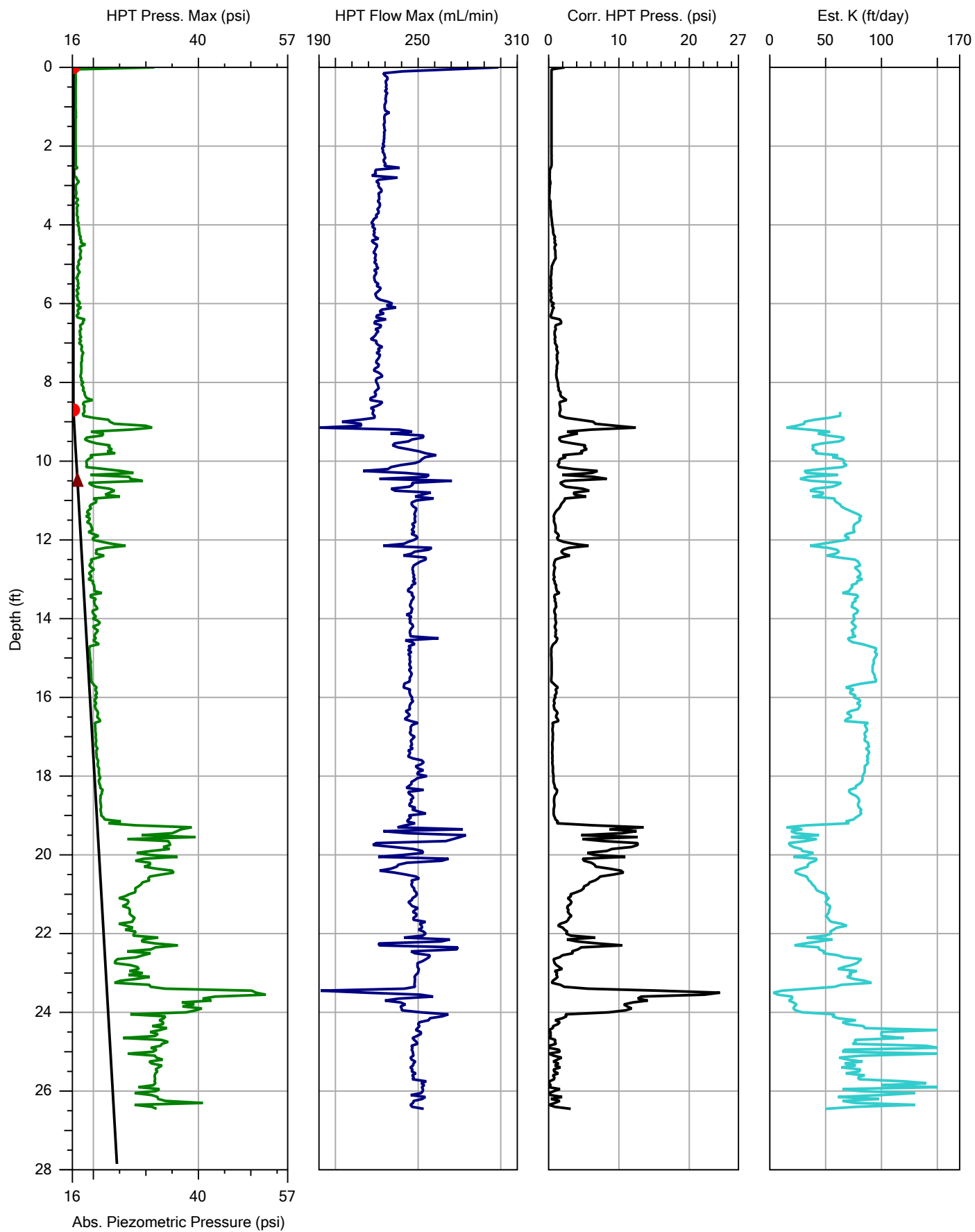


Company: Cascade
Project ID: Convoy Supply Site

Operator: Kochnev
Client: PBS Engineering and Environmental

File:	MIP-13.MHP
Date:	07/31/20
Location:	Portland, OR

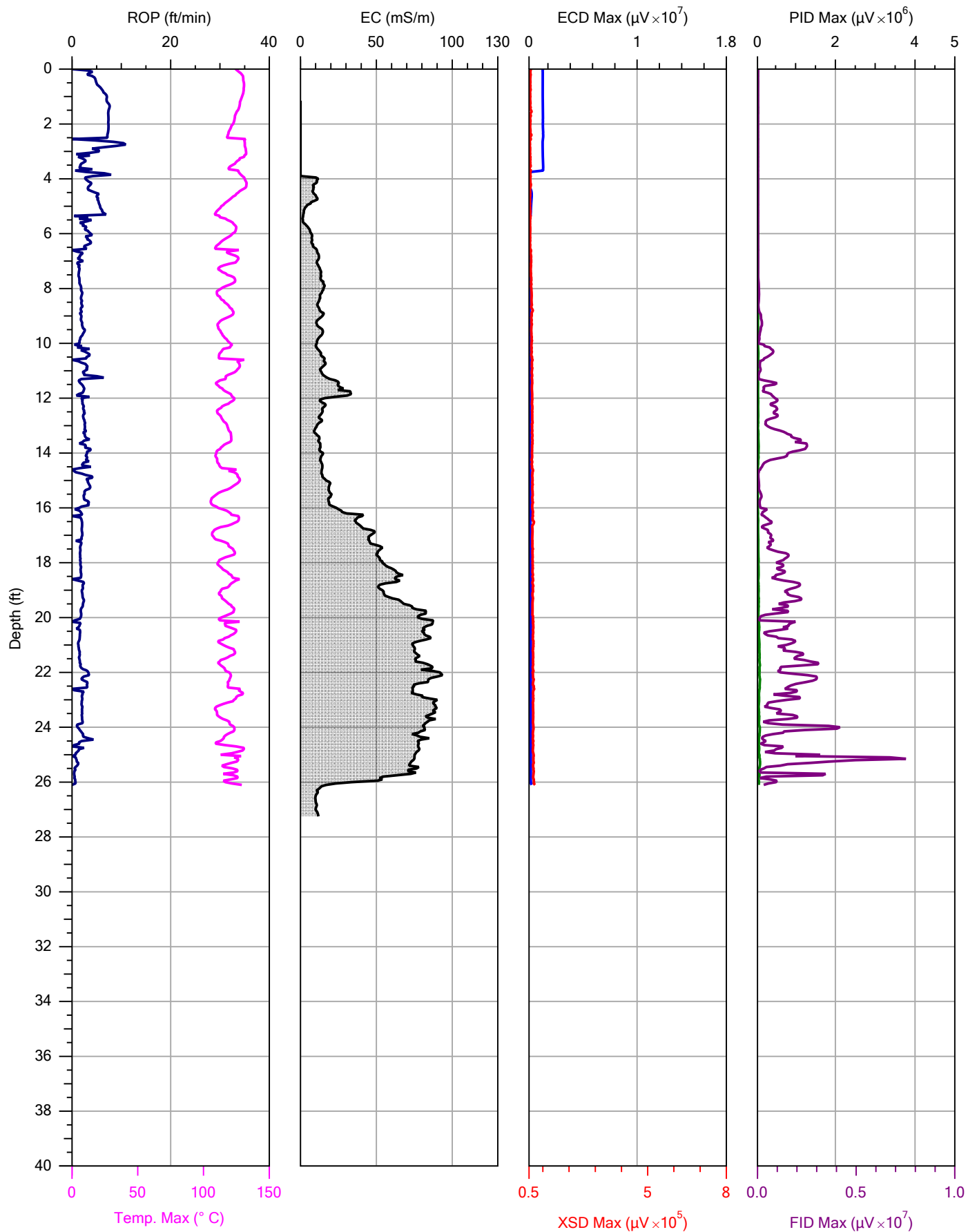


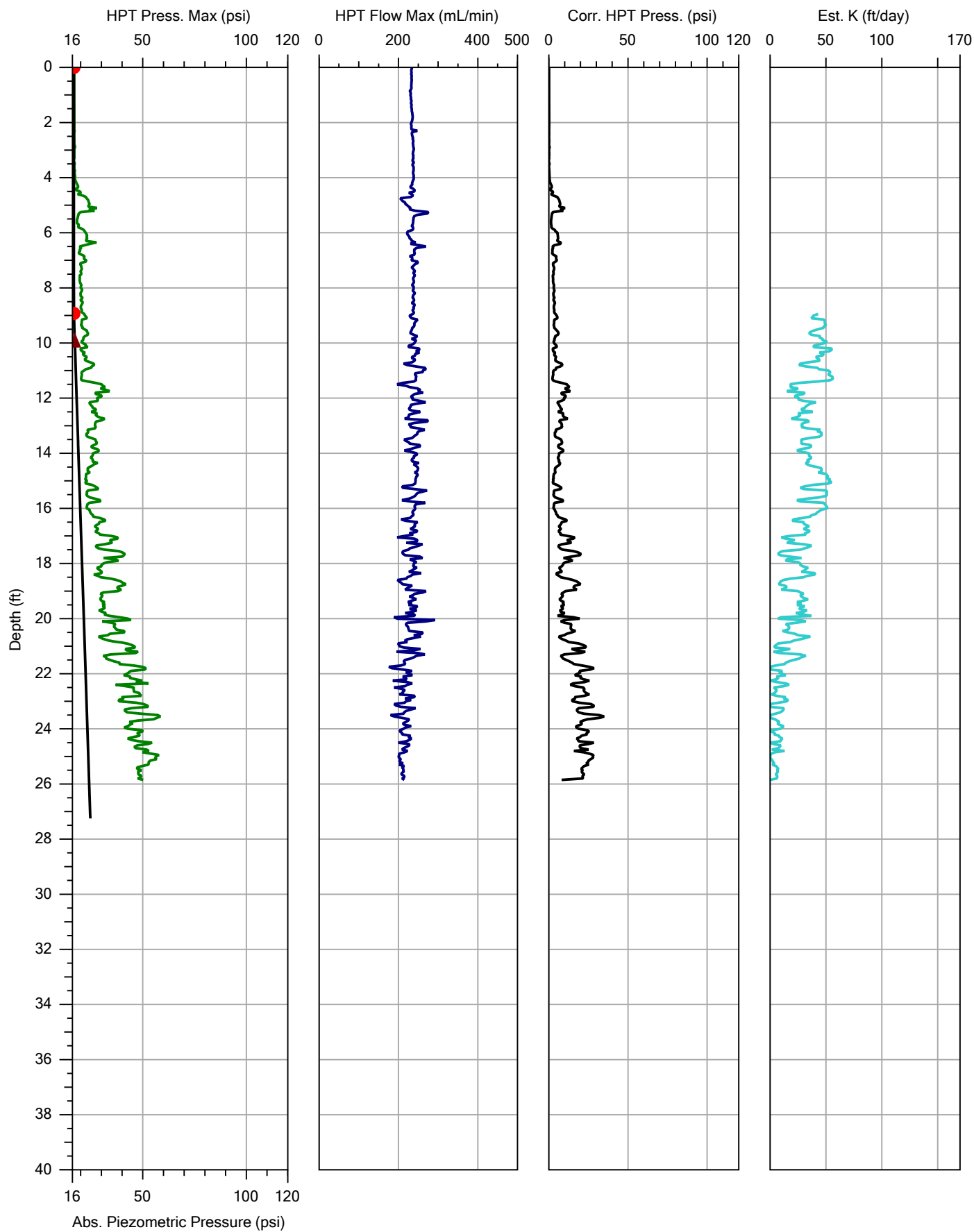


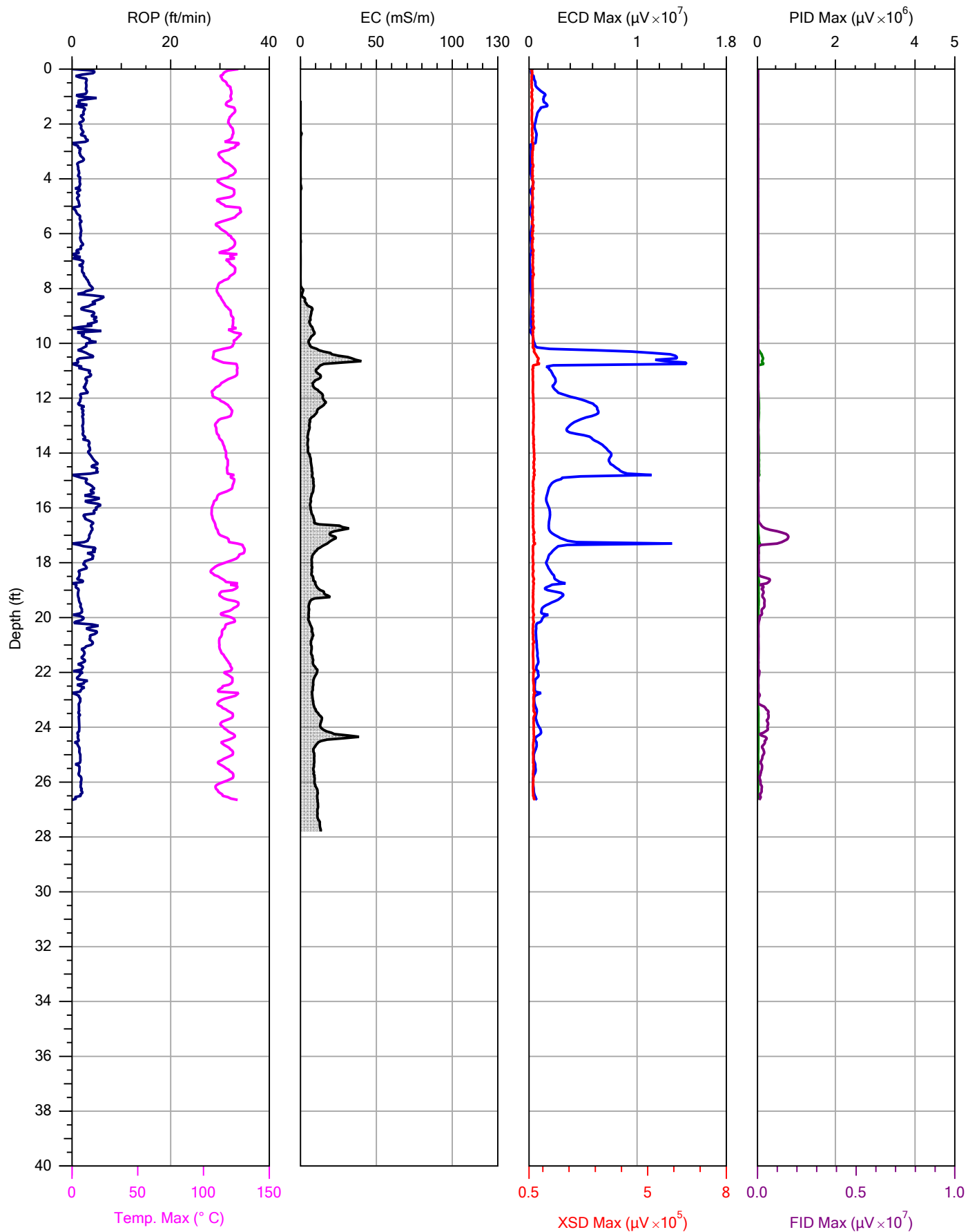


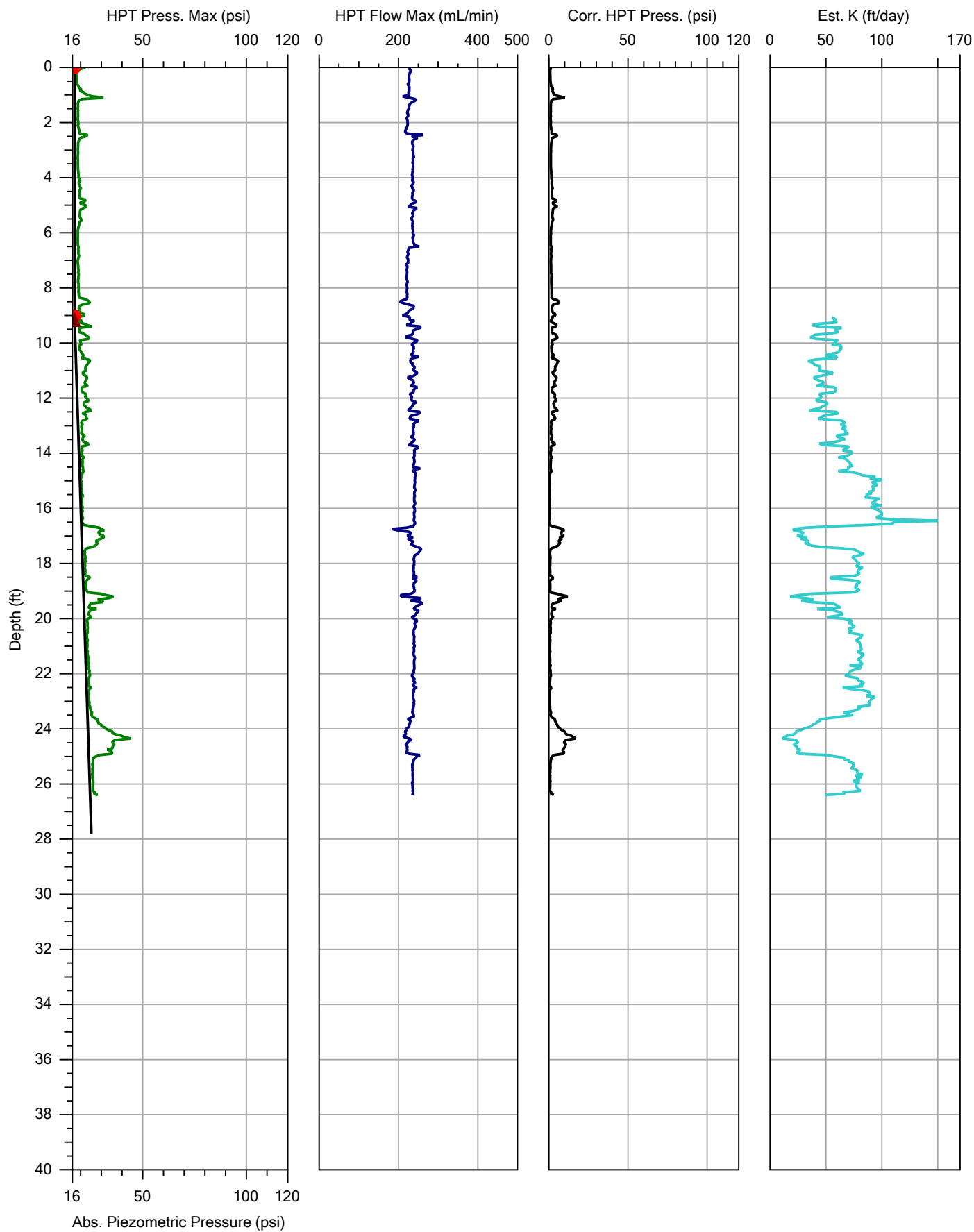
INVESTIGATION DATA PLOTS

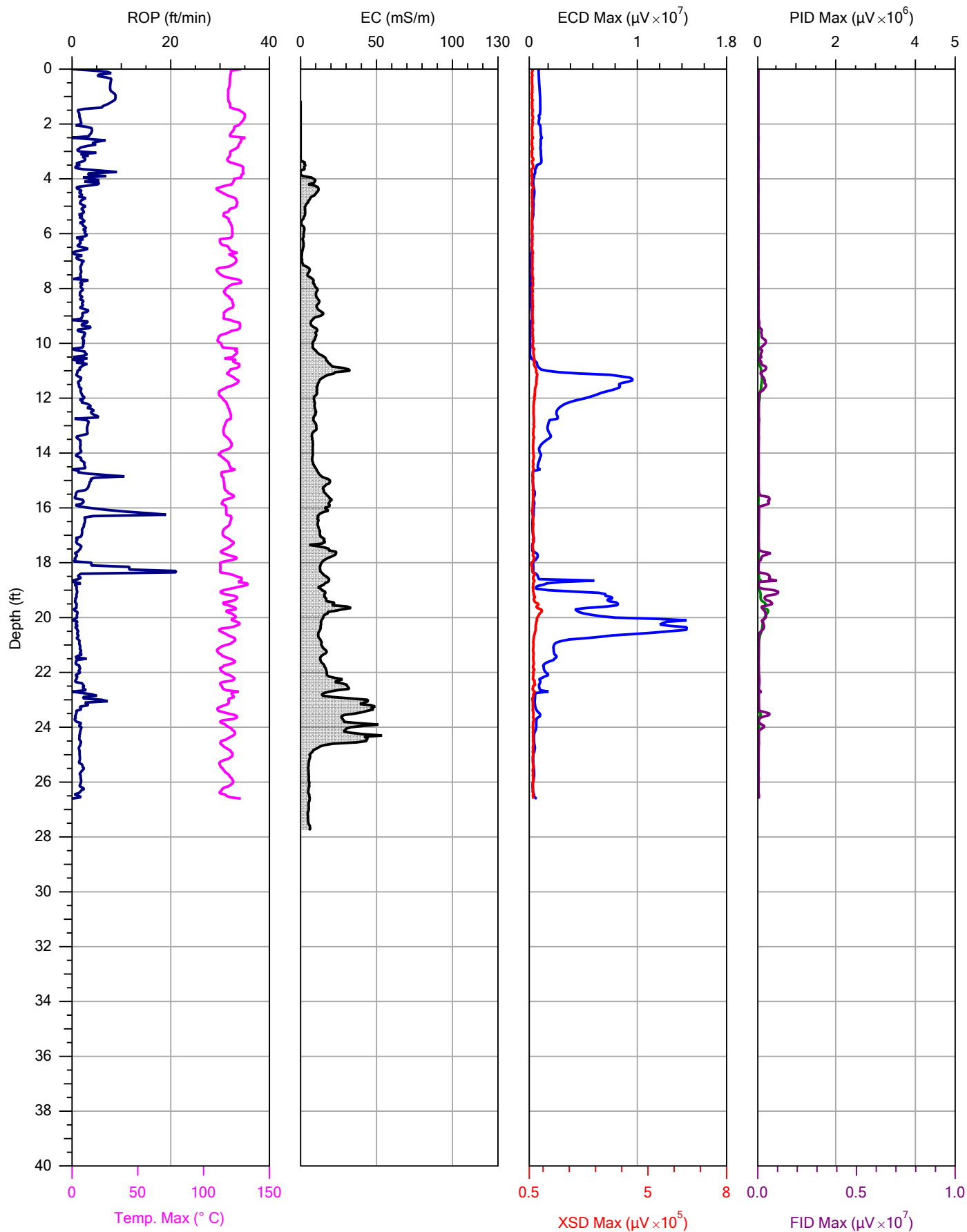
COMMON SCALE

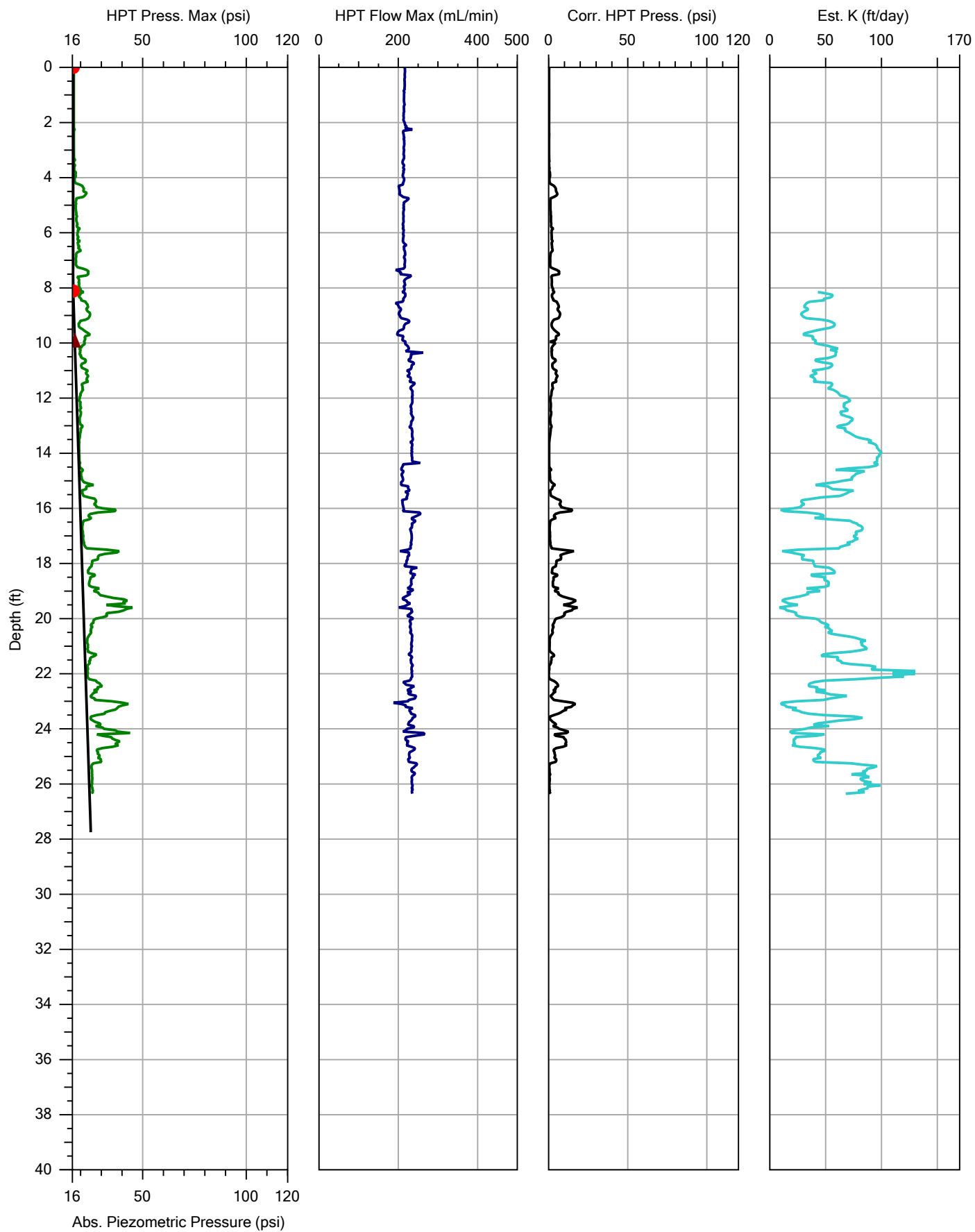


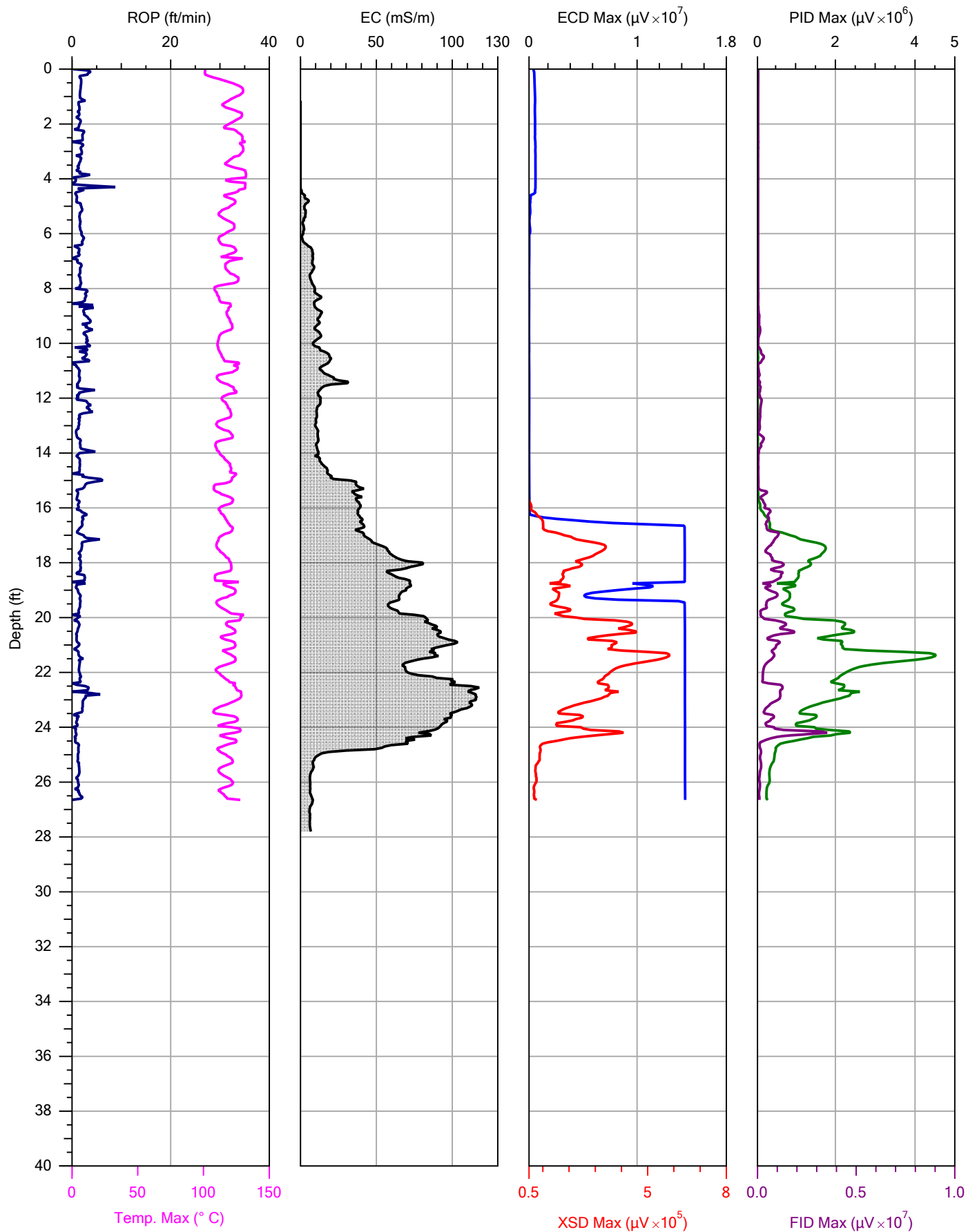


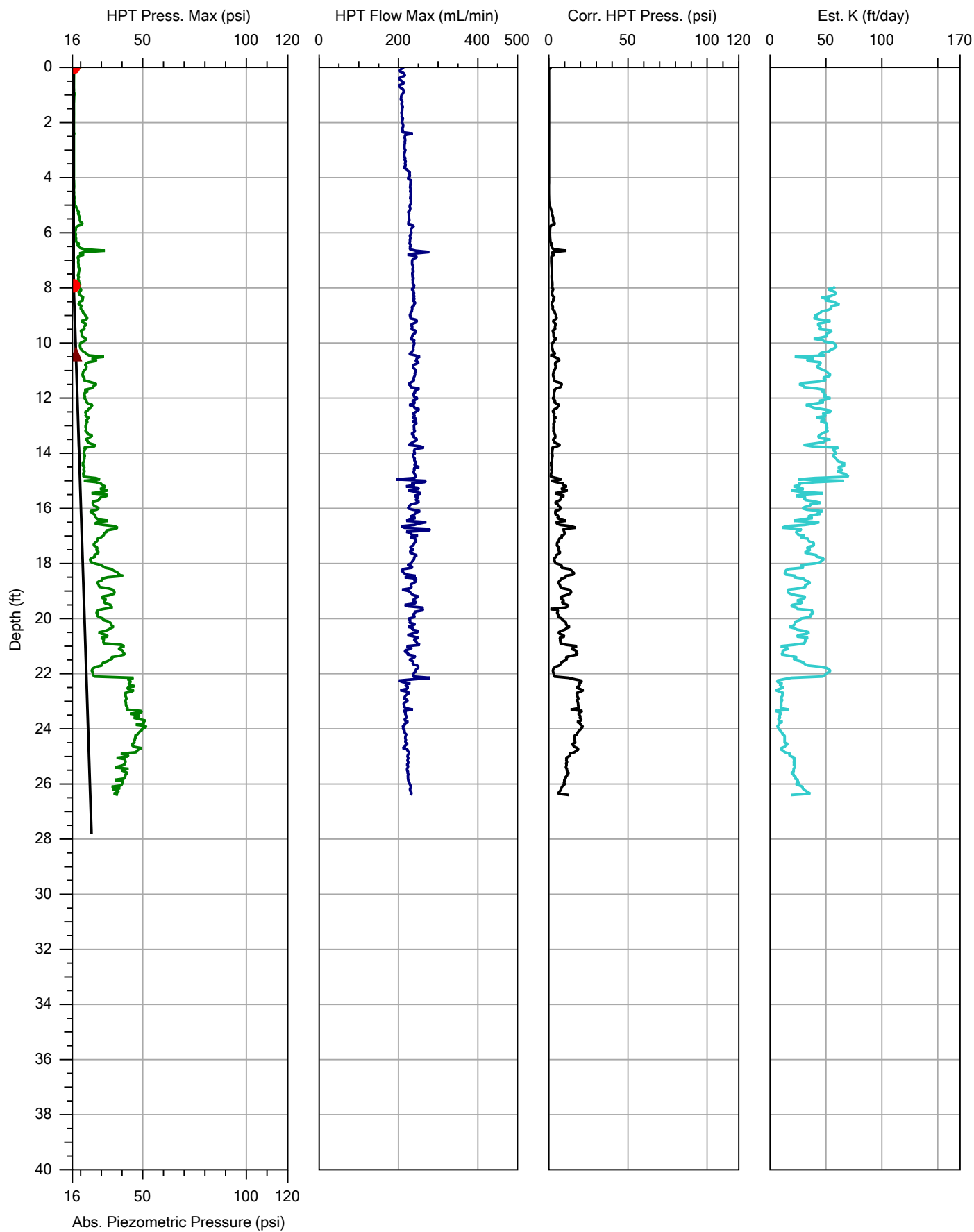




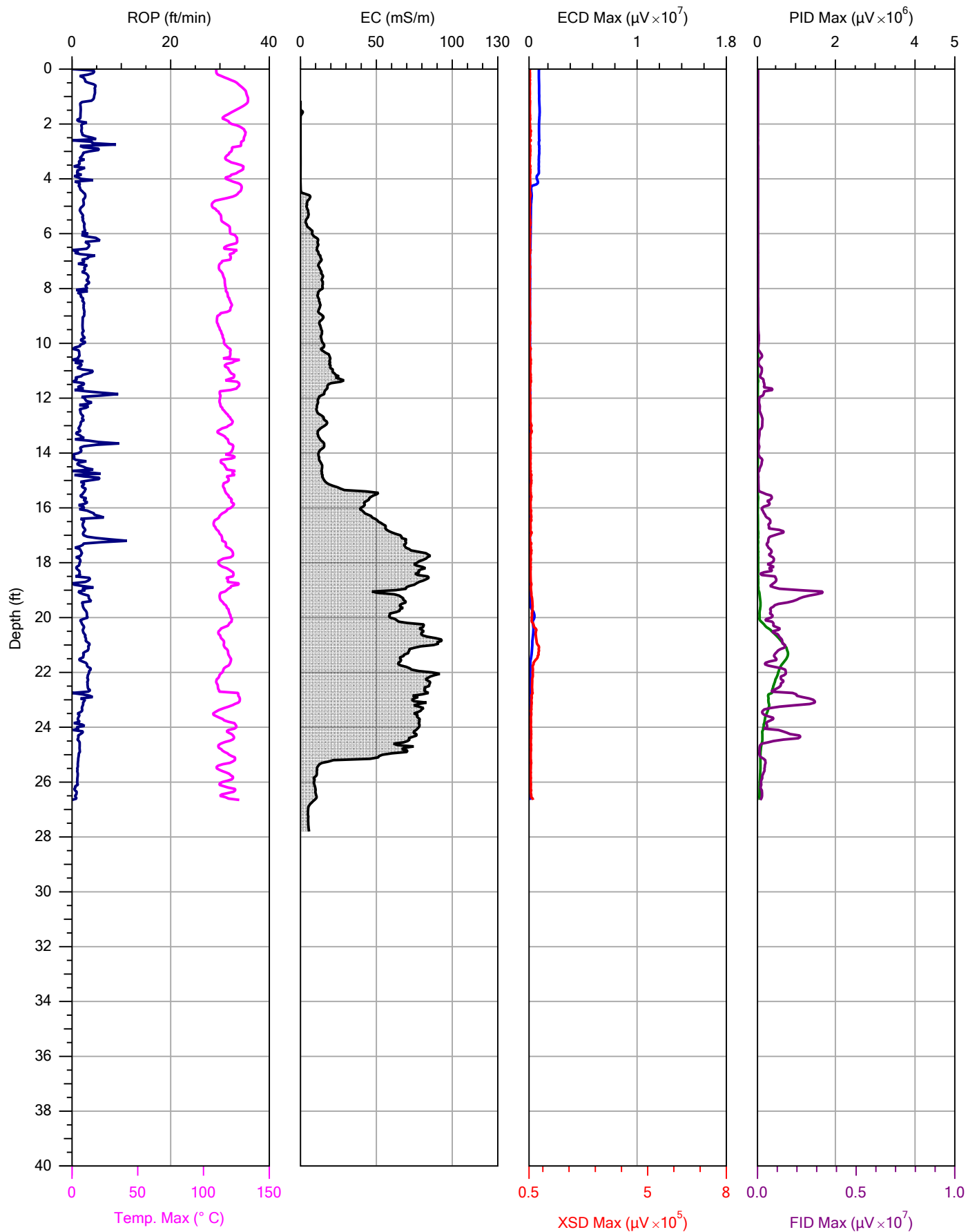


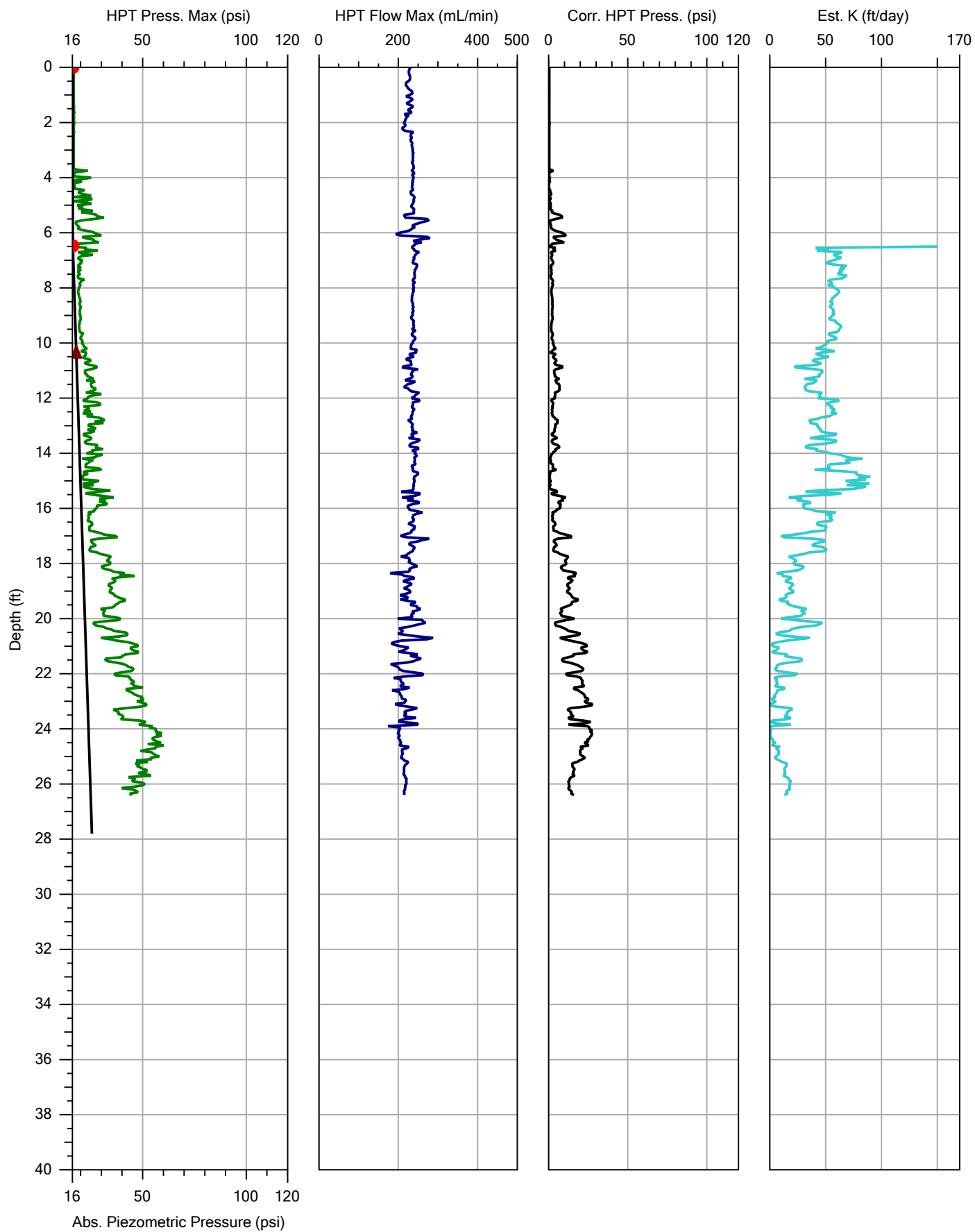


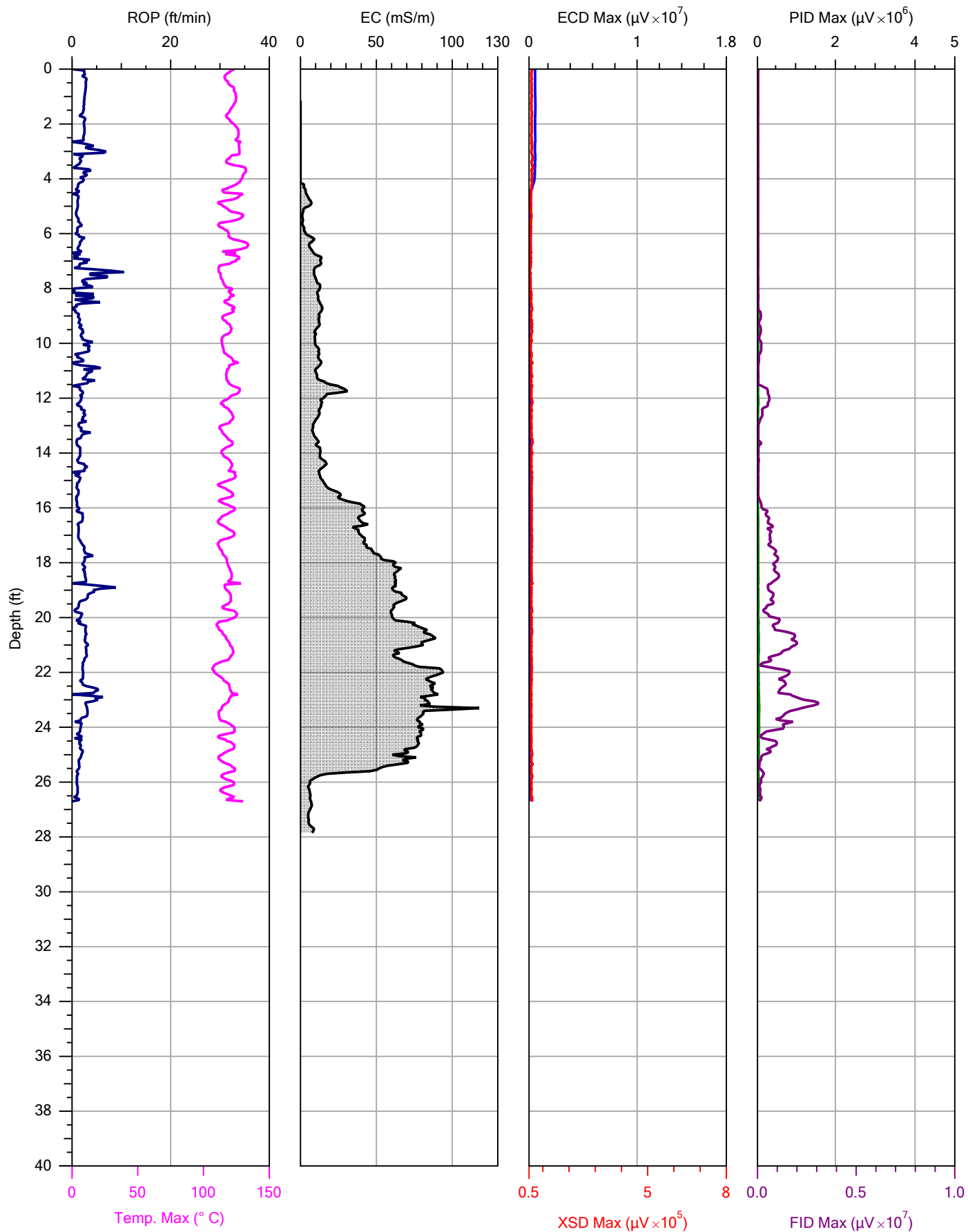


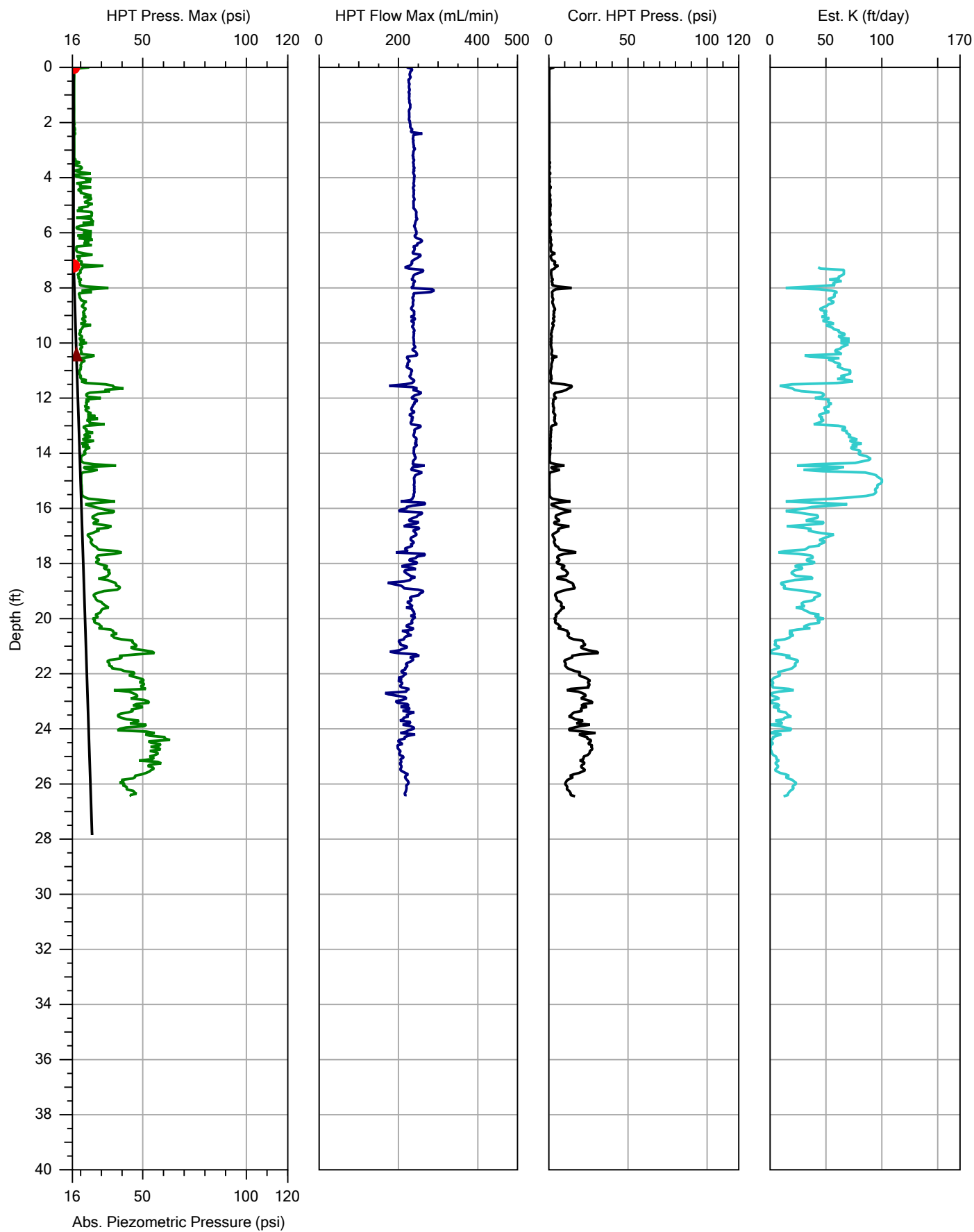


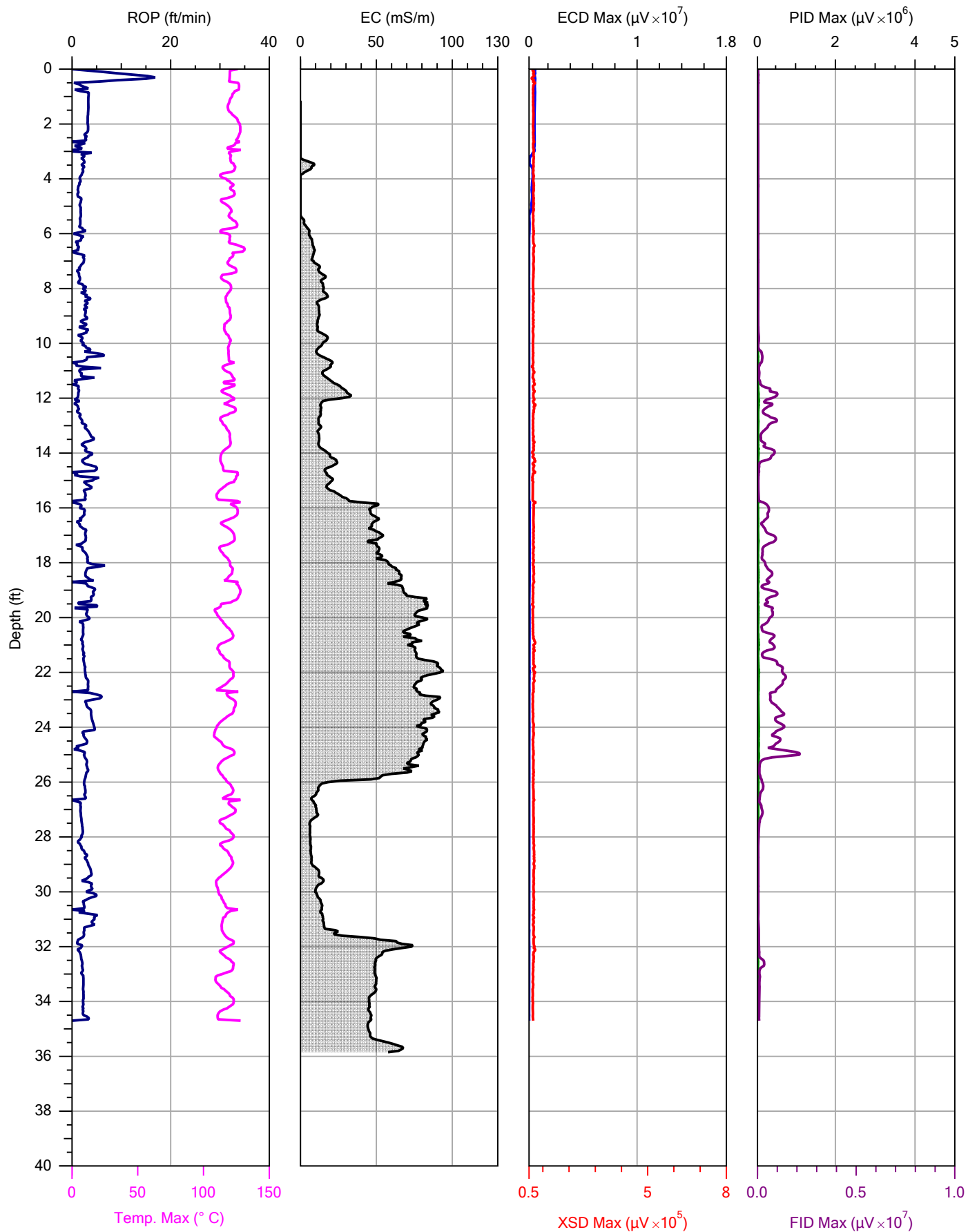
Company: Cascade		Operator: Kochnev	File: MIP-4.MHP
Project ID: Convoy Supply Site		Client: PBS Engineering and Environmental	Date: 07/29/20
			Location: Portland, OR





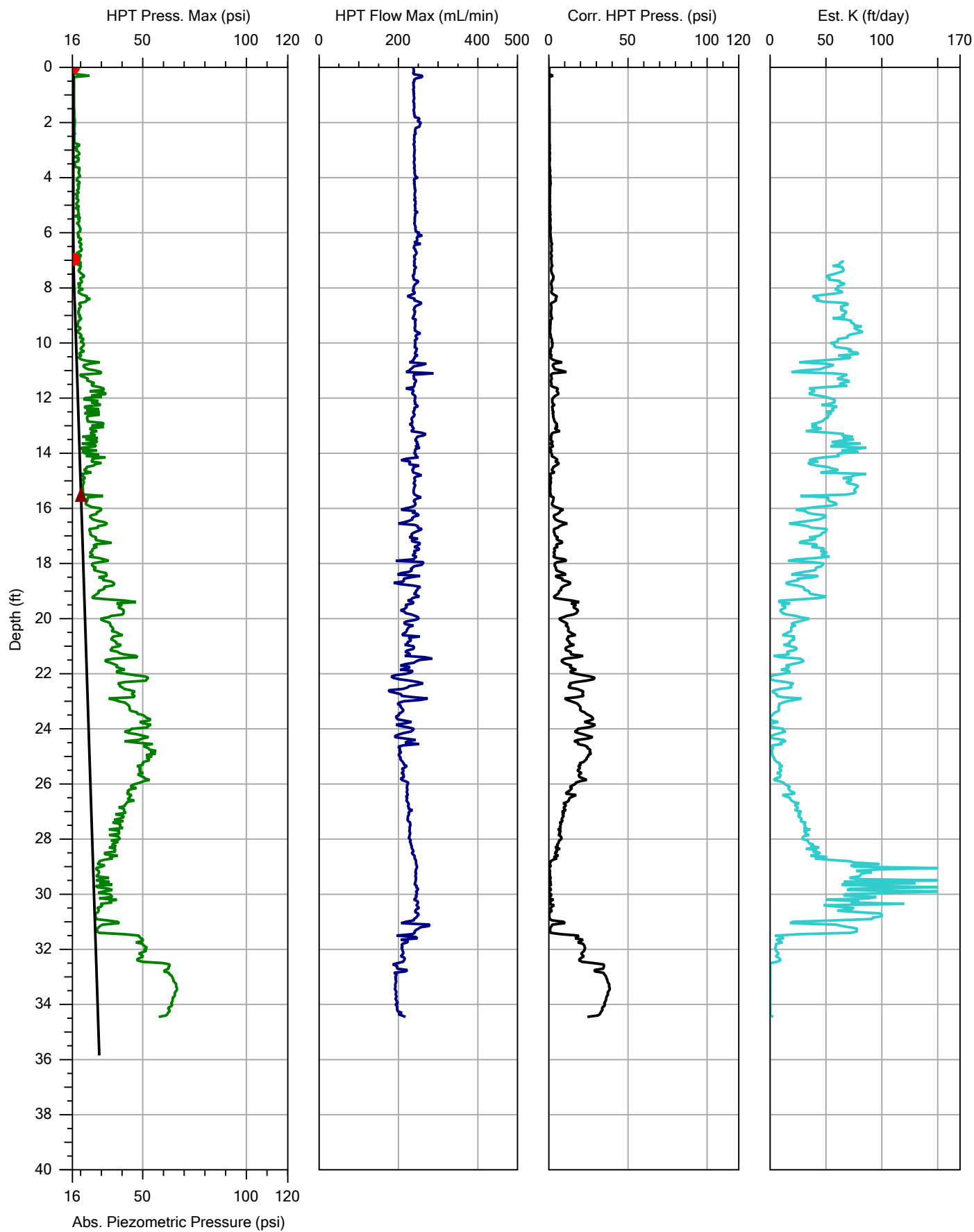


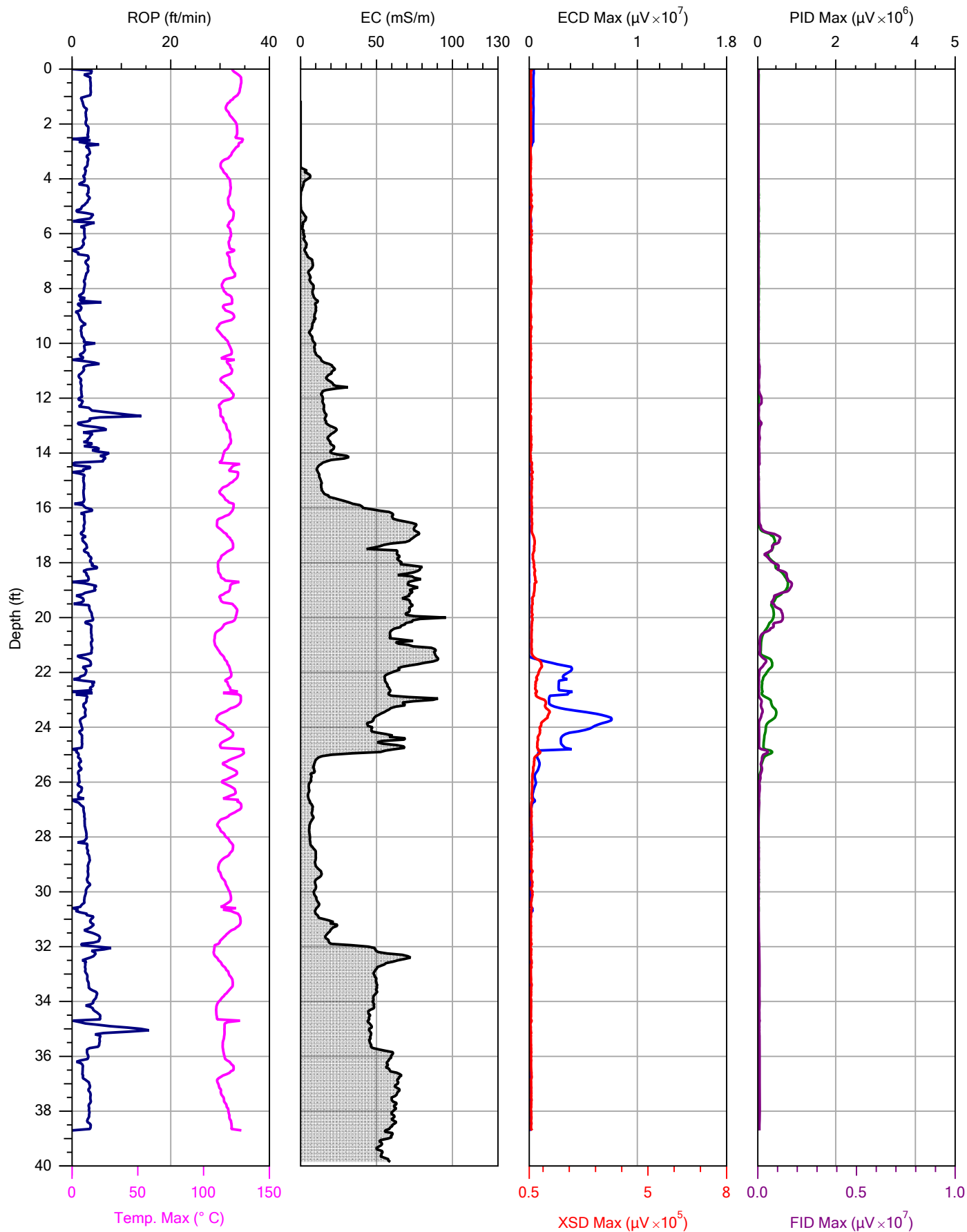


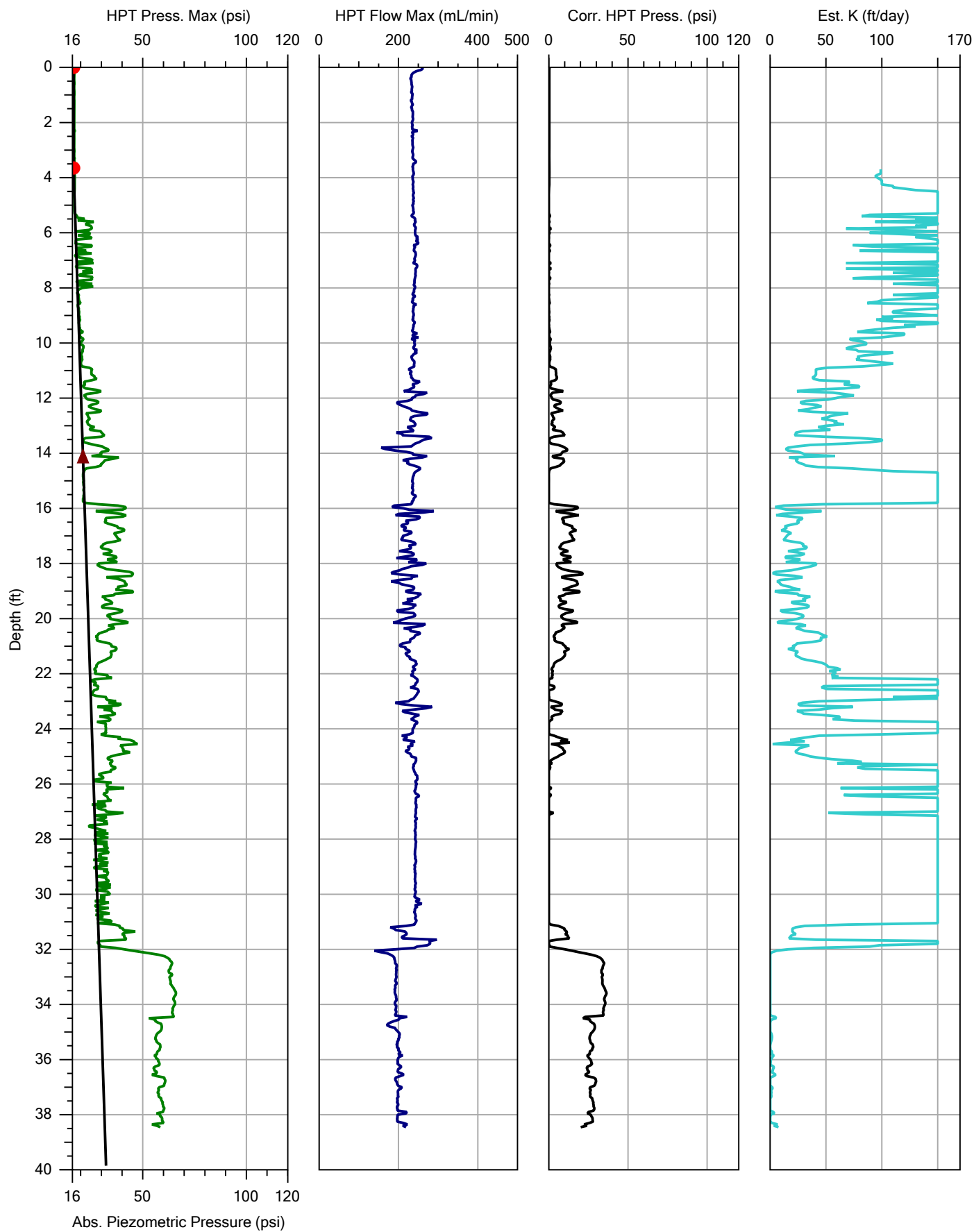


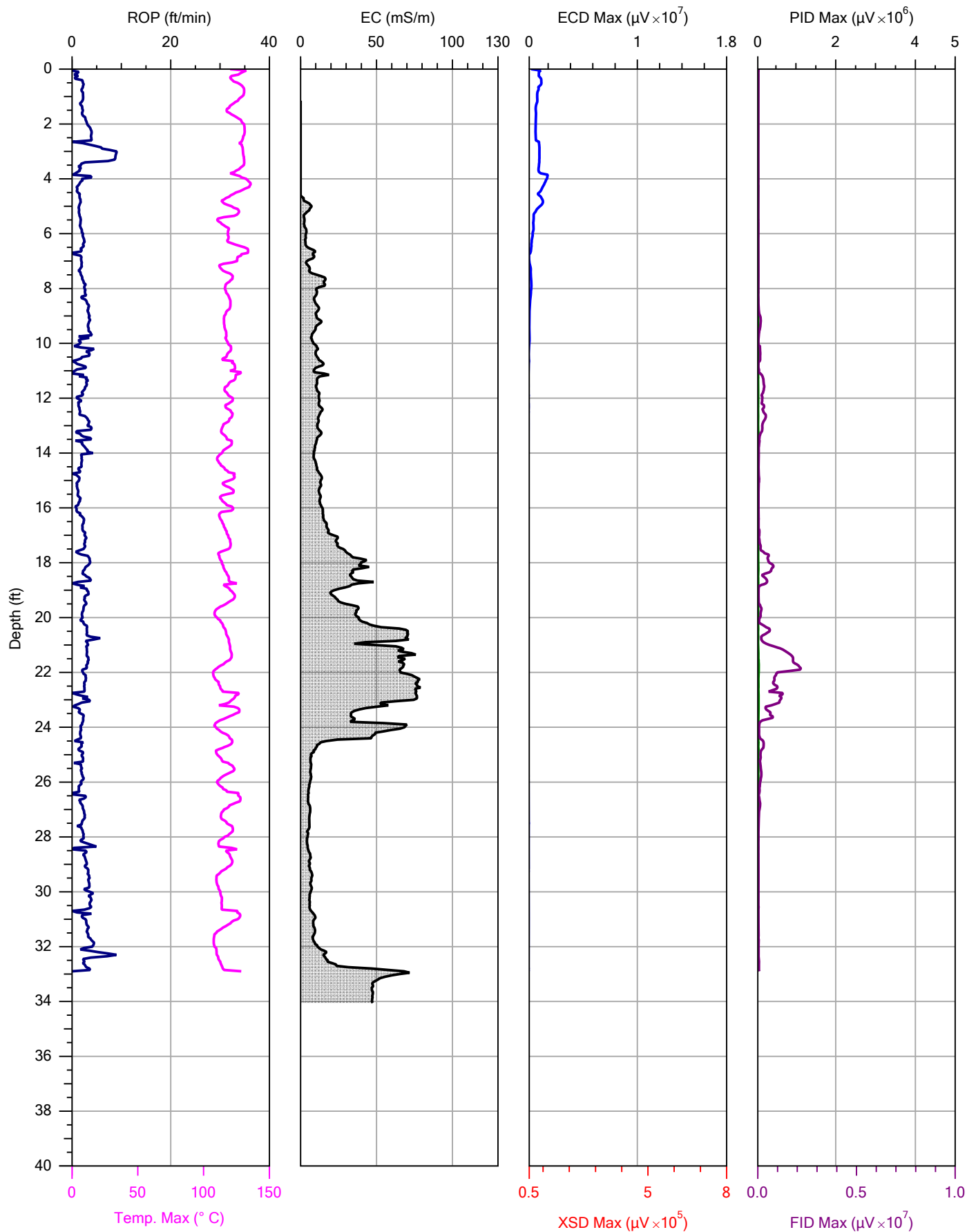
Company:	Cascade	Operator:	Kochnev
Project ID:	Convoy Supply Site	Client:	PBS Engineering and Environmental

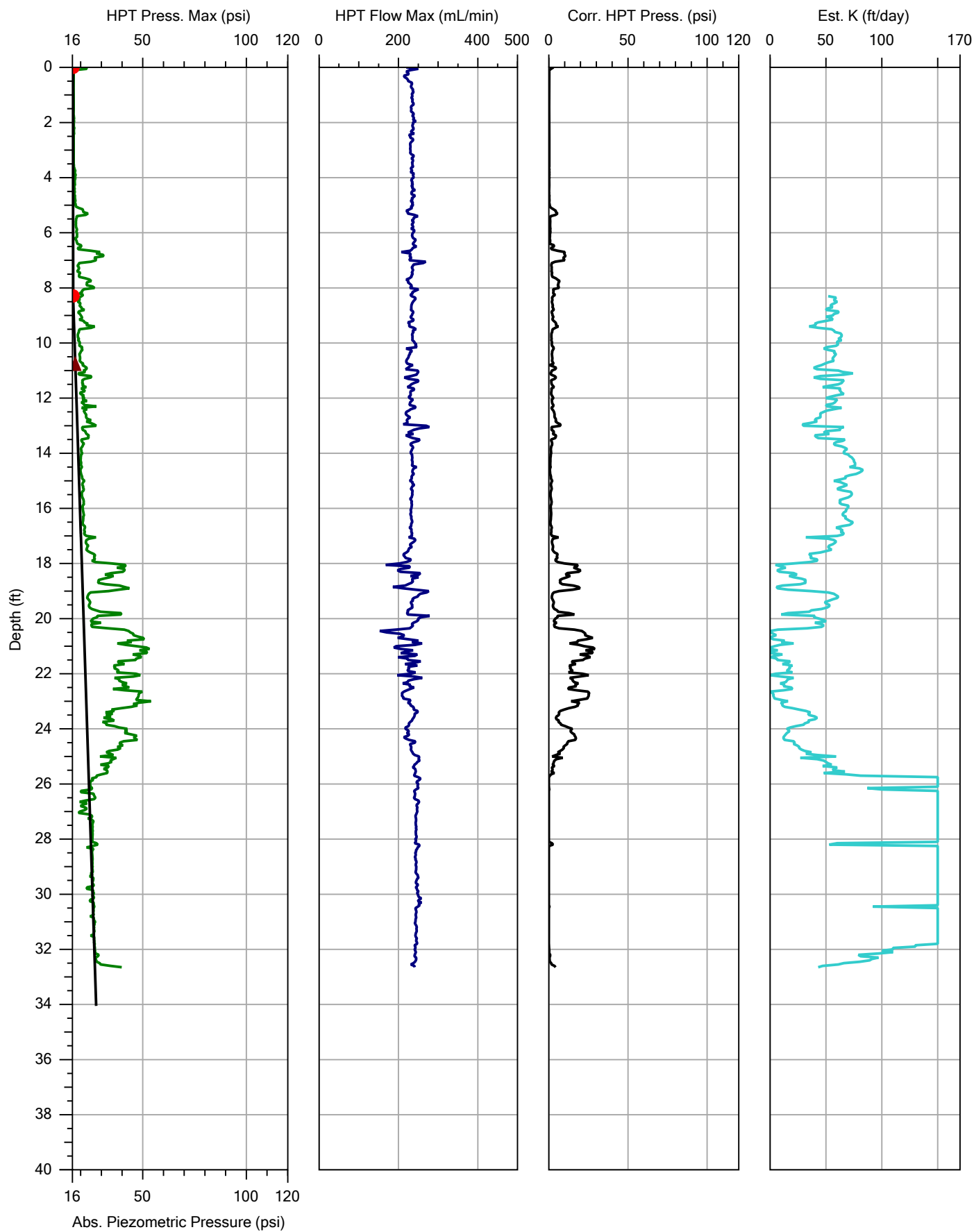
File:	MIP-7.MHP
Date:	07/29/20
Location:	Portland, OR

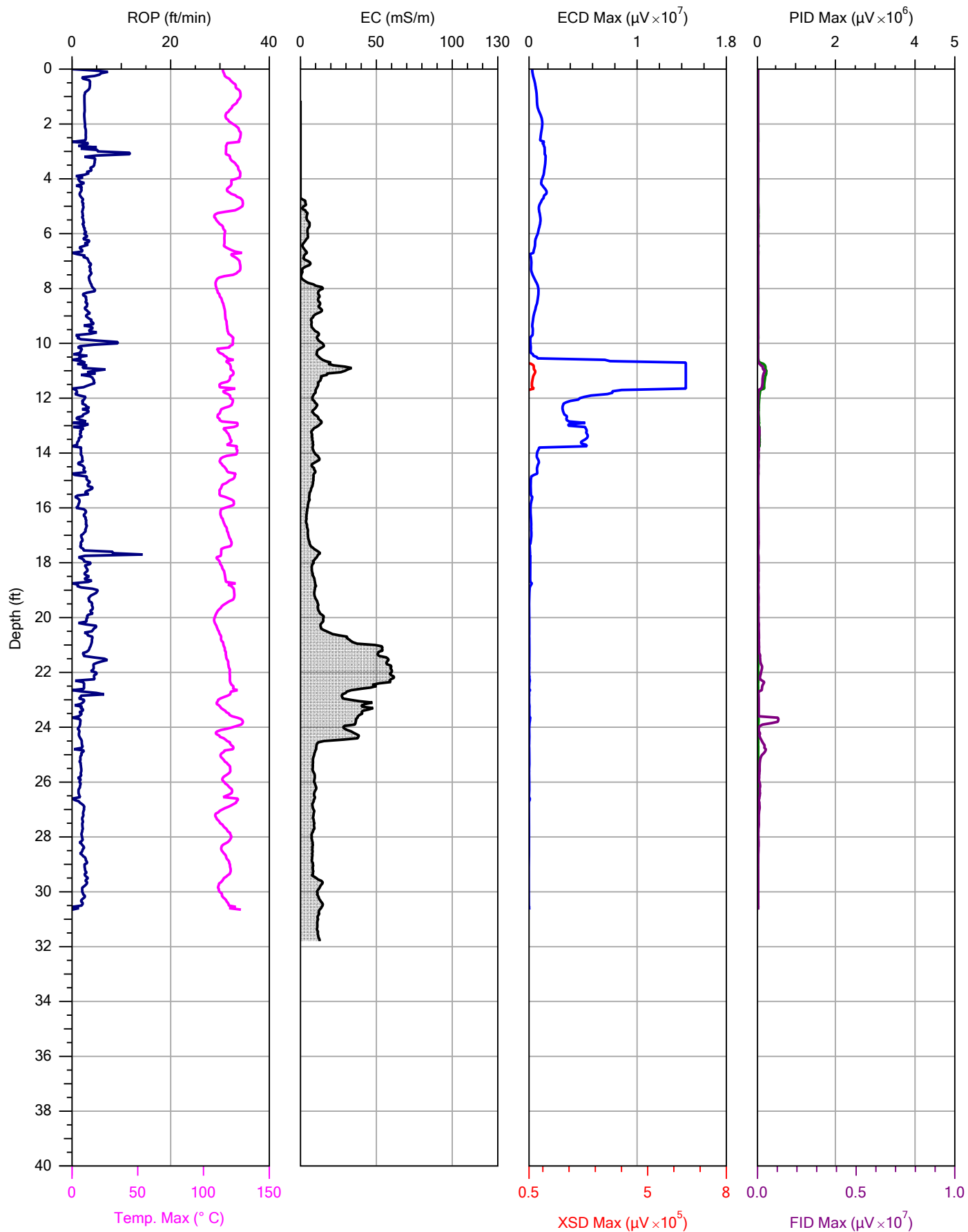


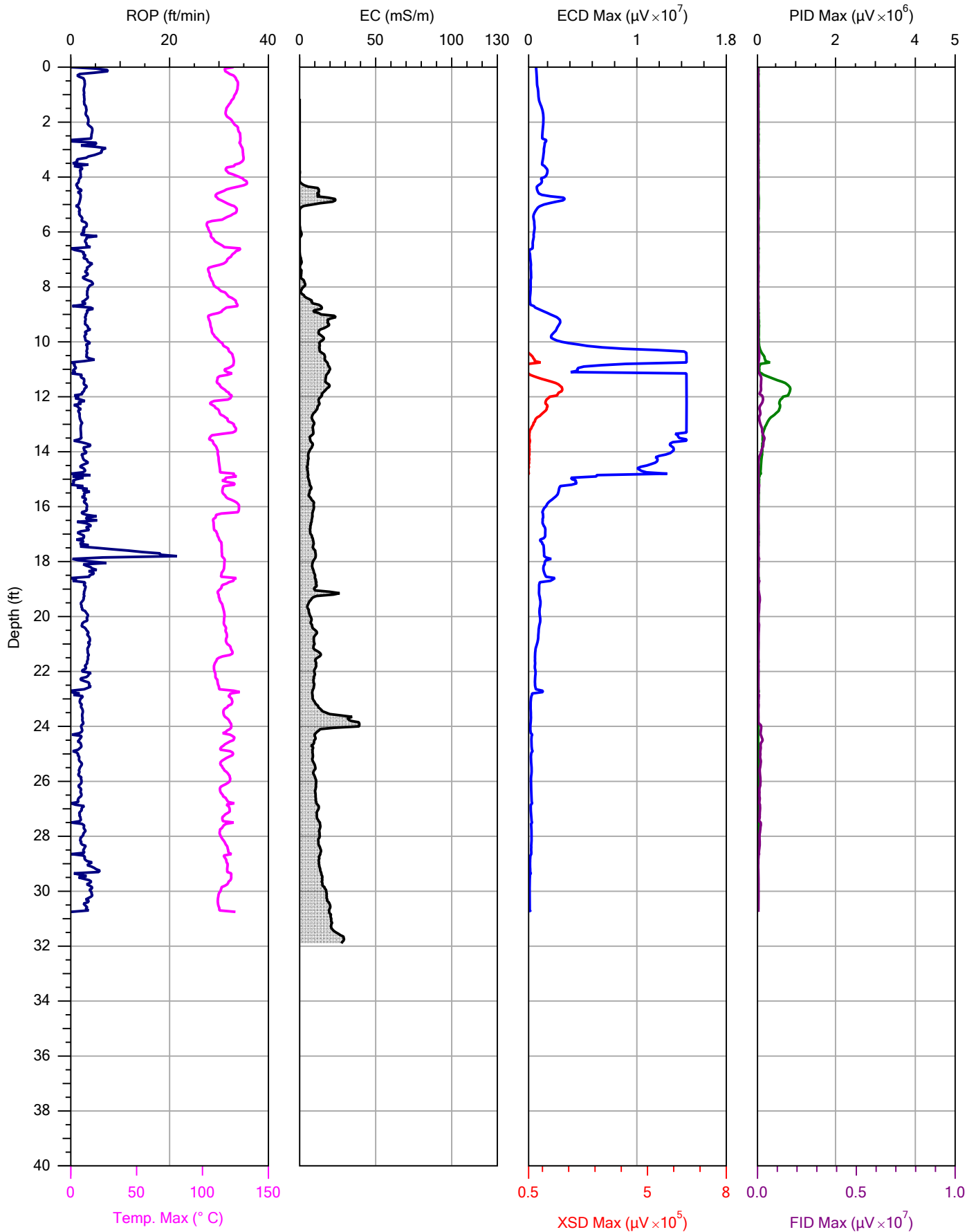


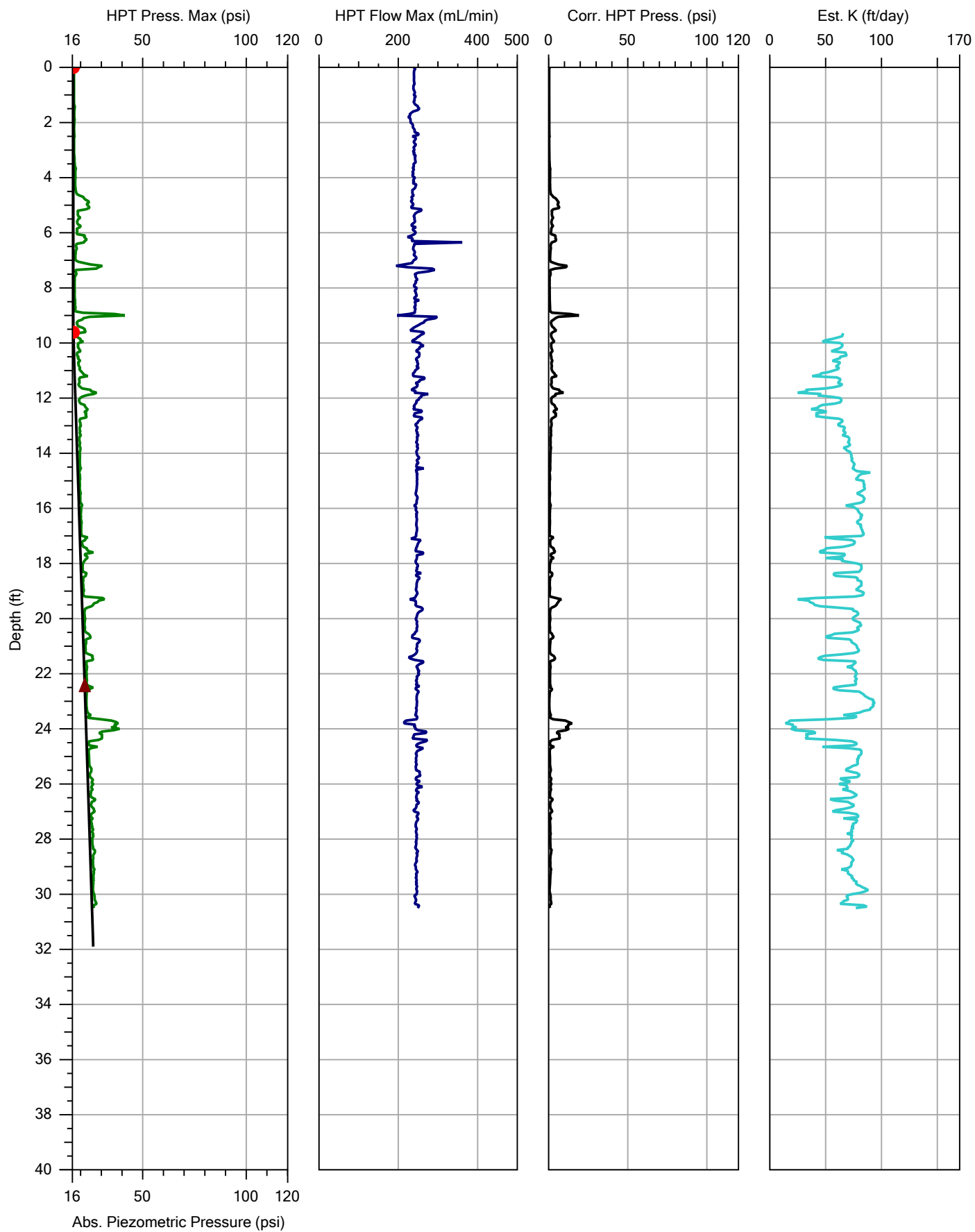


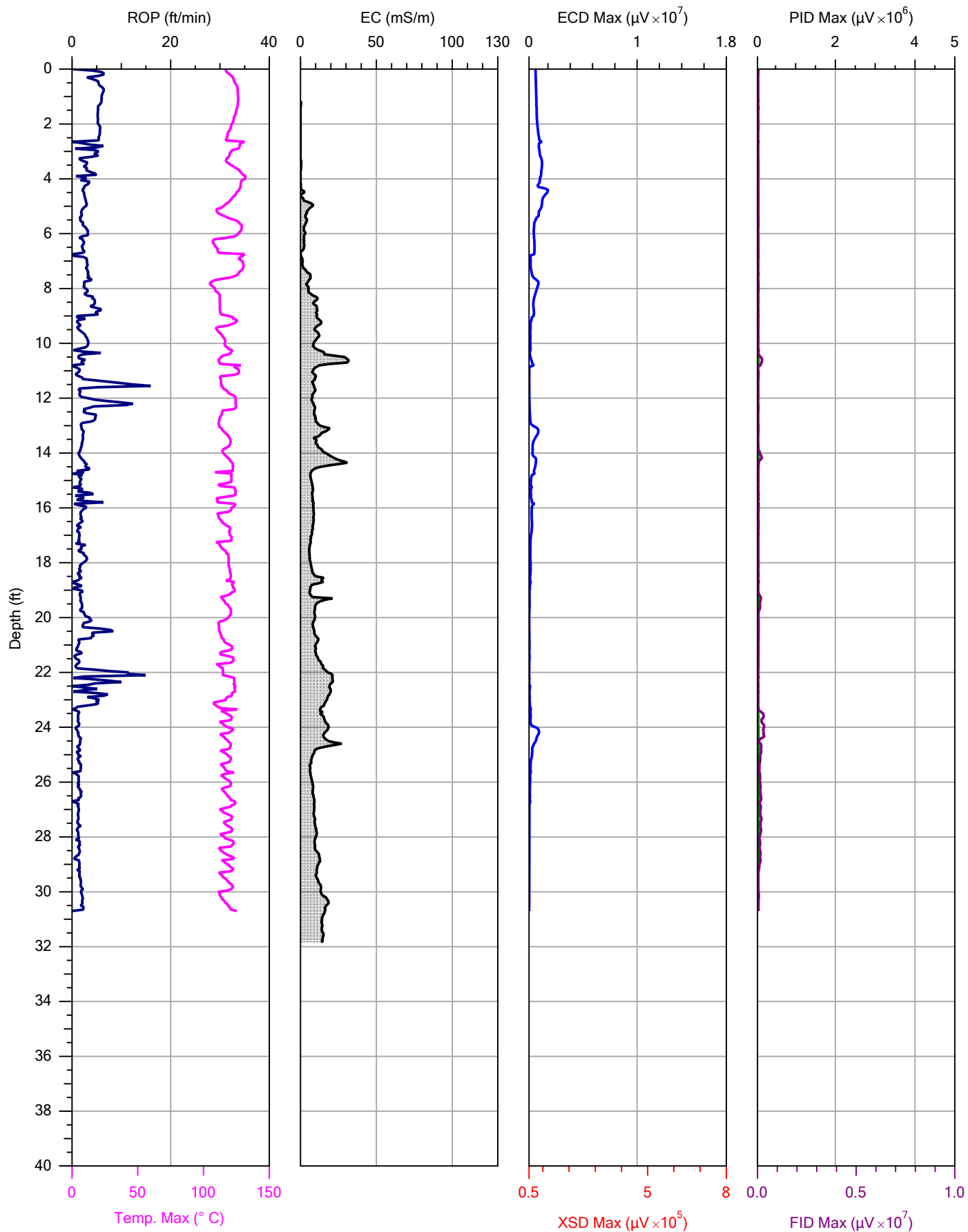


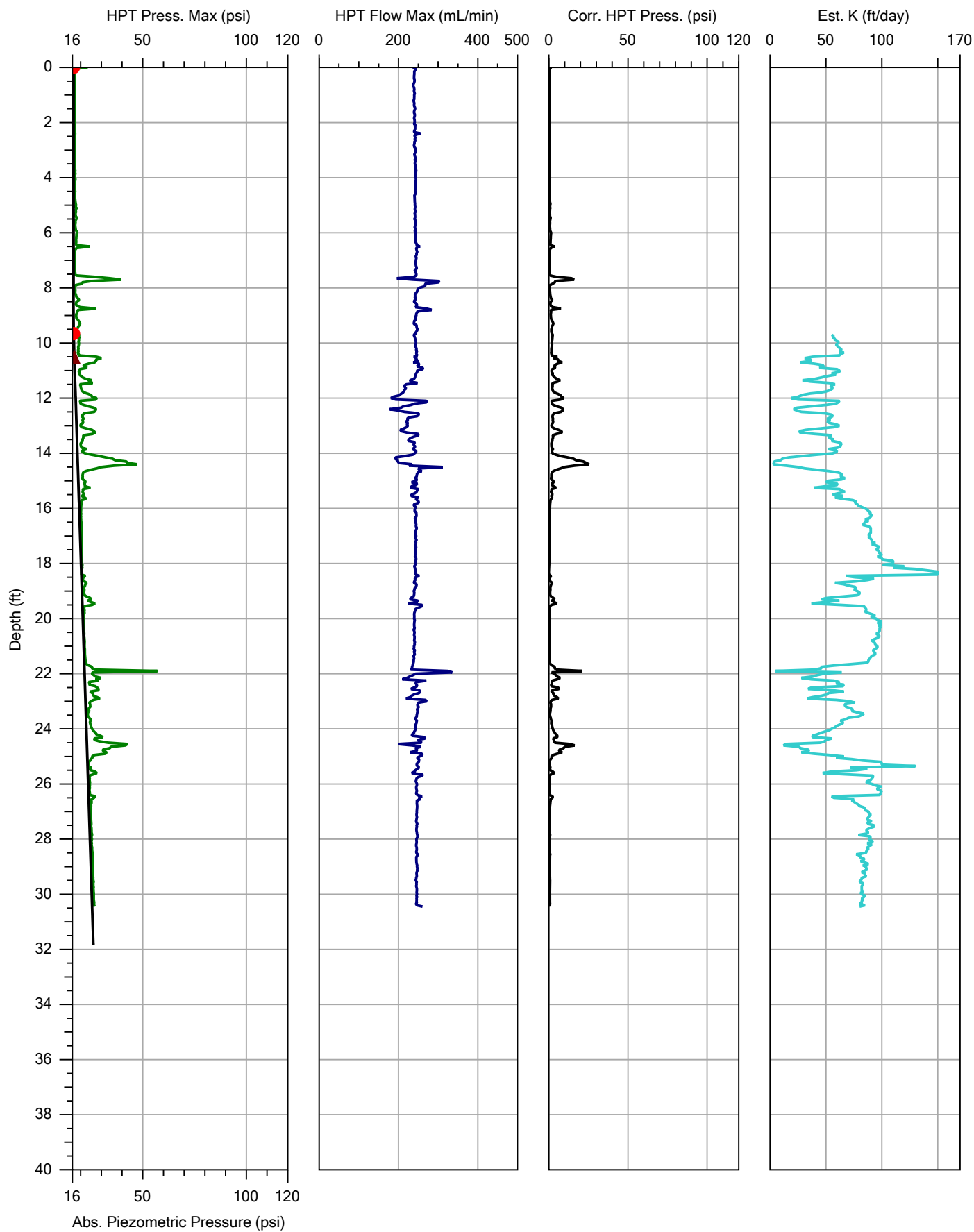


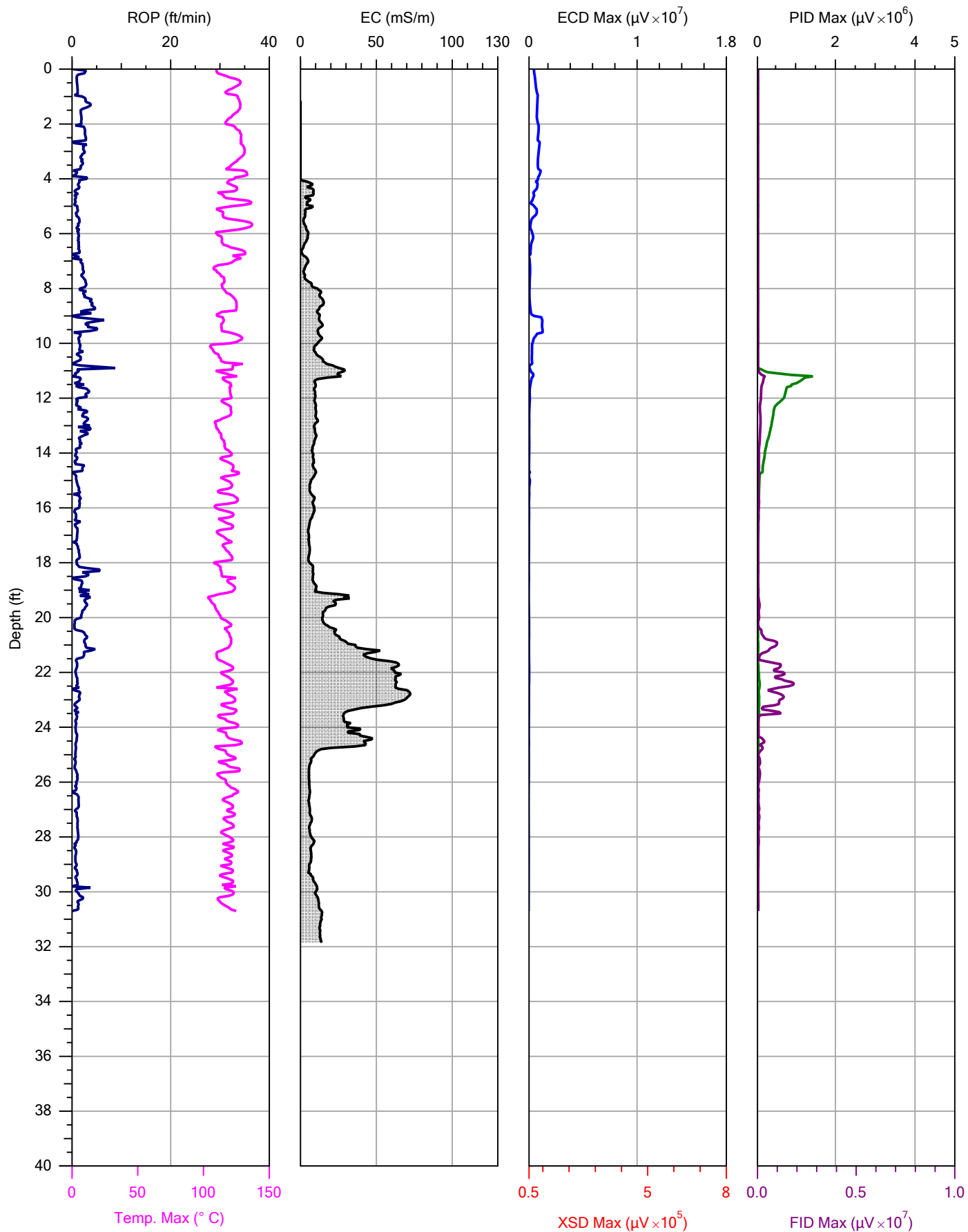


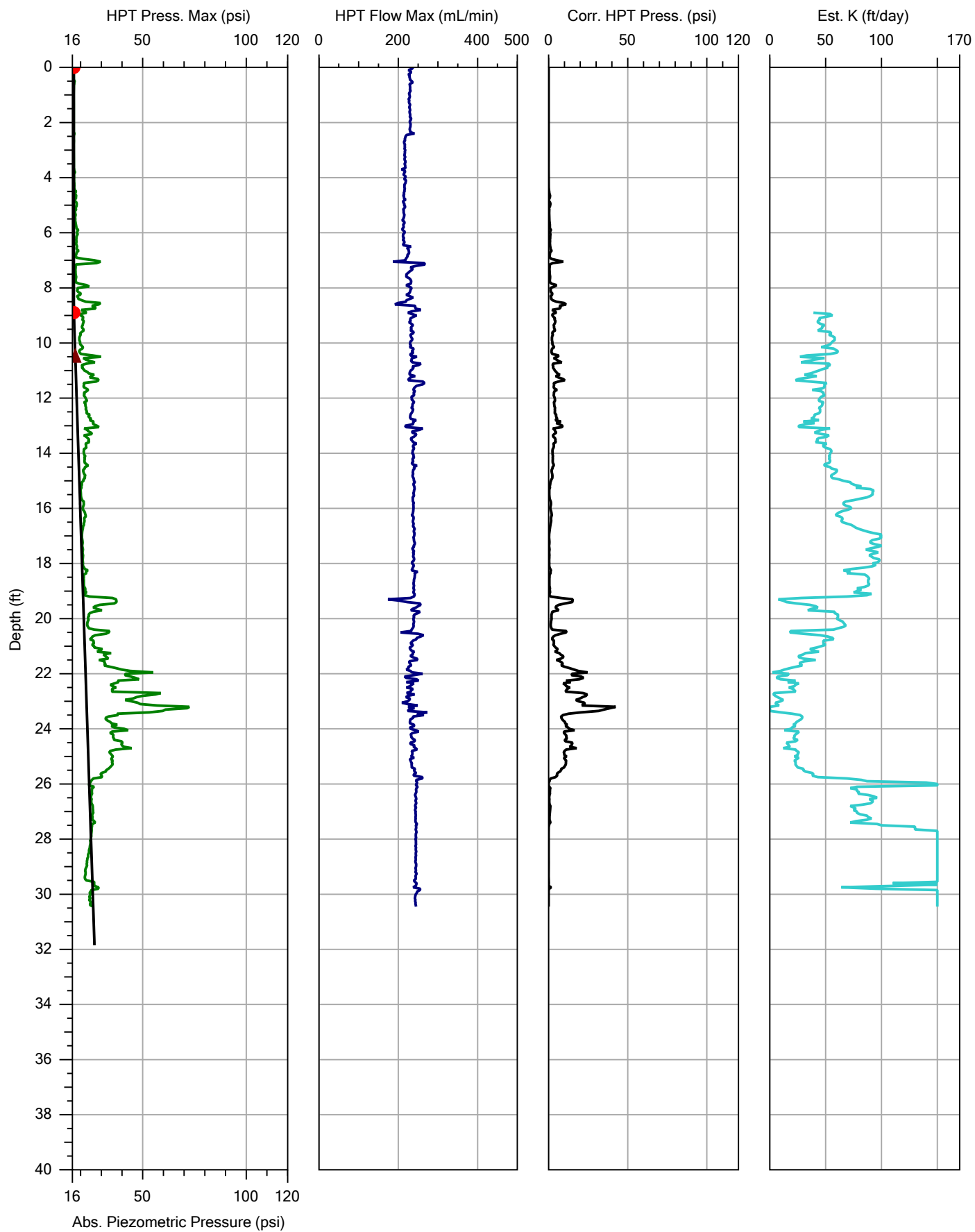


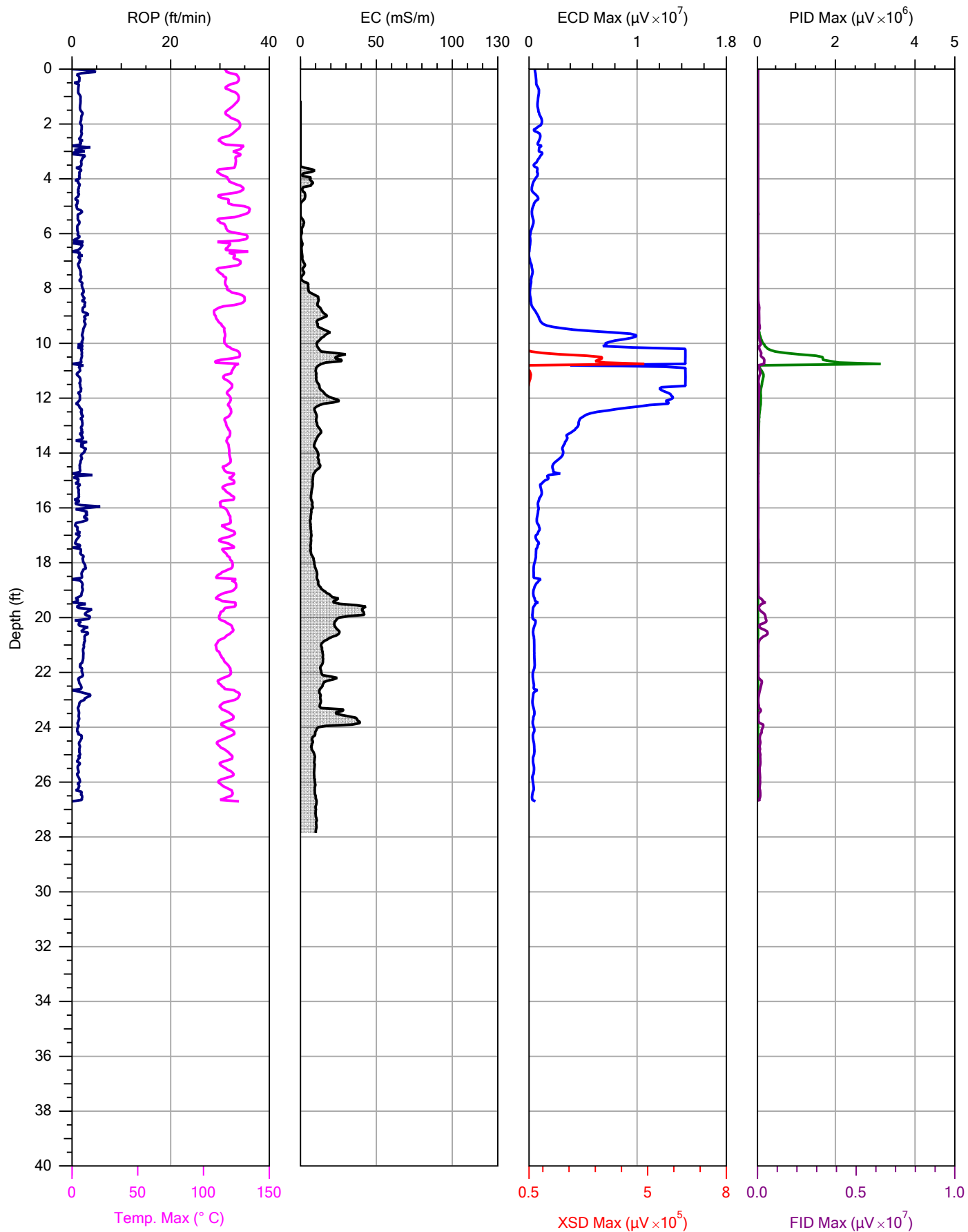


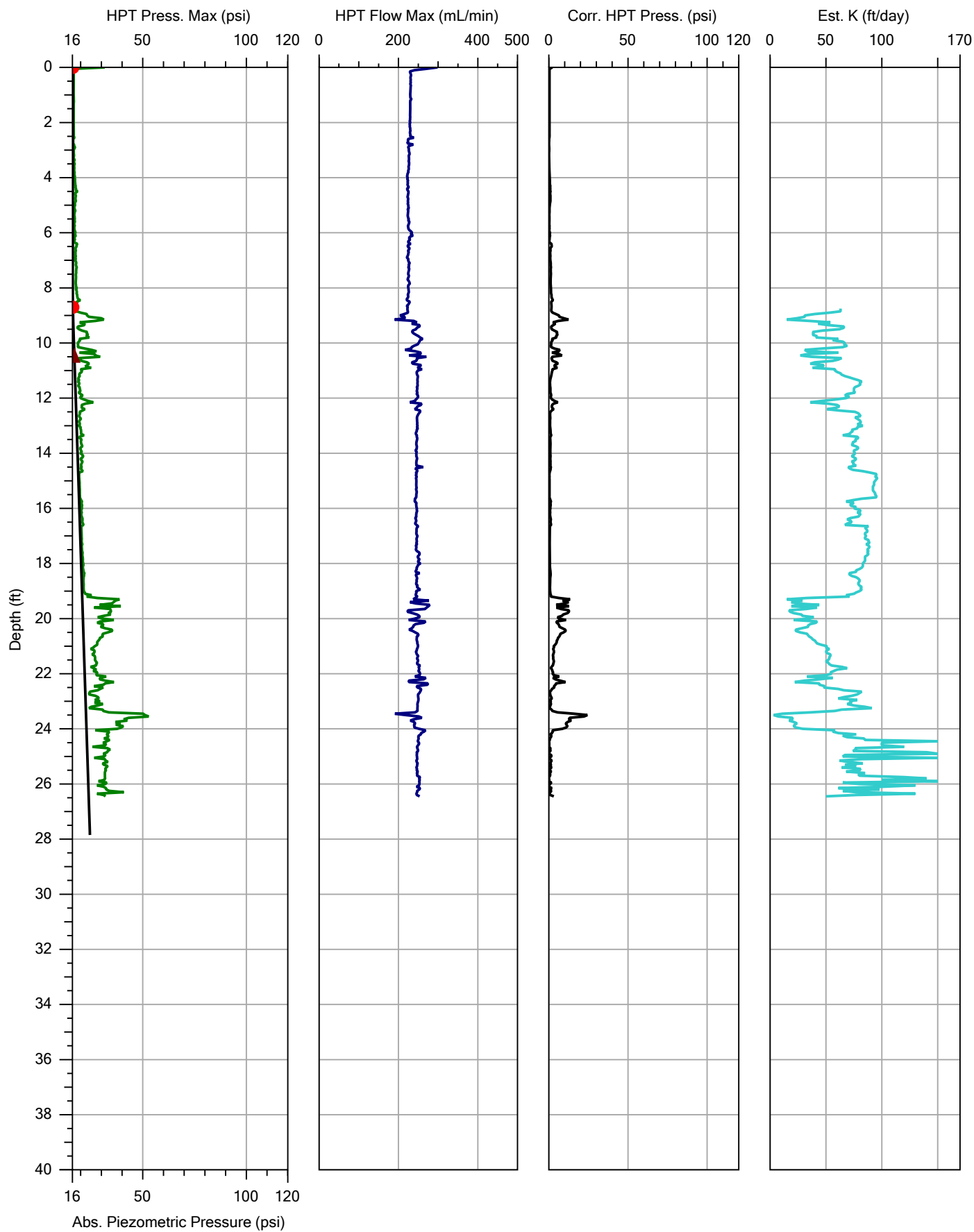












Appendix B

Standard Operating Procedures

STANDARD OPERATING PROCEDURE

Drilling and Soil Sampling Procedures

1 PURPOSE

This Standard Operating Procedure (SOP) provides an overview of mobile drilling methods typically used during environmental investigations along with associated health and safety issues. This document outlines procedures to be followed by PBS personnel during drilling and soil sampling activities. Groundwater and soil gas sample collection through the use of drill rigs are covered under separate SOPs.

2 TYPES OF DRILL RIGS

There are three types of drilling methods that are typically used for environmental investigations: direct push, auger, and sonic. Each type of drilling method is described below. A fourth option, discussed in Section 2.4, is a hand auger tool.

2.1 Direct-Push Drilling

Direct-push drilling methods are a common drilling technology used in environmental investigations due to the small diameter borehole (two and one-quarter inch (2.25")) that generates significantly less investigation-derived waste (IDW). The rigs are hydraulically powered, and use static and percussion force to advance the drill rods. Limited access rigs are available for interior locations while track-mounted rigs allow for sampling in locations with unimproved roads.

The rods are equipped with disposable plastic liners that contain the soil retrieved for observation and sampling. The entire column of rods is removed from the ground each time to retrieve soil for sampling. The rod lengths can be 3, 4, or 5 feet. Because of this, if caving or excessive slough is a concern, the borehole may be temporarily cased to keep it clear and open during soil sample retrieval.

2.2 Hollow Stem Auger Drilling (HSA)

Hollow stem auger drilling methods use hollow corkscrew drilling flights to advance into the subsurface. The borehole is typically 11 inches in diameter, with the flights having a 6-inch inner diameter space in which to retrieve samples or construct wells. The hollow stem auger drill rigs have better capability to penetrate higher density deposits than the direct push probe method. Some direct-push rigs have the capacity to drill with hollow stem auger flights, but these rigs typically do not have the mechanical power to drill through challenging soil. The use of auger drill rigs for environmental investigations is typically for the installation and decommissioning of monitoring wells.

Soil sampling with an auger drill rig is conducted through the use of split spoon samplers or Shelby tubes deployed through the inner hollow space. Split spoon samplers are typically 2.5 feet in length and advanced by hammer weight blow into the undisturbed soil. Shelby tubes are typically used in soft deposits such as clays. Soil brought to the surface on the exterior of drilling flights is considered drill or soil cuttings. Soil samples should not be collected and analyzed from the cuttings because that soil may have come in contact with other soil or contamination from varying depths.

2.3 Rotosonic Drilling

Rotosonic drilling methods (hereafter referenced as sonic method) advance drill rod flights into the ground through the use of vibration, and full-size sonic rigs can advance rods through very challenging unconsolidated geologic formations including large cobbles. The borehole size varies but typically is 4 to 6 inches in diameter.

Due to the nature of the drilling technology, the soil can be disturbed by the vibrations, so consistency and compaction are unreliable. Soil is vibrated out of the lead flight into plastic bags for observation and sampling. The entire column of rods is removed from the ground each time to retrieve soil for sampling; if caving or excessive slough is a concern, the borehole may be temporarily cased to keep it clear during soil sample retrieval.

2.4 Hand Auger Tool

A fourth drilling option is the use of a hand auger tool, sometimes called a handheld auger. This tool, made of steel, is used to bore a hole in soil or sediments. It is intended for use only by hand and is powered by human force by twisting or screwing the tool into the soil. The soil is retrieved through a short barrel that attaches to the base of the auger rods. This tool is used for sites where the soil is relatively easy to penetrate, and when sampling is limited to the upper 5 to 10 feet of the shallow surface. Different barrels are available for coarse-grained or fine-grained material.

3 HEALTH AND SAFETY PLAN

A Health and Safety Plan (HASP) must be developed prior to fieldwork commencing. Typically, a site-specific HASP is prepared from a PBS template for drilling investigations. In all cases, pertinent safety information must be relayed to field personnel, including subcontractors, to communicate mandatory elements from the federal code for hazardous waste operations and emergency response (29 CFR 1910.120(b)(4)).

4 UTILITY LOCATES

Utility locates will be completed on all drilling projects including hand-augered sampling. The property owner or site manager should be interviewed regarding the potential location of buried utilities or other subsurface obstructions on the property. The call-in numbers are provided below. Alternately, PBS personnel can obtain log-ins to file locate requests on-line (Internet Ticket Processing, <http://www.callbeforeyoudig.org/index.asp>).

Oregon Utility Notification Center: 1-800-332-2344
Washington Utility Notification Center: 1-800-424-5555

The Utility Notification Center needs to be contacted at least 48 hours (two business days) in advance to locate utility-owned lines up to the meter (e.g., water, gas, electric), and public utilities within the public right-of-way (e.g., sewer). In addition, a private utility locating company is typically contracted to survey for private utilities such as utility lines from meters to buildings, drain lines, buried electric cables, or irrigation and sprinkler lines.

When filing utility notification requests, PBS personnel should be as specific as possible about where to locate. Washington law requires that the proposed excavation/drilling work areas are field-marked with white paint prior to the locating event.

When beginning a project, PBS personnel must carefully think through where boreholes can be safely drilled, considering both subsurface and overhead obstructions. A site walk may be prudent once the utilities have been marked and prior to the drilling fieldwork. If safe drilling conditions cannot be confirmed, the PBS Project Manager should determine if engineering controls should be implemented, such as shielding or shutting down utility and/or power lines.

SAFETY NOTE: Drill rig masts must be a safe distance from overhead power lines to prevent mast lines and power lines being moved together by wind. Occupational Safety and Health Administration (OSHA) rules for drillers require a minimum distance of 10 feet, with additional spacing required depending on the voltage carried by the power line. The drill rig subcontractor is responsible for ensuring sufficient clearance. However, PBS personnel should verify that potentially unsafe conditions do not exist.

5 SAFETY EQUIPMENT REQUIREMENTS

The following safety equipment is required for all drilling investigations:

- Hard hat
- Hearing protection (ear muffs or plugs, must be worn when drill rig is in operation)
- Safety-toe work boots
- Safety vest
- Gloves (typically disposable)
- Safety goggles or glasses
- Life vests (only when working over water)

6 FIELD EQUIPMENT AND SUPPLIES REQUIREMENTS

The following equipment is typically required for drilling projects when soil sampling will occur. Groundwater or soil gas sampling is discussed in separate SOPs. PBS personnel should confirm that the drilling contractor will provide decontamination water, soap, brushes, and buckets.

General field supplies/equipment includes:

- 5-gallon buckets
- Bags (garbage)
- Bags (plastic zipper-type)
- Camera
- Cellular telephone and phone numbers of client, project laboratory, subcontractors, etc.
- Field notebook or daily log
- Measuring tape
- Paper towels
- Pens
- Spray paint (optional)

Soil sampling supplies/equipment includes:

- Project proposal/scope of work
- Alconox/Liquinox or similar decontamination detergent
- Distilled water (for decontamination)
- Environmental borehole log forms
- Hand auger (if required by scope)
- Ice chest with blue ice or party ice
- Nitrile or other chemically compatible gloves
- Photoionization detector (PID)
- Sample chain-of-custody forms
- Sample containers (ask lab about sample volume, preservatives, etc.)
- Sampling spade or spoons (if required by scope)

7 PRE-DRILLING ACTIVITIES

The following tasks must be performed before beginning work:

- Conduct tailgate safety meeting with all field personnel, including visitors such as the client or regulator; review Health and Safety Plan.
- Install traffic cones/barrier tape or other barrier to control pedestrian and vehicle access to work area as necessary.

The drilling subcontractor is responsible to ensure that the area on which the rig is to be positioned is cleared of removable obstacles and the rig should be leveled if parked on a sloped surface. The cleared/leveled area should be large enough to accommodate the rig and supplies. PBS personnel must confirm that the work area is cleared and safe for work prior to initiating drilling activities.

8 SOIL SAMPLING PROCEDURES

8.1 Logging and Field Screening Soil

Upon retrieval of the soil, describe as per the Geo-Environmental Field Classification chart for soil (included as an attachment). Record observations on an environmental borehole log.

If conducting head-space screening with a PID, remove one-quarter to one-half cup of soil and place in a sealable plastic bag. Seal the bag, break up the soil, and let sit for a minimum of five minutes (in colder weather, either wait for 15 to 30 minutes or put into a warm car or room). The purpose of the headspace screening is to measure what is off-gassing from the sample, and sufficient time must be allowed for that to occur. After the appropriate interval, place the end of the PID probe into the bag (through a small opening in the "zipper") and record the peak value.

If performing sheen testing, place a small sample volume (preferably darker or stained material) in a bowl partially filled with water and observe sheen indicative of petroleum contamination.

8.2 Collecting Soil Samples for Laboratory Analysis

Prior to collecting a sample for laboratory analysis, the sampler should don new gloves. If there are multiple samples to be collected from a single borehole, the gloves should be replaced to avoid cross-contamination.

Collect soil samples using a gloved hand or a clean sampling tool and place directly into the sample jar(s). For volatile organic compounds (VOCs), pack the soil to minimize jar headspace, or field preserve for VOCs using EPA Method 5035 (the field kit is obtained from the laboratory). Label samples as described under Section 8.3 Sample Numbering. Place labeled sample container(s) in the cooler with ice.

8.3 Sample Identification

Sample labels will be completed and attached to the jars in the field to prevent misidentification. All sample labels will include the following information:

- Project name or number
- Sample identification
- Sample collection date and time

The sample identification is unique to a particular sample and the format must be consistently used for all samples collected at the site. The sample identification typically includes the sample location and the collection depth. The sample location is the soil boring number or otherwise designated sample location. Standard abbreviations for sample location types are:

- | | |
|------------------------|---------------------|
| • DP = Direct push | • SO = Surface soil |
| • MW = Monitoring well | • SS = Soil sample |
| • SB = Soil boring | • TP = Test pit |
| • SE = Sediment | • WP = Well point |

Examples of sample identifications are: DP-5 (4'), SS-22 (1'), and MW-3 (15')

Other naming conventions may be used, as long as the labeling is consistent and each location is clearly identifiable.

9 BOREHOLE ABANDONMENT

The licensed driller is responsible for abandoning boreholes in compliance with state regulations. PBS personnel should ensure that this occurs, and that the sealing material (typically bentonite chips) is sufficiently hydrated for a proper seal. State regulations governing this are:

- Oregon Administration Rule (OAR) 690-240
- Washington Administrative Code (WAC) 173-160

10 DECONTAMINATION PROCEDURES

Minimizing the possibility of cross-contamination between samples is a critical component of a successful soil sampling project. This is achieved by consistent and thorough decontamination of sampling equipment, such as drill rods, sampling devices (split spoons, trowels, etc.), and other tools that may come in contact with soil to be sampled.

For drilling equipment, the drilling contractor is responsible for the decontamination procedures. Typically, a pressure washer with hot water or water with added detergent is used to clean drill rods and other equipment. The use of a steam cleaner is not appropriate because of the risk of burns, and steam cleaners do a poor job of removing soil particles from equipment.

For equipment and supplies used by PBS personnel, water with added detergent is typically used for decontamination. Alternately, disposable supplies, such as gloves and sampling scoops, can be used to avoid having to decontaminate them.

PBS field personnel should work with the PBS Project Manager to confirm the appropriate decontamination procedure for each project. For example, it may be important to know the source of the driller's water used for decontamination, and distilled or deionized water may need to be used to clean hand tools.

All water and sludge generated during decontamination will be captured for later disposal. Release of water directly onto the ground or into drains or catch basins is not allowed.

11 INVESTIGATION-DERIVED WASTE

Investigation-derived waste consists of soil cuttings, decontamination water, purge water (if groundwater is encountered), and personal protective equipment (e.g., nitrile gloves, rags, paper towels, Tyvek suits, disposable bailers, and tubing). All disposable personal protective equipment may be disposed of as general refuse unless otherwise instructed by the PBS Project Manager.

Soil cuttings are typically placed in 5-gallon buckets or other appropriate containers during the execution of the fieldwork, and transferred to 55-gallon drums as the project progresses. If appropriate, the cuttings may remain in buckets as long as tight-fitting lids are placed on each bucket. For some projects, the PBS Project Manager may request that decontamination/purge water be placed into the same drums as the soil, instead of keeping the two media separate. Depending on the type of contamination, this may result in cost savings for the client during disposal. Field personnel should confirm how to contain soil and water prior to each field event.

11.1 Drum Labeling

The storage containers must be labeled as hazardous, non-hazardous, or unknown pending laboratory results. The labels must be completed using an indelible marker and include:

- Date that the contents were generated
- Nature of the contents - for example:
 - o Drill cuttings
 - o Purged groundwater
 - o Decontamination water and/or sludge
- Contact phone number in the event emergency response personnel need to identify the contents of the container.

Drums or other storage containers should be placed in as secure a location as possible, which may be a building if the exterior area is not secure from vandalism.

12 POST-DRILLING ACTIVITIES

Upon return to the office, PBS personnel should:

- Clean and calibrate equipment prior to placing back into storage. If there were any operational issues noted, they should be reported immediately to the equipment manager.
- Submit field borehole logs for electronic formatting for future reports.
- Submit the daily field notes to the PBS Project Manager for placement into the project file. If a field notebook was used, and that notebook is not dedicated to that project, a copy of those notebook pages should be submitted.

STANDARD OPERATING PROCEDURE

Sampling Groundwater Monitoring Wells

1 BACKGROUND AND PURPOSE

Groundwater samples are collected from monitoring wells for analysis of physical and chemical parameters, either by using field observations and portable equipment and/or using established laboratory analytical methods. The goal of this process is to obtain groundwater samples that are representative of the aquifer (i.e., avoiding a sample that has been impacted by surface or atmospheric conditions).

Low-flow or zero volume purging and sampling methods were developed to produce samples with the least amount of interference resulting from the collection method. Low-flow purging techniques became the industry standard for collecting a groundwater sample because the methods slow groundwater velocity to the well, minimize turbidity and agitation in the water column, and reduce the volume of purged groundwater requiring disposal. These techniques include the use of pumps dedicated to specific wells or the use of a portable pump system. A zero volume/no purging method requires installation of a collection vessel within the well prior to the sample collection event, allowing the water column within the well to equilibrate with the aquifer prior to retrieving the sample. The appropriate technique is dependent on project-specific goals and data quality requirements. Sampling methodology should be confirmed with the PBS project manager (PM) prior to preparing for groundwater monitoring.

The procedures in this Standard Operating Procedure (SOP) are specific to standard monitoring wells with a single-slotted interval. It is assumed that low-flow purging and sampling protocols are used, although these protocols can be easily adjusted for other sampling methods. Temporary borings advanced for a single field event may be sampled using the techniques presented in this SOP.

2 EQUIPMENT AND SUPPLY LIST

- Well lock keys
- Groundwater Sampling Field Form and Depth to Groundwater Field Form
- Copies of field forms and data tables from previous groundwater monitoring event
- Electronic water level probe or interface probe (if dense or light non-aqueous phase liquids [DNAPL or LNAPL] are potentially present)
- Tubing cutters, knife or scissors (note: some sites do not allow the use of a knife on-site)
- Decontamination equipment
- Measuring cup
- Safety cones
- Bolt cutters
- Replacement well caps, bolts, and padlocks
- Small cup, turkey baster, or large sponge to purge standing water inside well monument
- Fish hooks, stainless steel weight, and fishing line to retrieve objects in the well
- Site map and health and safety plan

- Personal protection equipment (PPE) required for the site, including nitrile gloves (confirm with site-specific health and safety plan)
- Submersible pump or peristaltic pump and associated equipment
- Compressed gas source (nitrogen or air compressor), battery source, or generator and fuel
- Control box
- Disposable tubing, if necessary
- Flow-through cell and water quality parameter meter (e.g. YSI model)
- Buckets or containers for purge water and drum labels
- Sample containers, labels, packaging material
- Coolers and ice for samples

3 PROCEDURE

This section outlines standard procedures used for collecting groundwater samples from a monitoring well. Project Managers may modify or remove tasks as dictated by project needs; for example, turbidity or depth-to-bottom measurements may not be warranted at a site with sufficiently developed wells.

Preparation for a monitoring event begins in the office. The first step is to read the scope of work (e.g., proposal, sampling and analysis plan (SAP), work plan) to determine the number and location of monitoring wells to be sampled, health and safety considerations, quality control (QC) samples needed, sample containers required, and equipment needed for the site (peristaltic pump, bladder pump, both, etc.). Recommended preplanning procedures are as follows:

- Prepare, review, or update Health and Safety Plan (HASP) for the site.
- Obtain appropriate PPE for the site (e.g., hard hat, safety vest, gloves, safety glasses, life vest, flame retardant [FR] shirt or other client-required PPE).
- Determine number and type of samples to be collected.
- Determine which laboratory can meet analytical requirements (required analysis, screening levels).
- Order sample containers from laboratory, making sure to order QC sample containers and at least one extra set of containers. Ensure that a Safety Data Sheet (SDS) is provided for any sample preservative supplied by the laboratory.
- Print all forms needed for sampling event (work plan, HASP, depth to water forms, groundwater sampling forms, labels, chain of custody, etc.).
- Schedule PBS vehicle and equipment use on PBS calendars, as warranted.
- Order rental equipment for sampling event, if not available internally.

After arriving at the site, the following procedures should be followed:

- Don appropriate PPE and place safety cones around the work zone, if required by the HASP or deemed necessary by site conditions.
- Open all of the monitoring wells on-site and wait a minimum of 15 minutes for water levels to approach an equilibrium state with atmospheric pressure before taking any measurements.

- Note the general condition of the well on the depth to groundwater field form. Check well for damage or evidence of tampering, and record pertinent observations. Note any maintenance tasks that should be completed, such as well cap or padlock replacement.
- Collect depth to water measurements from each monitoring well, decontaminating the probe between locations. If possible, gauging should be conducted in order from the least to the most contaminated well. The measurements should be collected from all wells prior to beginning sample collection, unless project scope or site conditions indicate otherwise.
- Measure the depth to water relative to the marking on the well casings. If there is no mark, use the north side of the casing. Record the water level on the depth to groundwater field form. Note if DNAPL or LNAPL is present (this typically requires a meter capable of detecting NAPL-water interfaces). If NAPL is present, additional decontamination procedures will be warranted.
- Measure depth to bottom of well to record if sedimentation in the well has occurred.
- Make sure all information is completed on the depth to groundwater field form and sign and date it.

Sampling a groundwater monitoring well utilizing low-flow techniques relies on stabilization of field water quality parameters to determine when groundwater is representative of aquifer conditions. Measurement of groundwater quality parameters with a water quality parameter meter occurs in a closed system in which groundwater does not come in contact with open air; this is important for valid measurements because dissolved oxygen (DO), oxidation-reduction potential (ORP), and pH measurements can be sensitive to reactions with the atmosphere. A flow-through cell (flow cell) connected to the water quality parameter meter provides this closed system and is used to measure field parameters prior to collecting groundwater samples. Stabilization of selected parameters indicates that collected groundwater is representative of the aquifer and conditions are suitable for sampling to begin. See protocol below for stabilization parameters.

Low-flow purge and sample methods require care when placing a portable pump and/or tubing in the well to minimize disturbance to the water column. Pumping rates must be maintained at 0.1 to 0.5 liter per minute to reduce drawdown; the pump should never be run higher than 0.5 liters per minute prior to sampling.

For monitoring wells, sampling should proceed as follows:

- If using a portable pump setup, slowly lower the pump or tubing to the midpoint of the screen or sample interval. Secure the pump or tubing at the surface to prevent it from moving (not applicable if using dedicated pumps).
- Connect the bladder pump (attaching control box, compressor or nitrogen tank with regulator) or peristaltic pump to flow cell containing water quality parameter probes. Place the water level probe in the well so water levels can be measured as you are pumping. Start the pump and adjust the pumping rate to between 0.1 and 0.5 liters per minute (using a measuring cup to calculate the flow rate). Begin recording readings on the groundwater sampling field form. Be sure to purge the initial volume of water in the tubing before taking a reading.
- During purging, record readings of groundwater parameters (listed below) and water level every 3 to 5 minutes on the groundwater sampling field form. A drawdown of less than 0.3 feet in the water column, once the pumping rate has stabilized, is desirable; however, less permeable aquifer material or a clogged well filter pack may result in a deeper drawdown. At a minimum, the depth-to-water should be stabilized for three consecutive readings taken between 3 to 5 minutes apart (in conjunction with the stabilization of the other parameters). Visually describe and record turbidity. Purging is considered complete when the groundwater parameters have stabilized for three consecutive readings.

Field Parameter	Stabilization Goal
Temperature	+/-3%
Specific Conductance	+/- 3% mS/cm
pH	+/- 0.1 pH units
DO	+/- 10% or +/- 0.3 mg/L
ORP	+/- 10 millivolts
Depth to Water	+/- 0.3 feet

Please note that multi-parameter meters may have a resolution greater than the stabilization goal. Note the meter capabilities. If the field parameters do not stabilize within the stabilization goal, but are within the resolution of the meter, it may be acceptable to collect a sample in this scenario. This MUST be noted on the field form.

- Measure turbidity of the sample water using field instruments prior to sample collection and upon any obvious visual changes in turbidity during sample collection.
- Prior to collecting the water sample, the tubing originating in the well must be disconnected from the influent (inflow) side of the flow cell.
- Directly fill the sample containers from the tubing originating in the well. If you are collecting samples for volatile organic compound (VOC) analysis, you may need to decrease the pump rate to minimize volatilization of compounds from the sample; if this is the case, other samples should be collected first. You may restore the flow rate upon completion of filling sample containers for VOC analysis. Fill unpreserved bottles first. Filtered samples should be collected after all other samples have been collected.
- Groundwater samples collected for VOC analysis must be collected with zero headspace in the sample vial. This can be confirmed by gently tapping the sealed vial against a gloved hand to ensure that air bubbles are not present.
- If a duplicate sample is required for the well, it should be filled concurrently with the regular sample. This is accomplished by alternating bottles of the same type during sample collection (e.g., filling one bottle from each sample, then the second bottle from each sample.)
- Groundwater samples for dissolved metals analysis must be field filtered with a 0.45 micron filter directly connected to the tubing. Mark "field filtered" or "FF" on the bottle label, field form, and chain of custody.
- Prior to filling or just after filling, label each bottle with the project name, sample name, and sample date and time, and make sure it is properly sealed. The sample containers may also be labeled with what analysis will be performed (confirm with Project Manager). Place in a cooler with ice and pack for transportation.
- As necessary, pull pump and discard tubing. Decontaminate the pump based on the decontamination procedures established for the site.
- Make sure all information is completed on the groundwater field form and sign and date it.
- Close and lock the well.
- Contain purge and decontamination water in the appropriate containers as established for the project.
- Dispose of used sampling supplies and other waste in appropriate container as established for the project.

If low-flow sampling is not used at the site, these procedures should be modified as appropriate. The objective is to provide high-quality groundwater samples representative of the aquifer. Modifications to this SOP should keep this objective in mind at all times.

After fieldwork is completed:

- Ensure that chain-of-custody form has necessary information including site name, project manager, sample names, date and time collected, requested analysis, special notes (field filtered, MS/MSD, etc.).
- Scan and save field sheets to project folder on server. Retain original field copies in project folder; these are legal documents and should be retained as per PBS guidelines for document retention.
- Report any sampling or well maintenance issues to the project manager for evaluation and remedy.
- Clean and store PBS equipment for use on next project. Report any equipment damage or malfunctions or missing/depleted calibration solutions to the office equipment manager.
- Ship rental equipment back to vendor immediately to minimize project costs. Borrowed PBS equipment should be returned promptly to the lending office.

References

Puls, R.W. and M.J. Barcelona. *Groundwater Issue Paper: Low-Flow (Minimal Drawdown) Ground-Water Sampling Procedures*. US Environmental Protection Agency, EPA 540-S-95-504 (1996).

Yeskis, D. and Bernard Zavala. *Groundwater Issue Paper: Ground-Water Sampling Guidelines for Superfund and RCRA Project Managers*. US Environmental Protection Agency, EPA 542-S-02-001 (May 2002).

Appendix C

June 2021 Deep Zone Investigation Boring Logs



ECSI SITE 2424
PORTLAND, OREGON

BORING B-33

PBS PROJECT NUMBER:
20125.010

BORING B-33 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND- WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		ASPHALT						
		Brown, poorly graded SAND (SP); fine sand; damp						No sheen or odor throughout until approximately 20 feet bgs
		FILL					80	
5.0				0.1				
		becomes gray; moist					90	
10.0				0.1				
				0.2			95	
15.0				0.1				
				0.1			95	
20.0		Gray, SILT (ML) with sand and clay; medium plasticity; fine sand; moist		0.2				Slight sheen, no odor
					B33-21			
		Gray, SILT (ML) with clay; medium plasticity; damp		0.2			95	
25.0		Gray, poorly graded SAND (SP); fine sand; damp		0.1				
		fine, rounded gravel encountered					100	
30.0		Final depth 30.0 feet bgs; boring backfilled with bentonite.		0.1				
35.0								

BORING METHOD: Direct Push
DRILLED BY: Pacific Soil & Water, LLC
BORING BIT DIAMETER: 2-inch

LOGGED BY: N. Thornton
COMPLETED: 6/24/21



ECSI SITE 2424
PORTLAND, OREGON

BORING B-35

PBS PROJECT NUMBER:
20125.010

BORING B-35 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND- WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		ASPHALT						
		Brown, poorly graded SAND (SP); fine sand; damp						
		FILL becomes gray; moist					60	
5.0				0.0				
							60	
10.0				4.2				
				0.0				
15.0				0.1				
				0.1				Visible sheen for 17-25 feet bgs
20.0		Gray, SILT (ML) with sand and wood chips; medium plasticity; fine sand; moist						
		Gray, poorly graded SAND (SP); fine sand; wet		178				
				575			100	
25.0		4 inch layer of wood chips						
		No recovery		137				
30.0		Final depth 30.0 feet bgs; boring backfilled with bentonite.						
35.0								

BORING METHOD: Direct Push
DRILLED BY: Pacific Soil & Water, LLC
BORING BIT DIAMETER: 2-inch

LOGGED BY: N. Thornton
COMPLETED: 6/24/21

BORING LOG-ENV CORE 20125.010 MW 20210701.GPJ DATATMPL.GDT PRINT DATE: 8/3/21:RPG



ECSI SITE 2424
PORTLAND, OREGON

BORING MW-5

PBS PROJECT NUMBER:
20125.010

BORING MW-5 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND- WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		ASPHALT						
		Brown, poorly graded SAND (SP); fine sand; damp						Flush-mount Monument
		FILL					60	No odor or sheen throughout
5.0			▼	0.0				PVC Pipe
		becomes dark gray; moist					60	
10.0		Gray, SILT (ML) with sand and organics; low plasticity; fine sand; moist		0.0				Granular Bentonite
		Gray, SILT (ML) with clay and organics; medium plasticity; moist					100	
20.0		Gray, poorly graded SAND (SP); fine sand; moist		0.0				
		Gray, poorly graded SAND (SP); fine sand; moist		69.9				Sand
		Gray, poorly graded SAND (SP); fine sand; moist		226	MW5-21			
		Gray, poorly graded SAND (SP); fine sand; moist		24.2			100	
25.0		Gray, poorly graded SAND (SP); fine sand; moist		2.1				0.010-inch Slotted Screen
		Gray, poorly graded SAND (SP); fine sand; moist					100	
30.0		Final depth 30.0 feet bgs; boring backfilled with bentonite.						
35.0		Final depth 30.0 feet bgs; boring backfilled with bentonite.						

BORING METHOD: Direct Push
DRILLED BY: Pacific Soil & Water, LLC
BORING BIT DIAMETER: 2-inch

LOGGED BY: N. Thornton
COMPLETED: 6/23/21



ECSI SITE 2424
PORTLAND, OREGON

BORING MW-6

PBS PROJECT NUMBER:
20125.010

BORING MW-6 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND- WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		ASPHALT						
		Brown, poorly graded SAND (SP); fine sand; damp						Flush-mount Monument
		FILL					80	No odor or sheen throughout
5.0		becomes gray		0.1				PVC Pipe
10.0				0.0				Granular Bentonite
				0.0			100	
15.0				0.1				
		Gray, SILT (ML) with sand; low plasticity; fine sand; moist		0.0			100	
20.0				204.2				Sand
		Gray, poorly graded SAND (SP); medium to coarse sand; wet		220.8	MW6-21			
		Gray, SILT (ML) with clay; medium plasticity; damp					100	
25.0				24.1				0.010-inch Slotted Screen
		Gray, poorly graded SAND (SP); fine sand; moist		3.3				
				1.0			100	
30.0		Final depth 30.0 feet bgs; boring backfilled with bentonite.		0.3				
35.0								

BORING LOG-ENV CORE 20125.010 MW 20210701.GPJ DATATMPL.GDT PRINT DATE: 8/3/21:RPG

BORING METHOD: Direct Push
DRILLED BY: Pacific Soil & Water, LLC
BORING BIT DIAMETER: 2-inch

LOGGED BY: N. Thornton
COMPLETED: 6/24/21



ECSI SITE 2424
PORTLAND, OREGON

BORING MW-7

PBS PROJECT NUMBER:
20125.010

BORING MW-7 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND- WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		ASPHALT						
		Brown, poorly graded SAND (SP); fine sand; damp						Flush-mount Monument
		FILL					60	No odor or sheen throughout
5.0				0.6				PVC Pipe
		becomes gray					70	
10.0		becomes wet		0.2				Granular Bentonite
				0.1			100	
15.0				0.3				
		Gray, SILT (ML) with sand and organics; low plasticity; fine sand; moist		0.8			100	
20.0				152.4				Sand
		grades with clay; medium plasticity		570.0	MW7-21		100	
				49.1				
25.0		Gray, poorly graded SAND (SP); fine sand; moist		57.0				0.010-inch Slotted Screen
				14.2			100	
30.0		Final depth 30.0 feet bgs; boring backfilled with bentonite.						
35.0								

BORING LOG-ENV CORE 20125.010 MW 20210701.GPJ DATATMPL.GDT PRINT DATE: 8/3/21:RPG

BORING METHOD: Direct Push
DRILLED BY: Pacific Soil & Water, LLC
BORING BIT DIAMETER: 2-inch

LOGGED BY: N. Thornton
COMPLETED: 6/23/21



ECSI SITE 2424
PORTLAND, OREGON

BORING MW-8

PBS PROJECT NUMBER:
20125.010

BORING MW-8 LOCATION:
(See Site Plan)

DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND- WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		ASPHALT						
		Brown, poorly graded SAND (SP); fine sand; damp						Flush-mount Monument
		FILL					50	No odor or sheen throughout
5.0				0.0				PVC Pipe
							50	
10.0		becomes gray and wet		0.0				Granular Bentonite
							95	
15.0				0.1				
		Gray, SILT (ML) with sand and organics; low plasticity; fine sand; wet		0.7				
							90	
20.0		Gray, poorly graded SAND (SP); fine sand; damp		2.7				Sand
							0	
25.0				4.9				0.010-inch Slotted Screen
							0	
30.0		Final depth 30.0 feet bgs; boring backfilled with bentonite.		0.0				
35.0								

BORING LOG-ENV CORE 20125.010 MW 20210701.GPJ DATATMPL.GDT PRINT DATE: 8/3/21:RPG

BORING METHOD: Direct Push
DRILLED BY: Pacific Soil & Water, LLC
BORING BIT DIAMETER: 2-inch

LOGGED BY: N. Thornton
COMPLETED: 6/23/21



ECSI SITE 2424
PORTLAND, OREGON

BORING MW-9

PBS PROJECT NUMBER:
20125.010

BORING MW-9 LOCATION:
(See Site Plan)

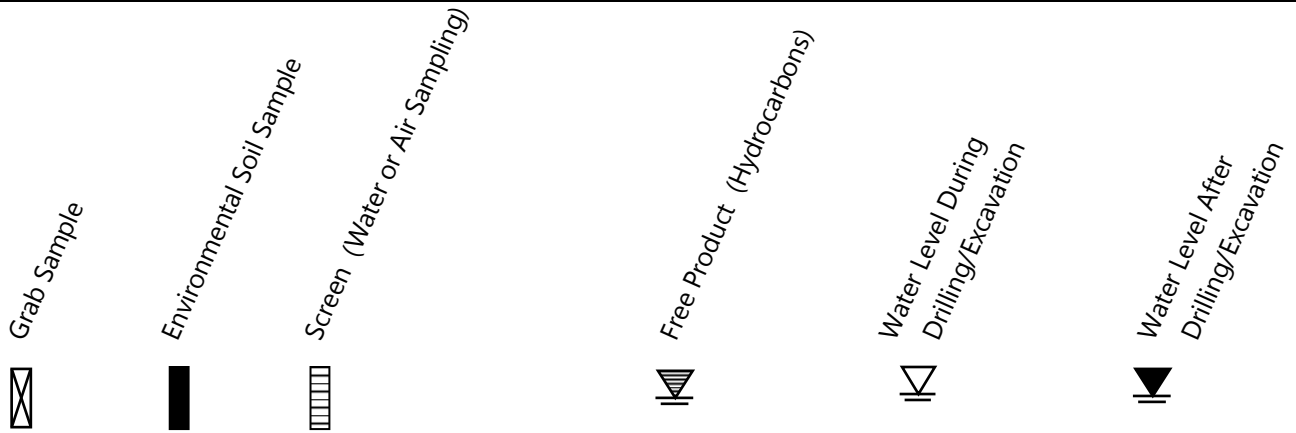
DEPTH FEET	GRAPHIC LOG	MATERIAL DESCRIPTION	GROUND- WATER	PID (PPM)	SAMPLE NUMBER	SAMPLE/ TEMPORARY WELL(S)	RECOVERY (%)	COMMENTS/ WELL INSTALLATION
0.0		ASPHALT						
		Brown, poorly graded SAND (SP); fine sand; damp						
		FILL					60	Flush-mount Monument
5.0								PVC Pipe
		becomes gray					60	
10.0								Granular Bentonite
		becomes wet					70	
15.0				5.5				
		Gray, SILT (ML) with sand and organics; low plasticity; fine sand; moist					80	
20.0				153				Sand
		Gray, SILT (ML) with clay and organics; medium plasticity; moist			MW9-23		100	Strong solvent odor at 23 feet bgs
25.0								0.010-inch Slotted Screen
		Gray, poorly graded SAND (SP); fine sand; moist		11.7			80	
30.0				6.8	MW9-29			
		Final depth 30.0 feet bgs; boring backfilled with bentonite.						
35.0								

BORING LOG-ENV CORE 20125.010 MW 20210701.GPJ DATATMPL.GDT PRINT DATE: 8/3/21:RPG

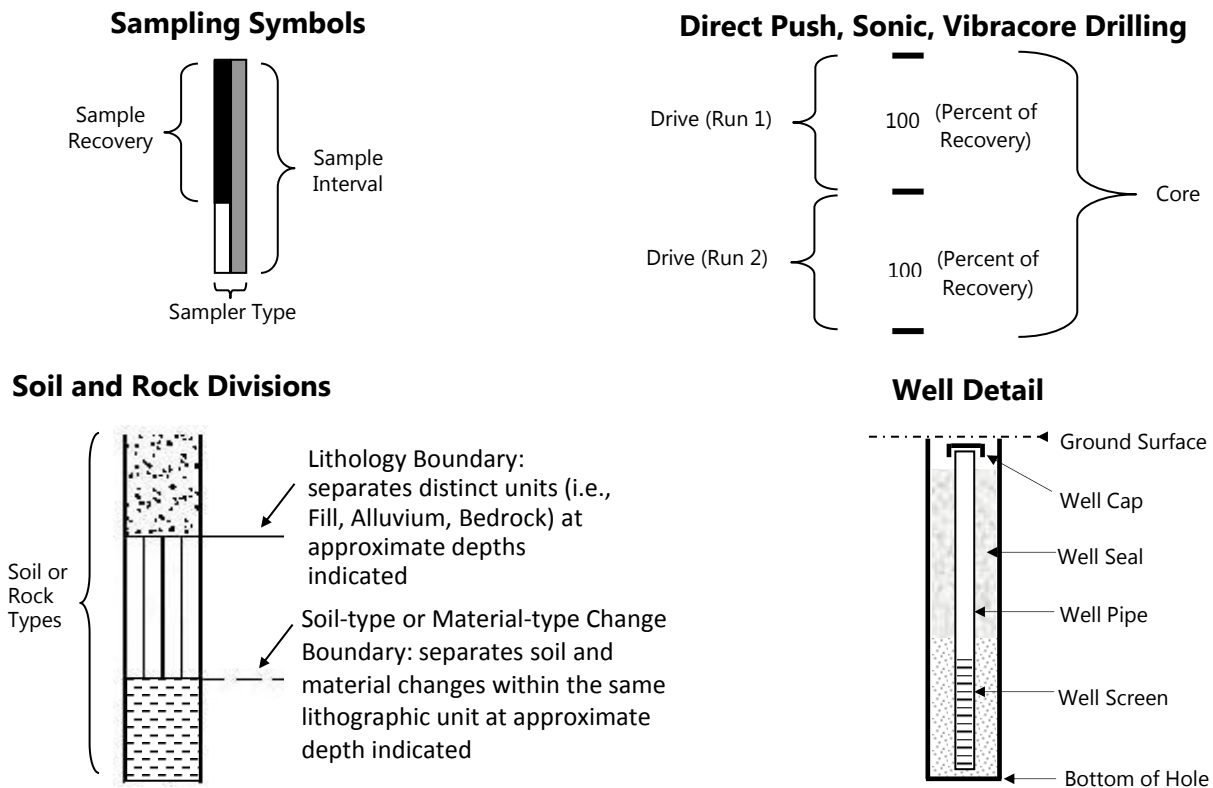
BORING METHOD: Direct Push
DRILLED BY: Pacific Soil & Water, LLC
BORING BIT DIAMETER: 2-inch

LOGGED BY: N. Thornton
COMPLETED: 6/24/21

SAMPLING DESCRIPTIONS



LOG GRAPHICS



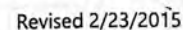
ENVIRONMENTAL TESTING EXPLANATIONS

ATD	At Time of Drilling	PPM	Parts PerMillion
BGS	Below Ground Surface	ND	Not Detected
MSL	Mean Sea Level	NS	No Sheen
MW	Monitoring Well (Water Sampling)	SS	Slight Sheen
OD	Outside Diameter	MS	Moderate Sheen
PID	Photoionization Detector Headspace Analysis	HS	High Sheen

Observations presented on the logs are based on limited field data and are not intended to be used for site engineering or construction decision purposes.

Appendix D

Water Quality Parameter Sheets





GROUNDWATER SAMPLING FORM (YSI Pro)

Project Name/ Location: NW Yeon

Date: 7 | 1 | 21

Monitoring Well ID MW6

Initial DTW (feet bgs)	6.79
------------------------	------

Screen Interval (feet bgs)

Well depth (feet bgs)

Depth of pump/tubing inlet (feet bgs)

Sampling method (describe pump or sampler)	P pump
---	--------

Purge Rate (L/min)	300 mL/min
--------------------	------------

Sample ID (if not well ID)	M1W6-GW
----------------------------	---------

Sample Time	1415
-------------	------

QC Sample

type: _____ ID _____ Time _____

Field Personnel	S. ECKES
-----------------	----------

Weather Conditions	overcast 75°F
--------------------	---------------

WELL PURGING INFORMATION

Time
☐ elapsed
☒ actual

DTW
(feet)Temp.
(C)

Dissolved
oxygen
(mg/L)

Specific
conductivity
☒ mS/cm
☐ μ S/cm

pH

ORP
(mV)Turbidity
(NTU)

Observations

Volume
purged
☐ ltr
☒ gal

1340	6.88	15.9	0.36	0.332	6.62	-39.8	cleanish	1.15
1349	6.88	15.7	0.30	0.578	6.06	-26.1	"	1.75
1353	6.89	15.8	0.25	0.99	6.05	-34.9	"	2.50
1356	6.89	15.7	0.25	0.54	6.07	-38.4	"	
1359	6.89	15.7	0.24	0.88	6.08	-40.9	"	
1402	6.89	15.7	0.22	0.90	6.09	-42.9	"	
1405	6.89	15.7	0.22	0.91	6.09	-45.0	"	

31.3

Total Volume Purged	3.25
---------------------	------

FIELD OBSERVATIONS / NOTES (such as well head condition, groundwater color, sediment load, recovery, sheen, odor, equipment)

Slight sheen on water

Signature of Field Personnel:

[illegible]

Revised 2/23/2015

	PBS Engineering and Environmental Inc. GROUNDWATER SAMPLING FORM (YSI Pro)	Project No: 20125.01010003	
		Project Name/ Location: NW Yeon Date: 7/1/21	
		Monitoring Well ID	MW3
Initial DTW (feet bgs)	7.31	Sample ID (if not well ID)	MW3-GW
Screen Interval (feet bgs)		Sample Time	1725
Well depth (feet bgs)		QC Sample type: _____ ID _____ Time _____	☒ Not collected
Depth of pump/tubing inlet (feet bgs)			
Sampling method (describe pump or sampler)	p pump	Field Personnel	S. Eckes
Purge Rate (L/min)	300 mL/min	Weather Conditions	overcast 70°F

PBS Engineering and Environmental Inc.

Project No: 20125.01010003

Date: 7/1/21

Monitoring Well ID

Initial DTW (feet bgs)

Sample ID (if not well ID)

Screen Interval (feet bgs)

1725

Well depth (feet bgs)

☒ Not collected

Depth of pump/tubing inlet (feet bgs)

ID_____ Time_____

Sampling method
(describe pump or sampler)

§ ECKE

Purge Rate (L/min)

overcast 70°F

WELL PURGING INFORMATION

Total Volume Purged	2.25
---------------------	------

FIELD OBSERVATIONS / NOTES (such as well head condition, groundwater color, sediment load, recovery, sheen, odor, equipment)

Signature of Field Personnel: _____

	PBS Engineering and Environmental Inc. GROUNDWATER SAMPLING FORM (YSI Pro)	Project No: 20125.01010003 Project Name/ Location: NWYeon Date: 7/1/21	Monitoring Well ID: XXXX MW4
		Initial DTW (feet bgs): 8.99 Screen Interval (feet bgs): Well depth (feet bgs): Depth of pump/tubing inlet (feet bgs): Sampling method (describe pump or sampler): p pump Purge Rate (L/min): 300 mL/min	Sample ID (if not well ID): MW4-GW Sample Time: 1830 QC Sample type: ☒ Not collected ID: _____ Time: _____ Field Personnel: S. Eckes Weather Conditions: overcast 70°F

[illegible]

Appendix E

June 2021 Deep Zone Investigation Laboratory Analytical

PBS Engineering & Env.- POR

Sample Delivery Group: L1371222
Samples Received: 06/25/2021
Project Number: 20125.010
Description: 3720 NW Yeon Ave

Report To: Nick Thornton
4412 S Corbett Ave
Portland, OR 97239

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
MW7-GW L1371222-01	6
MW5-GW L1371222-02	8
MW6-21 L1371222-03	10
B33-21 L1371222-04	12
MW6-GW L1371222-05	14
B33-GW L1371222-06	16
B34-23 L1371222-07	18
B34-29 L1371222-08	20
Qc: Quality Control Summary	22
Total Solids by Method 2540 G-2011	22
Volatile Organic Compounds (GC) by Method NWTPHGX	23
Volatile Organic Compounds (GC/MS) by Method 8260D	25
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	42
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	43
Gl: Glossary of Terms	44
Al: Accreditations & Locations	45
Sc: Sample Chain of Custody	46

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

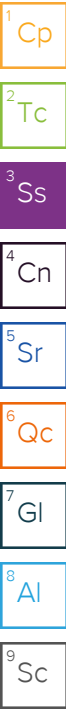
MW7-GW L1371222-01 GW

Collected by
Nick T

Collected date/time
06/24/21 08:30

Received date/time
06/25/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1697313	1	06/30/21 04:04	06/30/21 04:04	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1698153	250	06/30/21 23:45	06/30/21 23:45	JHH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1695562	1	06/26/21 00:20	06/26/21 13:47	BJP	Mt. Juliet, TN



MW5-GW L1371222-02 GW

Collected by
Nick T

Collected date/time
06/24/21 09:20

Received date/time
06/25/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1697313	1	06/30/21 04:25	06/30/21 04:25	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1698153	200	07/01/21 00:05	07/01/21 00:05	JHH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1695562	1	06/26/21 00:20	06/26/21 14:06	BJP	Mt. Juliet, TN

MW6-21 L1371222-03 Solid

Collected by
Nick T

Collected date/time
06/24/21 09:20

Received date/time
06/25/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1697316	1	06/30/21 12:53	06/30/21 13:02	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1700132	1	06/24/21 09:20	07/06/21 00:15	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1698914	1	06/24/21 09:20	07/01/21 18:19	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1700442	500	06/24/21 09:20	07/07/21 16:54	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1699005	1	07/02/21 05:41	07/03/21 04:01	TJD	Mt. Juliet, TN

B33-21 L1371222-04 Solid

Collected by
Nick T

Collected date/time
06/24/21 11:30

Received date/time
06/25/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1697316	1	06/30/21 12:53	06/30/21 13:02	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1700132	1	06/24/21 11:30	07/06/21 00:37	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1698914	1	06/24/21 11:30	07/01/21 18:41	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1700442	1	06/24/21 11:30	07/07/21 21:16	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1699005	1	07/02/21 05:41	07/03/21 04:41	TJD	Mt. Juliet, TN

MW6-GW L1371222-05 GW

Collected by
Nick T

Collected date/time
06/24/21 11:20

Received date/time
06/25/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1697313	1	06/30/21 04:45	06/30/21 04:45	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1698153	100	07/01/21 00:26	07/01/21 00:26	JHH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1695562	1	06/26/21 00:20	06/26/21 14:25	BJP	Mt. Juliet, TN

B33-GW L1371222-06 GW

Collected by
Nick T

Collected date/time
06/24/21 12:10

Received date/time
06/25/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1697727	1	06/30/21 11:52	06/30/21 11:52	ADM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1695562	1	06/26/21 00:20	06/26/21 14:44	BJP	Mt. Juliet, TN

SAMPLE SUMMARY

B34-23 L1371222-07 Solid

Collected by
Nick T

Collected date/time
06/24/21 13:00

Received date/time
06/25/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1697316	1	06/30/21 12:53	06/30/21 13:02	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1700653	105	06/24/21 13:00	07/06/21 17:59	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1701424	2100	06/24/21 13:00	07/07/21 18:04	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1702025	2100	06/24/21 13:00	07/08/21 13:44	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1699005	1	07/02/21 05:41	07/03/21 03:09	TJD	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

B34-29 L1371222-08 Solid

Collected by
Nick T

Collected date/time
06/24/21 14:30

Received date/time
06/25/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1697316	1	06/30/21 12:53	06/30/21 13:02	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1700653	1	06/24/21 14:30	07/06/21 16:31	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1698914	1	06/24/21 14:30	07/01/21 19:24	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1700442	109	06/24/21 14:30	07/07/21 17:15	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1699005	1	07/02/21 05:41	07/03/21 03:22	TJD	Mt. Juliet, TN

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

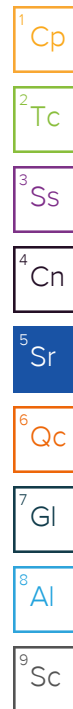


Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND	C3	50.0	1	06/30/2021 04:04	WG1697313
Acrolein	ND	C3	50.0	1	06/30/2021 04:04	WG1697313
Acrylonitrile	ND		10.0	1	06/30/2021 04:04	WG1697313
Benzene	ND		1.00	1	06/30/2021 04:04	WG1697313
Bromobenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
Bromodichloromethane	ND		1.00	1	06/30/2021 04:04	WG1697313
Bromoform	ND		1.00	1	06/30/2021 04:04	WG1697313
Bromomethane	ND		5.00	1	06/30/2021 04:04	WG1697313
n-Butylbenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
sec-Butylbenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
tert-Butylbenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
Carbon tetrachloride	ND		1.00	1	06/30/2021 04:04	WG1697313
Chlorobenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
Chlorodibromomethane	ND		1.00	1	06/30/2021 04:04	WG1697313
Chloroethane	ND		5.00	1	06/30/2021 04:04	WG1697313
Chloroform	ND		5.00	1	06/30/2021 04:04	WG1697313
Chloromethane	ND		2.50	1	06/30/2021 04:04	WG1697313
2-Chlorotoluene	ND		1.00	1	06/30/2021 04:04	WG1697313
4-Chlorotoluene	ND		1.00	1	06/30/2021 04:04	WG1697313
1,2-Dibromo-3-Chloropropane	ND		5.00	1	06/30/2021 04:04	WG1697313
1,2-Dibromoethane	ND		1.00	1	06/30/2021 04:04	WG1697313
Dibromomethane	ND		1.00	1	06/30/2021 04:04	WG1697313
1,2-Dichlorobenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
1,3-Dichlorobenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
1,4-Dichlorobenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
Dichlorodifluoromethane	ND	C3	5.00	1	06/30/2021 04:04	WG1697313
1,1-Dichloroethane	ND		1.00	1	06/30/2021 04:04	WG1697313
1,2-Dichloroethane	ND		1.00	1	06/30/2021 04:04	WG1697313
1,1-Dichloroethene	4.93		1.00	1	06/30/2021 04:04	WG1697313
cis-1,2-Dichloroethene	2650		250	250	06/30/2021 23:45	WG1698153
trans-1,2-Dichloroethene	15.6		1.00	1	06/30/2021 04:04	WG1697313
1,2-Dichloropropane	ND		1.00	1	06/30/2021 04:04	WG1697313
1,1-Dichloropropene	ND		1.00	1	06/30/2021 04:04	WG1697313
1,3-Dichloropropane	ND		1.00	1	06/30/2021 04:04	WG1697313
cis-1,3-Dichloropropene	ND		1.00	1	06/30/2021 04:04	WG1697313
trans-1,3-Dichloropropene	ND		1.00	1	06/30/2021 04:04	WG1697313
2,2-Dichloropropane	ND		1.00	1	06/30/2021 04:04	WG1697313
Di-isopropyl ether	ND		1.00	1	06/30/2021 04:04	WG1697313
Ethylbenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
Hexachloro-1,3-butadiene	ND		1.00	1	06/30/2021 04:04	WG1697313
Isopropylbenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
p-Isopropyltoluene	ND		1.00	1	06/30/2021 04:04	WG1697313
2-Butanone (MEK)	ND		10.0	1	06/30/2021 04:04	WG1697313
Methylene Chloride	ND		5.00	1	06/30/2021 04:04	WG1697313
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	06/30/2021 04:04	WG1697313
Methyl tert-butyl ether	ND		1.00	1	06/30/2021 04:04	WG1697313
Naphthalene	ND		5.00	1	06/30/2021 04:04	WG1697313
n-Propylbenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
Styrene	ND		1.00	1	06/30/2021 04:04	WG1697313
1,1,1,2-Tetrachloroethane	ND		1.00	1	06/30/2021 04:04	WG1697313
1,1,2,2-Tetrachloroethane	ND		1.00	1	06/30/2021 04:04	WG1697313
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	06/30/2021 04:04	WG1697313
Tetrachloroethene	9390		250	250	06/30/2021 23:45	WG1698153
Toluene	5.88		1.00	1	06/30/2021 04:04	WG1697313
1,2,3-Trichlorobenzene	ND	C4	1.00	1	06/30/2021 04:04	WG1697313
1,2,4-Trichlorobenzene	ND	C4	1.00	1	06/30/2021 04:04	WG1697313



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	06/30/2021 04:04	WG1697313
1,1,2-Trichloroethane	ND		1.00	1	06/30/2021 04:04	WG1697313
Trichloroethene	2100		250	250	06/30/2021 23:45	WG1698153
Trichlorofluoromethane	ND		5.00	1	06/30/2021 04:04	WG1697313
1,2,3-Trichloropropane	ND		2.50	1	06/30/2021 04:04	WG1697313
1,2,4-Trimethylbenzene	1.48		1.00	1	06/30/2021 04:04	WG1697313
1,2,3-Trimethylbenzene	1.61		1.00	1	06/30/2021 04:04	WG1697313
1,3,5-Trimethylbenzene	ND		1.00	1	06/30/2021 04:04	WG1697313
Vinyl chloride	3750		250	250	06/30/2021 23:45	WG1698153
Xylenes, Total	ND		3.00	1	06/30/2021 04:04	WG1697313
(S) Toluene-d8	105		80.0-120		06/30/2021 04:04	WG1697313
(S) Toluene-d8	103		80.0-120		06/30/2021 23:45	WG1698153
(S) 4-Bromofluorobenzene	108		77.0-126		06/30/2021 04:04	WG1697313
(S) 4-Bromofluorobenzene	91.4		77.0-126		06/30/2021 23:45	WG1698153
(S) 1,2-Dichloroethane-d4	92.2		70.0-130		06/30/2021 04:04	WG1697313
(S) 1,2-Dichloroethane-d4	103		70.0-130		06/30/2021 23:45	WG1698153

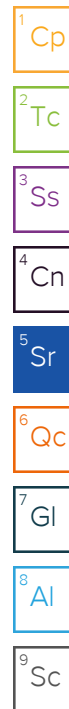
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	06/26/2021 13:47	WG1695562
(S) Nitrobenzene-d5	50.4		10.0-120		06/26/2021 13:47	WG1695562

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND	C3	50.0	1	06/30/2021 04:25	WG1697313
Acrolein	ND	C3	50.0	1	06/30/2021 04:25	WG1697313
Acrylonitrile	ND		10.0	1	06/30/2021 04:25	WG1697313
Benzene	ND		1.00	1	06/30/2021 04:25	WG1697313
Bromobenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
Bromodichloromethane	ND		1.00	1	06/30/2021 04:25	WG1697313
Bromoform	ND		1.00	1	06/30/2021 04:25	WG1697313
Bromomethane	ND		5.00	1	06/30/2021 04:25	WG1697313
n-Butylbenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
sec-Butylbenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
tert-Butylbenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
Carbon tetrachloride	ND		1.00	1	06/30/2021 04:25	WG1697313
Chlorobenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
Chlorodibromomethane	ND		1.00	1	06/30/2021 04:25	WG1697313
Chloroethane	ND		5.00	1	06/30/2021 04:25	WG1697313
Chloroform	ND		5.00	1	06/30/2021 04:25	WG1697313
Chloromethane	ND		2.50	1	06/30/2021 04:25	WG1697313
2-Chlorotoluene	ND		1.00	1	06/30/2021 04:25	WG1697313
4-Chlorotoluene	ND		1.00	1	06/30/2021 04:25	WG1697313
1,2-Dibromo-3-Chloropropane	ND		5.00	1	06/30/2021 04:25	WG1697313
1,2-Dibromoethane	ND		1.00	1	06/30/2021 04:25	WG1697313
Dibromomethane	ND		1.00	1	06/30/2021 04:25	WG1697313
1,2-Dichlorobenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
1,3-Dichlorobenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
1,4-Dichlorobenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
Dichlorodifluoromethane	ND	C3	5.00	1	06/30/2021 04:25	WG1697313
1,1-Dichloroethane	ND		1.00	1	06/30/2021 04:25	WG1697313
1,2-Dichloroethane	ND		1.00	1	06/30/2021 04:25	WG1697313
1,1-Dichloroethene	5.27		1.00	1	06/30/2021 04:25	WG1697313
cis-1,2-Dichloroethene	5890		200	200	07/01/2021 00:05	WG1698153
trans-1,2-Dichloroethene	37.7		1.00	1	06/30/2021 04:25	WG1697313
1,2-Dichloropropane	ND		1.00	1	06/30/2021 04:25	WG1697313
1,1-Dichloropropene	ND		1.00	1	06/30/2021 04:25	WG1697313
1,3-Dichloropropane	ND		1.00	1	06/30/2021 04:25	WG1697313
cis-1,3-Dichloropropene	ND		1.00	1	06/30/2021 04:25	WG1697313
trans-1,3-Dichloropropene	ND		1.00	1	06/30/2021 04:25	WG1697313
2,2-Dichloropropane	ND		1.00	1	06/30/2021 04:25	WG1697313
Di-isopropyl ether	ND		1.00	1	06/30/2021 04:25	WG1697313
Ethylbenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
Hexachloro-1,3-butadiene	ND		1.00	1	06/30/2021 04:25	WG1697313
Isopropylbenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
p-Isopropyltoluene	ND		1.00	1	06/30/2021 04:25	WG1697313
2-Butanone (MEK)	ND		10.0	1	06/30/2021 04:25	WG1697313
Methylene Chloride	ND		5.00	1	06/30/2021 04:25	WG1697313
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	06/30/2021 04:25	WG1697313
Methyl tert-butyl ether	ND		1.00	1	06/30/2021 04:25	WG1697313
Naphthalene	ND		5.00	1	06/30/2021 04:25	WG1697313
n-Propylbenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
Styrene	ND		1.00	1	06/30/2021 04:25	WG1697313
1,1,1,2-Tetrachloroethane	ND		1.00	1	06/30/2021 04:25	WG1697313
1,1,2,2-Tetrachloroethane	ND		1.00	1	06/30/2021 04:25	WG1697313
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	06/30/2021 04:25	WG1697313
Tetrachloroethene	196	Z1	60.0	200	07/01/2021 00:05	WG1698153
Toluene	1.57		1.00	1	06/30/2021 04:25	WG1697313
1,2,3-Trichlorobenzene	ND	C4	1.00	1	06/30/2021 04:25	WG1697313
1,2,4-Trichlorobenzene	ND	C4	1.00	1	06/30/2021 04:25	WG1697313



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	06/30/2021 04:25	WG1697313
1,1,2-Trichloroethane	ND		1.00	1	06/30/2021 04:25	WG1697313
Trichloroethene	217		200	200	07/01/2021 00:05	WG1698153
Trichlorofluoromethane	ND		5.00	1	06/30/2021 04:25	WG1697313
1,2,3-Trichloropropane	ND		2.50	1	06/30/2021 04:25	WG1697313
1,2,4-Trimethylbenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
1,2,3-Trimethylbenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
1,3,5-Trimethylbenzene	ND		1.00	1	06/30/2021 04:25	WG1697313
Vinyl chloride	3840		200	200	07/01/2021 00:05	WG1698153
Xylenes, Total	ND		3.00	1	06/30/2021 04:25	WG1697313
(S) Toluene-d8	106		80.0-120		06/30/2021 04:25	WG1697313
(S) Toluene-d8	104		80.0-120		07/01/2021 00:05	WG1698153
(S) 4-Bromofluorobenzene	107		77.0-126		06/30/2021 04:25	WG1697313
(S) 4-Bromofluorobenzene	91.2		77.0-126		07/01/2021 00:05	WG1698153
(S) 1,2-Dichloroethane-d4	91.4		70.0-130		06/30/2021 04:25	WG1697313
(S) 1,2-Dichloroethane-d4	104		70.0-130		07/01/2021 00:05	WG1698153

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	06/26/2021 14:06	WG1695562
(S) Nitrobenzene-d5	42.5		10.0-120		06/26/2021 14:06	WG1695562

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	91.4		1	06/30/2021 13:02	WG1697316

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	9.95		0.109	1	07/06/2021 00:15	WG1700132
(S) a,a,a-Trifluorotoluene(FID)	88.0		77.0-120		07/06/2021 00:15	WG1700132

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0547	1	07/01/2021 18:19	WG1698914
Acrylonitrile	ND		0.0109	1	07/01/2021 18:19	WG1698914
Benzene	0.00318		0.00109	1	07/01/2021 18:19	WG1698914
Bromodichloromethane	ND		0.00109	1	07/01/2021 18:19	WG1698914
Bromoform	ND		0.00109	1	07/01/2021 18:19	WG1698914
Bromomethane	ND		0.00547	1	07/01/2021 18:19	WG1698914
Carbon disulfide	0.00152		0.00109	1	07/01/2021 18:19	WG1698914
Carbon tetrachloride	ND		0.00109	1	07/01/2021 18:19	WG1698914
Chlorobenzene	ND		0.00109	1	07/01/2021 18:19	WG1698914
Chlorodibromomethane	ND		0.00109	1	07/01/2021 18:19	WG1698914
Chloroethane	ND		0.00547	1	07/01/2021 18:19	WG1698914
Chloroform	ND		0.00547	1	07/01/2021 18:19	WG1698914
Chloromethane	ND		0.00273	1	07/01/2021 18:19	WG1698914
1,2-Dibromoethane	ND		0.00109	1	07/01/2021 18:19	WG1698914
Dibromomethane	ND		0.00109	1	07/01/2021 18:19	WG1698914
1,2-Dibromo-3-Chloropropane	ND		0.00547	1	07/01/2021 18:19	WG1698914
1,2-Dichlorobenzene	ND		0.00109	1	07/01/2021 18:19	WG1698914
1,3-Dichlorobenzene	ND		0.00109	1	07/01/2021 18:19	WG1698914
1,4-Dichlorobenzene	ND		0.00109	1	07/01/2021 18:19	WG1698914
Dichlorodifluoromethane	ND		0.00547	1	07/01/2021 18:19	WG1698914
1,1-Dichloroethane	ND		0.00109	1	07/01/2021 18:19	WG1698914
1,2-Dichloroethane	ND		0.00109	1	07/01/2021 18:19	WG1698914
1,1-Dichloroethene	0.00294		0.00109	1	07/01/2021 18:19	WG1698914
cis-1,2-Dichloroethene	57.6		0.598	500	07/07/2021 16:54	WG1700442
trans-1,2-Dichloroethene	0.112		0.00109	1	07/01/2021 18:19	WG1698914
1,2-Dichloropropane	ND		0.00109	1	07/01/2021 18:19	WG1698914
cis-1,3-Dichloropropene	ND		0.00109	1	07/01/2021 18:19	WG1698914
trans-1,3-Dichloropropene	ND		0.00109	1	07/01/2021 18:19	WG1698914
Ethylbenzene	ND		0.00109	1	07/01/2021 18:19	WG1698914
2-Hexanone	ND		0.0109	1	07/01/2021 18:19	WG1698914
Iodomethane	ND		0.0109	1	07/01/2021 18:19	WG1698914
2-Butanone (MEK)	ND		0.0109	1	07/01/2021 18:19	WG1698914
Methylene Chloride	ND		0.00547	1	07/01/2021 18:19	WG1698914
4-Methyl-2-pentanone (MIBK)	ND		0.0109	1	07/01/2021 18:19	WG1698914
Pentachloroethane	ND		0.00547	1	07/01/2021 18:19	WG1698914
Styrene	ND		0.00109	1	07/01/2021 18:19	WG1698914
1,1,1,2-Tetrachloroethane	ND		0.00109	1	07/01/2021 18:19	WG1698914
1,1,2,2-Tetrachloroethane	ND		0.00109	1	07/01/2021 18:19	WG1698914
Tetrachloroethene	0.00632		0.00109	1	07/01/2021 18:19	WG1698914
Toluene	0.00714		0.00547	1	07/01/2021 18:19	WG1698914
1,1,1-Trichloroethane	ND		0.00109	1	07/01/2021 18:19	WG1698914
1,1,2-Trichloroethane	ND		0.00109	1	07/01/2021 18:19	WG1698914
Trichloroethene	0.00207		0.00109	1	07/01/2021 18:19	WG1698914
Trichlorofluoromethane	ND		0.00547	1	07/01/2021 18:19	WG1698914

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trichloropropane	ND		0.00273	1	07/01/2021 18:19	WG1698914
Vinyl acetate	ND		0.0109	1	07/01/2021 18:19	WG1698914
Vinyl chloride	25.7		0.598	500	07/07/2021 16:54	WG1700442
Xylenes, Total	ND		0.00328	1	07/01/2021 18:19	WG1698914
1,4-Dioxane	ND		0.109	1	07/01/2021 18:19	WG1698914
(S) Toluene-d8	100		75.0-131		07/01/2021 18:19	WG1698914
(S) Toluene-d8	110		75.0-131		07/07/2021 16:54	WG1700442
(S) 4-Bromofluorobenzene	112		67.0-138		07/01/2021 18:19	WG1698914
(S) 4-Bromofluorobenzene	106		67.0-138		07/07/2021 16:54	WG1700442
(S) 1,2-Dichloroethane-d4	108		70.0-130		07/01/2021 18:19	WG1698914
(S) 1,2-Dichloroethane-d4	95.8		70.0-130		07/07/2021 16:54	WG1700442

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	25.3	J3	4.37	1	07/03/2021 04:01	WG1699005
Residual Range Organics (RRO)	38.8		10.9	1	07/03/2021 04:01	WG1699005
(S) o-Terphenyl	43.3		18.0-148		07/03/2021 04:01	WG1699005

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	73.9		1	06/30/2021 13:02	WG1697316

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	0.177		0.135	1	07/06/2021 00:37	WG1700132
(S) a,a,a-Trifluorotoluene(FID)	90.9		77.0-120		07/06/2021 00:37	WG1700132

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0677	1	07/01/2021 18:41	WG1698914
Acrylonitrile	ND		0.0135	1	07/01/2021 18:41	WG1698914
Benzene	ND		0.00135	1	07/01/2021 18:41	WG1698914
Bromodichloromethane	ND		0.00135	1	07/01/2021 18:41	WG1698914
Bromoform	ND		0.00135	1	07/01/2021 18:41	WG1698914
Bromomethane	ND		0.00677	1	07/01/2021 18:41	WG1698914
Carbon disulfide	ND		0.00135	1	07/01/2021 18:41	WG1698914
Carbon tetrachloride	ND		0.00135	1	07/01/2021 18:41	WG1698914
Chlorobenzene	ND		0.00135	1	07/01/2021 18:41	WG1698914
Chlorodibromomethane	ND		0.00135	1	07/01/2021 18:41	WG1698914
Chloroethane	ND		0.00677	1	07/01/2021 18:41	WG1698914
Chloroform	ND		0.00677	1	07/01/2021 18:41	WG1698914
Chloromethane	ND		0.00338	1	07/01/2021 18:41	WG1698914
1,2-Dibromoethane	ND		0.00135	1	07/01/2021 18:41	WG1698914
Dibromomethane	ND		0.00135	1	07/01/2021 18:41	WG1698914
1,2-Dibromo-3-Chloropropane	ND		0.00677	1	07/01/2021 18:41	WG1698914
1,2-Dichlorobenzene	ND		0.00135	1	07/01/2021 18:41	WG1698914
1,3-Dichlorobenzene	ND		0.00135	1	07/01/2021 18:41	WG1698914
1,4-Dichlorobenzene	ND		0.00135	1	07/01/2021 18:41	WG1698914
Dichlorodifluoromethane	ND		0.00677	1	07/01/2021 18:41	WG1698914
1,1-Dichloroethane	ND		0.00135	1	07/01/2021 18:41	WG1698914
1,2-Dichloroethane	ND		0.00135	1	07/01/2021 18:41	WG1698914
1,1-Dichloroethene	ND		0.00135	1	07/01/2021 18:41	WG1698914
cis-1,2-Dichloroethene	ND		0.00135	1	07/07/2021 21:16	WG1700442
trans-1,2-Dichloroethene	ND		0.00135	1	07/01/2021 18:41	WG1698914
1,2-Dichloropropane	ND		0.00135	1	07/01/2021 18:41	WG1698914
cis-1,3-Dichloropropene	ND		0.00135	1	07/01/2021 18:41	WG1698914
trans-1,3-Dichloropropene	ND		0.00135	1	07/01/2021 18:41	WG1698914
Ethylbenzene	ND		0.00135	1	07/01/2021 18:41	WG1698914
2-Hexanone	ND		0.0135	1	07/01/2021 18:41	WG1698914
Iodomethane	ND		0.0135	1	07/01/2021 18:41	WG1698914
2-Butanone (MEK)	ND		0.0135	1	07/01/2021 18:41	WG1698914
Methylene Chloride	ND		0.00677	1	07/01/2021 18:41	WG1698914
4-Methyl-2-pentanone (MIBK)	ND		0.0135	1	07/01/2021 18:41	WG1698914
Pentachloroethane	ND		0.00677	1	07/01/2021 18:41	WG1698914
Styrene	ND		0.00135	1	07/01/2021 18:41	WG1698914
1,1,1,2-Tetrachloroethane	ND		0.00135	1	07/01/2021 18:41	WG1698914
1,1,2,2-Tetrachloroethane	ND		0.00135	1	07/01/2021 18:41	WG1698914
Tetrachloroethene	ND		0.00135	1	07/01/2021 18:41	WG1698914
Toluene	ND		0.00677	1	07/01/2021 18:41	WG1698914
1,1,1-Trichloroethane	ND		0.00135	1	07/01/2021 18:41	WG1698914
1,1,2-Trichloroethane	ND		0.00135	1	07/01/2021 18:41	WG1698914
Trichloroethene	ND		0.00135	1	07/01/2021 18:41	WG1698914
Trichlorofluoromethane	ND		0.00677	1	07/01/2021 18:41	WG1698914

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trichloropropane	ND		0.00338	1	07/01/2021 18:41	WG1698914
Vinyl acetate	ND		0.0135	1	07/01/2021 18:41	WG1698914
Vinyl chloride	ND		0.00135	1	07/07/2021 21:16	WG1700442
Xylenes, Total	ND		0.00406	1	07/01/2021 18:41	WG1698914
1,4-Dioxane	ND		0.135	1	07/01/2021 18:41	WG1698914
(S) Toluene-d8	99.5		75.0-131		07/01/2021 18:41	WG1698914
(S) Toluene-d8	108		75.0-131		07/07/2021 21:16	WG1700442
(S) 4-Bromofluorobenzene	103		67.0-138		07/01/2021 18:41	WG1698914
(S) 4-Bromofluorobenzene	111		67.0-138		07/07/2021 21:16	WG1700442
(S) 1,2-Dichloroethane-d4	107		70.0-130		07/01/2021 18:41	WG1698914
(S) 1,2-Dichloroethane-d4	110		70.0-130		07/07/2021 21:16	WG1700442

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	8.90		5.42	1	07/03/2021 04:41	WG1699005
Residual Range Organics (RRO)	15.7		13.5	1	07/03/2021 04:41	WG1699005
(S) o-Terphenyl	49.5		18.0-148		07/03/2021 04:41	WG1699005

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

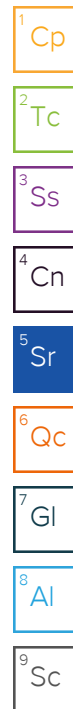
7Gl

8Al

9Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND	C3	50.0	1	06/30/2021 04:45	WG1697313
Acrolein	ND	C3	50.0	1	06/30/2021 04:45	WG1697313
Acrylonitrile	ND		10.0	1	06/30/2021 04:45	WG1697313
Benzene	ND		1.00	1	06/30/2021 04:45	WG1697313
Bromobenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
Bromodichloromethane	ND		1.00	1	06/30/2021 04:45	WG1697313
Bromoform	ND		1.00	1	06/30/2021 04:45	WG1697313
Bromomethane	ND		5.00	1	06/30/2021 04:45	WG1697313
n-Butylbenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
sec-Butylbenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
tert-Butylbenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
Carbon tetrachloride	ND		1.00	1	06/30/2021 04:45	WG1697313
Chlorobenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
Chlorodibromomethane	ND		1.00	1	06/30/2021 04:45	WG1697313
Chloroethane	ND		5.00	1	06/30/2021 04:45	WG1697313
Chloroform	ND		5.00	1	06/30/2021 04:45	WG1697313
Chloromethane	ND		2.50	1	06/30/2021 04:45	WG1697313
2-Chlorotoluene	ND		1.00	1	06/30/2021 04:45	WG1697313
4-Chlorotoluene	ND		1.00	1	06/30/2021 04:45	WG1697313
1,2-Dibromo-3-Chloropropane	ND		5.00	1	06/30/2021 04:45	WG1697313
1,2-Dibromoethane	ND		1.00	1	06/30/2021 04:45	WG1697313
Dibromomethane	ND		1.00	1	06/30/2021 04:45	WG1697313
1,2-Dichlorobenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
1,3-Dichlorobenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
1,4-Dichlorobenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
Dichlorodifluoromethane	ND	C3	5.00	1	06/30/2021 04:45	WG1697313
1,1-Dichloroethane	ND		1.00	1	06/30/2021 04:45	WG1697313
1,2-Dichloroethane	ND		1.00	1	06/30/2021 04:45	WG1697313
1,1-Dichloroethene	ND		1.00	1	06/30/2021 04:45	WG1697313
cis-1,2-Dichloroethene	687		100	100	07/01/2021 00:26	WG1698153
trans-1,2-Dichloroethene	8.99		1.00	1	06/30/2021 04:45	WG1697313
1,2-Dichloropropane	ND		1.00	1	06/30/2021 04:45	WG1697313
1,1-Dichloropropene	ND		1.00	1	06/30/2021 04:45	WG1697313
1,3-Dichloropropane	ND		1.00	1	06/30/2021 04:45	WG1697313
cis-1,3-Dichloropropene	ND		1.00	1	06/30/2021 04:45	WG1697313
trans-1,3-Dichloropropene	ND		1.00	1	06/30/2021 04:45	WG1697313
2,2-Dichloropropane	ND		1.00	1	06/30/2021 04:45	WG1697313
Di-isopropyl ether	ND		1.00	1	06/30/2021 04:45	WG1697313
Ethylbenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
Hexachloro-1,3-butadiene	ND		1.00	1	06/30/2021 04:45	WG1697313
Isopropylbenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
p-Isopropyltoluene	ND		1.00	1	06/30/2021 04:45	WG1697313
2-Butanone (MEK)	ND		10.0	1	06/30/2021 04:45	WG1697313
Methylene Chloride	ND		5.00	1	06/30/2021 04:45	WG1697313
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	06/30/2021 04:45	WG1697313
Methyl tert-butyl ether	ND		1.00	1	06/30/2021 04:45	WG1697313
Naphthalene	ND		5.00	1	06/30/2021 04:45	WG1697313
n-Propylbenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
Styrene	ND		1.00	1	06/30/2021 04:45	WG1697313
1,1,1,2-Tetrachloroethane	ND		1.00	1	06/30/2021 04:45	WG1697313
1,1,2,2-Tetrachloroethane	ND		1.00	1	06/30/2021 04:45	WG1697313
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	06/30/2021 04:45	WG1697313
Tetrachloroethene	ND		100	100	07/01/2021 00:26	WG1698153
Toluene	ND		1.00	1	06/30/2021 04:45	WG1697313
1,2,3-Trichlorobenzene	ND	C4	1.00	1	06/30/2021 04:45	WG1697313
1,2,4-Trichlorobenzene	ND	C4	1.00	1	06/30/2021 04:45	WG1697313



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	06/30/2021 04:45	WG1697313
1,1,2-Trichloroethane	ND		1.00	1	06/30/2021 04:45	WG1697313
Trichloroethene	ND		100	100	07/01/2021 00:26	WG1698153
Trichlorofluoromethane	ND		5.00	1	06/30/2021 04:45	WG1697313
1,2,3-Trichloropropane	ND		2.50	1	06/30/2021 04:45	WG1697313
1,2,4-Trimethylbenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
1,2,3-Trimethylbenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
1,3,5-Trimethylbenzene	ND		1.00	1	06/30/2021 04:45	WG1697313
Vinyl chloride	889		100	100	07/01/2021 00:26	WG1698153
Xylenes, Total	ND		3.00	1	06/30/2021 04:45	WG1697313
(S) Toluene-d8	104		80.0-120		06/30/2021 04:45	WG1697313
(S) Toluene-d8	105		80.0-120		07/01/2021 00:26	WG1698153
(S) 4-Bromofluorobenzene	105		77.0-126		06/30/2021 04:45	WG1697313
(S) 4-Bromofluorobenzene	92.4		77.0-126		07/01/2021 00:26	WG1698153
(S) 1,2-Dichloroethane-d4	91.4		70.0-130		06/30/2021 04:45	WG1697313
(S) 1,2-Dichloroethane-d4	102		70.0-130		07/01/2021 00:26	WG1698153

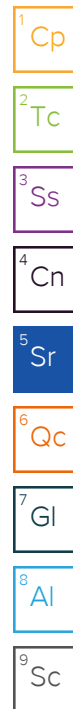
Sample Narrative:

L1371222-05 WG1697313, WG1698153: Not all compounds reportable at lower dilution.

L1371222-05 WG1697313, WG1698153: Cannot be re-analyzed at lower dilution due to high levels of target analytes.

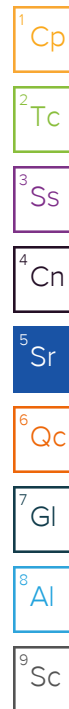
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	06/26/2021 14:25	WG1695562
(S) Nitrobenzene-d5	38.4		10.0-120		06/26/2021 14:25	WG1695562



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Acetone	ND		50.0	1	06/30/2021 11:52	WG1697727
Acrolein	ND	C3	50.0	1	06/30/2021 11:52	WG1697727
Acrylonitrile	ND		10.0	1	06/30/2021 11:52	WG1697727
Benzene	ND		1.00	1	06/30/2021 11:52	WG1697727
Bromobenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
Bromodichloromethane	ND		1.00	1	06/30/2021 11:52	WG1697727
Bromoform	ND		1.00	1	06/30/2021 11:52	WG1697727
Bromomethane	ND	J3	5.00	1	06/30/2021 11:52	WG1697727
n-Butylbenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
sec-Butylbenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
tert-Butylbenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
Carbon tetrachloride	ND		1.00	1	06/30/2021 11:52	WG1697727
Chlorobenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
Chlorodibromomethane	ND		1.00	1	06/30/2021 11:52	WG1697727
Chloroethane	ND		5.00	1	06/30/2021 11:52	WG1697727
Chloroform	ND		5.00	1	06/30/2021 11:52	WG1697727
Chloromethane	ND		2.50	1	06/30/2021 11:52	WG1697727
2-Chlorotoluene	ND		1.00	1	06/30/2021 11:52	WG1697727
4-Chlorotoluene	ND		1.00	1	06/30/2021 11:52	WG1697727
1,2-Dibromo-3-Chloropropane	ND		5.00	1	06/30/2021 11:52	WG1697727
1,2-Dibromoethane	ND		1.00	1	06/30/2021 11:52	WG1697727
Dibromomethane	ND		1.00	1	06/30/2021 11:52	WG1697727
1,2-Dichlorobenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
1,3-Dichlorobenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
1,4-Dichlorobenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
Dichlorodifluoromethane	ND		5.00	1	06/30/2021 11:52	WG1697727
1,1-Dichloroethane	ND		1.00	1	06/30/2021 11:52	WG1697727
1,2-Dichloroethane	ND		1.00	1	06/30/2021 11:52	WG1697727
1,1-Dichloroethene	ND		1.00	1	06/30/2021 11:52	WG1697727
cis-1,2-Dichloroethene	ND		1.00	1	06/30/2021 11:52	WG1697727
trans-1,2-Dichloroethene	ND		1.00	1	06/30/2021 11:52	WG1697727
1,2-Dichloropropane	ND		1.00	1	06/30/2021 11:52	WG1697727
1,1-Dichloropropene	ND		1.00	1	06/30/2021 11:52	WG1697727
1,3-Dichloropropane	ND		1.00	1	06/30/2021 11:52	WG1697727
cis-1,3-Dichloropropene	ND		1.00	1	06/30/2021 11:52	WG1697727
trans-1,3-Dichloropropene	ND		1.00	1	06/30/2021 11:52	WG1697727
2,2-Dichloropropane	ND		1.00	1	06/30/2021 11:52	WG1697727
Di-isopropyl ether	ND		1.00	1	06/30/2021 11:52	WG1697727
Ethylbenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
Hexachloro-1,3-butadiene	ND	C3 J3	1.00	1	06/30/2021 11:52	WG1697727
Isopropylbenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
p-Isopropyltoluene	ND		1.00	1	06/30/2021 11:52	WG1697727
2-Butanone (MEK)	ND		10.0	1	06/30/2021 11:52	WG1697727
Methylene Chloride	ND		5.00	1	06/30/2021 11:52	WG1697727
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	06/30/2021 11:52	WG1697727
Methyl tert-butyl ether	ND		1.00	1	06/30/2021 11:52	WG1697727
Naphthalene	ND	J3	5.00	1	06/30/2021 11:52	WG1697727
n-Propylbenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
Styrene	ND		1.00	1	06/30/2021 11:52	WG1697727
1,1,1,2-Tetrachloroethane	ND		1.00	1	06/30/2021 11:52	WG1697727
1,1,2,2-Tetrachloroethane	ND		1.00	1	06/30/2021 11:52	WG1697727
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	06/30/2021 11:52	WG1697727
Tetrachloroethene	ND		1.00	1	06/30/2021 11:52	WG1697727
Toluene	ND		1.00	1	06/30/2021 11:52	WG1697727
1,2,3-Trichlorobenzene	ND	C3 J3	1.00	1	06/30/2021 11:52	WG1697727
1,2,4-Trichlorobenzene	ND	J3	1.00	1	06/30/2021 11:52	WG1697727



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	06/30/2021 11:52	WG1697727
1,1,2-Trichloroethane	ND		1.00	1	06/30/2021 11:52	WG1697727
Trichloroethene	ND		1.00	1	06/30/2021 11:52	WG1697727
Trichlorofluoromethane	ND		5.00	1	06/30/2021 11:52	WG1697727
1,2,3-Trichloropropane	ND		2.50	1	06/30/2021 11:52	WG1697727
1,2,4-Trimethylbenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
1,2,3-Trimethylbenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
1,3,5-Trimethylbenzene	ND		1.00	1	06/30/2021 11:52	WG1697727
Vinyl chloride	ND		1.00	1	06/30/2021 11:52	WG1697727
Xylenes, Total	ND		3.00	1	06/30/2021 11:52	WG1697727
(S) Toluene-d8	105		80.0-120		06/30/2021 11:52	WG1697727
(S) 4-Bromofluorobenzene	98.1		77.0-126		06/30/2021 11:52	WG1697727
(S) 1,2-Dichloroethane-d4	99.9		70.0-130		06/30/2021 11:52	WG1697727

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	06/26/2021 14:44	WG1695562
(S) Nitrobenzene-d5	41.0		10.0-120		06/26/2021 14:44	WG1695562

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	74.7		1	06/30/2021 13:02	WG1697316

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	114		17.4	105	07/06/2021 17:59	WG1700653
(S) a,a,a-Trifluorotoluene(FID)	100		77.0-120		07/06/2021 17:59	WG1700653

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		174	2100	07/07/2021 18:04	WG1701424
Acrylonitrile	ND		34.9	2100	07/07/2021 18:04	WG1701424
Benzene	ND		3.49	2100	07/07/2021 18:04	WG1701424
Bromodichloromethane	ND		3.49	2100	07/07/2021 18:04	WG1701424
Bromoform	ND		3.49	2100	07/07/2021 18:04	WG1701424
Bromomethane	ND		17.4	2100	07/07/2021 18:04	WG1701424
Carbon disulfide	ND		3.49	2100	07/07/2021 18:04	WG1701424
Carbon tetrachloride	ND		3.49	2100	07/07/2021 18:04	WG1701424
Chlorobenzene	ND		3.49	2100	07/07/2021 18:04	WG1701424
Chlorodibromomethane	ND		3.49	2100	07/07/2021 18:04	WG1701424
Chloroethane	ND		17.4	2100	07/07/2021 18:04	WG1701424
Chloroform	ND		17.4	2100	07/07/2021 18:04	WG1701424
Chloromethane	ND		8.71	2100	07/07/2021 18:04	WG1701424
1,2-Dibromoethane	ND		3.49	2100	07/07/2021 18:04	WG1701424
Dibromomethane	ND		3.49	2100	07/07/2021 18:04	WG1701424
1,2-Dibromo-3-Chloropropane	ND		17.4	2100	07/07/2021 18:04	WG1701424
1,2-Dichlorobenzene	ND		3.49	2100	07/08/2021 13:44	WG1702025
1,3-Dichlorobenzene	ND		3.49	2100	07/07/2021 18:04	WG1701424
1,4-Dichlorobenzene	ND		3.49	2100	07/07/2021 18:04	WG1701424
Dichlorodifluoromethane	ND		17.4	2100	07/07/2021 18:04	WG1701424
1,1-Dichloroethane	ND		3.49	2100	07/07/2021 18:04	WG1701424
1,2-Dichloroethane	ND		3.49	2100	07/07/2021 18:04	WG1701424
1,1-Dichloroethene	ND		3.49	2100	07/07/2021 18:04	WG1701424
cis-1,2-Dichloroethene	13.3		3.49	2100	07/07/2021 18:04	WG1701424
trans-1,2-Dichloroethene	ND		3.49	2100	07/07/2021 18:04	WG1701424
1,2-Dichloropropane	ND		3.49	2100	07/07/2021 18:04	WG1701424
cis-1,3-Dichloropropene	ND		3.49	2100	07/07/2021 18:04	WG1701424
trans-1,3-Dichloropropene	ND		3.49	2100	07/07/2021 18:04	WG1701424
Ethylbenzene	ND		3.49	2100	07/07/2021 18:04	WG1701424
2-Hexanone	ND		34.9	2100	07/07/2021 18:04	WG1701424
Iodomethane	ND		34.9	2100	07/07/2021 18:04	WG1701424
2-Butanone (MEK)	ND		34.9	2100	07/07/2021 18:04	WG1701424
Methylene Chloride	ND		17.4	2100	07/07/2021 18:04	WG1701424
4-Methyl-2-pentanone (MIBK)	ND		34.9	2100	07/07/2021 18:04	WG1701424
Pentachloroethane	ND		17.4	2100	07/07/2021 18:04	WG1701424
Styrene	ND		3.49	2100	07/07/2021 18:04	WG1701424
1,1,1,2-Tetrachloroethane	ND		3.49	2100	07/07/2021 18:04	WG1701424
1,1,2,2-Tetrachloroethane	ND		3.49	2100	07/07/2021 18:04	WG1701424
Tetrachloroethene	237		3.49	2100	07/07/2021 18:04	WG1701424
Toluene	ND		17.4	2100	07/07/2021 18:04	WG1701424
1,1,1-Trichloroethane	ND		3.49	2100	07/07/2021 18:04	WG1701424
1,1,2-Trichloroethane	ND		3.49	2100	07/07/2021 18:04	WG1701424
Trichloroethene	19.9		3.49	2100	07/07/2021 18:04	WG1701424
Trichlorofluoromethane	ND		17.4	2100	07/07/2021 18:04	WG1701424

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trichloropropane	ND		8.71	2100	07/07/2021 18:04	WG1701424
Vinyl acetate	ND		34.9	2100	07/07/2021 18:04	WG1701424
Vinyl chloride	ND		3.49	2100	07/07/2021 18:04	WG1701424
Xylenes, Total	ND		10.5	2100	07/07/2021 18:04	WG1701424
1,4-Dioxane	ND		349	2100	07/07/2021 18:04	WG1701424
(S) Toluene-d8	107		75.0-131		07/07/2021 18:04	WG1701424
(S) Toluene-d8	93.0		75.0-131		07/08/2021 13:44	WG1702025
(S) 4-Bromofluorobenzene	94.5		67.0-138		07/07/2021 18:04	WG1701424
(S) 4-Bromofluorobenzene	101		67.0-138		07/08/2021 13:44	WG1702025
(S) 1,2-Dichloroethane-d4	103		70.0-130		07/07/2021 18:04	WG1701424
(S) 1,2-Dichloroethane-d4	111		70.0-130		07/08/2021 13:44	WG1702025

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		5.36	1	07/03/2021 03:09	WG1699005
Residual Range Organics (RRO)	ND		13.4	1	07/03/2021 03:09	WG1699005
(S) o-Terphenyl	25.7		18.0-148		07/03/2021 03:09	WG1699005

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	67.8		1	06/30/2021 13:02	WG1697316

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	0.748		0.147	1	07/06/2021 16:31	WG1700653
(S) a,a,a-Trifluorotoluene(FID)	96.0		77.0-120		07/06/2021 16:31	WG1700653

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0737	1	07/01/2021 19:24	WG1698914
Acrylonitrile	ND		0.0147	1	07/01/2021 19:24	WG1698914
Benzene	ND		0.00147	1	07/01/2021 19:24	WG1698914
Bromodichloromethane	ND		0.00147	1	07/01/2021 19:24	WG1698914
Bromoform	ND		0.00147	1	07/01/2021 19:24	WG1698914
Bromomethane	ND		0.00737	1	07/01/2021 19:24	WG1698914
Carbon disulfide	ND		0.00147	1	07/01/2021 19:24	WG1698914
Carbon tetrachloride	ND		0.00147	1	07/01/2021 19:24	WG1698914
Chlorobenzene	ND		0.00147	1	07/01/2021 19:24	WG1698914
Chlorodibromomethane	ND		0.00147	1	07/01/2021 19:24	WG1698914
Chloroethane	ND		0.00737	1	07/01/2021 19:24	WG1698914
Chloroform	ND		0.00737	1	07/01/2021 19:24	WG1698914
Chloromethane	ND		0.00369	1	07/01/2021 19:24	WG1698914
1,2-Dibromoethane	ND		0.00147	1	07/01/2021 19:24	WG1698914
Dibromomethane	ND		0.00147	1	07/01/2021 19:24	WG1698914
1,2-Dibromo-3-Chloropropane	ND		0.00737	1	07/01/2021 19:24	WG1698914
1,2-Dichlorobenzene	ND		0.00147	1	07/01/2021 19:24	WG1698914
1,3-Dichlorobenzene	ND		0.00147	1	07/01/2021 19:24	WG1698914
1,4-Dichlorobenzene	ND		0.00147	1	07/01/2021 19:24	WG1698914
Dichlorodifluoromethane	ND		0.00737	1	07/01/2021 19:24	WG1698914
1,1-Dichloroethane	ND		0.00147	1	07/01/2021 19:24	WG1698914
1,2-Dichloroethane	ND		0.00147	1	07/01/2021 19:24	WG1698914
1,1-Dichloroethene	ND		0.00147	1	07/01/2021 19:24	WG1698914
cis-1,2-Dichloroethene	0.110	Z1	0.0989	109	07/07/2021 17:15	WG1700442
trans-1,2-Dichloroethene	ND		0.00147	1	07/01/2021 19:24	WG1698914
1,2-Dichloropropane	ND		0.00147	1	07/01/2021 19:24	WG1698914
cis-1,3-Dichloropropene	ND		0.00147	1	07/01/2021 19:24	WG1698914
trans-1,3-Dichloropropene	ND		0.00147	1	07/01/2021 19:24	WG1698914
Ethylbenzene	ND		0.00147	1	07/01/2021 19:24	WG1698914
2-Hexanone	ND		0.0147	1	07/01/2021 19:24	WG1698914
Iodomethane	ND		0.0147	1	07/01/2021 19:24	WG1698914
2-Butanone (MEK)	ND		0.0147	1	07/01/2021 19:24	WG1698914
Methylene Chloride	ND		0.00737	1	07/01/2021 19:24	WG1698914
4-Methyl-2-pentanone (MIBK)	ND		0.0147	1	07/01/2021 19:24	WG1698914
Pentachloroethane	ND		0.00737	1	07/01/2021 19:24	WG1698914
Styrene	ND		0.00147	1	07/01/2021 19:24	WG1698914
1,1,1,2-Tetrachloroethane	ND		0.00147	1	07/01/2021 19:24	WG1698914
1,1,2,2-Tetrachloroethane	ND		0.00147	1	07/01/2021 19:24	WG1698914
Tetrachloroethene	4.54		0.208	109	07/07/2021 17:15	WG1700442
Toluene	ND		0.00737	1	07/01/2021 19:24	WG1698914
1,1,1-Trichloroethane	ND		0.00147	1	07/01/2021 19:24	WG1698914
1,1,2-Trichloroethane	ND		0.00147	1	07/01/2021 19:24	WG1698914
Trichloroethene	0.124	Z1	0.0416	109	07/07/2021 17:15	WG1700442
Trichlorofluoromethane	ND		0.00737	1	07/01/2021 19:24	WG1698914

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trichloropropane	ND		0.00369	1	07/01/2021 19:24	WG1698914
Vinyl acetate	ND		0.0147	1	07/01/2021 19:24	WG1698914
Vinyl chloride	0.0571	Z1	0.0470	109	07/07/2021 17:15	WG1700442
Xylenes, Total	ND		0.00442	1	07/01/2021 19:24	WG1698914
1,4-Dioxane	ND		0.147	1	07/01/2021 19:24	WG1698914
(S) Toluene-d8	97.3		75.0-131		07/01/2021 19:24	WG1698914
(S) Toluene-d8	109		75.0-131		07/07/2021 17:15	WG1700442
(S) 4-Bromofluorobenzene	105		67.0-138		07/01/2021 19:24	WG1698914
(S) 4-Bromofluorobenzene	102		67.0-138		07/07/2021 17:15	WG1700442
(S) 1,2-Dichloroethane-d4	111		70.0-130		07/01/2021 19:24	WG1698914
(S) 1,2-Dichloroethane-d4	95.1		70.0-130		07/07/2021 17:15	WG1700442

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		5.90	1	07/03/2021 03:22	WG1699005
Residual Range Organics (RRO)	ND		14.7	1	07/03/2021 03:22	WG1699005
(S) o-Terphenyl	49.2		18.0-148		07/03/2021 03:22	WG1699005

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3674433-1 06/30/21 13:02

Analyte	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Total Solids	0.00100			

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1371219-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1371219-02 06/30/21 13:02 • (DUP) R3674433-3 06/30/21 13:02

Analyte	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Total Solids	87.8	87.4	1	0.491		10

⁷Gl

⁸Al

Laboratory Control Sample (LCS)

(LCS) R3674433-2 06/30/21 13:02

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Total Solids	50.0	50.0	100	85.0-115	

⁹Sc

Method Blank (MB)

(MB) R3675902-2 07/05/21 23:30

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	96.4			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3675902-1 07/05/21 22:42

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.16	93.8	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			114	77.0-120	

L1373546-15 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1373546-15 07/06/21 07:19 • (MS) R3675902-3 07/06/21 07:41 • (MSD) R3675902-4 07/06/21 08:03

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	154	ND	105	109	68.3	70.7	25	10.0-149			3.55	27
(S) a,a,a-Trifluorotoluene(FID)					102	98.9		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3676517-2 07/06/21 10:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	95.8			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3676517-1 07/06/21 09:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.72	104	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			115	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3674109-3 06/30/21 00:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	50.0
Acrolein	U		2.54	50.0
Acrylonitrile	U		0.671	10.0
Benzene	U		0.0941	1.00
Bromobenzene	U		0.118	1.00
Bromodichloromethane	U		0.136	1.00
Bromoform	U		0.129	1.00
Bromomethane	U		0.605	5.00
n-Butylbenzene	U		0.157	1.00
sec-Butylbenzene	U		0.125	1.00
tert-Butylbenzene	U		0.127	1.00
Carbon tetrachloride	U		0.128	1.00
Chlorobenzene	U		0.116	1.00
Chlorodibromomethane	U		0.140	1.00
Chloroethane	U		0.192	5.00
Chloroform	U		0.111	5.00
Chloromethane	U		0.960	2.50
2-Chlorotoluene	U		0.106	1.00
4-Chlorotoluene	U		0.114	1.00
1,2-Dibromo-3-Chloropropane	U		0.276	5.00
1,2-Dibromoethane	U		0.126	1.00
Dibromomethane	U		0.122	1.00
1,2-Dichlorobenzene	U		0.107	1.00
1,3-Dichlorobenzene	U		0.110	1.00
1,4-Dichlorobenzene	U		0.120	1.00
Dichlorodifluoromethane	U		0.374	5.00
1,1-Dichloroethane	U		0.100	1.00
1,2-Dichloroethane	U		0.0819	1.00
1,1-Dichloroethene	U		0.188	1.00
trans-1,2-Dichloroethene	U		0.149	1.00
1,2-Dichloropropane	U		0.149	1.00
1,1-Dichloropropene	U		0.142	1.00
1,3-Dichloropropane	U		0.110	1.00
cis-1,3-Dichloropropene	U		0.111	1.00
trans-1,3-Dichloropropene	U		0.118	1.00
2,2-Dichloropropane	U		0.161	1.00
Di-isopropyl ether	U		0.105	1.00
Ethylbenzene	U		0.137	1.00
Hexachloro-1,3-butadiene	U		0.337	1.00
Isopropylbenzene	U		0.105	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3674109-3 06/30/21 00:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
Toluene	U		0.278	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichlorofluoromethane	U		0.160	5.00
1,2,3-Trichloropropane	U		0.237	2.50
1,2,3-Trimethylbenzene	U		0.104	1.00
1,2,4-Trimethylbenzene	U		0.322	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	105			80.0-120
(S) 4-Bromofluorobenzene	104			77.0-126
(S) 1,2-Dichloroethane-d4	93.5			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3674109-1 06/29/21 23:00 • (LCSD) R3674109-2 06/29/21 23:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	19.9	21.1	79.6	84.4	19.0-160			5.85	27
Acrolein	25.0	18.0	20.8	72.0	83.2	10.0-160			14.4	26
Acrylonitrile	25.0	24.2	26.1	96.8	104	55.0-149			7.55	20
Benzene	5.00	4.80	5.00	96.0	100	70.0-123			4.08	20
Bromobenzene	5.00	4.39	4.63	87.8	92.6	73.0-121			5.32	20
Bromodichloromethane	5.00	4.58	4.79	91.6	95.8	75.0-120			4.48	20
Bromoform	5.00	4.24	4.39	84.8	87.8	68.0-132			3.48	20
Bromomethane	5.00	6.08	6.19	122	124	10.0-160			1.79	25

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3674109-1 06/29/21 23:00 • (LCSD) R3674109-2 06/29/21 23:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
n-Butylbenzene	5.00	4.70	5.02	94.0	100	73.0-125			6.58	20
sec-Butylbenzene	5.00	4.62	4.89	92.4	97.8	75.0-125			5.68	20
tert-Butylbenzene	5.00	4.42	4.73	88.4	94.6	76.0-124			6.78	20
Carbon tetrachloride	5.00	4.80	4.99	96.0	99.8	68.0-126			3.88	20
Chlorobenzene	5.00	4.82	5.03	96.4	101	80.0-121			4.26	20
Chlorodibromomethane	5.00	4.53	4.76	90.6	95.2	77.0-125			4.95	20
Chloroethane	5.00	6.06	6.08	121	122	47.0-150			0.329	20
Chloroform	5.00	4.83	5.07	96.6	101	73.0-120			4.85	20
Chloromethane	5.00	4.02	4.25	80.4	85.0	41.0-142			5.56	20
2-Chlorotoluene	5.00	4.38	4.58	87.6	91.6	76.0-123			4.46	20
4-Chlorotoluene	5.00	4.43	4.70	88.6	94.0	75.0-122			5.91	20
1,2-Dibromo-3-Chloropropane	5.00	4.98	5.08	99.6	102	58.0-134			1.99	20
1,2-Dibromoethane	5.00	4.78	5.09	95.6	102	80.0-122			6.28	20
Dibromomethane	5.00	4.97	5.26	99.4	105	80.0-120			5.67	20
1,2-Dichlorobenzene	5.00	4.71	5.03	94.2	101	79.0-121			6.57	20
1,3-Dichlorobenzene	5.00	4.48	4.87	89.6	97.4	79.0-120			8.34	20
1,4-Dichlorobenzene	5.00	4.66	4.92	93.2	98.4	79.0-120			5.43	20
Dichlorodifluoromethane	5.00	3.30	3.66	66.0	73.2	51.0-149			10.3	20
1,1-Dichloroethane	5.00	4.82	4.90	96.4	98.0	70.0-126			1.65	20
1,2-Dichloroethane	5.00	4.73	4.99	94.6	99.8	70.0-128			5.35	20
1,1-Dichloroethene	5.00	4.71	4.93	94.2	98.6	71.0-124			4.56	20
trans-1,2-Dichloroethene	5.00	4.82	5.04	96.4	101	73.0-120			4.46	20
1,2-Dichloropropane	5.00	4.86	5.04	97.2	101	77.0-125			3.64	20
1,1-Dichloropropene	5.00	4.94	5.19	98.8	104	74.0-126			4.94	20
1,3-Dichloropropane	5.00	4.75	4.93	95.0	98.6	80.0-120			3.72	20
cis-1,3-Dichloropropene	5.00	4.57	5.01	91.4	100	80.0-123			9.19	20
trans-1,3-Dichloropropene	5.00	4.41	4.56	88.2	91.2	78.0-124			3.34	20
2,2-Dichloropropane	5.00	4.65	4.77	93.0	95.4	58.0-130			2.55	20
Di-isopropyl ether	5.00	4.44	4.58	88.8	91.6	58.0-138			3.10	20
Ethylbenzene	5.00	4.70	4.91	94.0	98.2	79.0-123			4.37	20
Hexachloro-1,3-butadiene	5.00	4.65	5.30	93.0	106	54.0-138			13.1	20
Isopropylbenzene	5.00	4.89	5.13	97.8	103	76.0-127			4.79	20
p-Isopropyltoluene	5.00	4.43	4.56	88.6	91.2	76.0-125			2.89	20
2-Butanone (MEK)	25.0	22.0	23.2	88.0	92.8	44.0-160			5.31	20
Methylene Chloride	5.00	4.80	5.04	96.0	101	67.0-120			4.88	20
4-Methyl-2-pentanone (MIBK)	25.0	22.6	23.6	90.4	94.4	68.0-142			4.33	20
Methyl tert-butyl ether	5.00	4.88	4.92	97.6	98.4	68.0-125			0.816	20
Naphthalene	5.00	5.82	6.33	116	127	54.0-135			8.40	20
n-Propylbenzene	5.00	4.47	4.75	89.4	95.0	77.0-124			6.07	20
Styrene	5.00	4.30	4.70	86.0	94.0	73.0-130			8.89	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3674109-1 06/29/21 23:00 • (LCSD) R3674109-2 06/29/21 23:20

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
1,1,1,2-Tetrachloroethane	5.00	4.73	4.95	94.6	99.0	75.0-125			4.55	20
1,1,2,2-Tetrachloroethane	5.00	4.44	4.93	88.8	98.6	65.0-130			10.5	20
Toluene	5.00	4.72	4.98	94.4	99.6	79.0-120			5.36	20
1,1,2-Trichlorotrifluoroethane	5.00	4.71	4.95	94.2	99.0	69.0-132			4.97	20
1,2,3-Trichlorobenzene	5.00	6.16	6.40	123	128	50.0-138			3.82	20
1,2,4-Trichlorobenzene	5.00	5.27	5.18	105	104	57.0-137			1.72	20
1,1,1-Trichloroethane	5.00	4.90	5.18	98.0	104	73.0-124			5.56	20
1,1,2-Trichloroethane	5.00	4.77	5.06	95.4	101	80.0-120			5.90	20
Trichlorofluoromethane	5.00	5.64	6.03	113	121	59.0-147			6.68	20
1,2,3-Trichloropropane	5.00	4.40	4.81	88.0	96.2	73.0-130			8.90	20
1,2,3-Trimethylbenzene	5.00	4.57	4.77	91.4	95.4	77.0-120			4.28	20
1,2,4-Trimethylbenzene	5.00	4.28	4.57	85.6	91.4	76.0-121			6.55	20
1,3,5-Trimethylbenzene	5.00	4.37	4.64	87.4	92.8	76.0-122			5.99	20
Xylenes, Total	15.0	14.0	14.8	93.3	98.7	79.0-123			5.56	20
(S) Toluene-d8				102	102	80.0-120				
(S) 4-Bromofluorobenzene				105	106	77.0-126				
(S) 1,2-Dichloroethane-d4				93.8	95.6	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3675604-3 06/30/21 10:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	50.0
Acrolein	U		2.54	50.0
Acrylonitrile	U		0.671	10.0
Benzene	U		0.0941	1.00
Bromobenzene	U		0.118	1.00
Bromodichloromethane	U		0.136	1.00
Bromoform	U		0.129	1.00
Bromomethane	U		0.605	5.00
n-Butylbenzene	U		0.157	1.00
sec-Butylbenzene	U		0.125	1.00
tert-Butylbenzene	U		0.127	1.00
Carbon tetrachloride	U		0.128	1.00
Chlorobenzene	U		0.116	1.00
Chlorodibromomethane	U		0.140	1.00
Chloroethane	U		0.192	5.00
Chloroform	U		0.111	5.00
Chloromethane	U		0.960	2.50
2-Chlorotoluene	U		0.106	1.00
4-Chlorotoluene	U		0.114	1.00
1,2-Dibromo-3-Chloropropane	U		0.276	5.00
1,2-Dibromoethane	U		0.126	1.00
Dibromomethane	U		0.122	1.00
1,2-Dichlorobenzene	U		0.107	1.00
1,3-Dichlorobenzene	U		0.110	1.00
1,4-Dichlorobenzene	U		0.120	1.00
Dichlorodifluoromethane	U		0.374	5.00
1,1-Dichloroethane	U		0.100	1.00
1,2-Dichloroethane	U		0.0819	1.00
1,1-Dichloroethene	U		0.188	1.00
cis-1,2-Dichloroethene	U		0.126	1.00
trans-1,2-Dichloroethene	U		0.149	1.00
1,2-Dichloropropane	U		0.149	1.00
1,1-Dichloropropene	U		0.142	1.00
1,3-Dichloropropane	U		0.110	1.00
cis-1,3-Dichloropropene	U		0.111	1.00
trans-1,3-Dichloropropene	U		0.118	1.00
2,2-Dichloropropane	U		0.161	1.00
Di-isopropyl ether	U		0.105	1.00
Ethylbenzene	U		0.137	1.00
Hexachloro-1,3-butadiene	U		0.337	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3675604-3 06/30/21 10:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Isopropylbenzene	U		0.105	1.00
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichloroethene	U		0.190	1.00
Trichlorofluoromethane	U		0.160	5.00
1,2,3-Trichloropropane	U		0.237	2.50
1,2,3-Trimethylbenzene	U		0.104	1.00
1,2,4-Trimethylbenzene	U		0.322	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Vinyl chloride	U		0.234	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	104			80.0-120
(S) 4-Bromofluorobenzene	97.9			77.0-126
(S) 1,2-Dichloroethane-d4	100			70.0-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675604-1 06/30/21 09:02 • (LCSD) R3675604-2 06/30/21 09:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	25.5	27.1	102	108	19.0-160			6.08	27
Acrolein	25.0	15.1	16.3	60.4	65.2	10.0-160			7.64	26
Acrylonitrile	25.0	23.1	24.1	92.4	96.4	55.0-149			4.24	20
Benzene	5.00	4.62	5.18	92.4	104	70.0-123			11.4	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675604-1 06/30/21 09:02 • (LCSD) R3675604-2 06/30/21 09:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Bromobenzene	5.00	4.29	4.49	85.8	89.8	73.0-121			4.56	20
Bromodichloromethane	5.00	4.79	5.17	95.8	103	75.0-120			7.63	20
Bromoform	5.00	4.94	5.31	98.8	106	68.0-132			7.22	20
Bromomethane	5.00	5.07	6.65	101	133	10.0-160		J3	27.0	25
n-Butylbenzene	5.00	5.01	5.57	100	111	73.0-125			10.6	20
sec-Butylbenzene	5.00	4.79	5.22	95.8	104	75.0-125			8.59	20
tert-Butylbenzene	5.00	4.40	4.92	88.0	98.4	76.0-124			11.2	20
Carbon tetrachloride	5.00	4.50	5.32	90.0	106	68.0-126			16.7	20
Chlorobenzene	5.00	5.21	5.64	104	113	80.0-121			7.93	20
Chlorodibromomethane	5.00	4.72	5.12	94.4	102	77.0-125			8.13	20
Chloroethane	5.00	4.90	5.37	98.0	107	47.0-150			9.15	20
Chloroform	5.00	5.06	5.54	101	111	73.0-120			9.06	20
Chloromethane	5.00	4.28	4.87	85.6	97.4	41.0-142			12.9	20
2-Chlorotoluene	5.00	4.62	4.88	92.4	97.6	76.0-123			5.47	20
4-Chlorotoluene	5.00	4.73	5.06	94.6	101	75.0-122			6.74	20
1,2-Dibromo-3-Chloropropane	5.00	4.47	5.11	89.4	102	58.0-134			13.4	20
1,2-Dibromoethane	5.00	4.92	5.30	98.4	106	80.0-122			7.44	20
Dibromomethane	5.00	4.99	5.16	99.8	103	80.0-120			3.35	20
1,2-Dichlorobenzene	5.00	5.11	5.57	102	111	79.0-121			8.61	20
1,3-Dichlorobenzene	5.00	5.21	5.65	104	113	79.0-120			8.10	20
1,4-Dichlorobenzene	5.00	4.84	5.17	96.8	103	79.0-120			6.59	20
Dichlorodifluoromethane	5.00	5.09	5.90	102	118	51.0-149			14.7	20
1,1-Dichloroethane	5.00	4.81	5.30	96.2	106	70.0-126			9.69	20
1,2-Dichloroethane	5.00	5.07	5.48	101	110	70.0-128			7.77	20
1,1-Dichloroethene	5.00	4.84	4.98	96.8	99.6	71.0-124			2.85	20
cis-1,2-Dichloroethene	5.00	4.86	5.47	97.2	109	73.0-120			11.8	20
trans-1,2-Dichloroethene	5.00	4.81	5.35	96.2	107	73.0-120			10.6	20
1,2-Dichloropropane	5.00	4.82	5.10	96.4	102	77.0-125			5.65	20
1,1-Dichloropropene	5.00	4.65	5.27	93.0	105	74.0-126			12.5	20
1,3-Dichloropropane	5.00	4.92	5.28	98.4	106	80.0-120			7.06	20
cis-1,3-Dichloropropene	5.00	4.89	5.39	97.8	108	80.0-123			9.73	20
trans-1,3-Dichloropropene	5.00	4.47	4.91	89.4	98.2	78.0-124			9.38	20
2,2-Dichloropropane	5.00	4.95	5.78	99.0	116	58.0-130			15.5	20
Di-isopropyl ether	5.00	4.62	4.99	92.4	99.8	58.0-138			7.70	20
Ethylbenzene	5.00	4.98	5.49	99.6	110	79.0-123			9.74	20
Hexachloro-1,3-butadiene	5.00	3.90	4.90	78.0	98.0	54.0-138		J3	22.7	20
Isopropylbenzene	5.00	4.62	5.21	92.4	104	76.0-127			12.0	20
p-Isopropyltoluene	5.00	4.65	5.13	93.0	103	76.0-125			9.82	20
2-Butanone (MEK)	25.0	23.6	23.5	94.4	94.0	44.0-160			0.425	20
Methylene Chloride	5.00	4.75	5.08	95.0	102	67.0-120			6.71	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675604-1 06/30/21 09:02 • (LCSD) R3675604-2 06/30/21 09:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
4-Methyl-2-pentanone (MIBK)	25.0	23.2	24.0	92.8	96.0	68.0-142			3.39	20
Methyl tert-butyl ether	5.00	4.73	5.27	94.6	105	68.0-125			10.8	20
Naphthalene	5.00	4.15	5.12	83.0	102	54.0-135		J3	20.9	20
n-Propylbenzene	5.00	4.41	4.74	88.2	94.8	77.0-124			7.21	20
Styrene	5.00	4.46	4.76	89.2	95.2	73.0-130			6.51	20
1,1,1,2-Tetrachloroethane	5.00	5.11	5.59	102	112	75.0-125			8.97	20
1,1,2,2-Tetrachloroethane	5.00	5.00	4.98	100	99.6	65.0-130			0.401	20
Tetrachloroethene	5.00	5.19	5.74	104	115	72.0-132			10.1	20
Toluene	5.00	4.86	5.23	97.2	105	79.0-120			7.33	20
1,1,2-Trichlorotrifluoroethane	5.00	5.05	5.45	101	109	69.0-132			7.62	20
1,2,3-Trichlorobenzene	5.00	3.94	5.14	78.8	103	50.0-138		J3	26.4	20
1,2,4-Trichlorobenzene	5.00	4.10	5.39	82.0	108	57.0-137		J3	27.2	20
1,1,1-Trichloroethane	5.00	4.76	5.42	95.2	108	73.0-124			13.0	20
1,1,2-Trichloroethane	5.00	4.95	5.32	99.0	106	80.0-120			7.21	20
Trichloroethene	5.00	4.83	5.57	96.6	111	78.0-124			14.2	20
Trichlorofluoromethane	5.00	4.93	5.86	98.6	117	59.0-147			17.2	20
1,2,3-Trichloropropane	5.00	4.86	4.73	97.2	94.6	73.0-130			2.71	20
1,2,3-Trimethylbenzene	5.00	4.60	5.07	92.0	101	77.0-120			9.72	20
1,2,4-Trimethylbenzene	5.00	4.92	5.33	98.4	107	76.0-121			8.00	20
1,3,5-Trimethylbenzene	5.00	4.60	4.99	92.0	99.8	76.0-122			8.13	20
Vinyl chloride	5.00	4.53	5.12	90.6	102	67.0-131			12.2	20
Xylenes, Total	15.0	15.0	16.3	100	109	79.0-123			8.31	20
(S) Toluene-d8				103	102	80.0-120				
(S) 4-Bromofluorobenzene				99.4	101	77.0-126				
(S) 1,2-Dichloroethane-d4				102	103	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3674530-4 06/30/21 23:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.126	1.00
Tetrachloroethene	U		0.300	1.00
Trichloroethene	U		0.190	1.00
Vinyl chloride	U		0.234	1.00
(S) Toluene-d8	101			80.0-120
(S) 4-Bromofluorobenzene	90.2			77.0-126
(S) 1,2-Dichloroethane-d4	105			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3674530-1 06/30/21 21:43 • (LCSD) R3674530-2 06/30/21 22:03

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
cis-1,2-Dichloroethene	5.00	4.67	4.60	93.4	92.0	73.0-120			1.51	20
Tetrachloroethene	5.00	5.19	5.33	104	107	72.0-132			2.66	20
Trichloroethene	5.00	5.33	5.34	107	107	78.0-124			0.187	20
Vinyl chloride	5.00	5.06	5.22	101	104	67.0-131			3.11	20
(S) Toluene-d8				103	101	80.0-120				
(S) 4-Bromofluorobenzene				91.3	96.1	77.0-126				
(S) 1,2-Dichloroethane-d4				106	108	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3675703-4 07/01/21 16:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0207	0.0500
Acrylonitrile	U		0.00202	0.0100
Benzene	U		0.000375	0.00100
Bromodichloromethane	U		0.000725	0.00100
Bromoform	U		0.000424	0.00100
Bromomethane	U		0.00117	0.00500
Carbon disulfide	U		0.000700	0.00100
Carbon tetrachloride	U		0.000248	0.00100
Chlorobenzene	U		0.000192	0.00100
Chlorodibromomethane	U		0.000224	0.00100
Chloroethane	U		0.00100	0.00500
Chloroform	U		0.00103	0.00500
Chloromethane	U		0.000650	0.00250
1,2-Dibromo-3-Chloropropane	U		0.00190	0.00500
1,2-Dibromoethane	U		0.000250	0.00100
Dibromomethane	U		0.000350	0.00100
1,2-Dichlorobenzene	U		0.000425	0.00100
1,3-Dichlorobenzene	U		0.000600	0.00100
1,4-Dichlorobenzene	U		0.000830	0.00100
Dichlorodifluoromethane	U		0.000287	0.00500
1,1-Dichloroethane	U		0.000268	0.00100
1,2-Dichloroethane	U		0.000450	0.00100
1,1-Dichloroethene	U		0.000355	0.00100
trans-1,2-Dichloroethene	U		0.000500	0.00100
1,2-Dichloropropane	U		0.000164	0.00100
cis-1,3-Dichloropropene	U		0.000425	0.00100
trans-1,3-Dichloropropene	U		0.000675	0.00100
Ethylbenzene	U		0.000300	0.00100
2-Hexanone	U		0.00179	0.0100
Iodomethane	U		0.00121	0.0100
2-Butanone (MEK)	U		0.00468	0.0100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.000950	0.0100
Styrene	U		0.000223	0.00100
1,1,1,2-Tetrachloroethane	U		0.000296	0.00100
1,1,2,2-Tetrachloroethane	U		0.000231	0.00100
Tetrachloroethene	U		0.000325	0.00100
Toluene	U		0.00123	0.00500
1,1,1-Trichloroethane	U		0.000370	0.00100
1,1,2-Trichloroethane	U		0.000425	0.00100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3675703-4 07/01/21 16:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Trichloroethene	U		0.000200	0.00100
Trichlorofluoromethane	U		0.000356	0.00500
1,2,3-Trichloropropane	U		0.000244	0.00250
Vinyl acetate	U		0.000990	0.0100
Xylenes, Total	U		0.000500	0.00300
1,4-Dioxane	U		0.0760	0.100
Pentachloroethane	U		0.00250	0.00500
(S) Toluene-d8	99.1			75.0-131
(S) 4-Bromofluorobenzene	102			67.0-138
(S) 1,2-Dichloroethane-d4	106			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3675703-1 07/01/21 14:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
1,4-Dioxane	1.00	1.36	136	18.0-160	
Pentachloroethane	0.0500	0.0436	87.2	70.0-130	
(S) Toluene-d8			97.1	75.0-131	
(S) 4-Bromofluorobenzene			100	67.0-138	
(S) 1,2-Dichloroethane-d4			101	70.0-130	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675703-2 07/01/21 15:19 • (LCSD) R3675703-3 07/01/21 15:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.120	0.127	96.0	102	10.0-160			5.67	31
Acrylonitrile	0.125	0.118	0.113	94.4	90.4	45.0-153			4.33	22
Benzene	0.0250	0.0229	0.0226	91.6	90.4	70.0-123			1.32	20
Bromodichloromethane	0.0250	0.0231	0.0228	92.4	91.2	73.0-121			1.31	20
Bromoform	0.0250	0.0231	0.0230	92.4	92.0	64.0-132			0.434	20
Bromomethane	0.0250	0.0262	0.0252	105	101	56.0-147			3.89	20
Carbon disulfide	0.0250	0.0202	0.0199	80.8	79.6	56.0-133			1.50	20
Carbon tetrachloride	0.0250	0.0227	0.0227	90.8	90.8	66.0-128			0.000	20
Chlorobenzene	0.0250	0.0225	0.0224	90.0	89.6	76.0-128			0.445	20
Chlorodibromomethane	0.0250	0.0226	0.0228	90.4	91.2	74.0-127			0.881	20
Chloroethane	0.0250	0.0228	0.0222	91.2	88.8	61.0-134			2.67	20
Chloroform	0.0250	0.0227	0.0225	90.8	90.0	72.0-123			0.885	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675703-2 07/01/21 15:19 • (LCSD) R3675703-3 07/01/21 15:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloromethane	0.0250	0.0198	0.0199	79.2	79.6	51.0-138			0.504	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0225	0.0228	90.0	91.2	59.0-130			1.32	20
1,2-Dibromoethane	0.0250	0.0227	0.0229	90.8	91.6	74.0-128			0.877	20
Dibromomethane	0.0250	0.0227	0.0228	90.8	91.2	75.0-122			0.440	20
1,2-Dichlorobenzene	0.0250	0.0222	0.0217	88.8	86.8	76.0-124			2.28	20
1,3-Dichlorobenzene	0.0250	0.0230	0.0219	92.0	87.6	76.0-125			4.90	20
1,4-Dichlorobenzene	0.0250	0.0223	0.0215	89.2	86.0	77.0-121			3.65	20
Dichlorodifluoromethane	0.0250	0.0213	0.0215	85.2	86.0	43.0-156			0.935	20
1,1-Dichloroethane	0.0250	0.0234	0.0230	93.6	92.0	70.0-127			1.72	20
1,2-Dichloroethane	0.0250	0.0226	0.0223	90.4	89.2	65.0-131			1.34	20
1,1-Dichloroethene	0.0250	0.0222	0.0216	88.8	86.4	65.0-131			2.74	20
trans-1,2-Dichloroethene	0.0250	0.0212	0.0207	84.8	82.8	71.0-125			2.39	20
1,2-Dichloropropane	0.0250	0.0241	0.0236	96.4	94.4	74.0-125			2.10	20
cis-1,3-Dichloropropene	0.0250	0.0233	0.0231	93.2	92.4	76.0-127			0.862	20
trans-1,3-Dichloropropene	0.0250	0.0242	0.0244	96.8	97.6	73.0-127			0.823	20
Ethylbenzene	0.0250	0.0227	0.0225	90.8	90.0	74.0-126			0.885	20
2-Hexanone	0.125	0.123	0.129	98.4	103	54.0-147			4.76	20
Iodomethane	0.125	0.111	0.110	88.8	88.0	74.0-134			0.905	20
2-Butanone (MEK)	0.125	0.130	0.136	104	109	30.0-160			4.51	24
Methylene Chloride	0.0250	0.0220	0.0215	88.0	86.0	68.0-123			2.30	20
4-Methyl-2-pentanone (MIBK)	0.125	0.127	0.132	102	106	56.0-143			3.86	20
Styrene	0.0250	0.0232	0.0228	92.8	91.2	72.0-127			1.74	20
1,1,1,2-Tetrachloroethane	0.0250	0.0218	0.0219	87.2	87.6	74.0-129			0.458	20
1,1,2,2-Tetrachloroethane	0.0250	0.0222	0.0221	88.8	88.4	68.0-128			0.451	20
Tetrachloroethene	0.0250	0.0221	0.0221	88.4	88.4	70.0-136			0.000	20
Toluene	0.0250	0.0217	0.0217	86.8	86.8	75.0-121			0.000	20
1,1,1-Trichloroethane	0.0250	0.0221	0.0219	88.4	87.6	69.0-126			0.909	20
1,1,2-Trichloroethane	0.0250	0.0220	0.0222	88.0	88.8	78.0-123			0.905	20
Trichloroethene	0.0250	0.0231	0.0229	92.4	91.6	76.0-126			0.870	20
Trichlorofluoromethane	0.0250	0.0235	0.0236	94.0	94.4	61.0-142			0.425	20
1,2,3-Trichloropropane	0.0250	0.0214	0.0217	85.6	86.8	67.0-129			1.39	20
Vinyl acetate	0.125	0.127	0.125	102	100	43.0-159			1.59	20
Xylenes, Total	0.0750	0.0674	0.0664	89.9	88.5	72.0-127			1.49	20
(S) Toluene-d8				97.2	98.4	75.0-131				
(S) 4-Bromofluorobenzene				102	102	67.0-138				
(S) 1,2-Dichloroethane-d4				109	110	70.0-130				

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3676803-4 07/07/21 13:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
cis-1,2-Dichloroethene	U		0.000475	0.00100
Tetrachloroethene	U		0.000325	0.00100
Trichloroethene	U		0.000200	0.00100
Vinyl chloride	U		0.000226	0.00100
(S) Toluene-d8	110			75.0-131
(S) 4-Bromofluorobenzene	105			67.0-138
(S) 1,2-Dichloroethane-d4	112			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3676803-1 07/07/21 11:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	0.0250	0.0261	104	73.0-125	
Tetrachloroethene	0.0250	0.0276	110	70.0-136	
Trichloroethene	0.0250	0.0278	111	76.0-126	
Vinyl chloride	0.0250	0.0282	113	63.0-134	
(S) Toluene-d8			105	75.0-131	
(S) 4-Bromofluorobenzene			108	67.0-138	
(S) 1,2-Dichloroethane-d4			122	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3676964-4 07/07/21 14:35

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0207	0.0500
Acrylonitrile	U		0.00202	0.0100
Benzene	U		0.000375	0.00100
Bromodichloromethane	U		0.000725	0.00100
Bromoform	U		0.000424	0.00100
Bromomethane	U		0.00117	0.00500
Carbon disulfide	U		0.000700	0.00100
Carbon tetrachloride	U		0.000248	0.00100
Chlorobenzene	0.000247	U	0.000192	0.00100
Chlorodibromomethane	U		0.000224	0.00100
Chloroethane	U		0.00100	0.00500
Chloroform	U		0.00103	0.00500
Chloromethane	U		0.000650	0.00250
1,2-Dibromo-3-Chloropropane	U		0.00190	0.00500
1,2-Dibromoethane	U		0.000250	0.00100
Dibromomethane	U		0.000350	0.00100
1,3-Dichlorobenzene	U		0.000600	0.00100
1,4-Dichlorobenzene	U		0.000830	0.00100
Dichlorodifluoromethane	U		0.000287	0.00500
1,1-Dichloroethane	U		0.000268	0.00100
1,2-Dichloroethane	U		0.000450	0.00100
1,1-Dichloroethene	U		0.000355	0.00100
cis-1,2-Dichloroethene	U		0.000475	0.00100
trans-1,2-Dichloroethene	U		0.000500	0.00100
1,2-Dichloropropane	U		0.000164	0.00100
cis-1,3-Dichloropropene	U		0.000425	0.00100
trans-1,3-Dichloropropene	U		0.000675	0.00100
Ethylbenzene	U		0.000300	0.00100
2-Hexanone	U		0.00179	0.0100
Iodomethane	U		0.00121	0.0100
2-Butanone (MEK)	U		0.00468	0.0100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.000950	0.0100
Styrene	U		0.000223	0.00100
1,1,1,2-Tetrachloroethane	U		0.000296	0.00100
1,1,2,2-Tetrachloroethane	U		0.000231	0.00100
Tetrachloroethene	U		0.000325	0.00100
Toluene	U		0.00123	0.00500
1,1,1-Trichloroethane	U		0.000370	0.00100
1,1,2-Trichloroethane	U		0.000425	0.00100

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3676964-4 07/07/21 14:35

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Trichloroethene	U		0.000200	0.00100
Trichlorofluoromethane	U		0.000356	0.00500
1,2,3-Trichloropropane	U		0.000244	0.00250
Vinyl acetate	U		0.000990	0.0100
Vinyl chloride	U		0.000226	0.00100
Xylenes, Total	U		0.000500	0.00300
1,4-Dioxane	U		0.0760	0.100
Pentachloroethane	U		0.00250	0.00500
(S) Toluene-d8	109			75.0-131
(S) 4-Bromofluorobenzene	94.8			67.0-138
(S) 1,2-Dichloroethane-d4	100			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3676964-1 07/07/21 13:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.125	0.132	106	10.0-160	
Acrylonitrile	0.125	0.127	102	45.0-153	
Benzene	0.0250	0.0242	96.8	70.0-123	
Bromodichloromethane	0.0250	0.0236	94.4	73.0-121	
Bromoform	0.0250	0.0264	106	64.0-132	
Bromomethane	0.0250	0.0368	147	56.0-147	
Carbon disulfide	0.0250	0.0239	95.6	56.0-133	
Carbon tetrachloride	0.0250	0.0256	102	66.0-128	
Chlorobenzene	0.0250	0.0266	106	76.0-128	
Chlorodibromomethane	0.0250	0.0264	106	74.0-127	
Chloroethane	0.0250	0.0306	122	61.0-134	
Chloroform	0.0250	0.0251	100	72.0-123	
Chloromethane	0.0250	0.0264	106	51.0-138	
1,2-Dibromo-3-Chloropropane	0.0250	0.0264	106	59.0-130	
1,2-Dibromoethane	0.0250	0.0261	104	74.0-128	
Dibromomethane	0.0250	0.0240	96.0	75.0-122	
1,3-Dichlorobenzene	0.0250	0.0274	110	76.0-125	
1,4-Dichlorobenzene	0.0250	0.0269	108	77.0-121	
Dichlorodifluoromethane	0.0250	0.0281	112	43.0-156	
1,1-Dichloroethane	0.0250	0.0260	104	70.0-127	
1,2-Dichloroethane	0.0250	0.0248	99.2	65.0-131	
1,1-Dichloroethene	0.0250	0.0252	101	65.0-131	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3676964-1 07/07/21 13:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	0.0250	0.0248	99.2	73.0-125	
trans-1,2-Dichloroethene	0.0250	0.0245	98.0	71.0-125	
1,2-Dichloropropane	0.0250	0.0242	96.8	74.0-125	
cis-1,3-Dichloropropene	0.0250	0.0233	93.2	76.0-127	
trans-1,3-Dichloropropene	0.0250	0.0285	114	73.0-127	
Ethylbenzene	0.0250	0.0268	107	74.0-126	
2-Hexanone	0.125	0.139	111	54.0-147	
Iodomethane	0.125	0.130	104	74.0-134	
2-Butanone (MEK)	0.125	0.126	101	30.0-160	
Methylene Chloride	0.0250	0.0257	103	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.125	0.144	115	56.0-143	
Styrene	0.0250	0.0269	108	72.0-127	
1,1,1,2-Tetrachloroethane	0.0250	0.0261	104	74.0-129	
1,1,2,2-Tetrachloroethane	0.0250	0.0258	103	68.0-128	
Tetrachloroethene	0.0250	0.0259	104	70.0-136	
Toluene	0.0250	0.0257	103	75.0-121	
1,1,1-Trichloroethane	0.0250	0.0248	99.2	69.0-126	
1,1,2-Trichloroethane	0.0250	0.0254	102	78.0-123	
Trichloroethene	0.0250	0.0240	96.0	76.0-126	
Trichlorofluoromethane	0.0250	0.0319	128	61.0-142	
1,2,3-Trichloropropane	0.0250	0.0252	101	67.0-129	
Vinyl acetate	0.125	0.133	106	43.0-159	
Vinyl chloride	0.0250	0.0305	122	63.0-134	
Xylenes, Total	0.0750	0.0794	106	72.0-127	
(S) Toluene-d8			104	75.0-131	
(S) 4-Bromofluorobenzene			96.3	67.0-138	
(S) 1,2-Dichloroethane-d4			114	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3676964-3 07/07/21 13:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
1,4-Dioxane	1.00	0.814	81.4	18.0-160	
Pentachloroethane	0.0500	0.0537	107	70.0-130	
(S) Toluene-d8			107	75.0-131	
(S) 4-Bromofluorobenzene			93.2	67.0-138	
(S) 1,2-Dichloroethane-d4			101	70.0-130	

Method Blank (MB)

(MB) R3677196-3 07/08/21 06:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
1,2-Dichlorobenzene	U		0.000425	0.00100
(S) Toluene-d8	97.7			75.0-131
(S) 4-Bromofluorobenzene	100			67.0-138
(S) 1,2-Dichloroethane-d4	101			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3677196-1 07/08/21 04:54 • (LCSD) R3677196-2 07/08/21 05:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,2-Dichlorobenzene	0.00500	0.00511	0.00530	102	106	76.0-124			3.65	20
(S) Toluene-d8				94.1	94.8	75.0-131				
(S) 4-Bromofluorobenzene				103	103	67.0-138				
(S) 1,2-Dichloroethane-d4				111	112	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3675057-1 07/02/21 11:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	54.7			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3675057-2 07/02/21 11:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	39.1	78.2	50.0-150	
(S) o-Terphenyl			72.4	18.0-148	

L1371222-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1371222-03 07/03/21 04:01 • (MS) R3675057-3 07/03/21 04:15 • (MSD) R3675057-4 07/03/21 04:27

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	52.5	25.3	71.3	53.4	87.7	53.2	1	50.0-150		J3	28.8	20
(S) o-Terphenyl					64.2	69.1		18.0-148				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3673037-3 06/26/21 10:15

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
1,4-Dioxane	U		0.0447	0.400
(S) Nitrobenzene-d5	64.0			10.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3673037-1 06/26/21 09:36 • (LCSD) R3673037-2 06/26/21 09:55

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dioxane	50.0	40.4	40.6	80.8	81.2	73.0-146			0.494	20
(S) Nitrobenzene-d5				66.5	68.0	10.0-120				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

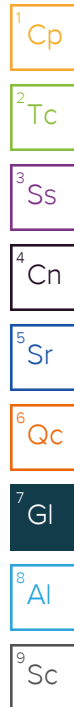
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
C4	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Data is likely to show a low bias concerning the result.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
Z1	The identification of the analyte is acceptable; the reported value is an estimate.



ACCREDITATIONS & LOCATIONS

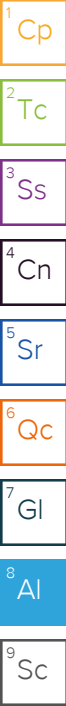
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.





12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody
constitutes acknowledgment and acceptance of the
Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

SDG # 137/222

Tal D122

Acctnum: PBSENGPOR

Template: T190123

Prelogin: P856474

PM: 110 - Brian Ford

PB:

Shipped Via:

Remarks Sample # (lab only)

Analysis / Container / Preservative

Pres
Chk

Billing Information:

Accounts Payable
4412 S Corbett Ave
Portland, OR 97239

Email To: Nick.Thornton@pbsusa.com

Company Name/Address:

PBS Engineering & Env.- POR

4412 S Corbett Ave
Portland, OR 97239

Report to:

Nick Thornton

Project Description:

3720 NW Yeon Ave

City/State
Collected:

OR

Please Circle:

PT MT CT ET

Phone: 503-248-1939

Client Project #
20125.010Lab Project #
PBSENGPOR-20125010

Site/Facility ID #

P.O. #

Rush? (Lab MUST Be Notified)

Same Day Five Day
Next Day 5 Day (Rad Only)
Two Day 10 Day (Rad Only)
Three Day

Date Results Needed

No.
of
Cntrs

Collected by (print):
Nick T
Collected by (signature):
Immediately
Packed on Ice N Y X

Sample ID

Comp/Grab

Matrix *

Depth

Date

Time

No.
of
Cntrs

Soil NWTPHDX w/ sil 4oz Clr-NoPres

soil NWTPHGX 40ml/NaHSO4/Syr/MeOH

soil VOC+1,4diox8260 40ml/NaHSO4/Syr/MeOH

water 1,4-diox. 8270 100ml Amb-NoPres

water VOCs 8260D 40ml Amb-HCl

MW7-GW

MW5-GW

MW6-21

B33-21

MW6-GW

B33-GW

B34-23

B34-29

trip blanks

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks:

Samples returned via:
UPS FedEx Courier

Tracking #

9883 00873248

Received by: (Signature)

Trip Blank Received: Yes No
HCL MeOH
TBR

Received by: (Signature)

Temp: 27.1 = 2.6 °C

Received for lab by: (Signature)

Date: 6/25/21 Time: 9:00

Sample Receipt Checklist
COC Seal Present/Intact: NP Y N
COC Signed/Accurate: Y N
Bottles arrive intact: Y N
Correct bottles used: Y N
Sufficient volume sent: Y N
If Applicable
VOA Zero Headspace: Y N
Preservation Correct/Checked: Y N
RAD Screen <0.5 mR/hr: Y N

If preservation required by Login: Date/Time

Hold:

Condition:
NCF / OK

July 09, 2021

PBS Engineering & Env.- POR

Sample Delivery Group: L1371341
Samples Received: 06/25/2021
Project Number: 20125.010
Description: 3720 NW Yeon Ave

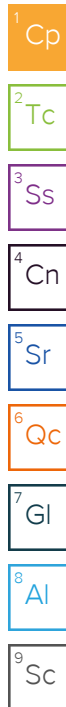
Report To: Nick Thornton
4412 S Corbett Ave
Portland, OR 97239

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
MW8-20 L1371341-02	5
B35-21 L1371341-03	7
B35-GW L1371341-04	9
MW8-GW L1371341-05	11
MW7-21 L1371341-06	13
MW5-21 L1371341-07	15
Qc: Quality Control Summary	17
Total Solids by Method 2540 G-2011	17
Volatile Organic Compounds (GC) by Method NWTPHGX	19
Volatile Organic Compounds (GC/MS) by Method 8260D	21
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	33
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	34
Gl: Glossary of Terms	35
Al: Accreditations & Locations	36
Sc: Sample Chain of Custody	37



SAMPLE SUMMARY

MW8-20 L1371341-02 Solid

				Collected by Nick T	Collected date/time 06/23/21 10:35	Received date/time 06/25/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1697797	1	06/30/21 12:12	06/30/21 12:21	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1699089	28	06/23/21 10:35	07/03/21 01:01	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1699056	28	06/23/21 10:35	07/03/21 02:36	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1699005	1	07/02/21 05:41	07/03/21 05:20	TJD	Mt. Juliet, TN

B35-21 L1371341-03 Solid

				Collected by Nick T	Collected date/time 06/23/21 12:00	Received date/time 06/25/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1697797	1	06/30/21 12:12	06/30/21 12:21	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1699089	26.5	06/23/21 12:00	07/03/21 01:23	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1698914	1	06/23/21 12:00	07/01/21 19:45	GLN	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1700442	212	06/23/21 12:00	07/07/21 15:34	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1699005	1	07/02/21 05:41	07/03/21 03:35	TJD	Mt. Juliet, TN

B35-GW L1371341-04 GW

				Collected by Nick T	Collected date/time 06/23/21 12:25	Received date/time 06/25/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1697727	1	06/30/21 13:54	06/30/21 13:54	ADM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1695562	1	06/26/21 00:20	06/26/21 15:04	BJP	Mt. Juliet, TN

MW8-GW L1371341-05 GW

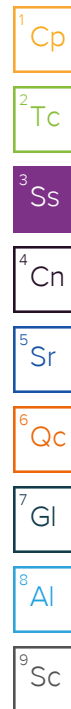
				Collected by Nick T	Collected date/time 06/23/21 13:00	Received date/time 06/25/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1697727	1	06/30/21 14:15	06/30/21 14:15	ADM	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1695562	1	06/26/21 00:20	06/26/21 15:23	BJP	Mt. Juliet, TN

MW7-21 L1371341-06 Solid

				Collected by Nick T	Collected date/time 06/23/21 13:55	Received date/time 06/25/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1697800	1	07/01/21 08:37	07/01/21 08:45	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1699089	32.3	06/23/21 13:55	07/03/21 01:45	ADM	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1698914	1	06/23/21 13:55	07/01/21 20:07	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1700442	2580	06/23/21 13:55	07/07/21 15:56	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1699005	1	07/02/21 05:41	07/03/21 05:07	TJD	Mt. Juliet, TN

MW5-21 L1371341-07 Solid

				Collected by Nick T	Collected date/time 06/23/21 15:15	Received date/time 06/25/21 09:00
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1697800	1	07/01/21 08:37	07/01/21 08:45	KDW	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1700653	31.5	06/23/21 15:15	07/06/21 17:15	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1698914	1	06/23/21 15:15	07/01/21 20:29	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1700442	1260	06/23/21 15:15	07/07/21 16:17	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1699005	1	07/02/21 05:41	07/03/21 04:54	TJD	Mt. Juliet, TN

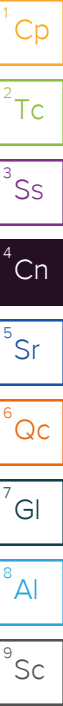


CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	55.6		1	06/30/2021 12:21	WG1697797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	ND		7.04	28	07/03/2021 01:01	WG1699089
(S) a,a,a-Trifluorotoluene(FID)	91.6		77.0-120		07/03/2021 01:01	WG1699089

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		3.52	28	07/03/2021 02:36	WG1699056
Acrylonitrile	ND		0.704	28	07/03/2021 02:36	WG1699056
Benzene	ND		0.0704	28	07/03/2021 02:36	WG1699056
Bromodichloromethane	ND		0.0704	28	07/03/2021 02:36	WG1699056
Bromoform	ND		0.0704	28	07/03/2021 02:36	WG1699056
Bromomethane	ND		0.352	28	07/03/2021 02:36	WG1699056
Carbon disulfide	ND		0.0704	28	07/03/2021 02:36	WG1699056
Carbon tetrachloride	ND		0.0704	28	07/03/2021 02:36	WG1699056
Chlorobenzene	ND		0.0704	28	07/03/2021 02:36	WG1699056
Chlorodibromomethane	ND		0.0704	28	07/03/2021 02:36	WG1699056
Chloroethane	ND		0.352	28	07/03/2021 02:36	WG1699056
Chloroform	ND		0.352	28	07/03/2021 02:36	WG1699056
Chloromethane	ND		0.176	28	07/03/2021 02:36	WG1699056
1,2-Dibromoethane	ND		0.0704	28	07/03/2021 02:36	WG1699056
Dibromomethane	ND		0.0704	28	07/03/2021 02:36	WG1699056
1,2-Dibromo-3-Chloropropane	ND		0.352	28	07/03/2021 02:36	WG1699056
1,2-Dichlorobenzene	ND		0.0704	28	07/03/2021 02:36	WG1699056
1,3-Dichlorobenzene	ND		0.0704	28	07/03/2021 02:36	WG1699056
1,4-Dichlorobenzene	ND		0.0704	28	07/03/2021 02:36	WG1699056
Dichlorodifluoromethane	ND		0.352	28	07/03/2021 02:36	WG1699056
1,1-Dichloroethane	ND		0.0704	28	07/03/2021 02:36	WG1699056
1,2-Dichloroethane	ND		0.0704	28	07/03/2021 02:36	WG1699056
1,1-Dichloroethene	ND		0.0704	28	07/03/2021 02:36	WG1699056
cis-1,2-Dichloroethene	ND		0.0704	28	07/03/2021 02:36	WG1699056
trans-1,2-Dichloroethene	ND		0.0704	28	07/03/2021 02:36	WG1699056
1,2-Dichloropropane	ND		0.0704	28	07/03/2021 02:36	WG1699056
cis-1,3-Dichloropropene	ND		0.0704	28	07/03/2021 02:36	WG1699056
trans-1,3-Dichloropropene	ND		0.0704	28	07/03/2021 02:36	WG1699056
Ethylbenzene	ND		0.0704	28	07/03/2021 02:36	WG1699056
2-Hexanone	ND		0.704	28	07/03/2021 02:36	WG1699056
Iodomethane	ND		0.704	28	07/03/2021 02:36	WG1699056
2-Butanone (MEK)	ND		0.704	28	07/03/2021 02:36	WG1699056
Methylene Chloride	ND		0.352	28	07/03/2021 02:36	WG1699056
4-Methyl-2-pentanone (MIBK)	ND		0.704	28	07/03/2021 02:36	WG1699056
Pentachloroethane	ND		0.352	28	07/03/2021 02:36	WG1699056
Styrene	ND		0.0704	28	07/03/2021 02:36	WG1699056
1,1,1,2-Tetrachloroethane	ND		0.0704	28	07/03/2021 02:36	WG1699056
1,1,2,2-Tetrachloroethane	ND		0.0704	28	07/03/2021 02:36	WG1699056
Tetrachloroethene	ND		0.0704	28	07/03/2021 02:36	WG1699056
Toluene	0.734		0.352	28	07/03/2021 02:36	WG1699056
1,1,1-Trichloroethane	ND		0.0704	28	07/03/2021 02:36	WG1699056
1,1,2-Trichloroethane	ND		0.0704	28	07/03/2021 02:36	WG1699056
Trichloroethene	ND		0.0704	28	07/03/2021 02:36	WG1699056
Trichlorofluoromethane	ND		0.352	28	07/03/2021 02:36	WG1699056

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

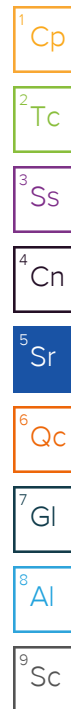
Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trichloropropane	ND		0.176	28	07/03/2021 02:36	WG1699056
Vinyl acetate	ND		0.704	28	07/03/2021 02:36	WG1699056
Vinyl chloride	0.0721		0.0704	28	07/03/2021 02:36	WG1699056
Xylenes, Total	ND		0.211	28	07/03/2021 02:36	WG1699056
1,4-Dioxane	ND		7.04	28	07/03/2021 02:36	WG1699056
(S) Toluene-d8	113		75.0-131		07/03/2021 02:36	WG1699056
(S) 4-Bromofluorobenzene	109		67.0-138		07/03/2021 02:36	WG1699056
(S) 1,2-Dichloroethane-d4	94.1		70.0-130		07/03/2021 02:36	WG1699056

Sample Narrative:

L1371341-02 WG1699056: Target compounds too high to run at a lower dilution.

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	88.9		7.19	1	07/03/2021 05:20	WG1699005
Residual Range Organics (RRO)	166		18.0	1	07/03/2021 05:20	WG1699005
(S) o-Terphenyl	45.5		18.0-148		07/03/2021 05:20	WG1699005



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	76.4		1	06/30/2021 12:21	WG1697797

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	7.61		4.24	26.5	07/03/2021 01:23	WG1699089
(S) a,a,a-Trifluorotoluene(FID)	94.0		77.0-120		07/03/2021 01:23	WG1699089

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0655	1	07/01/2021 19:45	WG1698914
Acrylonitrile	ND		0.0131	1	07/01/2021 19:45	WG1698914
Benzene	ND		0.00131	1	07/01/2021 19:45	WG1698914
Bromodichloromethane	ND		0.00131	1	07/01/2021 19:45	WG1698914
Bromoform	ND		0.00131	1	07/01/2021 19:45	WG1698914
Bromomethane	ND		0.00655	1	07/01/2021 19:45	WG1698914
Carbon disulfide	ND		0.00131	1	07/01/2021 19:45	WG1698914
Carbon tetrachloride	ND		0.00131	1	07/01/2021 19:45	WG1698914
Chlorobenzene	ND		0.00131	1	07/01/2021 19:45	WG1698914
Chlorodibromomethane	ND		0.00131	1	07/01/2021 19:45	WG1698914
Chloroethane	ND		0.00655	1	07/01/2021 19:45	WG1698914
Chloroform	ND		0.00655	1	07/01/2021 19:45	WG1698914
Chloromethane	ND		0.00327	1	07/01/2021 19:45	WG1698914
1,2-Dibromoethane	ND		0.00131	1	07/01/2021 19:45	WG1698914
Dibromomethane	ND		0.00131	1	07/01/2021 19:45	WG1698914
1,2-Dibromo-3-Chloropropane	ND		0.00655	1	07/01/2021 19:45	WG1698914
1,2-Dichlorobenzene	ND		0.00131	1	07/01/2021 19:45	WG1698914
1,3-Dichlorobenzene	ND		0.00131	1	07/01/2021 19:45	WG1698914
1,4-Dichlorobenzene	ND		0.00131	1	07/01/2021 19:45	WG1698914
Dichlorodifluoromethane	ND		0.00655	1	07/01/2021 19:45	WG1698914
1,1-Dichloroethane	ND		0.00131	1	07/01/2021 19:45	WG1698914
1,2-Dichloroethane	ND		0.00131	1	07/01/2021 19:45	WG1698914
1,1-Dichloroethene	0.00665		0.00131	1	07/01/2021 19:45	WG1698914
cis-1,2-Dichloroethene	6.25		0.340	212	07/07/2021 15:34	WG1700442
trans-1,2-Dichloroethene	0.0346		0.00131	1	07/01/2021 19:45	WG1698914
1,2-Dichloropropane	ND		0.00131	1	07/01/2021 19:45	WG1698914
cis-1,3-Dichloropropene	ND		0.00131	1	07/01/2021 19:45	WG1698914
trans-1,3-Dichloropropene	ND		0.00131	1	07/01/2021 19:45	WG1698914
Ethylbenzene	ND		0.00131	1	07/01/2021 19:45	WG1698914
2-Hexanone	ND		0.0131	1	07/01/2021 19:45	WG1698914
Iodomethane	ND		0.0131	1	07/01/2021 19:45	WG1698914
2-Butanone (MEK)	ND		0.0131	1	07/01/2021 19:45	WG1698914
Methylene Chloride	ND		0.00655	1	07/01/2021 19:45	WG1698914
4-Methyl-2-pentanone (MIBK)	ND		0.0131	1	07/01/2021 19:45	WG1698914
Pentachloroethane	ND		0.00655	1	07/01/2021 19:45	WG1698914
Styrene	ND		0.00131	1	07/01/2021 19:45	WG1698914
1,1,1,2-Tetrachloroethane	ND		0.00131	1	07/01/2021 19:45	WG1698914
1,1,2,2-Tetrachloroethane	ND		0.00131	1	07/01/2021 19:45	WG1698914
Tetrachloroethene	0.342	E	0.00131	1	07/01/2021 19:45	WG1698914
Toluene	ND		0.00655	1	07/01/2021 19:45	WG1698914
1,1,1-Trichloroethane	ND		0.00131	1	07/01/2021 19:45	WG1698914
1,1,2-Trichloroethane	ND		0.00131	1	07/01/2021 19:45	WG1698914
Trichloroethene	1.21		0.340	212	07/07/2021 15:34	WG1700442
Trichlorofluoromethane	ND		0.00655	1	07/01/2021 19:45	WG1698914

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trichloropropane	ND		0.00327	1	07/01/2021 19:45	WG1698914
Vinyl acetate	ND		0.0131	1	07/01/2021 19:45	WG1698914
Vinyl chloride	4.53	E	0.00131	1	07/01/2021 19:45	WG1698914
Xylenes, Total	ND		0.00393	1	07/01/2021 19:45	WG1698914
1,4-Dioxane	ND		0.131	1	07/01/2021 19:45	WG1698914
(S) Toluene-d8	97.6		75.0-131		07/01/2021 19:45	WG1698914
(S) Toluene-d8	90.3		75.0-131		07/07/2021 15:34	WG1700442
(S) 4-Bromofluorobenzene	103		67.0-138		07/01/2021 19:45	WG1698914
(S) 4-Bromofluorobenzene	107		67.0-138		07/07/2021 15:34	WG1700442
(S) 1,2-Dichloroethane-d4	112		70.0-130		07/01/2021 19:45	WG1698914
(S) 1,2-Dichloroethane-d4	113		70.0-130		07/07/2021 15:34	WG1700442

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND		5.24	1	07/03/2021 03:35	WG1699005
Residual Range Organics (RRO)	ND		13.1	1	07/03/2021 03:35	WG1699005
(S) o-Terphenyl	32.6		18.0-148		07/03/2021 03:35	WG1699005

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

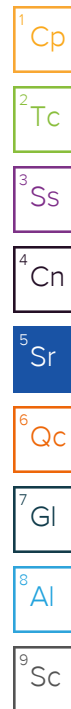
7Gl

8Al

9Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		50.0	1	06/30/2021 13:54	WG1697727
Acrolein	ND	C3	50.0	1	06/30/2021 13:54	WG1697727
Acrylonitrile	ND		10.0	1	06/30/2021 13:54	WG1697727
Benzene	ND		1.00	1	06/30/2021 13:54	WG1697727
Bromobenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
Bromodichloromethane	ND		1.00	1	06/30/2021 13:54	WG1697727
Bromoform	ND		1.00	1	06/30/2021 13:54	WG1697727
Bromomethane	ND	J3	5.00	1	06/30/2021 13:54	WG1697727
n-Butylbenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
sec-Butylbenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
tert-Butylbenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
Carbon tetrachloride	ND		1.00	1	06/30/2021 13:54	WG1697727
Chlorobenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
Chlorodibromomethane	ND		1.00	1	06/30/2021 13:54	WG1697727
Chloroethane	ND		5.00	1	06/30/2021 13:54	WG1697727
Chloroform	ND		5.00	1	06/30/2021 13:54	WG1697727
Chloromethane	ND		2.50	1	06/30/2021 13:54	WG1697727
2-Chlorotoluene	ND		1.00	1	06/30/2021 13:54	WG1697727
4-Chlorotoluene	ND		1.00	1	06/30/2021 13:54	WG1697727
1,2-Dibromo-3-Chloropropane	ND		5.00	1	06/30/2021 13:54	WG1697727
1,2-Dibromoethane	ND		1.00	1	06/30/2021 13:54	WG1697727
Dibromomethane	ND		1.00	1	06/30/2021 13:54	WG1697727
1,2-Dichlorobenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
1,3-Dichlorobenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
1,4-Dichlorobenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
Dichlorodifluoromethane	ND		5.00	1	06/30/2021 13:54	WG1697727
1,1-Dichloroethane	ND		1.00	1	06/30/2021 13:54	WG1697727
1,2-Dichloroethane	ND		1.00	1	06/30/2021 13:54	WG1697727
1,1-Dichloroethene	ND		1.00	1	06/30/2021 13:54	WG1697727
cis-1,2-Dichloroethene	31.6		1.00	1	06/30/2021 13:54	WG1697727
trans-1,2-Dichloroethene	ND		1.00	1	06/30/2021 13:54	WG1697727
1,2-Dichloropropane	ND		1.00	1	06/30/2021 13:54	WG1697727
1,1-Dichloropropene	ND		1.00	1	06/30/2021 13:54	WG1697727
1,3-Dichloropropane	ND		1.00	1	06/30/2021 13:54	WG1697727
cis-1,3-Dichloropropene	ND		1.00	1	06/30/2021 13:54	WG1697727
trans-1,3-Dichloropropene	ND		1.00	1	06/30/2021 13:54	WG1697727
2,2-Dichloropropane	ND		1.00	1	06/30/2021 13:54	WG1697727
Di-isopropyl ether	ND		1.00	1	06/30/2021 13:54	WG1697727
Ethylbenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
Hexachloro-1,3-butadiene	ND	C3 J3	1.00	1	06/30/2021 13:54	WG1697727
Isopropylbenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
p-Isopropyltoluene	ND		1.00	1	06/30/2021 13:54	WG1697727
2-Butanone (MEK)	ND		10.0	1	06/30/2021 13:54	WG1697727
Methylene Chloride	ND		5.00	1	06/30/2021 13:54	WG1697727
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	06/30/2021 13:54	WG1697727
Methyl tert-butyl ether	ND		1.00	1	06/30/2021 13:54	WG1697727
Naphthalene	ND	J3	5.00	1	06/30/2021 13:54	WG1697727
n-Propylbenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
Styrene	ND		1.00	1	06/30/2021 13:54	WG1697727
1,1,1,2-Tetrachloroethane	ND		1.00	1	06/30/2021 13:54	WG1697727
1,1,2,2-Tetrachloroethane	ND		1.00	1	06/30/2021 13:54	WG1697727
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	06/30/2021 13:54	WG1697727
Tetrachloroethene	4.86		1.00	1	06/30/2021 13:54	WG1697727
Toluene	ND		1.00	1	06/30/2021 13:54	WG1697727
1,2,3-Trichlorobenzene	ND	C3 J3	1.00	1	06/30/2021 13:54	WG1697727
1,2,4-Trichlorobenzene	ND	J3	1.00	1	06/30/2021 13:54	WG1697727



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	06/30/2021 13:54	WG1697727
1,1,2-Trichloroethane	ND		1.00	1	06/30/2021 13:54	WG1697727
Trichloroethene	22.6		1.00	1	06/30/2021 13:54	WG1697727
Trichlorofluoromethane	ND		5.00	1	06/30/2021 13:54	WG1697727
1,2,3-Trichloropropane	ND		2.50	1	06/30/2021 13:54	WG1697727
1,2,4-Trimethylbenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
1,2,3-Trimethylbenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
1,3,5-Trimethylbenzene	ND		1.00	1	06/30/2021 13:54	WG1697727
Vinyl chloride	28.5		1.00	1	06/30/2021 13:54	WG1697727
Xylenes, Total	ND		3.00	1	06/30/2021 13:54	WG1697727
(S) Toluene-d8	104		80.0-120		06/30/2021 13:54	WG1697727
(S) 4-Bromofluorobenzene	101		77.0-126		06/30/2021 13:54	WG1697727
(S) 1,2-Dichloroethane-d4	101		70.0-130		06/30/2021 13:54	WG1697727

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	06/26/2021 15:04	WG1695562
(S) Nitrobenzene-d5	36.8		10.0-120		06/26/2021 15:04	WG1695562

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

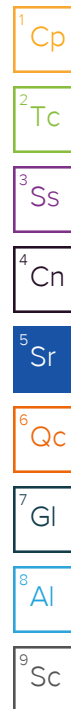
7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		50.0	1	06/30/2021 14:15	WG1697727
Acrolein	ND	C3	50.0	1	06/30/2021 14:15	WG1697727
Acrylonitrile	ND		10.0	1	06/30/2021 14:15	WG1697727
Benzene	ND		1.00	1	06/30/2021 14:15	WG1697727
Bromobenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
Bromodichloromethane	ND		1.00	1	06/30/2021 14:15	WG1697727
Bromoform	ND		1.00	1	06/30/2021 14:15	WG1697727
Bromomethane	ND	J3	5.00	1	06/30/2021 14:15	WG1697727
n-Butylbenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
sec-Butylbenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
tert-Butylbenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
Carbon tetrachloride	ND		1.00	1	06/30/2021 14:15	WG1697727
Chlorobenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
Chlorodibromomethane	ND		1.00	1	06/30/2021 14:15	WG1697727
Chloroethane	ND		5.00	1	06/30/2021 14:15	WG1697727
Chloroform	ND		5.00	1	06/30/2021 14:15	WG1697727
Chloromethane	ND		2.50	1	06/30/2021 14:15	WG1697727
2-Chlorotoluene	ND		1.00	1	06/30/2021 14:15	WG1697727
4-Chlorotoluene	ND		1.00	1	06/30/2021 14:15	WG1697727
1,2-Dibromo-3-Chloropropane	ND		5.00	1	06/30/2021 14:15	WG1697727
1,2-Dibromoethane	ND		1.00	1	06/30/2021 14:15	WG1697727
Dibromomethane	ND		1.00	1	06/30/2021 14:15	WG1697727
1,2-Dichlorobenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
1,3-Dichlorobenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
1,4-Dichlorobenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
Dichlorodifluoromethane	ND		5.00	1	06/30/2021 14:15	WG1697727
1,1-Dichloroethane	ND		1.00	1	06/30/2021 14:15	WG1697727
1,2-Dichloroethane	ND		1.00	1	06/30/2021 14:15	WG1697727
1,1-Dichloroethene	ND		1.00	1	06/30/2021 14:15	WG1697727
cis-1,2-Dichloroethene	46.9		1.00	1	06/30/2021 14:15	WG1697727
trans-1,2-Dichloroethene	ND		1.00	1	06/30/2021 14:15	WG1697727
1,2-Dichloropropane	ND		1.00	1	06/30/2021 14:15	WG1697727
1,1-Dichloropropene	ND		1.00	1	06/30/2021 14:15	WG1697727
1,3-Dichloropropane	ND		1.00	1	06/30/2021 14:15	WG1697727
cis-1,3-Dichloropropene	ND		1.00	1	06/30/2021 14:15	WG1697727
trans-1,3-Dichloropropene	ND		1.00	1	06/30/2021 14:15	WG1697727
2,2-Dichloropropane	ND		1.00	1	06/30/2021 14:15	WG1697727
Di-isopropyl ether	ND		1.00	1	06/30/2021 14:15	WG1697727
Ethylbenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
Hexachloro-1,3-butadiene	ND	C3 J3	1.00	1	06/30/2021 14:15	WG1697727
Isopropylbenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
p-Isopropyltoluene	ND		1.00	1	06/30/2021 14:15	WG1697727
2-Butanone (MEK)	ND		10.0	1	06/30/2021 14:15	WG1697727
Methylene Chloride	ND		5.00	1	06/30/2021 14:15	WG1697727
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	06/30/2021 14:15	WG1697727
Methyl tert-butyl ether	ND		1.00	1	06/30/2021 14:15	WG1697727
Naphthalene	ND	J3	5.00	1	06/30/2021 14:15	WG1697727
n-Propylbenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
Styrene	ND		1.00	1	06/30/2021 14:15	WG1697727
1,1,1,2-Tetrachloroethane	ND		1.00	1	06/30/2021 14:15	WG1697727
1,1,2,2-Tetrachloroethane	ND		1.00	1	06/30/2021 14:15	WG1697727
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	06/30/2021 14:15	WG1697727
Tetrachloroethene	ND		1.00	1	06/30/2021 14:15	WG1697727
Toluene	ND		1.00	1	06/30/2021 14:15	WG1697727
1,2,3-Trichlorobenzene	ND	C3 J3	1.00	1	06/30/2021 14:15	WG1697727
1,2,4-Trichlorobenzene	ND	J3	1.00	1	06/30/2021 14:15	WG1697727



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	06/30/2021 14:15	WG1697727
1,1,2-Trichloroethane	ND		1.00	1	06/30/2021 14:15	WG1697727
Trichloroethene	ND		1.00	1	06/30/2021 14:15	WG1697727
Trichlorofluoromethane	ND		5.00	1	06/30/2021 14:15	WG1697727
1,2,3-Trichloropropane	ND		2.50	1	06/30/2021 14:15	WG1697727
1,2,4-Trimethylbenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
1,2,3-Trimethylbenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
1,3,5-Trimethylbenzene	ND		1.00	1	06/30/2021 14:15	WG1697727
Vinyl chloride	46.0		1.00	1	06/30/2021 14:15	WG1697727
Xylenes, Total	ND		3.00	1	06/30/2021 14:15	WG1697727
(S) Toluene-d8	105		80.0-120		06/30/2021 14:15	WG1697727
(S) 4-Bromofluorobenzene	98.9		77.0-126		06/30/2021 14:15	WG1697727
(S) 1,2-Dichloroethane-d4	99.2		70.0-130		06/30/2021 14:15	WG1697727

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	06/26/2021 15:23	WG1695562
(S) Nitrobenzene-d5	26.8		10.0-120		06/26/2021 15:23	WG1695562

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	62.7		1	07/01/2021 08:45	WG1697800

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	195		6.64	32.3	07/03/2021 01:45	WG1699089
(S) a,a,a-Trifluorotoluene(FID)	92.9		77.0-120		07/03/2021 01:45	WG1699089

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0797	1	07/01/2021 20:07	WG1698914
Acrylonitrile	ND		0.0159	1	07/01/2021 20:07	WG1698914
Benzene	0.00443		0.00159	1	07/01/2021 20:07	WG1698914
Bromodichloromethane	ND		0.00159	1	07/01/2021 20:07	WG1698914
Bromoform	ND		0.00159	1	07/01/2021 20:07	WG1698914
Bromomethane	ND		0.00797	1	07/01/2021 20:07	WG1698914
Carbon disulfide	0.00260		0.00159	1	07/01/2021 20:07	WG1698914
Carbon tetrachloride	ND		0.00159	1	07/01/2021 20:07	WG1698914
Chlorobenzene	ND		0.00159	1	07/01/2021 20:07	WG1698914
Chlorodibromomethane	ND		0.00159	1	07/01/2021 20:07	WG1698914
Chloroethane	ND		0.00797	1	07/01/2021 20:07	WG1698914
Chloroform	ND		0.00797	1	07/01/2021 20:07	WG1698914
Chloromethane	ND		0.00399	1	07/01/2021 20:07	WG1698914
1,2-Dibromoethane	ND		0.00159	1	07/01/2021 20:07	WG1698914
Dibromomethane	ND		0.00159	1	07/01/2021 20:07	WG1698914
1,2-Dibromo-3-Chloropropane	ND		0.00797	1	07/01/2021 20:07	WG1698914
1,2-Dichlorobenzene	ND		0.00159	1	07/01/2021 20:07	WG1698914
1,3-Dichlorobenzene	ND		0.00159	1	07/01/2021 20:07	WG1698914
1,4-Dichlorobenzene	ND		0.00159	1	07/01/2021 20:07	WG1698914
Dichlorodifluoromethane	ND		0.00797	1	07/01/2021 20:07	WG1698914
1,1-Dichloroethane	ND		0.00159	1	07/01/2021 20:07	WG1698914
1,2-Dichloroethane	ND		0.00159	1	07/01/2021 20:07	WG1698914
1,1-Dichloroethene	0.0155		0.00159	1	07/01/2021 20:07	WG1698914
cis-1,2-Dichloroethene	312		5.30	2580	07/07/2021 15:56	WG1700442
trans-1,2-Dichloroethene	0.188		0.00159	1	07/01/2021 20:07	WG1698914
1,2-Dichloropropane	ND		0.00159	1	07/01/2021 20:07	WG1698914
cis-1,3-Dichloropropene	ND		0.00159	1	07/01/2021 20:07	WG1698914
trans-1,3-Dichloropropene	ND		0.00159	1	07/01/2021 20:07	WG1698914
Ethylbenzene	ND		0.00159	1	07/01/2021 20:07	WG1698914
2-Hexanone	ND		0.0159	1	07/01/2021 20:07	WG1698914
Iodomethane	ND		0.0159	1	07/01/2021 20:07	WG1698914
2-Butanone (MEK)	ND		0.0159	1	07/01/2021 20:07	WG1698914
Methylene Chloride	ND		0.00797	1	07/01/2021 20:07	WG1698914
4-Methyl-2-pentanone (MIBK)	ND		0.0159	1	07/01/2021 20:07	WG1698914
Pentachloroethane	ND		0.00797	1	07/01/2021 20:07	WG1698914
Styrene	ND		0.00159	1	07/01/2021 20:07	WG1698914
1,1,1,2-Tetrachloroethane	ND		0.00159	1	07/01/2021 20:07	WG1698914
1,1,2,2-Tetrachloroethane	ND		0.00159	1	07/01/2021 20:07	WG1698914
Tetrachloroethene	17.7		5.30	2580	07/07/2021 15:56	WG1700442
Toluene	0.0320		0.00797	1	07/01/2021 20:07	WG1698914
1,1,1-Trichloroethane	ND		0.00159	1	07/01/2021 20:07	WG1698914
1,1,2-Trichloroethane	ND		0.00159	1	07/01/2021 20:07	WG1698914
Trichloroethene	15.2		5.30	2580	07/07/2021 15:56	WG1700442
Trichlorofluoromethane	ND		0.00797	1	07/01/2021 20:07	WG1698914

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

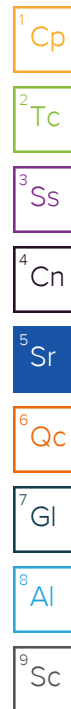
9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trichloropropane	ND		0.00399	1	07/01/2021 20:07	WG1698914
Vinyl acetate	ND		0.0159	1	07/01/2021 20:07	WG1698914
Vinyl chloride	23.2		5.30	2580	07/07/2021 15:56	WG1700442
Xylenes, Total	ND		0.00478	1	07/01/2021 20:07	WG1698914
1,4-Dioxane	ND		0.159	1	07/01/2021 20:07	WG1698914
(S) Toluene-d8	98.5		75.0-131		07/01/2021 20:07	WG1698914
(S) Toluene-d8	111		75.0-131		07/07/2021 15:56	WG1700442
(S) 4-Bromofluorobenzene	114		67.0-138		07/01/2021 20:07	WG1698914
(S) 4-Bromofluorobenzene	105		67.0-138		07/07/2021 15:56	WG1700442
(S) 1,2-Dichloroethane-d4	112		70.0-130		07/01/2021 20:07	WG1698914
(S) 1,2-Dichloroethane-d4	114		70.0-130		07/07/2021 15:56	WG1700442

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	41.0		6.38	1	07/03/2021 05:07	WG1699005
Residual Range Organics (RRO)	66.6		15.9	1	07/03/2021 05:07	WG1699005
(S) o-Terphenyl	33.6		18.0-148		07/03/2021 05:07	WG1699005



Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	%			date / time	
Total Solids	68.4		1	07/01/2021 08:45	WG1697800

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Gasoline Range Organics-NWTPH	94.1		5.77	31.5	07/06/2021 17:15	WG1700653
(S) a,a,a-Trifluorotoluene(FID)	98.1		77.0-120		07/06/2021 17:15	WG1700653

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry)	Qualifier	RDL (dry)	Dilution	Analysis	Batch
	mg/kg		mg/kg		date / time	
Acetone	ND		0.0731	1	07/01/2021 20:29	WG1698914
Acrylonitrile	ND		0.0146	1	07/01/2021 20:29	WG1698914
Benzene	0.00217		0.00146	1	07/01/2021 20:29	WG1698914
Bromodichloromethane	ND		0.00146	1	07/01/2021 20:29	WG1698914
Bromoform	ND		0.00146	1	07/01/2021 20:29	WG1698914
Bromomethane	ND		0.00731	1	07/01/2021 20:29	WG1698914
Carbon disulfide	0.00215		0.00146	1	07/01/2021 20:29	WG1698914
Carbon tetrachloride	ND		0.00146	1	07/01/2021 20:29	WG1698914
Chlorobenzene	ND		0.00146	1	07/01/2021 20:29	WG1698914
Chlorodibromomethane	ND		0.00146	1	07/01/2021 20:29	WG1698914
Chloroethane	ND		0.00731	1	07/01/2021 20:29	WG1698914
Chloroform	ND		0.00731	1	07/01/2021 20:29	WG1698914
Chloromethane	ND		0.00366	1	07/01/2021 20:29	WG1698914
1,2-Dibromoethane	ND		0.00146	1	07/01/2021 20:29	WG1698914
Dibromomethane	ND		0.00146	1	07/01/2021 20:29	WG1698914
1,2-Dibromo-3-Chloropropane	ND		0.00731	1	07/01/2021 20:29	WG1698914
1,2-Dichlorobenzene	ND		0.00146	1	07/01/2021 20:29	WG1698914
1,3-Dichlorobenzene	ND		0.00146	1	07/01/2021 20:29	WG1698914
1,4-Dichlorobenzene	ND		0.00146	1	07/01/2021 20:29	WG1698914
Dichlorodifluoromethane	ND		0.00731	1	07/01/2021 20:29	WG1698914
1,1-Dichloroethane	ND		0.00146	1	07/01/2021 20:29	WG1698914
1,2-Dichloroethane	ND		0.00146	1	07/01/2021 20:29	WG1698914
1,1-Dichloroethene	0.0275		0.00146	1	07/01/2021 20:29	WG1698914
cis-1,2-Dichloroethene	139		2.31	1260	07/07/2021 16:17	WG1700442
trans-1,2-Dichloroethene	0.219		0.00146	1	07/01/2021 20:29	WG1698914
1,2-Dichloropropane	ND		0.00146	1	07/01/2021 20:29	WG1698914
cis-1,3-Dichloropropene	ND		0.00146	1	07/01/2021 20:29	WG1698914
trans-1,3-Dichloropropene	ND		0.00146	1	07/01/2021 20:29	WG1698914
Ethylbenzene	ND		0.00146	1	07/01/2021 20:29	WG1698914
2-Hexanone	ND		0.0146	1	07/01/2021 20:29	WG1698914
Iodomethane	ND		0.0146	1	07/01/2021 20:29	WG1698914
2-Butanone (MEK)	ND		0.0146	1	07/01/2021 20:29	WG1698914
Methylene Chloride	ND		0.00731	1	07/01/2021 20:29	WG1698914
4-Methyl-2-pentanone (MIBK)	ND		0.0146	1	07/01/2021 20:29	WG1698914
Pentachloroethane	ND		0.00731	1	07/01/2021 20:29	WG1698914
Styrene	ND		0.00146	1	07/01/2021 20:29	WG1698914
1,1,1,2-Tetrachloroethane	ND		0.00146	1	07/01/2021 20:29	WG1698914
1,1,2,2-Tetrachloroethane	ND		0.00146	1	07/01/2021 20:29	WG1698914
Tetrachloroethene	20.3		2.31	1260	07/07/2021 16:17	WG1700442
Toluene	0.00755		0.00731	1	07/01/2021 20:29	WG1698914
1,1,1-Trichloroethane	ND		0.00146	1	07/01/2021 20:29	WG1698914
1,1,2-Trichloroethane	ND		0.00146	1	07/01/2021 20:29	WG1698914
Trichloroethene	8.39		2.31	1260	07/07/2021 16:17	WG1700442
Trichlorofluoromethane	ND		0.00731	1	07/01/2021 20:29	WG1698914

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trichloropropane	ND		0.00366	1	07/01/2021 20:29	WG1698914
Vinyl acetate	ND		0.0146	1	07/01/2021 20:29	WG1698914
Vinyl chloride	8.77		2.31	1260	07/07/2021 16:17	WG1700442
Xylenes, Total	ND		0.00439	1	07/01/2021 20:29	WG1698914
1,4-Dioxane	ND		0.146	1	07/01/2021 20:29	WG1698914
(S) Toluene-d8	101		75.0-131		07/01/2021 20:29	WG1698914
(S) Toluene-d8	108		75.0-131		07/07/2021 16:17	WG1700442
(S) 4-Bromofluorobenzene	120		67.0-138		07/01/2021 20:29	WG1698914
(S) 4-Bromofluorobenzene	104		67.0-138		07/07/2021 16:17	WG1700442
(S) 1,2-Dichloroethane-d4	114		70.0-130		07/01/2021 20:29	WG1698914
(S) 1,2-Dichloroethane-d4	96.9		70.0-130		07/07/2021 16:17	WG1700442

Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result (dry) mg/kg	Qualifier	RDL (dry) mg/kg	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	36.0		5.85	1	07/03/2021 04:54	WG1699005
Residual Range Organics (RRO)	57.6		14.6	1	07/03/2021 04:54	WG1699005
(S) o-Terphenyl	41.5		18.0-148		07/03/2021 04:54	WG1699005

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3674287-1 06/30/21 12:21

Analyte	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Total Solids	0.000			

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

L1371328-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1371328-03 06/30/21 12:21 • (DUP) R3674287-3 06/30/21 12:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Total Solids	69.3	70.9	1	2.22		10

⁷Gl

⁸Al

Laboratory Control Sample (LCS)

(LCS) R3674287-2 06/30/21 12:21

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Total Solids	50.0	50.0	100	85.0-115	

⁹Sc

Method Blank (MB)

(MB) R3674787-1 07/01/21 08:45

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00100			

1
Cp

2
Tc

3
Ss

L1371365-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1371365-02 07/01/21 08:45 • (DUP) R3674787-3 07/01/21 08:45

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	84.8	85.4	1	0.683		10

4
Cn

5
Sr

Laboratory Control Sample (LCS)

(LCS) R3674787-2 07/01/21 08:45

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	%	%	%	%	
Total Solids	50.0	50.0	100	85.0-115	

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3675236-2 07/02/21 20:59

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	90.3			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3675236-1 07/02/21 20:15

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.10	92.7	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			110	77.0-120	

L1370636-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1370636-01 07/03/21 03:35 • (MS) R3675236-3 07/03/21 05:02 • (MSD) R3675236-4 07/03/21 05:24

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Gasoline Range Organics-NWTPH	172	ND	149	151	86.4	87.8	25	10.0-149			1.62	27
(S) a,a,a-Trifluorotoluene(FID)					105	105		77.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3676517-2 07/06/21 10:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Gasoline Range Organics-NWTPH	U		0.0339	0.100
(S) a,a,a-Trifluorotoluene(FID)	95.8			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3676517-1 07/06/21 09:37

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5.50	5.72	104	71.0-124	
(S) a,a,a-Trifluorotoluene(FID)			115	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3675604-3 06/30/21 10:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	50.0
Acrolein	U		2.54	50.0
Acrylonitrile	U		0.671	10.0
Benzene	U		0.0941	1.00
Bromobenzene	U		0.118	1.00
Bromodichloromethane	U		0.136	1.00
Bromoform	U		0.129	1.00
Bromomethane	U		0.605	5.00
n-Butylbenzene	U		0.157	1.00
sec-Butylbenzene	U		0.125	1.00
tert-Butylbenzene	U		0.127	1.00
Carbon tetrachloride	U		0.128	1.00
Chlorobenzene	U		0.116	1.00
Chlorodibromomethane	U		0.140	1.00
Chloroethane	U		0.192	5.00
Chloroform	U		0.111	5.00
Chloromethane	U		0.960	2.50
2-Chlorotoluene	U		0.106	1.00
4-Chlorotoluene	U		0.114	1.00
1,2-Dibromo-3-Chloropropane	U		0.276	5.00
1,2-Dibromoethane	U		0.126	1.00
Dibromomethane	U		0.122	1.00
1,2-Dichlorobenzene	U		0.107	1.00
1,3-Dichlorobenzene	U		0.110	1.00
1,4-Dichlorobenzene	U		0.120	1.00
Dichlorodifluoromethane	U		0.374	5.00
1,1-Dichloroethane	U		0.100	1.00
1,2-Dichloroethane	U		0.0819	1.00
1,1-Dichloroethene	U		0.188	1.00
cis-1,2-Dichloroethene	U		0.126	1.00
trans-1,2-Dichloroethene	U		0.149	1.00
1,2-Dichloropropane	U		0.149	1.00
1,1-Dichloropropene	U		0.142	1.00
1,3-Dichloropropane	U		0.110	1.00
cis-1,3-Dichloropropene	U		0.111	1.00
trans-1,3-Dichloropropene	U		0.118	1.00
2,2-Dichloropropane	U		0.161	1.00
Di-isopropyl ether	U		0.105	1.00
Ethylbenzene	U		0.137	1.00
Hexachloro-1,3-butadiene	U		0.337	1.00

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3675604-3 06/30/21 10:44

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Isopropylbenzene	U		0.105	1.00
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichloroethene	U		0.190	1.00
Trichlorofluoromethane	U		0.160	5.00
1,2,3-Trichloropropane	U		0.237	2.50
1,2,3-Trimethylbenzene	U		0.104	1.00
1,2,4-Trimethylbenzene	U		0.322	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Vinyl chloride	U		0.234	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	104			80.0-120
(S) 4-Bromofluorobenzene	97.9			77.0-126
(S) 1,2-Dichloroethane-d4	100			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675604-1 06/30/21 09:02 • (LCSD) R3675604-2 06/30/21 09:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	25.5	27.1	102	108	19.0-160			6.08	27
Acrolein	25.0	15.1	16.3	60.4	65.2	10.0-160			7.64	26
Acrylonitrile	25.0	23.1	24.1	92.4	96.4	55.0-149			4.24	20
Benzene	5.00	4.62	5.18	92.4	104	70.0-123			11.4	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675604-1 06/30/21 09:02 • (LCSD) R3675604-2 06/30/21 09:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
Bromobenzene	5.00	4.29	4.49	85.8	89.8	73.0-121			4.56	20
Bromodichloromethane	5.00	4.79	5.17	95.8	103	75.0-120			7.63	20
Bromoform	5.00	4.94	5.31	98.8	106	68.0-132			7.22	20
Bromomethane	5.00	5.07	6.65	101	133	10.0-160		J3	27.0	25
n-Butylbenzene	5.00	5.01	5.57	100	111	73.0-125			10.6	20
sec-Butylbenzene	5.00	4.79	5.22	95.8	104	75.0-125			8.59	20
tert-Butylbenzene	5.00	4.40	4.92	88.0	98.4	76.0-124			11.2	20
Carbon tetrachloride	5.00	4.50	5.32	90.0	106	68.0-126			16.7	20
Chlorobenzene	5.00	5.21	5.64	104	113	80.0-121			7.93	20
Chlorodibromomethane	5.00	4.72	5.12	94.4	102	77.0-125			8.13	20
Chloroethane	5.00	4.90	5.37	98.0	107	47.0-150			9.15	20
Chloroform	5.00	5.06	5.54	101	111	73.0-120			9.06	20
Chloromethane	5.00	4.28	4.87	85.6	97.4	41.0-142			12.9	20
2-Chlorotoluene	5.00	4.62	4.88	92.4	97.6	76.0-123			5.47	20
4-Chlorotoluene	5.00	4.73	5.06	94.6	101	75.0-122			6.74	20
1,2-Dibromo-3-Chloropropane	5.00	4.47	5.11	89.4	102	58.0-134			13.4	20
1,2-Dibromoethane	5.00	4.92	5.30	98.4	106	80.0-122			7.44	20
Dibromomethane	5.00	4.99	5.16	99.8	103	80.0-120			3.35	20
1,2-Dichlorobenzene	5.00	5.11	5.57	102	111	79.0-121			8.61	20
1,3-Dichlorobenzene	5.00	5.21	5.65	104	113	79.0-120			8.10	20
1,4-Dichlorobenzene	5.00	4.84	5.17	96.8	103	79.0-120			6.59	20
Dichlorodifluoromethane	5.00	5.09	5.90	102	118	51.0-149			14.7	20
1,1-Dichloroethane	5.00	4.81	5.30	96.2	106	70.0-126			9.69	20
1,2-Dichloroethane	5.00	5.07	5.48	101	110	70.0-128			7.77	20
1,1-Dichloroethene	5.00	4.84	4.98	96.8	99.6	71.0-124			2.85	20
cis-1,2-Dichloroethene	5.00	4.86	5.47	97.2	109	73.0-120			11.8	20
trans-1,2-Dichloroethene	5.00	4.81	5.35	96.2	107	73.0-120			10.6	20
1,2-Dichloropropane	5.00	4.82	5.10	96.4	102	77.0-125			5.65	20
1,1-Dichloropropene	5.00	4.65	5.27	93.0	105	74.0-126			12.5	20
1,3-Dichloropropane	5.00	4.92	5.28	98.4	106	80.0-120			7.06	20
cis-1,3-Dichloropropene	5.00	4.89	5.39	97.8	108	80.0-123			9.73	20
trans-1,3-Dichloropropene	5.00	4.47	4.91	89.4	98.2	78.0-124			9.38	20
2,2-Dichloropropane	5.00	4.95	5.78	99.0	116	58.0-130			15.5	20
Di-isopropyl ether	5.00	4.62	4.99	92.4	99.8	58.0-138			7.70	20
Ethylbenzene	5.00	4.98	5.49	99.6	110	79.0-123			9.74	20
Hexachloro-1,3-butadiene	5.00	3.90	4.90	78.0	98.0	54.0-138		J3	22.7	20
Isopropylbenzene	5.00	4.62	5.21	92.4	104	76.0-127			12.0	20
p-Isopropyltoluene	5.00	4.65	5.13	93.0	103	76.0-125			9.82	20
2-Butanone (MEK)	25.0	23.6	23.5	94.4	94.0	44.0-160			0.425	20
Methylene Chloride	5.00	4.75	5.08	95.0	102	67.0-120			6.71	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675604-1 06/30/21 09:02 • (LCSD) R3675604-2 06/30/21 09:23

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD %	RPD Limits %
4-Methyl-2-pentanone (MIBK)	25.0	23.2	24.0	92.8	96.0	68.0-142			3.39	20
Methyl tert-butyl ether	5.00	4.73	5.27	94.6	105	68.0-125			10.8	20
Naphthalene	5.00	4.15	5.12	83.0	102	54.0-135		J3	20.9	20
n-Propylbenzene	5.00	4.41	4.74	88.2	94.8	77.0-124			7.21	20
Styrene	5.00	4.46	4.76	89.2	95.2	73.0-130			6.51	20
1,1,1,2-Tetrachloroethane	5.00	5.11	5.59	102	112	75.0-125			8.97	20
1,1,2,2-Tetrachloroethane	5.00	5.00	4.98	100	99.6	65.0-130			0.401	20
Tetrachloroethene	5.00	5.19	5.74	104	115	72.0-132			10.1	20
Toluene	5.00	4.86	5.23	97.2	105	79.0-120			7.33	20
1,1,2-Trichlorotrifluoroethane	5.00	5.05	5.45	101	109	69.0-132			7.62	20
1,2,3-Trichlorobenzene	5.00	3.94	5.14	78.8	103	50.0-138		J3	26.4	20
1,2,4-Trichlorobenzene	5.00	4.10	5.39	82.0	108	57.0-137		J3	27.2	20
1,1,1-Trichloroethane	5.00	4.76	5.42	95.2	108	73.0-124			13.0	20
1,1,2-Trichloroethane	5.00	4.95	5.32	99.0	106	80.0-120			7.21	20
Trichloroethene	5.00	4.83	5.57	96.6	111	78.0-124			14.2	20
Trichlorofluoromethane	5.00	4.93	5.86	98.6	117	59.0-147			17.2	20
1,2,3-Trichloropropane	5.00	4.86	4.73	97.2	94.6	73.0-130			2.71	20
1,2,3-Trimethylbenzene	5.00	4.60	5.07	92.0	101	77.0-120			9.72	20
1,2,4-Trimethylbenzene	5.00	4.92	5.33	98.4	107	76.0-121			8.00	20
1,3,5-Trimethylbenzene	5.00	4.60	4.99	92.0	99.8	76.0-122			8.13	20
Vinyl chloride	5.00	4.53	5.12	90.6	102	67.0-131			12.2	20
Xylenes, Total	15.0	15.0	16.3	100	109	79.0-123			8.31	20
(S) Toluene-d8				103	102	80.0-120				
(S) 4-Bromofluorobenzene				99.4	101	77.0-126				
(S) 1,2-Dichloroethane-d4				102	103	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3675703-4 07/01/21 16:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0207	0.0500
Acrylonitrile	U		0.00202	0.0100
Benzene	U		0.000375	0.00100
Bromodichloromethane	U		0.000725	0.00100
Bromoform	U		0.000424	0.00100
Bromomethane	U		0.00117	0.00500
Carbon disulfide	U		0.000700	0.00100
Carbon tetrachloride	U		0.000248	0.00100
Chlorobenzene	U		0.000192	0.00100
Chlorodibromomethane	U		0.000224	0.00100
Chloroethane	U		0.00100	0.00500
Chloroform	U		0.00103	0.00500
Chloromethane	U		0.000650	0.00250
1,2-Dibromo-3-Chloropropane	U		0.00190	0.00500
1,2-Dibromoethane	U		0.000250	0.00100
Dibromomethane	U		0.000350	0.00100
1,2-Dichlorobenzene	U		0.000425	0.00100
1,3-Dichlorobenzene	U		0.000600	0.00100
1,4-Dichlorobenzene	U		0.000830	0.00100
Dichlorodifluoromethane	U		0.000287	0.00500
1,1-Dichloroethane	U		0.000268	0.00100
1,2-Dichloroethane	U		0.000450	0.00100
1,1-Dichloroethene	U		0.000355	0.00100
trans-1,2-Dichloroethene	U		0.000500	0.00100
1,2-Dichloropropane	U		0.000164	0.00100
cis-1,3-Dichloropropene	U		0.000425	0.00100
trans-1,3-Dichloropropene	U		0.000675	0.00100
Ethylbenzene	U		0.000300	0.00100
2-Hexanone	U		0.00179	0.0100
Iodomethane	U		0.00121	0.0100
2-Butanone (MEK)	U		0.00468	0.0100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.000950	0.0100
Styrene	U		0.000223	0.00100
1,1,1,2-Tetrachloroethane	U		0.000296	0.00100
1,1,2,2-Tetrachloroethane	U		0.000231	0.00100
Tetrachloroethene	U		0.000325	0.00100
Toluene	U		0.00123	0.00500
1,1,1-Trichloroethane	U		0.000370	0.00100
1,1,2-Trichloroethane	U		0.000425	0.00100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3675703-4 07/01/21 16:29

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Trichlorofluoromethane	U		0.000356	0.00500
1,2,3-Trichloropropane	U		0.000244	0.00250
Vinyl acetate	U		0.000990	0.0100
Vinyl chloride	U		0.000226	0.00100
Xylenes, Total	U		0.000500	0.00300
1,4-Dioxane	U		0.0760	0.100
Pentachloroethane	U		0.00250	0.00500
(S) Toluene-d8	99.1			75.0-131
(S) 4-Bromofluorobenzene	102			67.0-138
(S) 1,2-Dichloroethane-d4	106			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3675703-1 07/01/21 14:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
1,4-Dioxane	1.00	1.36	136	18.0-160	
Pentachloroethane	0.0500	0.0436	87.2	70.0-130	
(S) Toluene-d8			97.1	75.0-131	
(S) 4-Bromofluorobenzene			100	67.0-138	
(S) 1,2-Dichloroethane-d4			101	70.0-130	

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675703-2 07/01/21 15:19 • (LCSD) R3675703-3 07/01/21 15:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.120	0.127	96.0	102	10.0-160			5.67	31
Acrylonitrile	0.125	0.118	0.113	94.4	90.4	45.0-153			4.33	22
Benzene	0.0250	0.0229	0.0226	91.6	90.4	70.0-123			1.32	20
Bromodichloromethane	0.0250	0.0231	0.0228	92.4	91.2	73.0-121			1.31	20
Bromoform	0.0250	0.0231	0.0230	92.4	92.0	64.0-132			0.434	20
Bromomethane	0.0250	0.0262	0.0252	105	101	56.0-147			3.89	20
Carbon disulfide	0.0250	0.0202	0.0199	80.8	79.6	56.0-133			1.50	20
Carbon tetrachloride	0.0250	0.0227	0.0227	90.8	90.8	66.0-128			0.000	20
Chlorobenzene	0.0250	0.0225	0.0224	90.0	89.6	76.0-128			0.445	20
Chlorodibromomethane	0.0250	0.0226	0.0228	90.4	91.2	74.0-127			0.881	20
Chloroethane	0.0250	0.0228	0.0222	91.2	88.8	61.0-134			2.67	20
Chloroform	0.0250	0.0227	0.0225	90.8	90.0	72.0-123			0.885	20

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675703-2 07/01/21 15:19 • (LCSD) R3675703-3 07/01/21 15:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloromethane	0.0250	0.0198	0.0199	79.2	79.6	51.0-138			0.504	20
1,2-Dibromo-3-Chloropropane	0.0250	0.0225	0.0228	90.0	91.2	59.0-130			1.32	20
1,2-Dibromoethane	0.0250	0.0227	0.0229	90.8	91.6	74.0-128			0.877	20
Dibromomethane	0.0250	0.0227	0.0228	90.8	91.2	75.0-122			0.440	20
1,2-Dichlorobenzene	0.0250	0.0222	0.0217	88.8	86.8	76.0-124			2.28	20
1,3-Dichlorobenzene	0.0250	0.0230	0.0219	92.0	87.6	76.0-125			4.90	20
1,4-Dichlorobenzene	0.0250	0.0223	0.0215	89.2	86.0	77.0-121			3.65	20
Dichlorodifluoromethane	0.0250	0.0213	0.0215	85.2	86.0	43.0-156			0.935	20
1,1-Dichloroethane	0.0250	0.0234	0.0230	93.6	92.0	70.0-127			1.72	20
1,2-Dichloroethane	0.0250	0.0226	0.0223	90.4	89.2	65.0-131			1.34	20
1,1-Dichloroethene	0.0250	0.0222	0.0216	88.8	86.4	65.0-131			2.74	20
trans-1,2-Dichloroethene	0.0250	0.0212	0.0207	84.8	82.8	71.0-125			2.39	20
1,2-Dichloropropane	0.0250	0.0241	0.0236	96.4	94.4	74.0-125			2.10	20
cis-1,3-Dichloropropene	0.0250	0.0233	0.0231	93.2	92.4	76.0-127			0.862	20
trans-1,3-Dichloropropene	0.0250	0.0242	0.0244	96.8	97.6	73.0-127			0.823	20
Ethylbenzene	0.0250	0.0227	0.0225	90.8	90.0	74.0-126			0.885	20
2-Hexanone	0.125	0.123	0.129	98.4	103	54.0-147			4.76	20
Iodomethane	0.125	0.111	0.110	88.8	88.0	74.0-134			0.905	20
2-Butanone (MEK)	0.125	0.130	0.136	104	109	30.0-160			4.51	24
Methylene Chloride	0.0250	0.0220	0.0215	88.0	86.0	68.0-123			2.30	20
4-Methyl-2-pentanone (MIBK)	0.125	0.127	0.132	102	106	56.0-143			3.86	20
Styrene	0.0250	0.0232	0.0228	92.8	91.2	72.0-127			1.74	20
1,1,1,2-Tetrachloroethane	0.0250	0.0218	0.0219	87.2	87.6	74.0-129			0.458	20
1,1,2,2-Tetrachloroethane	0.0250	0.0222	0.0221	88.8	88.4	68.0-128			0.451	20
Tetrachloroethene	0.0250	0.0221	0.0221	88.4	88.4	70.0-136			0.000	20
Toluene	0.0250	0.0217	0.0217	86.8	86.8	75.0-121			0.000	20
1,1,1-Trichloroethane	0.0250	0.0221	0.0219	88.4	87.6	69.0-126			0.909	20
1,1,2-Trichloroethane	0.0250	0.0220	0.0222	88.0	88.8	78.0-123			0.905	20
Trichlorofluoromethane	0.0250	0.0235	0.0236	94.0	94.4	61.0-142			0.425	20
1,2,3-Trichloropropane	0.0250	0.0214	0.0217	85.6	86.8	67.0-129			1.39	20
Vinyl acetate	0.125	0.127	0.125	102	100	43.0-159			1.59	20
Vinyl chloride	0.0250	0.0224	0.0221	89.6	88.4	63.0-134			1.35	20
Xylenes, Total	0.0750	0.0674	0.0664	89.9	88.5	72.0-127			1.49	20
(S) Toluene-d8				97.2	98.4	75.0-131				
(S) 4-Bromofluorobenzene				102	102	67.0-138				
(S) 1,2-Dichloroethane-d4				109	110	70.0-130				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3675916-4 07/02/21 19:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0207	0.0500
Acrylonitrile	U		0.00202	0.0100
Benzene	U		0.000375	0.00100
Bromodichloromethane	U		0.000725	0.00100
Bromoform	U		0.000424	0.00100
Bromomethane	U		0.00117	0.00500
Carbon disulfide	U		0.000700	0.00100
Carbon tetrachloride	U		0.000248	0.00100
Chlorobenzene	U		0.000192	0.00100
Chlorodibromomethane	U		0.000224	0.00100
Chloroethane	U		0.00100	0.00500
Chloroform	U		0.00103	0.00500
Chloromethane	U		0.000650	0.00250
1,2-Dibromo-3-Chloropropane	U		0.00190	0.00500
1,2-Dibromoethane	U		0.000250	0.00100
Dibromomethane	U		0.000350	0.00100
1,2-Dichlorobenzene	U		0.000425	0.00100
1,3-Dichlorobenzene	U		0.000600	0.00100
1,4-Dichlorobenzene	U		0.000830	0.00100
Dichlorodifluoromethane	U		0.000287	0.00500
1,1-Dichloroethane	U		0.000268	0.00100
1,2-Dichloroethane	U		0.000450	0.00100
1,1-Dichloroethene	U		0.000355	0.00100
cis-1,2-Dichloroethene	U		0.000475	0.00100
trans-1,2-Dichloroethene	U		0.000500	0.00100
1,2-Dichloropropane	U		0.000164	0.00100
cis-1,3-Dichloropropene	U		0.000425	0.00100
trans-1,3-Dichloropropene	U		0.000675	0.00100
Ethylbenzene	U		0.000300	0.00100
2-Hexanone	U		0.00179	0.0100
Iodomethane	U		0.00121	0.0100
2-Butanone (MEK)	U		0.00468	0.0100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.000950	0.0100
Styrene	U		0.000223	0.00100
1,1,1,2-Tetrachloroethane	U		0.000296	0.00100
1,1,2,2-Tetrachloroethane	U		0.000231	0.00100
Tetrachloroethene	U		0.000325	0.00100
Toluene	U		0.00123	0.00500
1,1,1-Trichloroethane	U		0.000370	0.00100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3675916-4 07/02/21 19:22

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
1,1,2-Trichloroethane	U		0.000425	0.00100
Trichloroethene	U		0.000200	0.00100
Trichlorofluoromethane	U		0.000356	0.00500
1,2,3-Trichloropropane	U		0.000244	0.00250
Vinyl acetate	U		0.000990	0.0100
Vinyl chloride	U		0.000226	0.00100
Xylenes, Total	U		0.000500	0.00300
1,4-Dioxane	U		0.0760	0.100
Pentachloroethane	U		0.00250	0.00500
(S) Toluene-d8	113			75.0-131
(S) 4-Bromofluorobenzene	103			67.0-138
(S) 1,2-Dichloroethane-d4	97.1			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3675916-1 07/02/21 16:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	0.125	0.197	158	10.0-160	E
Acrylonitrile	0.125	0.117	93.6	45.0-153	
Benzene	0.0250	0.0266	106	70.0-123	
Bromodichloromethane	0.0250	0.0242	96.8	73.0-121	
Bromoform	0.0250	0.0261	104	64.0-132	
Bromomethane	0.0250	0.0272	109	56.0-147	
Carbon disulfide	0.0250	0.0224	89.6	56.0-133	
Carbon tetrachloride	0.0250	0.0268	107	66.0-128	
Chlorobenzene	0.0250	0.0281	112	76.0-128	
Chlorodibromomethane	0.0250	0.0256	102	74.0-127	
Chloroethane	0.0250	0.0244	97.6	61.0-134	
Chloroform	0.0250	0.0257	103	72.0-123	
Chloromethane	0.0250	0.0277	111	51.0-138	
1,2-Dibromo-3-Chloropropane	0.0250	0.0218	87.2	59.0-130	
1,2-Dibromoethane	0.0250	0.0254	102	74.0-128	
Dibromomethane	0.0250	0.0258	103	75.0-122	
1,2-Dichlorobenzene	0.0250	0.0269	108	76.0-124	
1,3-Dichlorobenzene	0.0250	0.0260	104	76.0-125	
1,4-Dichlorobenzene	0.0250	0.0259	104	77.0-121	
Dichlorodifluoromethane	0.0250	0.0286	114	43.0-156	
1,1-Dichloroethane	0.0250	0.0262	105	70.0-127	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3675916-1 07/02/21 16:36

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
1,2-Dichloroethane	0.0250	0.0232	92.8	65.0-131	
1,1-Dichloroethene	0.0250	0.0255	102	65.0-131	
cis-1,2-Dichloroethene	0.0250	0.0269	108	73.0-125	
trans-1,2-Dichloroethene	0.0250	0.0262	105	71.0-125	
1,2-Dichloropropane	0.0250	0.0252	101	74.0-125	
cis-1,3-Dichloropropene	0.0250	0.0258	103	76.0-127	
trans-1,3-Dichloropropene	0.0250	0.0258	103	73.0-127	
Ethylbenzene	0.0250	0.0268	107	74.0-126	
2-Hexanone	0.125	0.112	89.6	54.0-147	
Iodomethane	0.125	0.147	118	74.0-134	
2-Butanone (MEK)	0.125	0.109	87.2	30.0-160	
Methylene Chloride	0.0250	0.0266	106	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.125	0.107	85.6	56.0-143	
Styrene	0.0250	0.0275	110	72.0-127	
1,1,1,2-Tetrachloroethane	0.0250	0.0283	113	74.0-129	
1,1,2,2-Tetrachloroethane	0.0250	0.0227	90.8	68.0-128	
Tetrachloroethene	0.0250	0.0280	112	70.0-136	
Toluene	0.0250	0.0254	102	75.0-121	
1,1,1-Trichloroethane	0.0250	0.0265	106	69.0-126	
1,1,2-Trichloroethane	0.0250	0.0253	101	78.0-123	
Trichloroethene	0.0250	0.0273	109	76.0-126	
Trichlorofluoromethane	0.0250	0.0344	138	61.0-142	
1,2,3-Trichloropropane	0.0250	0.0227	90.8	67.0-129	
Vinyl acetate	0.125	0.109	87.2	43.0-159	
Vinyl chloride	0.0250	0.0271	108	63.0-134	
Xylenes, Total	0.0750	0.0806	107	72.0-127	
(S) Toluene-d8			112	75.0-131	
(S) 4-Bromofluorobenzene			107	67.0-138	
(S) 1,2-Dichloroethane-d4			105	70.0-130	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3675916-3 07/02/21 18:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
1,4-Dioxane	1.00	1.08	108	18.0-160	
Pentachloroethane	0.0500	0.0479	95.8	70.0-130	
(S) Toluene-d8			111	75.0-131	
(S) 4-Bromofluorobenzene			106	67.0-138	

Laboratory Control Sample (LCS)

(LCS) R3675916-3 07/02/21 18:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) 1,2-Dichloroethane-d4			93.7	70.0-130	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3676803-4 07/07/21 13:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
cis-1,2-Dichloroethene	U		0.000475	0.00100
Tetrachloroethene	U		0.000325	0.00100
Trichloroethene	U		0.000200	0.00100
Vinyl chloride	U		0.000226	0.00100
(S) Toluene-d8	110			75.0-131
(S) 4-Bromofluorobenzene	105			67.0-138
(S) 1,2-Dichloroethane-d4	112			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3676803-1 07/07/21 11:45

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	0.0250	0.0261	104	73.0-125	
Tetrachloroethene	0.0250	0.0276	110	70.0-136	
Trichloroethene	0.0250	0.0278	111	76.0-126	
Vinyl chloride	0.0250	0.0282	113	63.0-134	
(S) Toluene-d8			105	75.0-131	
(S) 4-Bromofluorobenzene			108	67.0-138	
(S) 1,2-Dichloroethane-d4			122	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3675057-1 07/02/21 11:19

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Diesel Range Organics (DRO)	U		1.33	4.00
Residual Range Organics (RRO)	U		3.33	10.0
(S) o-Terphenyl	54.7			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3675057-2 07/02/21 11:32

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Diesel Range Organics (DRO)	50.0	39.1	78.2	50.0-150	
(S) o-Terphenyl			72.4	18.0-148	

L1371222-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1371222-03 07/03/21 04:01 • (MS) R3675057-3 07/03/21 04:15 • (MSD) R3675057-4 07/03/21 04:27

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	52.5	25.3	71.3	53.4	87.7	53.2	1	50.0-150		J3	28.8	20
(S) o-Terphenyl					64.2	69.1		18.0-148				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3673037-3 06/26/21 10:15

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
1,4-Dioxane	U		0.0447	0.400
(S) Nitrobenzene-d5	64.0			10.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3673037-1 06/26/21 09:36 • (LCSD) R3673037-2 06/26/21 09:55

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dioxane	50.0	40.4	40.6	80.8	81.2	73.0-146			0.494	20
(S) Nitrobenzene-d5				66.5	68.0	10.0-120				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

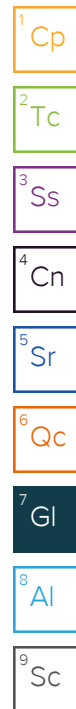
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
RDL (dry)	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J3	The associated batch QC was outside the established quality control range for precision.



ACCREDITATIONS & LOCATIONS

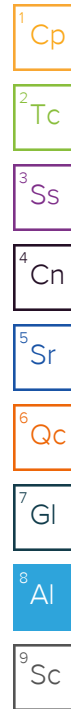
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

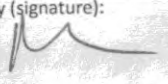
Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



Company Name/Address: PBS Engineering & Env.- POR 4412 S Corbett Ave Portland, OR 97239				Billing Information: Accounts Payable 4412 S Corbett Ave Portland, OR 97239				Pres Chk		Analysis / Container / Preservative										Chain of Custody Page ____ of ____									
Report to: Nick Thornton				Email To: Nick.Thornton@pbsusa.com						 12065 Lebanon Rd. Mount Juliet, TN 37122 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf SDG # U371341 E111 Table _____ Acctnum: PBSENGPOR Template: T190123 Prelogin: P856474 PM: 110 - Brian Ford PB: Shipped Via:																			
Project Description: 3720 NW Yeon Ave				City/State Collected: OR		Please Circle: PT MT CT ET																							
Phone: 503-248-1939				Client Project # 20125.010				Lab Project # PBSENGPOR-20125010																					
Collected by (print): Nick T				Site/Facility ID #				P.O. #																					
Collected by (signature): 				Rush? (Lab MUST Be Notified) ☐ Same Day ☐ Five Day ☐ Next Day ☐ 5 Day (Rad Only) ☐ Two Day ☐ 10 Day (Rad Only) ☐ Three Day				Quote #																					
Immediately Packed on Ice N ☐ Y ☒				Date Results Needed				No. of Cntrs																					
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time																							
MW8-G5		G	GW		6/23/21	1030	5																						
MW8-20			GW			1035	5	X	X	X																			
B35-21			GW			1200	5	X	X	X																			
B35-GW			GW			1225	5				X	X																	
MW8-GW			GW			1300	5				X	X																	
MW7-21			GW			1355	5	X	X	X																			
MW5-21			GW			1515	5	X	X	X																			
			GW																										
			GW																										
			GW																										

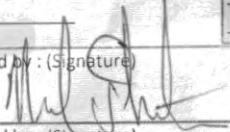
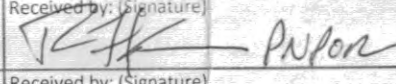
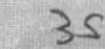
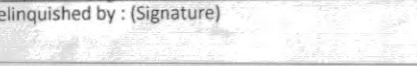
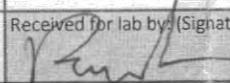
* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - WasteWater
 DW - Drinking Water
 OT - Other

Remarks:

pH _____ Temp _____
 Flow _____ Other _____

Samples returned via:
☐ UPS ☐ FedEx ☐ Courier

Tracking #

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No	HCL / MeOH TBR
	6/23/21	1700			
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C	Bottles Received:
	6/24/21	1100		1.2.1=1.1 	35
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date:	Time:
				6-25-21	9:00

If preservation required by Login: Date/Time

Hold: _____ Condition: **NCF / OK**

Sample Receipt Checklist

COC Seal Present/Intact: ☒ NP ☐ Y ☐ N

COC Signed/Accurate: ☒ ☐ Y ☐ N

Bottles arrive intact: ☒ ☐ Y ☐ N

Correct bottles used: ☒ ☐ Y ☐ N

Sufficient volume sent: ☒ ☐ Y ☐ N

If Applicable

VOA Zero Headspace: ☒ ☐ Y ☐ N

Preservation Correct/Checked: ☒ ☐ Y ☐ N

RAD Screen <0.5 mR/hr: ☒ ☐ Y ☐ N

PBS Engineering & Env.- POR

Sample Delivery Group: L1371683
Samples Received: 06/26/2021
Project Number: 20125.010
Description: 3720 NW Yeon Ave

Report To: Nick Thornton
4412 S Corbett Ave
Portland, OR 97239

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

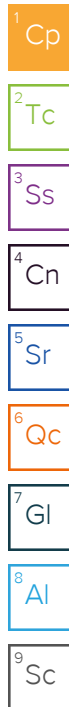
Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	4
Sr: Sample Results	5
MW9-GW L1371683-01	5
TRIP BLANKS L1371683-02	7
Qc: Quality Control Summary	9
Volatile Organic Compounds (GC) by Method NWTPHGX	9
Volatile Organic Compounds (GC/MS) by Method 8260D	11
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	16
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	17
Gl: Glossary of Terms	18
Al: Accreditations & Locations	19
Sc: Sample Chain of Custody	20

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

MW9-GW L1371683-01 GW

Collected by
David Rukki

Collected date/time
06/25/21 09:00

Received date/time
06/26/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1699096	1	07/02/21 20:37	07/02/21 20:37	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1698188	1	07/02/21 11:25	07/02/21 11:25	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1699531	50	07/03/21 06:18	07/03/21 06:18	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT	WG1699006	1	07/02/21 07:48	07/03/21 01:23	AEG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1696058	2	07/01/21 07:56	07/13/21 20:11	TMM	Mt. Juliet, TN

TRIP BLANKS L1371683-02 GW

Collected by
David Rukki

Collected date/time
06/25/21 00:00

Received date/time
06/26/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1697640	1	07/01/21 03:22	07/01/21 03:22	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1698188	1	07/02/21 05:01	07/02/21 05:01	ACG	Mt. Juliet, TN



CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Brian Ford
Project Manager

- ¹ Cp
- ² Tc
- ³ Ss
- ⁴ Cn
- ⁵ Sr
- ⁶ Qc
- ⁷ Gl
- ⁸ Al
- ⁹ Sc

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2450		100	1	07/02/2021 20:37	WG1699096
(S) a,a,a-Trifluorotoluene(FID)	99.5		78.0-120		07/02/2021 20:37	WG1699096

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		50.0	1	07/02/2021 11:25	WG1698188
Acrolein	ND	C3	50.0	1	07/02/2021 11:25	WG1698188
Acrylonitrile	ND		10.0	1	07/02/2021 11:25	WG1698188
Benzene	ND		1.00	1	07/02/2021 11:25	WG1698188
Bromobenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
Bromodichloromethane	ND		1.00	1	07/02/2021 11:25	WG1698188
Bromoform	ND		1.00	1	07/02/2021 11:25	WG1698188
Bromomethane	ND		5.00	1	07/02/2021 11:25	WG1698188
n-Butylbenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
sec-Butylbenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
tert-Butylbenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
Carbon tetrachloride	ND		1.00	1	07/02/2021 11:25	WG1698188
Chlorobenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
Chlorodibromomethane	ND		1.00	1	07/02/2021 11:25	WG1698188
Chloroethane	ND		5.00	1	07/02/2021 11:25	WG1698188
Chloroform	ND		5.00	1	07/02/2021 11:25	WG1698188
Chloromethane	ND		2.50	1	07/02/2021 11:25	WG1698188
2-Chlorotoluene	ND		1.00	1	07/02/2021 11:25	WG1698188
4-Chlorotoluene	ND		1.00	1	07/02/2021 11:25	WG1698188
1,2-Dibromo-3-Chloropropane	ND		5.00	1	07/02/2021 11:25	WG1698188
1,2-Dibromoethane	ND		1.00	1	07/02/2021 11:25	WG1698188
Dibromomethane	ND		1.00	1	07/02/2021 11:25	WG1698188
1,2-Dichlorobenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
1,3-Dichlorobenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
1,4-Dichlorobenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
Dichlorodifluoromethane	ND		5.00	1	07/02/2021 11:25	WG1698188
1,1-Dichloroethane	ND		1.00	1	07/02/2021 11:25	WG1698188
1,2-Dichloroethane	ND		1.00	1	07/02/2021 11:25	WG1698188
1,1-Dichloroethene	1.43		1.00	1	07/02/2021 11:25	WG1698188
cis-1,2-Dichloroethene	414		50.0	50	07/03/2021 06:18	WG1699531
trans-1,2-Dichloroethene	2.53		1.00	1	07/02/2021 11:25	WG1698188
1,2-Dichloropropane	ND		1.00	1	07/02/2021 11:25	WG1698188
1,1-Dichloropropene	ND		1.00	1	07/02/2021 11:25	WG1698188
1,3-Dichloropropane	ND		1.00	1	07/02/2021 11:25	WG1698188
cis-1,3-Dichloropropene	ND		1.00	1	07/02/2021 11:25	WG1698188
trans-1,3-Dichloropropene	ND		1.00	1	07/02/2021 11:25	WG1698188
2,2-Dichloropropane	ND		1.00	1	07/02/2021 11:25	WG1698188
Di-isopropyl ether	ND		1.00	1	07/02/2021 11:25	WG1698188
Ethylbenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
Hexachloro-1,3-butadiene	ND		1.00	1	07/02/2021 11:25	WG1698188
Isopropylbenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
p-Isopropyltoluene	ND		1.00	1	07/02/2021 11:25	WG1698188
2-Butanone (MEK)	ND		10.0	1	07/02/2021 11:25	WG1698188
Methylene Chloride	ND		5.00	1	07/02/2021 11:25	WG1698188
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	07/02/2021 11:25	WG1698188
Methyl tert-butyl ether	ND		1.00	1	07/02/2021 11:25	WG1698188
Naphthalene	ND		5.00	1	07/02/2021 11:25	WG1698188
n-Propylbenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
Styrene	ND		1.00	1	07/02/2021 11:25	WG1698188

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

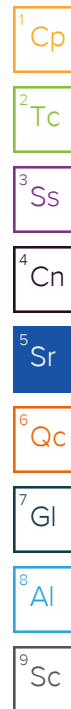
7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1,2-Tetrachloroethane	ND		1.00	1	07/02/2021 11:25	WG1698188
1,1,2,2-Tetrachloroethane	ND		1.00	1	07/02/2021 11:25	WG1698188
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	07/02/2021 11:25	WG1698188
Tetrachloroethene	6760		50.0	50	07/03/2021 06:18	WG1699531
Toluene	1.07		1.00	1	07/02/2021 11:25	WG1698188
1,2,3-Trichlorobenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
1,2,4-Trichlorobenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
1,1,1-Trichloroethane	ND		1.00	1	07/02/2021 11:25	WG1698188
1,1,2-Trichloroethane	ND		1.00	1	07/02/2021 11:25	WG1698188
Trichloroethene	581		50.0	50	07/03/2021 06:18	WG1699531
Trichlorofluoromethane	ND		5.00	1	07/02/2021 11:25	WG1698188
1,2,3-Trichloropropane	ND		2.50	1	07/02/2021 11:25	WG1698188
1,2,4-Trimethylbenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
1,2,3-Trimethylbenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
1,3,5-Trimethylbenzene	ND		1.00	1	07/02/2021 11:25	WG1698188
Vinyl chloride	70.3		1.00	1	07/02/2021 11:25	WG1698188
Xylenes, Total	ND		3.00	1	07/02/2021 11:25	WG1698188
(S) Toluene-d8	103		80.0-120		07/02/2021 11:25	WG1698188
(S) Toluene-d8	113		80.0-120		07/03/2021 06:18	WG1699531
(S) 4-Bromofluorobenzene	99.8		77.0-126		07/02/2021 11:25	WG1698188
(S) 4-Bromofluorobenzene	99.7		77.0-126		07/03/2021 06:18	WG1699531
(S) 1,2-Dichloroethane-d4	103		70.0-130		07/02/2021 11:25	WG1698188
(S) 1,2-Dichloroethane-d4	93.3		70.0-130		07/03/2021 06:18	WG1699531



Semi-Volatile Organic Compounds (GC) by Method NWTPHDX-SGT

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Diesel Range Organics (DRO)	ND	J3	100	1	07/03/2021 01:23	WG1699006
Residual Range Organics (RRO)	ND		250	1	07/03/2021 01:23	WG1699006
(S) o-Terphenyl	45.6		31.0-160		07/03/2021 01:23	WG1699006

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.800	2	07/13/2021 20:11	WG1696058
(S) Nitrobenzene-d5	96.6		10.0-120		07/13/2021 20:11	WG1696058

TRIP BLANKS

Collected date/time: 06/25/21 00:00

SAMPLE RESULTS - 02

L1371683

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	ND		100	1	07/01/2021 03:22	WG1697640
(S) a,a,a-Trifluorotoluene(FID)	98.4		78.0-120		07/01/2021 03:22	WG1697640

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		50.0	1	07/02/2021 05:01	WG1698188
Acrolein	ND	C3	50.0	1	07/02/2021 05:01	WG1698188
Acrylonitrile	ND		10.0	1	07/02/2021 05:01	WG1698188
Benzene	ND		1.00	1	07/02/2021 05:01	WG1698188
Bromobenzene	ND		1.00	1	07/02/2021 05:01	WG1698188
Bromodichloromethane	ND		1.00	1	07/02/2021 05:01	WG1698188
Bromoform	ND		1.00	1	07/02/2021 05:01	WG1698188
Bromomethane	ND		5.00	1	07/02/2021 05:01	WG1698188
n-Butylbenzene	ND		1.00	1	07/02/2021 05:01	WG1698188
sec-Butylbenzene	ND		1.00	1	07/02/2021 05:01	WG1698188
tert-Butylbenzene	ND		1.00	1	07/02/2021 05:01	WG1698188
Carbon tetrachloride	ND		1.00	1	07/02/2021 05:01	WG1698188
Chlorobenzene	ND		1.00	1	07/02/2021 05:01	WG1698188
Chlorodibromomethane	ND		1.00	1	07/02/2021 05:01	WG1698188
Chloroethane	ND		5.00	1	07/02/2021 05:01	WG1698188
Chloroform	ND		5.00	1	07/02/2021 05:01	WG1698188
Chloromethane	ND		2.50	1	07/02/2021 05:01	WG1698188
2-Chlorotoluene	ND		1.00	1	07/02/2021 05:01	WG1698188
4-Chlorotoluene	ND		1.00	1	07/02/2021 05:01	WG1698188
1,2-Dibromo-3-Chloropropane	ND		5.00	1	07/02/2021 05:01	WG1698188
1,2-Dibromoethane	ND		1.00	1	07/02/2021 05:01	WG1698188
Dibromomethane	ND		1.00	1	07/02/2021 05:01	WG1698188
1,2-Dichlorobenzene	ND		1.00	1	07/02/2021 05:01	WG1698188
1,3-Dichlorobenzene	ND		1.00	1	07/02/2021 05:01	WG1698188
1,4-Dichlorobenzene	ND		1.00	1	07/02/2021 05:01	WG1698188
Dichlorodifluoromethane	ND		5.00	1	07/02/2021 05:01	WG1698188
1,1-Dichloroethane	ND		1.00	1	07/02/2021 05:01	WG1698188
1,2-Dichloroethane	ND		1.00	1	07/02/2021 05:01	WG1698188
1,1-Dichloroethene	ND		1.00	1	07/02/2021 05:01	WG1698188
cis-1,2-Dichloroethene	ND		1.00	1	07/02/2021 05:01	WG1698188
trans-1,2-Dichloroethene	ND		1.00	1	07/02/2021 05:01	WG1698188
1,2-Dichloropropane	ND		1.00	1	07/02/2021 05:01	WG1698188
1,1-Dichloropropene	ND		1.00	1	07/02/2021 05:01	WG1698188
1,3-Dichloropropane	ND		1.00	1	07/02/2021 05:01	WG1698188
cis-1,3-Dichloropropene	ND		1.00	1	07/02/2021 05:01	WG1698188
trans-1,3-Dichloropropene	ND		1.00	1	07/02/2021 05:01	WG1698188
2,2-Dichloropropane	ND		1.00	1	07/02/2021 05:01	WG1698188
Di-isopropyl ether	ND		1.00	1	07/02/2021 05:01	WG1698188
Ethylbenzene	ND		1.00	1	07/02/2021 05:01	WG1698188
Hexachloro-1,3-butadiene	ND		1.00	1	07/02/2021 05:01	WG1698188
Isopropylbenzene	ND		1.00	1	07/02/2021 05:01	WG1698188
p-Isopropyltoluene	ND		1.00	1	07/02/2021 05:01	WG1698188
2-Butanone (MEK)	ND		10.0	1	07/02/2021 05:01	WG1698188
Methylene Chloride	ND		5.00	1	07/02/2021 05:01	WG1698188
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	07/02/2021 05:01	WG1698188
Methyl tert-butyl ether	ND		1.00	1	07/02/2021 05:01	WG1698188
Naphthalene	ND		5.00	1	07/02/2021 05:01	WG1698188
n-Propylbenzene	ND		1.00	1	07/02/2021 05:01	WG1698188
Styrene	ND		1.00	1	07/02/2021 05:01	WG1698188

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

TRIP BLANKS

Collected date/time: 06/25/21 00:00

SAMPLE RESULTS - 02

L1371683

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch	¹ Cp
1,1,1,2-Tetrachloroethane	ND		1.00	1	07/02/2021 05:01	WG1698188	² Tc
1,1,2,2-Tetrachloroethane	ND		1.00	1	07/02/2021 05:01	WG1698188	³ Ss
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	07/02/2021 05:01	WG1698188	⁴ Cn
Tetrachloroethene	ND		1.00	1	07/02/2021 05:01	WG1698188	⁵ Sr
Toluene	ND		1.00	1	07/02/2021 05:01	WG1698188	⁶ Qc
1,2,3-Trichlorobenzene	ND		1.00	1	07/02/2021 05:01	WG1698188	⁷ Gl
1,2,4-Trichlorobenzene	ND		1.00	1	07/02/2021 05:01	WG1698188	⁸ Al
1,1,1-Trichloroethane	ND		1.00	1	07/02/2021 05:01	WG1698188	⁹ Sc
1,1,2-Trichloroethane	ND		1.00	1	07/02/2021 05:01	WG1698188	
Trichloroethene	ND		1.00	1	07/02/2021 05:01	WG1698188	
Trichlorofluoromethane	ND		5.00	1	07/02/2021 05:01	WG1698188	
1,2,3-Trichloropropane	ND		2.50	1	07/02/2021 05:01	WG1698188	
1,2,4-Trimethylbenzene	ND		1.00	1	07/02/2021 05:01	WG1698188	
1,2,3-Trimethylbenzene	ND		1.00	1	07/02/2021 05:01	WG1698188	
1,3,5-Trimethylbenzene	ND		1.00	1	07/02/2021 05:01	WG1698188	
Vinyl chloride	ND		1.00	1	07/02/2021 05:01	WG1698188	
Xylenes, Total	ND		3.00	1	07/02/2021 05:01	WG1698188	
(S) Toluene-d8	104		80.0-120		07/02/2021 05:01	WG1698188	
(S) 4-Bromofluorobenzene	100		77.0-126		07/02/2021 05:01	WG1698188	
(S) 1,2-Dichloroethane-d4	104		70.0-130		07/02/2021 05:01	WG1698188	

Method Blank (MB)

(MB) R3674963-2 07/01/21 02:39

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	33.6	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	98.4			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3674963-1 07/01/21 01:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	6220	113	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			107	78.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3675660-2 07/02/21 19:25

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	36.3	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	97.6			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3675660-1 07/02/21 18:42

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5850	106	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			105	78.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3675139-2 07/02/21 04:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	50.0
Acrolein	U		2.54	50.0
Acrylonitrile	U		0.671	10.0
Benzene	U		0.0941	1.00
Bromobenzene	U		0.118	1.00
Bromodichloromethane	U		0.136	1.00
Bromoform	U		0.129	1.00
Bromomethane	U		0.605	5.00
n-Butylbenzene	U		0.157	1.00
sec-Butylbenzene	U		0.125	1.00
tert-Butylbenzene	U		0.127	1.00
Carbon tetrachloride	U		0.128	1.00
Chlorobenzene	U		0.116	1.00
Chlorodibromomethane	U		0.140	1.00
Chloroethane	U		0.192	5.00
Chloroform	U		0.111	5.00
Chloromethane	U		0.960	2.50
2-Chlorotoluene	U		0.106	1.00
4-Chlorotoluene	U		0.114	1.00
1,2-Dibromo-3-Chloropropane	U		0.276	5.00
1,2-Dibromoethane	U		0.126	1.00
Dibromomethane	U		0.122	1.00
1,2-Dichlorobenzene	U		0.107	1.00
1,3-Dichlorobenzene	U		0.110	1.00
1,4-Dichlorobenzene	U		0.120	1.00
Dichlorodifluoromethane	U		0.374	5.00
1,1-Dichloroethane	U		0.100	1.00
1,2-Dichloroethane	U		0.0819	1.00
1,1-Dichloroethene	U		0.188	1.00
cis-1,2-Dichloroethene	U		0.126	1.00
trans-1,2-Dichloroethene	U		0.149	1.00
1,2-Dichloropropane	U		0.149	1.00
1,1-Dichloropropene	U		0.142	1.00
1,3-Dichloropropane	U		0.110	1.00
cis-1,3-Dichloropropene	U		0.111	1.00
trans-1,3-Dichloropropene	U		0.118	1.00
2,2-Dichloropropane	U		0.161	1.00
Di-isopropyl ether	U		0.105	1.00
Ethylbenzene	U		0.137	1.00
Hexachloro-1,3-butadiene	U		0.337	1.00

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3675139-2 07/02/21 04:41

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Isopropylbenzene	U		0.105	1.00
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichloroethene	U		0.190	1.00
Trichlorofluoromethane	U		0.160	5.00
1,2,3-Trichloropropane	U		0.237	2.50
1,2,3-Trimethylbenzene	U		0.104	1.00
1,2,4-Trimethylbenzene	U		0.322	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Vinyl chloride	U		0.234	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	103			80.0-120
(S) 4-Bromofluorobenzene	99.4			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3675139-1 07/02/21 03:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	24.9	99.6	19.0-160	
Acrolein	25.0	12.5	50.0	10.0-160	
Acrylonitrile	25.0	23.2	92.8	55.0-149	
Benzene	5.00	4.82	96.4	70.0-123	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3675139-1 07/02/21 03:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Bromobenzene	5.00	4.93	98.6	73.0-121	
Bromodichloromethane	5.00	4.97	99.4	75.0-120	
Bromoform	5.00	5.29	106	68.0-132	
Bromomethane	5.00	6.71	134	10.0-160	
n-Butylbenzene	5.00	5.86	117	73.0-125	
sec-Butylbenzene	5.00	5.42	108	75.0-125	
tert-Butylbenzene	5.00	5.12	102	76.0-124	
Carbon tetrachloride	5.00	4.61	92.2	68.0-126	
Chlorobenzene	5.00	5.46	109	80.0-121	
Chlorodibromomethane	5.00	4.96	99.2	77.0-125	
Chloroethane	5.00	5.23	105	47.0-150	
Chloroform	5.00	5.28	106	73.0-120	
Chloromethane	5.00	4.79	95.8	41.0-142	
2-Chlorotoluene	5.00	5.26	105	76.0-123	
4-Chlorotoluene	5.00	5.50	110	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	5.00	100	58.0-134	
1,2-Dibromoethane	5.00	5.22	104	80.0-122	
Dibromomethane	5.00	5.06	101	80.0-120	
1,2-Dichlorobenzene	5.00	5.88	118	79.0-121	
1,3-Dichlorobenzene	5.00	5.86	117	79.0-120	
1,4-Dichlorobenzene	5.00	5.44	109	79.0-120	
Dichlorodifluoromethane	5.00	5.38	108	51.0-149	
1,1-Dichloroethane	5.00	5.10	102	70.0-126	
1,2-Dichloroethane	5.00	5.19	104	70.0-128	
1,1-Dichloroethene	5.00	4.32	86.4	71.0-124	
cis-1,2-Dichloroethene	5.00	5.20	104	73.0-120	
trans-1,2-Dichloroethene	5.00	4.92	98.4	73.0-120	
1,2-Dichloropropane	5.00	4.78	95.6	77.0-125	
1,1-Dichloropropene	5.00	4.95	99.0	74.0-126	
1,3-Dichloropropane	5.00	5.16	103	80.0-120	
cis-1,3-Dichloropropene	5.00	5.06	101	80.0-123	
trans-1,3-Dichloropropene	5.00	4.64	92.8	78.0-124	
2,2-Dichloropropane	5.00	5.03	101	58.0-130	
Di-isopropyl ether	5.00	4.75	95.0	58.0-138	
Ethylbenzene	5.00	5.20	104	79.0-123	
Hexachloro-1,3-butadiene	5.00	4.71	94.2	54.0-138	
Isopropylbenzene	5.00	4.92	98.4	76.0-127	
p-Isopropyltoluene	5.00	5.36	107	76.0-125	
2-Butanone (MEK)	25.0	22.5	90.0	44.0-160	
Methylene Chloride	5.00	4.95	99.0	67.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3675139-1 07/02/21 03:41

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Methyl-2-pentanone (MIBK)	25.0	23.6	94.4	68.0-142	
Methyl tert-butyl ether	5.00	4.82	96.4	68.0-125	
Naphthalene	5.00	5.16	103	54.0-135	
n-Propylbenzene	5.00	5.09	102	77.0-124	
Styrene	5.00	4.61	92.2	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	5.40	108	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	5.33	107	65.0-130	
Tetrachloroethene	5.00	5.59	112	72.0-132	
Toluene	5.00	5.17	103	79.0-120	
1,1,2-Trichlorotrifluoroethane	5.00	4.39	87.8	69.0-132	
1,2,3-Trichlorobenzene	5.00	4.88	97.6	50.0-138	
1,2,4-Trichlorobenzene	5.00	5.15	103	57.0-137	
1,1,1-Trichloroethane	5.00	4.97	99.4	73.0-124	
1,1,2-Trichloroethane	5.00	5.20	104	80.0-120	
Trichloroethene	5.00	5.45	109	78.0-124	
Trichlorofluoromethane	5.00	5.05	101	59.0-147	
1,2,3-Trichloropropane	5.00	5.31	106	73.0-130	
1,2,3-Trimethylbenzene	5.00	5.26	105	77.0-120	
1,2,4-Trimethylbenzene	5.00	5.44	109	76.0-121	
1,3,5-Trimethylbenzene	5.00	5.21	104	76.0-122	
Vinyl chloride	5.00	4.92	98.4	67.0-131	
Xylenes, Total	15.0	15.7	105	79.0-123	
(S) Toluene-d8			103	80.0-120	
(S) 4-Bromofluorobenzene			97.7	77.0-126	
(S) 1,2-Dichloroethane-d4			101	70.0-130	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3675687-3 07/02/21 20:17

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.126	1.00
Tetrachloroethene	0.711	U	0.300	1.00
Trichloroethene	U		0.190	1.00
(S) Toluene-d8	106			80.0-120
(S) 4-Bromofluorobenzene	95.8			77.0-126
(S) 1,2-Dichloroethane-d4	84.6			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675687-1 07/02/21 18:37 • (LCSD) R3675687-2 07/02/21 18:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
cis-1,2-Dichloroethene	5.00	5.07	4.85	101	97.0	73.0-120			4.44	20
Tetrachloroethene	5.00	5.37	6.47	107	129	72.0-132			18.6	20
Trichloroethene	5.00	4.76	5.32	95.2	106	78.0-124			11.1	20
(S) Toluene-d8				102	106	80.0-120				
(S) 4-Bromofluorobenzene				89.3	95.5	77.0-126				
(S) 1,2-Dichloroethane-d4				89.3	98.3	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3675610-1 07/02/21 23:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Diesel Range Organics (DRO)	U		33.3	100
Residual Range Organics (RRO)	U		83.3	250
(S) o-Terphenyl	48.5			31.0-160

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3675610-2 07/03/21 00:02 • (LCSD) R3675610-3 07/03/21 00:22

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Diesel Range Organics (DRO)	1500	1180	954	78.7	63.6	50.0-150		J3	21.2	20
(S) o-Terphenyl				52.5	41.4	31.0-160				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3674761-3 07/01/21 16:16

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
1,4-Dioxane	U		0.0447	0.400
(S) Nitrobenzene-d5	54.4			10.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3674761-1 07/01/21 15:38 • (LCSD) R3674761-2 07/01/21 15:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dioxane	50.0	39.5	39.6	79.0	79.2	73.0-146			0.253	20
(S) Nitrobenzene-d5				45.0	52.8	10.0-120				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

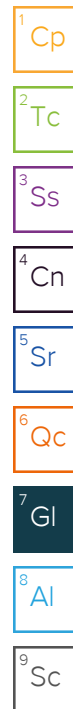
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.



ACCREDITATIONS & LOCATIONS

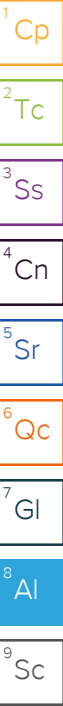
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



[illegible]

July 15, 2021

PBS Engineering & Env.- POR

Sample Delivery Group: L1374321
Samples Received: 07/03/2021
Project Number: 20125.010
Description: 3720 NW Yeon Ave

Report To: Nick Thornton
4412 S Corbett Ave
Portland, OR 97239

Entire Report Reviewed By:



Brian Ford
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.

Pace Analytical National

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

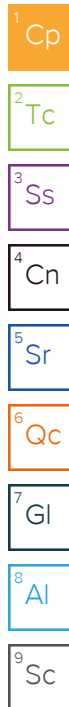


TABLE OF CONTENTS

Cp: Cover Page	1
Tc: Table of Contents	2
Ss: Sample Summary	3
Cn: Case Narrative	5
Sr: Sample Results	6
MW2-GW L1374321-01	6
MW6-GW L1374321-02	8
MW7-GW L1374321-03	10
MW5-GW L1374321-04	12
MW9-GW L1374321-05	14
MW3-GW L1374321-06	16
MW8-GW L1374321-07	18
MW4-GW L1374321-08	20
MW1-GW L1374321-09	22
Qc: Quality Control Summary	24
Volatile Organic Compounds (GC/MS) by Method 8260D	24
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	35
Gl: Glossary of Terms	37
Al: Accreditations & Locations	38
Sc: Sample Chain of Custody	39

¹ Cp
² Tc
³ Ss
⁴ Cn
⁵ Sr
⁶ Qc
⁷ Gl
⁸ Al
⁹ Sc

SAMPLE SUMMARY

MW2-GW L1374321-01 GW

Collected by
S. Eckes

Collected date/time
07/01/21 12:05

Received date/time
07/03/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1701608	1	07/09/21 19:45	07/09/21 19:45	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1703070	1	07/10/21 12:57	07/10/21 12:57	JHH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1700051	1	07/06/21 10:12	07/07/21 14:21	SHG	Mt. Juliet, TN

MW6-GW L1374321-02 GW

Collected by
S. Eckes

Collected date/time
07/01/21 14:15

Received date/time
07/03/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1701608	10	07/09/21 22:38	07/09/21 22:38	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1703971	1000	07/13/21 03:55	07/13/21 03:55	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1700051	1	07/06/21 10:12	07/07/21 14:40	SHG	Mt. Juliet, TN

MW7-GW L1374321-03 GW

Collected by
S. Eckes

Collected date/time
07/01/21 15:30

Received date/time
07/03/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1701608	5	07/09/21 22:59	07/09/21 22:59	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1703070	250	07/10/21 16:40	07/10/21 16:40	JHH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1700051	1	07/06/21 10:12	07/07/21 15:00	SHG	Mt. Juliet, TN

MW5-GW L1374321-04 GW

Collected by
S. Eckes

Collected date/time
07/01/21 16:15

Received date/time
07/03/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1701608	20	07/09/21 23:21	07/09/21 23:21	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1703070	200	07/10/21 17:00	07/10/21 17:00	JHH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1700051	1	07/06/21 10:12	07/07/21 15:19	SHG	Mt. Juliet, TN

MW9-GW L1374321-05 GW

Collected by
S. Eckes

Collected date/time
07/01/21 16:55

Received date/time
07/03/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1701608	1	07/09/21 20:07	07/09/21 20:07	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1703971	10	07/13/21 04:15	07/13/21 04:15	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1700051	1	07/06/21 10:12	07/07/21 15:38	SHG	Mt. Juliet, TN

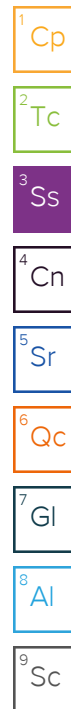
MW3-GW L1374321-06 GW

Collected by
S. Eckes

Collected date/time
07/01/21 17:25

Received date/time
07/03/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1701608	1	07/09/21 20:29	07/09/21 20:29	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1703971	50	07/13/21 04:35	07/13/21 04:35	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1702391	1.03	07/08/21 20:21	07/09/21 12:16	TMM	Mt. Juliet, TN



SAMPLE SUMMARY

MW8-GW L1374321-07 GW

Collected by
S. Eckes

Collected date/time
07/01/21 17:50

Received date/time
07/03/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1701608	1	07/09/21 20:50	07/09/21 20:50	JHH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1703971	1	07/13/21 03:35	07/13/21 03:35	JCP	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1702391	1	07/08/21 20:21	07/09/21 12:35	TMM	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

MW4-GW L1374321-08 GW

Collected by
S. Eckes

Collected date/time
07/01/21 18:30

Received date/time
07/03/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1703134	1	07/10/21 12:58	07/10/21 12:58	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1703298	100	07/11/21 20:46	07/11/21 20:46	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1702391	1	07/08/21 20:21	07/09/21 12:54	JNJ	Mt. Juliet, TN

MW1-GW L1374321-09 GW

Collected by
S. Eckes

Collected date/time
07/01/21 19:10

Received date/time
07/03/21 08:45

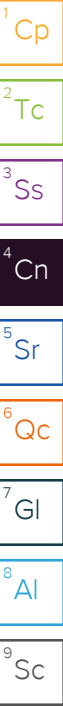
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1703134	1	07/10/21 13:18	07/10/21 13:18	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1703298	1	07/11/21 18:46	07/11/21 18:46	ACG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM	WG1702391	1	07/08/21 20:21	07/09/21 13:14	TMM	Mt. Juliet, TN

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

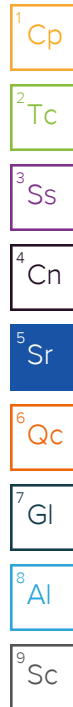


Brian Ford
Project Manager



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Acetone	ND		50.0	1	07/09/2021 19:45	WG1701608
Acrolein	ND	C3	50.0	1	07/09/2021 19:45	WG1701608
Acrylonitrile	ND		10.0	1	07/09/2021 19:45	WG1701608
Benzene	ND		1.00	1	07/09/2021 19:45	WG1701608
Bromobenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
Bromodichloromethane	ND		1.00	1	07/09/2021 19:45	WG1701608
Bromoform	ND		1.00	1	07/09/2021 19:45	WG1701608
Bromomethane	ND		5.00	1	07/09/2021 19:45	WG1701608
n-Butylbenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
sec-Butylbenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
tert-Butylbenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
Carbon tetrachloride	ND		1.00	1	07/09/2021 19:45	WG1701608
Chlorobenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
Chlorodibromomethane	ND		1.00	1	07/09/2021 19:45	WG1701608
Chloroethane	ND	J4	5.00	1	07/09/2021 19:45	WG1701608
Chloroform	ND		5.00	1	07/09/2021 19:45	WG1701608
Chloromethane	ND		2.50	1	07/09/2021 19:45	WG1701608
2-Chlorotoluene	ND		1.00	1	07/09/2021 19:45	WG1701608
4-Chlorotoluene	ND		1.00	1	07/09/2021 19:45	WG1701608
1,2-Dibromo-3-Chloropropane	ND		5.00	1	07/09/2021 19:45	WG1701608
1,2-Dibromoethane	ND		1.00	1	07/09/2021 19:45	WG1701608
Dibromomethane	ND		1.00	1	07/09/2021 19:45	WG1701608
1,2-Dichlorobenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
1,3-Dichlorobenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
1,4-Dichlorobenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
Dichlorodifluoromethane	ND		5.00	1	07/09/2021 19:45	WG1701608
1,1-Dichloroethane	ND		1.00	1	07/09/2021 19:45	WG1701608
1,2-Dichloroethane	ND		1.00	1	07/09/2021 19:45	WG1701608
1,1-Dichloroethene	ND		1.00	1	07/09/2021 19:45	WG1701608
cis-1,2-Dichloroethene	ND		1.00	1	07/09/2021 19:45	WG1701608
trans-1,2-Dichloroethene	ND		1.00	1	07/09/2021 19:45	WG1701608
1,2-Dichloropropane	ND		1.00	1	07/09/2021 19:45	WG1701608
1,1-Dichloropropene	ND		1.00	1	07/09/2021 19:45	WG1701608
1,3-Dichloropropane	ND		1.00	1	07/09/2021 19:45	WG1701608
cis-1,3-Dichloropropene	ND		1.00	1	07/09/2021 19:45	WG1701608
trans-1,3-Dichloropropene	ND		1.00	1	07/09/2021 19:45	WG1701608
2,2-Dichloropropane	ND		1.00	1	07/09/2021 19:45	WG1701608
Di-isopropyl ether	ND		1.00	1	07/09/2021 19:45	WG1701608
Ethylbenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
Hexachloro-1,3-butadiene	ND		1.00	1	07/10/2021 12:57	WG1703070
Isopropylbenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
p-Isopropyltoluene	ND		1.00	1	07/09/2021 19:45	WG1701608
2-Butanone (MEK)	ND		10.0	1	07/09/2021 19:45	WG1701608
Methylene Chloride	ND		5.00	1	07/09/2021 19:45	WG1701608
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	07/09/2021 19:45	WG1701608
Methyl tert-butyl ether	ND		1.00	1	07/09/2021 19:45	WG1701608
Naphthalene	ND		5.00	1	07/09/2021 19:45	WG1701608
n-Propylbenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
Styrene	ND		1.00	1	07/09/2021 19:45	WG1701608
1,1,1,2-Tetrachloroethane	ND		1.00	1	07/09/2021 19:45	WG1701608
1,1,2,2-Tetrachloroethane	ND		1.00	1	07/09/2021 19:45	WG1701608
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	07/09/2021 19:45	WG1701608
Tetrachloroethene	ND		1.00	1	07/09/2021 19:45	WG1701608
Toluene	ND		1.00	1	07/09/2021 19:45	WG1701608
1,2,3-Trichlorobenzene	ND	C4 J4	1.00	1	07/10/2021 12:57	WG1703070
1,2,4-Trichlorobenzene	ND	C4	1.00	1	07/10/2021 12:57	WG1703070



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	07/09/2021 19:45	WG1701608
1,1,2-Trichloroethane	ND		1.00	1	07/09/2021 19:45	WG1701608
Trichloroethene	ND		1.00	1	07/09/2021 19:45	WG1701608
Trichlorofluoromethane	ND		5.00	1	07/09/2021 19:45	WG1701608
1,2,3-Trichloropropane	ND		2.50	1	07/09/2021 19:45	WG1701608
1,2,4-Trimethylbenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
1,2,3-Trimethylbenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
1,3,5-Trimethylbenzene	ND		1.00	1	07/09/2021 19:45	WG1701608
Vinyl chloride	ND		1.00	1	07/09/2021 19:45	WG1701608
Xylenes, Total	ND		3.00	1	07/09/2021 19:45	WG1701608
(S) Toluene-d8	107		80.0-120		07/09/2021 19:45	WG1701608
(S) Toluene-d8	99.4		80.0-120		07/10/2021 12:57	WG1703070
(S) 4-Bromofluorobenzene	96.4		77.0-126		07/09/2021 19:45	WG1701608
(S) 4-Bromofluorobenzene	106		77.0-126		07/10/2021 12:57	WG1703070
(S) 1,2-Dichloroethane-d4	93.9		70.0-130		07/09/2021 19:45	WG1701608
(S) 1,2-Dichloroethane-d4	93.3		70.0-130		07/10/2021 12:57	WG1703070

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	07/07/2021 14:21	WG1700051
(S) Nitrobenzene-d5	74.8		10.0-120		07/07/2021 14:21	WG1700051

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		500	10	07/09/2021 22:38	WG1701608
Acrolein	ND	C3	500	10	07/09/2021 22:38	WG1701608
Acrylonitrile	ND		100	10	07/09/2021 22:38	WG1701608
Benzene	ND		10.0	10	07/09/2021 22:38	WG1701608
Bromobenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
Bromodichloromethane	ND		10.0	10	07/09/2021 22:38	WG1701608
Bromoform	ND		10.0	10	07/09/2021 22:38	WG1701608
Bromomethane	ND		50.0	10	07/09/2021 22:38	WG1701608
n-Butylbenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
sec-Butylbenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
tert-Butylbenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
Carbon tetrachloride	ND		10.0	10	07/09/2021 22:38	WG1701608
Chlorobenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
Chlorodibromomethane	ND		10.0	10	07/09/2021 22:38	WG1701608
Chloroethane	ND	J4	50.0	10	07/09/2021 22:38	WG1701608
Chloroform	ND		50.0	10	07/09/2021 22:38	WG1701608
Chloromethane	ND		25.0	10	07/09/2021 22:38	WG1701608
2-Chlorotoluene	ND		10.0	10	07/09/2021 22:38	WG1701608
4-Chlorotoluene	ND		10.0	10	07/09/2021 22:38	WG1701608
1,2-Dibromo-3-Chloropropane	ND		50.0	10	07/09/2021 22:38	WG1701608
1,2-Dibromoethane	ND		10.0	10	07/09/2021 22:38	WG1701608
Dibromomethane	ND		10.0	10	07/09/2021 22:38	WG1701608
1,2-Dichlorobenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
1,3-Dichlorobenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
1,4-Dichlorobenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
Dichlorodifluoromethane	ND		50.0	10	07/09/2021 22:38	WG1701608
1,1-Dichloroethane	ND		10.0	10	07/09/2021 22:38	WG1701608
1,2-Dichloroethane	ND		10.0	10	07/09/2021 22:38	WG1701608
1,1-Dichloroethene	ND		10.0	10	07/09/2021 22:38	WG1701608
cis-1,2-Dichloroethene	20200		1000	1000	07/13/2021 03:55	WG1703971
trans-1,2-Dichloroethene	159		10.0	10	07/09/2021 22:38	WG1701608
1,2-Dichloropropane	ND		10.0	10	07/09/2021 22:38	WG1701608
1,1-Dichloropropene	ND		10.0	10	07/09/2021 22:38	WG1701608
1,3-Dichloropropane	ND		10.0	10	07/09/2021 22:38	WG1701608
cis-1,3-Dichloropropene	ND		10.0	10	07/09/2021 22:38	WG1701608
trans-1,3-Dichloropropene	ND		10.0	10	07/09/2021 22:38	WG1701608
2,2-Dichloropropane	ND		10.0	10	07/09/2021 22:38	WG1701608
Di-isopropyl ether	ND		10.0	10	07/09/2021 22:38	WG1701608
Ethylbenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
Hexachloro-1,3-butadiene	ND		1000	1000	07/13/2021 03:55	WG1703971
Isopropylbenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
p-Isopropyltoluene	ND		10.0	10	07/09/2021 22:38	WG1701608
2-Butanone (MEK)	ND		100	10	07/09/2021 22:38	WG1701608
Methylene Chloride	ND		50.0	10	07/09/2021 22:38	WG1701608
4-Methyl-2-pentanone (MIBK)	ND		100	10	07/09/2021 22:38	WG1701608
Methyl tert-butyl ether	ND		10.0	10	07/09/2021 22:38	WG1701608
Naphthalene	ND		50.0	10	07/09/2021 22:38	WG1701608
n-Propylbenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
Styrene	ND		10.0	10	07/09/2021 22:38	WG1701608
1,1,1,2-Tetrachloroethane	ND		10.0	10	07/09/2021 22:38	WG1701608
1,1,2,2-Tetrachloroethane	ND		10.0	10	07/09/2021 22:38	WG1701608
1,1,2-Trichlorotrifluoroethane	ND		10.0	10	07/09/2021 22:38	WG1701608
Tetrachloroethene	31.9		10.0	10	07/09/2021 22:38	WG1701608
Toluene	ND		10.0	10	07/09/2021 22:38	WG1701608
1,2,3-Trichlorobenzene	ND		1000	1000	07/13/2021 03:55	WG1703971
1,2,4-Trichlorobenzene	ND		1000	1000	07/13/2021 03:55	WG1703971

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		10.0	10	07/09/2021 22:38	WG1701608
1,1,2-Trichloroethane	ND		10.0	10	07/09/2021 22:38	WG1701608
Trichloroethene	174		10.0	10	07/09/2021 22:38	WG1701608
Trichlorofluoromethane	ND		50.0	10	07/09/2021 22:38	WG1701608
1,2,3-Trichloropropane	ND		25.0	10	07/09/2021 22:38	WG1701608
1,2,4-Trimethylbenzene	26.3		10.0	10	07/09/2021 22:38	WG1701608
1,2,3-Trimethylbenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
1,3,5-Trimethylbenzene	ND		10.0	10	07/09/2021 22:38	WG1701608
Vinyl chloride	24600		1000	1000	07/13/2021 03:55	WG1703971
Xylenes, Total	ND		30.0	10	07/09/2021 22:38	WG1701608
(S) Toluene-d8	107		80.0-120		07/09/2021 22:38	WG1701608
(S) Toluene-d8	102		80.0-120		07/13/2021 03:55	WG1703971
(S) 4-Bromofluorobenzene	98.6		77.0-126		07/09/2021 22:38	WG1701608
(S) 4-Bromofluorobenzene	94.7		77.0-126		07/13/2021 03:55	WG1703971
(S) 1,2-Dichloroethane-d4	95.9		70.0-130		07/09/2021 22:38	WG1701608
(S) 1,2-Dichloroethane-d4	114		70.0-130		07/13/2021 03:55	WG1703971

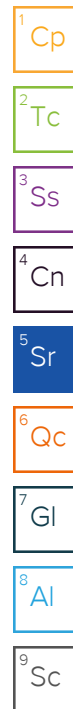
Sample Narrative:

L1374321-02 WG1701608, WG1703971: Not all compounds reportable at lower dilution.

L1374321-02 WG1701608, WG1703971: Cannot be reanalyzed at lower dilution due to high levels of target analytes.

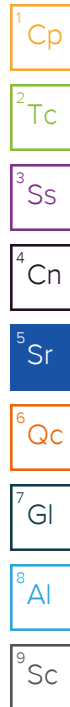
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	07/07/2021 14:40	WG1700051
(S) Nitrobenzene-d5	39.7		10.0-120		07/07/2021 14:40	WG1700051



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		250	5	07/09/2021 22:59	WG1701608
Acrolein	ND	C3	250	5	07/09/2021 22:59	WG1701608
Acrylonitrile	ND		50.0	5	07/09/2021 22:59	WG1701608
Benzene	ND		5.00	5	07/09/2021 22:59	WG1701608
Bromobenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
Bromodichloromethane	ND		5.00	5	07/09/2021 22:59	WG1701608
Bromoform	ND		5.00	5	07/09/2021 22:59	WG1701608
Bromomethane	ND		25.0	5	07/09/2021 22:59	WG1701608
n-Butylbenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
sec-Butylbenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
tert-Butylbenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
Carbon tetrachloride	ND		5.00	5	07/09/2021 22:59	WG1701608
Chlorobenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
Chlorodibromomethane	ND		5.00	5	07/09/2021 22:59	WG1701608
Chloroethane	ND	J4	25.0	5	07/09/2021 22:59	WG1701608
Chloroform	ND		25.0	5	07/09/2021 22:59	WG1701608
Chloromethane	ND		12.5	5	07/09/2021 22:59	WG1701608
2-Chlorotoluene	ND		5.00	5	07/09/2021 22:59	WG1701608
4-Chlorotoluene	ND		5.00	5	07/09/2021 22:59	WG1701608
1,2-Dibromo-3-Chloropropane	ND		25.0	5	07/09/2021 22:59	WG1701608
1,2-Dibromoethane	ND		5.00	5	07/09/2021 22:59	WG1701608
Dibromomethane	ND		5.00	5	07/09/2021 22:59	WG1701608
1,2-Dichlorobenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
1,3-Dichlorobenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
1,4-Dichlorobenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
Dichlorodifluoromethane	ND		25.0	5	07/09/2021 22:59	WG1701608
1,1-Dichloroethane	ND		5.00	5	07/09/2021 22:59	WG1701608
1,2-Dichloroethane	ND		5.00	5	07/09/2021 22:59	WG1701608
1,1-Dichloroethene	ND		5.00	5	07/09/2021 22:59	WG1701608
cis-1,2-Dichloroethene	3610		250	250	07/10/2021 16:40	WG1703070
trans-1,2-Dichloroethene	12.4		5.00	5	07/09/2021 22:59	WG1701608
1,2-Dichloropropane	ND		5.00	5	07/09/2021 22:59	WG1701608
1,1-Dichloropropene	ND		5.00	5	07/09/2021 22:59	WG1701608
1,3-Dichloropropane	ND		5.00	5	07/09/2021 22:59	WG1701608
cis-1,3-Dichloropropene	ND		5.00	5	07/09/2021 22:59	WG1701608
trans-1,3-Dichloropropene	ND		5.00	5	07/09/2021 22:59	WG1701608
2,2-Dichloropropane	ND		5.00	5	07/09/2021 22:59	WG1701608
Di-isopropyl ether	ND		5.00	5	07/09/2021 22:59	WG1701608
Ethylbenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
Hexachloro-1,3-butadiene	ND		250	250	07/10/2021 16:40	WG1703070
Isopropylbenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
p-Isopropyltoluene	ND		5.00	5	07/09/2021 22:59	WG1701608
2-Butanone (MEK)	ND		50.0	5	07/09/2021 22:59	WG1701608
Methylene Chloride	ND		25.0	5	07/09/2021 22:59	WG1701608
4-Methyl-2-pentanone (MIBK)	ND		50.0	5	07/09/2021 22:59	WG1701608
Methyl tert-butyl ether	ND		5.00	5	07/09/2021 22:59	WG1701608
Naphthalene	ND		25.0	5	07/09/2021 22:59	WG1701608
n-Propylbenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
Styrene	ND		5.00	5	07/09/2021 22:59	WG1701608
1,1,1,2-Tetrachloroethane	ND		5.00	5	07/09/2021 22:59	WG1701608
1,1,2,2-Tetrachloroethane	ND		5.00	5	07/09/2021 22:59	WG1701608
1,1,2-Trichlorotrifluoroethane	ND		5.00	5	07/09/2021 22:59	WG1701608
Tetrachloroethene	9670		250	250	07/10/2021 16:40	WG1703070
Toluene	ND		5.00	5	07/09/2021 22:59	WG1701608
1,2,3-Trichlorobenzene	ND	C4 J4	250	250	07/10/2021 16:40	WG1703070
1,2,4-Trichlorobenzene	ND	C4	250	250	07/10/2021 16:40	WG1703070



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		5.00	5	07/09/2021 22:59	WG1701608
1,1,2-Trichloroethane	ND		5.00	5	07/09/2021 22:59	WG1701608
Trichloroethene	2540		250	250	07/10/2021 16:40	WG1703070
Trichlorofluoromethane	ND		25.0	5	07/09/2021 22:59	WG1701608
1,2,3-Trichloropropane	ND		12.5	5	07/09/2021 22:59	WG1701608
1,2,4-Trimethylbenzene	6.68		5.00	5	07/09/2021 22:59	WG1701608
1,2,3-Trimethylbenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
1,3,5-Trimethylbenzene	ND		5.00	5	07/09/2021 22:59	WG1701608
Vinyl chloride	7580		250	250	07/10/2021 16:40	WG1703070
Xylenes, Total	ND		15.0	5	07/09/2021 22:59	WG1701608
(S) Toluene-d8	111		80.0-120		07/09/2021 22:59	WG1701608
(S) Toluene-d8	99.9		80.0-120		07/10/2021 16:40	WG1703070
(S) 4-Bromofluorobenzene	97.5		77.0-126		07/09/2021 22:59	WG1701608
(S) 4-Bromofluorobenzene	105		77.0-126		07/10/2021 16:40	WG1703070
(S) 1,2-Dichloroethane-d4	94.4		70.0-130		07/09/2021 22:59	WG1701608
(S) 1,2-Dichloroethane-d4	91.9		70.0-130		07/10/2021 16:40	WG1703070

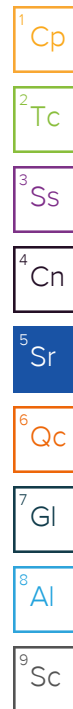
Sample Narrative:

L1374321-03 WG1701608, WG1703070: Not all compounds reportable at lower dilution.

L1374321-03 WG1701608, WG1703070: Cannot be reanalyzed at lower dilution due to high levels of target analytes.

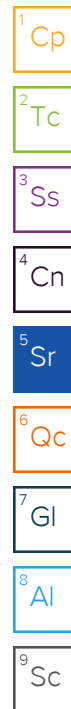
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	07/07/2021 15:00	WG1700051
(S) Nitrobenzene-d5	56.5		10.0-120		07/07/2021 15:00	WG1700051



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		1000	20	07/09/2021 23:21	WG1701608
Acrolein	ND	C3	1000	20	07/09/2021 23:21	WG1701608
Acrylonitrile	ND		200	20	07/09/2021 23:21	WG1701608
Benzene	ND		20.0	20	07/09/2021 23:21	WG1701608
Bromobenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
Bromodichloromethane	ND		20.0	20	07/09/2021 23:21	WG1701608
Bromoform	ND		20.0	20	07/09/2021 23:21	WG1701608
Bromomethane	ND		100	20	07/09/2021 23:21	WG1701608
n-Butylbenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
sec-Butylbenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
tert-Butylbenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
Carbon tetrachloride	ND		20.0	20	07/09/2021 23:21	WG1701608
Chlorobenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
Chlorodibromomethane	ND		20.0	20	07/09/2021 23:21	WG1701608
Chloroethane	ND	J4	100	20	07/09/2021 23:21	WG1701608
Chloroform	ND		100	20	07/09/2021 23:21	WG1701608
Chloromethane	ND		50.0	20	07/09/2021 23:21	WG1701608
2-Chlorotoluene	ND		20.0	20	07/09/2021 23:21	WG1701608
4-Chlorotoluene	ND		20.0	20	07/09/2021 23:21	WG1701608
1,2-Dibromo-3-Chloropropane	ND		100	20	07/09/2021 23:21	WG1701608
1,2-Dibromoethane	ND		20.0	20	07/09/2021 23:21	WG1701608
Dibromomethane	ND		20.0	20	07/09/2021 23:21	WG1701608
1,2-Dichlorobenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
1,3-Dichlorobenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
1,4-Dichlorobenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
Dichlorodifluoromethane	ND		100	20	07/09/2021 23:21	WG1701608
1,1-Dichloroethane	ND		20.0	20	07/09/2021 23:21	WG1701608
1,2-Dichloroethane	ND		20.0	20	07/09/2021 23:21	WG1701608
1,1-Dichloroethene	ND		20.0	20	07/09/2021 23:21	WG1701608
cis-1,2-Dichloroethene	19300		200	200	07/10/2021 17:00	WG1703070
trans-1,2-Dichloroethene	67.0		20.0	20	07/09/2021 23:21	WG1701608
1,2-Dichloropropane	ND		20.0	20	07/09/2021 23:21	WG1701608
1,1-Dichloropropene	ND		20.0	20	07/09/2021 23:21	WG1701608
1,3-Dichloropropane	ND		20.0	20	07/09/2021 23:21	WG1701608
cis-1,3-Dichloropropene	ND		20.0	20	07/09/2021 23:21	WG1701608
trans-1,3-Dichloropropene	ND		20.0	20	07/09/2021 23:21	WG1701608
2,2-Dichloropropane	ND		20.0	20	07/09/2021 23:21	WG1701608
Di-isopropyl ether	ND		20.0	20	07/09/2021 23:21	WG1701608
Ethylbenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
Hexachloro-1,3-butadiene	ND		200	200	07/10/2021 17:00	WG1703070
Isopropylbenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
p-Isopropyltoluene	ND		20.0	20	07/09/2021 23:21	WG1701608
2-Butanone (MEK)	ND		200	20	07/09/2021 23:21	WG1701608
Methylene Chloride	ND		100	20	07/09/2021 23:21	WG1701608
4-Methyl-2-pentanone (MIBK)	ND		200	20	07/09/2021 23:21	WG1701608
Methyl tert-butyl ether	ND		20.0	20	07/09/2021 23:21	WG1701608
Naphthalene	ND		100	20	07/09/2021 23:21	WG1701608
n-Propylbenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
Styrene	ND		20.0	20	07/09/2021 23:21	WG1701608
1,1,1,2-Tetrachloroethane	ND		20.0	20	07/09/2021 23:21	WG1701608
1,1,2,2-Tetrachloroethane	ND		20.0	20	07/09/2021 23:21	WG1701608
1,1,2-Trichlorotrifluoroethane	ND		20.0	20	07/09/2021 23:21	WG1701608
Tetrachloroethene	3490		20.0	20	07/09/2021 23:21	WG1701608
Toluene	ND		20.0	20	07/09/2021 23:21	WG1701608
1,2,3-Trichlorobenzene	ND	C4 J4	200	200	07/10/2021 17:00	WG1703070
1,2,4-Trichlorobenzene	ND	C4	200	200	07/10/2021 17:00	WG1703070



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		20.0	20	07/09/2021 23:21	WG1701608
1,1,2-Trichloroethane	ND		20.0	20	07/09/2021 23:21	WG1701608
Trichloroethene	1410		20.0	20	07/09/2021 23:21	WG1701608
Trichlorofluoromethane	ND		100	20	07/09/2021 23:21	WG1701608
1,2,3-Trichloropropane	ND		50.0	20	07/09/2021 23:21	WG1701608
1,2,4-Trimethylbenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
1,2,3-Trimethylbenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
1,3,5-Trimethylbenzene	ND		20.0	20	07/09/2021 23:21	WG1701608
Vinyl chloride	15800		200	200	07/10/2021 17:00	WG1703070
Xylenes, Total	ND		60.0	20	07/09/2021 23:21	WG1701608
(S) Toluene-d8	107		80.0-120		07/09/2021 23:21	WG1701608
(S) Toluene-d8	99.2		80.0-120		07/10/2021 17:00	WG1703070
(S) 4-Bromofluorobenzene	97.0		77.0-126		07/09/2021 23:21	WG1701608
(S) 4-Bromofluorobenzene	105		77.0-126		07/10/2021 17:00	WG1703070
(S) 1,2-Dichloroethane-d4	94.5		70.0-130		07/09/2021 23:21	WG1701608
(S) 1,2-Dichloroethane-d4	92.8		70.0-130		07/10/2021 17:00	WG1703070

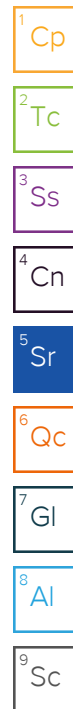
Sample Narrative:

L1374321-04 WG1701608, WG1703070: Not all compounds reportable at lower dilution.

L1374321-04 WG1701608, WG1703070: Cannot be reanalyzed at lower dilution due to high levels of target analytes.

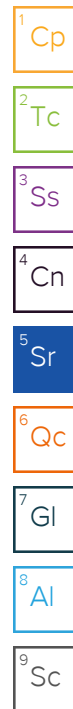
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	07/07/2021 15:19	WG1700051
(S) Nitrobenzene-d5	65.8		10.0-120		07/07/2021 15:19	WG1700051



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		50.0	1	07/09/2021 20:07	WG1701608
Acrolein	ND	C3	50.0	1	07/09/2021 20:07	WG1701608
Acrylonitrile	ND		10.0	1	07/09/2021 20:07	WG1701608
Benzene	ND		1.00	1	07/09/2021 20:07	WG1701608
Bromobenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
Bromodichloromethane	ND		1.00	1	07/09/2021 20:07	WG1701608
Bromoform	ND		1.00	1	07/09/2021 20:07	WG1701608
Bromomethane	ND		5.00	1	07/09/2021 20:07	WG1701608
n-Butylbenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
sec-Butylbenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
tert-Butylbenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
Carbon tetrachloride	ND		1.00	1	07/09/2021 20:07	WG1701608
Chlorobenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
Chlorodibromomethane	ND		1.00	1	07/09/2021 20:07	WG1701608
Chloroethane	ND	J4	5.00	1	07/09/2021 20:07	WG1701608
Chloroform	ND		5.00	1	07/09/2021 20:07	WG1701608
Chloromethane	ND		2.50	1	07/09/2021 20:07	WG1701608
2-Chlorotoluene	ND		1.00	1	07/09/2021 20:07	WG1701608
4-Chlorotoluene	ND		1.00	1	07/09/2021 20:07	WG1701608
1,2-Dibromo-3-Chloropropane	ND		5.00	1	07/09/2021 20:07	WG1701608
1,2-Dibromoethane	ND		1.00	1	07/09/2021 20:07	WG1701608
Dibromomethane	ND		1.00	1	07/09/2021 20:07	WG1701608
1,2-Dichlorobenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
1,3-Dichlorobenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
1,4-Dichlorobenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
Dichlorodifluoromethane	ND		5.00	1	07/09/2021 20:07	WG1701608
1,1-Dichloroethane	ND		1.00	1	07/09/2021 20:07	WG1701608
1,2-Dichloroethane	ND		1.00	1	07/09/2021 20:07	WG1701608
1,1-Dichloroethene	ND		1.00	1	07/09/2021 20:07	WG1701608
cis-1,2-Dichloroethene	74.0		1.00	1	07/09/2021 20:07	WG1701608
trans-1,2-Dichloroethene	ND		1.00	1	07/09/2021 20:07	WG1701608
1,2-Dichloropropane	ND		1.00	1	07/09/2021 20:07	WG1701608
1,1-Dichloropropene	ND		1.00	1	07/09/2021 20:07	WG1701608
1,3-Dichloropropane	ND		1.00	1	07/09/2021 20:07	WG1701608
cis-1,3-Dichloropropene	ND		1.00	1	07/09/2021 20:07	WG1701608
trans-1,3-Dichloropropene	ND		1.00	1	07/09/2021 20:07	WG1701608
2,2-Dichloropropane	ND		1.00	1	07/09/2021 20:07	WG1701608
Di-isopropyl ether	ND		1.00	1	07/09/2021 20:07	WG1701608
Ethylbenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
Hexachloro-1,3-butadiene	ND		10.0	10	07/13/2021 04:15	WG1703971
Isopropylbenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
p-Isopropyltoluene	ND		1.00	1	07/09/2021 20:07	WG1701608
2-Butanone (MEK)	ND		10.0	1	07/09/2021 20:07	WG1701608
Methylene Chloride	ND		5.00	1	07/09/2021 20:07	WG1701608
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	07/09/2021 20:07	WG1701608
Methyl tert-butyl ether	ND		1.00	1	07/09/2021 20:07	WG1701608
Naphthalene	ND		5.00	1	07/09/2021 20:07	WG1701608
n-Propylbenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
Styrene	ND		1.00	1	07/09/2021 20:07	WG1701608
1,1,1,2-Tetrachloroethane	ND		1.00	1	07/09/2021 20:07	WG1701608
1,1,2,2-Tetrachloroethane	ND		1.00	1	07/09/2021 20:07	WG1701608
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	07/09/2021 20:07	WG1701608
Tetrachloroethene	360		10.0	10	07/13/2021 04:15	WG1703971
Toluene	ND		1.00	1	07/09/2021 20:07	WG1701608
1,2,3-Trichlorobenzene	ND		10.0	10	07/13/2021 04:15	WG1703971
1,2,4-Trichlorobenzene	ND		10.0	10	07/13/2021 04:15	WG1703971



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	07/09/2021 20:07	WG1701608
1,1,2-Trichloroethane	ND		1.00	1	07/09/2021 20:07	WG1701608
Trichloroethene	31.1		1.00	1	07/09/2021 20:07	WG1701608
Trichlorofluoromethane	ND		5.00	1	07/09/2021 20:07	WG1701608
1,2,3-Trichloropropane	ND		2.50	1	07/09/2021 20:07	WG1701608
1,2,4-Trimethylbenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
1,2,3-Trimethylbenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
1,3,5-Trimethylbenzene	ND		1.00	1	07/09/2021 20:07	WG1701608
Vinyl chloride	32.2		1.00	1	07/09/2021 20:07	WG1701608
Xylenes, Total	ND		3.00	1	07/09/2021 20:07	WG1701608
(S) Toluene-d8	108		80.0-120		07/09/2021 20:07	WG1701608
(S) Toluene-d8	101		80.0-120		07/13/2021 04:15	WG1703971
(S) 4-Bromofluorobenzene	96.5		77.0-126		07/09/2021 20:07	WG1701608
(S) 4-Bromofluorobenzene	90.9		77.0-126		07/13/2021 04:15	WG1703971
(S) 1,2-Dichloroethane-d4	95.5		70.0-130		07/09/2021 20:07	WG1701608
(S) 1,2-Dichloroethane-d4	113		70.0-130		07/13/2021 04:15	WG1703971

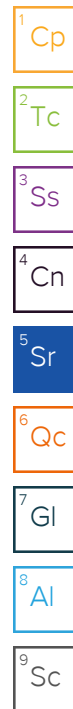
Sample Narrative:

L1374321-05 WG1701608, WG1703971: Not all compounds reportable at lower dilution.

L1374321-05 WG1701608, WG1703971: Cannot be reanalyzed at lower dilution due to high levels of target analytes.

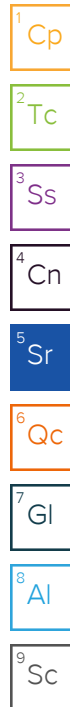
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	07/07/2021 15:38	WG1700051
(S) Nitrobenzene-d5	62.8		10.0-120		07/07/2021 15:38	WG1700051



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		50.0	1	07/09/2021 20:29	WG1701608
Acrolein	ND	C3	50.0	1	07/09/2021 20:29	WG1701608
Acrylonitrile	ND		10.0	1	07/09/2021 20:29	WG1701608
Benzene	ND		1.00	1	07/09/2021 20:29	WG1701608
Bromobenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
Bromodichloromethane	ND		1.00	1	07/09/2021 20:29	WG1701608
Bromoform	ND		1.00	1	07/09/2021 20:29	WG1701608
Bromomethane	ND		5.00	1	07/09/2021 20:29	WG1701608
n-Butylbenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
sec-Butylbenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
tert-Butylbenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
Carbon tetrachloride	ND		1.00	1	07/09/2021 20:29	WG1701608
Chlorobenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
Chlorodibromomethane	ND		1.00	1	07/09/2021 20:29	WG1701608
Chloroethane	ND	J4	5.00	1	07/09/2021 20:29	WG1701608
Chloroform	ND		5.00	1	07/09/2021 20:29	WG1701608
Chloromethane	ND		2.50	1	07/09/2021 20:29	WG1701608
2-Chlorotoluene	ND		1.00	1	07/09/2021 20:29	WG1701608
4-Chlorotoluene	ND		1.00	1	07/09/2021 20:29	WG1701608
1,2-Dibromo-3-Chloropropane	ND		5.00	1	07/09/2021 20:29	WG1701608
1,2-Dibromoethane	ND		1.00	1	07/09/2021 20:29	WG1701608
Dibromomethane	ND		1.00	1	07/09/2021 20:29	WG1701608
1,2-Dichlorobenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
1,3-Dichlorobenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
1,4-Dichlorobenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
Dichlorodifluoromethane	ND		5.00	1	07/09/2021 20:29	WG1701608
1,1-Dichloroethane	ND		1.00	1	07/09/2021 20:29	WG1701608
1,2-Dichloroethane	ND		1.00	1	07/09/2021 20:29	WG1701608
1,1-Dichloroethene	ND		1.00	1	07/09/2021 20:29	WG1701608
cis-1,2-Dichloroethene	90.5		1.00	1	07/09/2021 20:29	WG1701608
trans-1,2-Dichloroethene	ND		1.00	1	07/09/2021 20:29	WG1701608
1,2-Dichloropropane	ND		1.00	1	07/09/2021 20:29	WG1701608
1,1-Dichloropropene	ND		1.00	1	07/09/2021 20:29	WG1701608
1,3-Dichloropropane	ND		1.00	1	07/09/2021 20:29	WG1701608
cis-1,3-Dichloropropene	ND		1.00	1	07/09/2021 20:29	WG1701608
trans-1,3-Dichloropropene	ND		1.00	1	07/09/2021 20:29	WG1701608
2,2-Dichloropropane	ND		1.00	1	07/09/2021 20:29	WG1701608
Di-isopropyl ether	ND		1.00	1	07/09/2021 20:29	WG1701608
Ethylbenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
Hexachloro-1,3-butadiene	ND		50.0	50	07/13/2021 04:35	WG1703971
Isopropylbenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
p-Isopropyltoluene	ND		1.00	1	07/09/2021 20:29	WG1701608
2-Butanone (MEK)	ND		10.0	1	07/09/2021 20:29	WG1701608
Methylene Chloride	ND		5.00	1	07/09/2021 20:29	WG1701608
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	07/09/2021 20:29	WG1701608
Methyl tert-butyl ether	ND		1.00	1	07/09/2021 20:29	WG1701608
Naphthalene	ND		5.00	1	07/09/2021 20:29	WG1701608
n-Propylbenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
Styrene	ND		1.00	1	07/09/2021 20:29	WG1701608
1,1,1,2-Tetrachloroethane	ND		1.00	1	07/09/2021 20:29	WG1701608
1,1,2,2-Tetrachloroethane	ND		1.00	1	07/09/2021 20:29	WG1701608
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	07/09/2021 20:29	WG1701608
Tetrachloroethene	3150		50.0	50	07/13/2021 04:35	WG1703971
Toluene	ND		1.00	1	07/09/2021 20:29	WG1701608
1,2,3-Trichlorobenzene	ND		50.0	50	07/13/2021 04:35	WG1703971
1,2,4-Trichlorobenzene	ND		50.0	50	07/13/2021 04:35	WG1703971



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	07/09/2021 20:29	WG1701608
1,1,2-Trichloroethane	ND		1.00	1	07/09/2021 20:29	WG1701608
Trichloroethene	333		50.0	50	07/13/2021 04:35	WG1703971
Trichlorofluoromethane	ND		5.00	1	07/09/2021 20:29	WG1701608
1,2,3-Trichloropropane	ND		2.50	1	07/09/2021 20:29	WG1701608
1,2,4-Trimethylbenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
1,2,3-Trimethylbenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
1,3,5-Trimethylbenzene	ND		1.00	1	07/09/2021 20:29	WG1701608
Vinyl chloride	59.3		1.00	1	07/09/2021 20:29	WG1701608
Xylenes, Total	ND		3.00	1	07/09/2021 20:29	WG1701608
(S) Toluene-d8	111		80.0-120		07/09/2021 20:29	WG1701608
(S) Toluene-d8	99.7		80.0-120		07/13/2021 04:35	WG1703971
(S) 4-Bromofluorobenzene	98.4		77.0-126		07/09/2021 20:29	WG1701608
(S) 4-Bromofluorobenzene	95.8		77.0-126		07/13/2021 04:35	WG1703971
(S) 1,2-Dichloroethane-d4	94.4		70.0-130		07/09/2021 20:29	WG1701608
(S) 1,2-Dichloroethane-d4	111		70.0-130		07/13/2021 04:35	WG1703971

Sample Narrative:

L1374321-06 WG1701608, WG1703971: Not all compounds reportable at lower dilution.
L1374321-06 WG1701608, WG1703971: Cannot be reanalyzed at lower dilution due to high levels of target analytes.

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.412	1.03	07/09/2021 12:16	WG1702391
(S) Nitrobenzene-d5	87.9		10.0-120		07/09/2021 12:16	WG1702391

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

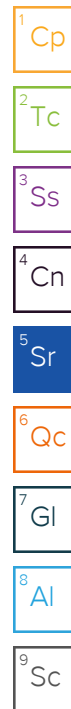
7Gl

8Al

9Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		50.0	1	07/09/2021 20:50	WG1701608
Acrolein	ND	C3	50.0	1	07/09/2021 20:50	WG1701608
Acrylonitrile	ND		10.0	1	07/09/2021 20:50	WG1701608
Benzene	ND		1.00	1	07/09/2021 20:50	WG1701608
Bromobenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
Bromodichloromethane	ND		1.00	1	07/09/2021 20:50	WG1701608
Bromoform	ND		1.00	1	07/09/2021 20:50	WG1701608
Bromomethane	ND		5.00	1	07/09/2021 20:50	WG1701608
n-Butylbenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
sec-Butylbenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
tert-Butylbenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
Carbon tetrachloride	ND		1.00	1	07/09/2021 20:50	WG1701608
Chlorobenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
Chlorodibromomethane	ND		1.00	1	07/09/2021 20:50	WG1701608
Chloroethane	ND	J4	5.00	1	07/09/2021 20:50	WG1701608
Chloroform	ND		5.00	1	07/09/2021 20:50	WG1701608
Chloromethane	ND		2.50	1	07/09/2021 20:50	WG1701608
2-Chlorotoluene	ND		1.00	1	07/09/2021 20:50	WG1701608
4-Chlorotoluene	ND		1.00	1	07/09/2021 20:50	WG1701608
1,2-Dibromo-3-Chloropropane	ND		5.00	1	07/09/2021 20:50	WG1701608
1,2-Dibromoethane	ND		1.00	1	07/09/2021 20:50	WG1701608
Dibromomethane	ND		1.00	1	07/09/2021 20:50	WG1701608
1,2-Dichlorobenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
1,3-Dichlorobenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
1,4-Dichlorobenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
Dichlorodifluoromethane	ND		5.00	1	07/09/2021 20:50	WG1701608
1,1-Dichloroethane	ND		1.00	1	07/09/2021 20:50	WG1701608
1,2-Dichloroethane	ND		1.00	1	07/09/2021 20:50	WG1701608
1,1-Dichloroethene	ND		1.00	1	07/09/2021 20:50	WG1701608
cis-1,2-Dichloroethene	43.9		1.00	1	07/09/2021 20:50	WG1701608
trans-1,2-Dichloroethene	ND		1.00	1	07/09/2021 20:50	WG1701608
1,2-Dichloropropane	ND		1.00	1	07/09/2021 20:50	WG1701608
1,1-Dichloropropene	ND		1.00	1	07/09/2021 20:50	WG1701608
1,3-Dichloropropane	ND		1.00	1	07/09/2021 20:50	WG1701608
cis-1,3-Dichloropropene	ND		1.00	1	07/09/2021 20:50	WG1701608
trans-1,3-Dichloropropene	ND		1.00	1	07/09/2021 20:50	WG1701608
2,2-Dichloropropane	ND		1.00	1	07/09/2021 20:50	WG1701608
Di-isopropyl ether	ND		1.00	1	07/09/2021 20:50	WG1701608
Ethylbenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
Hexachloro-1,3-butadiene	ND		1.00	1	07/13/2021 03:35	WG1703971
Isopropylbenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
p-Isopropyltoluene	ND		1.00	1	07/09/2021 20:50	WG1701608
2-Butanone (MEK)	ND		10.0	1	07/09/2021 20:50	WG1701608
Methylene Chloride	ND		5.00	1	07/09/2021 20:50	WG1701608
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	07/09/2021 20:50	WG1701608
Methyl tert-butyl ether	ND		1.00	1	07/09/2021 20:50	WG1701608
Naphthalene	ND		5.00	1	07/09/2021 20:50	WG1701608
n-Propylbenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
Styrene	ND		1.00	1	07/09/2021 20:50	WG1701608
1,1,1,2-Tetrachloroethane	ND		1.00	1	07/09/2021 20:50	WG1701608
1,1,2,2-Tetrachloroethane	ND		1.00	1	07/09/2021 20:50	WG1701608
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	07/09/2021 20:50	WG1701608
Tetrachloroethene	8.76		1.00	1	07/13/2021 03:35	WG1703971
Toluene	ND		1.00	1	07/09/2021 20:50	WG1701608
1,2,3-Trichlorobenzene	ND		1.00	1	07/13/2021 03:35	WG1703971
1,2,4-Trichlorobenzene	ND		1.00	1	07/13/2021 03:35	WG1703971



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	07/09/2021 20:50	WG1701608
1,1,2-Trichloroethane	ND		1.00	1	07/09/2021 20:50	WG1701608
Trichloroethene	3.79		1.00	1	07/13/2021 03:35	WG1703971
Trichlorofluoromethane	ND		5.00	1	07/09/2021 20:50	WG1701608
1,2,3-Trichloropropane	ND		2.50	1	07/09/2021 20:50	WG1701608
1,2,4-Trimethylbenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
1,2,3-Trimethylbenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
1,3,5-Trimethylbenzene	ND		1.00	1	07/09/2021 20:50	WG1701608
Vinyl chloride	42.8		1.00	1	07/09/2021 20:50	WG1701608
Xylenes, Total	ND		3.00	1	07/09/2021 20:50	WG1701608
(S) Toluene-d8	108		80.0-120		07/09/2021 20:50	WG1701608
(S) Toluene-d8	104		80.0-120		07/13/2021 03:35	WG1703971
(S) 4-Bromofluorobenzene	96.8		77.0-126		07/09/2021 20:50	WG1701608
(S) 4-Bromofluorobenzene	91.9		77.0-126		07/13/2021 03:35	WG1703971
(S) 1,2-Dichloroethane-d4	94.4		70.0-130		07/09/2021 20:50	WG1701608
(S) 1,2-Dichloroethane-d4	114		70.0-130		07/13/2021 03:35	WG1703971

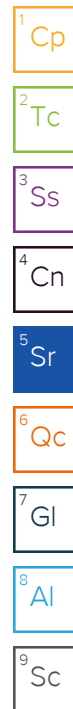
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	07/09/2021 12:35	WG1702391
(S) Nitrobenzene-d5	95.0		10.0-120		07/09/2021 12:35	WG1702391

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	ND		50.0	1	07/10/2021 12:58	WG1703134
Acrolein	ND		50.0	1	07/10/2021 12:58	WG1703134
Acrylonitrile	ND		10.0	1	07/10/2021 12:58	WG1703134
Benzene	ND		1.00	1	07/10/2021 12:58	WG1703134
Bromobenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
Bromodichloromethane	ND		1.00	1	07/10/2021 12:58	WG1703134
Bromoform	ND		1.00	1	07/10/2021 12:58	WG1703134
Bromomethane	ND		5.00	1	07/10/2021 12:58	WG1703134
n-Butylbenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
sec-Butylbenzene	1.56		1.00	1	07/10/2021 12:58	WG1703134
tert-Butylbenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
Carbon tetrachloride	ND		1.00	1	07/10/2021 12:58	WG1703134
Chlorobenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
Chlorodibromomethane	ND		1.00	1	07/10/2021 12:58	WG1703134
Chloroethane	ND		5.00	1	07/10/2021 12:58	WG1703134
Chloroform	ND		5.00	1	07/10/2021 12:58	WG1703134
Chloromethane	ND		2.50	1	07/10/2021 12:58	WG1703134
2-Chlorotoluene	ND		1.00	1	07/10/2021 12:58	WG1703134
4-Chlorotoluene	ND		1.00	1	07/10/2021 12:58	WG1703134
1,2-Dibromo-3-Chloropropane	ND		5.00	1	07/10/2021 12:58	WG1703134
1,2-Dibromoethane	ND		1.00	1	07/10/2021 12:58	WG1703134
Dibromomethane	ND		1.00	1	07/10/2021 12:58	WG1703134
1,2-Dichlorobenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
1,3-Dichlorobenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
1,4-Dichlorobenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
Dichlorodifluoromethane	ND		5.00	1	07/10/2021 12:58	WG1703134
1,1-Dichloroethane	ND		1.00	1	07/10/2021 12:58	WG1703134
1,2-Dichloroethane	ND		1.00	1	07/10/2021 12:58	WG1703134
1,1-Dichloroethene	2.46		1.00	1	07/10/2021 12:58	WG1703134
cis-1,2-Dichloroethene	907		100	100	07/11/2021 20:46	WG1703298
trans-1,2-Dichloroethene	17.4		1.00	1	07/10/2021 12:58	WG1703134
1,2-Dichloropropane	ND		1.00	1	07/10/2021 12:58	WG1703134
1,1-Dichloropropene	ND		1.00	1	07/10/2021 12:58	WG1703134
1,3-Dichloropropane	ND		1.00	1	07/10/2021 12:58	WG1703134
cis-1,3-Dichloropropene	ND		1.00	1	07/10/2021 12:58	WG1703134
trans-1,3-Dichloropropene	ND		1.00	1	07/10/2021 12:58	WG1703134
2,2-Dichloropropane	ND		1.00	1	07/10/2021 12:58	WG1703134
Di-isopropyl ether	ND		1.00	1	07/10/2021 12:58	WG1703134
Ethylbenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
Hexachloro-1,3-butadiene	ND		1.00	1	07/10/2021 12:58	WG1703134
Isopropylbenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
p-Isopropyltoluene	ND		1.00	1	07/10/2021 12:58	WG1703134
2-Butanone (MEK)	ND		10.0	1	07/10/2021 12:58	WG1703134
Methylene Chloride	ND		5.00	1	07/10/2021 12:58	WG1703134
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	07/10/2021 12:58	WG1703134
Methyl tert-butyl ether	ND		1.00	1	07/10/2021 12:58	WG1703134
Naphthalene	ND		5.00	1	07/10/2021 12:58	WG1703134
n-Propylbenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
Styrene	ND		1.00	1	07/10/2021 12:58	WG1703134
1,1,1,2-Tetrachloroethane	ND		1.00	1	07/10/2021 12:58	WG1703134
1,1,2,2-Tetrachloroethane	ND		1.00	1	07/10/2021 12:58	WG1703134
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	07/10/2021 12:58	WG1703134
Tetrachloroethene	1840		100	100	07/11/2021 20:46	WG1703298
Toluene	ND		1.00	1	07/10/2021 12:58	WG1703134
1,2,3-Trichlorobenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
1,2,4-Trichlorobenzene	ND		1.00	1	07/10/2021 12:58	WG1703134



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	07/10/2021 12:58	WG1703134
1,1,2-Trichloroethane	ND		1.00	1	07/10/2021 12:58	WG1703134
Trichloroethene	1710		100	100	07/11/2021 20:46	WG1703298
Trichlorofluoromethane	ND		5.00	1	07/10/2021 12:58	WG1703134
1,2,3-Trichloropropane	ND		2.50	1	07/10/2021 12:58	WG1703134
1,2,4-Trimethylbenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
1,2,3-Trimethylbenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
1,3,5-Trimethylbenzene	ND		1.00	1	07/10/2021 12:58	WG1703134
Vinyl chloride	32.0		1.00	1	07/10/2021 12:58	WG1703134
Xylenes, Total	ND		3.00	1	07/10/2021 12:58	WG1703134
(S) Toluene-d8	98.3		80.0-120		07/10/2021 12:58	WG1703134
(S) Toluene-d8	96.5		80.0-120		07/11/2021 20:46	WG1703298
(S) 4-Bromofluorobenzene	89.8		77.0-126		07/10/2021 12:58	WG1703134
(S) 4-Bromofluorobenzene	97.1		77.0-126		07/11/2021 20:46	WG1703298
(S) 1,2-Dichloroethane-d4	128		70.0-130		07/10/2021 12:58	WG1703134
(S) 1,2-Dichloroethane-d4	100		70.0-130		07/11/2021 20:46	WG1703298

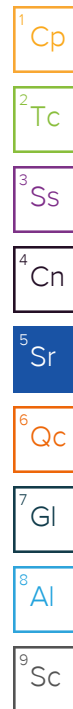
Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	0.435		0.400	1	07/09/2021 12:54	WG1702391
(S) Nitrobenzene-d5	99.0		10.0-120		07/09/2021 12:54	WG1702391

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	ug/l		ug/l		date / time	
Acetone	ND		50.0	1	07/10/2021 13:18	WG1703134
Acrolein	ND		50.0	1	07/10/2021 13:18	WG1703134
Acrylonitrile	ND		10.0	1	07/10/2021 13:18	WG1703134
Benzene	ND		1.00	1	07/10/2021 13:18	WG1703134
Bromobenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
Bromodichloromethane	ND		1.00	1	07/10/2021 13:18	WG1703134
Bromoform	ND		1.00	1	07/10/2021 13:18	WG1703134
Bromomethane	ND		5.00	1	07/10/2021 13:18	WG1703134
n-Butylbenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
sec-Butylbenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
tert-Butylbenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
Carbon tetrachloride	ND		1.00	1	07/10/2021 13:18	WG1703134
Chlorobenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
Chlorodibromomethane	ND		1.00	1	07/10/2021 13:18	WG1703134
Chloroethane	ND		5.00	1	07/10/2021 13:18	WG1703134
Chloroform	ND		5.00	1	07/10/2021 13:18	WG1703134
Chloromethane	ND		2.50	1	07/10/2021 13:18	WG1703134
2-Chlorotoluene	ND		1.00	1	07/10/2021 13:18	WG1703134
4-Chlorotoluene	ND		1.00	1	07/10/2021 13:18	WG1703134
1,2-Dibromo-3-Chloropropane	ND		5.00	1	07/10/2021 13:18	WG1703134
1,2-Dibromoethane	ND		1.00	1	07/10/2021 13:18	WG1703134
Dibromomethane	ND		1.00	1	07/10/2021 13:18	WG1703134
1,2-Dichlorobenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
1,3-Dichlorobenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
1,4-Dichlorobenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
Dichlorodifluoromethane	ND		5.00	1	07/10/2021 13:18	WG1703134
1,1-Dichloroethane	ND		1.00	1	07/10/2021 13:18	WG1703134
1,2-Dichloroethane	ND		1.00	1	07/10/2021 13:18	WG1703134
1,1-Dichloroethene	ND		1.00	1	07/10/2021 13:18	WG1703134
cis-1,2-Dichloroethene	ND		1.00	1	07/11/2021 18:46	WG1703298
trans-1,2-Dichloroethene	ND		1.00	1	07/10/2021 13:18	WG1703134
1,2-Dichloropropane	ND		1.00	1	07/10/2021 13:18	WG1703134
1,1-Dichloropropene	ND		1.00	1	07/10/2021 13:18	WG1703134
1,3-Dichloropropane	ND		1.00	1	07/10/2021 13:18	WG1703134
cis-1,3-Dichloropropene	ND		1.00	1	07/10/2021 13:18	WG1703134
trans-1,3-Dichloropropene	ND		1.00	1	07/10/2021 13:18	WG1703134
2,2-Dichloropropane	ND		1.00	1	07/10/2021 13:18	WG1703134
Di-isopropyl ether	ND		1.00	1	07/10/2021 13:18	WG1703134
Ethylbenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
Hexachloro-1,3-butadiene	ND		1.00	1	07/10/2021 13:18	WG1703134
Isopropylbenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
p-Isopropyltoluene	ND		1.00	1	07/10/2021 13:18	WG1703134
2-Butanone (MEK)	ND		10.0	1	07/10/2021 13:18	WG1703134
Methylene Chloride	ND		5.00	1	07/10/2021 13:18	WG1703134
4-Methyl-2-pentanone (MIBK)	ND		10.0	1	07/10/2021 13:18	WG1703134
Methyl tert-butyl ether	ND		1.00	1	07/10/2021 13:18	WG1703134
Naphthalene	ND		5.00	1	07/10/2021 13:18	WG1703134
n-Propylbenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
Styrene	ND		1.00	1	07/10/2021 13:18	WG1703134
1,1,1,2-Tetrachloroethane	ND		1.00	1	07/10/2021 13:18	WG1703134
1,1,2,2-Tetrachloroethane	ND		1.00	1	07/10/2021 13:18	WG1703134
1,1,2-Trichlorotrifluoroethane	ND		1.00	1	07/10/2021 13:18	WG1703134
Tetrachloroethene	ND		1.00	1	07/11/2021 18:46	WG1703298
Toluene	ND		1.00	1	07/10/2021 13:18	WG1703134
1,2,3-Trichlorobenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
1,2,4-Trichlorobenzene	ND		1.00	1	07/10/2021 13:18	WG1703134



Volatile Organic Compounds (GC/MS) by Method 8260D

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,1,1-Trichloroethane	ND		1.00	1	07/10/2021 13:18	WG1703134
1,1,2-Trichloroethane	ND		1.00	1	07/10/2021 13:18	WG1703134
Trichloroethene	ND		1.00	1	07/11/2021 18:46	WG1703298
Trichlorofluoromethane	ND		5.00	1	07/10/2021 13:18	WG1703134
1,2,3-Trichloropropane	ND		2.50	1	07/10/2021 13:18	WG1703134
1,2,4-Trimethylbenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
1,2,3-Trimethylbenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
1,3,5-Trimethylbenzene	ND		1.00	1	07/10/2021 13:18	WG1703134
Vinyl chloride	3.79		1.00	1	07/10/2021 13:18	WG1703134
Xylenes, Total	ND		3.00	1	07/10/2021 13:18	WG1703134
(S) Toluene-d8	110		80.0-120		07/10/2021 13:18	WG1703134
(S) Toluene-d8	90.9		80.0-120		07/11/2021 18:46	WG1703298
(S) 4-Bromofluorobenzene	98.8		77.0-126		07/10/2021 13:18	WG1703134
(S) 4-Bromofluorobenzene	91.8		77.0-126		07/11/2021 18:46	WG1703298
(S) 1,2-Dichloroethane-d4	123		70.0-130		07/10/2021 13:18	WG1703134
(S) 1,2-Dichloroethane-d4	95.8		70.0-130		07/11/2021 18:46	WG1703298

Semi Volatile Organic Compounds (GC/MS) by Method 8270E-SIM

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
1,4-Dioxane	ND		0.400	1	07/09/2021 13:14	WG1702391
(S) Nitrobenzene-d5	84.2		10.0-120		07/09/2021 13:14	WG1702391

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3678321-2 07/09/21 12:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	50.0
Acrolein	U		2.54	50.0
Acrylonitrile	U		0.671	10.0
Benzene	U		0.0941	1.00
Bromobenzene	U		0.118	1.00
Bromodichloromethane	U		0.136	1.00
Bromoform	U		0.129	1.00
Bromomethane	U		0.605	5.00
n-Butylbenzene	U		0.157	1.00
sec-Butylbenzene	U		0.125	1.00
tert-Butylbenzene	U		0.127	1.00
Carbon tetrachloride	U		0.128	1.00
Chlorobenzene	U		0.116	1.00
Chlorodibromomethane	U		0.140	1.00
Chloroethane	1.71	U	0.192	5.00
Chloroform	U		0.111	5.00
Chloromethane	U		0.960	2.50
2-Chlorotoluene	U		0.106	1.00
4-Chlorotoluene	U		0.114	1.00
1,2-Dibromo-3-Chloropropane	U		0.276	5.00
1,2-Dibromoethane	U		0.126	1.00
Dibromomethane	U		0.122	1.00
1,2-Dichlorobenzene	U		0.107	1.00
1,3-Dichlorobenzene	U		0.110	1.00
1,4-Dichlorobenzene	U		0.120	1.00
Dichlorodifluoromethane	U		0.374	5.00
1,1-Dichloroethane	U		0.100	1.00
1,2-Dichloroethane	U		0.0819	1.00
1,1-Dichloroethene	U		0.188	1.00
cis-1,2-Dichloroethene	U		0.126	1.00
trans-1,2-Dichloroethene	U		0.149	1.00
1,2-Dichloropropane	U		0.149	1.00
1,1-Dichloropropene	U		0.142	1.00
1,3-Dichloropropane	U		0.110	1.00
cis-1,3-Dichloropropene	U		0.111	1.00
trans-1,3-Dichloropropene	U		0.118	1.00
2,2-Dichloropropane	U		0.161	1.00
Di-isopropyl ether	U		0.105	1.00
Ethylbenzene	U		0.137	1.00
Isopropylbenzene	U		0.105	1.00

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3678321-2 07/09/21 12:37

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichloroethene	U		0.190	1.00
Trichlorofluoromethane	U		0.160	5.00
1,2,3-Trichloropropane	U		0.237	2.50
1,2,3-Trimethylbenzene	U		0.104	1.00
1,2,4-Trimethylbenzene	U		0.322	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Vinyl chloride	U		0.234	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	108			80.0-120
(S) 4-Bromofluorobenzene	97.7			77.0-126
(S) 1,2-Dichloroethane-d4	97.9			70.0-130

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3678321-3 07/09/21 15:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	31.1	124	19.0-160	
Acrolein	25.0	13.0	52.0	10.0-160	
Acrylonitrile	25.0	22.6	90.4	55.0-149	
Benzene	5.00	5.33	107	70.0-123	
Bromobenzene	5.00	4.67	93.4	73.0-121	
Bromodichloromethane	5.00	5.10	102	75.0-120	
Bromoform	5.00	5.56	111	68.0-132	

Laboratory Control Sample (LCS)

(LCS) R3678321-3 07/09/21 15:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Bromomethane	5.00	6.80	136	10.0-160	
n-Butylbenzene	5.00	6.22	124	73.0-125	
sec-Butylbenzene	5.00	6.19	124	75.0-125	
tert-Butylbenzene	5.00	5.94	119	76.0-124	
Carbon tetrachloride	5.00	5.96	119	68.0-126	
Chlorobenzene	5.00	5.77	115	80.0-121	
Chlorodibromomethane	5.00	5.71	114	77.0-125	
Chloroethane	5.00	21.6	432	47.0-150	J4
Chloroform	5.00	4.99	99.8	73.0-120	
Chloromethane	5.00	5.25	105	41.0-142	
2-Chlorotoluene	5.00	4.71	94.2	76.0-123	
4-Chlorotoluene	5.00	4.92	98.4	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	4.91	98.2	58.0-134	
1,2-Dibromoethane	5.00	5.66	113	80.0-122	
Dibromomethane	5.00	5.36	107	80.0-120	
1,2-Dichlorobenzene	5.00	5.77	115	79.0-121	
1,3-Dichlorobenzene	5.00	5.59	112	79.0-120	
1,4-Dichlorobenzene	5.00	5.30	106	79.0-120	
Dichlorodifluoromethane	5.00	5.99	120	51.0-149	
1,1-Dichloroethane	5.00	5.23	105	70.0-126	
1,2-Dichloroethane	5.00	4.89	97.8	70.0-128	
1,1-Dichloroethene	5.00	5.53	111	71.0-124	
cis-1,2-Dichloroethene	5.00	5.68	114	73.0-120	
trans-1,2-Dichloroethene	5.00	5.30	106	73.0-120	
1,2-Dichloropropane	5.00	5.00	100	77.0-125	
1,1-Dichloropropene	5.00	5.06	101	74.0-126	
1,3-Dichloropropane	5.00	5.43	109	80.0-120	
cis-1,3-Dichloropropene	5.00	5.10	102	80.0-123	
trans-1,3-Dichloropropene	5.00	5.11	102	78.0-124	
2,2-Dichloropropane	5.00	4.10	82.0	58.0-130	
Di-isopropyl ether	5.00	4.19	83.8	58.0-138	
Ethylbenzene	5.00	5.88	118	79.0-123	
Isopropylbenzene	5.00	6.19	124	76.0-127	
p-Isopropyltoluene	5.00	5.94	119	76.0-125	
2-Butanone (MEK)	25.0	22.5	90.0	44.0-160	
Methylene Chloride	5.00	5.21	104	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	22.6	90.4	68.0-142	
Methyl tert-butyl ether	5.00	4.74	94.8	68.0-125	
Naphthalene	5.00	6.24	125	54.0-135	
n-Propylbenzene	5.00	5.26	105	77.0-124	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3678321-3 07/09/21 15:47

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Styrene	5.00	5.67	113	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	6.03	121	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.56	91.2	65.0-130	
Tetrachloroethene	5.00	5.93	119	72.0-132	
Toluene	5.00	6.01	120	79.0-120	
1,1,2-Trichlorotrifluoroethane	5.00	6.49	130	69.0-132	
1,1,1-Trichloroethane	5.00	5.06	101	73.0-124	
1,1,2-Trichloroethane	5.00	5.35	107	80.0-120	
Trichloroethene	5.00	5.66	113	78.0-124	
Trichlorofluoromethane	5.00	5.77	115	59.0-147	
1,2,3-Trichloropropane	5.00	4.80	96.0	73.0-130	
1,2,3-Trimethylbenzene	5.00	4.14	82.8	77.0-120	
1,2,4-Trimethylbenzene	5.00	5.16	103	76.0-121	
1,3,5-Trimethylbenzene	5.00	5.17	103	76.0-122	
Vinyl chloride	5.00	5.72	114	67.0-131	
Xylenes, Total	15.0	18.1	121	79.0-123	
(S) Toluene-d8			106	80.0-120	
(S) 4-Bromofluorobenzene			98.2	77.0-126	
(S) 1,2-Dichloroethane-d4			97.6	70.0-130	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3678900-2 07/10/21 09:33

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.126	1.00
Hexachloro-1,3-butadiene	U		0.337	1.00
Tetrachloroethene	U		0.300	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
Trichloroethene	U		0.190	1.00
Vinyl chloride	U		0.234	1.00
(S) Toluene-d8	101			80.0-120
(S) 4-Bromofluorobenzene	107			77.0-126
(S) 1,2-Dichloroethane-d4	92.3			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3678900-1 07/10/21 08:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	5.00	5.48	110	73.0-120	
Hexachloro-1,3-butadiene	5.00	5.85	117	54.0-138	
Tetrachloroethene	5.00	4.96	99.2	72.0-132	
1,2,3-Trichlorobenzene	5.00	6.99	140	50.0-138	J4
1,2,4-Trichlorobenzene	5.00	5.92	118	57.0-137	
Trichloroethene	5.00	5.68	114	78.0-124	
Vinyl chloride	5.00	4.59	91.8	67.0-131	
(S) Toluene-d8			97.1	80.0-120	
(S) 4-Bromofluorobenzene			105	77.0-126	
(S) 1,2-Dichloroethane-d4			92.1	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3677928-2 07/10/21 08:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Acetone	U		11.3	50.0
Acrolein	U		2.54	50.0
Acrylonitrile	U		0.671	10.0
Benzene	U		0.0941	1.00
Bromobenzene	U		0.118	1.00
Bromodichloromethane	U		0.136	1.00
Bromoform	U		0.129	1.00
Bromomethane	U		0.605	5.00
n-Butylbenzene	U		0.157	1.00
sec-Butylbenzene	U		0.125	1.00
tert-Butylbenzene	U		0.127	1.00
Carbon tetrachloride	U		0.128	1.00
Chlorobenzene	U		0.116	1.00
Chlorodibromomethane	U		0.140	1.00
Chloroethane	U		0.192	5.00
Chloroform	U		0.111	5.00
Chloromethane	U		0.960	2.50
2-Chlorotoluene	U		0.106	1.00
4-Chlorotoluene	U		0.114	1.00
1,2-Dibromo-3-Chloropropane	U		0.276	5.00
1,2-Dibromoethane	U		0.126	1.00
Dibromomethane	U		0.122	1.00
1,2-Dichlorobenzene	U		0.107	1.00
1,3-Dichlorobenzene	U		0.110	1.00
1,4-Dichlorobenzene	U		0.120	1.00
Dichlorodifluoromethane	U		0.374	5.00
1,1-Dichloroethane	U		0.100	1.00
1,2-Dichloroethane	U		0.0819	1.00
1,1-Dichloroethene	U		0.188	1.00
trans-1,2-Dichloroethene	U		0.149	1.00
1,2-Dichloropropane	U		0.149	1.00
1,1-Dichloropropene	U		0.142	1.00
1,3-Dichloropropane	U		0.110	1.00
cis-1,3-Dichloropropene	U		0.111	1.00
trans-1,3-Dichloropropene	U		0.118	1.00
2,2-Dichloropropane	U		0.161	1.00
Di-isopropyl ether	U		0.105	1.00
Ethylbenzene	U		0.137	1.00
Hexachloro-1,3-butadiene	U		0.337	1.00
Isopropylbenzene	U		0.105	1.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3677928-2 07/10/21 08:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
Toluene	U		0.278	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichlorofluoromethane	U		0.160	5.00
1,2,3-Trichloropropane	U		0.237	2.50
1,2,3-Trimethylbenzene	U		0.104	1.00
1,2,4-Trimethylbenzene	U		0.322	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Vinyl chloride	U		0.234	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	104			80.0-120
(S) 4-Bromofluorobenzene	92.6			77.0-126
(S) 1,2-Dichloroethane-d4	125			70.0-130

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3677928-1 07/10/21 08:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	28.7	115	19.0-160	
Acrolein	25.0	34.1	136	10.0-160	
Acrylonitrile	25.0	29.1	116	55.0-149	
Benzene	5.00	5.08	102	70.0-123	
Bromobenzene	5.00	5.27	105	73.0-121	
Bromodichloromethane	5.00	5.66	113	75.0-120	
Bromoform	5.00	5.76	115	68.0-132	

Laboratory Control Sample (LCS)

(LCS) R3677928-1 07/10/21 08:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Bromomethane	5.00	7.23	145	10.0-160	
n-Butylbenzene	5.00	5.25	105	73.0-125	
sec-Butylbenzene	5.00	5.18	104	75.0-125	
tert-Butylbenzene	5.00	5.20	104	76.0-124	
Carbon tetrachloride	5.00	5.08	102	68.0-126	
Chlorobenzene	5.00	5.10	102	80.0-121	
Chlorodibromomethane	5.00	5.07	101	77.0-125	
Chloroethane	5.00	6.22	124	47.0-150	
Chloroform	5.00	5.26	105	73.0-120	
Chloromethane	5.00	4.72	94.4	41.0-142	
2-Chlorotoluene	5.00	5.59	112	76.0-123	
4-Chlorotoluene	5.00	5.42	108	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	5.30	106	58.0-134	
1,2-Dibromoethane	5.00	5.32	106	80.0-122	
Dibromomethane	5.00	5.98	120	80.0-120	
1,2-Dichlorobenzene	5.00	5.60	112	79.0-121	
1,3-Dichlorobenzene	5.00	5.60	112	79.0-120	
1,4-Dichlorobenzene	5.00	5.38	108	79.0-120	
Dichlorodifluoromethane	5.00	5.79	116	51.0-149	
1,1-Dichloroethane	5.00	5.65	113	70.0-126	
1,2-Dichloroethane	5.00	6.40	128	70.0-128	
1,1-Dichloroethene	5.00	4.76	95.2	71.0-124	
trans-1,2-Dichloroethene	5.00	4.50	90.0	73.0-120	
1,2-Dichloropropane	5.00	5.06	101	77.0-125	
1,1-Dichloropropene	5.00	5.47	109	74.0-126	
1,3-Dichloropropane	5.00	5.51	110	80.0-120	
cis-1,3-Dichloropropene	5.00	5.32	106	80.0-123	
trans-1,3-Dichloropropene	5.00	6.01	120	78.0-124	
2,2-Dichloropropane	5.00	6.47	129	58.0-130	
Di-isopropyl ether	5.00	5.24	105	58.0-138	
Ethylbenzene	5.00	4.68	93.6	79.0-123	
Hexachloro-1,3-butadiene	5.00	5.91	118	54.0-138	
Isopropylbenzene	5.00	4.67	93.4	76.0-127	
p-Isopropyltoluene	5.00	5.52	110	76.0-125	
2-Butanone (MEK)	25.0	28.0	112	44.0-160	
Methylene Chloride	5.00	4.61	92.2	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	28.6	114	68.0-142	
Methyl tert-butyl ether	5.00	5.64	113	68.0-125	
Naphthalene	5.00	4.78	95.6	54.0-135	
n-Propylbenzene	5.00	5.18	104	77.0-124	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3677928-1 07/10/21 08:16

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Styrene	5.00	4.97	99.4	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	5.09	102	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	5.59	112	65.0-130	
Toluene	5.00	5.08	102	79.0-120	
1,1,2-Trichlorotrifluoroethane	5.00	6.34	127	69.0-132	
1,2,3-Trichlorobenzene	5.00	4.86	97.2	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.87	97.4	57.0-137	
1,1,1-Trichloroethane	5.00	6.02	120	73.0-124	
1,1,2-Trichloroethane	5.00	5.50	110	80.0-120	
Trichlorofluoromethane	5.00	5.69	114	59.0-147	
1,2,3-Trichloropropane	5.00	5.98	120	73.0-130	
1,2,3-Trimethylbenzene	5.00	4.27	85.4	77.0-120	
1,2,4-Trimethylbenzene	5.00	5.14	103	76.0-121	
1,3,5-Trimethylbenzene	5.00	4.99	99.8	76.0-122	
Vinyl chloride	5.00	5.63	113	67.0-131	
Xylenes, Total	15.0	14.0	93.3	79.0-123	
(S) Toluene-d8			101	80.0-120	
(S) 4-Bromofluorobenzene			93.6	77.0-126	
(S) 1,2-Dichloroethane-d4			128	70.0-130	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3678416-3 07/11/21 14:23

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.126	1.00
Tetrachloroethene	U		0.300	1.00
Trichloroethene	U		0.190	1.00
(S) Toluene-d8	93.6			80.0-120
(S) 4-Bromofluorobenzene	91.3			77.0-126
(S) 1,2-Dichloroethane-d4	101			70.0-130

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3678416-1 07/11/21 13:23 • (LCSD) R3678416-2 07/11/21 13:43

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
cis-1,2-Dichloroethene	5.00	4.55	4.75	91.0	95.0	73.0-120			4.30	20
Tetrachloroethene	5.00	4.74	5.03	94.8	101	72.0-132			5.94	20
Trichloroethene	5.00	4.45	4.88	89.0	97.6	78.0-124			9.22	20
(S) Toluene-d8				91.2	95.6	80.0-120				
(S) 4-Bromofluorobenzene				95.7	96.0	77.0-126				
(S) 1,2-Dichloroethane-d4				106	105	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3678812-2 07/12/21 22:21

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
cis-1,2-Dichloroethene	U		0.126	1.00
Hexachloro-1,3-butadiene	U		0.337	1.00
Tetrachloroethene	U		0.300	1.00
1,2,3-Trichlorobenzene	0.679	U	0.230	1.00
1,2,4-Trichlorobenzene	0.613	U	0.481	1.00
Trichloroethene	U		0.190	1.00
Vinyl chloride	U		0.234	1.00
(S) Toluene-d8	99.1			80.0-120
(S) 4-Bromofluorobenzene	90.6			77.0-126
(S) 1,2-Dichloroethane-d4	114			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3678812-1 07/12/21 21:25

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
cis-1,2-Dichloroethene	5.00	4.78	95.6	73.0-120	
Hexachloro-1,3-butadiene	5.00	5.85	117	54.0-138	
Tetrachloroethene	5.00	5.87	117	72.0-132	
1,2,3-Trichlorobenzene	5.00	4.32	86.4	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.71	94.2	57.0-137	
Trichloroethene	5.00	5.82	116	78.0-124	
Vinyl chloride	5.00	5.65	113	67.0-131	
(S) Toluene-d8			98.1	80.0-120	
(S) 4-Bromofluorobenzene			95.5	77.0-126	
(S) 1,2-Dichloroethane-d4			112	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3676763-2 07/07/21 11:27

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	ug/l		ug/l	ug/l
1,4-Dioxane	U		0.0447	0.400
(S) Nitrobenzene-d5	78.9			10.0-120

Laboratory Control Sample (LCS)

(LCS) R3676763-1 07/07/21 11:08

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	ug/l	ug/l	%	%	
1,4-Dioxane	50.0	43.6	87.2	73.0-146	
(S) Nitrobenzene-d5			73.7	10.0-120	

L1374339-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1374339-01 07/07/21 15:58 • (MS) R3676763-3 07/07/21 16:17 • (MSD) R3676763-4 07/07/21 16:36

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	ug/l	ug/l	ug/l	ug/l	%	%		%			%	%
1,4-Dioxane	45.5	2.64	42.2	42.1	86.9	86.7	1	38.0-160			0.237	21
(S) Nitrobenzene-d5					74.4	75.9		10.0-120				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3677735-3 07/09/21 11:57

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
1,4-Dioxane	U		0.0447	0.400
(S) Nitrobenzene-d5	89.0			10.0-120

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3677735-1 07/09/21 11:18 • (LCSD) R3677735-2 07/09/21 11:37

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,4-Dioxane	50.0	68.8	69.0	138	138	73.0-146			0.290	20
(S) Nitrobenzene-d5				83.5	93.7	10.0-120				

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

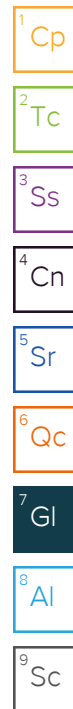
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
C4	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Data is likely to show a low bias concerning the result.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J4	The associated batch QC was outside the established quality control range for accuracy.



ACCREDITATIONS & LOCATIONS

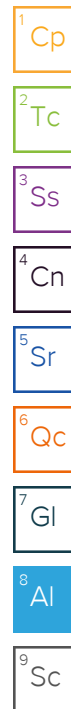
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

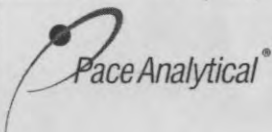
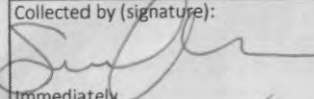
Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1,6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1,4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA -- ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA -- ISO 17025 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

* Not all certifications held by the laboratory are applicable to the results reported in the attached report.

* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace Analytical.



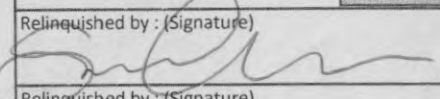
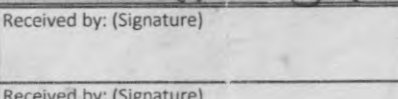
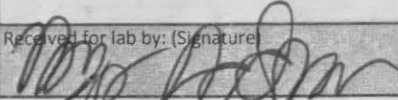
Company / Address: PBS Engineering & Env.- POR 4412 S Corbett Ave Portland, OR 97239				Billing Information: Accounts Payable 4412 S Corbett Ave Portland, OR 97239				Chain of Custody Page <u>1</u> of <u>1</u>  12065 Lebanon Rd Mount Juliet, TN 37122 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf			
Report to: Nick Thornton				Email To: Nick.Thornton@pbsusa.com				Analysis / Container / Preservative Pres Chk NWT PHDX w/ silica 4oz Clr-No Pres NWT PHGX 40ml Amb/MeOH 10ml/Syr VOCs 8260D 40ml Amb/MeOH 10ml/Syr 8270 1.4 Dioxin 8260 Full VOCs			
Project Description:		City/State Collected:		Please Circle: PT MT CT ET							
Phone: 503-248-1939		Client Project # 24202.000		Lab Project # PBSENGPOR-24202000						SDG # 1374321 H136	
Collected by (print): <i>S. Eckes</i>		Site/Facility ID #		P.O. #						Acctnum: PBSENGPOR Template: T186897 Prelogin: P845109 PM: 110 - Brian Ford PB:	
Collected by (signature): 		Rush? (Lab MUST Be Notified) ☐ Same Day ☐ Five Day ☐ Next Day ☐ 5 Day (Rad Only) ☐ Two Day ☐ 10 Day (Rad Only) ☐ Three Day		Quote #		Date Results Needed		No. of Cntrs		Shipped Via:	
Immediately Packed on Ice N ☐ Y ☒										Remarks Sample # (lab only)	
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time						
MW2-GW	grab	SS		7/1/21	1205	5					01
MW6-GW		SS			1415						02
MW7-GW		SS			1530						03
MW5-GW		SS			1615						04
MW9-GW		SS			1655						05
MW3-GW		SS			1725						06
MW8-GW		SS			1750						07
MW4-GW		SS			1830						08
MW1-GW		SS			1910						09
		SS									

* Matrix:
 SS - Soil AIR - Air F - Filter
 GW - Groundwater B - Bioassay
 WW - Waste Water
 DW - Drinking Water
 OT - Other

Remarks:

Samples returned via: ☐ UPS ☐ FedEx ☐ Courier

Tracking # **501612263191**

Relinquished by: (Signature) 		Date: 7/1/21 Time: 2055		Received by: (Signature) 		Trip Blank Received: Yes ☐ No ☒ HCL/MeOH TBR		Sample Receipt Checklist COC Seal Present/Intact: ☒ Y ☐ N COC Signed/Accurate: ☒ Y ☐ N Bottles arrive intact: ☒ Y ☐ N Correct bottles used: ☒ Y ☐ N Sufficient volume sent: ☒ Y ☐ N If Applicable VOA Zero Headspace: ☒ Y ☐ N Preservation Correct/Checked: ☒ Y ☐ N RAD Screen <0.5 mR/hr: ☒ Y ☐ N	
Relinquished by: (Signature)		Date: Time:		Received by: (Signature)		Temp: 120T °C Bottles Received: 45		If preservation required by Login: Date/Time	
Relinquished by: (Signature)		Date: Time:		Received for lab by: (Signature) 		Date: 7/13/21 Time: 8:45		Hold: Condition: NCF / ☒ OK	