Remedial Investigation/Feasibility Study

Port of Longview TPH Site

Appendix A
Interim Data Report

Port of Longview TPH Site

Interim Data Report

Prepared for

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Interim Data Report

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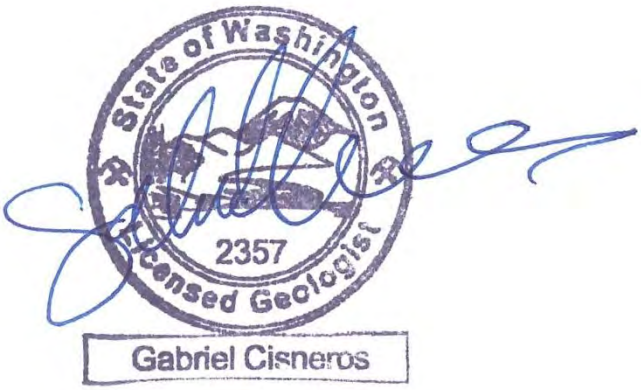

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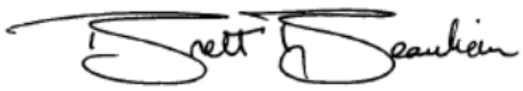

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List of Acronyms and Abbreviations

Acronym/ Abbreviation	Definition
Agreed Order	Agreed Order No. DE 15907
AOPC	Area of Potential Concern
AST	Aboveground storage tank
bgs	Below ground surface
BTEX	Benzene, toluene, ethylbenzene, and xylenes
Chevron	Chevron Environmental Management Company
COC	Contaminant of concern
Columbia	Columbia Technologies, LLC
Columbia Report	Columbia Technologies, LLC's High-Resolution Fluorescence/Hydraulic Profile Characterization Report
cPAH	Carcinogenic polycyclic aromatic hydrocarbon
CSM	Conceptual site model
CUL	Cleanup level
DRO	Diesel-range organics
DTW	Depth to water
EC	Electrical conductivity
Ecology	Washington State Department of Ecology
EDB	1,2-Dibromoethane

Acronym/ Abbreviation	Definition
EDC	1,2-Dichloroethane
EIM	Environmental Information Management
EPH	Extractable petroleum hydrocarbons
FBI	Friedman and Bruya, Inc.
Fremont	Fremont Analytical, Inc.
Georgia-Pacific	Georgia-Pacific LLC
GPR	Ground-penetrating radar
GRO	Gasoline-range organics
HCID	Hydrocarbon identification
HPT	Hydraulic profiling tool
IDW	Investigation-derived waste
LNAPL	Light non-aqueous phase liquid
µg/L	Micrograms per liter
$\mu g/m^3$	Micrograms per cubic meter
mg/kg	Milligrams per kilogram
mL/min	Milliliters per minute
MNA	Monitored natural attenuation
MTBE	Methyl *tert*-butyl ether
MTCA	Model Toxics Control Act
NAVD 88	North American Vertical Datum of 1988
OIP	Optical Image Profiler
ORO	Oil-range organics
PAH	Polycyclic aromatic hydrocarbon
PLP	Potentially liable party
Port	Port of Longview
PPE	Personal protective equipment
RI	Remedial investigation
SAP/QAPP	Sampling and Analysis Plan/Quality Assurance Project Plan
Site	Port of Longview Total Petroleum Hydrocarbons Site

Acronym/ Abbreviation	Definition
TEQ	Toxic equivalent
TPH	Total petroleum hydrocarbons
UST	Underground storage tank
VI	Vapor intrusion
VOC	Volatile organic compound
VPH	Volatile petroleum hydrocarbons
WestRock	WestRock Longview LLC
Wilson	Wilson Oil, Inc., doing business as Wilcox & Flegel Oil Company
Work Plan	Remedial Investigation Work Plan
WSDOT	Washington State Department of Transportation

1.0 Introduction

This Interim Data Report presents the data collected during the 2019 to 2020 remedial investigation (RI) activities performed at of the Port of Longview (Port) Total Petroleum Hydrocarbons (TPH) Site (Site) in Longview, Washington (Figure 1.1). The RI activities were completed on behalf of the Port in accordance with the approved RI Work Plan (Work Plan; Floyd|Snider 2019) and were conducted as a specific requirement of Agreed Order No. DE 15907 (Agreed Order) between the Port, Chevron Environmental Management Company (Chevron), Georgia-Pacific LLC (Georgia-Pacific), and the Washington State Department of Ecology (Ecology). Other potentially liable parties (PLPs) related to the Site include Wilson Oil, Inc., doing business as Wilcox & Flegel Oil Company (Wilson) and WestRock Longview LLC (WestRock), a corporate predecessor to Longview Fibre Paper and Packaging, Inc.[1] Both the Agreed Order signatories and the other PLPs are collectively referred to as the PLP Group.

The purpose of the Interim Data Report is to present the initial field data and identify any remaining data gaps to be filled prior to preparing the RI report. Specifically, the Interim Data Report describes the work conducted to collect the data and includes a summary of the sampling plan, sampling methods, and sampling results. The sampling results are provided both in summary tables and on figures and are compared to the preliminary screening levels contained in the Work Plan to evaluate the nature and extent of the chemicals detected.

1.1 BACKGROUND

The Site is located at 10 International Way in Longview, Washington, on the north side of the Columbia River, directly east of the Lewis and Clark Bridge. The total area of the Port's property that encompasses the Site is approximately 28.2 acres and consists of an office building, multiple buildings and warehouses, two berths, and a railyard (Figure 1.2).

A log export facility is adjacent to (northwest of) the Site, an active bulk fuel facility is located to the northeast of the Site. Land uses at the Site and in the surrounding area are industrial.

As a result of the discovery of releases of petroleum products to soil and groundwater associated with various historical uses, the Site was included on the Ecology list of confirmed and suspected impacted sites in 1991. In the past, investigation and remediation work as well as routine groundwater monitoring at the Site have been accomplished cooperatively between the Port, Chevron, Longview Fibre Company (a corporate predecessor to Longview Fibre Paper and Packaging, Inc., a corporate predecessor to WestRock), and the James River Corporation (a corporate successor to Crown Zellerbach and corporate predecessor of Georgia-Pacific).

Following the cessation of routine groundwater monitoring in 2013, the Port undertook a review of data gaps and conducted an additional investigation in 2015 to address priority data gaps. The

[1] Longview Fibre Paper and Packaging, Inc., a corporate predecessor to Longview Fibre Company, did business as KapStone Kraft Paper Corporation, which is the name referenced in the Agreed Order and is a corporate predecessor to WestRock.

data gaps and the results of the 2015 priority data gaps investigation are described in the Data Gaps Report (Floyd|Snider 2015). The remaining data gaps, not addressed during the 2015 investigation, provide the basis for much of the scope of the RI activities described in the Work Plan. Additionally, the Port performed interim action activities in 2019 to remove exposed portions of the pipelines located beneath Berth 1 and Berth 2. Only a small capped stub from each pipeline remains where the pipelines extend out of the bulkhead.

In 2016, Ecology issued PLP letters to the Port, Chevron, Georgia-Pacific, Wilson, and KapStone Kraft Paper Corporation (a corporate predecessor to WestRock). The Port, Chevron, and Georgia-Pacific worked with Ecology to prepare the Agreed Order, which underwent public comment and was entered with an effective date of February 13, 2019.

1.2 INTERIM DATA REPORT ORGANIZATION

The remaining sections of this report are organized as follows:

- **Section 2—Remedial Investigation Work Performed:** Describes the work performed during two field investigation mobilizations (designated Phase I and Phase II), and the first two quarters of groundwater monitoring conducted following completion of the Phase I and Phase II field events. Section 2.0 is divided to discuss data collection activities individually for each Area of Potential Concern (AOPC) identified in the Work Plan.
- **Section 3—Results:** Describes the results of the Phase I and Phase II field investigations, for each AOPC, and describes results of the two completed groundwater monitoring events conducted following completion of Phase I and Phase II activities. This includes discussion of soil vapor testing and initial evaluation of hydrogeologic data collection.
- **Section 4.0—Conclusions:** Discusses the data collected for each media, and considers the sufficiency of the existing data set for completion of the RI process. This section also describes the recommended changes to the ongoing groundwater monitoring program.
- **Section 5.0—References:** Includes references cited in this report.

2.0 Remedial Investigation Work Performed

Previous investigations including soil and groundwater data collected in 2015 and 2019, which are presented in the Data Gaps Report and Work Plan, have largely defined the location and concentration of contaminants of concern (COCs) in soil and groundwater at the Site (Floyd|Snider 2015 and 2019). Within the Site boundaries, well-defined data gaps in the understanding of the nature and extent of contamination remain only in selected AOPCs. Additional data were collected from these AOPCs to address remaining data gaps in the nature and extent of contamination and to support more accurate estimates of contaminated soil volume for remedial evaluation and the development of remedial alternatives. The following RI work activities were (or will be) completed to address the remaining data needs:

- Collecting sufficient soil and groundwater data to confirm the nature and extent of impacts to conduct focused assessments of spatial extent, to estimate volume of contaminated media, and to evaluate remedial alternatives
- Assessing seasonal change in the extent of groundwater impacts based on four quarters of groundwater monitoring
- Collecting sufficient data to confirm Site COCs and determine cleanup levels (CULs)
- Collecting sufficient hydrogeologic data to understand the hydrogeologic regime at the Site and how it affects the contaminant fate and transport

RI work activities conducted during two mobilizations (Phase I and Phase II) to investigate soil and groundwater conditions are described in Sections 2.1 and 2.2. Following the Phase I and Phase II mobilizations, additional work was performed as part of the RI activities, including two consecutive quarters of groundwater monitoring and sampling as described in Section 2.3; the first round of soil vapor sampling as described in Section 2.4; and the dry season portion of the hydrogeologic study as described in Section 2.5. Results from these additional RI activities are also summarized in this report. All activities were conducted in accordance with the Work Plan and associated Sampling and Analysis Plan/Quality Assurance Project Plan (SAP/QAPP).

2.1 OVERVIEW OF PHASE I AND PHASE II INVESTIGATION ACTIVITIES

Data collection activities related to defining the nature and extent of impacted media at the Site during Phase I and Phase II are summarized in this section. Data collection included soil, groundwater, and soil vapor. A detailed discussion of Phase I and Phase II investigations completed at each AOPC is presented in Section 2.2; AOPCs and their primary data gaps or areas of potential concern are illustrated on Figure 2.1. The extents of each AOPC shown on Figure 2.1 are approximate and are illustrated to show the general area of concern. Prior to any subsurface investigation work, a public one-call and a private utility survey were conducted to identify conductible lines, and drilling locations were cleared of utilities using a hand auger or compressed air and a vactor truck to remove soil down to at least 5 feet prior to drilling. The following sections briefly summarize the overall Phase I and Phase II activities.

2.1.1 Phase I Activities

Phase I occurred between November 13 and 22, 2019, and consisted of a high-resolution fluorescence/hydraulic profile characterization of the Site conducted by Columbia Technologies, LLC (Columbia), overseen by Floyd|Snider personnel. This was accomplished by using an Optical Image Profiler (OIP), manufactured by Geoprobe, and a hydraulic profiling tool (HPT) attached to a direct-push drill rig to investigate the potential for residual light non-aqueous phase liquid (LNAPL) and TPH impacts in the subsurface at 73 locations across the Site (OIP-01 through OIP-73). The OIP was utilized to provide rapid and cost-effective delineation of residual LNAPL and residual TPH impacts. The HPT was used to obtain hydrostratigraphic data in relevant AOPCs. The OIP/HPT data for each location are shown in Columbia's report included as Appendix A; OIP/HPT locations advanced during the Phase I activities are shown on Figure 2.2.

In addition to the OIP/HPT boring locations, six direct-push boring locations were advanced immediately adjacent to select OIP/HPT locations during Phase I of RI fieldwork to collect continuous soil samples and analytical data (OIP-08, OIP-30, OIP-42, OIP-52, OIP-53, and OIP-66). The lithology and analytical results from these direct-push borings were compared to the OIP/HPT results prior to proposing direct-push locations during the Phase II. The select direct-push locations were advanced in areas with low to significant petroleum hydrocarbon impacts and varying hydrostratigraphy to evaluate the OIP/HPT response data. In general, the observations between the fluorescence response of the OIP tool and soil analytical results were as follows:

- The OIP tool exhibited a strong fluorescence response in areas impacted with gasoline-range organics (GRO), diesel-range organics (DRO), and lighter polycyclic aromatic hydrocarbon (PAH) ranges but was less responsive with heavier oil fuels.
- OIP response is shown as a percent area fluorescence based on analysis of the images as the probe advances with depth. For example, a fluorescence response of 50% is when the half of the frame shows a fluorescence response.
- The OIP tool provided qualitative to semiquantitative information about the distribution of subsurface petroleum-impacted soil and extent of LNAPL both above and below the perched water-bearing zone and lower water table.
- A comparison of the OIP fluorescence response and quantitative soil results indicated that a fluorescence response greater than 50% indicated an exceedance of screening levels for GRO and DRO. A fluorescence response of less than 10% generally indicated that GRO and DRO impacts were present but at concentrations less than screening levels.

A summary of the OIP/HPT and laboratory analytical results are discussed for each AOPC in Section 3.0. Boring logs are included in Appendix B, the OIP/HPT report is included in Appendix A.

2.1.2 Phase II Activities

Phase II fieldwork occurred between March 9, 2020, and March 13, 2020, and included advancing 32 soil borings, installing two soil vapor points (VP-1 and VP-2) and eight monitoring wells (MW-33 through MW-40), collecting surface samples beneath Berth 1 and Berth 2, and conducting a professional land survey for all monitoring wells and vapor points. Direct push borings were advanced adjacent to 24 Phase I OIP/HPT borings (OIP-02, OIP-04, OIP-05, OIP-06, OIP-15, OIP-18, OIP-19, OIP-20, OIP-21, OIP-23, OIP-31, OIP-39, OIP-46, OIP-47, OIP-49, OIP-54, OIP-57, OIP-64, OIP-67, OIP-68, OIP-69, OIP-70, OIP-72, and OIP-73) and at eight additional locations (GP-31 through GP-38). The Phase I OIP/HPT and soil data results, along with results from previous investigations (designated GP-1 through GP-30), were used to determine the direct-push and monitoring well locations. Phase I and Phase II soil boring and monitoring well locations, as well as previous investigation locations, are shown on Figure 2.3. Soil and reconnaissance groundwater samples (samples collected from boreholes to provide general groundwater quality information) were collected from direct-push borings and soil samples were collected during the installation of monitoring wells to help obtain quantitative soil and groundwater results. Direct-push locations were selected to collect vertical and lateral laboratory analytical samples to delineate the extent of impacts and to assist in future assessments of the volume of TPH-impacted soil. Within each AOPC, at least one direct-push boring was advanced in an area containing residual TPH impacts identified by OIP/HPT to obtain quantitative results and to delineate the vertical extent of TPH impacts within the AOPC.

2.1.2.1 Direct-Push Locations and Surface Samples

During all direct-push activities, soil cores were continuously collected and soil was field screened for indications of petroleum hydrocarbon impacts, which were recorded on the soil boring logs (Appendix B). In general, direct-push soil borings were advanced to the groundwater surface or past the bottom depth of visible impacts. Soil samples were generally collected from the depth representative of the greatest impacts based on field screening observations (e.g., photoionization detector measurements, sheen, odor, staining), and a minimum of one soil sample was collected from where the capillary fringe was first encountered. Groundwater samples were collected from select direct-push borings that were located in areas of the Site that do not have existing wells or to confirm groundwater concentrations observed in adjacent wells. Discrete groundwater samples (samples collected from specific depth intervals based on existing information) were collected at depths where groundwater was encountered during the OIP/HPT survey and based on the hydraulic permeability determined from the HPT pressure profiles. Temporary well screens were used to collect samples from the upper 5 to 10 feet of groundwater encountered. Prior to collecting samples, groundwater was purged until the groundwater was visibly clear, at which time turbidity readings, ranging between 1 and 39 nephelometric turbidity units, were collected and recorded in the field notebook. Surface samples were collected beneath Berth 1 and Berth 2 below the capped pipelines. All soil and groundwater samples collected during Phase I and Phase II activities were submitted to Friedman and Bruya, Inc. (FBI) of Seattle, Washington, for laboratory analysis.

2.1.2.2 Monitoring Well Installation

All monitoring wells, except for MW-39, were advanced using a hollow-stem auger rig. All monitoring wells were constructed of 2-inch-diameter Schedule 40 polyvinyl chloride with a flush threaded riser, including a threaded end plug and a machine-slotted 10-foot-long, 0.010-inch slotted screen. The screen interval depths varied at each location. The annular space around the screen was filled with clean 12-20 silica sand. The annular space above the silica sand was sealed with bentonite chips. Bentonite placed above the water table was hydrated with potable water. All materials were placed concurrently with drill casing withdrawal. The surface of each well was completed with a flush-mounted, traffic-grade steel monument, and the wells were secured by a lockable gasket cap.

MW-39 was advanced and installed using a track-mounted direct-push drill rig due to the limited access of the location within the rail lines. Although installed with a direct-push rig, MW-39 was constructed similarly to the other wells with a pre-pack well screen with clean 12-20 silica sand.

During monitoring well installation activities, soil samples were collected at least every 2.5 feet using a split-spoon sampler (or continuously using a 5-foot disposable plastic liner at MW-39). Soil analytical samples were generally collected at the depth representative of greatest field screening impacts, if observed. A minimum of one soil analytical sample was collected from the capillary fringe.

The wells were developed by surging and purging until extracted water was clean with no visible turbidity, and at least 10 well volumes were removed from each monitoring well. The volume of water purged during development was recorded in the field notebook and ranged between 23 and 50 gallons per well.

As-built construction details, including the total depth of each boring and the placement depths of the filter sand pack, the bentonite seal, and the surface completion were measured to the nearest 0.1 foot. Well logs, including soil sample description and as-built construction details, are included as Appendix B. All monitoring wells were installed and developed in accordance with the Work Plan.

2.1.2.3 Soil Vapor Point Installation

Two soil vapor points, VP-1 and VP-2, were installed during Phase II activities using a direct-push rig to advance each vapor point to a depth of 5.5 feet below ground surface (bgs). A 6-inch-long, 0.75-inch-diameter stainless steel screen was installed that is capped on the bottom end and fitted with an airtight Swagelok fitting connected on the other end. The screen was set at a depth of 5.25 feet bgs in order for the center of the screen to be set at 5 feet bgs. A length of 0.25-inch-outer-diameter rigid wall nylon tubing was attached to the fitting at the end of probe screen and set to be exposed above grade. The above-grade end of the tubing was fitted with an on/off control valve, which is used to prevent short-circuiting of ambient air into the probes and to conduct closed-valve tests.

The 6-inch screen tip was vertically centered in a 1-foot-long interval containing standard sand pack, resulting in 3 inches of sand above and below the screen. The sand pack was covered with a 1-foot interval of dry granular bentonite, which was covered with 1 foot of pre-hydrated granular bentonite. The dry granular bentonite was emplaced immediately above the sand pack to ensure that pre-hydrated granular bentonite slurry did not flow down to the probe screen. The remainder of the borehole was completed with a 2-foot-thick cement cap. A flush-mounted well box was installed to protect the nylon tubing and on/off control valve. Soil vapor point installation logs are included in Appendix B.

2.1.2.4 Professional Land Surveying Activities

Following completion of drilling and well installation activities, a licensed surveyor located the positions of all monitoring wells (former and new) and vapor points and surveyed the elevations of the top of each monitoring well monument and the top of each monitoring well casing. All monitoring casings were surveyed on the north side of each casing to the nearest 0.01 foot. Horizontal position coordinates were reported relative to the in North American Datum of 1983 Washington, State Plane South. Elevations were reported relative to the North American Vertical Datum of 1988 (NAVD 88). Well logs provided in Appendix B include the Washington State Plane South coordinates of the well and the top of well casing elevation. The soil borings, monitoring wells, and vapor point locations are shown on Figure 2.3.

2.2 DESCRIPTION OF ACTIVITIES BY AOPC

2.2.1 AOPC 1: Soil and Groundwater Near Southern Pipelines

AOPC 1 is located in the vicinity of Transit Shed 2, adjacent to Berth 2, and beneath Berth 2 (Figure 2.1). The 2015 data gaps investigation in this area identified soil contamination inland of Transit Shed 2 at boring location GP-18. In addition, two surface samples P-1 and P-2, collected in 1994 beneath the end of the abandoned pipelines beneath Berth 2, contained residual TPH impacts (Golder 1994; Figure 2.1). The data gaps in AOPC 1 consist of delineating the extent of soil impacts previously observed in GP-18 and further investigation of impacts to surface soil beneath Berth 2. To collect additional information on soil and groundwater conditions in this area, two direct-push borings (OIP-05 and OIP-06) were advanced; four surface soil samples (P3 through P6) were collected; and two monitoring wells (MW-37 and MW-38) were installed within AOPC 1 during the Phase I and Phase II activities (Figures 2.2 and 2.3).

2.2.1.1 Phase I Activities: AOPC 1

During the Phase I activities, two OIP/HPT borings, OIP-05 and OIP-06, within Transit Shed 2 and downgradient of GP-18 were advanced to determine if soil impacts detected in soil boring GP-18 were present beneath the building.

2.2.1.2 Phase II Activities: AOPC 1

During the Phase II activities, direct-push soil borings were advanced immediately adjacent to OIP/HPT locations OIP-05 and OIP-06 to collect analytical soil samples to delineate the extent of

impacts observed in GP-18. In addition, a discrete groundwater sample was collected from the OIP-06 boring.

The exposed sections of the pipelines located beneath Berth 1 and Berth 2 were removed during the 2019 interim action activities conducted by the Port, and only a small capped stub from each pipeline remains where the pipes extend out of the bulkhead. Surface samples were collected to investigate current soil conditions beneath the southern pipelines under Berth 2. Surface samples P3 and P4 were collected near historical surface samples (P-1 and P-2) and below the remaining eastern pipeline segments that are visible beneath Berth 2. Surface samples P5 and P6 were collected beneath the remaining westernmost pipeline segments beneath Berth 1. Surface samples P3 and P4 were collected from the very small amount of soil that accumulated within the riprap. There was insufficient soil volume at locations P3 and P4 within the riprap to collect deeper subsurface soil samples. Deeper soil samples were not collected from P3 through P6 due to the absence of petroleum hydrocarbon impacts based on field screening observations. Surface sample logs are included in Appendix B, and photographs of these locations are included in Appendix C.

To confirm the quality of groundwater adjacent to the Columbia River and between areas of confirmed soil and groundwater impacts and the river, two monitoring wells, MW-37 and MW-38, were installed within the vicinity of previous boring locations GP-13 and GP-16. Both wells were installed using a hollow-stem auger drill rig. Petroleum hydrocarbon impacts were not detected in either MW-37 or MW-38 via field screening; therefore, soil samples were collected from the capillary fringe. Well logs, including soil sample descriptions and as-built construction details, are included as Appendix B.

2.2.2 AOPC 2: Former AST Area

AOPC 2 is located in the northeast portion of the Site and encompasses the former aboveground storage tank (AST) area. An excavation was conducted in 1996 to an average depth of 6 feet bgs and expanded past the footprint of the AST toward the south, west, and east in order to remove the impacted soil. Soil data from samples collected during the 1996 interim action cleanup show that one sample collected from the base of the excavation pit contained TPH concentrations exceeding Model Toxics Control Act (MTCA) Method A CULs. Additionally, no verification samples were collected beyond the extent of the former AST footprint and former test pit locations with known soil impacts (Golder 1996). Therefore, additional data were needed to determine if impacted soil remains below the excavated area and if soil impacts extend to the east, southeast, and south of the former AST excavation. To address these data gaps, four OIP/HPT borings and two direct push borings were advanced within AOPC 2 during the Phase I and Phase II activities (Figures 2.2 and 2.3).

2.2.2.1 Phase I Activities: AOPC 2

During the first mobilization, four OIP/HPT boring locations, OIP-01 through OIP-04, were advanced within the vicinity of the former AST. Borings were advanced to a depth of at least

32 feet bgs to investigate residual impacts including the presence of residual LNAPL and to obtain hydrostratigraphic data. OIP/HPT boring locations are shown on Figure 2.2.

2.2.2.2 Phase II Activities: AOPC 2

During the second mobilization, locations OIP-02 and OIP-04 were advanced immediately adjacent to their respective Phase I locations with direct-push borings for collection of soil and discrete groundwater samples. Analytical soil samples were collected at depths where the OIP/HPT borings displayed a fluorescence response indicative of TPH impacts, and just above encountered groundwater (Section 3.0 includes a summary of the results and how to interpret the OIP/HPT data). Discrete groundwater samples were collected from both OIP-02 and OIP-04. Soil boring locations are shown on Figure 2.3.

2.2.3 AOPC 3: Former Mechanic's Shop USTs

AOPC 3 is located in the south-central portion of the Site, in the vicinity of the former mechanic's shop. In 1993, approximately 15 cubic yards of petroleum-impacted soil was removed during the decommissioning of a 4,000-gallon and 8,000-gallon gasoline underground storage tanks (USTs) associated with the former mechanic's shop. The maximum depth of the excavation was approximately 11 feet bgs. Soil samples collected from the excavation indicated that residual hydrocarbon impacts remained (Golder 1993a). Additional data were needed to establish the vertical and horizontal extent of soil impacts adjacent to and downgradient of the former mechanic's shop USTs; therefore, four OIP/HPT borings and five direct-push borings were advanced within AOPC 3 (Figures 2.2 and 2.3).

2.2.3.1 Phase I Activities: AOPC 3

During the first mobilization, four OIP/HPT borings (OIP-18 through OIP-21) were advanced within the vicinity of the former mechanic's shop and former UST locations (Figure 2.2). Borings were advanced to a depth of at least 30 feet bgs to investigate residual impacts and/or presence of residual LNAPL and to obtain hydrostratigraphic data.

2.2.3.2 Phase II Activities: AOPC 3

During the second mobilization, a direct-push rig was used to obtain soil analytical data, based on the OIP/HPT results, at locations OIP-18 through OIP-21. OIP results and field screening during drilling indicated a thin zone of petroleum hydrocarbon-impacted soil from 10.5 to 12 feet bgs in OIP-20. Therefore, an additional step-out location, GP-38, was advanced in the presumed downgradient direction of OIP-20 and a soil sample was collected at the same depth as TPH impacts encountered in OIP-20 (Figure 2.3). Soil samples within AOPC 3 were collected in accordance with Ecology's Table 830-1 of Required Testing for Petroleum Releases (WAC 173-340-900) and guidelines for UST decommissioning (WAC 173-360A) and in accordance with the SAP/QAPP. In addition, a soil sample from OIP-20 was submitted for additional analyses to be used for product identification and to calculate MTCA Method B and Method C CULs for TPH.

2.2.4 AOPC 4: Monitoring Well MW-19

AOPC-4 is located along the rail corridor, on the northern extent of the Site. LNAPL was historically observed in a monitoring well in this area (MW-19 in 1993) but has not been detected in more recent monitoring events. In addition, MW-19 is more than 100 feet from the closest investigation location. Therefore, additional soil and groundwater data were needed to assess whether LNAPL is present within the vicinity of MW-19 and to further define any TPH impacts between MW-19 and MW-6 to the north and MW-15 to the south. To address this data gap, 11 OIP/HPT borings were completed in the vicinity of MW-19, and four direct push locations and one monitoring well location were advanced during Phase II to collect additional soil and groundwater data.

2.2.4.1 Phase I Activities: AOPC 4

During the first mobilization, 11 OIP/HPT borings (OIP-57 through OIP-63, OIP-69 through OIP-71, and OIP-73) were advanced within the vicinity of MW-19 to investigate the potential for residual LNAPL and TPH impacts in the subsurface and to obtain hydrostratigraphic data (Figure 2.2). Originally, three OIP/HPT borings were proposed in AOPC 4; however, additional OIP/HPT borings were added to delineate the extent of impacts based on OIP results in the initial three locations, OIP-57, OIP-58, and OIP-59.

2.2.4.2 Phase II Activities: AOPC 4

During the second mobilization, four direct-push locations (OIP-57, OIP-69, OIP-70, and OIP-73) were advanced to collect laboratory analytical samples to delineate the lateral and vertical extent of TPH impacts in AOPC 4. Monitoring well MW-39 was installed to collect information about shallow groundwater elevations and impacts. Soil analytical samples were collected at depths where adjacent OIP/HPT boring locations displayed fluorescence response, and just above encountered groundwater. Discrete groundwater samples were collected from direct-push locations OIP-69 and OIP-70 to help delineate the extent of TPH impacts in groundwater and to confirm groundwater results from the adjacent monitoring well, respectively.

During implementation of the Phase I investigation, OIP/HPT results indicated the screen interval for MW-19 (13.5 to 19.5 feet bgs) does not capture petroleum hydrocarbon impacts observed by the OIP/HPT results between 11.5 to 14 feet bgs. OIP/HPT results also indicated MW-19 is not screened across the top of the groundwater table (depth to groundwater has been recorded at 12 feet bgs during the wet season). Although not originally proposed in the Work Plan, installation of monitoring well MW-39 was considered necessary to investigate shallow groundwater elevations and hydrocarbon impacts. Due to limited access and rail lines, monitoring well MW-39 was advanced and installed using a direct-push, track-mounted drill rig. Continuous soil samples were collected for logging and select depth intervals were submitted for laboratory analysis to delineate the vertical extent of soil impacts. Select soil samples from MW-39 were submitted for additional laboratory analyses to be used for petroleum hydrocarbon product identification and to calculate MTCA Method B and Method C CULs for TPH. Well logs, including soil sample descriptions and as-built construction details, are included in Appendix B.

2.2.5 AOPC 5: Former Fuel Loading Racks

AOPC 5 is located in the central portion of the Site, in the area of the former fuel loading racks along the rail corridor. There are limited soil data within the former fuel loading racks area, which has historically included measurements of LNAPL in MW-20, limiting understanding of the current extents and volume of impacted soil present; therefore, additional soil data were needed to assess shallow soil conditions.

To assess this area, 26 OIP/HPT borings were completed during Phase I; 10 direct-push borings were advanced during Phase II; and two monitoring wells were installed within AOPC 5 (Figures 2.2 and 2.3).

2.2.5.1 Phase I Activities: AOPC 5

During the first mobilization, 26 borings were advanced (OIP-15 through OIP-17, OIP-33 through OIP-51, OIP-55, OIP-56, OIP-64, and OIP-72) at approximately 25-foot spacings along the entire length of the former loading racks between the loading racks and the former pipelines. Three perpendicular transects of OIP/HPT borings were advanced to the eastern portion of the rail lines and to the west adjacent to and within the former Warehouse 9 footprint.

In addition to advancing OIP/HPT boring locations during Phase I, one direct-push boring was advanced immediately adjacent to OIP-42 within an area with significant OIP/HPT fluorescence response and varying stratigraphy in order to evaluate the OIP/HPT response data. The lithology and analytical results from analytical samples collected in this boring at OIP-42 were compared to the OIP/HPT results to inform the locations of direct-push borings during Phase II of the RI activities. The OIP/HPT locations are shown on Figure 2.2.

2.2.5.2 Phase II Activities: AOPC 5

During Phase II, eight direct-push locations were advanced, with six immediately adjacent to OIP/HPT locations (OIP-15, OIP-39, OIP-46, OIP-47, OIP-49, and OIP-64) and two at additional locations (GP-35 and GP-36), to collect laboratory analytical samples. Two monitoring wells, MW-33 and MW-40, were installed to delineate the lateral and vertical extent of TPH impacts in this area of the Site. Laboratory analytical soil samples were collected from depths at which adjacent OIP/HPT borings displayed elevated fluorescence responses, and just above encountered groundwater. Shallow soil samples were also collected and submitted for analyses in OIP-47 and MW-40 to delineate the extent of contamination in shallow soils. In addition, select soil samples from GP-36, OIP-42, OIP-47, MW-33, and MW-40 were submitted for additional analyses to be used for petroleum hydrocarbon product identification and to calculate MTCA Method B and Method C CULs for TPH.

The preliminary conceptual site model (CSM) presented in the Work Plan identified a need for groundwater data from the alluvial aquifer in this area of the Site (Floyd|Snider 2019). Monitoring well MW-33 was installed to fill a gap for the alluvial aquifer in the center of the Site between MW-10 and MW-23. The location of MW-33 will also allow for calculation of vertical

hydraulic gradients relative to the adjacent perched water-bearing zone well MW-17. Monitoring well MW-40 was not originally proposed in the Work Plan. However, OIP/HPT results showed elevated fluorescence response deeper than existing well screen intervals within this area of the Site. Therefore, MW-40 was constructed to assess dissolved-phase hydrocarbon impacts within the deeper alluvial aquifer. Well logs are included in Appendix B.

In addition to the chemical sampling program, soil samples were collected during the installation of MW-33 at depths of 7.5 to 9 feet bgs, 10 to 11 feet bgs, 13 to 15 feet bgs, 17.5 to 19 feet bgs, and 21 to 23 feet bgs and submitted for physical parameters (grain size, porosity, fraction organic carbon, and bulk density). Samples were collected from several depths within the perched water-bearing zone, silt underlying the perched water-bearing zone, and the alluvial aquifer. These data will be evaluated in the RI to support the preliminary CSM for the perched area in the center of the Site, which proposes this unit is relatively insubstantial as a water-bearing unit and has limited hydraulic connection with the alluvial aquifer below.

2.2.6 AOPC 6: Former Calloway Ross Parcel

AOPC 6 is the location of the former Calloway Ross facility where historical activities included a gasoline UST that was removed and surface spills and leaks that were remediated through removal of approximately 175 tons of impacted soil. However, the extent of impacts were not adequately delineated by previous investigations in the southern portion of the property and beneath the former Warehouse 9 building footprint. Data gaps at AOPC 6 consist of adequately delineating the vertical and lateral extent of impacts in this area and beneath the former Warehouse 9 footprint. Therefore, 11 OIP/HPT borings were completed, and five direct-push borings were advanced to collect soil and discrete groundwater samples to be used for delineation and petroleum hydrocarbons product identification within AOPC 6 (Figures 2.2 and 2.3).

2.2.6.1 Phase I Activities: AOPC 6

During the first mobilization, 11 borings (OIP-07 through OIP-14 and OIP-66 through OIP-68) were advanced at spacings between 25 and 50 feet along approximate north-south and east-west transects within the former Warehouse 9 building footprint and adjacent to the former Calloway Ross UST. OIP/HPT location OIP-09 was advanced immediately adjacent to former direct-push location GP-1 (Floyd|Snider 2015). The lithology and analytical results from GP-1 were compared to the OIP/HPT results of OIP-9 and a correlation was confirmed between the OIP/HPT response, analytical results, and lithology. The comparison of these results enabled a qualitative determination of whether the lateral extent of impacts were bounded via OIP/HPT results in the field during Phase I.

In addition to advancing OIP/HPT boring locations during Phase I, two direct-push borings were advanced immediately adjacent to OIP-08 and OIP-66 within areas with significant fluorescence response and varying stratigraphy in order to further evaluate the OIP/HPT response data. The lithology and analytical results were compared to the OIP/HPT results prior to proposing direct-push locations during Phase II of the RI activities. The OIP/HPT locations are shown on Figure 2.2, and locations for GP-1 through GP-30 are shown on Figure 2.3.

2.2.6.2 Phase II Activities: AOPC 6

During the second mobilization, three direct-push locations (OIP-67, OIP-68, and GP-37; refer to Figure 2.3) were advanced to collect laboratory analytical soil samples and to delineate the lateral and vertical extent of TPH impacts on the northern portion of AOPC 6. Soil samples from OIP-68 and GP-37 were collected to bound the lateral extent of impacts, and discrete groundwater samples were collected from direct-push locations OIP-67 and OIP-68.

During both phases, select soil samples from OIP-08, OIP-66, OIP-67, and OIP-68 were submitted for additional analyses to be used for petroleum hydrocarbon product identification and to calculate MTCA Method B and Method C CULs for TPH.

2.2.7 AOPC 7: Monitoring Wells MW-26 and MW-28

AOPC 7 is located north of Former Warehouse 9, on the west side of the rail corridor and extends to the east to include the former Longview Pipeline. The results of 2019 groundwater monitoring indicated elevated concentrations of DRO and oil-range organics (ORO) detected at monitoring well MW-28. Both monitoring wells in this area, MW-26 and MW-28, are screened within the perched water-bearing zone. Historical soil data show DRO detections at a concentration of 42,000 milligrams per kilogram (mg/kg) in monitoring well MW-26 at 18 feet bgs. The spatial and matrix distribution of contamination within this area of the Site required additional delineation.

To provide this delineation, 17 OIP/HPT borings were completed; seven direct-push borings were advanced to collect soil samples; and one monitoring well was installed within AOPC 7 (Figures 2.2 and 2.3).

2.2.7.1 Phase I Activities: AOPC 7

During the first mobilization, 15 borings (OIP-22 through OIP-32,[2] OIP-52 through OIP-54, and OIP-65) were advanced at approximately 25-foot to 40-foot spacings along the rail lines and the former pipelines. A perpendicular transect of OIP/HPT borings was advanced from the eastern portion of the rail lines, near MW-27 and adjacent to the former Longview Pipeline, to the west adjacent to and within the former Warehouse 9 footprint.

In addition to advancing OIP/HPT boring locations during Phase I, three direct-push borings were advanced immediately adjacent to OIP-30, OIP-52, and OIP-53 to evaluate the OIP/HPT response data. Laboratory analytical soil samples were collected from OIP-53 to delineate the lateral extent of impacts to the west. The lithology and analytical results from these direct-push borings

[2] Although OIP-32 is physically located within AOPC 3, OIP-32 results are summarized within AOPC 7 because this location was installed for evaluation of the data gaps associated with AOPC 7 and not those associated with AOPC 3. The AOPC 7 data gaps include impacts associated with the former Longview Pipeline, to which OIP-32 is adjacent, and delineation of groundwater DRO and ORO impacts observed in MW-26 and MW-28. OIP-32 was installed in the presumed downgradient direction and in the vicinity of the 2015 boring location GP-27, which contained DRO and ORO exceedances. The data gap associated with AOPC 3 is GRO impacts.

were compared to the OIP/HPT results prior to proposing direct-push locations during Phase II of the RI activities. The OIP/HPT locations are shown on Figure 2.2.

2.2.7.2 Phase II Activities: AOPC 7

During the Phase II activities, four direct-push locations (OIP-23, OIP-31, GP-33, and GP-34; refer to Figure 2.3) were advanced to collect soil samples for laboratory analyses and to delineate the lateral and vertical extent of TPH impacts within AOPC 7. Soil samples for laboratory analyses were collected from borings OIP-31 and GP-34 to bound the eastern and southeastern lateral extent of impacts, and a reconnaissance groundwater sample was collected from GP-34.

During both phases, select soil samples from OIP-30 and OIP-23 were submitted for additional analyses to be used for petroleum hydrocarbon product identification and calculation of MTCA Method B and Method C CULs for TPH.

Furthermore, there is a need for groundwater data from the alluvial aquifer in this area of the Site. Monitoring well MW-34 was installed adjacent to MW-28 and within the deeper alluvial aquifer. The location of MW-34 will allow for calculation of vertical hydraulic gradients relative to the adjacent perched water-bearing zone well MW-28. Well logs are included in Appendix B.

In addition to the chemical sampling program, soil samples were collected during the installation of MW-34 at depths of 12 to 13 feet bgs, 14 to 16 feet bgs, 18 to 20 feet bgs, and 20.5 to 21.5 feet bgs and submitted for soil physical parameters (grain size, porosity, fraction organic carbon, and bulk density). Soil samples were collected from the several depths within the perched water-bearing zone, silt underlying the perched water-bearing zone, and the alluvial aquifer.

2.2.8 AOPC 8: Soil Vapor Quality

AOPC 8 is associated with the potential for soil gas migration into future buildings adjacent to a residual LNAPL plume identified at MW-09 where LNAPL has been observed since 1993 (Golder 1993b). Currently, there are no occupied buildings over or in the vicinity of shallow impacted soil, LNAPL, or groundwater impacted by dissolved-phase hydrocarbons. Vapor intrusion (VI) is a relevant potential future exposure pathway because there is a potential for buildings to be constructed within 30 feet of monitoring well MW-09, which contained LNAPL thicknesses of 0.14 feet and 0.11 feet during the May and August 2020 groundwater sampling events, respectively. To evaluate the soil vapor pathway, two soil vapor points were installed: VP-1 was installed in the slab of the former Warehouse 9 in the northeastern corner, near MW-09; and VP-2 was installed in the middle of the former Warehouse 9 slab (Figure 2.3).

2.2.8.1 Phase I Activities: AOPC 8

The Work Plan proposed installation of two vapor pins within the former Warehouse 9 footprint; however, the former Warehouse 9 slab consisted of asphalt, not concrete. There is a chance that ambient air can enter the samples via short-circuiting from the surface when vapor pins are installed within asphalt. Therefore, two vapor points were installed at a depth of 5.25 feet to

prevent short circuiting of ambient air. Vapor point installation was conducted in accordance with Floyd|Snider's Vapor Intrusion Standard Guideline, which was included in Appendix B of the Work Plan (Floyd|Snider 2019). Prior to installation, Ecology was informed of the proposed change from vapor pins to vapor points and provided concurrence by email on January 24, 2020 (Morris 2020). Vapor point installation details are summarized in Section 2.1.2.3, and soil vapor point installation logs are included in Appendix B.

2.2.9 AOPC 9: U.S. Army Reserve Building

AOPC 9 is located on the northeast side of the former U.S. Army Reserve building, east of the rail lines. A former heating oil UST was located on the northeast side of the building, and evaluation of potential impacts from this UST were the focus of investigation in this area. Investigation activities in this area included installation of direct-push soil borings during Phase II (refer to Figure 2.3).

2.2.9.1 Phase II Activities: AOPC 9

During the Phase II activities, two direct-push soil borings, GP-31 and GP-32, were advanced on either side of the former heating oil UST that was located adjacent to the former U.S. Army Reserve building. Although it was proposed in the Work Plan to locate the former UST, a ground-penetrating radar (GPR) survey was not necessary because building drawings were obtained from the Port that showed the location of the tank, which supplied fuel for the building's steam boiler immediately northeast of the building (U.S. Navy 1949). Laboratory analytical soil samples and reconnaissance groundwater samples were collected from both GP-31 and GP-32. Boring locations are shown on Figure 2.3 and logs are included in Appendix B.

2.2.10 Groundwater Quality and Hydrogeologic Characterization Downgradient of AOPCs

During the Phase II activities, two additional monitoring wells, MW-35 and MW-36, were installed along the western and southern boundary of known Site impacts to delineate the downgradient extent of groundwater contamination. Both wells will provide important data points for monitoring gradients and flow directions and help to further define the extent of groundwater impacts. Monitoring wells MW-35 and MW-36 were advanced with a hollow-stem auger drill rig, and soil samples were collected and submitted for laboratory analysis. Well logs, including soil sample descriptions and as-built construction details, are included in Appendix B.

2.3 GROUNDWATER MONITORING AND SAMPLING ACTIVITIES

Four consecutive quarters of groundwater monitoring and sampling will be performed in accordance with the Work Plan. Two quarters of groundwater sampling have been completed to date and were performed in May and August 2020. These two groundwater sampling events are summarized in the following sections.

2.3.1 May 2020 Groundwater Monitoring and Sampling Event

The first round of groundwater sampling was conducted between May 6 and 7, 2020. Prior to collecting groundwater samples, depth-to-water (DTW) measurements were collected in all accessible wells and wells were checked for the presence of LNAPL. Due to rail activities, DTW measurements were not collected for all the wells on the first day.

Groundwater samples were collected from 35 of the 40 monitoring wells that were planned to be sampled in the Work Plan. LNAPL was observed in MW-09. MW-05 and MW-28 contained an insufficient volume of groundwater to be sampled. Monitoring wells MW-04 and MW-30, which are located within a locked fenced area on Washington State Department of Transportation (WSDOT) property, were inaccessible during the May 2020 event.

Groundwater samples were collected in accordance with the Work Plan and SAP/QAPP and submitted to FBI for chemical analyses, with the exception of monitored natural attenuation (MNA) parameters, which were analyzed by Fremont Analytical, Inc. (Fremont). Field forms are provided in Appendix D.

2.3.2 August 2020 Groundwater Monitoring and Sampling Event

The second groundwater sampling event was conducted on August 10 and 11, 2020. Prior to collecting groundwater samples, DTW was collected, wells were checked for the presence of LNAPL, and monitoring wells MW-30 and T-2 (which were not sampled during the previous event) were redeveloped. T-2 was included in the groundwater monitoring and sampling network to assess dissolved-phase hydrocarbon impacts in the vicinity of the former 80,000-barrel AST (AOPC 2; refer to Figure 2.3).

Groundwater samples were collected from 36 of the 41 monitoring wells that were planned to be sampled in the Work Plan. LNAPL was observed in MW-09, and monitoring wells MW-04, MW-05, MW-11, MW-16, and MW-20 contained an insufficient volume of groundwater to be sampled. Due to the presence of reddish-brown sediment and bacterial growth (potentially iron-reducing bacteria), monitoring well MW-30 was redeveloped by surging and purging until 11 gallons were purged and the water was visibly clear. Sampling and redevelopment field forms are included in Appendix D. Groundwater samples were collected in accordance with the Work Plan and SAP/QAPP and submitted to FBI for chemical analyses with the exception of MNA parameters, which were analyzed by Fremont. Field forms are provided in Appendix D.

2.4 SOIL VAPOR SAMPLING ACTIVITIES

The first round of soil vapor sampling was conducted on May 8, 2020. Samples were collected in accordance with the Work Plan and Ecology guidance for VI assessment (Ecology 2018) using laboratory-certified 1-liter evacuated Summa canisters equipped with a flow control device and laboratory-provided manifolds and polytetrafluoroethylene tubing. Prior to sample collection, a shut-in (or closed valve) test was performed to assess the sampling train for air leaks. The closed-

valve test was conducted for a period of 5 minutes. All canisters maintained their vacuum for the duration of the test.

Helium was used as a trace gas during sampling to test for leaks in the vapor point seal and connections in the manifold during the filling of the Summa canisters. Samples were collected after purging the tubing and vapor screen of at least three volumes of vapor within the sampling train at a flow rate less than 200 milliliters per minute (mL/min). A 6-liter Summa canister was used to purge the tubing. After the sampling train was purged, soil gas samples were collected over a 5-minute period at a flow rate of less than 150 mL/min. Sample collection was stopped before the vacuum in the canister was fully depleted. A field duplicate sample was collected at location VP-1 using a laboratory-supplied flow splitter.

Once the sampling period was completed, the inlet port of the canister was tightly sealed for transportation to the analytical laboratory. The initial canister vacuums, vacuum testing times, purging times, purged volumes, sampling start and end times, and final vacuum readings were recorded on soil vapor sampling sheets, which are included in Appendix D. Soil vapor samples were submitted to FBI for analysis on May 8, 2020.

2.5 HYDROGEOLOGIC EVALUATIONS: PRESSURE TRANSDUCER MEASUREMENTS

Six unvented pressure transducer dataloggers were installed on May 8, 2020, in monitoring wells MW-01, MW-17, MW-23, MW-29, MW-31, and MW-33. These wells were instrumented with Solinst Levelogger Junior transducers in accordance with the Work Plan. A Solinst barologger was deployed to measure ambient atmospheric pressure. Transducers were installed to obtain data necessary for evaluation of the following objectives in the RI (refer to the Work Plan):

- Effects from the Oregon Way pump station north of the Site (refer to Figure 1.1) on the alluvial aquifer and perched water-bearing zone
- Effects of the Columbia River tidal fluctuations on the alluvial aquifer and perched water-bearing zone
- Evaluation of the perched water-bearing zone to determine if it is a substantial water-bearing zone or an ephemeral accumulation
- Determine the vertical gradient between the perched water-bearing zone and the alluvial aquifer over a multi-month period

To assist in answering these questions, transducers were placed in wells MW-01 and MW-31 located in the northernmost portion of the Site and in wells MW-23 and MW-29 located in the south-central portion of the Site. There are wells located farther to the south; however, any farther south would be beyond the perched water-bearing zone and the majority of the dissolved-phase plume. Transducers were placed in paired wells MW-33 and MW-17. MW-17 is screened within the perched water-bearing zone, and MW-33 is screened within the deeper alluvial aquifer. The monitoring wells MW-29 (screened within the perched water-bearing zone) and MW-23 (screened within the alluvial aquifer) also serve as a pair suitable for comparing water level elevations. Manual water levels were collected at the time of transducer deployment. On

August 10, 2020, the transducer and barologger data were uploaded. Manual water levels were measured at the time of uploading, and the transducers were returned to the wells. Transducers are expected to be left in the wells for approximately 1 year.

2.6 MINOR DEVIATIONS FROM THE WORK PLAN AND SAP/QAPP

2.6.1 AOPC 2: Former AST Area

Groundwater analytical data collected during the Phase II activities show ORO and DRO detections in OIP-04 at concentrations that exceed the screening levels. As a result, an effort was made to locate historical monitoring wells T-1 and T-2 to further delineate TPH impacts within AOPC 2. Monitoring well T-1 could not be located; however, well T-2 was located (refer to Figure 2.3), redeveloped, and added to the list of the wells to be sampled during the quarterly monitoring and sampling events. Sampling and redevelopment field forms are included in Appendix D.

2.6.2 AOPC 4: Monitoring Well MW-19

The installation of monitoring well MW-39 was not in the Work Plan. However, its installation was proposed during a January 21, 2020, meeting with Ecology and the Site PLPs. During the Phase I activities, OIP/HPT results within AOPC 4 and groundwater elevation data for monitoring well MW-19 indicated that the screened interval for MW-19, which is 13.5 to 19.5 feet bgs, does not capture impacts observed in OIP results between 11.5 to 14 feet bgs and is not screened across the top of the groundwater table. Depth to groundwater measurements indicate that groundwater rises to a depth of 12 feet bgs during the wet season. Therefore, monitoring well MW-39 was installed to investigate shallow groundwater elevations and conditions. Additionally, monitoring well MW-39 was advanced and installed using a direct-push, track-mounted drill rig due to limited access and proximity to the rail line. Holt Drilling, Inc., used a larger 3-inch-diameter casing to advance the well to depth and installed MW-39 with a pre-pack of clean 12-20 silica sand to be consistent with the other well locations. The well was installed in compliance with Ecology's minimum standards for direct-push resource protection wells (WAC 173-160-451).

2.6.3 AOPC 5: Former Fuel Loading Racks

The installation of monitoring well MW-40 was not in the Work Plan. However, the installation of MW-40 was proposed during the January 21, 2020, meeting with Ecology and the PLPs. OIP results indicated that TPH impacts may be present at depths deeper than existing well screen intervals within this area of the Site. Therefore, MW-40 was installed to evaluate dissolved-phase hydrocarbon conditions within the deeper alluvial aquifer in this area.

2.6.4 AOPC 8: Soil Vapor Quality

As stated in Section 2.2.8, two soil vapor points were installed instead of vapor pins as planned in the Work Plan. The former Warehouse 9 slab consists of asphalt, not concrete. There is a

chance that ambient air can enter the samples, via short-circuiting from the surface, when vapor pins are installed within asphalt. Therefore, two vapor points were installed at a bottom depth of 5.25 feet bgs to prevent short circuiting of ambient air.

2.6.5 AOPC 9: U.S. Army Reserve Building

A GPR survey was proposed in the Work Plan for the purposes of locating a former heating oil UST (and any other potential USTs in the area of the former U.S. Army Reserve building). Prior to completion of the investigation, the Port located and provided building plans that showed the location of the former heating oil UST, so the GPR survey was not conducted.

2.6.6 Monitoring Well Sampling and Survey

MW-04 and MW-30 were not accessible and were not sampled or professionally surveyed during the May 2020 groundwater monitoring and sampling event. Access to this WSDOT-owned property was subsequently obtained by the Port. These wells were sampled during the August 2020 monitoring event and will be included in future monitoring events. Survey data will be collected prior to completion of the RI if determined necessary for evaluation of groundwater conditions.

2.6.7 Transducer Study

The Work Plan proposed a 3-day transducer study to determine if the Oregon Way pump station, to the north, could potentially influence the alluvial aquifer and perched water bearing zone due to its high flow rate (up to 70,000 gallons per minute). This 3-day transducer study would have occurred in coordination with the Consolidated Diking Improvement District during pumping operations of the Oregon Way pump station. However, pumping operations are not on a set schedule and are influenced by weather conditions. Therefore, transducers were installed immediately after the May 2020 groundwater sampling event and will be deployed for multiple months, rather than the proposed 3 days.

2.7 DATA MANAGEMENT AND VALIDATION

Following each sampling event, a Compliance Screening (Stages 1 & 2A) data quality review was performed on the collected data. Data were validated in accordance with the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2017a) and/or *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA 2017b). Data validation resulted in assignment of qualifiers to select samples/analyses, as detailed in the Data Validation Summary Memorandum provided in Appendix E. The data validation determined that all data were of acceptable quality for use, as reported by the laboratory, unless specifically qualified in the data validation process detailed in Appendix E.

Following validation, all data collected during Phase I and Phase II RI field events and the quarterly groundwater monitoring events were uploaded into Floyd|Snider's electronic project database and submitted to Ecology's Environmental Information Management (EIM) system. All data submitted to date have been accepted into the EIM system.

2.8 INVESTIGATION-DERIVED WASTE

Phase I, Phase II, and the first round of groundwater sampling generated investigation-derived waste (IDW) consisting of the following liquids and solids:

- Purge water.
- Decontamination wash water.
- Soil drill cuttings, including non-soil debris that may be removed from the subsurface during drilling.
- Disposable materials used during fieldwork that may be impacted by contaminated media or decontamination wash water (e.g., disposable personal protective equipment [PPE], used filters, plastic sheeting, paper towels, and tubing).

IDW was managed and disposed of in accordance with applicable waste management regulations. IDW soil and liquids were placed in 55-gallon drums and appropriately labeled. Drums containing IDW were transported offsite for disposal at PRS Group, Inc., in Tacoma, Washington, as non-hazardous petroleum-contaminated media. The drums were picked up prior to generating IDW from the second groundwater sampling event.

All disposable sampling material and PPE (e.g., paper towels, disposable coveralls, and gloves) used in sample processing were placed in heavyweight garbage bags or other appropriate containers. Disposable supplies were removed from the Site by sampling personnel and placed in a municipal solid waste refuse container for disposal at a solid waste landfill.

3.0 Results

This section summarizes soil, groundwater, and soil vapor results for each AOPC and preliminary transducer and hydrogeology study results for the Site. The data discussed in this section reflect samples collected during Phase I, Phase II, and May 2020 and August 2020 soil vapor and/or groundwater sampling events.

Phase I and II OIP/HPT and soil results are discussed in Section 3.1 and Phase II groundwater results are discussed in Section 3.2. Soil and groundwater data are presented in Tables 3.1 through 3.8 and Figures 3.1 through 3.12. Columbia's High-Resolution Fluorescence/Hydraulic Profile Characterization Report (Columbia Report) is included as Appendix A, the laboratory reports are included as Appendix E, the soil parameters analyzed for MW-33 and MW-34 are included as Appendix F.

In the following sections, TPH impacts at the Site are discussed relative to screening levels established in the Work Plan for comparison purposes only. Soil analytical results from select boring locations (OIP-20, OIP-23, OIP-30, OIP-42, OIP-47, OIP-66, OIP-67, and MW-39) across the Site were used to calculate preliminary TPH MTCA Method B and Method C CULs for protection of human health through direct contact. These calculations are included in Appendix G. MTCA Method B CULs for TPH across the Site range between 2,157 and 2,849 mg/kg, and MTCA Method C CULs for TPH range between 32,840 and 47,031 mg/kg. The CULs vary based on location and petroleum product type and will be further evaluated in the RI report.

The Columbia Report contains the OIP/HPT logs, which show the results for each OIP/HPT location. The OIP results or petroleum hydrocarbon response show the vertical distribution and relative concentration of impacts in the subsurface from 0% to 100% at a centimeter scale. In other words, the percentage scale in the Columbia Report shows the percentage of the area of the camera lens that displays a fluorescence at a centimeter scale. The greater the percentage, the greater fluorescence response observed through the camera lens. The HPT and electrical conductivity (EC) tool evaluate the subsurface hydrostratigraphy. The HPT identifies soil intervals exhibiting higher hydraulic permeability or heterogeneities. The result is a vertical profile recording changes in hydraulic pressure measured directly as water is pumped into the formation at a constant rate, which reveals the variability and relative hydraulic conductivity of the soil. The EC dipole measures the EC of soil and groundwater. EC measurements can be used to identify changes in the lithology. Typically, as EC increases the grain size decreases. Therefore, an increase in EC could be a result of the EC probe advancing past a coarse-grained sand to a very fine-grained sand or from a silty sand to a clayey silt. Therefore, "increasing fines" is used, rather than soil types such as sand, silt, or clay, when discussing an increase in EC data. Direct-push soil borings were advanced during the Phase I activities to compare the OIP/HPT results with field and lithology observations.

3.1 SOIL RESULTS: PHASE I AND PHASE II SAMPLING EVENTS

A summary of the Phase I OIP/HPT results and subsequent Phase II soil results are discussed in the following sections for each AOPC. During Phase I and Phase II activities, soil samples were initially screened by the laboratory using hydrocarbon identification (HCID) by NWTPH-HCID. If the value of the HCID screening analysis for DRO, ORO, or GRO exceeded the reporting limits, then the appropriate analytical method was used to quantify the product type detected, including the following:

- DRO and ORO by NWTPH-Dx
- GRO by NWTPH-Gx
- Benzene, toluene, ethylbenzene, and xylenes (BTEX) by USEPA Method 8260 (when GRO exceedances of Work Plan screening levels were detected)

Additional analyses were conducted on selected soil samples if substantial petroleum impacts to soil were encountered, based on field screening observations. Additional analyses included the following:

- BTEX, methyl *tert*-butyl ether (MTBE), hexane, 1,2-dibromoethane (EDB), and 1,2-dichloroethane (EDC) by USEPA Method 8260C
- Carcinogenic polycyclic aromatic hydrocarbons (cPAHs) and naphthalenes by USEPA Method 8270D SIM
- Total lead by USEPA Method 6020
- Extractable petroleum hydrocarbons (EPH) and volatile petroleum hydrocarbons (VPH) by Methods NWEPH and NWVPH

The results from the additional analyses will be used to calculate MTCA Method B and Method C CULs for TPH in the RI.

3.1.1 AOPC 1: Soil and Groundwater Near Southern Pipelines

Fluorescence responses were not observed in the two OIP/HPT locations OIP-05 and OIP-06 within AOPC 1, which indicates that TPH impacts are not present. No other OIP/HPT borings were advanced in this area.

HPT and EC data showed that soils in AOPC 1 are generally permeable with a 3-foot layer of increasing fines, lower permeability soils at depths between 24 and 27 feet bgs. No dissipation tests were conducted within AOPC 1.

No soil samples were collected from AOPC 1 during Phase I. During the Phase II activities, soil samples were collected at the groundwater table from direct-push borings at OIP-05 and OIP-06 to delineate the lateral extent of impacts observed in GP-18, and a groundwater sample was collected from OIP-06. Soil analytical results for OIP-05 and OIP-06 show that TPH concentrations

were either less than their respective laboratory quantitation limits or less than their respective screening levels.

Surface samples P3 and P4, beneath the decking of Berth 2, were collected near historical surface samples (P-1 and P-2) and below the eastern pipelines that daylight beneath Berth 2. Surface samples P5 and P6 were collected beneath the westernmost pipelines beneath Berth 1. Soil results show ORO detections in P3 and P6 at concentrations of 4,200 and 2,300 mg/kg, respectively, which exceed the screening level. GRO and DRO concentrations were either less than reporting limits or less than their respective screening levels. cPAHs were detected in P3 and P4 at toxic equivalents (TEQs) of 2.3 and 0.51 mg/kg, respectively.

Soil samples were collected during the installation of MW-37 and MW-38. Field screening did not indicate TPH impacts during their advancement; therefore, soil samples were collected from the capillary fringe at depths of 27.5 feet and 23.5 feet, respectively. Soil analytical results from MW-37 and MW-38 indicate that all constituents were less than their respective laboratory quantitation limits. Soil analytical results for AOPC 1 are presented in Tables 3.1 and 3.2 and Figures 3.1 through 3.4.

3.1.2 AOPC 2: Former AST Area

Four OIP/HPT boring locations, OIP-01 through OIP-04, were advanced within the vicinity of the former 80,000-barrel AST. OIP results showed a slight fluorescence response (less than 10%) in the top 5 feet bgs and no fluorescence response at depths greater than 5 feet bgs in all four locations.

HPT and EC data indicate that soils with increasing fines and low permeability are located approximately between 0 and 13 feet bgs at locations OIP-01 through OIP-03 toward the south end of AOPC 2. Dissipation tests in AOPC 2 were conducted at OIP-03 and OIP-04. The dissipation tests show that DTW was approximately 15.7 feet bgs at the time of drilling with a hydraulic permeability ranging from less than 10 feet per day in soils with an increase in fines to greater than 75 feet per day in soils with less fines.

During the second mobilization, soil samples were collected at locations OIP-02 and OIP-04 using a direct-push drill rig. Soil analytical data indicate that DRO and ORO are present in OIP-02 at 5 feet bgs at concentrations of 1,900 and 3,400 mg/kg, respectively. No other petroleum compounds were detected in soil samples at concentrations greater than their respective laboratory quantitation limits within AOPC 2. Soil analytical results for AOPC 2 are presented in Table 3.1 and Figures 3.1 through 3.3.

3.1.3 AOPC 3: Former Mechanic's Shop USTs

Four OIP/HPT borings (OIP-18 through OIP-21) were advanced within the vicinity of the former mechanic's shop and former USTs. OIP results show a fluorescence response (approximately 75%) in OIP-20 between approximately 11 and 12 feet bgs. No other location within AOPC 3

showed a measurable fluorescence response, indicating no hydrocarbon impacts are expected to be present.

HPT and EC data indicate that the fluorescence response observed at 11 to 12 feet bgs is present within a higher permeability zone immediately between lenses of increasing fines, lower permeability material. Data also indicate that soil with an increase in fines and low permeability are present throughout AOPC 3 between 22 and 26 feet bgs.

Dissipation tests conducted at OIP-18 and OIP-19 indicate that groundwater was present at depths of 26 and 19 feet bgs, respectively, and hydraulic permeability ranged from less than 5 feet per day in soils with increasing fines to greater than 75 feet per day in coarse-grained soils.

During the second mobilization, a direct-push rig was used to obtain quantitative soil analytical results at locations OIP-18 through OIP-21. Lithology observations and field screening results indicated a thin zone of impacted soil from 10.5 to 12 feet bgs between silty sand and silt layers in OIP-20, which corresponds to the observed OIP/HPT fluorescence response. Therefore, an additional step-out location, GP-38, was advanced downgradient to the west of OIP-20, and a soil sample was collected at the same depth as TPH impacts encountered in OIP-20 (Figure 2.3). GRO exceeding the screening level was detected in OIP-20 between 11 and 11.5 feet bgs at a concentration of 630 mg/kg. All other soil samples collected within AOPC 3, including from GP-38, resulted in concentrations less than laboratory quantitation limits. Soil analytical results for AOPC 3 are presented in Table 3.1 and Figures 3.1 through 3.3.

3.1.4 AOPC 4: Monitoring Well MW-19

Eleven OIP/HPT borings (OIP-57 through OIP-63, OIP-69 through OIP-71, and OIP-73) were advanced within AOPC 4. OIP results show up to 100% fluorescence response at the locations toward the center of AOPC 4, near MW-19, at depths between approximately 6 feet bgs and 15 feet bgs, depending on the location. Fluorescence responses in the outermost locations (OIP-57, OIP-69, OIP-70, and OIP-73) were limited to smaller unsustained responses at less than 10% and 60% immediately at the surface at locations OIP-57 and OIP-73, respectively.

HPT and EC data indicate that soils throughout AOPC 4 generally have lower permeability with an increase in fine-grained material with pockets of coarse-grained, higher permeability soil between 2 and 13 feet bgs. The lenses of coarse-grained soil are interbedded within the fine-grained soils. The lenses of shallower, coarse-grained soil typically correspond with the zones of fluorescence response.

A dissipation test conducted at OIP-58 indicates that groundwater was present at a depth of 13.75 feet bgs, and hydraulic permeability ranged from less than 5 feet per day in soils with increasing fines to greater than 75 feet per day in soils with less fines.

During the second mobilization, a direct push rig was used to obtain soil samples at OIP-57, OIP-69, OIP-70, and OIP-73 to confirm that the lateral extent of impacted soil had been defined as reflected in the OIP/HPT results. All soil samples collected within AOPC 4 resulted in GRO, DRO,

and ORO concentrations less than laboratory quantitation limits. Laboratory results corresponded well with OIP/HPT fluorescence responses. Additionally, four soil samples were collected at varying depths during the installation of MW-39. Soil samples collected at MW-39 resulted in TPH concentrations with exceedances of screening levels for GRO and DRO within the 8 to 9 feet and 13 to 14 feet interval samples. The 13 to 14 feet sample at MW-39 had the greatest TPH impacts with a GRO concentration of 990 mg/kg and a DRO concentration of 18,000 mg/kg. GRO and DRO results were less than laboratory quantitation limits in the surface sample and the deepest sample at 18.5 feet bgs. Samples collected at MW-39 for cPAH and volatile organic compound (VOC) analysis resulted in concentrations either less than laboratory quantitation limits or less than their respective screening levels for all other analytes. Soil analytical results for AOPC 4 are presented in Tables 3.1 and 3.2 and Figures 3.1 through 3.4.

3.1.5 AOPC 5: Former Fuel Loading Racks

Twenty-six OIP/HPT borings (OIP-15 through OIP-17, OIP-33 through OIP-51, OIP-55, OIP-56, OIP-64, and OIP-72) were completed within AOPC 5 (Figure 2.2). OIP results throughout AOPC 5 show up to 100% fluorescence response at the surface down to 24 feet bgs, with an unsustained response with less than 75% fluorescence at the surface in some locations and the greatest response between 9 and 22 feet bgs. The thickest fluorescence response was observed beneath the rail lines and immediately adjacent to the former pipelines in the area between OIP-38 and OIP-44. OIP results indicate that fluorescence response decreases in percentage and thickness to the northeast and southwest and is not present to the south at OIP-33 and to the north at OIP-56.

Three OIP/HPT transects were completed perpendicular to the rail lines within AOPC 5:

- OIP results along the southernmost transect from OIP-17 to OIP-46 show no fluorescence response to the east at OIP-46; soil analytical data from the 2015 direct-push boring GP-2 show that TPH impacts are bounded to the west (Floyd|Snider 2015). Fluorescence response along this transect is present at depths between 9 and 16 feet bgs.
- The central transect is located within both AOPC 5 and AOPC 6 from west to east at locations OIP-09 to OIP-49, respectively. OIP-09 was advanced immediately adjacent to GP-01 to compare fluorescence response and HPT results with soil analytical data and subsurface observations. A small fluorescence response was observed at the same depth (17 to 19 feet bgs) that field screening observations and analytical data in GP-01 detected slight TPH impacts at concentrations less than their respective screening levels (Floyd|Snider 2015). The fluorescence response at OIP-09 was used as a comparison to help determine when TPH are bounded using OIP results. OIP results from OIP-49 to the northeast show two narrow fluorescence responses similar to OIP-09 at 13 and 18 feet bgs, indicating that OIP-49 is at or close to the lateral extent of impacts in this area. Fluorescence response along the central transect shows petroleum hydrocarbon impacts within the top 2 feet in some locations, with the majority of impacts at depths between 10 and 23 feet bgs.

- The northernmost transect is located across both AOPC 5 and AOPC 6 from west to east at locations OIP-14 and OIP-72. These locations appear to bound the extent of impacts in this area; there was no fluorescence response in OIP-14 to the west and only a narrow fluorescence response in OIP-72 between 10 and 11 feet bgs. Across the northern transect, fluorescence response is within the top 3 feet in some locations, with the majority of OIP/HPT response present between 11 and 21 feet bgs.

HPT and EC data show thin zones with increasing fines and low permeability extending continuously across AOPC 5 at various depths with prominent shallow fine-grained layers and deeper layers of increasing fines within the subsurface extending to approximately 10 to 15 feet bgs. Fluorescence response is generally observed between the layers of increasing fines within the vadose zone and below the deeper fine-grained layers within the higher permeability zones and alluvial aquifer.

Dissipation tests conducted in select locations within AOPC 5 show that DTW ranges between 13 and 18 feet bgs at the time of drilling, and hydraulic permeability ranges from less than 10 feet per day in soils with an increase in fines to greater than 75 feet per day in soils with less fines.

Soil samples were collected during both Phase I and Phase II activities from 10 direct-push locations and during installation of monitoring wells MW-33 and MW-40. Soil analytical data indicate that the lateral extent of hydrocarbon impacts within AOPC 5 is delineated to the northeast at locations OIP-39 and GP-35, to the southeast at OIP-46, to the southwest at OIP-64, and to the west at locations GP-1, GP-2, and GP-30 (installed in 2015). Soil analytical results at locations OIP-49 and OIP-72 to the east show detections of GRO at concentrations exceeding the screening level, indicating that the extent of contamination in this area expands slightly outside the investigated area. The GRO detections in OIP-49 and OIP-72 were at concentrations of 960 mg/kg and 520 mg/kg, respectively.

Within AOPC 5, the following analytical results were obtained:

- GRO was detected in soil at depths between 10.5 and 17.5 feet bgs in OIP-15, OIP-42, OIP-47, OIP-49, OIP-72, GP-36, MW-33, and MW-40 at concentrations exceeding the screening level.
    - The greatest GRO concentration was detected in GP-36 at 4,100 mg/kg between 13 and 14 feet bgs.
- DRO was detected at depths between 10.5 and 17.5 feet bgs in OIP-15, OIP-42, GP-36, MW-33, and MW-40 at concentrations exceeding the screening level.
    - The greatest DRO concentration was detected in MW-40 at 18,000 mg/kg between 10.5 and 11 feet bgs.
- ORO was detected at concentrations exceeding the screening level in MW-40 at depths of 1 to 1.5 feet bgs and 10.5 to 11 feet bgs.
    - The greatest ORO concentration was detected in MW-40 at 7,900 mg/kg between 10.5 and 11 feet bgs.

- Benzene was detected at concentrations exceeding the screening level at depths between 10.5 and 17.5 feet bgs at OIP-42, GP-36, and MW-40.
    - The greatest benzene concentration was detected in MW-40 at 12 mg/kg between 10.5 and 11 feet bgs.
- Ethylbenzene was detected at concentrations exceeding the screening level at depths between 10.5 and 17.5 feet bgs at OIP-42, OIP-47, GP-36, and MW-40.
    - The greatest ethylbenzene concentration was detected in OIP-42 at 41 mg/kg between 17 and 17.5 feet bgs.
- Toluene was detected at concentrations exceeding the screening level at depths between 10 and 17 feet bgs at OIP-49 and OIP-72.
    - The greatest toluene concentration was detected in OIP-49 at 14 mg/kg at 17 feet bgs.
- Total xylenes were detected at concentrations exceeding the screening level at depths between 10.5 and 17 feet bgs at OIP-40 and MW-40.
    - The greatest total xylenes concentration was detected in MW-40 at 15 mg/kg between 10.5 and 11 feet bgs.
- No other VOCs or cPAHs were detected in soil at concentrations greater than their respective screening levels.

Soil analytical results for AOPC 5 are presented in Tables 3.1 and 3.2 and Figures 3.1 through 3.4.

Soil parameter data, such as grain size, porosity, fraction organic carbon, and bulk density, collected from monitoring well MW-33 are included in Appendix F. As stated previously, these data will be evaluated in the RI report to support the preliminary CSM for the perched area in the center of the Site.

3.1.6 AOPC 6: Former Calloway Ross Parcel

Eleven OIP/HPT borings (OIP-07 through OIP-14 and OIP-66 through OIP-68) were advanced within AOPC 6 during the Phase I mobilization. OIP/HPT borings are not labeled with the correct AOPC in Appendix A. OIP results show fluorescence response at the OIP locations throughout the south to north and west to east transect between 9 and 23 feet bgs. Fluorescence response in AOPC 6 is typically represented by multiple fluorescence spikes up to 100% within high-permeability areas located above and below zones of increasing fines with low-permeability.

HPT and EC data show interbedded finer- and coarser-grained lenses approximately between 4 and 17 feet bgs within AOPC 6. Multiple fluorescence spikes up to 100% were observed within the deeper coarser-grained layers between the layers of increasing fines. These observations are especially evident in the OIP/HPT results for OIP-07 (Appendix A). Several dissipation tests were conducted across AOPC 6 and indicate that perched groundwater is present at a depth of approximately 14 to 17 feet bgs and water in the alluvial aquifer (characterized by consistently

greater conductivity) is at a depth of approximately 22 to 24 feet bgs. Hydraulic permeability ranges from less than 10 feet per day in soils with an increase in fines to greater than 75 feet per day in coarse-grained soils.

During both phases, select soil samples from GP-37, OIP-08, OIP-66, OIP-67, and OIP-68 were submitted for laboratory analyses to delineate the lateral and vertical extent of TPH impacts, to assist in determining volume of TPH impacts present, and to help in identifying product type. Soil analytical data indicate that the lateral extent of hydrocarbon impacts within AOPC 6 is delineated to the west at location GP-37 and to the north at OIP-68, with TPH concentrations in these locations less than their respective screening levels. AOPC 6 is adjacent to AOPC 5 to the east and south.

Soil samples were collected from OIP-08, OIP-66, and OIP-67 to confirm the results of the OIP/HPT borings. At OIP-08, the sample collected from the 19 to 20 feet bgs interval resulted in GRO and DRO concentrations of 4,900 mg/kg and 12,000 mg/kg, respectively. Benzene and ethylbenzene exceeding the screening levels were detected at 1.1 mg/kg and 27 mg/kg, respectively, in the sample collected from 19 to 20 feet bgs at OIP-08. At OIP-66, the sample collected from the 12 to 12.5 feet bgs interval resulted in a GRO concentration of 2,000 mg/kg. The analytical results at both OIP-08 and OIP-66 exceeded the screening levels as expected based on the high fluorescence response during OIP/HPT advancement. Soil samples from OIP-67 show GRO and DRO screening level exceedances between 11 and 14.5 feet bgs with the greatest GRO concentration, 2,200 mg/kg, detected between 14.5 and 15 feet bgs and the greatest DRO concentration, 4,300 mg/kg, between 11 and 12 feet bgs. TPH impacts are vertically delineated at 18 feet in OIP-67, with TPH concentrations less than respective laboratory quantitation limits. Other analytes including BTEX and cPAHs did not exceed their respective screening levels in any other samples collected from AOPC 6. Soil analytical results for AOPC 6 are presented in Tables 3.1 and 3.2 and Figures 3.1 through 3.4.

3.1.7 AOPC 7: Monitoring Wells MW-26 and MW-28

Seventeen OIP/HPT borings (OIP-22 through OIP-32, OIP-52 through OIP-54, and OIP-65) were completed, seven direct-push borings (OIP-23, OIP-30, OIP-31, OIP-52, OIP-53, GP-33 and GP-34) were advanced to collect soil samples, and one monitoring well (MW-34) was installed within AOPC 7.

OIP locations ran in two transects, one parallel to the rail lines from northeast to southwest and one perpendicular to the rail lines from approximately west to east. Results throughout AOPC 7 show up to 100% fluorescence response at the surface down to 24 feet bgs, with a slight, less than 60%, unsustained response at the surface in some locations and with the greatest response between 11 and 24 feet bgs. The thickest fluorescence response was observed beneath the rail lines, adjacent to the former pipelines in the area between OIP-24 and OIP-27. OIP results indicate that TPH impacts are bounded along the parallel transect to the southwest and northeast by OIP-54 and OIP-55. OIP results along the perpendicular transect show no fluorescence response to the west at OIP-53 and to the east at OIP-31. The majority of elevated fluorescence response along this transect is present at depths between approximately 11 and 24 feet bgs. A

slight fluorescence response was present within the top 2 feet in OIP-30 and OIP-52 with responses of less than 20% and less than 60%, respectively.

HPT and EC data show thin zones of increasing fines with low-permeability extending continuously across AOPC 7 at various depths with prominent shallow, fine-grained layers and a deeper layer of increasing fines. The majority of fluorescence responses are present within the higher permeability zones just above and below the shallower layers with an increase in fines and above and within the first few feet of the deeper fine-grained layer as it transitions to a more consistent zone of fine-grained soils within the deeper alluvial aquifer.

Dissipation tests conducted at select locations within AOPC 7 show that DTW was between 20 and 22 feet bgs at the time of drilling, and hydraulic permeability ranges from less than 10 feet per day in soils that show an increase in fines to slightly greater than 75 feet per day in coarse-grained soils.

GRO was detected in soil at concentrations exceeding the screening level at depths between 14 and 24.5 feet bgs in OIP-23, OIP-30, OIP-51, GP-33 and MW-34. The greatest GRO concentration was detected in OIP-23 at 790 mg/kg between 19 and 20 feet bgs. DRO was detected at concentrations exceeding the screening level at depths between 14 and 24 feet bgs in OIP-23, OIP-30, OIP-51 and MW-34. The greatest DRO concentration was detected in OIP-23 at 48,000 mg/kg between 19 and 20 feet bgs. ORO was detected at concentrations exceeding the screening level at depths between 14 and 21 feet bgs in OIP-30 and GP-33. The greatest ORO concentration was detected in OIP-30 at 12,000 mg/kg from 20 to 21 feet bgs.

BTEX and other VOC concentrations did not exceed their respective screening levels in any samples collected from AOPC 7. A single cPAH TEQ concentration of 0.54 mg/kg detected in OIP-30 between 20 and 21 feet bgs exceeded the screening level.

Soil concentrations exceeding the screening levels are delineated in AOPC 7 to the east and west at OIP-31 and OIP-53, respectively, by samples with results less than the screening levels or the laboratory reporting limits. Soil analytical results for AOPC 7 are presented in Tables 3.1 and 3.2 and Figures 3.1 through 3.4.

Soil parameter data, such as grain size, porosity, fraction organic carbon, and bulk density, collected from monitoring MW-34 are included in Appendix F. As stated previously, these data will be evaluated in the RI report to support the preliminary CSM for the perched area in the center of the Site.

3.1.8 AOPC 9: U.S. Army Reserve Building

Although there were no OIP/HPT locations advanced in AOPC 9 during Phase I, two Geoprobe boring locations were drilled near the former U.S. Army Reserve building during Phase II (GP-31 and GP-32). Soils collected from both Geoprobe locations in AOPC 9 were analyzed for DRO, GRO, and ORO by NWTPH-HCID and resulted in concentrations less than laboratory quantitation limits. Soil analytical results for AOPC 9 are presented in Table 3.1 and Figures 3.1 through 3.3.

3.1.9 Downgradient of AOPCs

Soil samples for laboratory analysis were collected during installation of wells MW-35 and MW-36 located the presumed downgradient direction of the AOPCs. Soils collected from both locations were analyzed for DRO, GRO, and ORO by NWTPH-HCID and resulted in concentrations less than laboratory quantitation limits. Soil analytical results for these locations are presented in Table 3.1 and Figures 3.1 through 3.3.

3.2 GROUNDWATER RESULTS: PHASE II AND GROUNDWATER SAMPLING EVENTS

Groundwater samples were collected from direct-push locations during the Phase II activities and from permanent monitoring wells during the first two quarterly groundwater sampling events in May 2020 and August 2020.

Groundwater samples collected from all Geoprobe locations and monitoring wells were analyzed for DRO, ORO, GRO, BTEX, and cPAHs in accordance with the Work Plan and SAP/QAPP. Additional analyses were conducted in accordance with MTCA Table 830-1 of Required Testing for Petroleum Releases (WAC 173-340-900) in select Geoprobe locations and wells located near former USTs, which included naphthalenes, MTBE, EDB, EDC, and lead. Select groundwater samples from another subset of spatially representative monitoring wells were submitted for full suite of VOC analysis. Laboratory analytical results for these analyses are presented in Tables 3.4 and 3.5.

Select wells were analyzed for MNA parameters in accordance with WAC 173-340-820 and were based on source areas, well screen depths, and distance from source areas as summarized in Table 3.6. The following geochemical parameters were recorded in the field using a YSI Pro DSS multiparameter water quality meter and Hach Field Kits for MNA monitoring:

- Dissolved oxygen (YSI)
- Redox potential (YSI)
- pH (YSI)
- Conductivity (YSI)
- Temperature (YSI)
- Ferrous iron (Hach Field Kits)

Geochemical MNA indicators that were analyzed by the laboratory consisted of the following:

- Nitrate by USEPA Method 300.0
- Manganese (soluble) by USEPA Method 200.8
- Sulfate by USEPA Method 300.0
- Methane by RSK-175
- Alkalinity by SM 2320B

Groundwater analytical results are discussed for each AOPC in the following sections. Results are presented for Phase II and the May 2020 monitoring event in Figures 3.5 through 3.8 and for the August 2020 monitoring event in Figures 3.9 through 3.12.

3.2.1 AOPC 1: Soil and Groundwater Near Southern Pipelines

Groundwater samples were collected from OIP-06 during the Phase II activities and from monitoring wells MW-37 and MW-38 during the first two quarterly sampling events conducted in May and August 2020. No compounds were detected at concentrations greater than their respective screening levels or laboratory quantitation limits.

3.2.2 AOPC 2: Former AST Area

Discrete groundwater samples were collected from OIP-02 and OIP-04 during the Phase II activities. Groundwater samples were collected from monitoring well MW-32 during the first two quarterly sampling events conducted in May and August 2020, and from monitoring well T-2 during the August 2020 sampling event.

DRO and ORO were detected in the discrete groundwater sample for direct-push boring OIP-04 at concentrations of 660 micrograms per liter (µg/L) and 870 µg/L, respectively, which exceed the screening levels. The detections of DRO and ORO in OIP-04 resulted in the addition of monitoring well T-2 to the sampling program for future quarterly sampling events. A groundwater sample was collected from T-2 during the August 2020 groundwater sampling event. No other constituents were detected at concentrations greater than their respective screening levels or laboratory quantitation limits in groundwater samples during the sampling events.

3.2.3 AOPC 3: Former Mechanic's Shop USTs

Groundwater samples were collected from UST-4 during the first two consecutive quarterly sampling events conducted in May and August 2020. In addition to the typical analyses, EDB, EDC, MTBE, and naphthalenes were analyzed in accordance with the SAP/QAPP, Ecology's Table 830-1 of Required Testing for Petroleum Releases (WAC 173-340-900), and guidelines for UST decommissioning (WAC 173-360A).

DRO and ORO results detected in UST-4 during the May 2020 sampling event show that the sum of their concentrations 230 and 320 µg/L, respectively, slightly exceeds the screening level of 500 µg/L. However, the laboratory report flagged the May 2020 results noting that the sample chromatographic pattern does not resemble the fuel standard used for quantitation. All other constituents were either less than their respective screening levels or less than the laboratory reporting limit.

Results from the August 2020 sampling event show that all constituents analyzed at UST-4 were less than their respective screening levels or laboratory quantitation limits.

3.2.4 AOPC 4: Monitoring Well MW-19

During Phase II, temporary wells were utilized to collect discrete groundwater samples at OIP-69 and OIP-70. Samples collected from both locations were analyzed for GRO, DRO, ORO, VOCs, and select PAHs. Results indicate low-level detections for DRO at OIP-69 and OIP-7 of 140 µg/L and 220 µg/L, respectively. Sample results at both locations were below laboratory quantitation limits for all other analytes.

Groundwater samples were collected from MW-06, MW-19, and MW-39 during the first two consecutive quarterly sampling events conducted in May and August 2020. Samples collected at MW-19 did not exceed screening levels for any of the analyzed analytes during either sampling event.

Samples collected from MW-06 during May and August 2020 contained DRO exceedances of the screening level of 780 µg/L and 1,900 µg/L, respectively. DRO and ORO concentrations at MW-39 exceeded screening levels during both the May and August 2020 sampling events. The greatest DRO concentration in MW-39 was detected during the August 2020 sampling event at a concentration of 6,500 µg/L; the greatest ORO concentration detected in MW-39 was detected during the May 2020 sampling event at a concentration of 950 µg/L.

3.2.5 AOPC 5: Former Fuel Loading Racks

A discrete groundwater sample was collected from OIP-15 during the Phase II activities and analyzed for GRO, DRO, ORO, VOCs, and select PAHs. The DRO concentration of 1,300 µg/L at OIP-15 exceeded the screening level. No other analytes in OIP-15 were detected at concentrations exceeding their respective screening levels or laboratory quantitation limits.

Monitoring wells MW-07, MW-09, MW-11, MW-12, MW-13, MW-14, MW-15, MW-16, MW-17, MW-20, MW-25, MW-33, and MW-40 are considered within or adjacent to the former loading racks in AOPC 5. All of these wells were sampled during the May and August 2020 sampling events except for MW-09 during both events and MW-11, MW-16, and MW-20 during the August event. MW-09 was not sampled because it contained a measurable LNAPL thickness of 0.14 feet and 0.11 feet during the May and August 2020 sampling events, respectively. MW-11, MW-16, and MW-20 were not sampled during the August 2020 event because they had an insufficient volume of water.

May and August 2020 groundwater analytical results from monitoring wells MW-11, MW-13, MW-14, MW-16, MW-17, and MW-25 show that analytes were not detected at concentrations exceeding their respective screening levels or laboratory quantitation limits. The following analytes were detected at concentrations exceeding their respective screening levels within wells located in AOPC 5 during the May or August 2020 sampling events:

- GRO in monitoring wells MW-07, MW-12, MW-20, and MW-40, with the greatest concentration in MW-12 at 7,100 µg/L detected during the August event

- DRO in OIP-15 and monitoring wells MW-07, MW-12, MW-15, MW-20, MW-33, and MW-40, with the greatest concentration in MW-40 at 3,400 µg/L detected during the August event
- Benzene in monitoring wells MW-12 and MW-40, with the greatest concentration in MW-12 at 910 µg/L detected during the August event

No other analytes were detected at concentrations exceeding their respective screening levels or laboratory quantitation limits.

3.2.6 AOPC 6: Former Calloway Ross Parcel

During Phase II, temporary wells were utilized to collect discrete groundwater samples at OIP-67 and OIP-68. Collected groundwater samples were analyzed for GRO, DRO, ORO, VOCs, and select PAHs. Samples collected at OIP-67 resulted in exceedances of the MTCA Method A screening levels for both GRO and DRO with concentrations of 3,200 µg/L and 2,000 µg/L, respectively. Samples collected at OIP-68 also resulted in exceedances of MTCA Method A screening levels for GRO and DRO; GRO was detected at a concentration of 860 µg/L, and DRO was detected at a concentration of 900 µg/L.

Monitoring wells MW-02, MW-03, MW-05, MW-08, and MW-10 are considered within or adjacent to the former Calloway Ross Parcel (AOPC 6). These wells were sampled during the May and August 2020 sampling events except for MW-05, which had an insufficient volume of water during both events. The following analytes were detected at concentrations exceeding their respective screening levels during the May or August 2020 sampling events:

- GRO in monitoring wells MW-08 and MW-10, with the greatest concentration in MW-10 at 4,100 µg/L detected during the August event
- DRO in monitoring wells MW-02, MW-03, MW-08, and MW-10, with the greatest concentration in MW-08 at 2,400 µg/L detected during the August event
- ORO in monitoring well MW-03, with the greatest concentration of 590 µg/L detected during the May event
- Benzene in monitoring well MW-10, with the greatest concentration of 120 µg/L detected during the August event

No other analytes were detected at concentrations exceeding their respective screening levels or laboratory quantitation limits.

3.2.7 AOPC 7: Monitoring Wells MW-26 and MW-28

During Phase II, a temporary well was utilized to collect a reconnaissance groundwater sample at GP-34. Collected groundwater samples were analyzed for GRO, DRO, ORO, VOCs, and select PAHs. Groundwater analytical results in GP-34 show that no analytes were detected at concentrations exceeding their respective screening levels or laboratory quantitation limits.

Monitoring wells MW-18, MW-24, MW-26, MW-27, MW-28, MW-29, and MW-34 are considered within or adjacent to AOPC 7. These wells were sampled during the May and August 2020 sampling events except for MW-28, which had an insufficient volume of water during the May 2020 sampling event.

May and August 2020 groundwater analytical results from monitoring wells MW-18, MW-24, MW-27, and MW-29 show that analytes were not detected at concentrations exceeding their respective screening levels or laboratory quantitation limits. The following analytes were detected at concentrations exceeding their respective MTCA Method A screening levels during the May or August 2020 sampling events:

- DRO in monitoring wells MW-26, MW-28, and MW-34, with the greatest concentration in MW-28 at 5,200 ug/L detected during the August event
- ORO in monitoring well MW-28, with a concentration of 890 µg/L detected during the August event

No other analytes were detected at concentrations exceeding their respective screening levels or laboratory quantitation limits.

3.2.8 AOPC 9: U.S. Army Reserve Building

During Phase II activities, temporary wells were utilized to collect reconnaissance groundwater samples from GP-31 and GP-32. Collected samples were analyzed for GRO, DRO, ORO, VOCs, and select PAHs. Samples collected from both locations had low-level detections of DRO at concentrations of 55 µg/L and 150 µg/L, respectively; neither detection exceeds screening levels. Analytical results for all other analytes were detected at concentrations at or below laboratory reporting limits.

3.2.9 Upgradient and Downgradient Groundwater Results

Monitoring wells MW-01, MW-04, MW-22, MW-23, MW-30, MW-31, MW-35, and MW-36 are not closely associated with an AOPC. Analytical data from these wells are useful in defining the bounding edge of the dissolved-phase plume along the upgradient and downgradient extents of the Site. These wells were sampled during the May and August 2020 sampling events except for MW-04 and MW-30, which were inaccessible during the May event, and MW-04, which had an insufficient volume of water during the August 2020 sampling event.

May and August 2020 groundwater analytical results from monitoring wells MW-01, MW-22, MW-23, MW-31, and MW-36 show that analytes were not detected at concentrations exceeding their respective screening levels or laboratory quantitation limits.

The following analytes were detected at concentrations exceeding their respective screening levels during the May or August 2020 sampling events:

- DRO in monitoring well MW-30, with a concentration of 1,100 µg/L detected during the August event.

- DRO in monitoring well MW-35, with the greatest concentration of 670 µg/L detected during the August event.

The DRO detections for both MW-30 and MW-35 were flagged with a laboratory note indicating that the sample chromatographic pattern does not resemble the fuel standard used for quantitation.

No other analytes at these locations were detected at concentrations exceeding their respective screening levels or laboratory quantitation limits. Future monitoring events will determine if these results are a seasonal trend.

3.3 SOIL VAPOR RESULTS

Soil-gas samples were collected from locations VP-1 and VP-2 (refer to Figure 2.3) and were analyzed for the following:

- Air-phase petroleum hydrocarbons, BTEX, and naphthalene by USEPA Method TO-15
- Helium using ASTM D1946 by TO-15 for leak detection

Soil vapor results are presented in Table 3.7. Laboratory analytical reports are included in Appendix E. Soil vapor concentrations are compared to screening levels presented in the updated Table 1 of Ecology's guidance for VI assessment (Ecology 2018) and to the updated January 2020 MTCA Method B sub-slab soil gas screening levels listed on Ecology's Cleanup Levels and Risk Calculation website (Ecology 2020).

Laboratory analytical data show that TPH was detected at concentrations between 160 and 450 micrograms per cubic meter (µg/m^3) and total xylenes were detected in VP-2 at a concentration of 5.6 µg/m^3, compared to the soil gas screening levels of 4,700 µg/m^3 and 1,500 µg/m^3 respectively. Helium was not detected at or above the laboratory quantitation limit, indicating that there were no leaks in the sampling manifold or vapor point surface seal. The results indicate that there were no detected exceedances when compared to conservative residential MTCA Method B sub-slab soil vapor screening levels and that there is no influence from outside ambient air.

3.4 HYDROGEOLOGIC RESULTS

Water level elevations were measured manually during the May and August 2020 sampling events. Additionally, water level data collected between May 8 and August 10, 2020, by the six transducers installed in wells MW-01, MW-17, MW-23, MW-29, MW-31, and MW-33 were downloaded to assess preliminary trends. The results of these hydrogeologic measurements are discussed in the following sections, and groundwater elevations for the May and August 2020 events are included on Table 3.8.

3.4.1 Groundwater Elevations and Preliminary Flow Directions

Groundwater elevation contours for the perched water-bearing zone and alluvial aquiver interpolated from measurements collected during the May 2020 monitoring event are presented on Figure 3.13 and Figure 3.14, respectively. Groundwater elevation contours for the August 2020 monitoring event are presented on Figures 3.15 and 3.16.

3.4.1.1 Perched Water-Bearing Zone

In the perched water-bearing zone, groundwater elevations ranged between 12.75 and 17.34 feet NAVD 88 during the May 2020 event and between 9.56 and 15.26 feet NAVD 88 during the August 2020 event. Perched groundwater was encountered in all wells gauged during both events, suggesting that this water-bearing zone is saturated into the dry season. The results are generally consistent with prior findings of radially outward apparent groundwater flow directions from the center of the site, although the actual flux of perched water-bearing zone groundwater has not been demonstrated.

In May 2020, a localized high elevation point was present at MW-14, with apparent flow direction to the north from this location. During the May monitoring event, the apparent groundwater flow direction from the southern portion of the perched water-bearing zone (between approximately MW-13 and MW-29) was westerly. This is generally consistent with the apparent flow directions based on August results, with a radial flow outward from MW-14 in the northern portion of the perched water-bearing zone and generally northwesterly flow from the southern portion of the perched zone. This variation in heads and apparent flow directions in the perched water-bearing zone is consistent with a thin saturated thickness and sensitivity to local recharge and may indicate insubstantial flux of groundwater.

3.4.1.2 Alluvial Aquifer

In the alluvial aquifer, groundwater elevations ranged between 6.79 and 8.77 feet NAVD 88 during the May 2020 monitoring event and between 6.13 and 7.22 feet NAVD 88 during the August 2020 monitoring event. During both events, the overall groundwater flow direction was to the north-northwest. During the May monitoring event, the groundwater flow direction away from the Columbia River and across the site was primarily northwesterly, with groundwater elevations slightly lower in wells along the railway and former Standard Pipeline in the central portion of the Site relative to wells to the east and west of the railway. During the August event, the northwesterly flow direction at the north of the Site was consistent with May measurements. However, there was an apparent component of southerly flow from the center of the Site, and the groundwater flow direction at the southern edge of the Site near the Columbia River was northeasterly (away from the Columbia River) in August. Measurements for both May and August were collected while the tidally influenced elevation of the Columbia River was ebbing as it approached lows of 2.7 feet mean lower low water in May and -0.6 feet mean lower low water in August, suggesting that the groundwater flow direction is consistently away from the Columbia River.

Groundwater elevations measured during the August 2020 monitoring event are also shown on cross-sections A-A', B-B', and C-C' presented in Figures 3.17, 3.18, and 3.19, respectively. Perched groundwater was typically encountered immediately above and within shallow low-permeability silt layers encountered between elevations of approximately 10 to 15 feet NAVD 88.

3.4.2 Transducer Results

Water level data collected from transducers between May and August 2020 were evaluated to make preliminary determinations of influence due to Columbia River tidal fluctuations, the saturated thickness of the perched water-bearing zone throughout the seasonal variation, and vertical gradients between perched and alluvial aquifer groundwater. The other objective of the transducer study, to determine influence due to the Oregon Way pump station, will be evaluated based on future wet season monitoring. Preliminary hydrographs are presented in Figures 3.20a through 3.20i.

3.4.2.1 Tidal Influence

A hydrograph of barometer-corrected water level elevations at all Site wells selected for transducer study along with the tide elevation of the Columbia River is presented in Figure 3.20a. An overall similar seasonal pattern of elevation change relative to the tide elevation during the course of the approximately 3-month data collection period was apparent in alluvial aquifer wells MW-01, MW-23, MW-31, and MW-33. Seasonal fluctuations in the elevation of groundwater observed in perched water-bearing zone well MW-17 were also apparent, with water levels generally rising in the spring and decreasing in the later summer, although these changes did not closely match elevation trends in the Columbia River or alluvial aquifer.

The groundwater elevations at individual wells relative to Columbia River tidal elevations are plotted for June 21 to 27, 2020, on Figures 3.20b through 3.20g. This period was selected for tide elevations that were clustered around the approximate average for the total study period and did not exhibit extreme high or low elevations. Comparison of groundwater levels to Columbia River water levels indicates measurable tidal influence in five of six monitoring wells measured. Tidal influence was observed in three of four alluvial aquifer monitoring wells (MW-1, MW-33, and MW-23) including the north, central, and south-central areas of the Site, extending up to approximately 1,600 feet from the Columbia River. Modest tidal influence was measured in both perched water-bearing zone monitoring wells in the central (MW-17) and south-central (MW-29) portions of the Site. No tidal influence was observed in water levels at MW-31, located near the northwest corner of the Site.

These findings build on the results of the previous tidal study (Golder 1999), which identified tidal influence in wells from the northern portion of the Site, MW-1 and MW-31, and a minor but measurable influence on perched water-bearing zone wells MW-14 and MW-16, suggesting the low permeability silt reduces the transmissivity between the units. The measurement of changes (up to approximately 0.4 feet) in water level in response to tidal variation in perched water-bearing zone wells MW-17 and MW-29 is consistent with the previous findings demonstrating reduced transmissivity, but it also indicates that the low permeability silt unit between the

perched water-bearing zone and alluvial aquifer is saturated and that groundwater is transmitted between the units, which is typical of a silt aquitard, and expected to amount to minimal flux of groundwater because of the low permeability.

Data for individual wells are discussed in geographic order from the northern portion of the Site to the south-central portion of the Site.

In the northern portion of the Site, the groundwater elevation in alluvial aquifer wells MW-01 and MW-31 exhibited moderate fluctuations between approximately 7.0 and 7.3 feet NAVD 88 (refer to Figures 3.20b and 3.20c). A slight pattern of fluctuation consistent with the period of the tidal cycle was observed at MW-01; however, this pattern was not apparent at MW-31, which is further west and approximately 200 feet closer to the river than MW-01.

In the central portion of the Site, the groundwater elevation in alluvial aquifer well MW-33 exhibited moderate elevations similar to the more northerly alluvial wells, ranging from approximately 7.8 to 8.2 feet NAVD 88 (refer to Figure 3.20d). These fluctuations also exhibited a period consistent with the tide cycle. Elevations at perched water-bearing zone well MW-17 had a similar magnitude of fluctuation (from approximately 16.2 to 16.6 feet NAVD 88; refer to Figure 3.20e), consistent with a lag relative to the daily tidal cycle.

In the south-central portion of the Site, groundwater elevations at alluvial aquifer well MW-23 exhibited significantly greater variation, ranging from approximately 7.9 to 9.2 feet NAVD 88 (refer to Figure 3.20f). The periodic nature of the variations at MW-23 was also more pronounced, with maximum and minimum elevations lagging behind the high and low Columbia River tides by approximately 80 to 90 minutes. Groundwater elevations in perched water-bearing zone well MW-29 fluctuated between approximately 13.6 and 13.7 feet NAVD 88 (refer to Figure 3.20g) and, similar to the more northerly perched water-bearing zone well, exhibited an apparent pattern of fluctuation consistent with a time lag relative to the daily tidal cycle.

3.4.2.2 Saturated Thickness of the Perched Water-Bearing Zone

Measurable perched groundwater was present throughout the study period, which extended into the dry month of August, in the two perched water-bearing zone wells MW-17 and MW-29, suggesting that this perched water-bearing zone is persistent in these areas of the Site. The saturated thickness in MW-17 ranged from approximately 5.1 to 9.2 feet during the data collection period, and the saturated thickness of MW-29 ranged from approximately 9.8 to 10.5 feet during this period. Additional data collection, including from the remainder of August and September 2020, will be useful in further evaluation.

3.4.2.3 Head Differences between the Perched Water-Bearing Zone and Alluvial Aquifer

Head differences for selected well pairs in the central (MW-17 and MW-33) and south-central MW-23 and MW-29) portions of the Site are presented in Figures 3.20h and 3.20i, respectively. Head differences between paired wells indicate the direction and magnitude of vertical gradients. Head differences were significant in both well pairs, averaging approximately 8.4 feet

higher in MW-17 than MW-33 (refer to Figure 3.20h) and approximately 5 feet higher in MW-29 than MW-23 (refer to Figure 3.20i). It should also be noted that MW-23 and MW-29 are farther apart laterally than MW-17 and MW-33 and their respective elevations may, therefore, be influenced by other factors as compared to a more geographically proximal well pair. However, at both locations in the central and south-central portions of the Site, vertical gradients were strongly downward between the perched water-bearing zone and alluvial aquifer. Downward gradients indicate the potential for downward flow of groundwater, although the actual flux of groundwater depends on other factors, including the permeability of the material. The pronounced head difference is consistent with the preliminary CSM that there is limited hydraulic connection between the two zones and that flow between the units generally resembles slow leakage through a low-permeability aquitard.

4.0 Conclusions

This section provides a brief summary of the results collected to date, incorporating data from previous investigations where appropriate to evaluate the understanding of nature and extent of impacts at the Site.

4.1 SOIL DATA SUFFICIENCY

As discussed in previous sections, data collected is being screened relative to the screening levels based on MTCA Method A CULs included in the Work Plan because these provide a conservative metric for determining data sufficiency for confirmation of contaminant nature and extent. These CULs are used for screening purposes only. During development of the RI report, MTCA Method B and Method C CULs for protection of human health through direct contact will be calculated and considered for applicability at the Site. To understand the potential range of these MTCA Method B and Method C CULs, preliminary calculations were conducted for a select set of locations analyzed for the appropriate constituents (preliminary calculations are included in Appendix G). The preliminary MTCA Method B calculated values for TPH across the Site range between 2,157 and 2,849 mg/kg, and the preliminary MTCA Method C calculated values for TPH range between 32,840 and 47,031 mg/kg.

When evaluating data compared to the values discussed above, the collected data are sufficient to bound the extent of contamination in soil. The only two areas with a less robust delineation of the extent of soil contamination are the following:

- In the vicinity of OIP-49 and OIP-72 on the eastern side of AOPC 5 where GRO was detected at concentrations of 960 and 520 mg/kg, respectively. Given the magnitude of these detections compared to the preliminary MTCA Method B and C calculated values, the limited extent of the exceedances (both located within thin zones less than 1 to 2 feet thick) and the presence of soil borings with GRO concentrations less than screening levels further to the east (GP-31 and GP-32), no additional data collection is warranted in this area for completion of an RI.
- In the vicinity of OIP-02 on the eastern side of AOPC 2 where DRO and ORO were detected at concentrations of 1,900 mg/kg and 3,400 mg/kg, respectively, in a sample collected from 5 feet bgs. Similarly, given the magnitude of these detections compared to the preliminary MTCA Method B and C calculated values, the adjacent borings to the north, west, and south with no detections of TPH constituents, and the presence of OIP-01 to the east that did not contain a fluorescence response, no additional data collection is warranted in this area for completion of an RI.

Therefore, soil impacts are considered to be delineated in all directions at the Site.

Soil impacts are present in shallow vadose soils at concentrations exceeding screening levels in some locations, such as within the former loading racks area and beneath the berths. However, the majority of TPH present in shallow soils consist of mixtures of heavily weathered diesel and oils

based on age and analytical data. EPH, VPH, VOC, and cPAH data at the Site (Tables 3.2 and 3.3) indicate that the mixtures have low toxicity, indicated by the lowest preliminary MTCA Method C calculated value of 32,840 mg/kg. This will be evaluated further in the RI report.

The majority of TPH impacts in soil are encountered within the central portion of the Site and are present within the vadose zone, perched water-bearing zone, and within the deeper alluvial aquifer. The greatest TPH (sum of GRO, DRO, and ORO) concentration detected at the Site is in OIP-23 at 19 feet bgs with a concentration of 51,000 mg/kg. This concentration is consistent with the historical soil data in the adjacent monitoring well MW-26, where DRO and GRO were detected at similar elevated concentrations in soil.

4.2 GROUNDWATER DATA SUFFICIENCY

Groundwater data show DRO impacts with concentrations exceeding screening levels from MW-06 in the north to MW-30 and MW-35 to the south and southwest. Like with soil, the majority of impacts are located within the central portion of the Site. The extent of groundwater impacts is largely defined in all directions with slight screening level exceedances in MW-30 and MW-35 to the west of AOPC 3. Historical groundwater concentrations show that DRO detections in MW-30 fluctuate at concentrations greater than and less than screening levels, so this is not considered a concern for preparation of the RI report, and no additional monitoring locations are proposed.

GRO impacts in groundwater are delineated in all directions with screening level exceedances only beneath the former Calloway Ross Parcel (AOPC 6) and former loading racks (AOPC 5).

ORO impacts are defined in all directions with exceedances only in the north at MW-39 and within the central portion of the Site. Analytical data from monitoring wells MW-37 and MW-38 indicate that Site TPH impacts do not extend to the bank of the Columbia River.

4.2.1 Proposed Revisions to Sampling Program

Groundwater analytical data from the temporary wells, and the first two quarterly events—one conducted at the end of the wet season and one during a dry season—confirm that cPAHs, select VOCs, and lead are not present in groundwater at detectable concentrations. The Work Plan proposes that after two quarters of groundwater sampling results, the number of monitoring wells to be sampled may be reduced (after request to and approval by Ecology) pending consecutive results of non-detect or less than screening levels. Given the expansive non-detect results during both wet and dry season sampling events and Site-wide non-detect results for select analytes, a list of monitoring wells proposed for removal from the sampling program as well as analytes proposed for removal from future laboratory analyses is included in Table 4.1.

4.3 SOIL VAPOR DATA SUFFICIENCY

Soil vapor results from the first sampling event are sufficient for evaluation of the VI pathway in the RI report. However, a second sampling event will be performed in November 2020, as per

the Work Plan, at the same two soil vapor locations. No additional soil vapor data are expected to be required for completion of the RI report.

4.4 HYDROGEOLOGIC DATA SUFFICIENCY

Transducer data collected over the past 3 months indicate measurable tidal influence in five of six monitoring wells measured. Tidal influence was observed in and three of four alluvial aquifer monitoring wells (MW-1, MW-33, and MW-23), with tidal influence in both perched water-bearing zone monitoring wells in the central (MW-17) and south-central (MW-29) portions of the Site. During the first three months, no tidal influence was observed in water levels at MW-31, located near the northwest corner of the Site. The transducers will remain in place throughout the quarterly groundwater monitoring schedule to collect data and evaluate tidal influence through the wet season.

4.5 CONCLUSIONS AND NEXT STEPS

Overall, soil and groundwater impacts have largely been defined at the Site. Two more quarterly groundwater sampling events will be performed in November 2020 and February 2021, and the hydrogeologic aquifer pumping test is expected to be performed in November 2020. The pump test will be performed to further evaluate the hydraulic connection between the perched water-bearing zone and alluvial aquifer and their hydraulic properties for assessment of potential remedial action alternatives. The soil data collected during the 2015 data gaps activities and RI activities, future hydrogeologic testing, and vapor and groundwater sampling events will be sufficient for understanding Site conditions and to adequately characterize the Site. The next steps will include development of the RI report which will include cleanup standards for the Site, define the COCs, document the nature and extent of contamination and overall site compliance status, and prepare a comprehensive CSM to reflect Site-wide information.

5.0 References

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Port of Longview TPH Site

Interim Data Report

Tables

Table 3.1
Soil Analytical Data—GRO, DRO, ORO, and BTEX

			AOPC 1									AOPC 2			
		Location	OIP-05	OIP-06	P3	P4	P5	P6		MW-37		MW-38	OIP-02		OIP-04	
		Sample ID	OIP-05-27-28	OIP-06-27-28	P3-0-0.5	P4-0-0.5	P5-0-0.5	P6-0.5-1.0	P6-0.5-1.0D	MW-37-27.5-28	MW-37-27.5-28D	MW-38-23.5-24	OIP-02-5-5.5	OIP-02-14-15	OIP-04-4-5	OIP-04-15-16
		Date	03/13/2020	03/13/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/11/2020	03/11/2020	03/11/2020	03/10/2020	03/10/2020
		Sample Depth	27-28 feet	27-28 feet	0-0.5 feet	0-0.5 feet	0-0.5 feet	0.5-1 feet	0.5-1 feet	27.5-28 feet	27.5-28 feet	23.5-24 feet	5-5.5 feet	14-15 feet	4-5 feet	15-16 feet
Analyte	Units	Preliminary Screening Level														
Total Petroleum Hydrocarbons																
Gasoline Range Organics	mg/kg	30	20 U	20 U	25 U	25 U	25 U	25 U	25 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Diesel Range Organics	mg/kg	2,000	50 U	50 U	620 (1)	300 (1)	860	580	560	50 U	50 U	50 U	1,900 (1)	50 U	50 U	50 U
Oil Range Organics	mg/kg	2,000	250 U	250 U	4,200	1,900	1,200	2,300	2,100	250 U	250 U	250 U	3,400	250 U	250 U	250 U
Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) Compounds																
Benzene	mg/kg	0.03			0.030 U	0.030 U	0.030 U	0.030 U	0.030 U							
Ethylbenzene	mg/kg	7			0.050 U	0.050 U	0.050 U	0.050 U	0.050 U							
Toluene	mg/kg	6			0.050 U	0.050 U	0.050 U	0.050 U	0.050 U							
Xylene (meta & para)	mg/kg	--			0.10 U	0.10 U	0.10 U	0.10 U	0.10 U							
Xylene (ortho)	mg/kg	--			0.050 U	0.050 U	0.050 U	0.050 U	0.050 U							
Xylene (total)	mg/kg	9			0.10 U	0.10 U	0.10 U	0.10 U	0.10 U							

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Abbreviations:

DRO Diesel-range organics

GRO Gasoline-range organics

mg/kg Milligrams per kilogram

MTCA Model Toxics Control Act

ORO Oil-range organics

Qualifier:

U Analyte was not detected at the given reporting limit.

Table 3.1
Soil Analytical Data—GRO, DRO, ORO, and BTEX

			AOPC 3						AOPC 4				
		Location	OIP-18	OIP-19	OIP-20		OIP-21	GP-38	OIP-57	OIP-69		OIP-70	
		Sample ID	OIP-18-19-19.5	OIP-19-19-20	OIP-20-11-11.5	OIP-20-19-19.5	OIP-21-18-19	GP-38-11-11.5	OIP-57-14	OIP-69-11-12	OIP-69-14.5-15	OIP-70-8	OIP-70-12-14
		Date	03/13/2020	03/13/2020	03/13/2020	03/13/2020	03/13/2020	03/13/2020	03/10/2020	03/11/2020	03/11/2020	03/10/2020	03/10/2020
		Sample Depth	19-19.5 feet	19-20 feet	11-11.5 feet	19-19.5 feet	18-19 feet	11-11.5 feet	14-14 feet	11-12 feet	14.5-15 feet	8-8 feet	12-14 feet
Analyte	Units	Preliminary Screening Level											
Total Petroleum Hydrocarbons													
Gasoline Range Organics	mg/kg	30	20 U	20 U	630	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Diesel Range Organics	mg/kg	2,000	50 U	50 U	440 (1)	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Oil Range Organics	mg/kg	2,000	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Benzene, Toluene, Ethylbenzene, and Xylene Compounds													
Benzene	mg/kg	0.03			0.030 U								
Ethylbenzene	mg/kg	7			0.11								
Toluene	mg/kg	6			0.050 U								
Xylene (meta & para)	mg/kg	--			0.11								
Xylene (ortho)	mg/kg	--			0.050 U								
Xylene (total)	mg/kg	9			0.11								

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Abbreviations:

DRO Diesel-range organics

GRO Gasoline-range organics

mg/kg Milligrams per kilogram

MTCA Model Toxics Control Act

ORO Oil-range organics

Qualifier:

U Analyte was not detected at the given reporting limit.

Table 3.1
Soil Analytical Data—GRO, DRO, ORO, and BTEX

			AOPC 4 (cont.)							AOPC 5					
Location			OIP-73			MW-39				OIP-15			OIP-39		
Sample ID			OIP-73-9-10	OIP-73-13-14	OIP-73-13-14D	MW-39-2-4	MW-39-8-9	MW-39-13-14	MW-39-18.5-20	OIP-15-15-16	OIP-15-20-21	OIP-15-23-24	OIP-39-15-15.5	OIP-39-16.5-17	OIP-39-21-22
Date			03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/10/2020	03/10/2020	03/10/2020
Sample Depth			9-10 feet	13-14 feet	13-14 feet	2-4 feet	8-9 feet	13-14 feet	18.5-20 feet	15-16 feet	20-21 feet	23-24 feet	15-15.5 feet	16.5-17 feet	21-22 feet
Analyte	Units	Preliminary Screening Level													
Total Petroleum Hydrocarbons															
Gasoline Range Organics	mg/kg	30	20 U	20 U	20 U	20 U	150	990	5 U	35	5 U	20 U	5 U	7.3	20 U
Diesel Range Organics	mg/kg	2,000	50 U	50 U	50 U	50 U	4,400	18,000	50 U	2,300	50 U	50 U	50 U	50 U	50 U
Oil Range Organics	mg/kg	2,000	250 U	250 U	250 U	250 U	250 U	340 (1)	250 U	370 (1)	250 U	250 U	250 U	250 U	250 U
Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) Compounds															
Benzene	mg/kg	0.03					0.030 U	0.030 U	0.030 U	0.030 U	0.030 U		0.030 U	0.030 U	
Ethylbenzene	mg/kg	7					0.050 U	0.050 U	0.050 U	0.050 U	0.050 U		0.050 U	0.050 U	
Toluene	mg/kg	6					0.050 U	0.050 U	0.050 UJ	0.050 U	0.050 U		0.050 U	0.050 U	
Xylene (meta & para)	mg/kg	--					0.10 U	0.10 U	0.10 U	0.10 U	0.10 U		0.10 U	0.10 U	
Xylene (ortho)	mg/kg	--					0.050 U	0.050 U	0.050 U	0.050 U	0.050 U		0.050 U	0.050 U	
Xylene (total)	mg/kg	9					0.10 U	0.10 U	0.10 U	0.10 U	0.10 U		0.10 U	0.10 U	

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Abbreviations:

DRO Diesel-range organics

GRO Gasoline-range organics

mg/kg Milligrams per kilogram

MTCA Model Toxics Control Act

ORO Oil-range organics

Qualifier:

U Analyte was not detected at the given reporting limit.

Table 3.1
Soil Analytical Data—GRO, DRO, ORO, and BTEX

			AOPC 5 (cont.)													
		Location	OIP-42	OIP-46		OIP-47				OIP-49		OIP-64	OIP-72		GP-35	
		Sample ID	OIP42-17-17.5-112119	OIP-46-10-11	OIP-46-14	OIP-47-2-3	OIP-47-11-12	OIP-47-17	OIP-47-25	OIP-49-10	OIP-49-17	OIP-64-14-15	OIP-72-10-11	OIP-72-16-17	GP-35-7-8	GP-35-16-17
		Date	11/21/2019	03/10/2020	03/10/2020	03/09/2020	03/09/2020	03/09/2020	03/09/2020	03/09/2020	03/09/2020	03/12/2020	03/11/2020	03/11/2020	03/10/2020	03/10/2020
		Sample Depth	17-17.5 feet	10-11 feet	14-14 feet	2-3 feet	11-12 feet	17-17 feet	25-25 feet	10-10 feet	17-17 feet	14-15 feet	10-11 feet	16-17 feet	7-8 feet	16-17 feet
Analyte	Units	Preliminary Screening Level														
Total Petroleum Hydrocarbons																
Gasoline Range Organics	mg/kg	30	3,600	20 U	20 U	20 U	5,700	49	20 U	22	960	20 U	520	270	20 U	20 U
Diesel Range Organics	mg/kg	2,000	17,000	50 U	50 U	50 U	210 [1]	360	50 U	50 U	50 U	50 U	50 U	50 U	590	50 U
Oil Range Organics	mg/kg	2,000	1,500 [1]	250 U	250 U	250 U	250 U	250 U	250 U	360	250 U	250 U	250 U	250 U	250 U	250 U
Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) Compounds																
Benzene	mg/kg	0.03	2.4				0.030 U	0.030 U		0.020 U	0.020 UJ		0.020 UJ	0.020 U		
Ethylbenzene	mg/kg	7	41				27	7.0		0.16	0.020 UJ		0.020 UJ	0.020 U		
Toluene	mg/kg	6	0.99				0.12	0.089		0.020 U	14 J		6.1 J	2.1		
Xylene (meta & para)	mg/kg	--	4.1				1.9	1.6								
Xylene (ortho)	mg/kg	--	0.50 U				0.30	0.15								
Xylene (total)	mg/kg	9	4.1				2.2	1.8		0.41	14 J		7.0 J	2.3		

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Abbreviations:

DRO Diesel-range organics

GRO Gasoline-range organics

mg/kg Milligrams per kilogram

MTCA Model Toxics Control Act

ORO Oil-range organics

Qualifier:

U Analyte was not detected at the given reporting limit.

Table 3.1
Soil Analytical Data—GRO, DRO, ORO, and BTEX

			AOPC 5 (cont.)										
		Location	GP-36			MW-33			MW-40				
		Sample ID	GP-36-13-14	GP-36-16-17	GP-36-22-23	MW-33-12-12.5	MW-33-19.5-20	MW-33-22.5-23	MW-40-1.0-1.5	MW-40-10.5-11	MW-40-17	MW-40-17D	MW-40-24-24.5
		Date	03/12/2020	03/12/2020	03/12/2020	03/09/2020	03/09/2020	03/09/2020	03/09/2020	03/09/2020	03/09/2020	03/09/2020	03/09/2020
		Sample Depth	13-14 feet	16-17 feet	22-23 feet	12-12.5 feet	19.5-20 feet	22.5-23 feet	1-1.5 feet	10.5-11 feet	17-17 feet	17-17 feet	24-24.5 feet
Analyte	Units	Preliminary Screening Level											
Total Petroleum Hydrocarbons													
Gasoline Range Organics	mg/kg	30	4,100	950	20 U	230	5 U	20 U	20 U	2,000	170	1,700	20 U
Diesel Range Organics	mg/kg	2,000	3,500	15,000	50 U	15,000	50 U	50 U	200 [(1)]	18,000	2,400	2,100	50 U
Oil Range Organics	mg/kg	2,000	250 U	970 [(1)]	250 U	600 [(1)]	250 U	250 U	2,400	7,900 [(1)]	250 U	320 [(1)]	250 U
Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) Compounds													
Benzene	mg/kg	0.03	0.25	0.61		0.030 U	0.030 U			12	0.33	0.088	
Ethylbenzene	mg/kg	7	4.7	7.6		0.050 U	0.050 U			7.4	0.14	0.19	
Toluene	mg/kg	6	0.27	0.47		0.050 U	0.050 U			5.4	0.050 U	0.050 U	
Xylene (meta & para)	mg/kg	--	1.5	2.5		0.10 U	0.10 U				0.13	0.12	
Xylene (ortho)	mg/kg	--	0.050 U	0.056		0.050 U	0.050 U				0.050 U	0.050 U	
Xylene (total)	mg/kg	9	1.5	2.6		0.10 U	0.10 U			15	0.13	0.12	

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Abbreviations:

DRO Diesel-range organics

GRO Gasoline-range organics

mg/kg Milligrams per kilogram

MTCA Model Toxics Control Act

ORO Oil-range organics

Qualifier:

U Analyte was not detected at the given reporting limit.

Table 3.1
Soil Analytical Data—GRO, DRO, ORO, and BTEX

			AOPC 6											
		Location	OIP-08	OIP-66		OIP-67				OIP-68			GP-37	
		Sample ID	OIP08-19-20-112219	OIP166-12-12.5D	OIP66-12-12.5-1112219	OIP-67-11-12	OIP-67-14.5-15	OIP-67-18-19	OIP-67-7-8	OIP-68-10-11	OIP-68-10-11D	OIP-68-13.5-14	GP-37-12-14	GP-37-12-14D
		Date	11/22/2019	11/22/2019	11/22/2019	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/11/2020	03/11/2020	03/11/2020	03/12/2020	03/12/2020
		Sample Depth	19-20 feet	12-12.5 feet	12-12.5 feet	11-12 feet	14.5-15 feet	18-19 feet	7-8 feet	10-11 feet	10-11 feet	13.5-14 feet	12-14 feet	12-14 feet
Analyte	Units	Preliminary Screening Level												
Total Petroleum Hydrocarbons														
Gasoline Range Organics	mg/kg	30	4,900	2,000	1,500	1,500	2,200	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Diesel Range Organics	mg/kg	2,000	12,000	490	760	4,300	2,100	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Oil Range Organics	mg/kg	2,000	1,000 (1)	250 U	250 U	310 (1)	250 U	250 U	250 U	250 U	250 U	250 U	250 U	250 U
Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) Compounds														
Benzene	mg/kg	0.03	1.1	0.030 U	0.030 U	0.030 U	0.030 U							
Ethylbenzene	mg/kg	7	27	0.25	0.12	0.062	0.050 U							
Toluene	mg/kg	6	0.74	0.050 U	0.050 U	0.050 U	0.050 U							
Xylene (meta & para)	mg/kg	--	3.2	0.10 U	0.10 U	0.10 U	0.10 U							
Xylene (ortho)	mg/kg	--	0.25 U	0.050 U	0.050 U	0.050 U	0.050 U							
Xylene (total)	mg/kg	9	3.2	0.10 U	0.10 U	0.10 U	0.10 U							

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Abbreviations:

DRO Diesel-range organics

GRO Gasoline-range organics

mg/kg Milligrams per kilogram

MTCA Model Toxics Control Act

ORO Oil-range organics

Qualifier:

U Analyte was not detected at the given reporting limit.

Table 3.1
Soil Analytical Data—GRO, DRO, ORO, and BTEX

			AOPC 7										
Location			OIP-23				OIP-30	OIP-31		OIP-52		OIP-53	OIP-54
Sample ID			OIP-23-14-15	OIP-23-19-20	OIP-23-23-24	OIP-23-29.5-30	OIP30-20-21-111919	OIP-31-17	OIP-31-20	OIP52-19-19.5-112219	OIP52-22-22.5-112219	OIP53-22-22.5-112219	OIP-54-15-16
Date			03/10/2020	03/10/2020	03/10/2020	03/10/2020	11/19/2019	03/09/2020	03/09/2020	11/22/2019	11/22/2019	11/22/2019	03/11/2020
Sample Depth			14-15 feet	19-20 feet	23-24 feet	29.5-30 feet	20-21 feet	17-17 feet	20-20 feet	19-19.5 feet	22-22.5 feet	22-22.5 feet	15-16 feet
Analyte	Units	Preliminary Screening Level											
Total Petroleum Hydrocarbons													
Gasoline Range Organics	mg/kg	30	420	790	200	20 U	61	20 U	20 U	86	260	5 U	20 U
Diesel Range Organics	mg/kg	2,000	13,000	48,000	5,700	50 U	11,000	50 U	50 U	530	2,200	50 U	50 U
Oil Range Organics	mg/kg	2,000	250 U	1,300 (1)	250 U	250 U	12,000	250 U	250 U	250 U	250 U	250 U	660
Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) Compounds													
Benzene	mg/kg	0.03	0.030 U	0.030 U	0.030 U		0.030 U			0.030 U	0.030 U	0.030 U	
Ethylbenzene	mg/kg	7	0.050 U	0.050 U	0.050 U		0.050 U			0.050 U	0.050 U	0.050 U	
Toluene	mg/kg	6	0.050 U	0.050 U	0.050 U		0.050 U			0.050 U	0.050 U	0.050 U	
Xylene (meta & para)	mg/kg	--	0.10 U	0.10 U	0.10 U		0.10 U			0.10 U	0.10 U	0.10 U	
Xylene (ortho)	mg/kg	--	0.050 U	0.081	0.050 U		0.063			0.050 U	0.050 U	0.050 U	
Xylene (total)	mg/kg	9	0.10 U	0.081	0.10 U		0.063			0.10 U	0.10 U	0.10 U	

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Abbreviations:

DRO Diesel-range organics

GRO Gasoline-range organics

mg/kg Milligrams per kilogram

MTCA Model Toxics Control Act

ORO Oil-range organics

Qualifier:

U Analyte was not detected at the given reporting limit.

Table 3.1
Soil Analytical Data—GRO, DRO, ORO, and BTEX

			AOPC 7 (cont.)									AOPC 9		Downgradient of AOPCs	
Location			GP-33				GP-34	MW-34				GP-31	GP-32	MW-35	MW-36
Sample ID			GP-33-14-14.5	GP-33-19.5-20	GP-33-24-25	GP-33-28-29	GP-34-14-15	MW-34-15-15.5	MW-34-20-20.5	MW-34-24-24.5	MW-34-28-28.5	GP-31-14-15	GP-32-17.5-18.5	MW-35-15.5-16	MW-36-25.5-26
Date			03/09/2020	03/09/2020	03/09/2020	03/09/2020	03/09/2020	03/10/2020	03/10/2020	03/10/2020	03/10/2020	03/11/2020	03/11/2020	03/10/2020	03/11/2020
Sample Depth			14-14.5 feet	19.5-20 feet	24-25 feet	28-29 feet	14-15 feet	15-15.5 feet	20-20.5 feet	24-24.5 feet	28-28.5 feet	14-15 feet	17.5-18.5 feet	15.5-16 feet	25.5-26 feet
Analyte	Units	Preliminary Screening Level													
Total Petroleum Hydrocarbons															
Gasoline Range Organics	mg/kg	30	170	20 U	20 U	20 U	20 U	760	280	46	20 U	20 U	20 U	20 U	20 U
Diesel Range Organics	mg/kg	2,000	830 (1)	50 U	50 U	50 U	50 U	23,000	17,000	300	50 U	50 U	50 U	50 U	50 U
Oil Range Organics	mg/kg	2,000	3,800	250 U	250 U	250 U	250 U	540 (1)	480 (1)	250 U	250 U	250 U	250 U	250 U	250 U
Benzene, Toluene, Ethylbenzene, and Xylene (BTEX) Compounds															
Benzene	mg/kg	0.03	0.020 U					0.030 U	0.030 U	0.030 U					
Ethylbenzene	mg/kg	7	0.11					0.050 U	0.050 U	0.050 U					
Toluene	mg/kg	6	0.58					0.050 U	0.050 U	0.050 U					
Xylene (meta & para)	mg/kg	--						0.10 U	0.10 U	0.10 U					
Xylene (ortho)	mg/kg	--						0.050 U	0.050 U	0.050 U					
Xylene (total)	mg/kg	9	1.7					0.10 U	0.10 U	0.10 U					

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Abbreviations:

DRO Diesel-range organics

GRO Gasoline-range organics

mg/kg Milligrams per kilogram

MTCA Model Toxics Control Act

ORO Oil-range organics

Qualifier:

U Analyte was not detected at the given reporting limit.

Table 3.2
Soil Analytical—VOCs, SVOCs, and Metals

			AOPC 1					AOPC 3	AOPC 4				AOPC 5			
		Location	P3	P4	P5	P6		OIP-20	OIP-69	MW-39			OIP-15		OIP-39	
		Sample ID	P3-0-0.5	P4-0-0.5	P5-0-0.5	P6-0.5-1.0	P6-0.5-1.0D	OIP-20-11-11.5	OIP-69-14.5-15	MW-39-8-9	MW-39-13-14	MW-39-18.5-20	OIP-15-15-16	OIP-15-20-21	OIP-39-15-15.5	OIP-39-16.5-17
		Date	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/13/2020	03/11/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/10/2020	03/10/2020
		Sample Depth	0-0.5 feet	0-0.5 feet	0-0.5 feet	0.5-1 feet	0.5-1 feet	11-11.5 feet	14.5-15 feet	8-9 feet	13-14 feet	18.5-20 feet	15-16 feet	20-21 feet	15-15.5 feet	16.5-17 feet
Analyte	Units	Preliminary Screening Level														
Conventionals																
Total organic carbon	%	--							0.075 U							
Metals																
Lead	mg/kg	--						8.2					1.1	1.9		1.2
Semivolatile Organic Compounds (SVOCs)																
cPAHs (MTCA TEQ-HalfND)	mg/kg	0.1	2.3	0.51	*0.76 U*	*0.76 U*	*7.1 U*	0.0076 U		0.0077 J	0.038	0.0076 U	0.038 U	0.0076 U	0.0076 U	0.0076 U
cPAHs (MTCA TEQ-ZeroND)	mg/kg	--	2.3	0.51	0 U [1]	0 U [1]	0 U [1]	0 U [1]		0.00023 J	0.00071	0 U [1]	0 U [1]	0 U [1]	0 U [1]	0 U [1]
Naphthalene	mg/kg	--						1.5						0.050 U		
1-Methylnaphthalene	mg/kg	--														
2-Methylnaphthalene	mg/kg	--														
Acenaphthene	mg/kg	--														
Acenaphthylene	mg/kg	--														
Anthracene	mg/kg	--														
Benzo(a)anthracene	mg/kg	--	1.8	0.46	1.0 U	1.0 U	1.0 U	0.010 U		0.010 U	0.050 U	0.010 U	0.050 U	0.010 U	0.010 U	0.010 U
Benzo(a)pyrene	mg/kg	--	1.5	0.35	1.0 U	1.0 U	10 U	0.010 U		0.010 U	0.050 U	0.010 U	0.050 U	0.010 U	0.010 U	0.010 U
Benzo(b)fluoranthene	mg/kg	--	3.5	0.66	1.0 U	1.0 U	10 U	0.010 U		0.010 U	0.050 U	0.010 U	0.050 U	0.010 U	0.010 U	0.010 U
Benzo(g,h,i)perylene	mg/kg	--														
Benzo(k)fluoranthene	mg/kg	--	1.0	0.22	1.0 U	1.0 U	10 U	0.010 U		0.010 U	0.050 U	0.010 U	0.050 U	0.010 U	0.010 U	0.010 U
Chrysene	mg/kg	--	3.1	0.63	1.0 U	1.0 U	1.0 U	0.010 U		0.023	0.071	0.010 U	0.050 U	0.010 U	0.010 U	0.010 U
Dibenzo(a,h)anthracene	mg/kg	--	1.0 U	0.10 U	1.0 U	1.0 U	10 U	0.010 U		0.010 UJ	0.050 U	0.010 U	0.050 U	0.010 U	0.010 U	0.010 U
Fluoranthene	mg/kg	--														
Fluorene	mg/kg	--														
Indeno(1,2,3-c,d)pyrene	mg/kg	--	1.3	0.19	1.0 U	1.0 U	10 U	0.010 U		0.010 U	0.050 U	0.010 U	0.050 U	0.010 U	0.010 U	0.010 U
Naphthalene	mg/kg	--														
Phenanthrene	mg/kg	--														
Pyrene	mg/kg	--														
Volatile Organic Compounds (VOCs)																
1,2-Dibromoethane (EDB)	mg/kg	--						0.050 U			0.050 U		0.050 U	0.050 U		0.050 U
1,2-Dichloroethane (EDC)	mg/kg	--						0.050 U			0.050 U		0.050 U	0.050 U		0.050 U
Methyl-Tert-Butyl Ether	mg/kg	--						0.050 U			0.050 U		0.050 U			0.050 U
n-Hexane	mg/kg	--						0.25 U			0.25 U		0.25 U	0.25 U		0.25 U

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

Italics Indicates a nondetect result with a practical quantitation limit that exceeds the applicable screening level.

1 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Abbreviations:

cPAH Carcinogenic polycyclic aromatic hydrocarbon

mg/kg Milligrams per kilogram

MTCA Model Toxics Control Act

TEQ Toxic equivalent

Qualifier:

J Analyte was detected, concentration is considered to be an estimate.

U Analyte was not detected at the given reporting limit.

UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Table 3.2
Soil Analytical—VOCs, SVOCs, and Metals

			AOPC 5 (cont.)										AOPC 6		
		Location	OIP-42	OIP-46	OIP-47		GP-36		MW-33		MW-40		OIP-08	OIP-66	
		Sample ID	OIP42-17-17.5-112119	OIP-46-8	OIP-47-11-12	OIP-47-17	GP-36-13-14	GP-36-16-17	MW-33-12-12.5	MW-33-19.5-20	MW-40-17	MW-40-17D	OIP08-19-20-112219	OIP166-12-12.5D	OIP66-12-12.5-1112219
		Date	11/21/2019	03/10/2020	03/09/2020	03/09/2020	03/12/2020	03/12/2020	03/09/2020	03/09/2020	03/09/2020	03/09/2020	11/22/2019	11/22/2019	11/22/2019
		Sample Depth	17-17.5 feet	8-8 feet	11-12 feet	17-17 feet	13-14 feet	16-17 feet	12-12.5 feet	19.5-20 feet	17-17 feet	17-17 feet	19-20 feet	12-12.5 feet	12-12.5 feet
Analyte	Units	Preliminary Screening Level													
Conventionals															
Total organic carbon	%	--		0.075 U											
Metals															
Lead	mg/kg	--			3.3	2.6	2.7	3.8	1.1	3.6	2.1	1.5		3.8	3.0
Semivolatile Organic Compounds (SVOCs)															
cPAHs (MTCA TEQ-HalfND)	mg/kg	0.1	0.052		0.0076 U	0.0076 U	0.038	0.045	0.039	0.0076 U	0.038	0.038	0.042	0.038 U	0.038 U
cPAHs (MTCA TEQ-ZeroND)	mg/kg	--	0.017		0 U [1]	0 U [1]	0.00064	0.010	0.0010	0 U [1]	0.00068	0.00088	0.0073	0 U [1]	0 U [1]
Naphthalene	mg/kg	--				6.3	1.1	2.0							
1-Methylnaphthalene	mg/kg	--	38										32	1.4	1.7
2-Methylnaphthalene	mg/kg	--	27										27	1.6	1.9
Acenaphthene	mg/kg	--	1.3										1.0	0.050 U	0.053
Acenaphthylene	mg/kg	--	0.050 U										0.050 U	0.050 U	0.050 U
Anthracene	mg/kg	--	0.050 U										0.050 U	0.050 U	0.050 U
Benzo(a)anthracene	mg/kg	--	0.13		0.010 U	0.010 U	0.050 U	0.091	0.050 U	0.010 U	0.050 U	0.050 U	0.057	0.050 U	0.050 U
Benzo(a)pyrene	mg/kg	--	0.050 U		0.010 U	0.010 U	0.050 U	0.050 U	0.050 U	0.010 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Benzo(b)fluoranthene	mg/kg	--	0.050 U		0.010 U	0.010 U	0.050 U	0.050 U	0.050 U	0.010 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Benzo(g,h,i)perylene	mg/kg	--	0.050 U										0.050 U	0.050 U	0.050 U
Benzo(k)fluoranthene	mg/kg	--	0.050 U		0.010 U	0.010 U	0.050 U	0.050 U	0.050 U	0.010 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Chrysene	mg/kg	--	0.40		0.010 U	0.010 U	0.064	0.11	0.10	0.010 U	0.068	0.088	0.16	0.050 U	0.050 U
Dibenzo(a,h)anthracene	mg/kg	--	0.050 U		0.010 U	0.010 U	0.050 U	0.050 U	0.050 U	0.010 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Fluoranthene	mg/kg	--	0.24										0.16	0.050 U	0.050 U
Fluorene	mg/kg	--	8.0										6.8	0.24	0.28
Indeno(1,2,3-c,d)pyrene	mg/kg	--	0.050 U		0.010 U	0.010 U	0.050 U	0.050 U	0.050 U	0.010 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U
Naphthalene	mg/kg	--	0.050 U										0.050 U	0.050 U	0.050 U
Phenanthrene	mg/kg	--	11										8.8	0.30	0.32
Pyrene	mg/kg	--	0.71										0.43	0.050 U	0.050 U
Volatile Organic Compounds (VOCs)															
1,2-Dibromoethane (EDB)	mg/kg	--	0.50 U		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U			0.25 U		0.050 U
1,2-Dichloroethane (EDC)	mg/kg	--	0.50 U		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U			0.25 U		0.050 U
Methyl-Tert-Butyl Ether	mg/kg	--	0.50 U		0.050 U	0.050 U	0.050 U	0.050 U	0.050 U	0.050 U			0.25 U		0.050 U
n-Hexane	mg/kg	--	45		3.6	1.3	18	32	0.25 U	0.25 U			23		1.1

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

Italics Indicates a nondetect result with a practical quantitation limit that exceeds the applicable screening level.

1 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Abbreviations:

cPAH Carcinogenic polycyclic aromatic hydrocarbon
mg/kg Milligrams per kilogram
MTCA Model Toxics Control Act
TEQ Toxic equivalent

Qualifier:

J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Table 3.2
Soil Analytical—VOCs, SVOCs, and Metals

			AOPC 6 (cont.)			AOPC 7							
Location			OIP-67		OIP-68	OIP-23			OIP-30	OIP-52		OIP-53	OIP-54
Sample ID			OIP-67-11-12	OIP-67-14.5-15	OIP-68-14-14.5	OIP-23-14-15	OIP-23-19-20	OIP-23-23-24	OIP30-20-21-111919	OIP52-19-19.5-112219	OIP52-22-22.5-112219	OIP53-22-22.5-112219	OIP-54-18-19
Date			03/12/2020	03/12/2020	03/11/2020	03/10/2020	03/10/2020	03/10/2020	11/19/2019	11/22/2019	11/22/2019	11/22/2019	03/11/2020
Sample Depth			11-12 feet	14.5-15 feet	14-14.5 feet	14-15 feet	19-20 feet	23-24 feet	20-21 feet	19-19.5 feet	22-22.5 feet	22-22.5 feet	18-19 feet
Analyte	Units	Preliminary Screening Level											
Conventionals													
Total organic carbon	%	--			0.16							0.075 U	0.075 U
Metals													
Lead	mg/kg	--	5.0	1.6						1.0 U	1.2	1.0 U	
Semivolatile Organic Compounds (SVOCs)													
cPAHs (MTCA TEQ-HalfND)	mg/kg	0.1	0.048	0.038 U		0.038	0.053	0.038 U	0.54	0.0076 U	0.0076	0.0076 U	
cPAHs (MTCA TEQ-ZeroND)	mg/kg	--	0.015	0 U [1]		0.00058	0.018	0 U [1]	0.53	0 U [1]	0.00010	0 U [1]	
Naphthalene	mg/kg	--		0.15									
1-Methylnaphthalene	mg/kg	--							13	0.55	8.1	0.010 U	
2-Methylnaphthalene	mg/kg	--							15	0.010 U	0.010 U	0.010 U	
Acenaphthene	mg/kg	--							0.94	0.077	0.39	0.010 U	
Acenaphthylene	mg/kg	--							0.10 U	0.010 U	0.010 U	0.010 U	
Anthracene	mg/kg	--							2.1	0.010 U	0.010 U	0.010 U	
Benzo(a)anthracene	mg/kg	--	0.080	0.050 U		0.050 U	0.16	0.050 U	0.81	0.010 U	0.010 U	0.010 U	
Benzo(a)pyrene	mg/kg	--	0.050 U	0.050 U		0.050 U	0.050 U	0.050 U	0.40	0.010 U	0.010 U	0.010 U	
Benzo(b)fluoranthene	mg/kg	--	0.063	0.050 U		0.050 U	0.050 U	0.050 U	0.24	0.010 U	0.010 U	0.010 U	
Benzo(g,h,i)perylene	mg/kg	--							0.11	0.010 U	0.010 U	0.010 U	
Benzo(k)fluoranthene	mg/kg	--	0.050 U	0.050 U		0.050 U	0.050 U	0.050 U	0.10 U	0.010 U	0.010 U	0.010 U	
Chrysene	mg/kg	--	0.093	0.050 U		0.058	0.23	0.050 U	2.0	0.010 U	0.010	0.010 U	
Dibenzo(a,h)anthracene	mg/kg	--	0.050 U	0.050 U		0.050 U	0.050 U	0.050 U	0.10 U	0.010 U	0.010 U	0.010 U	
Fluoranthene	mg/kg	--							0.58	0.011	0.045	0.010 U	
Fluorene	mg/kg	--							4.3	0.57	3.5	0.010 U	
Indeno(1,2,3-c,d)pyrene	mg/kg	--	0.050 U	0.050 U		0.050 U	0.050 U	0.050 U	0.10 U	0.010 U	0.010 U	0.010 U	
Naphthalene	mg/kg	--							0.10 U	0.010 U	0.010 U	0.010 U	
Phenanthrene	mg/kg	--							8.4	0.87	4.0	0.010 U	
Pyrene	mg/kg	--							3.4	0.026	0.10	0.010 U	
Volatile Organic Compounds (VOCs)													
1,2-Dibromoethane (EDB)	mg/kg	--	0.050 U	0.050 U		0.050 U	0.050 U	0.050 U	0.050 U				
1,2-Dichloroethane (EDC)	mg/kg	--	0.050 U	0.050 U		0.050 U	0.050 U	0.050 U	0.050 U				
Methyl-Tert-Butyl Ether	mg/kg	--	0.050 U	0.050 U		0.050 U	0.050 U	0.050 U	0.050 U				
n-Hexane	mg/kg	--	0.32	1.0		0.25 U	0.42	0.25 U	0.25 U				

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

Italics Indicates a nondetect result with a practical quantitation limit that exceeds the applicable screening level.

1 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Abbreviations:

cPAH Carcinogenic polycyclic aromatic hydrocarbon

mg/kg Milligrams per kilogram

MTCA Model Toxics Control Act

TEQ Toxic equivalent

Qualifier:

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Table 3.2
Soil Analytical—VOCs, SVOCs, and Metals

			AOPC 7 (cont.)		
		Location	MW-34		
		Sample ID	MW-34-15-15.5	MW-34-20-20.5	MW-34-24-24.5
		Date	03/10/2020	03/10/2020	03/10/2020
		Sample Depth	15-15.5 feet	20-20.5 feet	24-24.5 feet
Analyte	Units	Preliminary Screening Level			
Conventionals					
Total organic carbon	%	--			
Metals					
Lead	mg/kg	--	1.1	1.3	1.0 U
Semivolatile Organic Compounds (SVOCs)					
cPAHs (MTCA TEQ-HalfND)	mg/kg	0.1	0.039	0.038	0.0076 U
cPAHs (MTCA TEQ-ZeroND)	mg/kg	--	0.0014	0.00072	0 U [(1)]
Naphthalene	mg/kg	--			
1-Methylnaphthalene	mg/kg	--			
2-Methylnaphthalene	mg/kg	--			
Acenaphthene	mg/kg	--			
Acenaphthylene	mg/kg	--			
Anthracene	mg/kg	--			
Benzo(a)anthracene	mg/kg	--	0.050 U	0.050 U	0.010 U
Benzo(a)pyrene	mg/kg	--	0.050 U	0.050 U	0.010 U
Benzo(b)fluoranthene	mg/kg	--	0.050 U	0.050 U	0.010 U
Benzo(g,h,i)perylene	mg/kg	--			
Benzo(k)fluoranthene	mg/kg	--	0.050 U	0.050 U	0.010 U
Chrysene	mg/kg	--	0.14	0.072	0.010 U
Dibenzo(a,h)anthracene	mg/kg	--	0.050 U	0.050 U	0.010 U
Fluoranthene	mg/kg	--			
Fluorene	mg/kg	--			
Indeno(1,2,3-c,d)pyrene	mg/kg	--	0.050 U	0.050 U	0.010 U
Naphthalene	mg/kg	--			
Phenanthrene	mg/kg	--			
Pyrene	mg/kg	--			
Volatile Organic Compounds (VOCs)					
1,2-Dibromoethane (EDB)	mg/kg	--			
1,2-Dichloroethane (EDC)	mg/kg	--			
Methyl-Tert-Butyl Ether	mg/kg	--			
n-Hexane	mg/kg	--			

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

Italics Indicates a nondetect result with a practical quantitation limit that exceeds the applicable screening level.

1 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Abbreviations:

cPAH Carcinogenic polycyclic aromatic hydrocarbon

mg/kg Milligrams per kilogram

MTCA Model Toxics Control Act

TEQ Toxic equivalent

Qualifier:

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U Analyte was not detected at the given reporting limit.

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Table 3.3
Soil Analytical Data—VPH/EPH

Location		OIP-08	OIP-15		OIP-20	OIP-23			OIP-30	OIP-39	OIP-42
Sample ID		OIP08-19-20-112219	OIP-15-15-16	OIP-15-20-21	OIP-20-11-11.5	OIP-23-14-15	OIP-23-19-20	OIP-23-23-24	OIP30-20-21-111919	OIP-39-16.5-17	OIP42-17-17.5-112119
Date		11/22/2019	03/12/2020	03/12/2020	03/13/2020	03/10/2020	03/10/2020	03/10/2020	11/19/2019	03/10/2020	11/21/2019
Sample Depth		19-20 feet	15-16 feet	20-21 feet	11-11.5 feet	14-15 feet	19-20 feet	23-24 feet	20-21 feet	16.5-17 feet	17-17.5 feet
Analyte	Units										
Petroleum Fractionation Data											
EPH Aliphatic C10-C12	mg/kg	1,100	150	13 U	64	630	2800	300	150	12 U	1,300
EPH Aliphatic C12-C16	mg/kg	3,300	1,100	13 U	32	2,900	12,000	1,600	1,300	12 U	4,100
EPH Aliphatic C16-C21	mg/kg	2,800	1,100	13 U	14 U	3,100	11,000	1,800	1,700	12 U	3,500
EPH Aliphatic C21-C34	mg/kg	870	310 J	13 U	14 U	470 J	1,600 J	260 J	2,000	12 U	990
EPH Aliphatic C8-C10	mg/kg	820 J	23 UJ	26 UJ	71 J	140 J	620 J	70 J	33 J	37 J	920 J
EPH Aromatic C10-C12	mg/kg	290	11 U	13 U	130	98	480	49	56	12 U	400
EPH Aromatic C12-C16	mg/kg	890	120	13 U	110	910	3,600	490	560	12 U	1,300
EPH Aromatic C16-C21	mg/kg	2,000	740	13 U	20	2,700	9,500	1500	1,700	12 U	2,600
EPH Aromatic C21-C34	mg/kg	390	270	13 U	20	320	910	160	2,300	12 U	500
EPH Aromatic C8-C10	mg/kg	80 J	11 UJ	13 UJ	14 UJ	13 UJ	44 J	12 UJ	16 J	12 UJ	110 J
VPH Aliphatic C10-C12	mg/kg	620	13	1.5 U	120	110	310	84	39	1.1 U	220
VPH Aliphatic C5-C6	mg/kg	16 U	1.1 U	1.8 U	1.7 U	17 U	16 U	27 U	1.6 U	1.3 U	280
VPH Aliphatic C6-C8	mg/kg	270	1.6 U	2.5 U	26	24 U	39	38 U	6.2	2.1	600
VPH Aliphatic C8-C10	mg/kg	290	0.88 U	1.4 U	56	35	65	22 U	9.5	1.0 U	120
VPH Aromatic C10-C12	mg/kg	1,400	31	0.61 U	270	470	1,000	320	44	0.85	540
VPH Aromatic C12-C13	mg/kg	2,200	200	7.1 U	280	900 J	4,000	1,700 J	140	5.2 U	560
VPH Aromatic C8-C10	mg/kg	430	1.9 U	3.1 U	51	34 J	110 J	46 U	18	2.2 U	200

Note:

All results rounded to two significant figures.

Abbreviations:

EPH Extractable petroleum hydrocarbons
mg/kg Milligrams per kilogram
VPH Volatile petroleum hydrocarbons

Qualifier:

J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Table 3.3
Soil Analytical Data—VPH/EPH

Location		OIP-47		OIP-66	OIP-67		GP-36		MW-33		MW-39
Sample ID		OIP-47-11-12	OIP-47-17	OIP66-12-12.5-1112219	OIP-67-11-12	OIP-67-14.5-15	GP-36-13-14	GP-36-16-17	MW-33-12-12.5	MW-33-19.5-20	MW-39-13-14
Date		03/09/2020	03/09/2020	11/22/2019	03/12/2020	03/12/2020	03/12/2020	03/12/2020	03/09/2020	03/09/2020	03/12/2020
Sample Depth		11-12 feet	17-17 feet	12-12.5 feet	11-12 feet	14.5-15 feet	13-14 feet	16-17 feet	12-12.5 feet	19.5-20 feet	13-14 feet
Analyte	Units										
Petroleum Fractionation Data											
EPH Aliphatic C10-C12	mg/kg	17	19	200	580	62 J	350	820	690	15 U	890
EPH Aliphatic C12-C16	mg/kg	13 U	15 U	270	1,500	210 J	1,200	2,400	3,300	20	4,300
EPH Aliphatic C16-C21	mg/kg	13 U	15 U	200	1,500	230 J	1,200	2,300	3,000	15 U	4,600
EPH Aliphatic C21-C34	mg/kg	13 U	15 U	45	330 J	22 J	250 J	520 J	720 J	15 U	630 J
EPH Aliphatic C8-C10	mg/kg	27 UJ	32 J	240 J	320 J	42 J	170 J	440 J	110 J	30 UJ	200 J
EPH Aromatic C10-C12	mg/kg	16	28	69	180	14 J	120	240	110	15 U	130
EPH Aromatic C12-C16	mg/kg	16	15 U	96	610	57 J	450	880	850	15 U	1,000
EPH Aromatic C16-C21	mg/kg	13 U	18	180	1,200	190 J	970	1,800	2,400	15 U	3,300
EPH Aromatic C21-C34	mg/kg	13 U	27	93	250	19 J	170	400	490	15 U	410
EPH Aromatic C8-C10	mg/kg	13 UJ	15 UJ	13 UJ	12 UJ	12 UJ	13 UJ	22 J	13 UJ	15 UJ	10 UJ
VPH Aliphatic C10-C12	mg/kg	470	110	60	800	230 J	53 U	240	210	1.3 U	260
VPH Aliphatic C5-C6	mg/kg	270	8.5	1.3 U	35 U	5.4 J	62 U	63	7.7	1.5 U	15 U
VPH Aliphatic C6-C8	mg/kg	830	110	36	250	120 J	89 U	400	12	2.1 U	33
VPH Aliphatic C8-C10	mg/kg	330	100	35	540	150 J	50 U	170	40	1.2 U	57
VPH Aromatic C10-C12	mg/kg	1,100	360	200	1,900 J	440 J	79	560	760	14	520
VPH Aromatic C12-C13	mg/kg	1,200	420	170	4,300 J	780 J	610	820	2,200 J	20 J	2,700 J
VPH Aromatic C8-C10	mg/kg	330	130 J	57	510	120 J	110 U	190	53 J	2.5 U	63

Note:

All results rounded to two significant figures.

Abbreviations:

EPH Extractable petroleum hydrocarbons
mg/kg Milligrams per kilogram
VPH Volatile petroleum hydrocarbons

Qualifier:

J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Table 3.4
Groundwater Analytical Data—GRO, DRO, ORO, SVOCs, and Metals

			AOPC 1					AOPC 2							
		Location	OIP-06	MW-37		MW-38		OIP-02		OIP-04	MW-32		T-2	UST-4	UST-4
		Sample ID	OIP-06-GW-25-30	MW-37-050720	MW-37-081020	MW-38-050720	MW-38-081020	OIP-02-GW-14.5-19.5	OIP-02-GW-14.5-19.5D	OIP-04-GW-15-20	MW-32-050720	MW-32-081120	T-2-081120	UST-104-022819	UST-4-022819
		Date	03/13/2020	05/07/2020	08/10/2020	05/07/2020	08/10/2020	03/11/2020	03/11/2020	03/10/2020	05/07/2020	08/11/2020	08/11/2020	02/28/2019	02/28/2019
Analyte	Units	Preliminary Screening Level													
Total Petroleum Hydrocarbons by NWTPH-Gx and NWTPH-Dx															
Gasoline-range organics (GRO)	µg/L	800	100 U	100 U	120	100 U	100 U	100 U	100 U	130	100 U	100 U	100 U	100 U	100 U
Diesel-range organics (DRO)	µg/L	500	200 (1)	210 (1)	50 U	74 (1)	57 (1)	110 (1)	94 (1)	660 (1)	50 U	50 U	50 U	140 (1)	140 (1)
Oil-range organics (ORO)	µg/L	500	250 U	250 U	250 UJ	250 U	250 U	250 U	250 U	870 (1)	250 U	250 U	250 U	300 U	300 U
Total diesel-range and oil-range organics	µg/L	500	200 (1)	210 (1)	250 UJ	74 (1)	57 (1)	110 (1)	94 (1)	1,500 (1)	250 U	250 U	250 U		
Total Petroleum Hydrocarbons by NWTPH-HCID															
Diesel Range Organics	µg/L	500												60 U	60 U
Oil Range Organics	µg/L	500												300 U	300 U
BTEX Compounds by USEPA 8021B/8260D															
Benzene	µg/L	5	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	1.0 U	1.0 U
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1,000	1.0 U	1.0 U	2.5	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (meta & para)	µg/L	--	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U		
Xylene (ortho)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		
Xylene (total)	µg/L	1,000	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	3.0 U	3.0 U
Semivolatile Organic Compounds (SVOCs)															
cPAHs (MTCA TEQ-HalfND)	µg/L	0.1	0.030 U	0.030	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U		
cPAHs (MTCA TEQ-ZeroND)	µg/L	0.1	0 U (2)	0.00045	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)		
Total HPAH	µg/L	--		0.20		0.040 U					0.040 U				
Total LPAH	µg/L	--		0.89 J		0.40 UJ					0.40 UJ				
Total PAH	µg/L	--		1.1 J		0.40 UJ					0.40 UJ				
1-Methylnaphthalene	µg/L	--		0.40 U		0.40 U					0.40 U				
2-Methylnaphthalene	µg/L	--		0.40 U		0.40 U					0.40 U				
Acenaphthene	µg/L	--		0.82		0.040 U					0.040 U				
Acenaphthylene	µg/L	--		0.040 U		0.040 U					0.040 U				
Anthracene	µg/L	--		0.040 U		0.040 U					0.040 U				
Benzo(a)anthracene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		
Benzo(a)pyrene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		
Benzo(b)fluoranthene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		
Benzo(g,h,i)perylene	µg/L	--		0.040 U		0.040 U					0.040 U				
Benzo(k)fluoranthene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		
Chrysene	µg/L	--	0.040 U	0.045	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		
Dibenzo(a,h)anthracene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		
Fluoranthene	µg/L	--		0.043		0.040 U					0.040 U				
Fluorene	µg/L	--		0.073 J		0.040 UJ					0.040 UJ				
Hexachlorobutadiene	µg/L	--											1.0 U		
Indeno(1,2,3-c,d)pyrene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		
Naphthalene	µg/L	--	1.0 U	0.40 U		0.40 U		1.0 U	1.0 U	1.0 U	0.40 U		1.0 U		
Phenanthrene	µg/L	--		0.060 U		0.060 U					0.060 U				
Pyrene	µg/L	--		0.11		0.040 U					0.040 U				

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

2 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Qualifiers:

J Analyte was detected, concentration is considered to be an estimate.

U Analyte was not detected at the given reporting limit.

UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Abbreviations:

BTEX Benzene, toluene, ethylbenzene, and xylenes

cPAH Carcinogenic polycyclic aromatic hydrocarbon

µg/L Micrograms per liter

MTCA Model Toxics Model Toxics Control Act

PAH Polycyclic arc Polycyclic aromatic hydrocarbon

TEQ Toxic equival Toxic equivalent

Table 3.4
Groundwater Analytical Data—GRO, DRO, ORO, SVOCs, and Metals

			APOC 3		AOPC 4									
		Location	UST-4		OIP-69	OIP-70	MW-06	MW-06		MW-19	MW-19		MW-39	
		Sample ID	UST-4-050620	UST-4-081020	OIP-69-GW-12-17	OIP-70-GW-10-15	MW-06-022719	MW-06-050620	MW-06-081020	MW-19-022719	MW-19-050720	MW-19-081020	MW-39-050720	MW-39-081020
		Date	05/06/2020	08/10/2020	03/11/2020	03/10/2020	02/27/2019	05/06/2020	08/10/2020	02/27/2019	05/07/2020	08/10/2020	05/07/2020	08/10/2020
Analyte	Units	Preliminary Screening Level												
Total Petroleum Hydrocarbons by NWTPH-Gx and NWTPH-Dx														
Gasoline-range organics (GRO)	µg/L	800	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	380	510
Diesel-range organics (DRO)	µg/L	500	230 (1)	57 (1)	140	220 (1)	800 (1)	780 (1)	1,900 (1)	67 (1)	50 U	76 (1)	5,700	6,500 (1)
Oil-range organics (ORO)	µg/L	500	320 (1)	250 U	250 U	250 U	300 U	250 U	360 (1)	300 U	250 U	250 U	950 (1)	790 (1)
Total diesel-range and oil-range organics	µg/L	500	550 (1)	57 (1)	140	220 (1)	800 (1)	780 (1)	2,300 (1)		250 U	76 (1)	6,700 (1)	7,300 (1)
Total Petroleum Hydrocarbons by NWTPH-HCID														
Diesel Range Organics	µg/L	500					140			60 U				
Oil Range Organics	µg/L	500					300 U			300 U				
BTEX Compounds by USEPA 8021B/8260D														
Benzene	µg/L	5	0.35 U	0.35 U	0.35 U	0.35 U	1.0 U	0.35 U	0.35 U	1.0 U	0.35 U	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (meta & para)	µg/L	--	2.0 U	2.0 U	2.0 U	2.0 U		2.0 U	2.0 U		2.0 U	2.0 U	2.0 U	2.0 U
Xylene (ortho)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U
Xylene (total)	µg/L	1,000	2.0 U	2.0 U	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Semivolatile Organic Compounds (SVOCs)														
cPAHs (MTCA TEQ-HalfND)	µg/L	0.1	0.030 U	0.030 U	0.030 U	0.030 U		0.030 U	0.030 U		0.030 U	0.030 U	0.030 U	0.030 U
cPAHs (MTCA TEQ-ZeroND)	µg/L	0.1	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)
Total HPAH	µg/L	--	0.040 U					0.040 U			0.040 U		0.040 U	
Total LPAH	µg/L	--	0.40 UJ					0.80 J			0.40 UJ		10 J	
Total PAH	µg/L	--	0.40 UJ					0.80 J			0.40 UJ		10 J	
1-Methylnaphthalene	µg/L	--	0.40 U					0.40 U			0.40 U		11	
2-Methylnaphthalene	µg/L	--	0.40 U					0.40 U			0.40 U		0.40 U	
Acenaphthene	µg/L	--	0.040 U					0.15			0.040 U		1.7	
Acenaphthylene	µg/L	--	0.040 U					0.040 U			0.040 U		0.040 U	
Anthracene	µg/L	--	0.040 U					0.040 U			0.040 U		0.040 U	
Benzo(a)anthracene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U
Benzo(a)pyrene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U
Benzo(b)fluoranthene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U
Benzo(g,h,i)perylene	µg/L	--	0.040 U					0.040 U			0.040 U		0.040 U	
Benzo(k)fluoranthene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U
Chrysene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U
Dibenzo(a,h)anthracene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U
Fluoranthene	µg/L	--	0.040 U					0.040 U			0.040 U		0.040 U	
Fluorene	µg/L	--	0.040 UJ					0.65 J			0.040 UJ		7.2 J	
Hexachlorobutadiene	µg/L	--									1.0 U	1.0 U		1.0 U
Indeno(1,2,3-c,d)pyrene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U
Naphthalene	µg/L	--	0.40 U	1.0 U	1.0 U	1.0 U		0.40 U			0.40 U	1.0 U	0.40 U	1.0 U
Phenanthrene	µg/L	--	0.060 U					0.060 U			0.060 U		1.5	
Pyrene	µg/L	--	0.040 U					0.040 U			0.040 U		0.040 U	

Notes:

Blank cells are intentional.
All results rounded to two significant figures.
-- Not established.
Indicates a result that exceeds the applicable screening level.
1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
2 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Qualifiers:

J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Abbreviations:

BTEX Benzene, toluene, ethylbenzene, and xylenes
cPAH Carcinogenic polycyclic aromatic hydrocarbon
µg/L Micrograms per liter
MTCA Model Toxics Model Toxics Control Act
PAH Polycyclic arc Polycyclic aromatic hydrocarbon
TEQ Toxic equival Toxic equivalent

Table 3.4
Groundwater Analytical Data—GRO, DRO, ORO, SVOCs, and Metals

			AOPC 5													
		Location	OIP-15	MW-07	MW-07			MW-11	MW-11	MW-12	MW-12		MW-13	MW-13		MW-14
		Sample ID	OIP-15-GW-14-19	MW-07-022719	MW-07-050620	MW-07-081120	MW-107-081120	MW-11-022819	MW-11-050720	MW-12-022719	MW-12-050720	MW-12-081120	MW-13-022819	MW-13-050720	MW-13-081020	MW-14-022719
		Date	03/12/2020	02/27/2019	05/06/2020	08/11/2020	08/11/2020	02/28/2019	05/07/2020	02/27/2019	05/07/2020	08/11/2020	02/28/2019	05/07/2020	08/10/2020	02/27/2019
Analyte	Units	Preliminary Screening Level														
Total Petroleum Hydrocarbons by NWTPH-Gx and NWTPH-Dx																
Gasoline-range organics (GRO)	µg/L	800	380	1,100	560	1,200	1,300	100 U	100 U	600	470	7,100	100 U	100 U	100 U	100 U
Diesel-range organics (DRO)	µg/L	500	1,300	780 (1)	820	1,200	1,200	60 U	66 (1)	490 (1)	130 (1)	2,100	60 U	50 U	60 (1)	150 (1)
Oil-range organics (ORO)	µg/L	500	380 (1)	300 U	250 U	250 U	250 U	300 U	250 U	300 U	250 U	250 U	300 U	250 U	250 U	300 U
Total diesel-range and oil-range organics	µg/L	500	1,700 (1)		820	1,200	1,200	60 U	66 (1)		130 (1)	2,100		250 U	60 (1)	150 (1)
Total Petroleum Hydrocarbons by NWTPH-HCID																
Diesel Range Organics	µg/L	500		340 (1)				60 U		100 (1)			60 U			81
Oil Range Organics	µg/L	500		300 U				300 U		300 U			300 U			300 U
BTEX Compounds by USEPA 8021B/8260D																
Benzene	µg/L	5	0.35 U	2.0	0.45	0.56	0.58	1.0 U	0.35 U	61	81	910	1.0 U	0.35 U	0.35 U	1.0 U
Ethylbenzene	µg/L	700	1.0 U	2.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.5	2.0	46	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1,000	1.0 U	9.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	6.4	2.8	42	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (meta & para)	µg/L	--	2.0 U		2.0 U	2.0 U	2.0 U		2.0 U		3.6	57		2.0 U	2.0 U	
Xylene (ortho)	µg/L	--	1.0 U		1.0 U	1.0 U	1.0 U		1.0 U		1.0 U	1.3		1.0 U	1.0 U	
Xylene (total)	µg/L	1,000	2.0 U	6.0	2.0 U	2.0 U	2.0 U	3.0 U	2.0 U	6.2	3.6	58	3.0 U	2.0 U	2.0 U	3.0 U
Semivolatile Organic Compounds (SVOCs)																
cPAHs (MTCA TEQ-HalfND)	µg/L	0.1	0.030 U		0.030 U	0.030 U	0.030 U		0.030 U		0.030 U	0.030 U		0.030 U	0.030 U	
cPAHs (MTCA TEQ-ZeroND)	µg/L	0.1	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)
Total HPAH	µg/L	--			0.040 U				0.040 U		0.040 U			0.040 U		
Total LPAH	µg/L	--			0.40 UJ				0.40 UJ		0.40 UJ			0.40 UJ		
Total PAH	µg/L	--			0.40 UJ				0.40 UJ		0.40 UJ			0.40 UJ		
1-Methylnaphthalene	µg/L	--			0.40 U				0.40 U		0.40 U			0.40 U		
2-Methylnaphthalene	µg/L	--			0.40 U				0.40 U		0.40 U			0.40 U		
Acenaphthene	µg/L	--			0.040 U				0.040 U		0.040 U			0.040 U		
Acenaphthylene	µg/L	--			0.040 U				0.040 U		0.040 U			0.040 U		
Anthracene	µg/L	--			0.040 U				0.040 U		0.040 U			0.040 U		
Benzo(a)anthracene	µg/L	--	0.040 U		0.040 U	0.040 U	0.040 U		0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	
Benzo(a)pyrene	µg/L	--	0.040 U		0.040 U	0.040 U	0.040 U		0.040 U		0.040 UJ	0.040 U		0.040 U	0.040 U	
Benzo(b)fluoranthene	µg/L	--	0.040 U		0.040 U	0.040 U	0.040 U		0.040 U		0.040 UJ	0.040 U		0.040 U	0.040 U	
Benzo(g,h,i)perylene	µg/L	--			0.040 U				0.040 U		0.040 UJ			0.040 U		
Benzo(k)fluoranthene	µg/L	--	0.040 U		0.040 U	0.040 U	0.040 U		0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	
Chrysene	µg/L	--	0.040 U		0.040 U	0.040 U	0.040 U		0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	
Dibenzo(a,h)anthracene	µg/L	--	0.040 U		0.040 U	0.040 U	0.040 U		0.040 U		0.040 UJ	0.040 U		0.040 U	0.040 U	
Fluoranthene	µg/L	--			0.040 U				0.040 U		0.040 U			0.040 U		
Fluorene	µg/L	--			0.040 UJ				0.040 UJ		0.040 UJ			0.040 UJ		
Hexachlorobutadiene	µg/L	--									1.0 U	1.0 U				
Indeno(1,2,3-c,d)pyrene	µg/L	--	0.040 U		0.040 U	0.040 U	0.040 U		0.040 U		0.040 UJ	0.040 U		0.040 U	0.040 U	
Naphthalene	µg/L	--	1.0 U		0.40 U	1.0 U	1.0 U		0.40 U		0.40 U	1.0 U		0.40 U		
Phenanthrene	µg/L	--			0.060 U				0.060 U		0.060 U			0.060 U		
Pyrene	µg/L	--			0.040 U				0.040 U		0.040 U			0.040 U		

Notes:

Blank cells are intentional.
All results rounded to two significant figures.
-- Not established.
Indicates a result that exceeds the applicable screening level.
1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
2 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Qualifiers:

J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Abbreviations:

BTEX Benzene, toluene, ethylbenzene, and xylenes
cPAH Carcinogenic polycyclic aromatic hydrocarbon
µg/L Micrograms per liter
MTCA Model Toxics (Model Toxics Control Act
PAH Polycyclic aror Polycyclic aromatic hydrocarbon
TEQ Toxic equivale Toxic equivalent

Table 3.4
Groundwater Analytical Data—GRO, DRO, ORO, SVOCs, and Metals

			AOPC 5 (cont.)															
Location			MW-14		MW-15	MW-15		MW-16	MW-16	MW-17	MW-17		MW-20	MW-20	MW-25	MW-25		
Sample ID			MW-14-050720	MW-14-081120	MW-15-022719	MW-15-050720	MW-15-081020	MW-16-022719	MW-16-050720	MW-17-022819	MW-17-050720	MW-17-081120	MW-20-022819	MW-20-050720	MW-25-0228	MW-25-050720	MW-25-081120	
Date			05/07/2020	08/11/2020	02/27/2019	05/07/2020	08/10/2020	02/27/2019	05/07/2020	02/28/2019	05/07/2020	08/11/2020	02/28/2019	05/07/2020	########	05/07/2020	08/11/2020	
Analyte	Units	Preliminary Screening Level																
Total Petroleum Hydrocarbons by NWTPH-Gx and NWTPH-Dx																		
Gasoline-range organics (GRO)	µg/L	800	100 U	100 U	100 U	140	120	100 U	100 U	100 U	100 U	100 U	1,500	2,800	## U	100 U	100 U	
Diesel-range organics (DRO)	µg/L	500	120 (1)	230 (1)	78 (1)	510 (1)	300 (1)	60 U	84 (1)	60 U	67 (1)	62 (1)	970 (1)	1,000 (1)	60 U	50 U	50 U	
Oil-range organics (ORO)	µg/L	500	250 U	250 U	300 U	250 U	250 U	300 U	250 U	300 U	250 U	250 U	360 (1)	290 (1)	## U	250 U	250 U	
Total diesel-range and oil-range organics	µg/L	500	120 (1)	230 (1)	78 (1)	510 (1)	300 (1)		84 (1)	60 U	67 (1)	62 (1)		1,300 (1)		250 U	250 U	
Total Petroleum Hydrocarbons by NWTPH-HCID																		
Diesel Range Organics	µg/L	500			60 U			60 U		65 U			370 (1)		60 U			
Oil Range Organics	µg/L	500			300 U			300 U		320 U			300 U		## U			
BTEX Compounds by USEPA 8021B/8260D																		
Benzene	µg/L	5	0.35 U	0.35 U	1.0 U	0.35 U	0.35 U	1.0 U	0.35 U	1.0 U	0.35 U	0.35 U	1.7	1.6	1.0 U	0.35 U	0.35 U	
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	7.0	5.5	1.0 U	1.0 U	1.0 U	
Toluene	µg/L	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	3.7	1.0 U	1.0 U	1.0 U	
Xylene (meta & para)	µg/L	--	2.0 U	2.0 U		2.0 U	2.0 U		2.0 U		2.0 U	2.0 U		4.3		2.0 U	2.0 U	
Xylene (ortho)	µg/L	--	1.0 U	1.0 U		1.0 U	1.0 U		1.0 U		1.0 U	1.0 U		1.0 U		1.0 U	1.0 U	
Xylene (total)	µg/L	1,000	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	3.0 U	2.0 U	3.0 U	2.0 U	2.0 U	9.1	4.3	3.0 U	2.0 U	2.0 U	
Semivolatile Organic Compounds (SVOCs)																		
cPAHs (MTCA TEQ-HalfND)	µg/L	0.1	0.030 U	0.030 U		0.030 U	0.030 U		0.030 U		0.030 U	0.030 U		0.030 U		0.030 U	0.030 U	
cPAHs (MTCA TEQ-ZeroND)	µg/L	0.1	0 U (2)	0 U (2)		0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	
Total HPAH	µg/L	--	0.040 U			0.040 U			0.040 U		0.040 U			0.040 U		0.040 U		
Total LPAH	µg/L	--	0.40 UJ			0.66 J			0.40 UJ		0.40 UJ			0.40 UJ		0.40 UJ		
Total PAH	µg/L	--	0.40 UJ			0.66 J			0.40 UJ		0.40 UJ			0.40 UJ		0.40 UJ		
1-Methylnaphthalene	µg/L	--	0.40 U			0.40 U			0.40 U		0.40 U			7.4		0.40 U		
2-Methylnaphthalene	µg/L	--	0.40 U			0.40 U			0.40 U		0.40 U			0.40 U		0.40 U		
Acenaphthene	µg/L	--	0.040 U			0.38			0.040 U		0.040 U			0.040 U		0.040 U		
Acenaphthylene	µg/L	--	0.040 U			0.040 U			0.040 U		0.040 U			0.040 U		0.040 U		
Anthracene	µg/L	--	0.040 U			0.040 U			0.040 U		0.040 U			0.040 U		0.040 U		
Benzo(a)anthracene	µg/L	--	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	
Benzo(a)pyrene	µg/L	--	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	
Benzo(b)fluoranthene	µg/L	--	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	
Benzo(g,h,i)perylene	µg/L	--	0.040 U			0.040 U			0.040 U		0.040 U			0.040 U		0.040 U		
Benzo(k)fluoranthene	µg/L	--	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	
Chrysene	µg/L	--	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	
Dibenzo(a,h)anthracene	µg/L	--	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	
Fluoranthene	µg/L	--	0.040 U			0.040 U			0.040 U		0.040 U			0.040 U		0.040 U		
Fluorene	µg/L	--	0.040 UJ			0.19 J			0.040 UJ		0.040 UJ			0.040 UJ		0.040 UJ		
Hexachlorobutadiene	µg/L	--																
Indeno(1,2,3-c,d)pyrene	µg/L	--	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	
Naphthalene	µg/L	--	0.40 U			0.40 U			0.40 U		0.40 U			0.40 U		0.40 U		
Phenanthrene	µg/L	--	0.060 U			0.087			0.060 U		0.060 U			0.060 U		0.060 U		
Pyrene	µg/L	--	0.040 U			0.040 U			0.040 U		0.040 U			0.040 U		0.040 U		

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

2 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Qualifiers:

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U Analyte was not detected at the given reporting limit.

UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Abbreviations:

BTEX Benzene, toluene, ethylbenzene, and xylenes

cPAH Carcinogenic polycyclic aromatic hydrocarbon

µg/L Micrograms per liter

MTCA Model Toxics Model Toxics Control Act

PAH Polycyclic arc Polycyclic aromatic hydrocarbon

TEQ Toxic equival Toxic equivalent

Table 3.4
Groundwater Analytical Data—GRO, DRO, ORO, SVOCs, and Metals

			AOPC 5 (cont.)					AOPC 6								
		Location	MW-33			MW-40		OIP-67	OIP-68	MW-02	MW-02		MW-03	MW-03		MW-05
		Sample ID	MW-133-050620	MW-33-050620	MW-33-081120	MW-40-050620	MW-40-081120	OIP-67-GW-14-19	OIP-68-GW-13-18	MW-02-022719	MW-02-050620	MW-02-081020	MW-03-022719	MW-03-050620	MW-03-081020	MW-05-022719
		Date	05/06/2020	05/06/2020	08/11/2020	05/06/2020	08/11/2020	03/12/2020	03/11/2020	02/27/2019	05/06/2020	08/10/2020	02/27/2019	05/06/2020	08/10/2020	02/27/2019
Analyte	Units	Preliminary Screening Level														
Total Petroleum Hydrocarbons by NWTPH-Gx and NWTPH-Dx																
Gasoline-range organics (GRO)	µg/L	800	130	160	150	1,100	2,000	3,200	860	100 U	100 U	100 U	960	260	570	100 U
Diesel-range organics (DRO)	µg/L	500	850	1,100	930	2,900 (1)	3,400	2,000	900 (1)	60 U	310 (1)	640 (1)	1,700 (1)	1,500 (1)	1,100 (1)	82 (1)
Oil-range organics (ORO)	µg/L	500	250 U	250 U	250 U	320 (1)	330 (1)	250 U	290 (1)	300 U	250 U	330 (1)	450 (1)	590 (1)	410 (1)	300 U
Total diesel-range and oil-range organics	µg/L	500	850	1,100	930	3,200 (1)	3,700 (1)	2,000	1,200 (1)		560 (1)	970 (1)		2,100 (1)	1,500 (1)	
Total Petroleum Hydrocarbons by NWTPH-HCID																
Diesel Range Organics	µg/L	500				1,100	2,000			60 U			73 (1)			60 U
Oil Range Organics	µg/L	500								300 U			300 U			300 U
BTEX Compounds by USEPA 8021B/8260D																
Benzene	µg/L	5	0.35 U	0.35 U	0.35 U	430	310	1.3	0.35 U	1.0 U	0.35 U	0.35 U	13	1.1	1.2	1.0 U
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.0 U	7.4	1.1	1.3	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1,000	1.0 U	1.0 U	1.0 U	11	6.3	2.3	1.0 U	1.0 U	1.0 U	1.0 U	5.0 U	1.0 U	1.0 U	1.0 U
Xylene (meta & para)	µg/L	--	2.0 U	2.0 U	2.0 U	4.2	2.0	2.2	2.0 U		2.0 U	2.0 U		2.0 U	2.0 U	
Xylene (ortho)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U	1.0 U		1.0 U	1.0 U	
Xylene (total)	µg/L	1,000	2.0 U	2.0 U	2.0 U	4.2	2.0	2.2	2.0 U	3.0 U	2.0 U	2.0 U	15 U	2.0 U	2.0 U	3.0 U
Semivolatile Organic Compounds (SVOCs)																
cPAHs (MTCA TEQ-HalfND)	µg/L	0.1	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U	0.030 UJ	0.030 U		0.030 U	0.030 U		0.030 U	0.030 U	
cPAHs (MTCA TEQ-ZeroND)	µg/L	0.1	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 UJ (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)
Total HPAH	µg/L	--	0.040 U	0.040 U		0.040 U					0.040 U			0.040 U		
Total LPAH	µg/L	--	1.6 J	1.5 J		8.5 J					0.40 UJ			0.40 UJ		
Total PAH	µg/L	--	1.6 J	1.5 J		8.5 J					0.40 UJ			0.40 UJ		
1-Methylnaphthalene	µg/L	--	0.40 U	0.40 U		53					0.40 U			0.40 U		
2-Methylnaphthalene	µg/L	--	0.40 U	0.40 U		3.8					0.40 U			0.40 U		
Acenaphthene	µg/L	--	0.36	0.34		1.2					0.040 U			0.040 U		
Acenaphthylene	µg/L	--	0.040 U	0.040 U		0.040 U					0.040 U			0.040 U		
Anthracene	µg/L	--	0.040 U	0.040 U		0.040 U					0.040 U			0.040 U		
Benzo(a)anthracene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	
Benzo(a)pyrene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 UJ	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	
Benzo(b)fluoranthene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	
Benzo(g,h,i)perylene	µg/L	--	0.040 U	0.040 U		0.040 U					0.040 U			0.040 U		
Benzo(k)fluoranthene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	
Chrysene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	
Dibenzo(a,h)anthracene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 UJ	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	
Fluoranthene	µg/L	--	0.040 U	0.040 U		0.040 U					0.040 U			0.040 U		
Fluorene	µg/L	--	0.74 J	0.70 J		5.2 J					0.040 UJ			0.040 UJ		
Hexachlorobutadiene	µg/L	--				1.0 U	1.0 U									
Indeno(1,2,3-c,d)pyrene	µg/L	--	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U	
Naphthalene	µg/L	--	0.40 U	0.40 U		0.40 U	1.0 U	1.0 U	1.0 U		0.40 U			0.40 U	1.0 U	
Phenanthrene	µg/L	--	0.47	0.44		2.1					0.060 U			0.060 U		
Pyrene	µg/L	--	0.040 U	0.040 U		0.040 U					0.040 U			0.040 U		

Notes:

Blank cells are intentional.
All results rounded to two significant figures.
-- Not established.
Indicates a result that exceeds the applicable screening level.
1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
2 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Qualifiers:

J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Abbreviations:

BTEX Benzene, toluene, ethylbenzene, and xylenes
cPAH Carcinogenic polycyclic aromatic hydrocarbon
µg/L Micrograms per liter
MTCA Model Toxics Model Toxics Control Act
PAH Polycyclic aro Polycyclic aromatic hydrocarbon
TEQ Toxic equivale Toxic equivalent

Table 3.4
Groundwater Analytical Data—GRO, DRO, ORO, SVOCs, and Metals

			AOPC 6 (cont.)					AOPC 7									
Location			MW-08		MW-10	MW-10		GP-34	MW-18	MW-18		MW-24	MW-24			MW-26	MW-26	
Sample ID			MW-08-050620	MW-08-081020	MW-10-022719	MW-10-050620	MW-10-081020	GP-34-GW-14-19	MW-18-022819	MW-18-050720	MW-18-081120	MW-24-022819	MW-24-050720	MW-24-081120		MW-26-022819	MW-26-050720	MW-26-081020
Date			05/06/2020	08/10/2020	02/27/2019	05/06/2020	08/10/2020	03/09/2020	02/28/2019	05/07/2020	08/11/2020	02/28/2019	05/07/2020	08/11/2020		02/28/2019	05/07/2020	08/10/2020
Analyte	Units	Preliminary Screening Level																
Total Petroleum Hydrocarbons by NWTPH-Gx and NWTPH-Dx																		
Gasoline-range organics (GRO)	µg/L	800	2,300	3,000	100 U	450	4,100	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Diesel-range organics (DRO)	µg/L	500	2,100 (1)	2,400 (1)	60 U	340 (1)	1,400 (1)	330 (1)	60 U	50 U	50 U	60 U	50 U	50 U	140 (1)		670 (1)	610 (1)
Oil-range organics (ORO)	µg/L	500	280 (1)	370 (1)	300 U	250 U	250 U	250 U	300 U	250 U	250 U	300 U	250 U	250 U	300 U		250 U	250 U
Total diesel-range and oil-range organics	µg/L	500	2,400 (1)	2,800 (1)		340 (1)	1,400 (1)	330 (1)		250 U	250 U	300 U	250 U	250 U			670 (1)	610 (1)
Total Petroleum Hydrocarbons by NWTPH-HCID																		
Diesel Range Organics	µg/L	500			60 U				60 U			60 U			60 U			
Oil Range Organics	µg/L	500			300 U				300 U			300 U			300 U			
BTEX Compounds by USEPA 8021B/8260D																		
Benzene	µg/L	5	1.1	1.0	1.1	42	120	0.35 U	1.0 U	0.35 U	0.35 U	1.0 U	0.35 U	0.35 U	1.0 U		0.35 U	0.35 U
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.0 U	7.6	60	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U	1.0 U
Toluene	µg/L	1,000	2.0	1.8	1.0 U	5.0	19	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U		1.0 U	1.0 U
Xylene (meta & para)	µg/L	--	2.7	3.2		2.5	20	2.0 U		2.0 U	2.0 U		2.0 U	2.0 U			2.0 U	2.0 U
Xylene (ortho)	µg/L	--	1.0 U	1.0 U		1.0 U	1.0 U	1.0 U		1.0 U	1.0 U		1.0 U	1.0 U			1.0 U	1.0 U
Xylene (total)	µg/L	1,000	2.7	3.2	3.0 U	2.5	20	2.0 U	3.0 U	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	3.0 U		2.0 U	2.0 U
Semivolatile Organic Compounds (SVOCs)																		
cPAHs (MTCA TEQ-HalfND)	µg/L	0.1	0.030 U	0.038 U		0.030 U	0.030 U	0.030 U		0.030 U	0.030 U		0.030 U	0.030 U			0.030 U	0.030 U
cPAHs (MTCA TEQ-ZeroND)	µg/L	0.1	0 U (2)	0 U (2)		0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)		0 U (2)	0 U (2)
Total HPAH	µg/L	--	0.040 U			0.040 U				0.040 U			0.040 U				0.040 U	
Total LPAH	µg/L	--	2.2 J			0.075 J				0.40 UJ			0.40 UJ				0.40 UJ	
Total PAH	µg/L	--	2.2 J			0.075 J				0.40 UJ			0.40 UJ				0.40 UJ	
1-Methylnaphthalene	µg/L	--	20			2.1				0.40 U			0.40 U				0.40 U	
2-Methylnaphthalene	µg/L	--	0.40 U			0.40 U				0.40 U			0.40 U				0.40 U	
Acenaphthene	µg/L	--	0.46			0.040 U				0.040 U			0.040 U				0.040 U	
Acenaphthylene	µg/L	--	0.040 U			0.040 U				0.040 U			0.040 U				0.040 U	
Anthracene	µg/L	--	0.040 U			0.040 U				0.040 U			0.040 U				0.040 U	
Benzo(a)anthracene	µg/L	--	0.040 U	0.050 U		0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U			0.040 U	0.040 U
Benzo(a)pyrene	µg/L	--	0.040 U	0.050 U		0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U			0.040 U	0.040 U
Benzo(b)fluoranthene	µg/L	--	0.040 U	0.050 U		0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U			0.040 U	0.040 U
Benzo(g,h,i)perylene	µg/L	--	0.040 U			0.040 U				0.040 U			0.040 U				0.040 U	
Benzo(k)fluoranthene	µg/L	--	0.040 U	0.050 U		0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U			0.040 U	0.040 U
Chrysene	µg/L	--	0.040 U	0.050 U		0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U			0.040 U	0.040 U
Dibenzo(a,h)anthracene	µg/L	--	0.040 U	0.050 U		0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U			0.040 U	0.040 U
Fluoranthene	µg/L	--	0.040 U			0.040 U				0.040 U			0.040 U				0.040 U	
Fluorene	µg/L	--	1.5 J			0.075 J				0.040 UJ			0.040 UJ				0.040 UJ	
Hexachlorobutadiene	µg/L	--				1.0 U	1.0 U											
Indeno(1,2,3-c,d)pyrene	µg/L	--	0.040 U	0.050 U		0.040 U	0.040 U	0.040 U		0.040 U	0.040 U		0.040 U	0.040 U			0.040 U	0.040 U
Naphthalene	µg/L	--	0.40 U			0.40 U	1.0 U	1.0 U		0.40 U			0.40 U				0.40 U	
Phenanthrene	µg/L	--	0.28			0.060 U				0.060 U			0.060 U				0.060 U	
Pyrene	µg/L	--	0.040 U			0.040 U				0.040 U			0.040 U				0.040 U	

Notes:

Blank cells are intentional.
All results rounded to two significant figures.
-- Not established.
Indicates a result that exceeds the applicable screening level.
1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
2 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Qualifiers:

J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
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Abbreviations:

BTEX Benzene, toluene, ethylbenzene, and xylenes
cPAH Carcinogenic polycyclic aromatic hydrocarbon
µg/L Micrograms per liter
MTCA Model Toxics Model Toxics Control Act
PAH Polycyclic arc Polycyclic aromatic hydrocarbon
TEQ Toxic equival Toxic equivalent

Table 3.4
Groundwater Analytical Data—GRO, DRO, ORO, SVOCs, and Metals

			AOPC 7 (cont.)											AOPC 8	
Location			MW-27				MW-28	MW-28	MW-29	MW-29		MW-34		GP-31	GP-32
Sample ID			MW-127-050720	MW-27-022819	MW-27-050720	MW-27-081020	MW-28-022819	MW-28-081120	MW-29-022819	MW-29-050620	MW-29-081120	MW-34-050620	MW-34-081020	GP-31-GW-13.5-18.5	GP-32-GW-14-19
Date			05/07/2020	02/28/2019	05/07/2020	08/10/2020	02/28/2019	08/11/2020	02/28/2019	05/06/2020	08/11/2020	05/06/2020	08/10/2020	03/11/2020	03/11/2020
Analyte	Units	Preliminary Screening Level													
Total Petroleum Hydrocarbons by NWTPH-Gx and NWTPH-Dx															
Gasoline-range organics (GRO)	µg/L	800	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	130	100 U	100 U
Diesel-range organics (DRO)	µg/L	500	190 (1)	60 U	150 (1)	110 (1)	5,500 (1)	5,200 (1)	60 U	54 (1)	50 U	1,300 (1)	1,500 (1)	55 (1)	150 (1)
Oil-range organics (ORO)	µg/L	500	250 U	300 U	250 U	250 U	1,600 (1)	890 (1)	300 U	250 U	250 U	250 U	290 (1)	250 U	250 U
Total diesel-range and oil-range organics	µg/L	500	190 (1)	60 U	150 (1)	110 (1)		6,100 (1)		54 (1)	250 U	1,300 (1)	1,800 (1)	55 (1)	150 (1)
Total Petroleum Hydrocarbons by NWTPH-HCID															
Diesel Range Organics	µg/L	500		60 U			610		60 U						
Oil Range Organics	µg/L	500		300 U			300 U		300 U						
BTEX Compounds by USEPA 8021B/8260D															
Benzene	µg/L	5	0.35 U	1.0 U	0.35 U	0.35 U	1.0 U	0.35 U	1.0 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (meta & para)	µg/L	--	2.0 U		2.0 U	2.0 U		2.0 U		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Xylene (ortho)	µg/L	--	1.0 U		1.0 U	1.0 U		1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (total)	µg/L	1,000	2.0 U	3.0 U	2.0 U	2.0 U	3.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Semivolatile Organic Compounds (SVOCs)															
cPAHs (MTCA TEQ-HalfND)	µg/L	0.1	0.030 U		0.030 U	0.030 U		0.030 U		0.030 U	0.030 U	0.030 U	0.030 U	0.030 U	0.030 U
cPAHs (MTCA TEQ-ZeroND)	µg/L	0.1	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)		0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)
Total HPAH	µg/L	--	0.040 U		0.040 U					0.040 U		0.040 U			
Total LPAH	µg/L	--	0.40 UJ		0.40 UJ					0.40 UJ		0.24 J			
Total PAH	µg/L	--	0.40 UJ		0.40 UJ					0.40 UJ		0.24 J			
1-Methylnaphthalene	µg/L	--	0.40 U		0.40 U					0.40 U		0.40 U			
2-Methylnaphthalene	µg/L	--	0.40 U		0.40 U					0.40 U		0.40 U			
Acenaphthene	µg/L	--	0.040 U		0.040 U					0.040 U		0.095			
Acenaphthylene	µg/L	--	0.040 U		0.040 U					0.040 U		0.040 U			
Anthracene	µg/L	--	0.040 U		0.040 U					0.040 U		0.040 U			
Benzo(a)anthracene	µg/L	--	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Benzo(a)pyrene	µg/L	--	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Benzo(b)fluoranthene	µg/L	--	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Benzo(g,h,i)perylene	µg/L	--	0.040 U		0.040 U					0.040 U		0.040 U			
Benzo(k)fluoranthene	µg/L	--	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Chrysene	µg/L	--	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Dibenzo(a,h)anthracene	µg/L	--	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Fluoranthene	µg/L	--	0.040 U		0.040 U					0.040 U		0.040 U			
Fluorene	µg/L	--	0.040 UJ		0.040 UJ					0.040 UJ		0.14 J			
Hexachlorobutadiene	µg/L	--						1.0 U				1.0 U	1.0 U		
Indeno(1,2,3-c,d)pyrene	µg/L	--	0.040 U		0.040 U	0.040 U		0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Naphthalene	µg/L	--	0.40 U		0.40 U			1.0 U		0.40 U		0.40 U	1.0 U		
Phenanthrene	µg/L	--	0.060 U		0.060 U					0.060 U		0.060 U			
Pyrene	µg/L	--	0.040 U		0.040 U					0.040 U		0.040 U			

Notes:

Blank cells are intentional.
All results rounded to two significant figures.
-- Not established.
Indicates a result that exceeds the applicable screening level.
1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
2 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Qualifiers:

J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Abbreviations:

BTEX Benzene, toluene, ethylbenzene, and xylenes
cPAH Carcinogenic polycyclic aromatic hydrocarbon
µg/L Micrograms per liter
MTCA Model Toxics Control Act
PAH Polycyclic aromatic hydrocarbon
TEQ Toxic equivalent

Table 3.4
Groundwater Analytical Data—GRO, DRO, ORO, SVOCs, and Metals

			Outside of AOPCs									
		Location	MW-01	MW-01		MW-04	MW-22	MW-22		MW-23	MW-23	
		Sample ID	MW-01-022719	MW-01-050620	MW-01-081020	MW-04-022819	MW-22-022819	MW-22-050720	MW-22-081120	MW-23-022819	MW-23-050620	MW-23-081120
		Date	02/27/2019	05/06/2020	08/10/2020	02/28/2019	02/28/2019	05/07/2020	08/11/2020	02/28/2019	05/06/2020	08/11/2020
Analyte	Units	Preliminary Screening Level										
Total Petroleum Hydrocarbons by NWTPH-Gx and NWTPH-Dx												
Gasoline-range organics (GRO)	µg/L	800	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Diesel-range organics (DRO)	µg/L	500	60 U	50 U	50 U	60 U	60 U	50 U	50 U	60 U	50 U	50 U
Oil-range organics (ORO)	µg/L	500	300 U	250 U	250 U	300 U	300 U	250 U	250 U	300 U	250 U	250 U
Total diesel-range and oil-range organics	µg/L	500		250 U	250 U	300 U	300 U	250 U	250 U	300 U	250 U	250 U
Total Petroleum Hydrocarbons by NWTPH-HCID												
Diesel Range Organics	µg/L	500	60 U			60 U	60 U			60 U		
Oil Range Organics	µg/L	500	300 U			300 U	300 U			300 U		
BTEX Compounds by USEPA 8021B/8260D												
Benzene	µg/L	5	1.0 U	0.35 U	0.35 U	1.0 U	1.0 U	0.35 U	0.35 U	1.0 U	0.35 U	0.35 U
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (meta & para)	µg/L	--		2.0 U	2.0 U			2.0 U	2.0 U		2.0 U	2.0 U
Xylene (ortho)	µg/L	--		1.0 U	1.0 U			1.0 U	1.0 U		1.0 U	1.0 U
Xylene (total)	µg/L	1,000	3.0 U	2.0 U	2.0 U	3.0 U	3.0 U	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U
Semivolatile Organic Compounds (SVOCs)												
cPAHs (MTCA TEQ-HalfND)	µg/L	0.1		0.030 U	0.030 U			0.030 U	0.030 U		0.030 U	0.030 U
cPAHs (MTCA TEQ-ZeroND)	µg/L	0.1	0 U [2]	0 U [2]	0 U [2]	0 U [2]	0 U [2]	0 U [2]	0 U [2]	0 U [2]	0 U [2]	0 U [2]
Total HPAH	µg/L	--		0.040 U				0.040 U			0.040 U	
Total LPAH	µg/L	--		0.40 UJ				0.40 UJ			0.40 UJ	
Total PAH	µg/L	--		0.40 UJ				0.40 UJ			0.40 UJ	
1-Methylnaphthalene	µg/L	--		0.40 U				0.40 U			0.40 U	
2-Methylnaphthalene	µg/L	--		0.40 U				0.40 U			0.40 U	
Acenaphthene	µg/L	--		0.040 U				0.040 U			0.040 U	
Acenaphthylene	µg/L	--		0.040 U				0.040 U			0.040 U	
Anthracene	µg/L	--		0.040 U				0.040 U			0.040 U	
Benzo(a)anthracene	µg/L	--		0.040 U	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U
Benzo(a)pyrene	µg/L	--		0.040 U	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U
Benzo(b)fluoranthene	µg/L	--		0.040 U	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U
Benzo(g,h,i)perylene	µg/L	--		0.040 U				0.040 U			0.040 U	
Benzo(k)fluoranthene	µg/L	--		0.040 U	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U
Chrysene	µg/L	--		0.040 U	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U
Dibenzo(a,h)anthracene	µg/L	--		0.040 U	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U
Fluoranthene	µg/L	--		0.040 U				0.040 U			0.040 U	
Fluorene	µg/L	--		0.040 UJ				0.040 UJ			0.040 UJ	
Hexachlorobutadiene	µg/L	--									1.0 U	1.0 U
Indeno(1,2,3-c,d)pyrene	µg/L	--		0.040 U	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U
Naphthalene	µg/L	--		0.40 U				0.40 U			0.40 U	1.0 U
Phenanthrene	µg/L	--		0.060 U				0.060 U			0.060 U	
Pyrene	µg/L	--		0.040 U				0.040 U			0.040 U	

Notes:

Blank cells are intentional.
All results rounded to two significant figures.
-- Not established.
Indicates a result that exceeds the applicable screening level.
1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
2 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Qualifiers:

J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Abbreviations:

BTEX Benzene, toluene, ethylbenzene, and xylenes
cPAH Carcinogenic polycyclic aromatic hydrocarbon
µg/L Micrograms per liter
MTCA Model Toxics Model Toxics Control Act
PAH Polycyclic arc Polycyclic aromatic hydrocarbon
TEQ Toxic equival Toxic equivalent

Table 3.4
Groundwater Analytical Data—GRO, DRO, ORO, SVOCs, and Metals

			Outside of AOPCs (cont.)										
		Location	MW-30	MW-31	MW-31	MW-31		MW-32	MW-35		MW-36		
		Sample ID	MW-30-081120	MW-131-022719	MW-31-022719	MW-31-050620	MW-31-081020	MW-32-022819	MW-35-050620	MW-35-081020	MW-136-081020	MW-36-050620	MW-36-081020
		Date	08/11/2020	02/27/2019	02/27/2019	05/06/2020	08/10/2020	02/28/2019	05/06/2020	08/10/2020	08/10/2020	05/06/2020	08/10/2020
Analyte	Units	Preliminary Screening Level											
Total Petroleum Hydrocarbons by NWTPH-Gx and NWTPH-Dx													
Gasoline-range organics (GRO)	µg/L	800	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Diesel-range organics (DRO)	µg/L	500	1,100 (1)	60 U	60 U	50 U	50 U	60 U	630 (1)	670 (1)	50 U	50 U	50 U
Oil-range organics (ORO)	µg/L	500	480 (1)	300 U	300 U	250 U	250 U	300 U	250 U	260 (1)	250 U	250 U	250 U
Total diesel-range and oil-range organics	µg/L	500	1,600 (1)			250 U	250 U		630 (1)	930 (1)	250 U	250 U	250 U
Total Petroleum Hydrocarbons by NWTPH-HCID													
Diesel Range Organics	µg/L	500		60 U	60 U			60 U					
Oil Range Organics	µg/L	500		300 U	300 U			300 U					
BTEX Compounds by USEPA 8021B/8260D													
Benzene	µg/L	5	0.35 U	1.0 U	1.0 U	0.35 U	0.35 U	1.0 U	0.35 U	0.35 U	0.35 U	0.35 U	0.35 U
Ethylbenzene	µg/L	700	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Toluene	µg/L	1,000	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (meta & para)	µg/L	--	2.0 U			2.0 U	2.0 U		2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Xylene (ortho)	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Xylene (total)	µg/L	1,000	2.0 U	3.0 U	3.0 U	2.0 U	2.0 U	3.0 U	2.0 U	2.0 U	2.0 U	2.0 U	2.0 U
Semivolatile Organic Compounds (SVOCs)													
cPAHs (MTCA TEQ-HalfND)	µg/L	0.1	0.030 U			0.030 U	0.030 U		0.030 U	0.030 U	0.030 U	0.030 U	0.030 U
cPAHs (MTCA TEQ-ZeroND)	µg/L	0.1	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)	0 U (2)
Total HPAH	µg/L	--				0.040 U			0.040 U			0.040 U	
Total LPAH	µg/L	--				0.40 UJ			0.40 UJ			0.40 UJ	
Total PAH	µg/L	--				0.40 UJ			0.40 UJ			0.40 UJ	
1-Methylnaphthalene	µg/L	--				0.40 U			0.40 U			0.40 U	
2-Methylnaphthalene	µg/L	--				0.40 U			0.40 U			0.40 U	
Acenaphthene	µg/L	--				0.040 U			0.040 U			0.040 U	
Acenaphthylene	µg/L	--				0.040 U			0.040 U			0.040 U	
Anthracene	µg/L	--				0.040 U			0.040 U			0.040 U	
Benzo(a)anthracene	µg/L	--	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Benzo(a)pyrene	µg/L	--	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Benzo(b)fluoranthene	µg/L	--	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Benzo(g,h,i)perylene	µg/L	--				0.040 U			0.040 U			0.040 U	
Benzo(k)fluoranthene	µg/L	--	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Chrysene	µg/L	--	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Dibenzo(a,h)anthracene	µg/L	--	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Fluoranthene	µg/L	--				0.040 U			0.040 U			0.040 U	
Fluorene	µg/L	--				0.040 UJ			0.040 UJ			0.040 UJ	
Hexachlorobutadiene	µg/L	--							1.0 U	1.0 U			
Indeno(1,2,3-c,d)pyrene	µg/L	--	0.040 U			0.040 U	0.040 U		0.040 U	0.040 U	0.040 U	0.040 U	0.040 U
Naphthalene	µg/L	--				0.40 U			0.40 U	1.0 U		0.40 U	
Phenanthrene	µg/L	--				0.060 U			0.060 U			0.060 U	
Pyrene	µg/L	--				0.040 U			0.040 U			0.040 U	

Notes:

Blank cells are intentional.
All results rounded to two significant figures.
-- Not established.
Indicates a result that exceeds the applicable screening level.
1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.
2 None of the cPAH compounds were detected at reporting limits; therefore, the TEQ result was 0.

Qualifiers:

J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Abbreviations:

BTEX Benzene, toluene, ethylbenzene, and xylenes
cPAH Carcinogenic polycyclic aromatic hydrocarbon
µg/L Micrograms per liter
MTCA Model Toxics Model Toxics Control Act
PAH Polycyclic arc Polycyclic aromatic hydrocarbon
TEQ Toxic equival Toxic equivalent

Table 3.5
Groundwater Analytical Data—VOCs

			AOPC 2	APOC 3		AOPC 4				AOPC 5				
		Location	T-2	UST-4		MW-19		MW-39		MW-07			MW-12	
		Sample ID	T-2-081120	UST-4-050620	UST-4-081020	MW-19-050720	MW-19-081020	MW-39-050720	MW-39-081020	MW-07-050620	MW-07-081120	MW-107-081120	MW-12-050720	MW-12-081120
		Date	08/11/2020	05/06/2020	08/10/2020	05/07/2020	08/10/2020	05/07/2020	08/10/2020	05/06/2020	08/11/2020	08/11/2020	05/07/2020	08/11/2020
Analyte	Units	Preliminary Screening Level												
Volatile Organic Compounds (VOCs) by EPA 8260D														
1,1,1,2-Tetrachloroethane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,1,1-Trichloroethane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,1-Dichloroethane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,1-Dichloroethene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,1-Dichloropropene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,2,3-Trichlorobenzene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,2,3-Trichloropropane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0
1,2-Dibromo-3-chloropropane	µg/L	--	10 U			10 U	10 U		10 U				10 U	10 U
1,2-Dibromoethane	µg/L	--	1.0 U				1.0 U		1.0 U			1.0 U		1.0 U
1,2-Dibromoethane (EDB)	µg/L	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
1,2-Dichlorobenzene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,2-Dichloroethane (EDC)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	3.3
1,3-Dichlorobenzene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,3-Dichloropropane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
2,2-Dichloropropane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
2-Chlorotoluene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
2-Hexanone	µg/L	--	10 U			10 U	10 U		10 U				10 U	10 U
4-Chlorotoluene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Acetone	µg/L	--	50 U			50 U	50 U		50 U				50 U	50 U
Bromobenzene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Bromodichloromethane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Bromoform	µg/L	--	5.0 U			5.0 U	5.0 U		5.0 U				5.0 U	5.0 U
Bromomethane	µg/L	--	5.0 U			5.0 U	5.0 U		5.0 U				5.0 U	5.0 U
Carbon tetrachloride	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Chlorobenzene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Chloroethane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Chloroform	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Chloromethane	µg/L	--	10 U			10 U	10 U		10 U				10 U	10 U
cis-1,2-Dichloroethene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Cymene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Dibromochloromethane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Dibromomethane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Dichlorodifluoromethane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
iso-Propylbenzene	µg/L	--	1.0 U			1.0 U	1.0 U		8.5				1.6	34
Methyl ethyl ketone	µg/L	--	20 U			20 U	20 U		20 U				20 U	20 U

Table 3.5
Groundwater Analytical Data—VOCs

			AOPC 2	APOC 3		AOPC 4				AOPC 5				
		Location	T-2	UST-4		MW-19		MW-39		MW-07			MW-12	
		Sample ID	T-2-081120	UST-4-050620	UST-4-081020	MW-19-050720	MW-19-081020	MW-39-050720	MW-39-081020	MW-07-050620	MW-07-081120	MW-107-081120	MW-12-050720	MW-12-081120
		Date	08/11/2020	05/06/2020	08/10/2020	05/07/2020	08/10/2020	05/07/2020	08/10/2020	05/06/2020	08/11/2020	08/11/2020	05/07/2020	08/11/2020
Analyte	Units	Preliminary Screening Level												
VOCs by EPA 8260D (cont.)														
Methyl iso butyl ketone	µg/L	--	10 U			10 U	10 U		10 U				10 U	10 U
Methylene chloride	µg/L	--	5.0 U			5.0 U	5.0 U		5.0 U				5.0 U	5.0 U
Methyl-tert-butyl ether	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
n-Hexane	µg/L	--	5.0 U			1.0 U	5.0 U	1.0 U	5.0 U				10	190
n-Propylbenzene	µg/L	--	1.0 U			1.0 U	1.0 U		9.4				3.7	82
sec-Butylbenzene	µg/L	--	1.0 U			1.0 U	1.0 U		2.3				1.0 U	3.5
Styrene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
tert-Butylbenzene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Tetrachloroethene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Trichloroethene	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Trichlorofluoromethane	µg/L	--	1.0 U			1.0 U	1.0 U		1.0 U				1.0 U	1.0 U
Vinyl chloride	µg/L	--	0.20 U			0.20 U	0.20 U		0.20 U				0.20 U	0.20 U

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Abbreviation:

µg/L Micrograms per liter

Qualifier:

U Analyte was not detected at the given reporting limit.

Table 3.5
Groundwater Analytical Data—VOCs

			AOPC 5 (cont.)		AOPC 6				AOPC 7			Outside of AOPCs			
Location			MW-40		MW-03		MW-10		MW-28	MW-34		MW-23		MW-35	
Sample ID			MW-40-050620	MW-40-081120	MW-03-050620	MW-03-081020	MW-10-050620	MW-10-081020	MW-28-081120	MW-34-050620	MW-34-081020	MW-23-050620	MW-23-081120	MW-35-050620	MW-35-081020
Date			05/06/2020	08/11/2020	05/06/2020	08/10/2020	05/06/2020	08/10/2020	08/11/2020	05/06/2020	08/10/2020	05/06/2020	08/11/2020	05/06/2020	08/10/2020
Analyte	Units	Preliminary Screening Level													
Volatile Organic Compounds (VOCs) by EPA 8260D															
1,1,1,2-Tetrachloroethane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,1-Trichloroethane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2,2-Tetrachloroethane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1,2-Trichloroethane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloroethene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,1-Dichloropropene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichlorobenzene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,3-Trichloropropane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trichlorobenzene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2,4-Trimethylbenzene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dibromo-3-chloropropane	µg/L	--	10 U	10 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
1,2-Dibromoethane	µg/L	--		1.0 U				1.0 U	1.0 U		1.0 U		1.0 U		1.0 U
1,2-Dibromoethane (EDB)	µg/L	--	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U	0.010 U
1,2-Dichlorobenzene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloroethane (EDC)	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,2-Dichloropropane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3,5-Trimethylbenzene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichlorobenzene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,3-Dichloropropane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
1,4-Dichlorobenzene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2,2-Dichloropropane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Chlorotoluene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
2-Hexanone	µg/L	--	10 U	10 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
4-Chlorotoluene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Acetone	µg/L	--	50 U	50 U			50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Bromobenzene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromodichloromethane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Bromoform	µg/L	--	5.0 U	5.0 U			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Bromomethane	µg/L	--	5.0 U	5.0 U			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Carbon tetrachloride	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chlorobenzene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroethane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloroform	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Chloromethane	µg/L	--	10 U	10 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
cis-1,2-Dichloroethene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
cis-1,3-Dichloropropene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Cymene	µg/L	--	1.0 U	1.0 U			1.0 U	1.1	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromochloromethane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dibromomethane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Dichlorodifluoromethane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
iso-Propylbenzene	µg/L	--	13	3.9			5.4	30	1.0 U	1.3	1.4	1.0 U	1.0 U	1.0 U	1.0 U
Methyl ethyl ketone	µg/L	--	20 U	20 U			20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U	20 U

Table 3.5
Groundwater Analytical Data—VOCs

			AOPC 5 (cont.)		AOPC 6				AOPC 7			Outside of AOPCs			
		Location	MW-40		MW-03		MW-10		MW-28	MW-34		MW-23		MW-35	
		Sample ID	MW-40-050620	MW-40-081120	MW-03-050620	MW-03-081020	MW-10-050620	MW-10-081020	MW-28-081120	MW-34-050620	MW-34-081020	MW-23-050620	MW-23-081120	MW-35-050620	MW-35-081020
		Date	05/06/2020	08/11/2020	05/06/2020	08/10/2020	05/06/2020	08/10/2020	08/11/2020	05/06/2020	08/10/2020	05/06/2020	08/11/2020	05/06/2020	08/10/2020
Analyte	Units	Preliminary Screening Level													
VOCs by EPA 8260D (cont.)															
Methyl iso butyl ketone	µg/L	--	10 U	10 U			10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Methylene chloride	µg/L	--	5.0 U	5.0 U			5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U	5.0 U
Methyl-tert-butyl ether	µg/L	--	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
n-Hexane	µg/L	--	22	10			3.7	49	5.0 U	1.0 U	5.0 U	1.0 U	5.0 U	1.0 U	5.0 U
n-Propylbenzene	µg/L	--	19	5.0			9.1	64	1.0 U	1.0 U	1.2	1.0 U	1.0 U	1.0 U	1.0 U
sec-Butylbenzene	µg/L	--	2.9	1.2			1.0 U	3.2	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Styrene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
tert-Butylbenzene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Tetrachloroethene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,2-Dichloroethene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
trans-1,3-Dichloropropene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichloroethene	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Trichlorofluoromethane	µg/L	--	1.0 U	1.0 U			1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U	1.0 U
Vinyl chloride	µg/L	--	0.20 U	0.20 U			0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U	0.20 U

Notes:

Blank cells are intentional.

All results rounded to two significant figures.

-- Not established.

Indicates a result that exceeds the applicable screening level.

1 The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

Abbreviation:

µg/L Micrograms per liter

Qualifier:

U Analyte was not detected at the given reporting limit.

Table 3.6
Groundwater Analytical Data—Monitored Natural Attenuation Parameters

			AOPC 1		AOPC 2		AOPC 3		AOPC 4			
		Location	MW-37	MW-38	MW-32	T-2	UST-4		MW-06	MW-19		MW-39
		Sample ID	MW-37-081020	MW-38-081020	MW-32-081120	T-2-081120	UST-4-050620	UST-4-081020	MW-06-081020	MW-19-050720	MW-19-081020	MW-39-081020
		Date	08/10/2020	08/10/2020	08/11/2020	08/11/2020	05/06/2020	08/10/2020	08/10/2020	05/07/2020	08/10/2020	08/10/2020
Analyte	**Units**	**Fraction**										
Conventionals												
Ferrous iron	mg/L	NA								0.02	0.50 U	
Nitrate (as nitrogen)	mg/L	Total								5.3 J	7.7 J	
Sulfate	mg/L	Total								10	16	
Alkalinity (as $CaCO_3$)	mg/L	Total								110	93	
Biochemical oxygen demand	mg/L	Total										
Chemical oxygen demand	mg/L	Total										
Conductivity	µS/cm	NA	1.267	0.381	0.403	0.333		0.211	239.4		422.8	562
Dissolved oxygen	mg/L	NA	0.4	0.43	0.5	2.63		4.48	0.1		0.97	0.01
ORP	mV	NA	-110.5	-83.6	-112.5	-65.5		127.4	-116.1		126.4	-144.4
pH	pH	NA	6.83	6.61	6.5	6.47		6.05	6.55		6.13	6.51
Temperature	°C	NA	18.5	17.2	16.1	14.4		17.5	16.3		15.4	16.1
Turbidity	NTU	NA	87.3	104.4	5.8	22.3		15.3	2.4		0	-0.4
Dissolved Gases												
Methane	mg/L	Total								0.0086 U	0.0086 U	
Metals												
Lead	µg/L	Dissolved					1.0 U					
Lead	µg/L	Total					1.0 U	1.0 U				
Manganese	µg/L	Dissolved								2.0 U	2.0 U	

Notes:
Blank cells are intentional.
All laboratory results are rounded to two significant figures. Field parameter results are not rounded.

Abbreviations:

°C	Degrees Celsius
µg/L	Micrograms per liter
µS/cm	Microsiemens per centimeter
mg/L	Milligrams per liter
mV	Millivolt
NA	Not applicable
NTU	Nephelometric turbidity units
ORP	Oxidation-reduction potential

Qualifiers:

J	Analyte was detected, concentration is considered to be an estimate.
U	Analyte was not detected at the given reporting limit.
UJ	Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Table 3.6
Groundwater Analytical Data—Monitored Natural Attenuation Parameters

			APOC 5										
		Location	MW-07			MW-12		MW-13	MW-14		MW-15	MW-17	
		Sample ID	MW-07-050620	MW-07-081120	MW-107-081120	MW-12-050720	MW-12-081120	MW-13-081020	MW-14-050720	MW-14-081120	MW-15-081020	MW-17-050720	MW-17-081120
		Date	05/06/2020	08/11/2020	08/11/2020	05/07/2020	08/11/2020	08/10/2020	05/07/2020	08/11/2020	08/10/2020	05/07/2020	08/11/2020
Analyte	**Units**	**Fraction**											
Conventionals													
Ferrous iron	mg/L	NA					2.5						0.50 U
Nitrate (as nitrogen)	mg/L	Total				0.92	0.10 U		3.0 J	0.10		0.88	0.27
Sulfate	mg/L	Total				0.50	0.31		7.3	2.4		3.3	2.0
Alkalinity (as $CaCO_3$)	mg/L	Total				54	200		210	220		210	170
Biochemical oxygen demand	mg/L	Total											
Chemical oxygen demand	mg/L	Total											
Conductivity	µS/cm	NA		494.9			554	533		0.426	643		296.3
Dissolved oxygen	mg/L	NA		0.03			0.02	0.53		0.56	0.03		5.38
ORP	mV	NA		-128			-108.8	-128.1		30.5	-132.5		107.8
pH	pH	NA		6.69			6.45	6.66		6.56	6.59		6.91
Temperature	°C	NA		14.1			14.6	16.4		18	14.8		14.5
Turbidity	NTU	NA		0.6			9	4.28		12.4	5.2		8.7
Dissolved Gases													
Methane	mg/L	Total				0.061	4.6		0.0086 U	1.6		0.0086 U	0.19
Metals													
Lead	µg/L	Dissolved	1.0 U										
Lead	µg/L	Total	1.0 U	1.0 U	1.0 U								
Manganese	µg/L	Dissolved				23	1800		6.0	88		2.5	2.7

Notes:
Blank cells are intentional.
All laboratory results are rounded to two significant figures. Field parameter results are not rounded.

Abbreviations:
°C Degrees Celsius
µg/L Micrograms per liter
µS/cm Microsiemens per centimeter
mg/L Milligrams per liter
mV Millivolt
NA Not applicable
NTU Nephelometric turbidity units
ORP Oxidation-reduction potential

Qualifiers:
J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Table 3.6
Groundwater Analytical Data—Monitored Natural Attenuation Parameters

			APOC 5 (cont.)						AOPC 6						
		Location	MW-20	MW-25		MW-33	MW-40		MW-02		MW-03		MW-08	MW-10	
		Sample ID	MW-20-050720	MW-25-050720	MW-25-081120	MW-33-081120	MW-40-050620	MW-40-081120	MW-02-081020	MW-02-022321	MW-03-050620	MW-03-081020	MW-08-081020	MW-10-050620	MW-10-081020
		Date	05/07/2020	05/07/2020	08/11/2020	08/11/2020	05/06/2020	08/11/2020	08/10/2020	02/23/2021	05/06/2020	08/10/2020	08/10/2020	05/06/2020	08/10/2020
Analyte	**Units**	**Fraction**													
Conventionals															
Ferrous iron	mg/L	NA			4.5										3.0
Nitrate (as nitrogen)	mg/L	Total	0.20 U	0.10 U	0.11									0.10 UJ	0.20 U
Sulfate	mg/L	Total	0.69	4.1	0.34									0.78	0.60 U
Alkalinity (as $CaCO_3$)	mg/L	Total	430	78	190									43	120
Biochemical oxygen demand	mg/L	Total	45				11 J								
Chemical oxygen demand	mg/L	Total	69				46								
Conductivity	µS/cm	NA			0.398	298.6		279.1	481.5			276.3	571		426.4
Dissolved oxygen	mg/L	NA			0.67	0.4		5.6	1.49	8.47		0.2	0.21		0.24
ORP	mV	NA			-101.7	88.4		104.3	119.2	195.9		-16.5	-85		-6.5
pH	pH	NA			6.47	6.3		6.37	6.28	6.68		6.32	6.47		6.34
Temperature	°C	NA			15.8	14.2		14.8	16.6	12.9		16.7	15.9		15.1
Turbidity	NTU	NA			3.9	19.33		5.89	4.22	2.51		6.95	7.36		4.15
Dissolved Gases															
Methane	mg/L	Total	5.9 J	2.1	4.6									1.6	2.4
Metals															
Lead	µg/L	Dissolved									1.0 U			1.0 U	
Lead	µg/L	Total									1.0 U	1.0 U		1.0 U	1.0 U
Manganese	µg/L	Dissolved	3,000	720	1,400									660	2,300

Notes:
Blank cells are intentional.
All laboratory results are rounded to two significant figures. Field parameter results are not rounded.

Abbreviations:
°C Degrees Celsius
µg/L Micrograms per liter
µS/cm Microsiemens per centimeter
mg/L Milligrams per liter
mV Millivolt
NA Not applicable
NTU Nephelometric turbidity units
ORP Oxidation-reduction potential

Qualifiers:
J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Table 3.6
Groundwater Analytical Data—Monitored Natural Attenuation Parameters

			AOPC 7									
		Location	MW-18		MW-24		MW-26	MW-27	MW-28	MW-29		MW-34
		Sample ID	MW-18-050720	MW-18-081120	MW-24-050720	MW-24-081120	MW-26-081020	MW-27-081020	MW-28-081120	MW-29-050620	MW-29-081120	MW-34-081020
		Date	05/07/2020	08/11/2020	05/07/2020	08/11/2020	08/10/2020	08/10/2020	08/11/2020	05/06/2020	08/11/2020	08/10/2020
Analyte	**Units**	**Fraction**										
Conventionals												
Ferrous iron	mg/L	NA		0.50 U		0.50 U					0.50 U	
Nitrate (as nitrogen)	mg/L	Total	0.96	0.54	0.88	0.95				2.4 J	2.2	
Sulfate	mg/L	Total	4.0	3.8	5.2	4.8				9.9	14	
Alkalinity (as $CaCO_3$)	mg/L	Total	88	110	110	130				47	49	
Biochemical oxygen demand	mg/L	Total										
Chemical oxygen demand	mg/L	Total										
Conductivity	µS/cm	NA		198.2		247.9	218.5	445	203.4		167	1.906
Dissolved oxygen	mg/L	NA		2.13		7.11	7.29	0.73	1.57		2.78	0.56
ORP	mV	NA		63.8		113.9	-67.7	-37.8	2.8		63.7	-25.5
pH	pH	NA		6.51		6.8	6.52	6.31	6.2		6.35	5.88
Temperature	°C	NA		14.6		14	22.2	16.3	17.5		14.1	17.3
Turbidity	NTU	NA		6.69		39.87	20.87	18.24	17.02		3.69	3.3
Dissolved Gases												
Methane	mg/L	Total	0.0086 U	0.025	0.016	0.0086 U				0.0097	0.017	
Metals												
Lead	µg/L	Dissolved										
Lead	µg/L	Total										
Manganese	µg/L	Dissolved	3.5	100	9.1	6.4				2.0 U	2.0 U	

Notes:
Blank cells are intentional.
All laboratory results are rounded to two significant figures. Field parameter results are not rounded.

Abbreviations:
°C Degrees Celsius
µg/L Micrograms per liter
µS/cm Microsiemens per centimeter
mg/L Milligrams per liter
mV Millivolt
NA Not applicable
NTU Nephelometric turbidity units
ORP Oxidation-reduction potential

Qualifiers:
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UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Table 3.6
Groundwater Analytical Data—Monitored Natural Attenuation Parameters

			Outside of AOPCs										
		Location	MW-01	MW-22			MW-23		MW-30	MW-31		MW-35	MW-36
		Sample ID	MW-01-081020	MW-122-081120	MW-22-050720	MW-22-081120	MW-23-050620	MW-23-081120	MW-30-081120	MW-31-050620	MW-31-081020	MW-35-081020	MW-36-081020
		Date	08/10/2020	08/11/2020	05/07/2020	08/11/2020	05/06/2020	08/11/2020	08/11/2020	05/06/2020	08/10/2020	08/10/2020	08/10/2020
Analyte	**Units**	**Fraction**											
Conventionals													
Ferrous iron	mg/L	NA				4.0		2.5	0.50 U		0.50 U	0.50 U	
Nitrate (as nitrogen)	mg/L	Total		0.10 U	0.11	0.10 U	0.20 UJ	0.40 U	42 J	5.6 J	4.4	13 J	
Sulfate	mg/L	Total		0.30	0.30 U	0.31	3.3	7.3	130	17	18	8.3	
Alkalinity (as $CaCO_3$)	mg/L	Total		150	150	150	100	93	140	230	200	78	
Biochemical oxygen demand	mg/L	Total											
Chemical oxygen demand	mg/L	Total											
Conductivity	µS/cm	NA	274.6			0.266		712	1.167		0.386	0.433	0.232
Dissolved oxygen	mg/L	NA	-0.03			0.51		0.29	2.49		6.09	1.05	1.29
ORP	mV	NA	-93.2			-49.6		-385	127.3		127.3	74.9	61.1
pH	pH	NA	6.51			6.38		6.44	6.28		6.42	6.44	6.26
Temperature	°C	NA	15.1			15.4		15.5	15.5		16	18.4	17.1
Turbidity	NTU	NA	-2			6		3.35	4.2		6	9.6	9.3
Dissolved Gases													
Methane	mg/L	Total		2.8	0.98	4.0	0.77	0.75	0.0086 U	0.0086 U	0.0086 U	0.013	
Metals													
Lead	µg/L	Dissolved											
Lead	µg/L	Total											
Manganese	µg/L	Dissolved		1,100	790	1,100	2,100	2,600	130	2.0 U	2.0 U	26	

Notes:
Blank cells are intentional.
All laboratory results are rounded to two significant figures. Field parameter results are not rounded.

Abbreviations:
°C Degrees Celsius
µg/L Micrograms per liter
µS/cm Microsiemens per centimeter
mg/L Milligrams per liter
mV Millivolt
NA Not applicable
NTU Nephelometric turbidity units
ORP Oxidation-reduction potential

Qualifiers:
J Analyte was detected, concentration is considered to be an estimate.
U Analyte was not detected at the given reporting limit.
UJ Analyte was not detected, concentration given is the reporting limit, which is considered to be an estimate.

Table 3.7
Soil Vapor Analytical Data

		Location	VP-1		VP-2
		Sample ID	SVP-01-050820	SVP-101-050820	SVP-02-050820
		Date	05/08/2020 8:10	05/08/2020 8:10	05/08/2020 8:57
Analyte	**Units**	**Screening Level**			
Conventionals					
Helium	µg/m³	--	6.0 U	6.0 U	6.0 U
Total Petroleum Hydrocarbons (TPH)					
TPH	µg/m³	4,700	180	160	450
Volatile Organic Compounds					
Benzene	µg/m³	11	0.96 U	1.0 U	0.99 U
Toluene	µg/m³	7,600	57 U	60 U	58 U
Ethylbenzene	µg/m³	15,000	1.3 U	1.4 U	1.3 U
Xylene (total)	µg/m³	1,500	2.6 U	2.8 U	5.6
Polycyclic Aromatic Hydrocabons					
Naphthalene	µg/m³	2.5	0.79 U	0.84 U	0.81 U

Notes:

All results rounded to two significant figures.

-- Not established.

Abbreviations:

µg/m³ Micrograms per cubic meter

MTCA Model Toxics Control Act

Qualifier:

U Analyte was not detected at the given reporting limit.

Table 3.8
Groundwater Elevations

Well	Aquifer	TOC Elevation	Date	Time	Depth to Water	Depth to LNAPL	Groundwater Elevation
MW-01	Alluvial Aquifer	17.96	05/06/2020	11:34	11.17	--	6.79
			08/10/2020	10:08	11.70	--	6.26
MW-02	Perched	22.71	05/06/2020	10:59	9.76	--	12.95
			08/10/2020	10:19	10.17	--	12.54
MW-03	Alluvial Aquifer	20.93	05/06/2020	10:48	13.39	--	7.54
			08/10/2020	10:15	14.18	--	6.75
MW-04	Perched	24.22 (1)	05/06/2020	--	--	--	--
			08/10/2020	09:30	17.12	--	7.10
MW-05	Alluvial Aquifer	22.69	05/06/2020	11:11	14.96	--	7.73
			08/10/2020	10:21	15.90	--	6.79
MW-06	Alluvial Aquifer	17.48	05/06/2020	11:45	10.62	--	6.86
			08/10/2020	10:15	11.35	--	6.13
MW-07	Alluvial Aquifer	22.21	05/06/2020	11:57	14.82	--	7.39
			08/10/2020	10:40	15.60	--	6.61
MW-08	Alluvial Aquifer	20.61	05/06/2020	10:25	13.19	--	7.42
			08/10/2020	10:08	13.93	--	6.68
MW-09	Perched	23.36	05/06/2020	14:30	16.19	16.05	7.283
			08/11/2020	10:05	16.96	16.85	6.489
MW-10	Alluvial Aquifer	22.89	05/06/2020	10:36	15.38	--	7.51
			08/10/2020	10:11	16.21	--	6.68
MW-11	Perched	25.07	05/7/2020 (2)	12:37	12.39	--	12.68
			08/10/2020	10:55	15.43	--	9.64
MW-12	Alluvial Aquifer	21.16	05/7/2020 (2)	13:58	13.60	--	7.56
			08/11/2020 (3)	12:28	14.60	--	6.56
MW-13	Perched	25.09	05/7/2020 (2)	11:01	11.03	--	14.06
			08/10/2020	11:06	11.46	--	13.63
MW-14	Perched	23.77	05/7/2020 (2)	13:44	6.43	--	17.34
			08/10/2020	10:42	8.51	--	15.26
MW-15	Alluvial Aquifer	21.75	05/7/2020 (2)	12:40	14.11	--	7.64
			08/10/2020	10:25	15.00	--	6.75
MW-16	Perched	22.94	05/7/2020 (2)	11:30	9.92	--	13.02
		22.06 (4)	08/10/2020	10:31	12.41	--	10.53
MW-17	Perched	25.24	05/7/2020 (2)	09:48	10.07	--	15.17
			08/10/2020	11:12	12.62	--	12.62
MW-18	Perched	26.56	05/7/2020 (2)	12:37	12.50	--	14.06
			08/10/2020	11:40	13.40	--	13.16
MW-19	Alluvial Aquifer	20.20	05/7/2020 (2)	13:55	13.30	--	6.90
			08/10/2020	10:14	13.95	--	6.25
MW-20	Alluvial Aquifer	23.34	05/7/2020 (2)	12:13	15.55	--	7.79
			8/11/2020 (3)	10:00	16.78	--	6.56
MW-22	Alluvial Aquifer	31.40	05/06/2020	09:28	23.04	--	8.36
			08/10/2020	11:07	24.76	--	6.64
MW-23	Alluvial Aquifer	31.43	05/06/2020	08:53	22.93	--	8.50
			08/10/2020	10:43	24.72	--	6.71
MW-24	Perched	27.89	05/06/2020	10:02	12.58	--	15.31
			08/10/2020	11:36	13.31	--	14.58
MW-25	Alluvial Aquifer	21.45	05/7/2020 (2)	10:45	8.02	--	13.43
			08/11/2020 (3)	11:31	9.68	--	11.77
MW-26	Perched	27.14	05/06/2020	10:13	12.89	--	14.25
			08/10/2020	11:20	13.08	--	14.06
MW-27	Alluvial Aquifer	25.90	05/7/2020 (2)	10:01	18.10	--	7.80
			08/10/2020	11:27	18.50	--	7.40
MW-28	Perched	27.36	05/7/2020 (2)	15:50	17.91	--	9.45
			08/10/2020	11:35	13.60	--	13.76
MW-29	Perched	29.77	05/06/2020	15:05	15.82	--	13.95
			08/10/2020	11:31	16.20	--	13.57
MW-30 (5)	Perched	26.32	05/06/2020	--	--	--	--
			08/10/2020	08:45	16.80	--	9.52
MW-31	Alluvial Aquifer	19.89	05/06/2020	11:22	13.09	--	6.80
			08/10/2020	10:02	13.72	--	6.17
MW-32	Alluvial Aquifer	21.17	05/06/2020	12:08	13.38	--	7.79
			08/10/2020	09:45	14.31	--	6.86
MW-33	Alluvial Aquifer	25.91	05/06/2020	15:08	18.32	--	7.59
			08/10/2020	11:15	19.25	--	6.66
MW-34	Alluvial Aquifer	26.67	05/06/2020	08:30	18.74	--	7.93
			08/10/2020	10:21	20.27	--	6.40
MW-35	Perched	26.95	05/06/2020	08:41	14.20	--	12.75
			08/10/2020	10:36	15.08	--	11.87
MW-36	Alluvial Aquifer	31.59	05/06/2020	09:39	23.50	--	8.09
			08/10/2020	11:13	25.05	--	6.54
MW-37	Alluvial Aquifer	31.13	05/06/2020	09:05	22.54	--	8.59
			08/10/2020	10:59	23.91	--	7.22
MW-38	Alluvial Aquifer	31.09	05/06/2020	09:16	22.32	--	8.77
			08/10/2020	11:03	24.09	--	7.00
MW-39	Alluvial Aquifer	18.95	05/7/2020 (2)	13:18	12.08	--	6.87
			08/10/2020	10:30	12.80	--	6.15
MW-40	Alluvial Aquifer	24.65	05/06/2020	14:14	17.05	--	7.60
			08/10/2020	10:55	18.07	--	6.58
UST-4	NA	31.68	05/06/2020	09:51	17.34	--	14.34
			08/10/2020	11:19	17.67	--	14.01
T-2	NA	19.30 (1)	08/10/2020	10:00	12.91	--	6.39

Notes:

-- Not applicable.

1 MW-04 was not accessible during surveying activities; T-2 location was not known during surveying activities.

2 Well not accessible on first day of depth to water measurements.

3 Groundwater elevation not used in contour figures due to depth to water measurement collected on a different day.

4 MW-16 was repaired by lowering the casing on 12/18/2020 and resurveyed on 12/30/2020.

5 Well not accessible during May 2020 sampling event and surveyed by Floyd|Snider on 8/11/2020.

Abbreviations:

LNAPL Light non-aqueous phase liquid

TOC Top of casing

Table 4.1
Proposed Revisions to Groundwater Monitoring Program

Proposed Change to Sampling Program	Rationale	Locations Affected
Limit VOCs analyses to BTEX compounds	The full suite of VOCs were analyzed in 10 wells across the Site, and another three wells were analyzed for MTBE, n-hexane, EDB, and EDC. No VOCs other than BTEX were detected at concentrations exceeding their respective screening levels or laboratory quantitation limits during the February 2019, (1) May 2020, or August 2020 sampling events.	Full Suite: MW-10, MW-12, MW-19, MW-23, MW-28, MW-34, MW-35, MW-39, MW-40, T-2 EDB/EDC, MTBE, n-Hexane: UST-4, MW-3, MW-7
Limit SVOC analysis to naphthalenes, (2) eliminate cPAH analysis	Groundwater analytical results for cPAHs were either less than laboratory quantitation limits or less than screening levels for total TEQ concentrations in all groundwater samples. In addition, aside from naphthalenes (detected at concentrations exceeding laboratory quantitation limits, no screening levels included in Remedial Investigation Work Plan), no SVOCs were detected at concentrations exceeding their respective screening levels or laboratory quantitation limits during the February 2019, (1) May 2020, and August 2020 sampling events.	All Locations
Remove seven wells from the sampling program where no analytes have been detected at concentrations exceeding screening levels	No analytes at these locations were detected at concentrations exceeding their respective screening levels or laboratory quantitation limits during the February 2019, (1) May 2020, and August 2020 sampling events. In addition, none of these locations are included in the MNA analysis program.	MW-01, MW-11, MW-13, MW-16, MW-19, MW-27, and MW-32
Eliminate lead analysis	Total and/or dissolved lead was not detected at concentrations exceeding screening levels or laboratory quantitation limits in any sample collected during the May 2020 and August 2020 sampling events.	All Locations

Notes:

1 Refer to the Remedial Investigation Work Plan for the February 2019 groundwater sampling results (Floyd|Snider 2019).

2 Naphthalenes include naphthalene, 1-methylnaphthalene, and 2-methylnaphthalene.

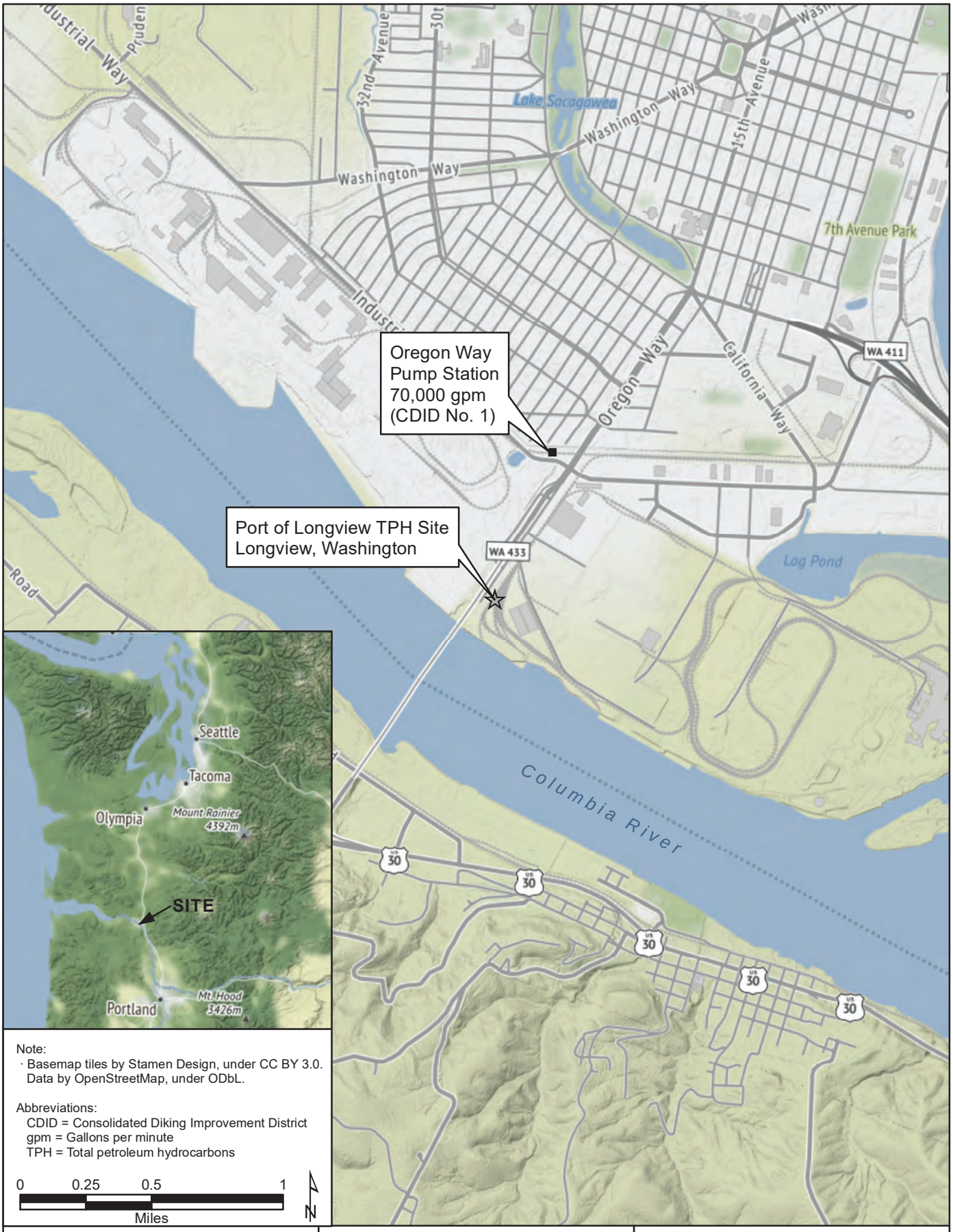
Abbreviations:

BTEX Benzene, toluene, ethylbenzene, and xylenes
cPAH Carcinogenic polycyclic aromatic hydrocarbon
EDB 1,2-Dibromoethane
EDC 1,2-Dichloroethane
MNA Monitored natural attenuation
MTBE Methyl tert-butyl ether
SVOC Semivolatile organic compound
TEQ Toxic equivalent
VOC Volatile organic compound

Port of Longview TPH Site

Interim Data Report

Figures



Note:
· Basemap tiles by Stamen Design, under CC BY 3.0. Data by OpenStreetMap, under ODbL.

Abbreviations:
CDID = Consolidated Diking Improvement District
gpm = Gallons per minute
TPH = Total petroleum hydrocarbons

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Figure 1.1
Vicinity Map

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9/15/2020

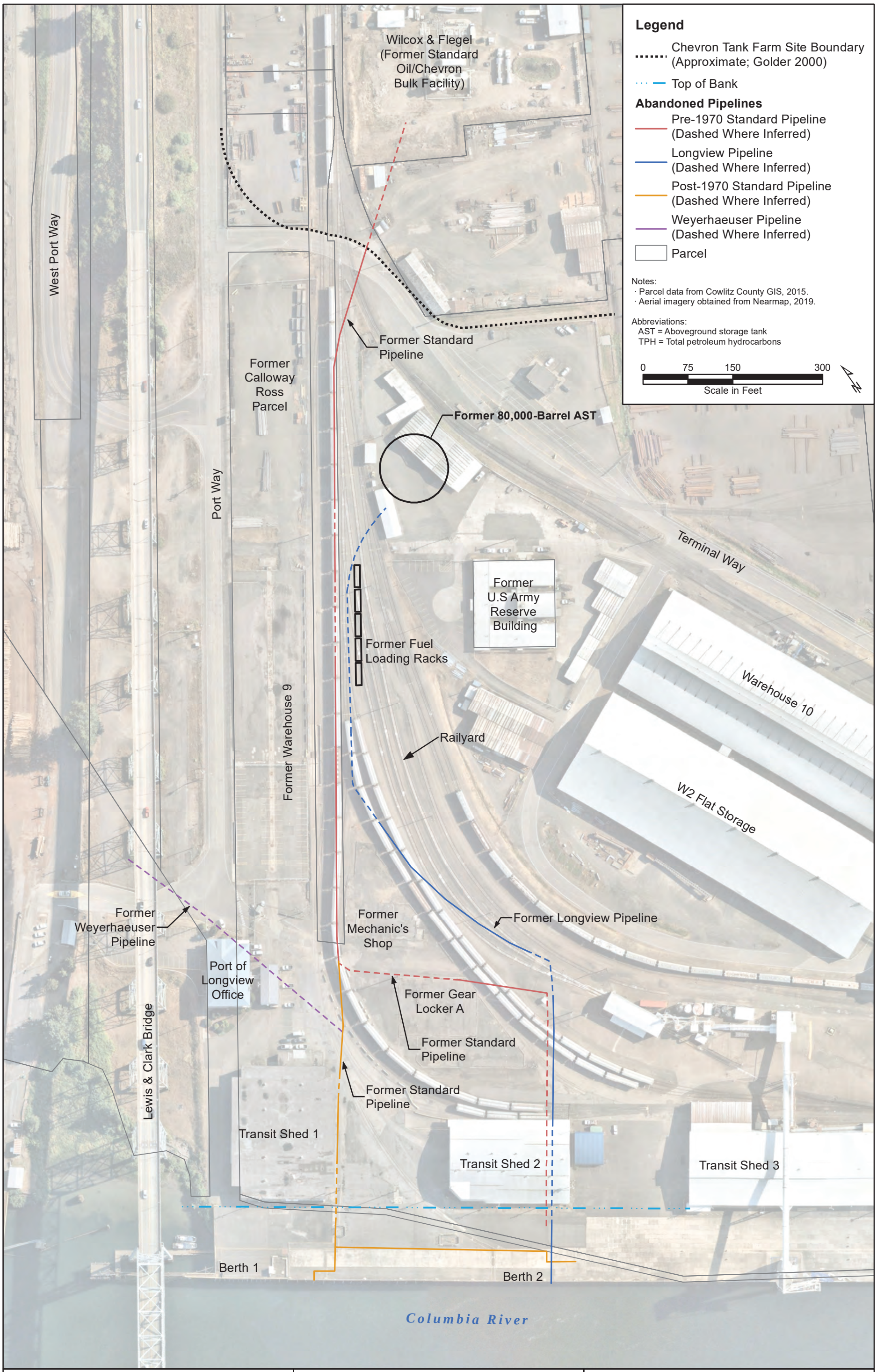

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Figure 1.2
Site Map

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9/15/2020

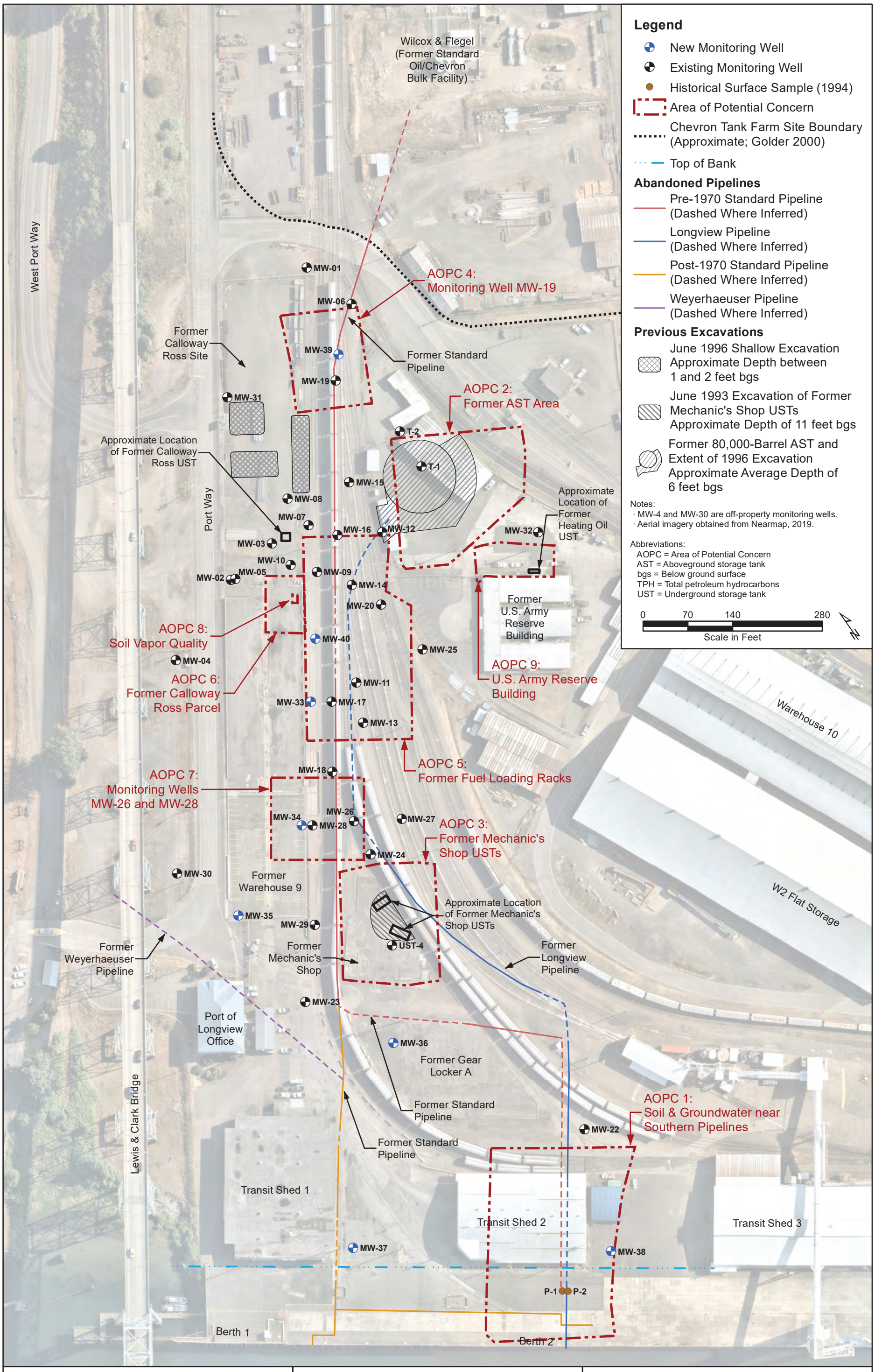

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Figure 2.1
Areas of Potential Concern

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10/19/2020

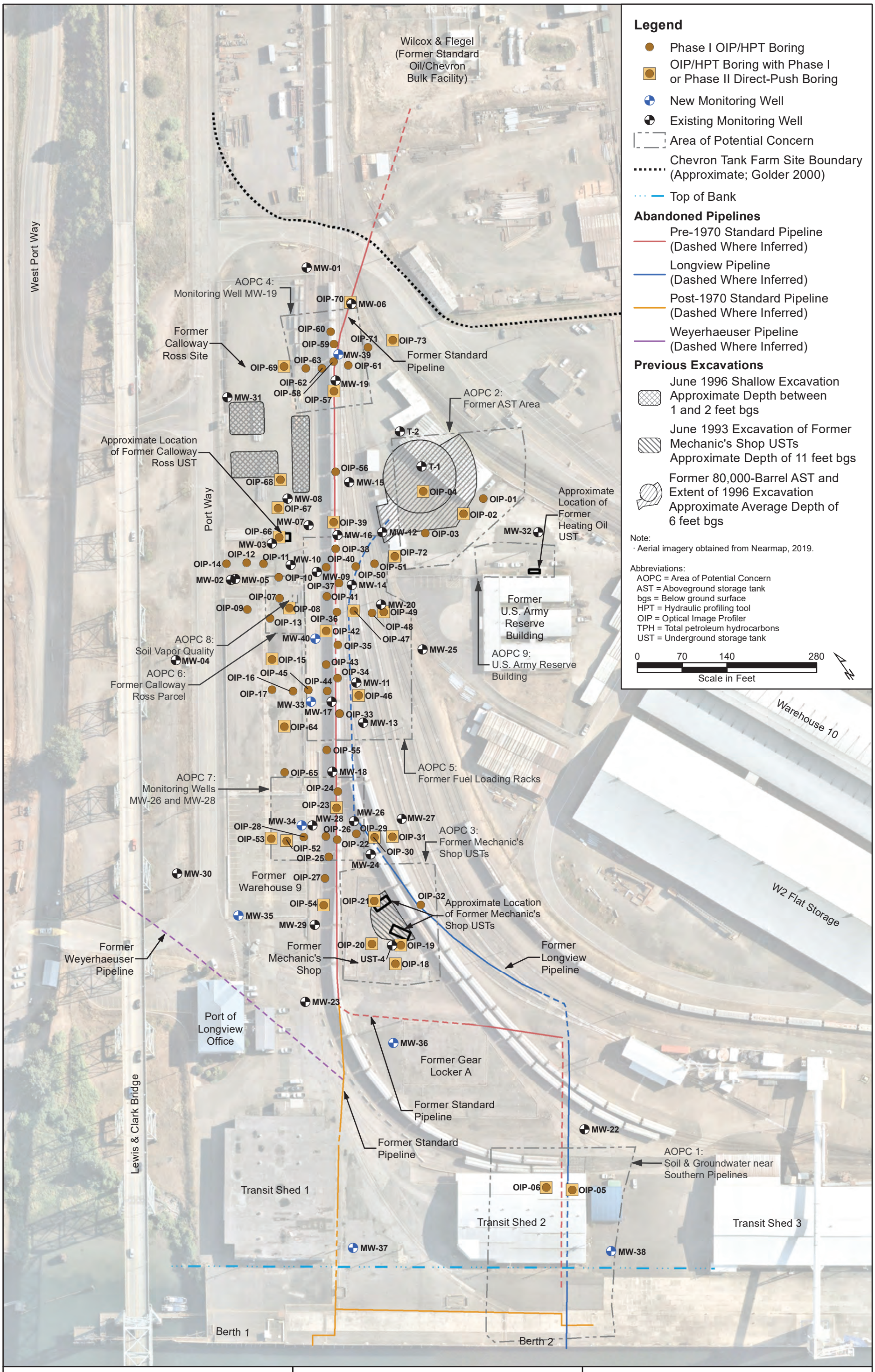

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Figure 2.2
Phase I OIP/HPT Boring Locations

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10/9/2020

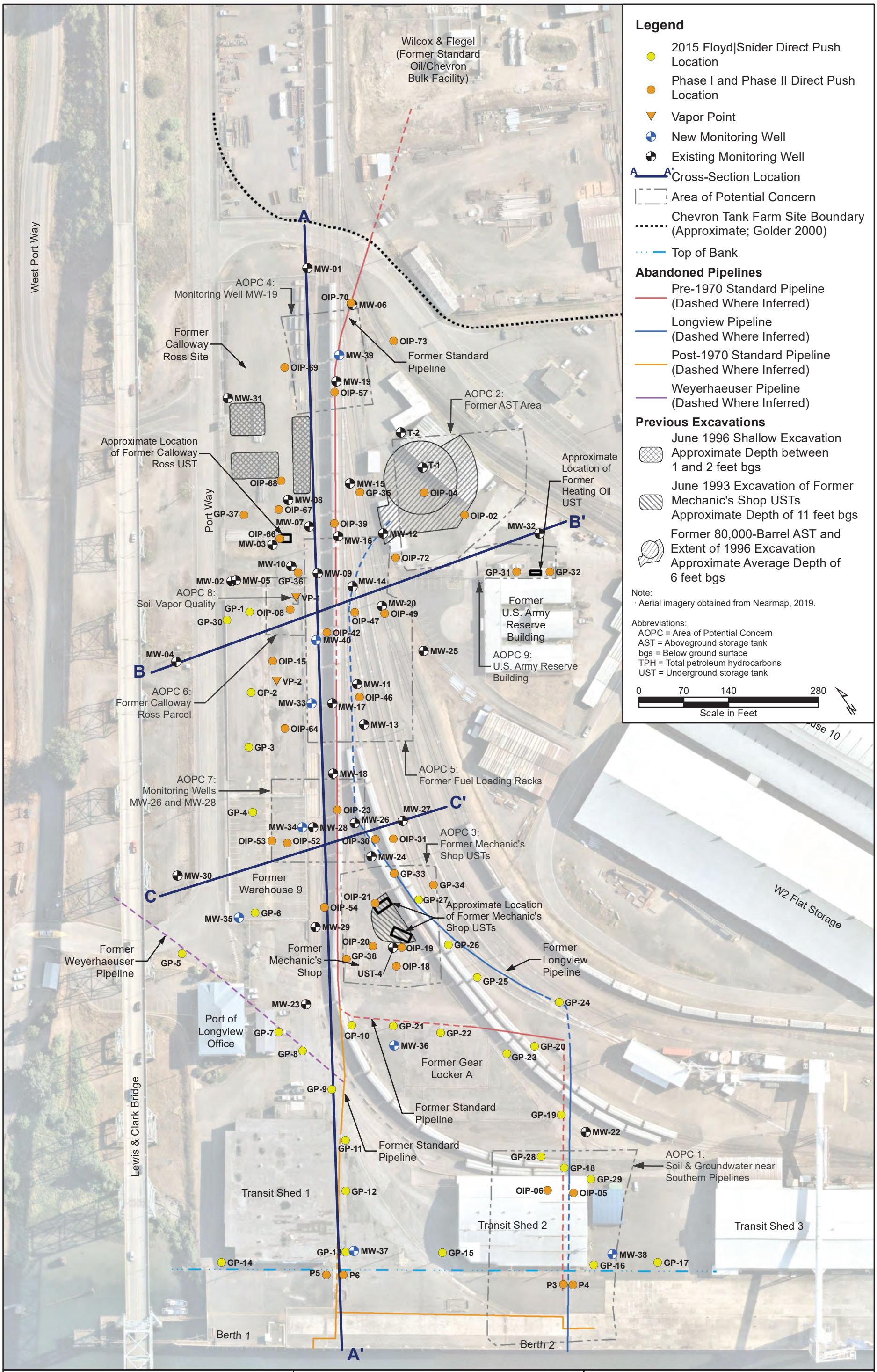

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Figure 2.3
Soil Boring and Monitoring Well Locations

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10/9/2020

Legend

Location Type

- Monitoring Well
- Direct Push
- Historical Location[1]

GRO Results (mg/kg)

- Not Detected
- >20–30
- >30–100
- >100–5,700
- >5,700[2]
- Area of Potential Concern
- Chevron Tank Farm Site Boundary (Approximate; Golder 2000)
- Top of Bank

Abandoned Pipelines

- Pre-1970 Standard Pipeline (Dashed Where Inferred)
- Longview Pipeline (Dashed Where Inferred)
- Post-1970 Standard Pipeline (Dashed Where Inferred)
- Weyerhaeuser Pipeline (Dashed Where Inferred)

Previous Excavations

- June 1996 Shallow Excavation Approximate Depth between 1 and 2 feet bgs
- June 1993 Excavation of Former Mechanic's Shop USTs Approximate Depth of 11 feet bgs
- Former 80,000-Barrel AST and Extent of 1996 Excavation Approximate Average Depth of 6 feet bgs

Notes:
1. Soil results for the 2015 historical locations are reported in Floyd|Snider's 2015 Port of Longview TPH Site Data Gaps Report.
2. This number is based on preliminary residual saturation levels.

· Data represent the maximum result at each location.
· Aerial imagery obtained from Nearmap, 2019.

Abbreviations:
AOPC = Area of Potential Concern
AST = Aboveground storage tank
bgs = Below ground surface
GRO = Gasoline-range organics
mg/kg = Milligrams per kilogram
TPH = Total petroleum hydrocarbons
UST = Underground storage tank

0 70 140 280
Scale in Feet

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Figure 3.1
Concentrations of Gasoline-Range Organics in Soil

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.1 Concentrations of Gasoline-Range Organics in Soil.mxd
9/17/2020

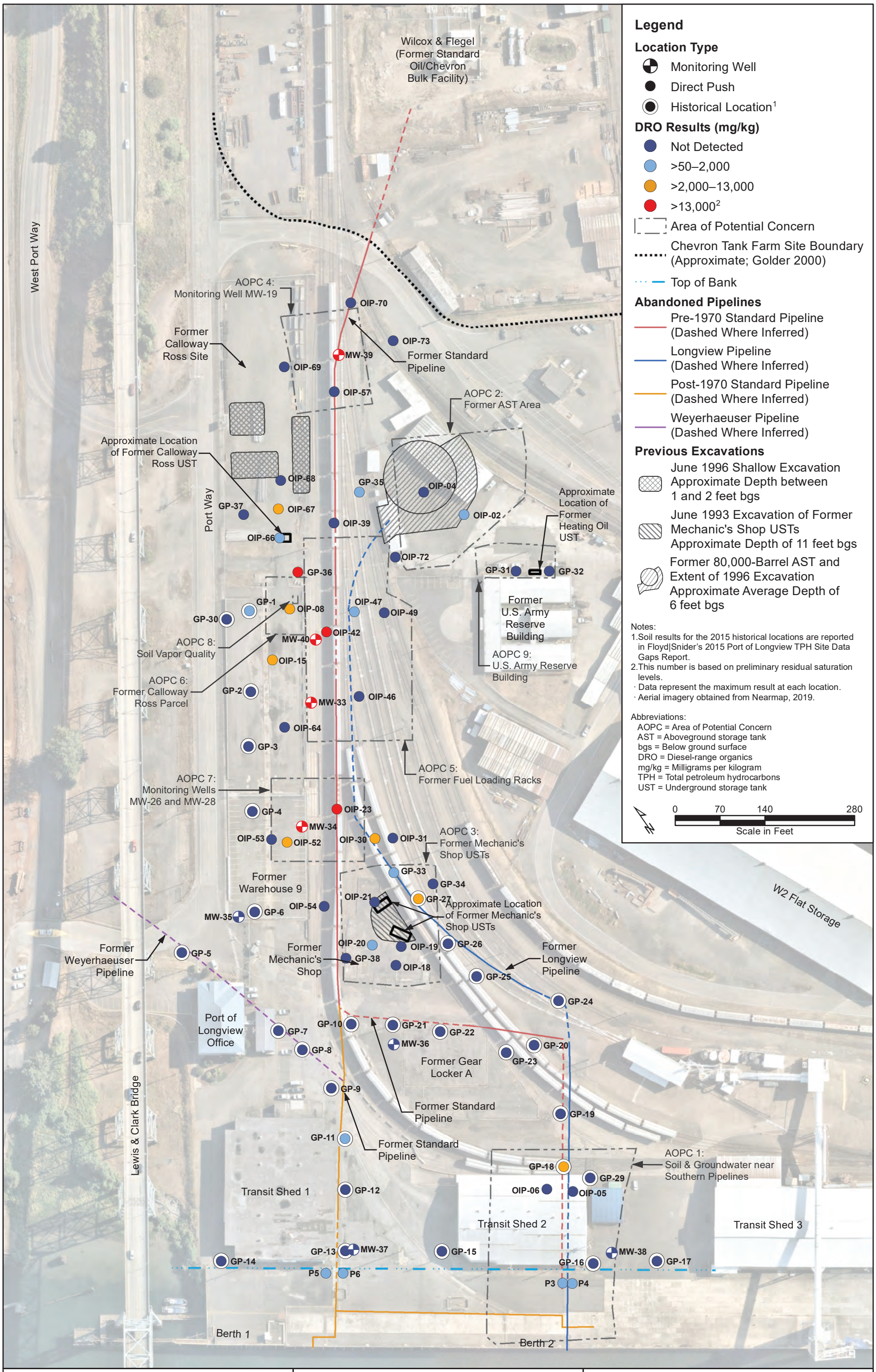

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Figure 3.2
Concentrations of Diesel-Range Organics in Soil

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9/17/2020

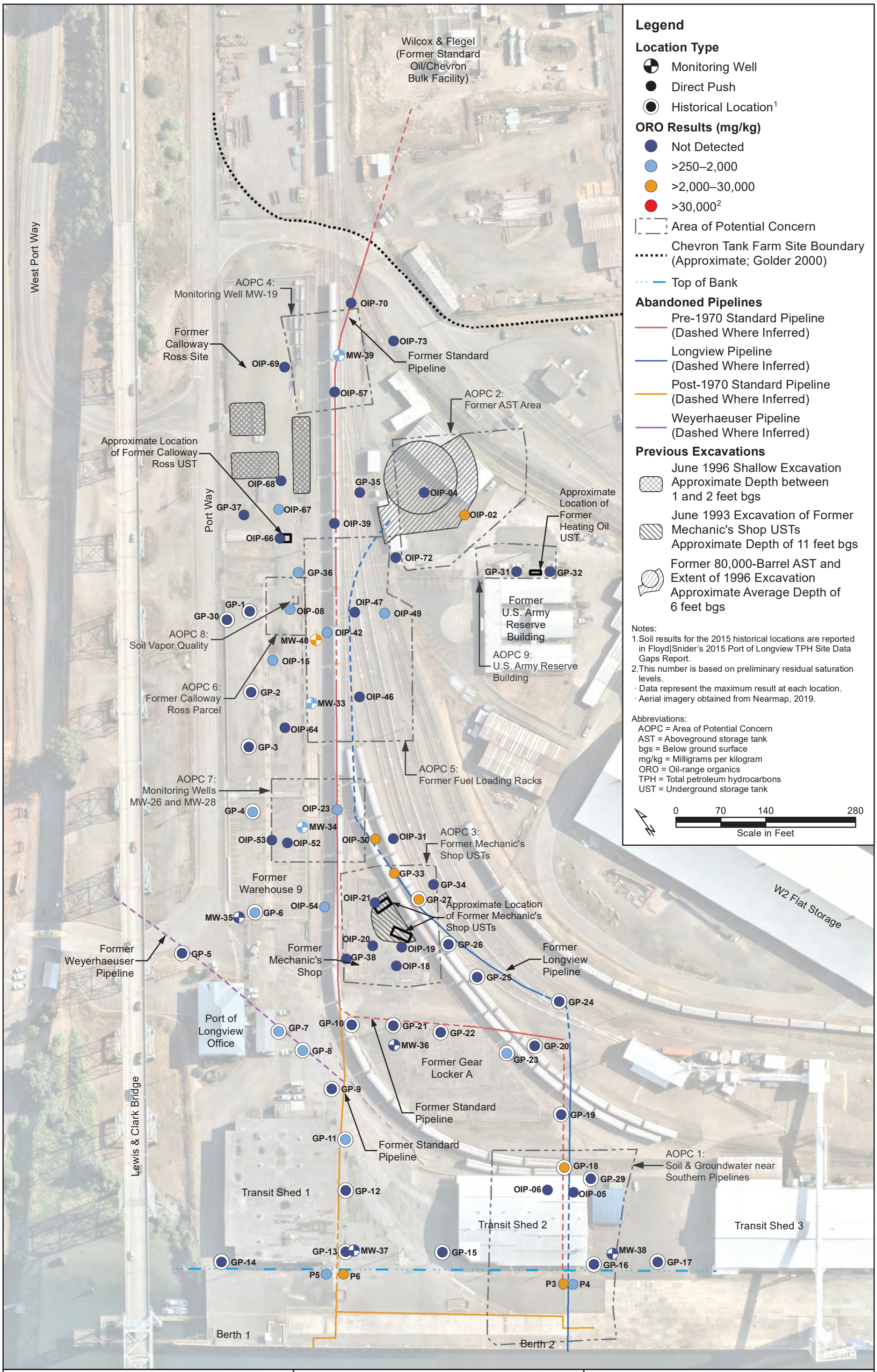

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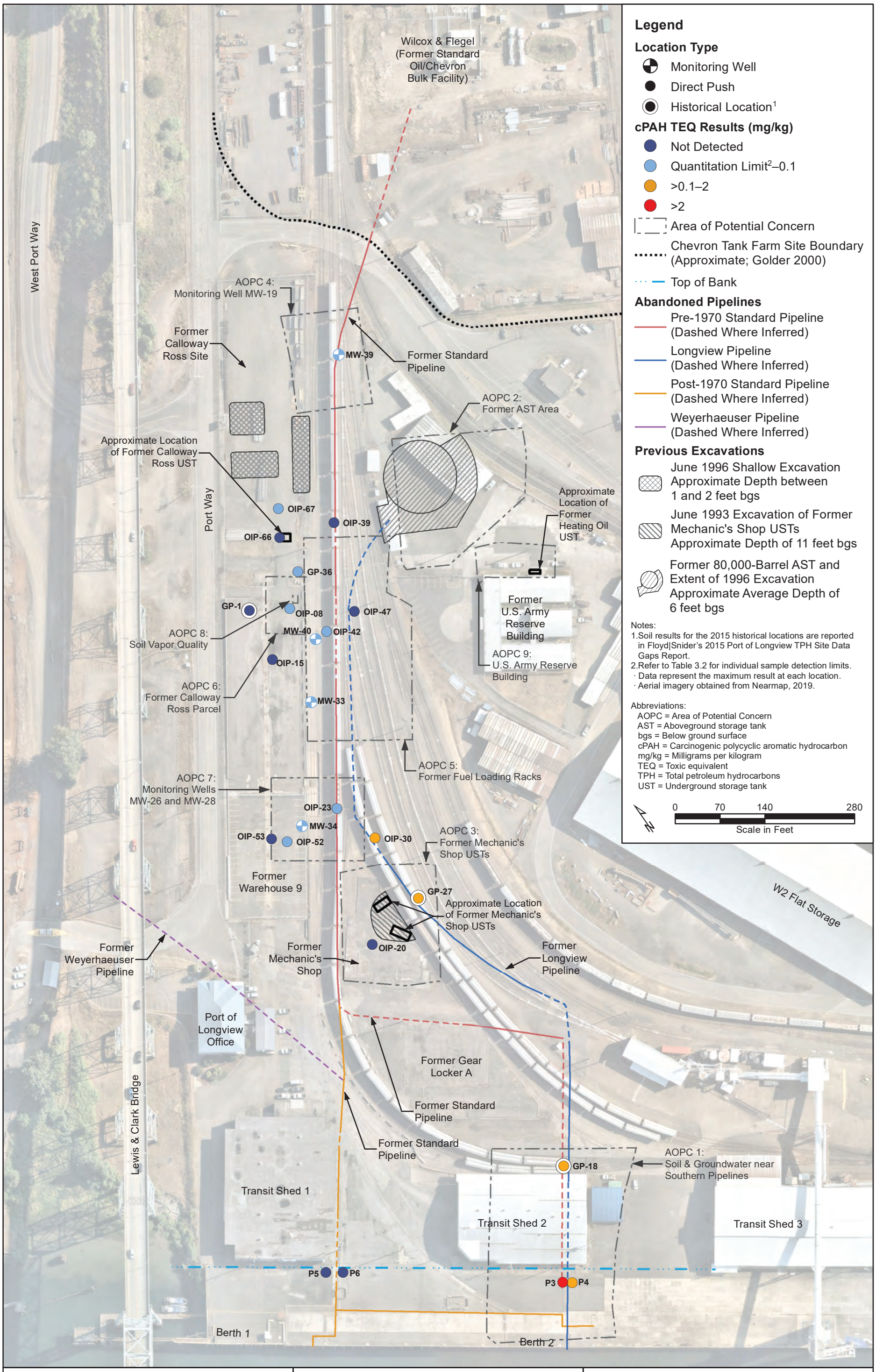
Figure 3.3
Concentrations of Oil-Range Organics in Soil

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.3 Concentrations of Oil-Range Organics in Soil.mxd
9/17/2020



Legend

Location Type

- Monitoring Well
- Direct Push
- Historical Location[1]

cPAH TEQ Results (mg/kg)

- Not Detected
- Quantitation Limit[2]–0.1
- >0.1–2
- >2
- Area of Potential Concern
- Chevron Tank Farm Site Boundary (Approximate; Golder 2000)
- Top of Bank

Abandoned Pipelines

- Pre-1970 Standard Pipeline (Dashed Where Inferred)
- Longview Pipeline (Dashed Where Inferred)
- Post-1970 Standard Pipeline (Dashed Where Inferred)
- Weyerhaeuser Pipeline (Dashed Where Inferred)

Previous Excavations

- June 1996 Shallow Excavation Approximate Depth between 1 and 2 feet bgs
- June 1993 Excavation of Former Mechanic's Shop USTs Approximate Depth of 11 feet bgs
- Former 80,000-Barrel AST and Extent of 1996 Excavation Approximate Average Depth of 6 feet bgs

Notes:
1. Soil results for the 2015 historical locations are reported in Floyd|Snider's 2015 Port of Longview TPH Site Data Gaps Report.
2. Refer to Table 3.2 for individual sample detection limits.
· Data represent the maximum result at each location.
· Aerial imagery obtained from Nearmap, 2019.

Abbreviations:
AOPC = Area of Potential Concern
AST = Aboveground storage tank
bgs = Below ground surface
cPAH = Carcinogenic polycyclic aromatic hydrocarbon
mg/kg = Milligrams per kilogram
TEQ = Toxic equivalent
TPH = Total petroleum hydrocarbons
UST = Underground storage tank

0 70 140 280
Scale in Feet

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Figure 3.4
Concentrations of cPAH TEQ in Soil

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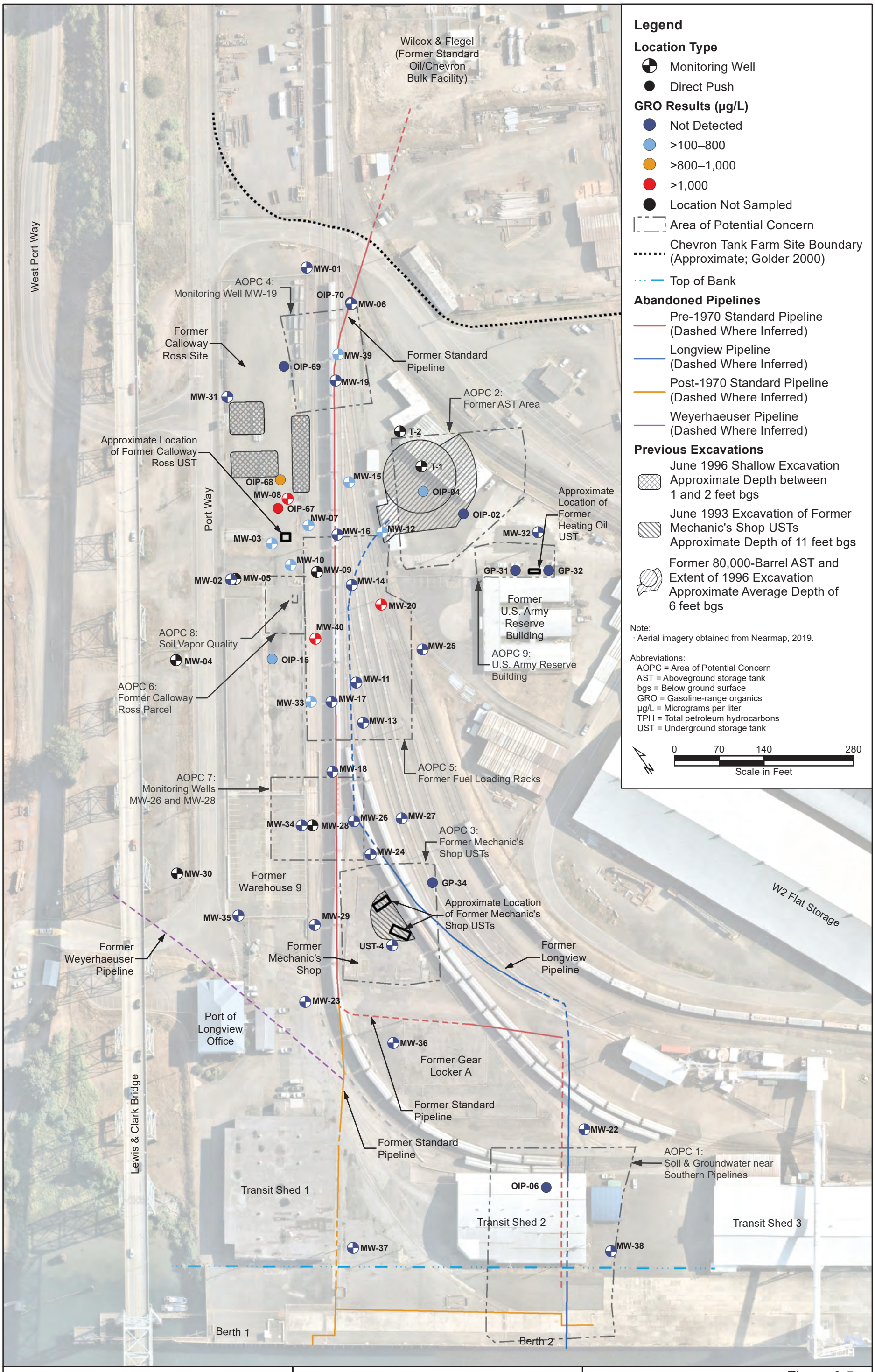
9/16/2020



Legend

Location Type

- Monitoring Well
- Direct Push

GRO Results (µg/L)

- Not Detected
- >100–800
- >800–1,000
- >1,000
- Location Not Sampled
- Area of Potential Concern
- Chevron Tank Farm Site Boundary (Approximate; Golder 2000)
- Top of Bank

Abandoned Pipelines

- Pre-1970 Standard Pipeline (Dashed Where Inferred)
- Longview Pipeline (Dashed Where Inferred)
- Post-1970 Standard Pipeline (Dashed Where Inferred)
- Weyerhaeuser Pipeline (Dashed Where Inferred)

Previous Excavations

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- June 1993 Excavation of Former Mechanic's Shop USTs Approximate Depth of 11 feet bgs
- Former 80,000-Barrel AST and Extent of 1996 Excavation Approximate Average Depth of 6 feet bgs

Note:
· Aerial imagery obtained from Nearmap, 2019.

Abbreviations:
AOPC = Area of Potential Concern
AST = Aboveground storage tank
bgs = Below ground surface
GRO = Gasoline-range organics
µg/L = Micrograms per liter
TPH = Total petroleum hydrocarbons
UST = Underground storage tank

0 70 140 280
Scale in Feet

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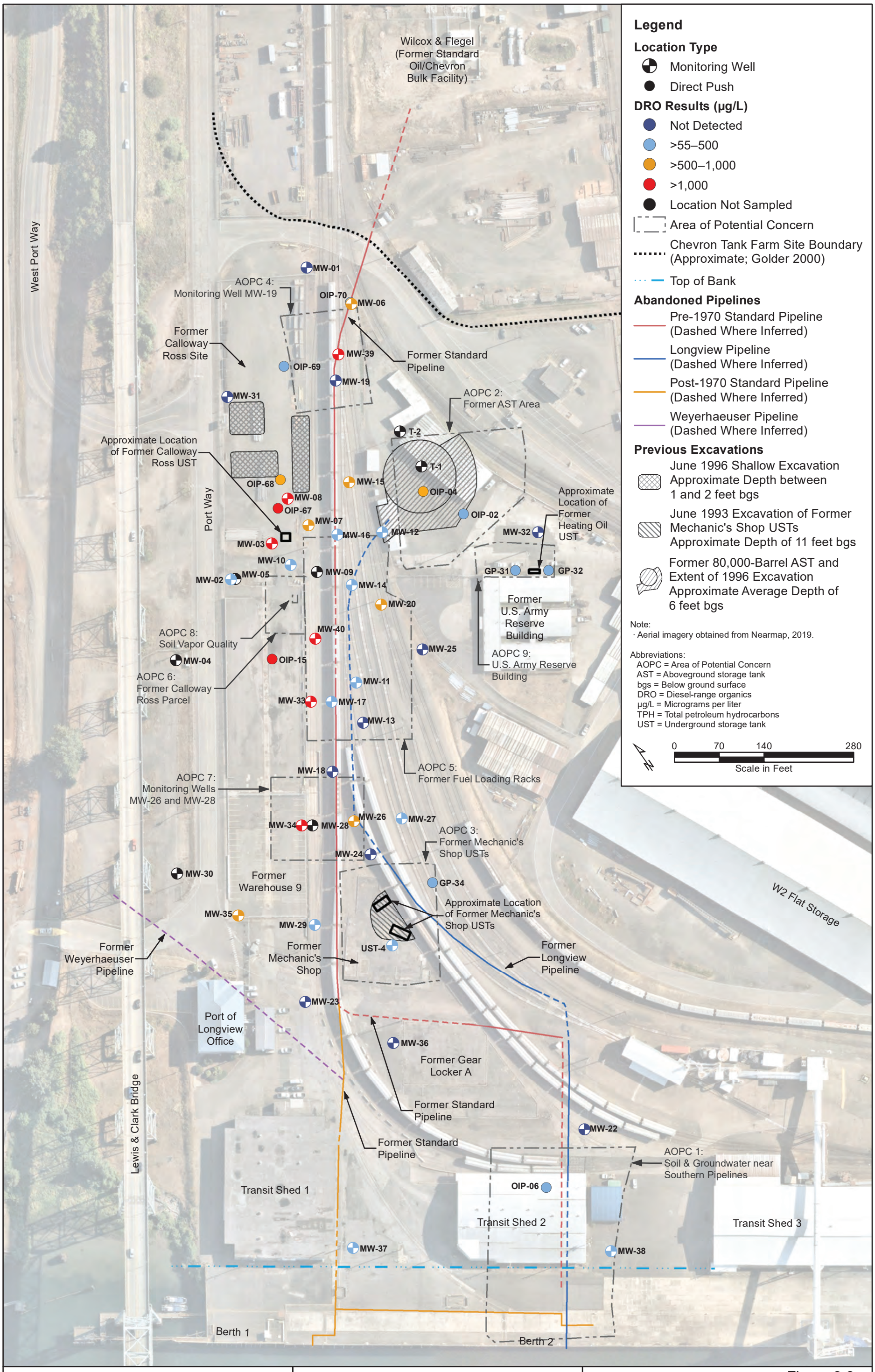
Figure 3.5
Phase II and May 2020 Concentrations of Gasoline-Range Organics in Groundwater

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.5 Phase II and May 2020 Concentrations of Gasoline-Range Organics in Groundwater.mxd
9/16/2020



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Port of Longview TPH Site
Longview, Washington

Figure 3.6
Phase II and May 2020 Concentrations of Diesel-Range Organics in Groundwater

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.6 Phase II and May 2020 Concentrations of Diesel-Range Organics in Groundwater.mxd
9/16/2020

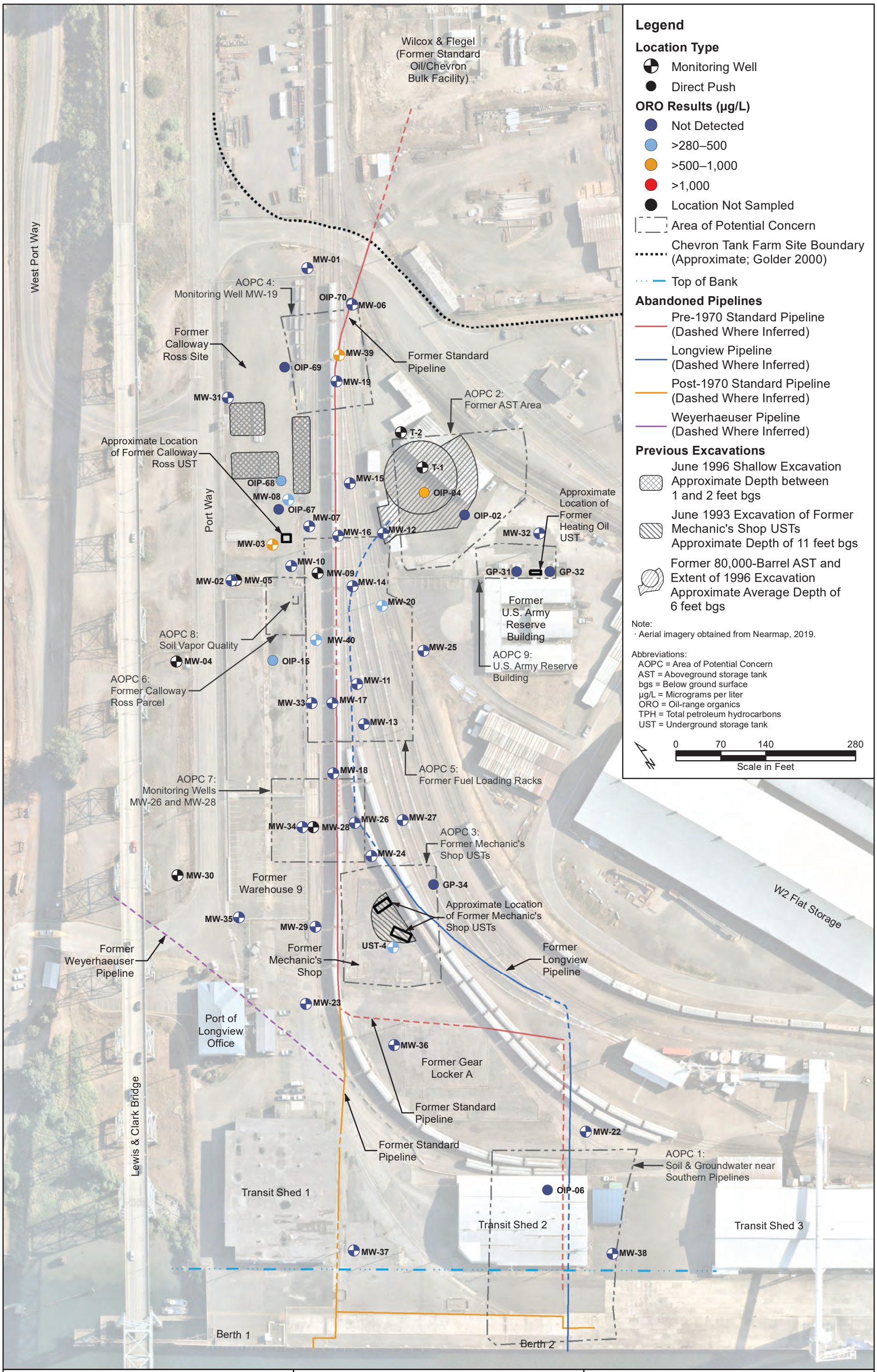

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Figure 3.7
Phase II and May 2020 Concentrations of Oil-Range Organics in Groundwater

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.7 Phase II and May 2020 Concentrations of Oil-Range Organics in Groundwater.mxd
9/16/2020

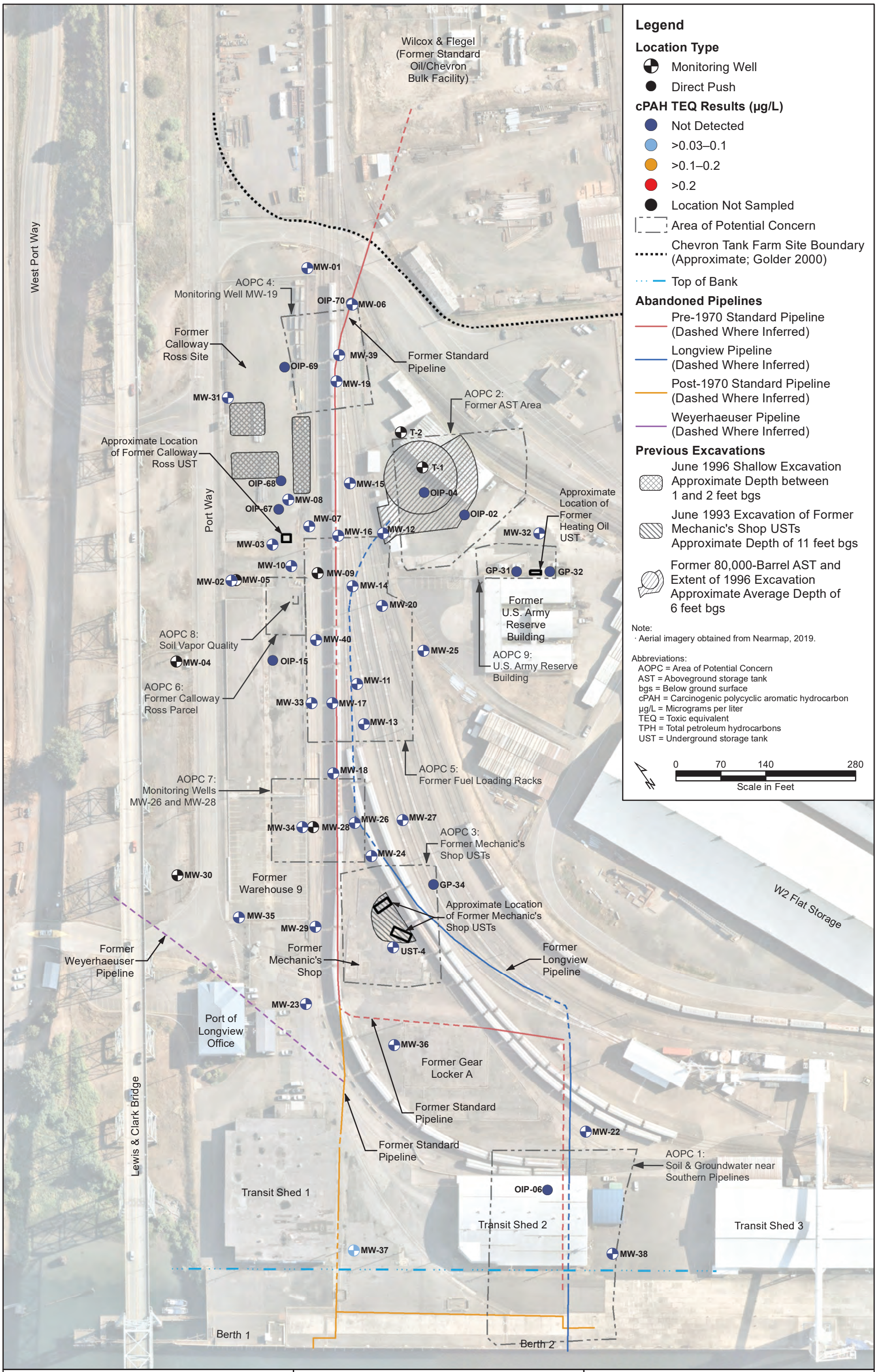

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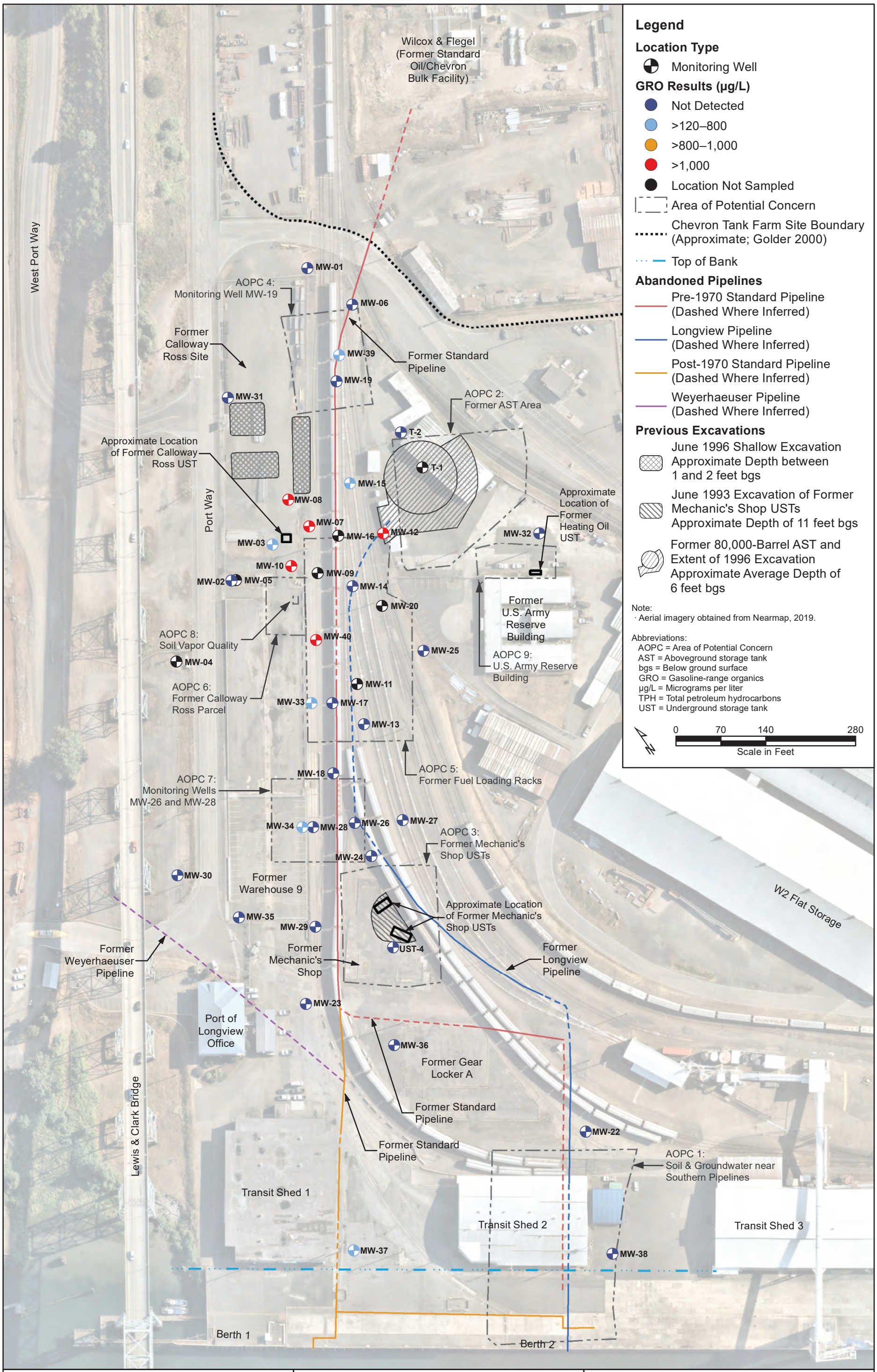
Figure 3.8
Phase II and May 2020 Concentrations of cPAH TEQ in Groundwater

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.8 Phase II and May 2020 Concentrations of cPAH TEQ in Groundwater.mxd
9/16/2020



Legend

Location Type

- Monitoring Well

GRO Results (µg/L)

- Not Detected
- >120–800
- >800–1,000
- >1,000
- Location Not Sampled
- Area of Potential Concern
- Chevron Tank Farm Site Boundary (Approximate; Golder 2000)
- Top of Bank

Abandoned Pipelines

- Pre-1970 Standard Pipeline (Dashed Where Inferred)
- Longview Pipeline (Dashed Where Inferred)
- Post-1970 Standard Pipeline (Dashed Where Inferred)
- Weyerhaeuser Pipeline (Dashed Where Inferred)

Previous Excavations

- June 1996 Shallow Excavation Approximate Depth between 1 and 2 feet bgs
- June 1993 Excavation of Former Mechanic's Shop USTs Approximate Depth of 11 feet bgs
- Former 80,000-Barrel AST and Extent of 1996 Excavation Approximate Average Depth of 6 feet bgs

Note:
· Aerial imagery obtained from Nearmap, 2019.

Abbreviations:
AOPC = Area of Potential Concern
AST = Aboveground storage tank
bgs = Below ground surface
GRO = Gasoline-range organics
µg/L = Micrograms per liter
TPH = Total petroleum hydrocarbons
UST = Underground storage tank

0 70 140 280
Scale in Feet

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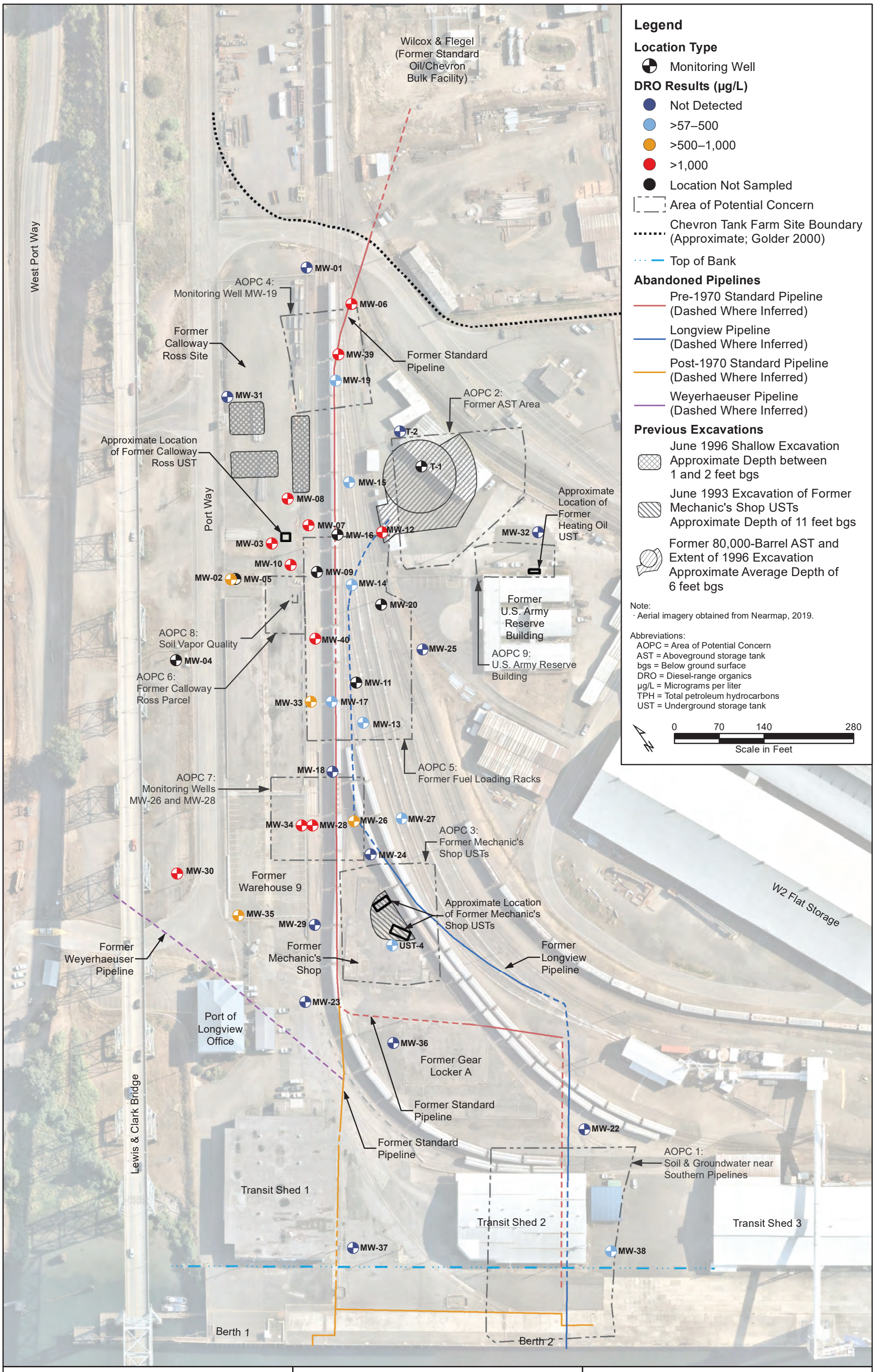
Figure 3.9
August 2020 Concentrations of Gasoline-Range Organics in Groundwater

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.9 August 2020 Concentrations of Gasoline-Range Organics in Groundwater.mxd
9/16/2020



Legend

Location Type

- Monitoring Well

DRO Results (µg/L)

- Not Detected
- >57–500
- >500–1,000
- >1,000
- Location Not Sampled
- Area of Potential Concern
- Chevron Tank Farm Site Boundary (Approximate; Golder 2000)
- Top of Bank

Abandoned Pipelines

- Pre-1970 Standard Pipeline (Dashed Where Inferred)
- Longview Pipeline (Dashed Where Inferred)
- Post-1970 Standard Pipeline (Dashed Where Inferred)
- Weyerhaeuser Pipeline (Dashed Where Inferred)

Previous Excavations

- June 1996 Shallow Excavation Approximate Depth between 1 and 2 feet bgs
- June 1993 Excavation of Former Mechanic's Shop USTs Approximate Depth of 11 feet bgs
- Former 80,000-Barrel AST and Extent of 1996 Excavation Approximate Average Depth of 6 feet bgs

Note:
· Aerial imagery obtained from Nearmap, 2019.

Abbreviations:
AOPC = Area of Potential Concern
AST = Aboveground storage tank
bgs = Below ground surface
DRO = Diesel-range organics
µg/L = Micrograms per liter
TPH = Total petroleum hydrocarbons
UST = Underground storage tank

0 70 140 280
Scale in Feet

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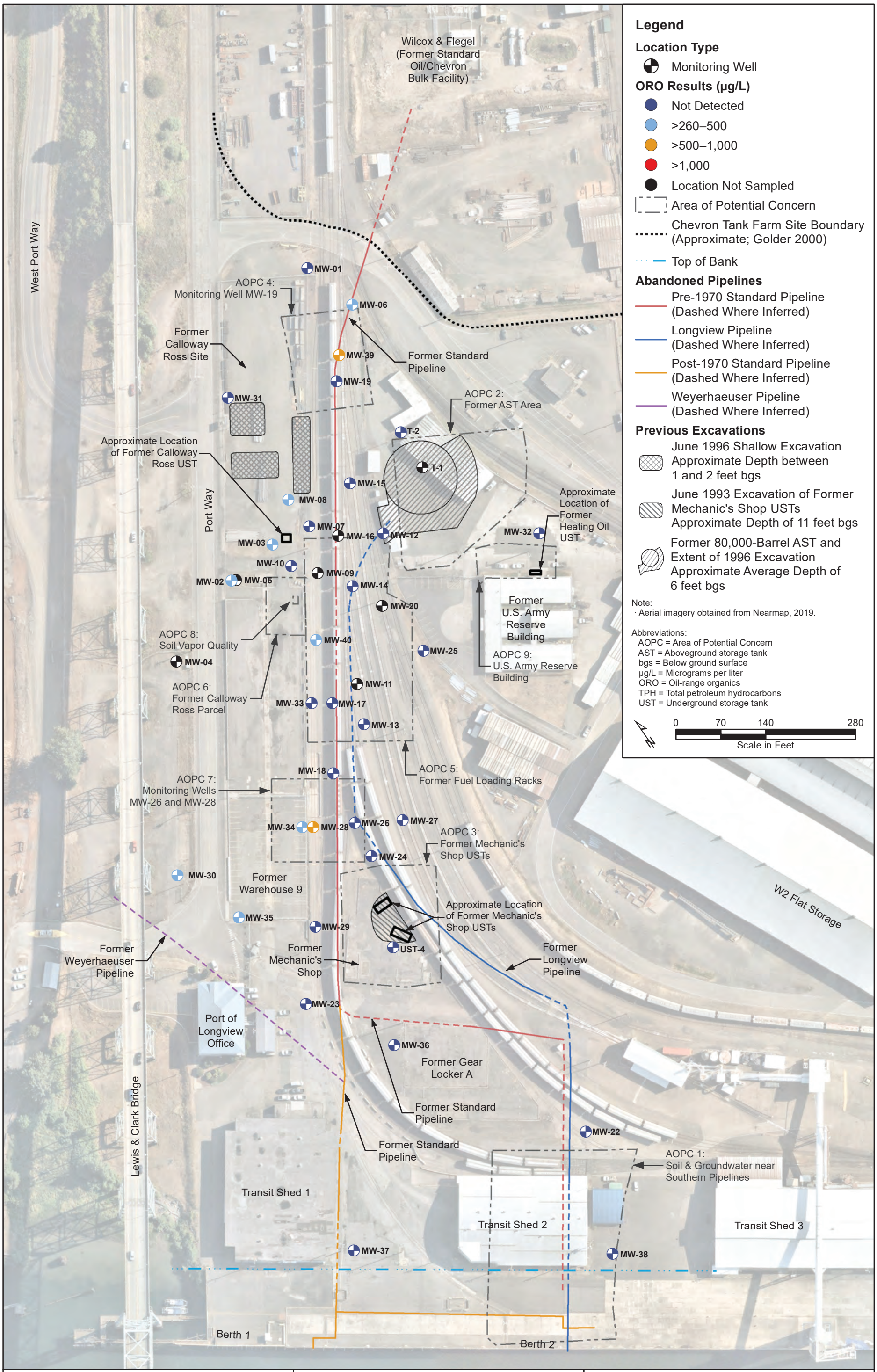
Figure 3.10
August 2020 Concentrations of Diesel-Range Organics in Groundwater

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.10 August 2020 Concentrations of Diesel-Range Organics in Groundwater.mxd
9/16/2020



Legend

Location Type

- Monitoring Well

ORO Results (µg/L)

- Not Detected
- >260–500
- >500–1,000
- >1,000
- Location Not Sampled
- Area of Potential Concern
- Chevron Tank Farm Site Boundary (Approximate; Golder 2000)
- Top of Bank

Abandoned Pipelines

- Pre-1970 Standard Pipeline (Dashed Where Inferred)
- Longview Pipeline (Dashed Where Inferred)
- Post-1970 Standard Pipeline (Dashed Where Inferred)
- Weyerhaeuser Pipeline (Dashed Where Inferred)

Previous Excavations

- June 1996 Shallow Excavation Approximate Depth between 1 and 2 feet bgs
- June 1993 Excavation of Former Mechanic's Shop USTs Approximate Depth of 11 feet bgs
- Former 80,000-Barrel AST and Extent of 1996 Excavation Approximate Average Depth of 6 feet bgs

Note:
· Aerial imagery obtained from Nearmap, 2019.

Abbreviations:
AOPC = Area of Potential Concern
AST = Aboveground storage tank
bgs = Below ground surface
µg/L = Micrograms per liter
ORO = Oil-range organics
TPH = Total petroleum hydrocarbons
UST = Underground storage tank

N

0 70 140 280

Scale in Feet

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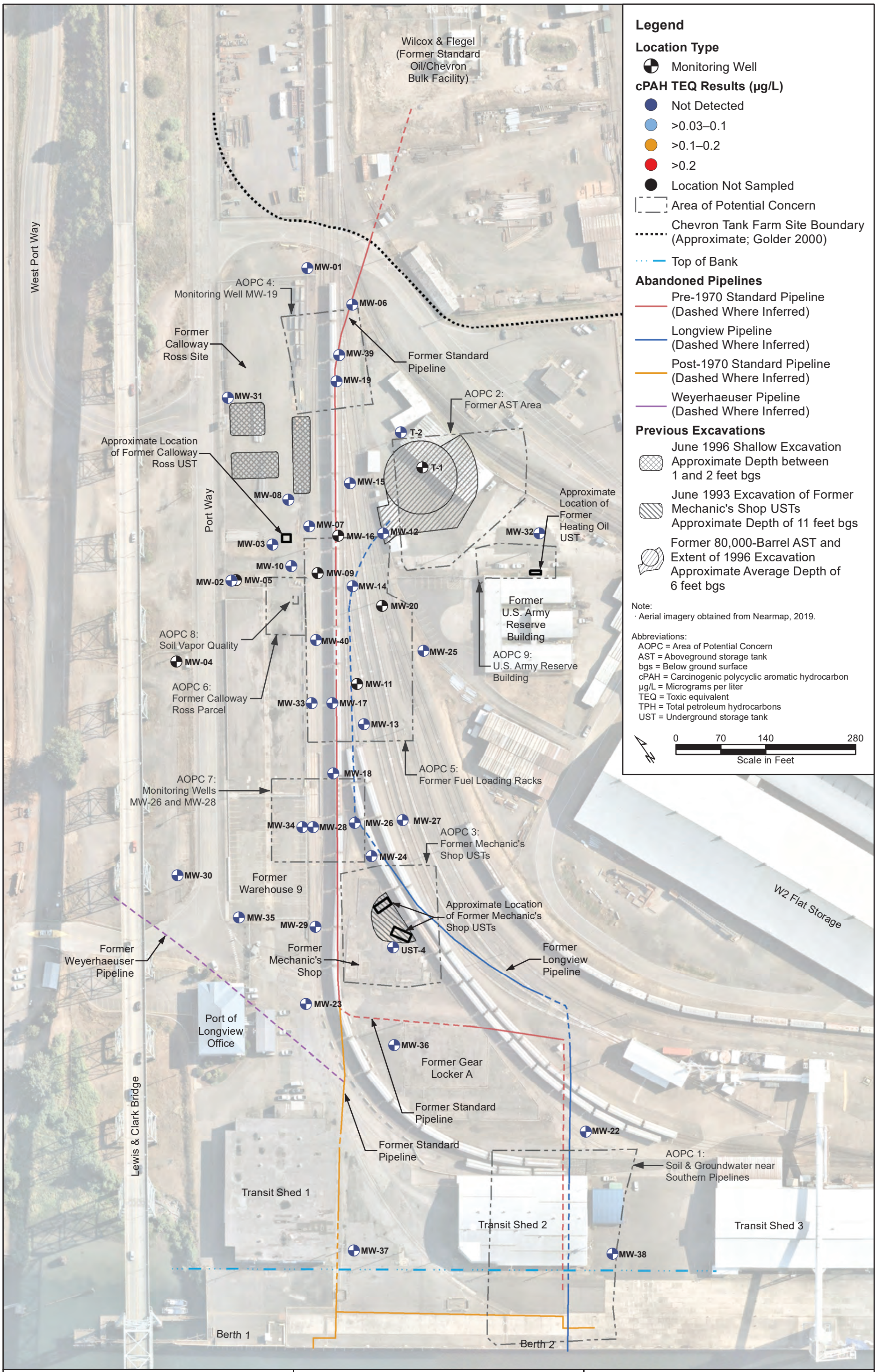
Figure 3.11
August 2020 Concentrations of Oil-Range Organics in Groundwater

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.11 August 2020 Concentrations of Oil-Range Organics in Groundwater.mxd
9/16/2020



Legend

Location Type

- Monitoring Well

cPAH TEQ Results (µg/L)

- Not Detected
- >0.03–0.1
- >0.1–0.2
- >0.2
- Location Not Sampled
- Area of Potential Concern
- Chevron Tank Farm Site Boundary (Approximate; Golder 2000)
- Top of Bank

Abandoned Pipelines

- Pre-1970 Standard Pipeline (Dashed Where Inferred)
- Longview Pipeline (Dashed Where Inferred)
- Post-1970 Standard Pipeline (Dashed Where Inferred)
- Weyerhaeuser Pipeline (Dashed Where Inferred)

Previous Excavations

- June 1996 Shallow Excavation Approximate Depth between 1 and 2 feet bgs
- June 1993 Excavation of Former Mechanic's Shop USTs Approximate Depth of 11 feet bgs
- Former 80,000-Barrel AST and Extent of 1996 Excavation Approximate Average Depth of 6 feet bgs

Note:
· Aerial imagery obtained from Nearmap, 2019.

Abbreviations:
AOPC = Area of Potential Concern
AST = Aboveground storage tank
bgs = Below ground surface
cPAH = Carcinogenic polycyclic aromatic hydrocarbon
µg/L = Micrograms per liter
TEQ = Toxic equivalent
TPH = Total petroleum hydrocarbons
UST = Underground storage tank

0 70 140 280
Scale in Feet

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Figure 3.12
August 2020 Concentrations of cPAH TEQ in Groundwater

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.12 August 2020 Concentrations of cPAH TEQ in Groundwater.mxd
9/16/2020

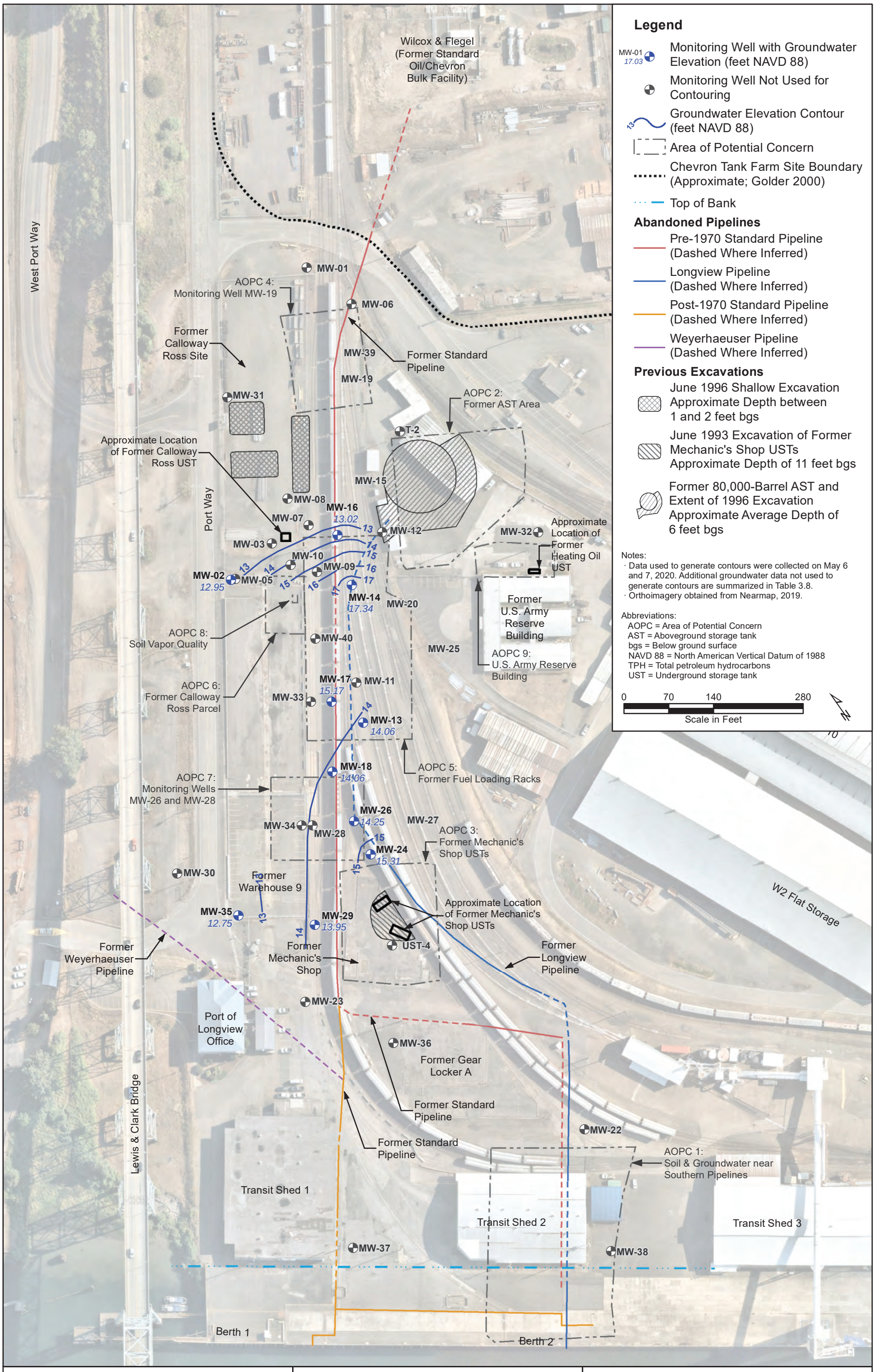

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Figure 3.13
May 2020 Groundwater Contours—
Perched Water-Bearing Zone

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.13 May 2020 Groundwater Contours - Perched Water-Bearing Zone.mxd
9/16/2020

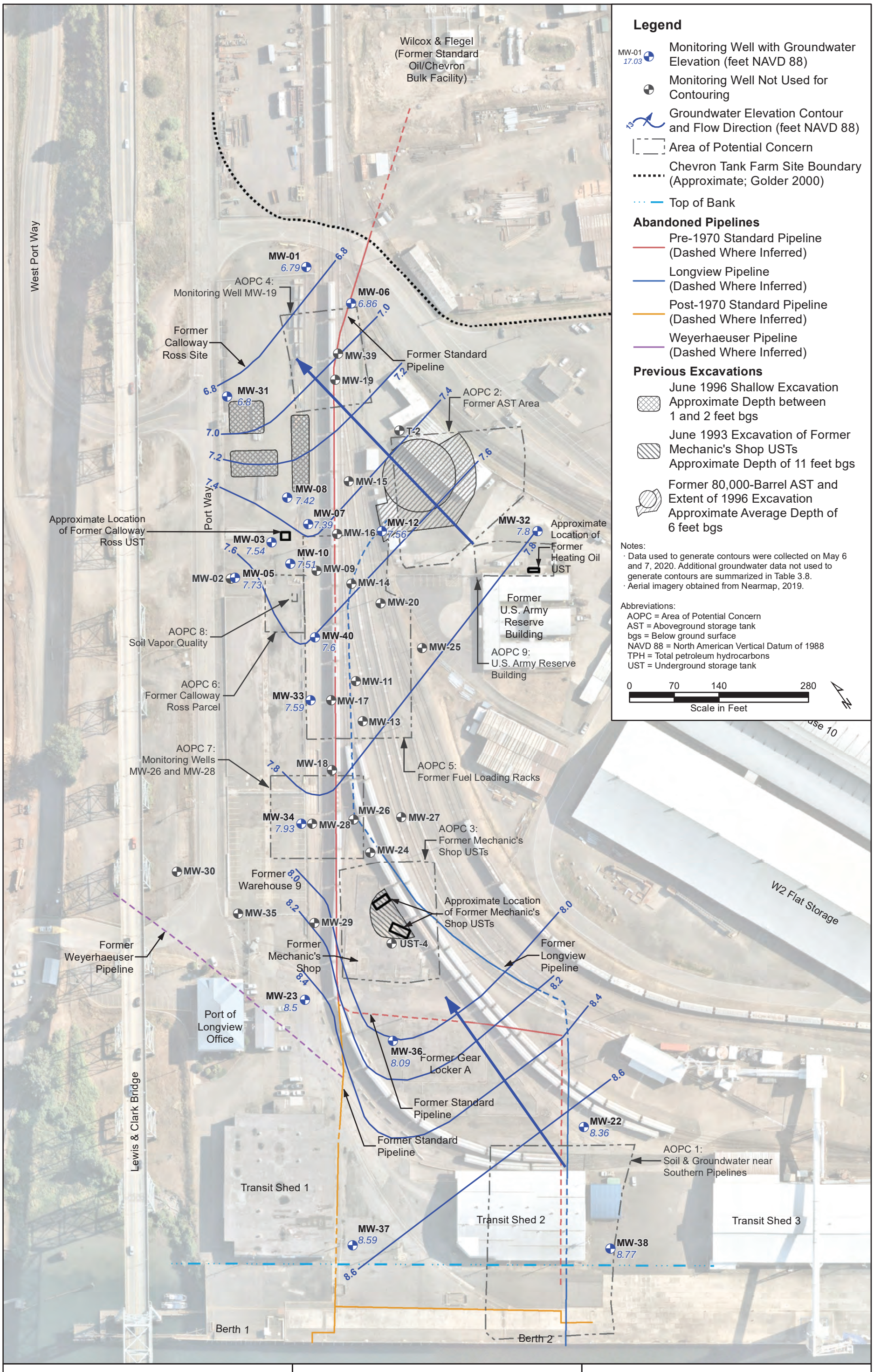

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Figure 3.14
May 2020 Groundwater Contours—
Alluvial Aquifer

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.14 May 2020 Groundwater Contours - Alluvial Aquifer.mxd
9/16/2020

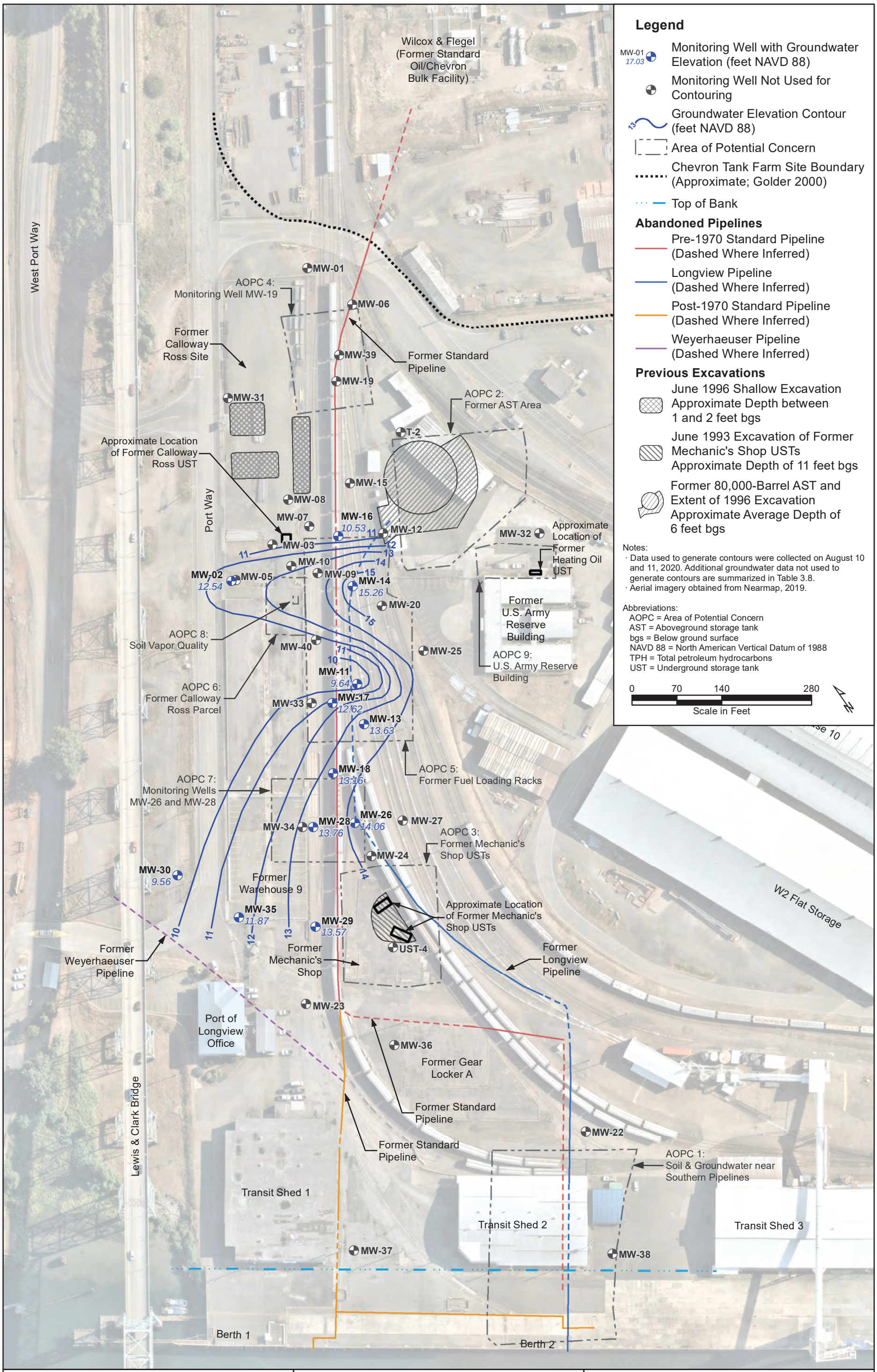

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Figure 3.15
August 2020 Groundwater Contours—
Perched Water-Bearing Zone

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.15 August 2020 Groundwater Contours - Perched Water-Bearing Zone.mxd
9/16/2020

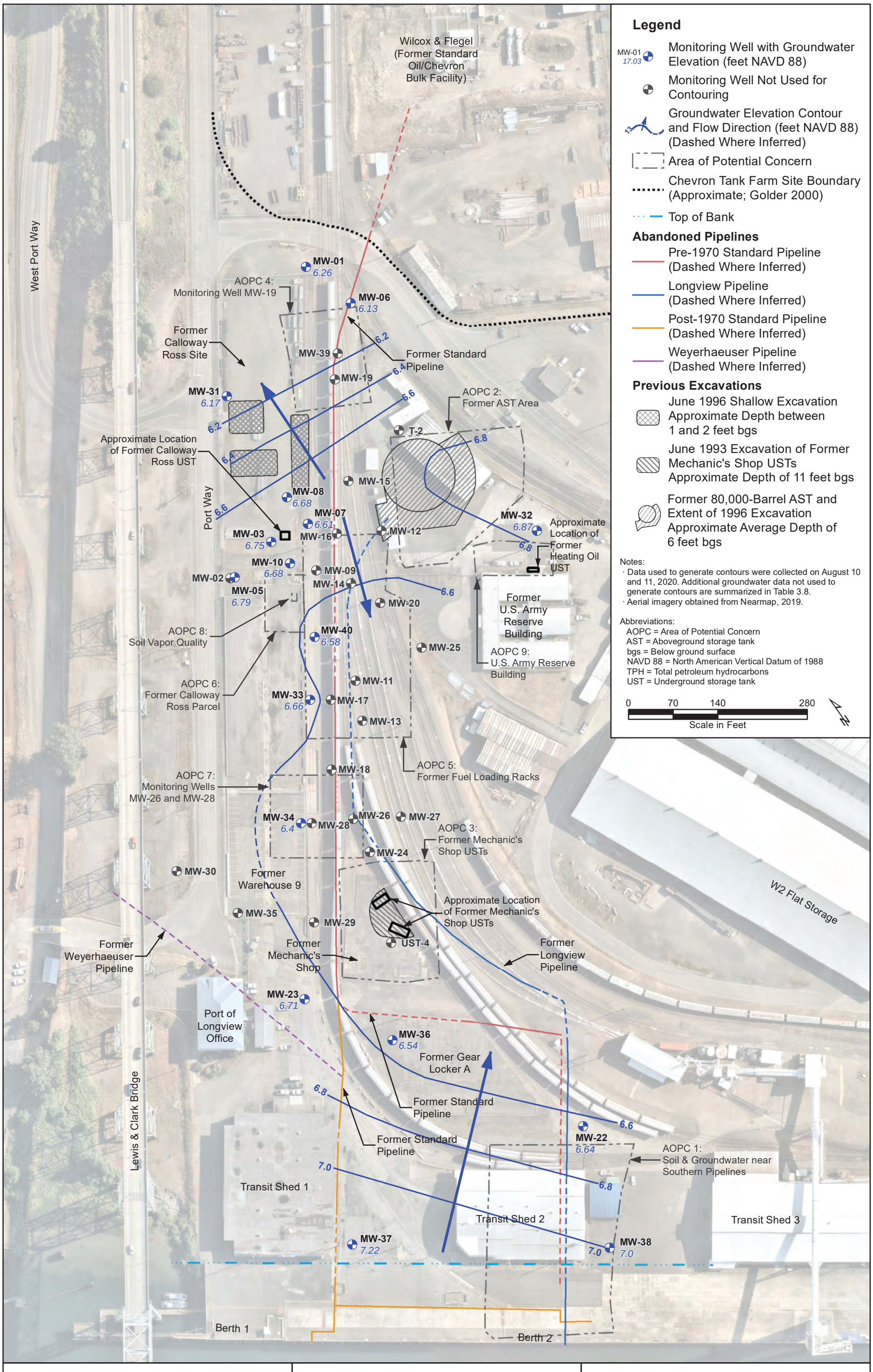

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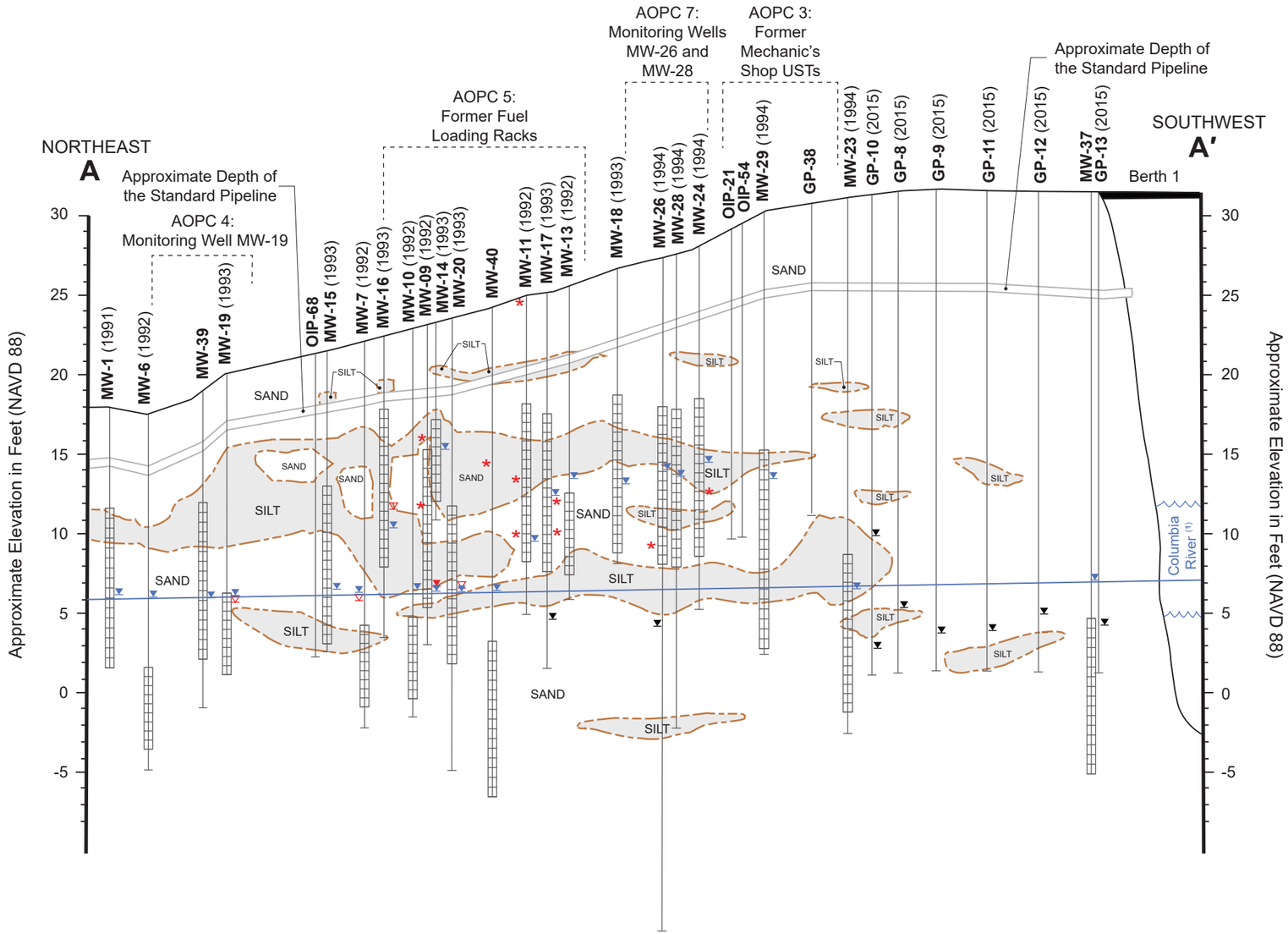
Figure 3.16
August 2020 Groundwater Contours—
Alluvial Aquifer

I:\GIS\Projects\POL-TPH\MXD\Interim Data Report\Figure 3.16 August 2020 Groundwater Contours - Alluvial Aquifer.mxd
9/16/2020



Legend

- MW-02 (1992) — Year Installed; Boring
- Soil sample with concentrations exceeding residual saturation levels for GRO or DRO
- Groundwater measured August 10 or 11, 2020
- Well Screen Interval
- Groundwater encountered at time of drilling
- LNAPL observed at least once during historical monitoring events
- LNAPL observed during the 2020 sampling events
- Approximate alluvial aquifer groundwater elevation measured on August 10 and 11, 2020
- Contact boundary between lithologies
- SAND — Fine to medium SAND with little to some silt and occasional gravel
- SILT — SILT with low to high plasticity and little to some sand

Notes:

1 The Columbia River Stage has an approximate highest tide of 12 feet NAVD 88 and approximate lowest tide of 4.9 feet NAVD 88. Elevations represent the average of average monthly highest and lowest tide elevations from 2002 to 2020 at Station 9440422.

- Cross-section location shown on Figure 2.3. Locations shown are offset.
- Based on the lithology and using Table 15-14 (Residual Saturation Values) in Ecology's Concise Explanatory Statement, residual saturation values for GRO, DRO, and ORO are estimated to be approximately 5,625 mg/kg, 13,333 mg/kg, and 30,000 mg/kg, respectively (Ecology 2001). Residual saturation values will be re-evaluated in the Remedial Investigation Report.
- Existing cross-section uses lithology described in historical boring logs. Updates will be made during the preparation of the Remedial Investigation Report that uses lithology observed in the recent direct-push boring logs.

Abbreviations:
APOC = Area of Potential Concern
DRO = Diesel-range organics
GRO = Gasoline-range organics
LNAPL = Light non-aqueous-phase liquid
mg/kg = Milligrams per kilogram
NAVD 88 = North American Vertical Datum of 1988
ORO = Oil-range organics
TPH = Total petroleum hydrocarbons
UST = Underground storage tank

Horizontal Scale in Feet
0' 50' 100' 200'
0' 2' 4' 8'
Vertical Scale in Feet
Vertical Exaggeration = 25x

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Figure 3.17
Cross-Section A-A′

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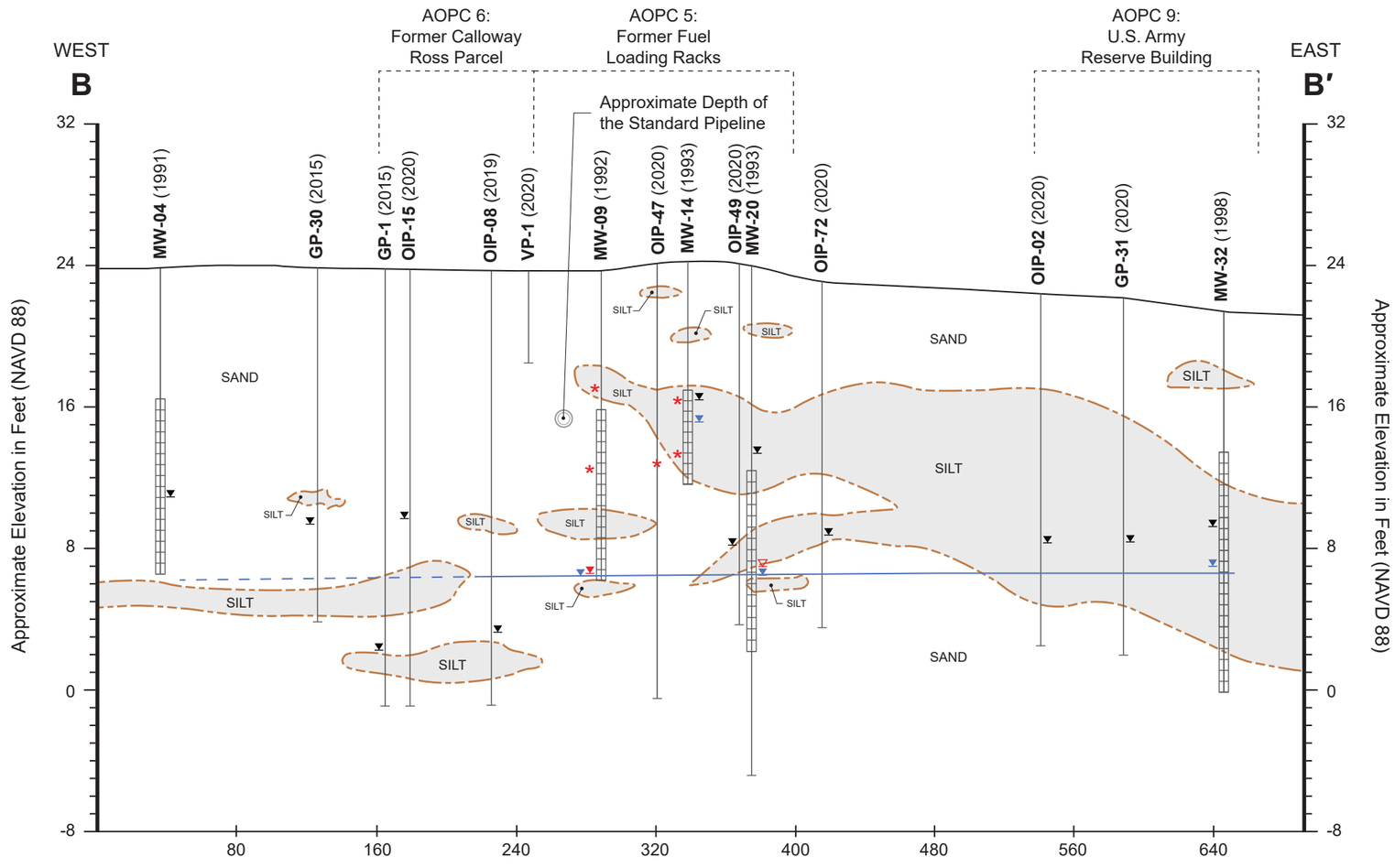
05/24/2021



Legend

MW-20 (1993) — Year Installed

Boring

* Soil sample with concentrations exceeding residual saturation levels for GRO or DRO

Groundwater measured August 10 or 11, 2020

Well Screen Interval

Groundwater elevation measured at time of drilling

LNAPL observed at least once during historical monitoring events

LNAPL observed during the 2020 sampling events

Approximate alluvial aquifer groundwater elevation measured on August 10 and 11, 2020 (dashed where inferred)

Contact boundary between lithologies

SAND — Fine to medium SAND with little to some silt and occasional gravel

SILT — SILT with low to high plasticity and little to some sand

Notes:

- Cross-section location shown on Figure 2.3. Locations shown are offset.
- Based on the lithology and using Table 15-14 (Residual Saturation Values) in Ecology's Concise Explanatory Statement, residual saturation values for GRO, DRO, and ORO are estimated to be approximately 5,625 mg/kg, 13,333 mg/kg, and 30,000 mg/kg, respectively (Ecology 2001). Residual saturation values will be re-evaluated in the Remedial Investigation Report.

Abbreviations:
AOPC = Area of Potential Concern
DRO = Diesel-range organics
GRO = Gasoline-range organics
LNAPL = Light non-aqueous-phase liquid
mg/kg = Milligrams per kilogram
NAVD 88 = North American Vertical Datum of 1988
ORO = Oil-range organics
TPH = Total petroleum hydrocarbons

Horizontal Scale in Feet
0' 20' 40' 80'
0' 2' 4' 8'
Vertical Scale in Feet
Vertical Exaggeration = 10x

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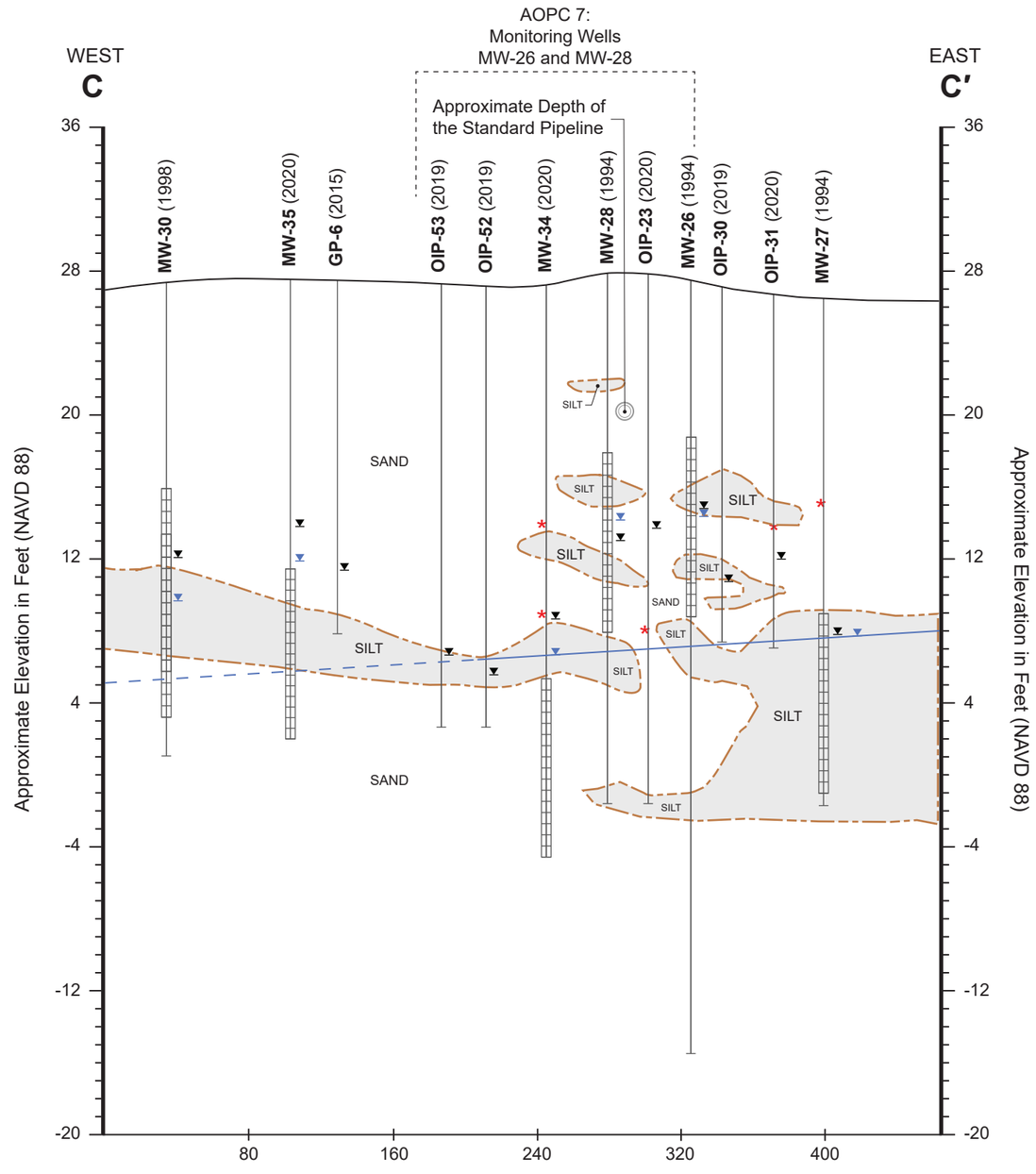
Figure 3.18
Cross-Section B-B′

I:\GIS\Projects\POL-TPH\AI\Interim Data Report\Figure 3.18 Cross-Section B-B'_2020-0916.ai
09/16/2020



Legend

- MW-27 (1994) — Year Installed
- Boring
- * Soil sample with concentrations exceeding residual saturation levels for GRO or DRO
- Groundwater measured on August 10, 2020
- Well Screen Interval
- Groundwater elevation measured at time of drilling
- Approximate alluvial aquifer groundwater elevation measured on August 10, 2020 (dashed where inferred)
- Contact boundary between lithologies
- SAND — Fine to medium SAND with little to some silt and occasional gravel
- SILT — SILT with low to high plasticity andlittle to some sand

Notes:

- Cross-section location shown on Figure 2.3. Locations shown are offset.
- Based on the lithology and using Table 15-14 (Residual Saturation Values) in Ecology's Concise Explanatory Statement, residual saturation values for GRO, DRO, and ORO are estimated to be approximately 5,625 mg/kg, 13,333 mg/kg, and 30,000 mg/kg, respectively (Ecology 2001). Residual saturation values will be re-evaluated in the Remedial Investigation Report.

Abbreviations:
AOPC = Area of Potential Concern
DRO = Diesel-range organics
GRO = Gasoline-range organics
LNAPL = Light non-aqueous-phase liquid
mg/kg = Milligrams per kilogram
NAVD 88 = North American Vertical Datum of 1988
ORO = Oil-range organics
TPH = Total petroleum hydrocarbons

Horizontal Scale in Feet
0' 20' 40' 80'
0' 2' 4' 8'
Vertical Scale in Feet
Vertical Exaggeration = 10x

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Figure 3.19
Cross-Section C-C′

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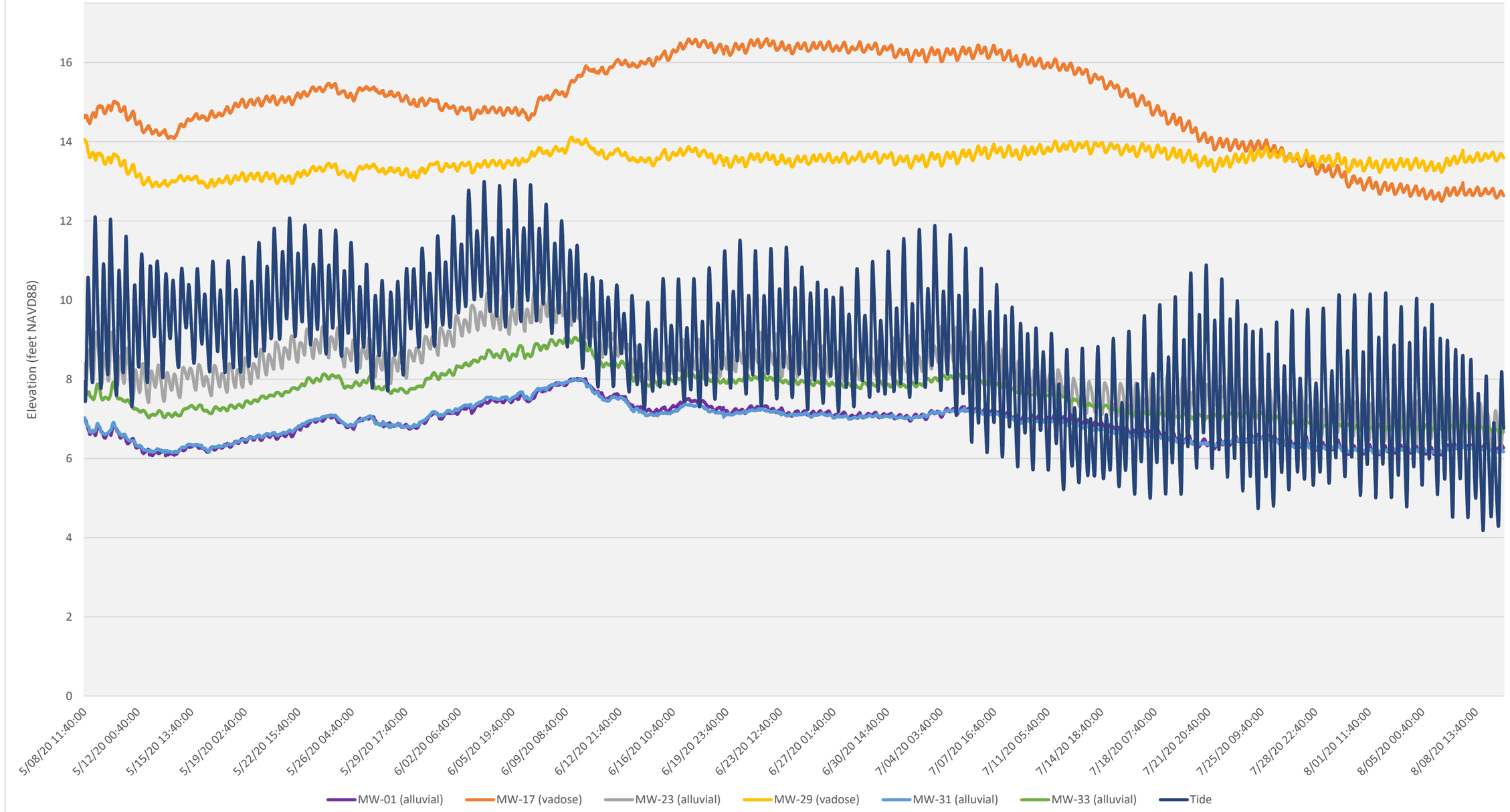
09/16/2020



Note: Columbia River Elevations shown are from NOAA Station 9440422 and were converted from feet MLLW to feet NAVD 88 using a datum conversion of +4.924 feet, obtained using NOAA's Online VDatum conversion tool (https://vdatum.noaa.gov/vdatumweb/) for the Site shoreline area.
Abbreviations: MLLW = Mean lower low water; NAVD 88 = North American Vertical Datum of 1988; NOAA = National Oceanic and Atmospheric Administration

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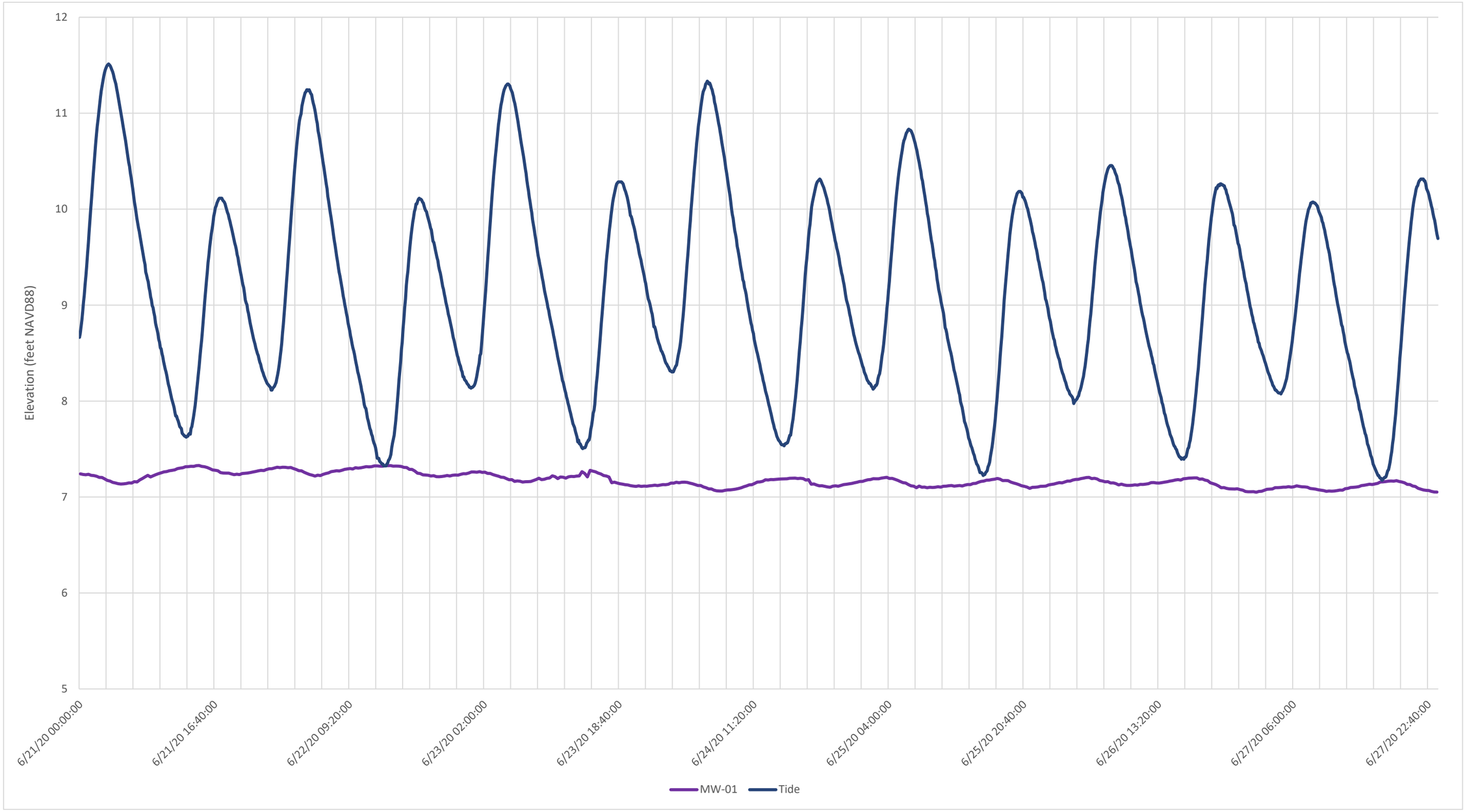
Figure 3.20a
Hydrograph of Selected Monitoring Wells and Columbia River, May–August 2020



Note: Columbia River Elevations shown are from NOAA Station 9440422 and were converted from feet MLLW to feet NAVD 88 using a datum conversion of +4.924 feet, obtained using NOAA's Online VDatum conversion tool (https://vdatum.noaa.gov/vdatumweb/) for the Site shoreline area.
Abbreviations: MLLW = Mean lower low water; NAVD 88 = North American Vertical Datum of 1988; NOAA = National Oceanic and Atmospheric Administration

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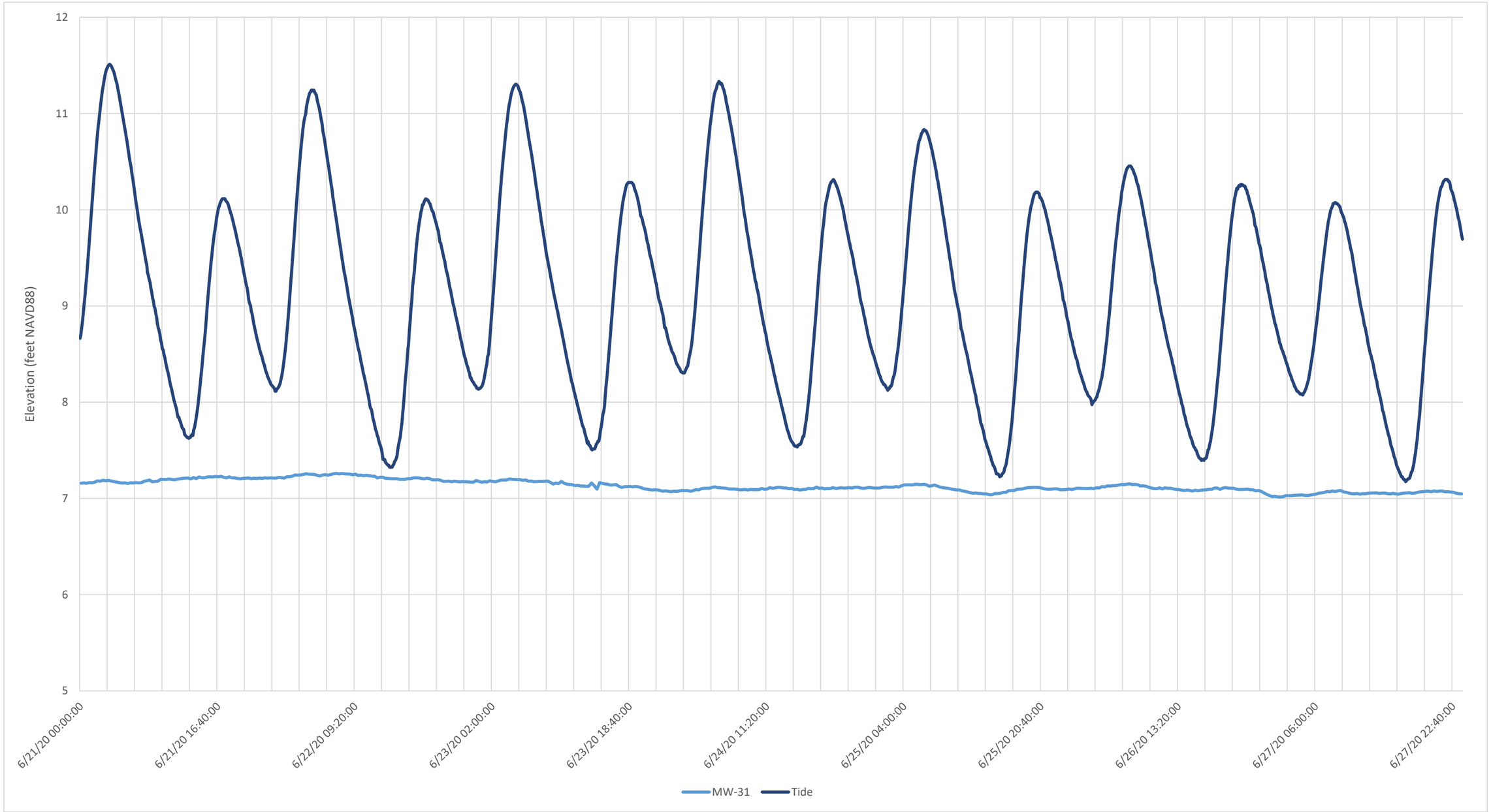
Figure 3.20b
Groundwater Elevation Relative to Columbia River Tidal Elevation at MW-01 (Alluvial, Northern Portion of Site), June 21–27, 2020



Note: Columbia River Elevations shown are from NOAA Station 9440422 and were converted from feet MLLW to feet NAVD 88 using a datum conversion of +4.924 feet, obtained using NOAA's Online VDatum conversion tool (https://vdatum.noaa.gov/vdatumweb/) for the Site shoreline area.
Abbreviations: MLLW = Mean lower low water; NAVD 88 = North American Vertical Datum of 1988; NOAA = National Oceanic and Atmospheric Administration

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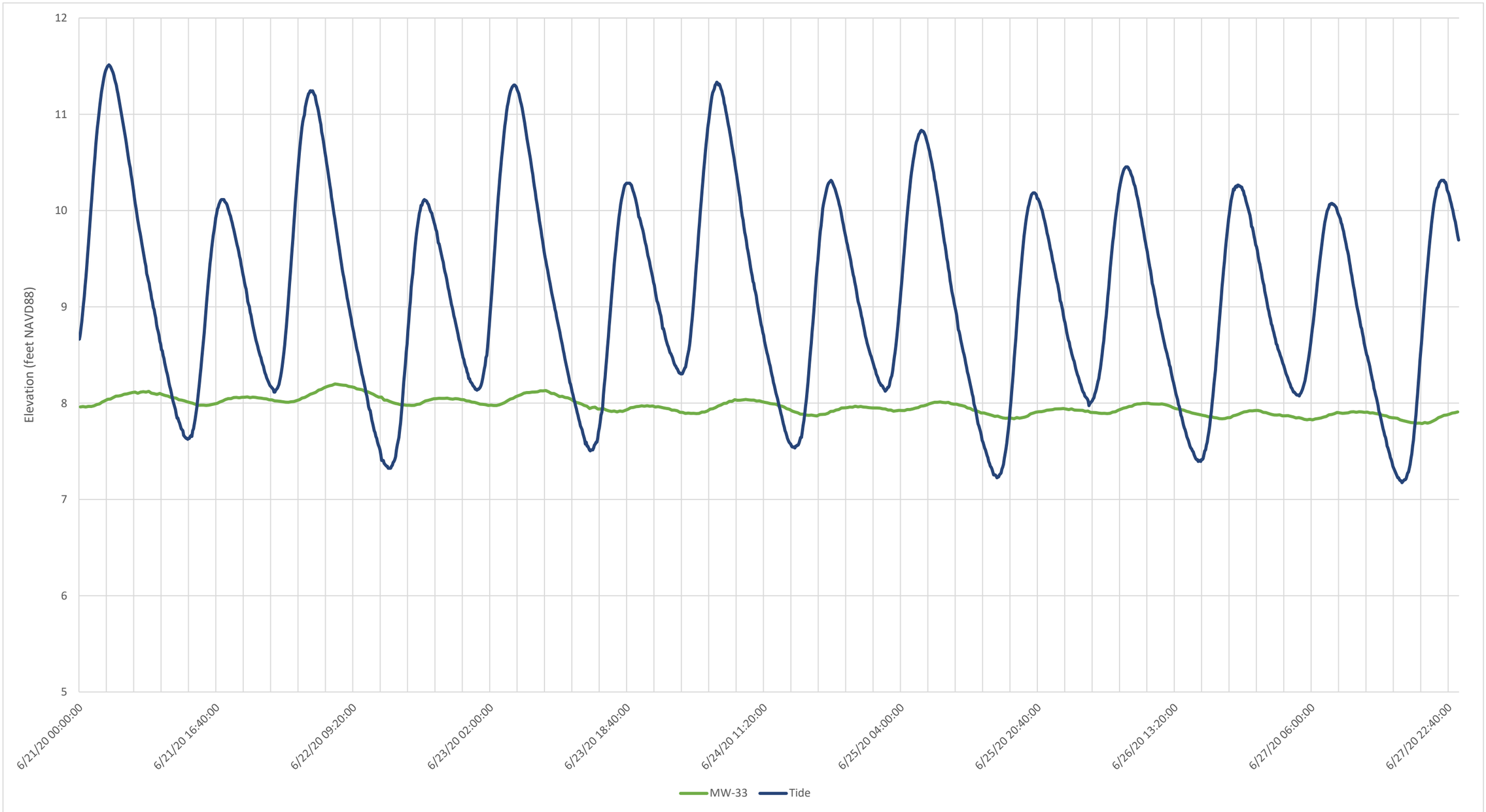

Note: Columbia River Elevations shown are from NOAA Station 9440422 and were converted from feet MLLW to feet NAVD 88 using a datum conversion of +4.924 feet, obtained using NOAA's Online VDatum conversion tool (https://vdatum.noaa.gov/vdatumweb/) for the Site shoreline area.
Abbreviations: MLLW = Mean lower low water; NAVD 88 = North American Vertical Datum of 1988; NOAA = National Oceanic and Atmospheric Administration

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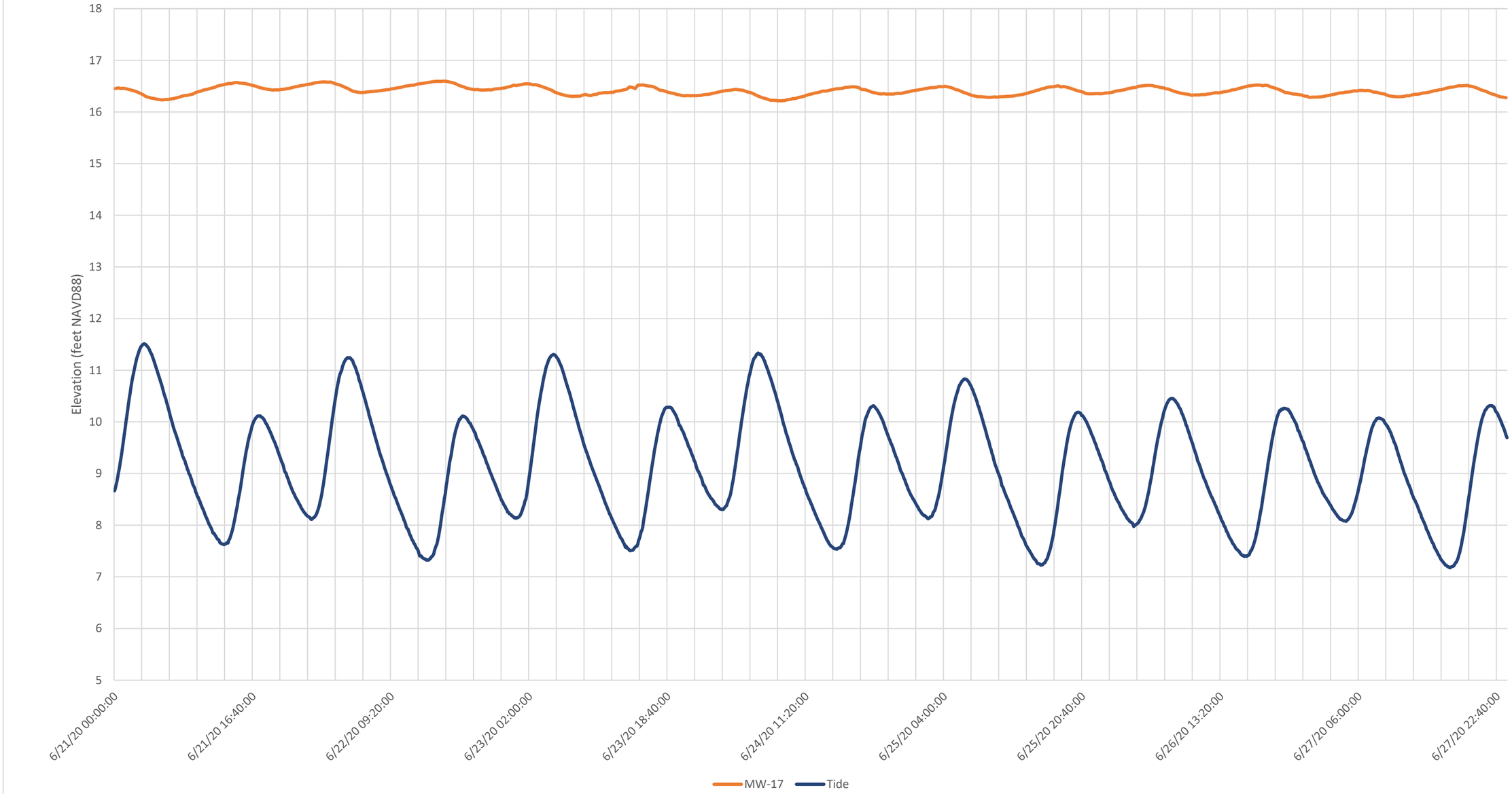
Figure 3.20d
Groundwater Elevation Relative to Columbia River Tidal Elevation at MW-33 (Alluvial, Central Portion of Site), June 21–27, 2020



Note: Columbia River Elevations shown are from NOAA Station 9440422 and were converted from feet MLLW to feet NAVD 88 using a datum conversion of +4.924 feet, obtained using NOAA's Online VDatum conversion tool (https://vdatum.noaa.gov/vdatumweb/) for the Site shoreline area.
Abbreviations: MLLW = Mean lower low water; NAVD 88 = North American Vertical Datum of 1988; NOAA = National Oceanic and Atmospheric Administration

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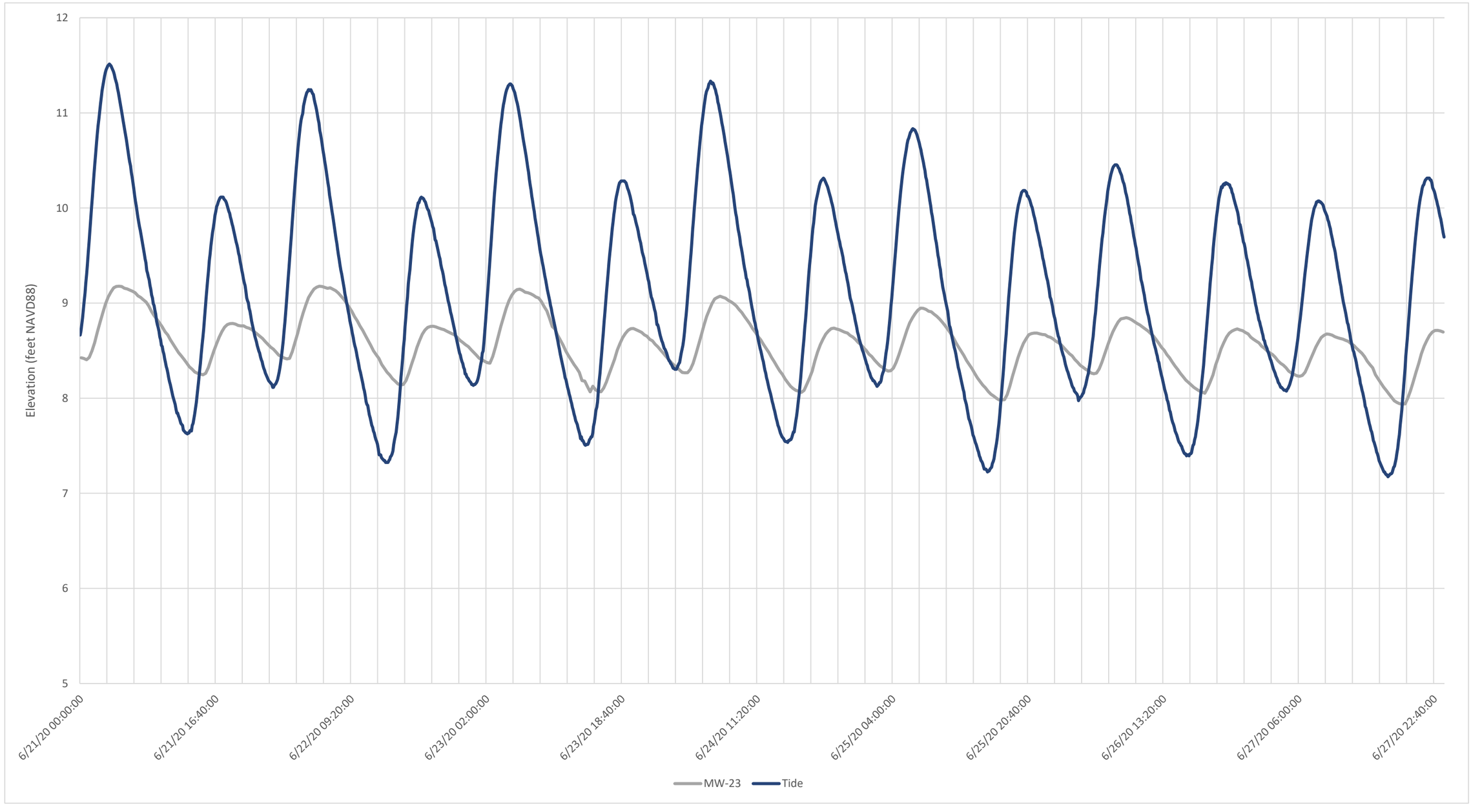
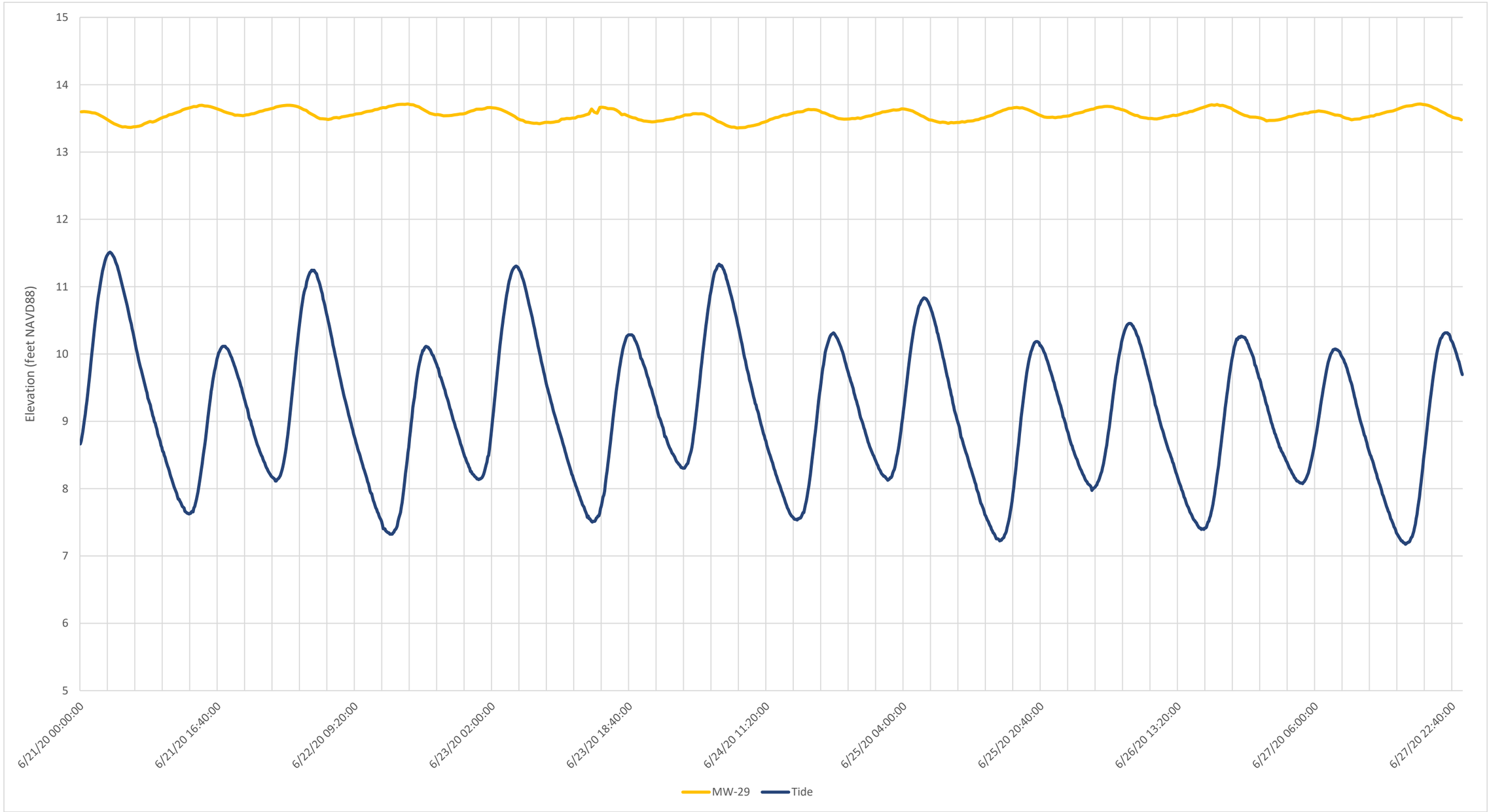
Figure 3.20e
Groundwater Elevation Relative to Columbia River Tidal Elevation at MW-17 (Vadose, Central Portion of Site), June 21–27, 2020



Note: Columbia River Elevations shown are from NOAA Station 9440422 and were converted from feet MLLW to feet NAVD 88 using a datum conversion of +4.924 feet, obtained using NOAA's Online VDatum conversion tool (https://vdatum.noaa.gov/vdatumweb/) for the Site shoreline area.
Abbreviations: MLLW = Mean lower low water; NAVD 88 = North American Vertical Datum of 1988; NOAA = National Oceanic and Atmospheric Administration

FLOYD | SNIDER strategy • science • engineering	**Interim Data Report** **Port of Longview TPH Site** **Longview, Washington**	Figure 3.20f Groundwater Elevation Relative to Columbia River Tidal Elevation at MW-23 (Alluvial, South-Central Portion of Site), June 21–27, 2020



Note: Columbia River Elevations shown are from NOAA Station 9440422 and were converted from feet MLLW to feet NAVD 88 using a datum conversion of +4.924 feet, obtained using NOAA's Online VDatum conversion tool (https://vdatum.noaa.gov/vdatumweb/) for the Site shoreline area.
Abbreviations: MLLW = Mean lower low water; NAVD 88 = North American Vertical Datum of 1988; NOAA = National Oceanic and Atmospheric Administration

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Interim Data Report
Port of Longview TPH Site
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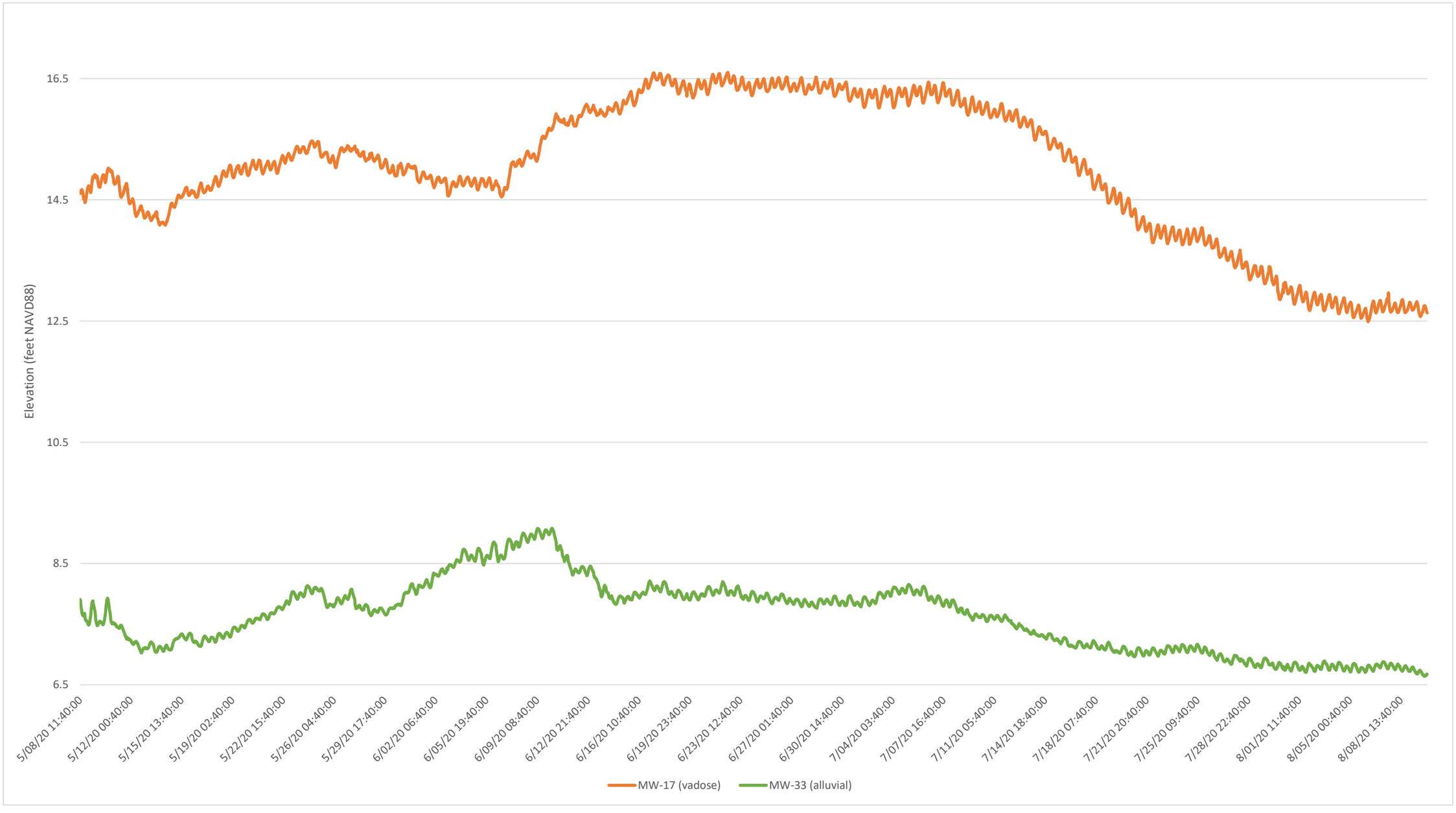
Figure 3.20g
Groundwater Elevation Relative to Columbia River Tidal Elevation at MW-29 (Vadose, South-Central Portion of Site), June 21–27, 2020



Note: Columbia River Elevations shown are from NOAA Station 9440422 and were converted from feet MLLW to feet NAVD 88 using a datum conversion of +4.924 feet, obtained using NOAA's Online VDatum conversion tool (https://vdatum.noaa.gov/vdatumweb/) for the Site shoreline area.
Abbreviations: MLLW = Mean lower low water; NAVD 88 = North American Vertical Datum of 1988; NOAA = National Oceanic and Atmospheric Administration

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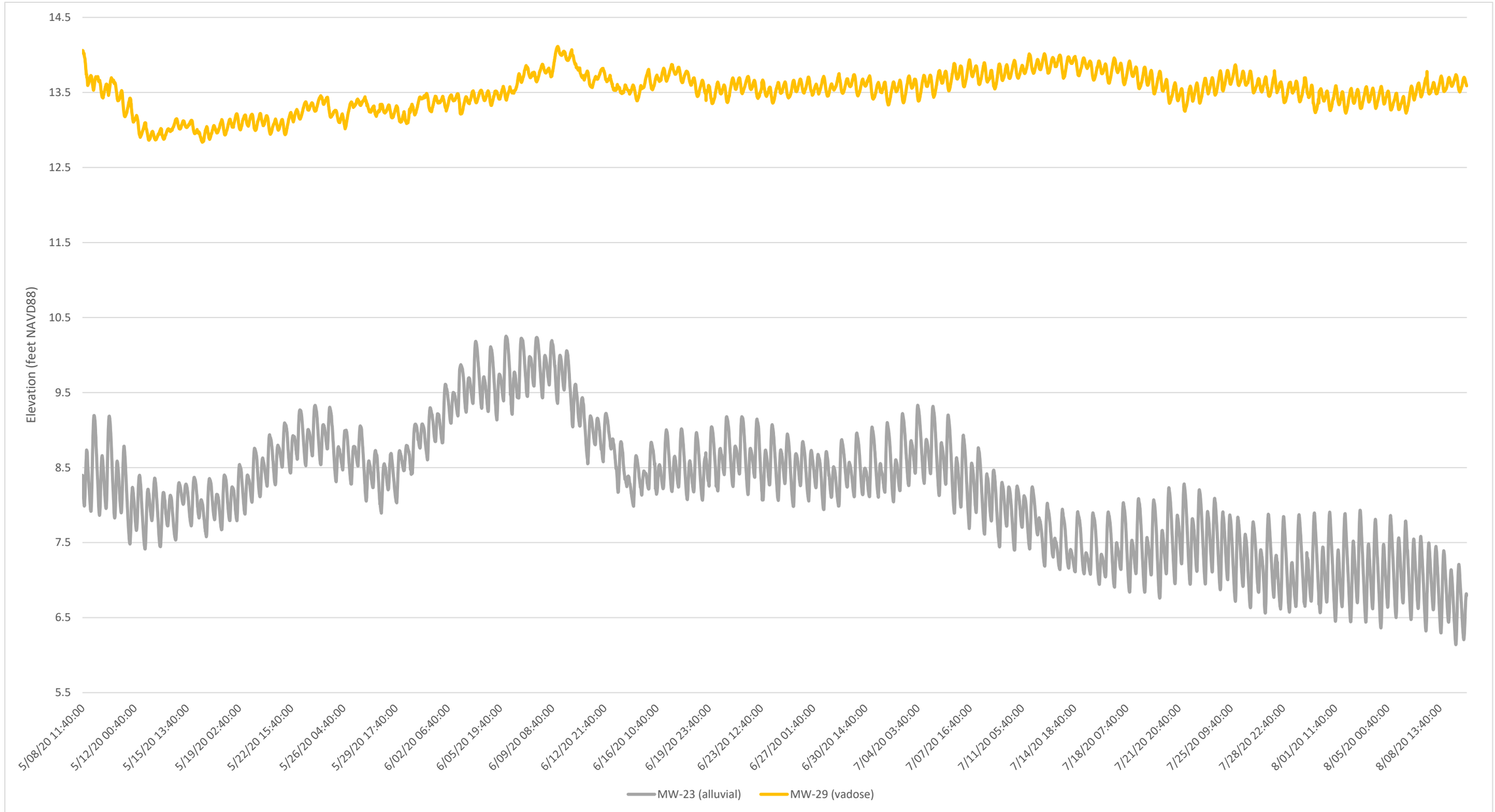
Figure 3.20h
Vertical Head Differences at Selected Well Pairs in Central Portion of Site, May–August 2020



Note: Columbia River Elevations shown are from NOAA Station 9440422 and were converted from feet MLLW to feet NAVD 88 using a datum conversion of +4.924 feet, obtained using NOAA's Online VDatum conversion tool (https://vdatum.noaa.gov/vdatumweb/) for the Site shoreline area.
Abbreviations: MLLW = Mean lower low water; NAVD 88 = North American Vertical Datum of 1988; NOAA = National Oceanic and Atmospheric Administration

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Longview, Washington

Figure 3.20i
Vertical Head Differences at Selected Well Pairs in South-Central Portion of Site, May–August 2020

5/31/2021

Port of Longview TPH Site

Interim Data Report

Appendix A
Columbia Technologies, LLC's High-Resolution Fluorescence/Hydraulic Profile Characterization Report

Prepared for:

FLOYD SNIDER
601 Union Street, Suite 600
Seattle, WA 98101

High-Resolution Fluorescence/Hydraulic Profile Characterization, Port of Longview, WA November 2019

CT Project Number 3870-2019-05

Submitted by:

COLUMBIA Technologies
Rockville, Maryland

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For more information on COLUMBIA Technologies, SmartData Solutions®, and LNAPL assessment tools and protocols visit http://www.columbiatechnologies.com or call 1-888-344-2704.

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Conversion Factors

Inch/Ounce/Pound/PSI to International System of Units

Multiply	By	To obtain
	Length	
Inch (in.)	2.54	Centimeter (cm)
Inch (in.)	25.4	Millimeter (mm)
Foot (ft.)	0.3048	Meter (m)
	Volume	
Ounce (oz.)	29.6	Milliliters (ml)
Gallon (gal)	3.8	Liters (L)
	Pressure	
Pounds per Square Inch (psi)	6.89	Kilopascals (kPa)
	Hydraulic Conductivity	
Feet per day (ft/day)	0.0003527	Centimeters per second (cm/sec)

Temperature in degrees Celsius (^oC) is converted to degrees Fahrenheit (^oF) as

$$(^oF) = (1.8 \times (^oC)) + 32$$

Datum

Horizontal and vertical coordinates are referenced from the World Geodetic System 1984 [EPSG:4326].

Supplemental Information

Electrical conductivity (EC) is provided in millisiemens per meter (mS/meter).

Concentrations of chemical constituents in water are provided in either milligrams per liter (mg/L) or micrograms per liter (μg/L).

Concentrations of chemical constituents in soil are provided in either milligrams per kilogram (mg/kg) or micrograms per kilogram (μg/kg).

Concentrations of chemical constituents in vapor are provided in either milligrams per cubic meter (mg/m^3) or micrograms per cubic meter ($\mu g/m^3$).

High-Resolution Fluorescence/Hydraulic Profile Characterization, Port of Longview, WA November 2019

Summary

COLUMBIA Technologies, LLC, as a subcontractor to **Floyd Snider**, conducted a high-resolution fluorescence/hydraulic profile characterization of the Port of Longview, WA site located at 10 E Port Way, Longview, WA (the Site) during the period of November 13 to 22, 2019.

The primary objectives of this assessment were to characterize the extent and physical characteristics of the remaining hydrocarbon impacts and to identify the soil structure in which any residual hydrocarbon impacts resides for permeability.

To accomplish these objectives, a high-resolution fluorescence/hydraulic profile characterization was conducted to inform the Conceptual Site Model (CSM).

The information presented herein is based on high-resolution direct sensing measurements made by **COLUMBIA Technologies** and pertinent historic site data provided by **Floyd Snider.**

An overview of the site and the survey locations identified by **Floyd Snider** are presented in **Figure 3** (see end of this report). As discussed further, below, these survey locations were adjusted during the course of the survey, at the direction of **Floyd Snider** based on daily review of the results as they were developed.

The direct sensing data employed for this assessment are comprised of the Optical Imaging Profiler (OIP) combined with the Hydraulic Profiling Tool (HPT) measurements. This combined tool is referred to as OiHpt. Direcensing logs are presented in **Appendix D**.

Direct sensing survey stations are shown in **Figure 4**. Direct sensing survey locations consist of 73 OiHpt stations in and around eight (8) Areas of Potential Concern (AOPC) designated by **Floyd Snider**. OIP and HPT data were collected in each of the 73 OiHpt stations. Dissipation tests were conducted at 22 of the 73 OiHpt stations to identify the static water level and to estimate the hydraulic permeability (K) of the soils below the groundwater surface.

These direct-sensing stations were initially located at the Site adjacent to

existing monitoring wells exhibiting elevated concentrations of petroleum hydrocarbons (PHCs). Subsequent locations were added where needed to more completely define the fluorescence footprint.

Figures 5 and **6** provide a visualization of the residual hydrocarbon impacts in both plan and elevation views.

The HPT and EC data show the thin, finer grained, low permeability zones extending fairly continuously across the site, at different depths from 2 to 30 ft bgs. **Figures 7** and **8** provide visualizations of the soil layering and the residual hydrocarbon impacts.

The results of the dissipation tests and the calculated hydraulic permeability are shown in the logs in **Appendix D**.

Methods, Assumptions, and Procedures

Planning for this High-Resolution Fluorescence/Hydraulic Profile Characterization involved a review of available site documentation to develop an understanding of the site.

Direct sensing survey stations are shown in **Figure 4**. (AOPC1-05 and -06 at the Transit Shed on the SE corner of the investigation are omitted for graphical clarity. See **Figure 3**) Direct sensing survey locations consist of 73 OiHpt borings in and around eight (8) Areas of Potential Concern (AOPC) designated by **Floyd Snider**.

These direct-sensing stations were initially located at the Site near to existing monitoring wells exhibiting elevated concentrations of petroleum hydrocarbons (PHCs).

Optical Imaging Profiler (OIP)

Utilizing OIP, the vertical distribution and relative concentrations of hydrocarbon impacts in the subsurface can be discerned at the centimeter scale. Initial OIP stations were advanced in proximity to selected monitoring wells with known residual phase petroleum hydrocarbons. These first lines of evidence enabled the team to characterize the presence and depth interval of hydrocarbon impacts at the impacted locations. The observed response of the OIP system at these locations then served as a reference for complete delineation of hydrocarbon impacts present at the site.

The remaining OIP stations were planned to be advanced at selected locations stepping out from the responses discovered during the initial borings to delineate the lateral extent of hydrocarbon impacts.

COLUMBIA Technologies employed the OIP with the Hydraulic Profiling Tool (HPT) with the Electrical Conductivity (EC) system to evaluate subsurface hydrostratigraphy. The HPT identifies soil intervals exhibiting higher hydraulic permeability or heterogeneities.

The HPT pressure logs record changes in hydraulic pressure measured directly as water is pumped into the formation at a constant rate. These logs reveal the variability and relative hydraulic conductivity of the soil.

The combined OiHpt probe also contains an Electrical Conductivity dipole array at the tip of the probe that measures the electrical conductivity (EC) of soil and groundwater.

EC measurements identify changes in the soil's electrical conductivity that can be related to changes in stratigraphy, providing insight into contaminant pathways when viewed in relation to chemical detector response.

Low EC values generally indicate coarse-grained materials (sand and gravel), while higher EC values usually indicate elevated clay content, although water chemistry and other site-specific factors influence EC response as well.

General conductivity ranges for basic soil types are presented in **Figure 1,** below (Geoprobe, 2015).

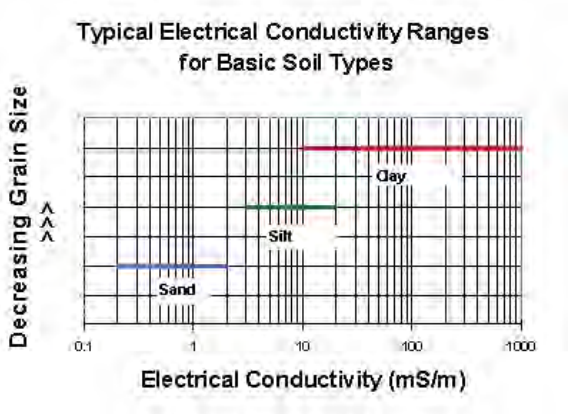

Figure 1

Results and Discussion

OIP Response

Figures 5 and **6** provide visualizations of the fluorescence in both plan and elevation views. The OiHpt logs are shown in **Appendix D.**

Significant OIP levels were found from the surface to 24 ft bgs. The greatest thickness of fluorescence response was identified in AOPC7 - from approximately 10 to 24 ft bgs. The area around the former Standard Oil Pipeline (AOPC4) also had fluorescence from six (6) to 15 ft bgs.

Hydrostratigraphy

High HPT pressure and low system flow are indicative of low permeability soils. Higher permeability is manifested by low hydraulic pressure and normal system flow.

For this site, HPT data identified highly complex soils indicative of interbedded high and low permeability as shown in the log for AOPC5-OIP43, **Figure 2**, below.

The HPT and EC data show one- to three-foot (1-3) thick, finer grained, low permeability zones extending fairly continuously across the site, at different depths from 2 to 30 ft bgs.

Stations AOPC8-OIP07, AOPC8-OIP13, and AOPC4-OIP58 have spikes in their EC readings, which likely are the result of some conductor in the soil and do not reflect changes in soil grain size. **Figures 7** and **8** provide visualizations of the soil layering and the residual hydrocarbon impacts.

The depth to groundwater and groundwater elevation was calculated from dissipation tests during this investigation and found to vary between 13 and 26-ft bgs across the site.

The hydraulic permeability (K) was calculated based on dissipation tests and HPT data for 22 stations. Hydraulic permeability was found to vary from very low (less than 10 ft/day) to high (over 75 ft/day).

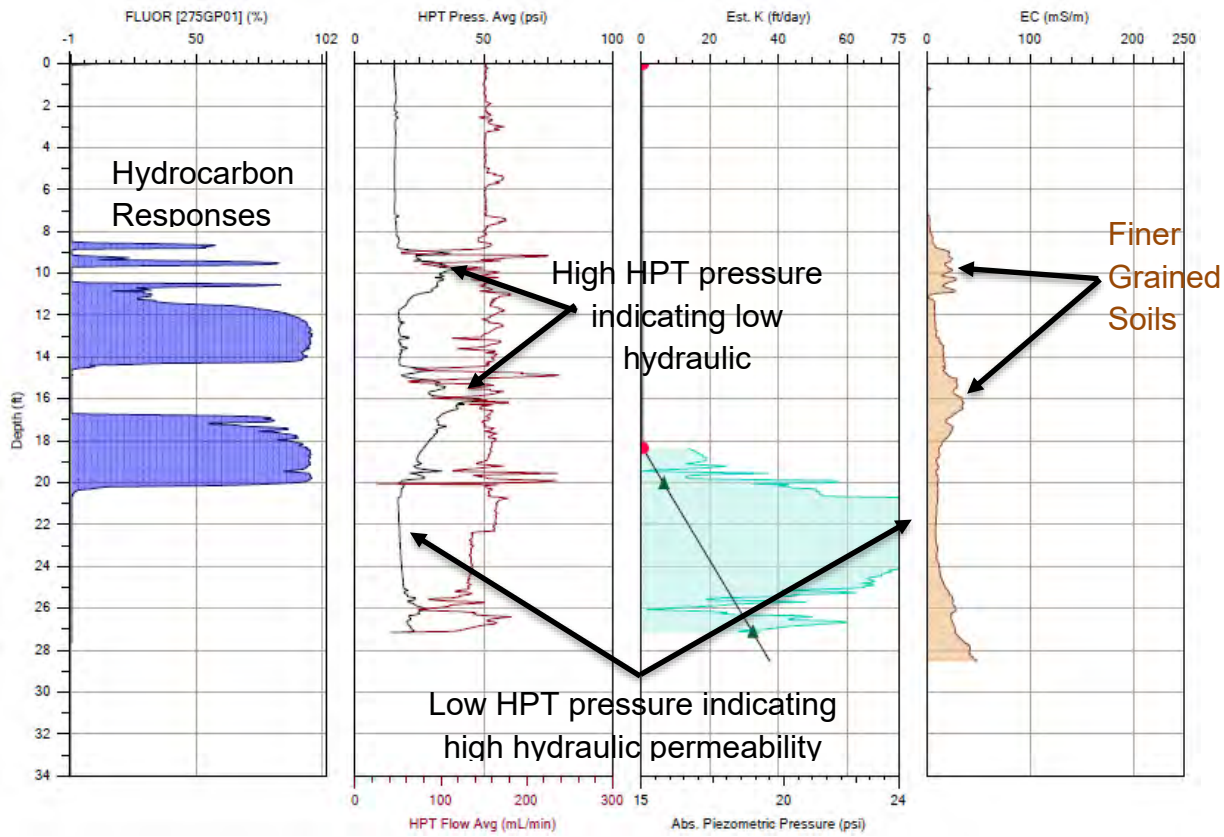

Figure 2 – Example OiHpt Log (AOPC5-OIP43)

Quality Control and Data Anomalies

Each direct sensing instrument was operated in accordance with the manufacturer's standard operating procedures and the *Standard Practice for Direct Push Technology for Volatile Contaminant Logging with the Membrane Interface Probe (MIP)* ASTM STANDARD D7352 – 07.

Performance testing was conducted on each system prior to and following each survey sounding. These procedures are outlined in **Appendix C.**

A QC review of the OiHpt logs for this project did not reveal any anomalies in the operation of the system that would have resulted in a lack of detection of petroleum hydrocarbon impacts.

The direct-sensing logs generated for this assessment are presented in **Appendix D**.

Conclusions

1. This high-resolution assessment of the Port of Longview site confirmed hydrocarbon impacts based on OIP response in AOPC4, AOPC5, AOPC6, AOPC7, and AOPC8. Fluorescence response was also found at one station in AOPC3. The OIP responses in AOPC1 and AOPC2 do not indicate hydrocarbon impacts in those areas.
2. Fluorescence response was found at the surface and to 24 ft bgs.
3. The HPT and EC data show the thin, finer grained, low permeability zones extending fairly continuously across the site, at different depths from two (2) to 30 ft bgs. Hydraulic permeability ranges from below 10 to greater than 75 ft/day.
4. The depth to groundwater was found (based on dissipation tests) to vary between 13 and 26-ft bgs across the site.

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List of Symbols, Abbreviations, and Acronyms

Symbol or Abbreviation	Definition
CSM	**Conceptual Site Model.** A **CSM** is a method to describe what is known or can be inferred about a site for the purpose of making a decision. A CSM generally will address physical, chemical and biological systems; contaminant release and transport; societal issues; policy, land use, and exposures.
DPT	**Direct-Push Technology** (DPT) refers to a group of techniques used for subsurface investigation by driving, pushing and/or vibrating small-diameter rods into the ground.
HPT	**Hydraulic Profiling Tool**. The **HPT** is a logging **tool** that measures the pressure required to inject a flow of water into the soil as the probe is advanced into the subsurface. In addition to measurement of injection pressure, the HPT can also be used to measure hydrostatic pressure under the zero flow condition.
LCSM	**LNAPL Conceptual Site Model.** A **LCSM** is a conceptual site model focused on the release and transport of LNAPL contaminants.
LIF	**Laser-induced fluorescence** is a spectroscopic method in which an atom or molecule is excited to a higher energy level by the absorption of laser light followed by spontaneous emission of light.
LNAPL	**Light Non-Aqueous Phase Liquids** are groundwater contaminants that are not soluble in water and have lower density than water, in contrast to a **DNAPL** which has higher density than water.
OIP	**Optical Image Profiler.** An **OIP** is a tool that uses laser light in the ultraviolet spectrum to excite fluorescent molecules that exist in the vast majority of hazardous non-aqueous phase liquids (NAPLs) such as petroleum fuels/oils, coal tars, and creosotes.
PHC	**Petroleum Hydrocarbons.** The presence of petroleum hydrocarbon fuels in any phase. **(PHC).**
UST	**Underground Storage Tank.** Under Federal law **UST** means any one or combination of tanks including connected underground pipes that is used to contain regulated substances, and the volume of which including the volume of underground pipes is 10 percent or more beneath the surface of the ground. This does not include, among other things, any farm or residential tank of 1,100 gallons or less capacity used for storing motor fuel for noncommercial purposes, tanks for storing heating oil for consumption on the premises, or septic tanks.

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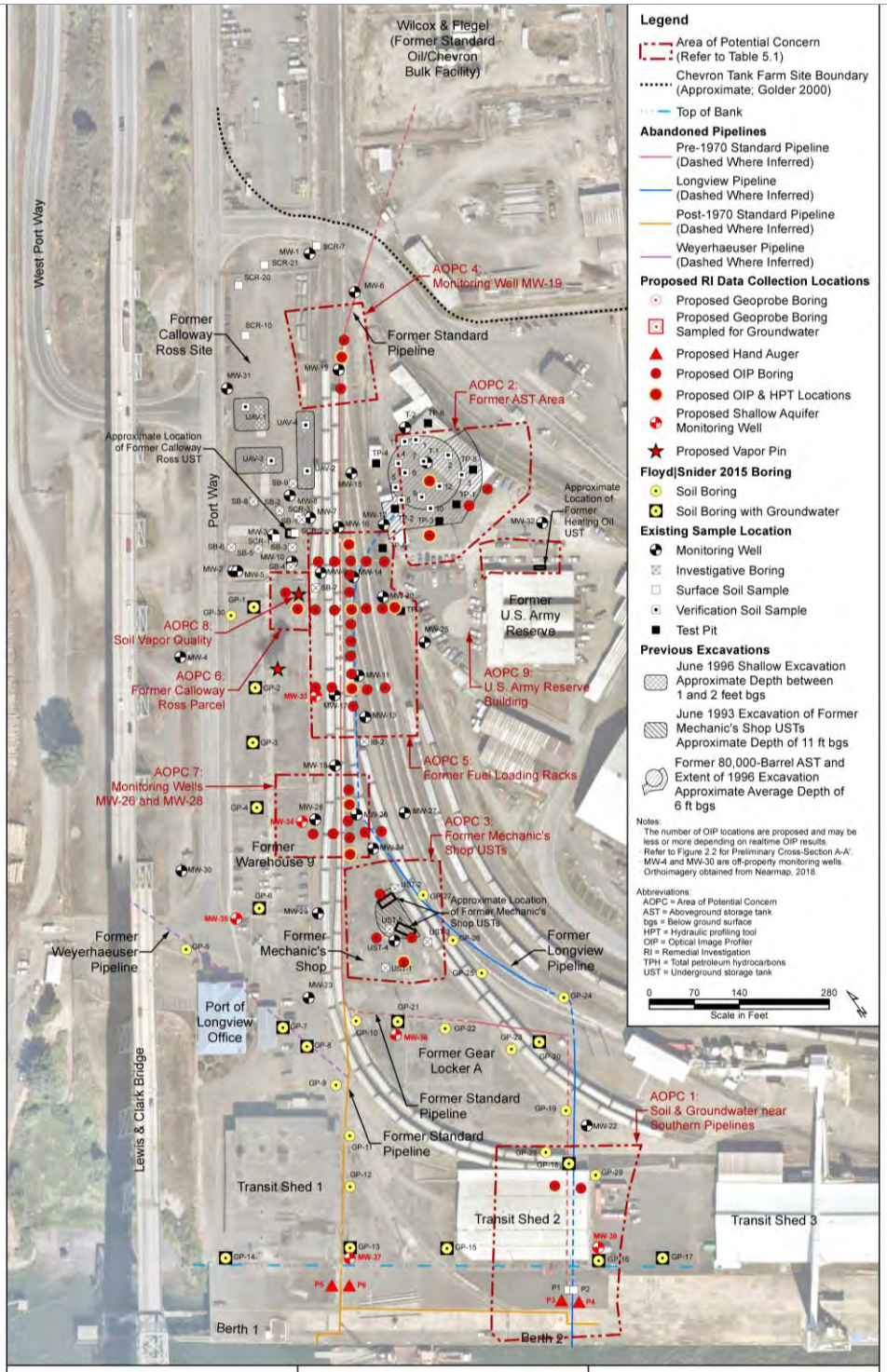
FIGURES



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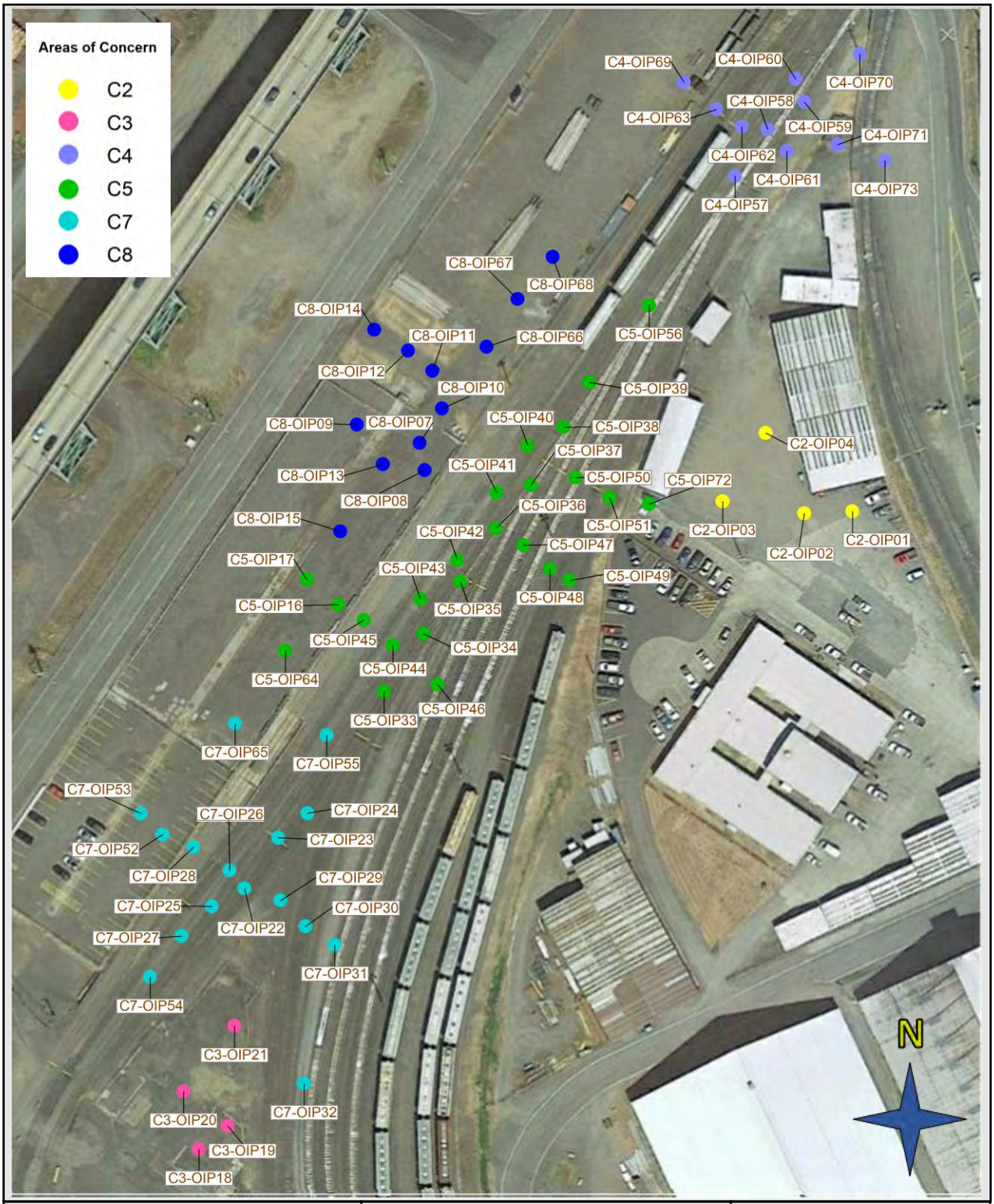
Remedial Investigation Work Plan
Port of Longview TPH Site
Longview, Washington

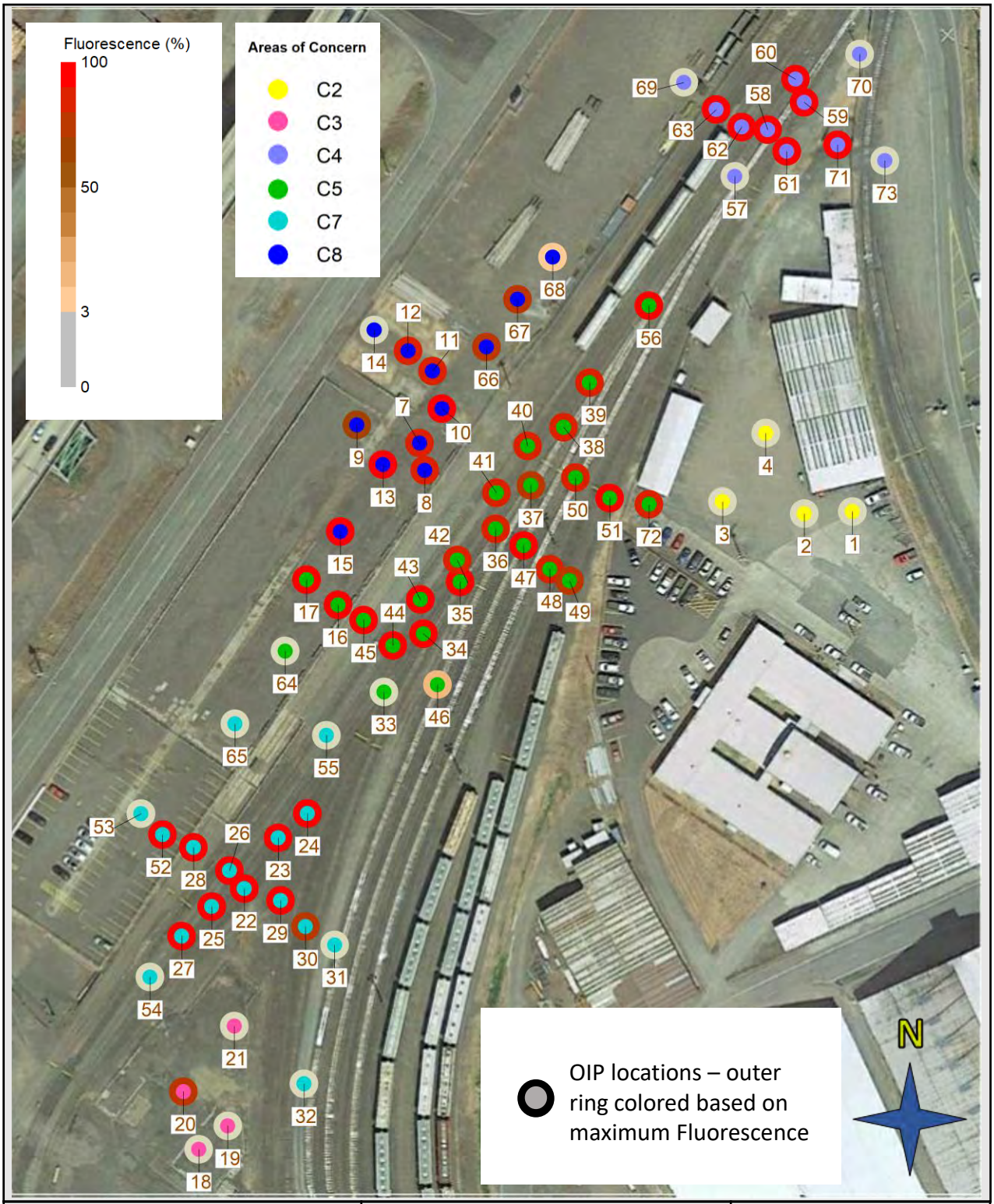
Figure 5.1
Areas of Potential Concern and Proposed RI Data Collection Locations

COLUMBIA TECHNOLOGIES

Port of Longview Longview, WA		**Site Overview with Initial HRSC Stations**
High-Resolution Site Characterization	November 2019	**Figure 3**



COLUMBIA TECHNOLOGIES	**Port of Longview** Longview, WA	**OiHpt Stations**
	High-Resolution Site Characterization November 2019	**Figure 4**



COLUMBIA TECHNOLOGIES	**Port of Longview** Longview, WA	**Hydrocarbon Impact Footprint Plan View**
	High-Resolution Site Characterization November 2019	**Figure 5**

Hydrocarbon Impact Footprint Elevation View

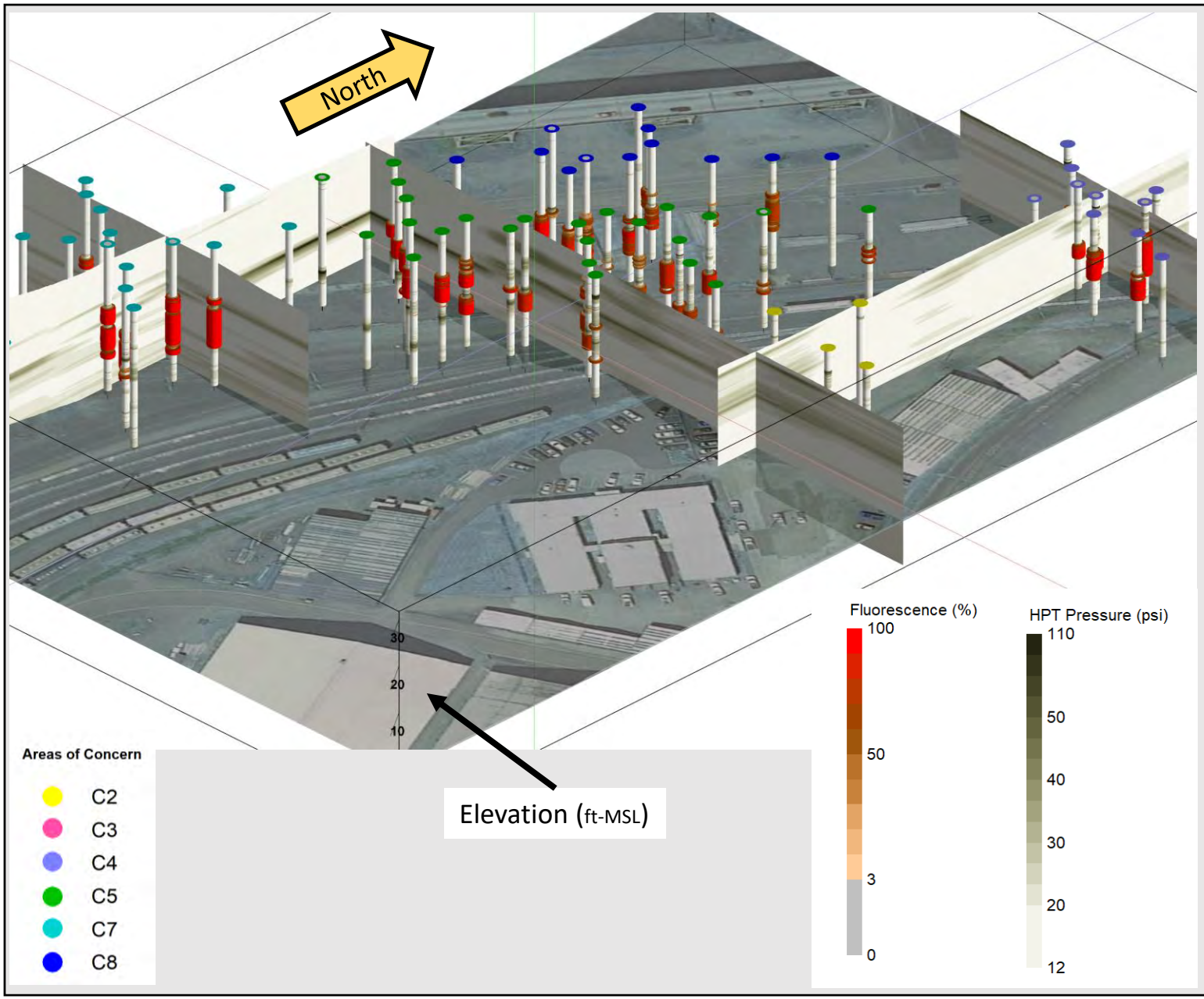
Figure 6

Port of Longview
Longview, WA

November 2019

High-Resolution Site Characterization

COLUMBIA TECHNOLOGIES



Fluorescence vs. HPT Pressure

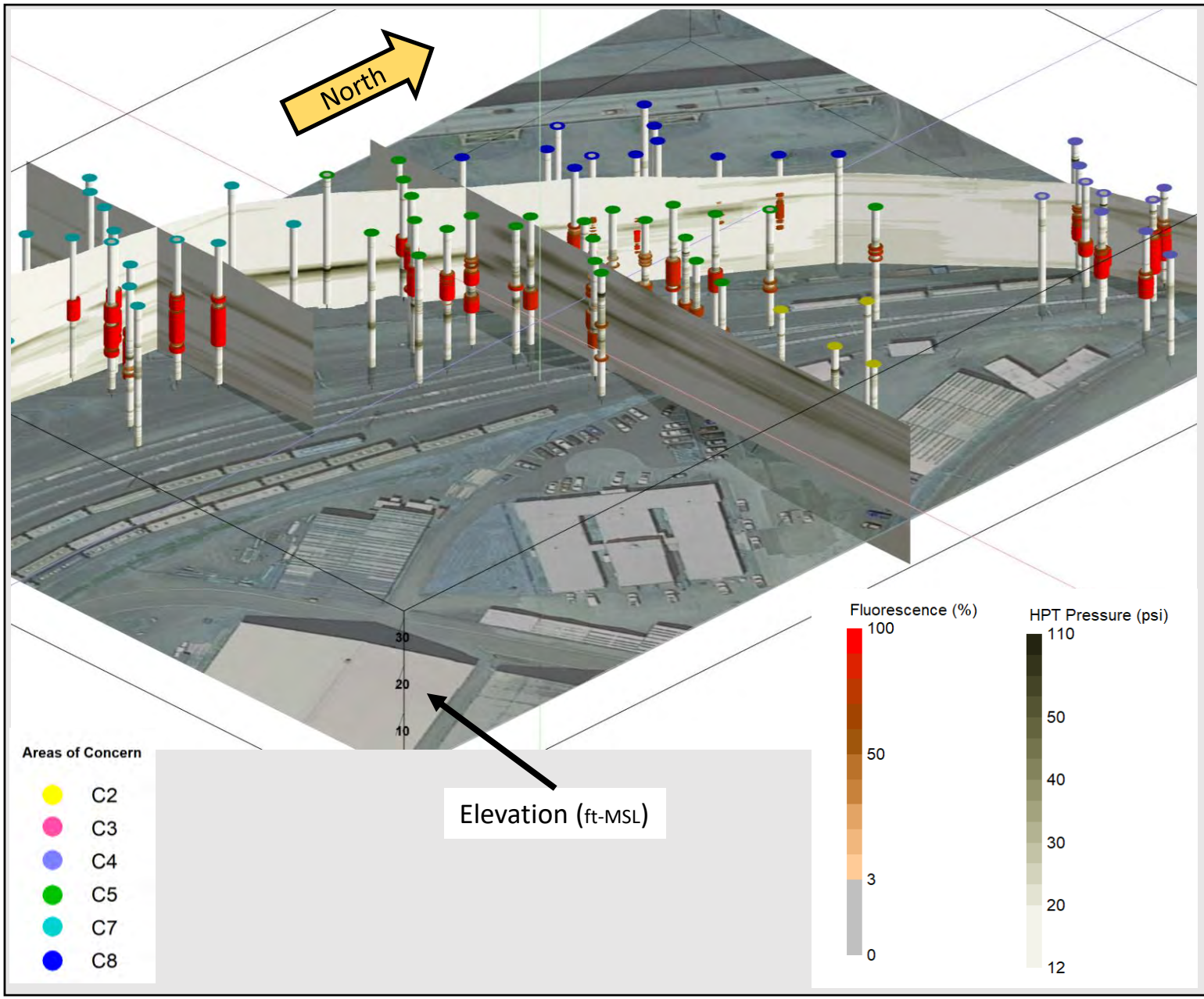
Figure 7

Port of Longview
Longview, WA

November 2019

High-Resolution Site Characterization

COLUMBIA TECHNOLOGIES



Fluorescence vs. HPT Pressure

Figure 8

Port of Longview
Longview, WA

November 2019

High-Resolution Site Characterization

COLUMBIA TECHNOLOGIES

APPENDICES

APPENDIX A - Direct Sensing Equipment Description

Optical Imaging Profiler (OIP) Equipment Description

The OIP system utilized for this investigation is the latest generation developed by Geoprobe Systems. The OIP system uses a high-energy Light Emitting Diode (LED) to produce an ultraviolet light source for the detection of polycyclic aromatic hydrocarbons (PAHs).

The OIP system employs an excitation beam of light from an LED at 275 nanometers (nm). Any residual phase PAHs present in the soil matrix will absorb and then release this photon energy in the form of fluorescence.

This fluorescence is captured via a UV camera in the probe. Individual OIP logs consist of a primary graph of fluorescence as a % of the optical image recorded by the UV camera. Visible light images can also be captured if desired. The camera records the UV images at a rate of 30 frames per second.

OIP screening is performed by pushing or hammering the OIP probe into the soil at the target rate of two centimeters per second (0.8 inches per second). As the OIP is advanced, the fluorescence in each frame is captured and analyzed and displayed in real-time as a function of depth.

OIP system data is presented as a percentage of the optical window showing fluorescence. OIP system performance is checked using known compounds such as diesel, motor oil, and gasoline. Site specific products may be used as an additional performance check

Any fluorescence response is normally indicative of residual phase petroleum hydrocarbons, though some naturally occurring materials such as limestone will also fluoresce to a lesser and more monochromatic degree.

Hydraulic Profiling Tool (HPT) Equipment Description

The HPT probe is approximately 24 inches in length and 1.5-inches in diameter. The probe is driven into the ground at the nominal rate of 12 inches per minute using a DPT rig.

The HPT probe was developed by Geoprobe Systems® and contains two separate systems: soil EC and the HPT. EC, HPT parameters, and temperature are collected by the HPT Field Instrument and displayed continuously in real-time during each push of the probe.

EC: Soil electrical conductivity, the inverse of soil resistivity, is measured using a Werner array arrangement. In this process, an electrical current is transmitted through the soil from two electrodes on the probe body. This current is then passed back to the probe, and the voltage response of the imposed

current to the soil is measured across these points. Conductivity is measured in Siemens/meter, and due to the low conductivity of earth materials, the EC probe uses mS/m. The probe is reasonably accurate in the range of 5 to 400 mS/m.

The electrical properties of soil vary by geological setting. Therefore, conductivity measurements will vary both in magnitude and the relative change from one soil type to another in each geological setting. In general, at a given location, lower conductivity values are characteristic of larger particles such as cobbles and sands, while higher conductivities are characteristic of finer sized particles such as finer sand, silts, and clays. Observed conductivities significantly higher than 400 mS/m are indicative of ionic materials other than soil. Examples include saltwater intrusion, the presence of ionic chemicals from storage or injection, or potentially soil mixtures with metallic compounds.

HPT: The HPT portion of the system is used to create high-resolution, real-time profiles of soil hydraulic properties, which can be used to infer permeability and hydraulic conductivity. The HPT system consists of a controller, a pump, a transfer line (trunkline) which is pre-strung through the DPT rods, a pressure transducer, a permeable screen, and a field computer.

HPT screening is performed simultaneously with the EC logging. As the tool is advanced, water is pumped through the trunkline and passes into the soil through the permeable screen. The flow is regulated as to be as constant as possible. The pressure required to inject the constant flow of water into the soil, known as the HPT pressure, is monitored by the pressure transducer and recorded on the field computer in pounds per square inch (psi) versus depth. The flow rate of the water into the soil formation is also measured and recorded in milliliters per minute (mL/min) versus depth.

Static pressure measurements (dissipation tests) can also be made by stopping at discrete intervals, allowing users to determine the static water level. The dissipation test provides an estimate of the static water level, based on the hydraulic head imposed on the probe at rest as compared to the pressure measured at the surface prior to starting each location push. Dissipation tests are best to run in coarse-grained materials (sands and gravels) to assure that the local ambient hydrostatic pressure is measured quickly and accurately.

To perform a dissipation test, the HPT probe is advanced to a depth below the water table and the water flow is stopped. The pressure dissipation (reduction of pressure gradient caused by forcibly pumping water into the formation) is monitored until a stable value is observed. The dissipation usually takes the shape of a curve approaching an inflection point or stable value. The stable value is then used for the hydraulic pressure at that depth and can be used to estimate static water depth. The HPT

software can also provide an estimate of K (a value used in hydrogeologic calculations) to provide an interpretation of the hydraulic permeability of the formation.

Depth in feet is measured and recorded using a precision potentiometer with a 100-inch linear range. The potentiometer is mounted on the mast of the DPT rig and a counter-weight anchored to the foot of the rig. Measurements are recorded on the down stroke of the mast, as the tooling string is pushed into the ground, and is accurate within 1/10th of an inch. The reference elevation (depth) reported for each individual boring is established by setting the data logger to zero feet with the sensing window of the downhole probe aligned with the ground surface.

True boring elevations can be established with the addition of survey data if provided for in the scope of work.

APPENDIX B – Interpretation of Qualitative Direct Sensing Data

General OIP Log Interpretation

The OIP system utilized for this investigation is the latest generation developed by Geoprobe Systems. The OIP system uses a high-energy Light Emitting Diode (LED) to produce an ultraviolet light source for the detection of polycyclic aromatic hydrocarbons (PAHs).

The OIP system employs an excitation beam of light from an LED at 275 nanometers (nm). Any residual phase PAHs present in the soil matrix will absorb and then release this photon energy in the form of fluorescence.

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Any fluorescence response is normally indicative of residual phase petroleum hydrocarbons, though some naturally occurring materials such as limestone will also fluoresce to a lesser and more monochromatic degree.

General HPT Log Interpretation

Each HPT log, presented on an individual scale, includes three separate graphs of data. The Y axis on all graphs is depth. The first graph displays HPT pressure in psi and flow rate measured in mL/min. In general, higher HPT pressure readings and lower flow rates indicate lower soil permeability, while lower HPT pressure readings and higher flow rate readings indicate higher soil permeability. The second graph shows estimated K value, in feet/day, indicating the hydraulic permeability of the formation. The static groundwater level is also displayed on the graphs. The third graph displays the EC, measured in mS/m. Lower soil conductivities are indicative of coarser grained particles, such as sands and silty sands, and higher soil conductivities are indicative of finer grained particles, such as clays and silty clays.

The HPT pressure and electrical conductivity can be used to identify hydraulic permeable layers, confining units and preferential migration pathways. This information is useful for creating contaminate fate and transport models, selecting monitoring well location and screen intervals, and targeting zones for remedial injections.

Interpreting OIP and Comparison to Laboratory Analyses

Generalized correlation between OIP and laboratory analytical results can be inferred but cannot be viewed as a linear comparison. OIP response and laboratory results are collected, analyzed and reported in different units and by different procedures, so correlation is not an exact one-to-one comparison. The OIP uses a process where a 2D soil surface is exposed to excitation light, and any fluorescent light emitted is analyzed at the ground surface. Soil and groundwater results involve the collection of a soil core, extraction of sub-sample at the surface, and then transporting them to a laboratory for extraction and analysis. These processes are different by definition.

APPENDIX C – Quality Control Procedures

System Quality Control Checks

Direct sensing technologies such as MIP and OIP provide qualitative or semi-quantitative direct contact measurements of conditions in the soil, water, and vapor matrix of the subsurface. Correct performance response of the instruments is determined using standards or mixtures of known values or concentrations. Before and after each measurement run, the instruments are tested with these known standards to ensure their response is within an acceptable range.

The nature of direct-sensing technology is different than a typical laboratory analysis. In the lab, a known volume of a known concentration is introduced to the system, the compounds are separated chromatographically, and the response for each individual compound is recorded. This process is highly reproducible, and precise standards exist for laboratory control limits.

These performance tests of direct sensing instruments are not calibrations, per se. While the instrument response can be expected to be linear for a single chemical compound or in the known matrix conditions of the performance test standards, matrix conditions and chemical mixtures will be highly variable throughout the measurement run in subsurface.

In MIP, for instance, subsurface compounds diffuse across the MIP membrane, enter the carrier gas stream, and are transported directly to the GC. There is no chromatographic separation, just total response with depth.

Several other factors affect direct-sensing responses.

For LIF and OIP, these factors include:

- Soil grain size
- Interferences from fluorescent minerals such as limestones
- Contaminant types
- Degree of saturation
- System performance

For these reasons, a "calibration" is not possible. The variables within compounds of interest, mixtures of compounds, and subsurface conditions cannot be standardized. However, system performance can. Therefore, COLUMBIA Technologies implements protocols to test and evaluate system performance to produce the highest quality data in the industry. The results of these performance tests are maintained with each project file and available upon request.

OIP System Performance Test

The optical testing is done to ensure that the camera and light sources are working properly. The visible target is used to verify the camera's functionality and image focus.

A black box test is used to verify that there are no objects or contaminants on the inside of the OIP window which could result in false positives. The measured fluorescence during the black box test should be less than 0.1%.

Diesel fuel and motor oil in test cuvettes are typically used to check the functionality of the UV light source and the camera detection. The measured fluorescence for diesel fuel should be greater than 70% and the measured fluorescence for non-synthetic motor oil should be greater than 80%.

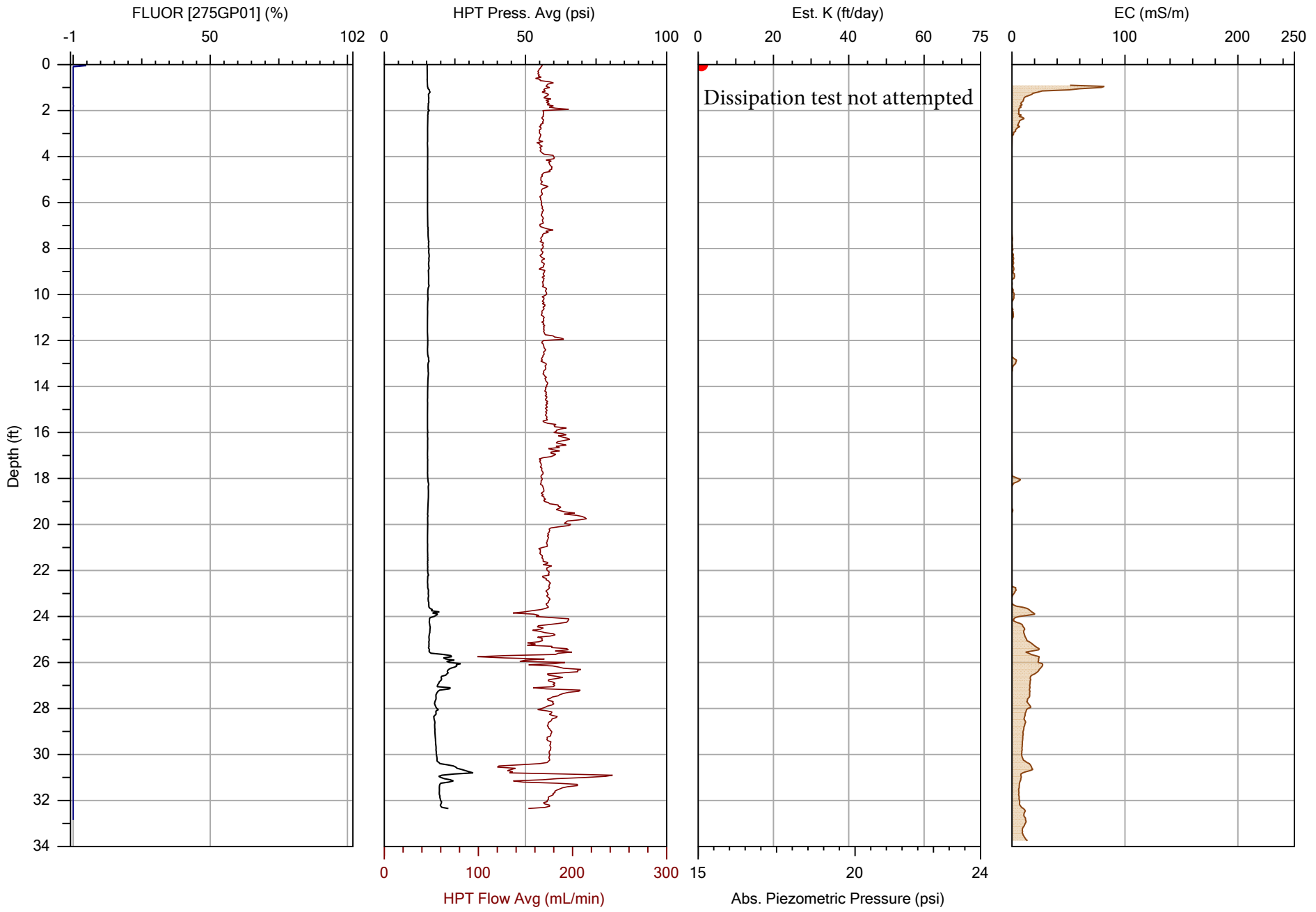
Note, the optical test recommended values are not pass-fail, and it is up to the operator to determine if the OIP probe is working properly.

HPT System Performance Test

The EC dipole is evaluated using a brass and stainless-steel test jig, resulting in known values of 55 and 290 millisiemens (mS). Results must fall within 10% of the expected values; otherwise corrective action must be performed.

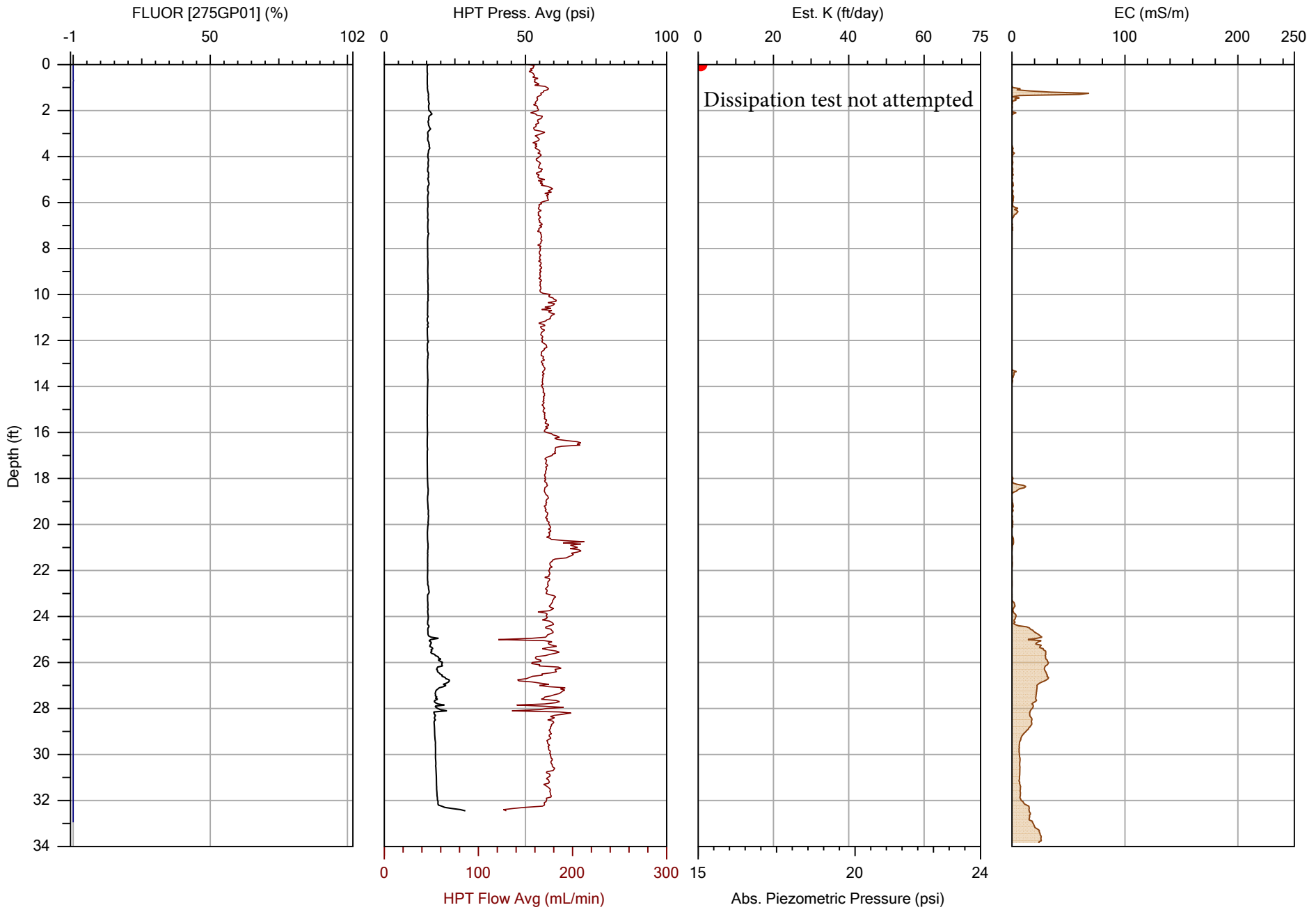
The HPT pressure and flow sensors are also evaluated using static (no flow) and dynamic (flow at approximately 150 milliliters per minute) hydraulic pressure measurements at two different head elevations, 6.0 inches apart. The difference for each test must be 0.2 psi, +/- 10%; otherwise corrective action must be performed.

APPENDIX D – Data Logs for Optical Imaging Profiler with Hydraulic Profile Tool (OiHpt) – Collective Scale



COLUMBIA TECHNOLOGIES

		File: AOPC1-OIP05.OIHP
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/13/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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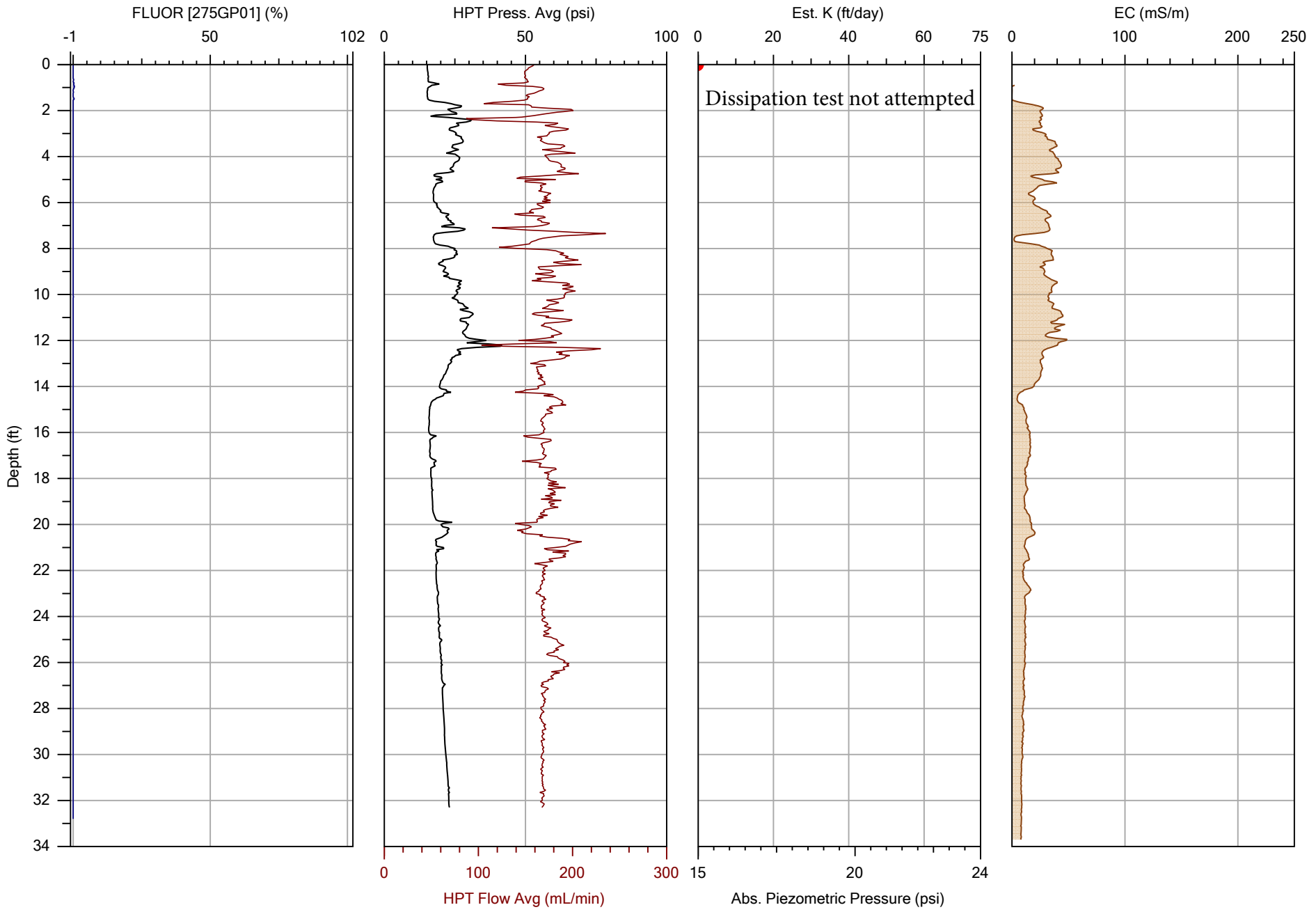
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/13/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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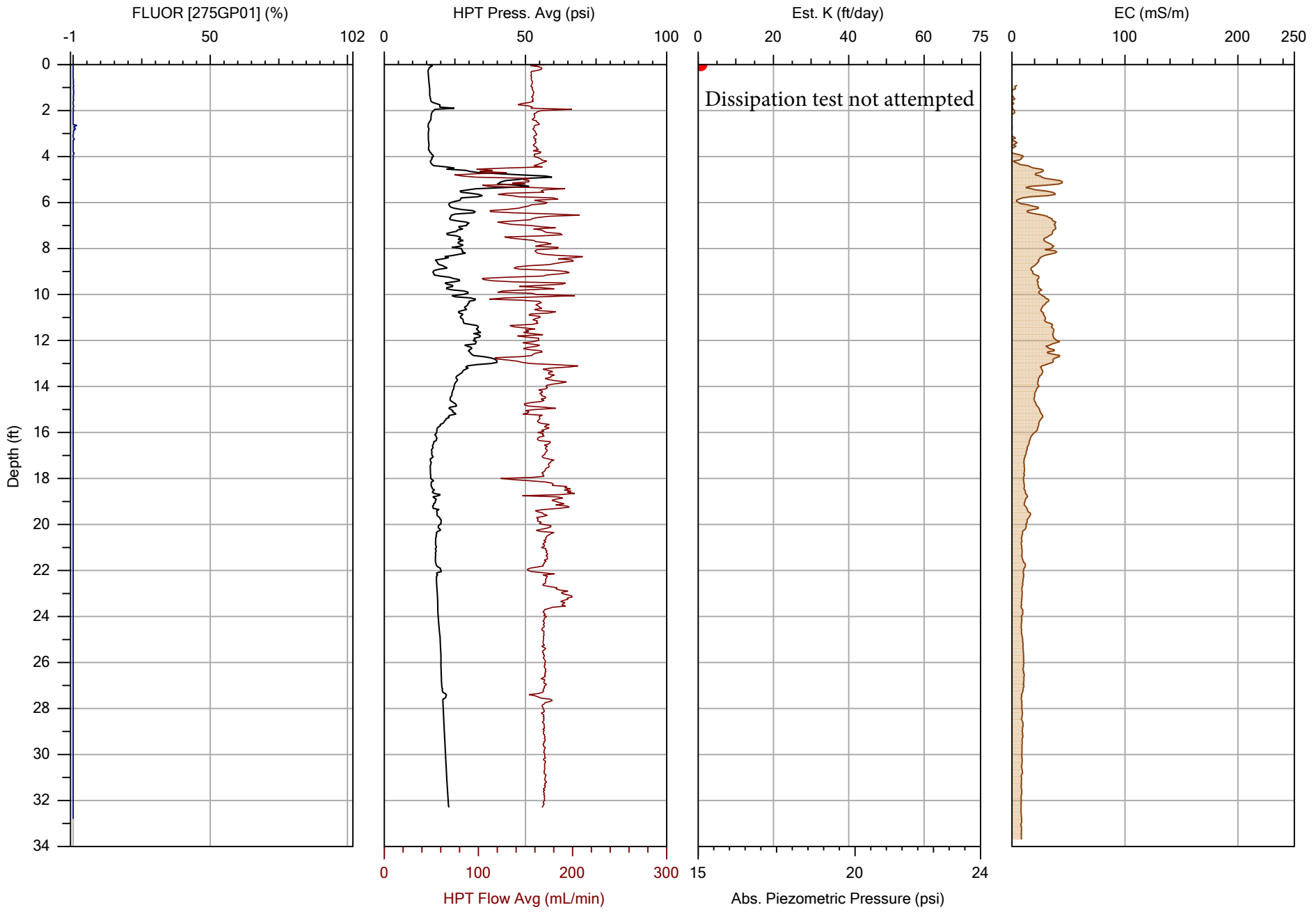
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/13/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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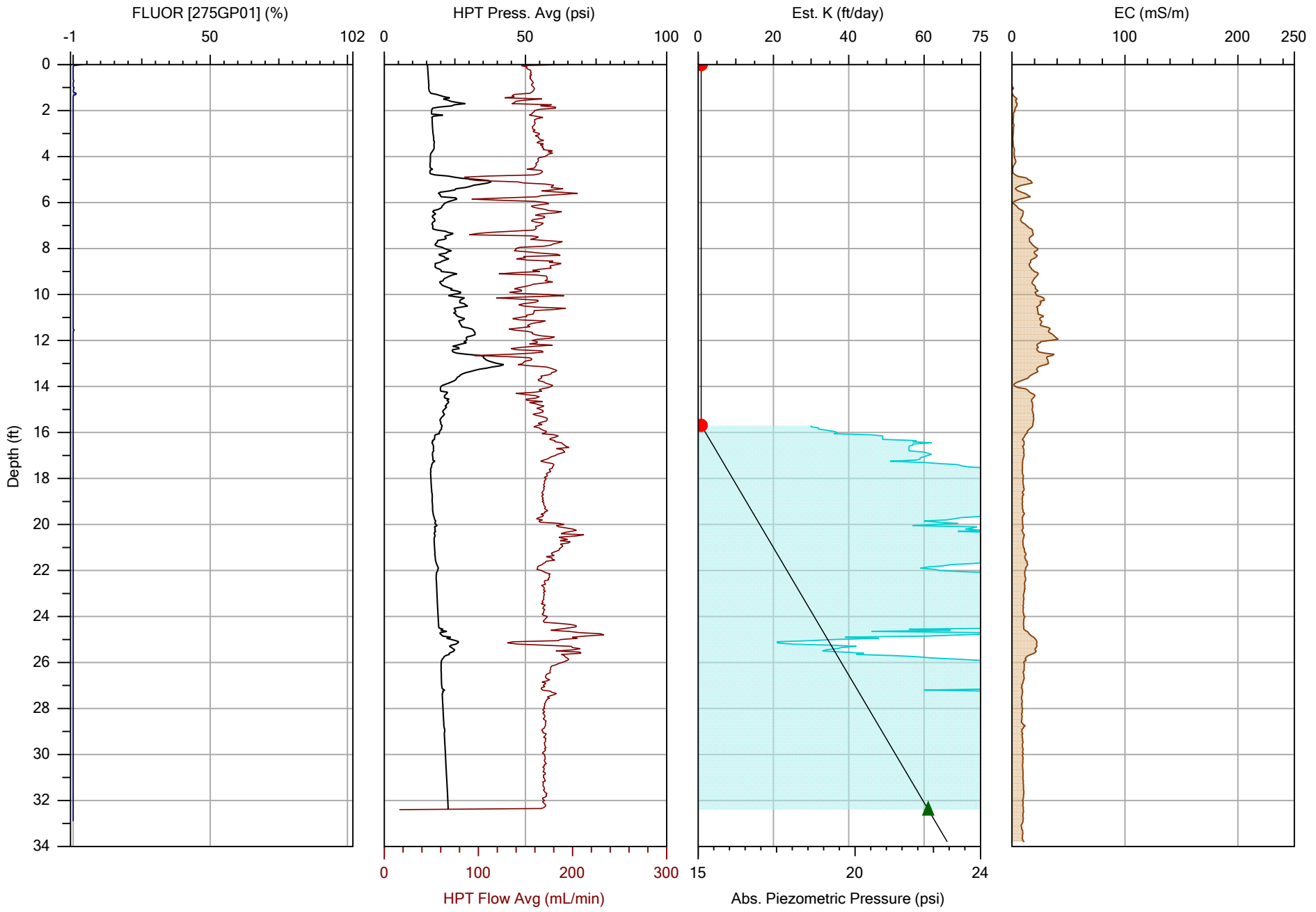
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/13/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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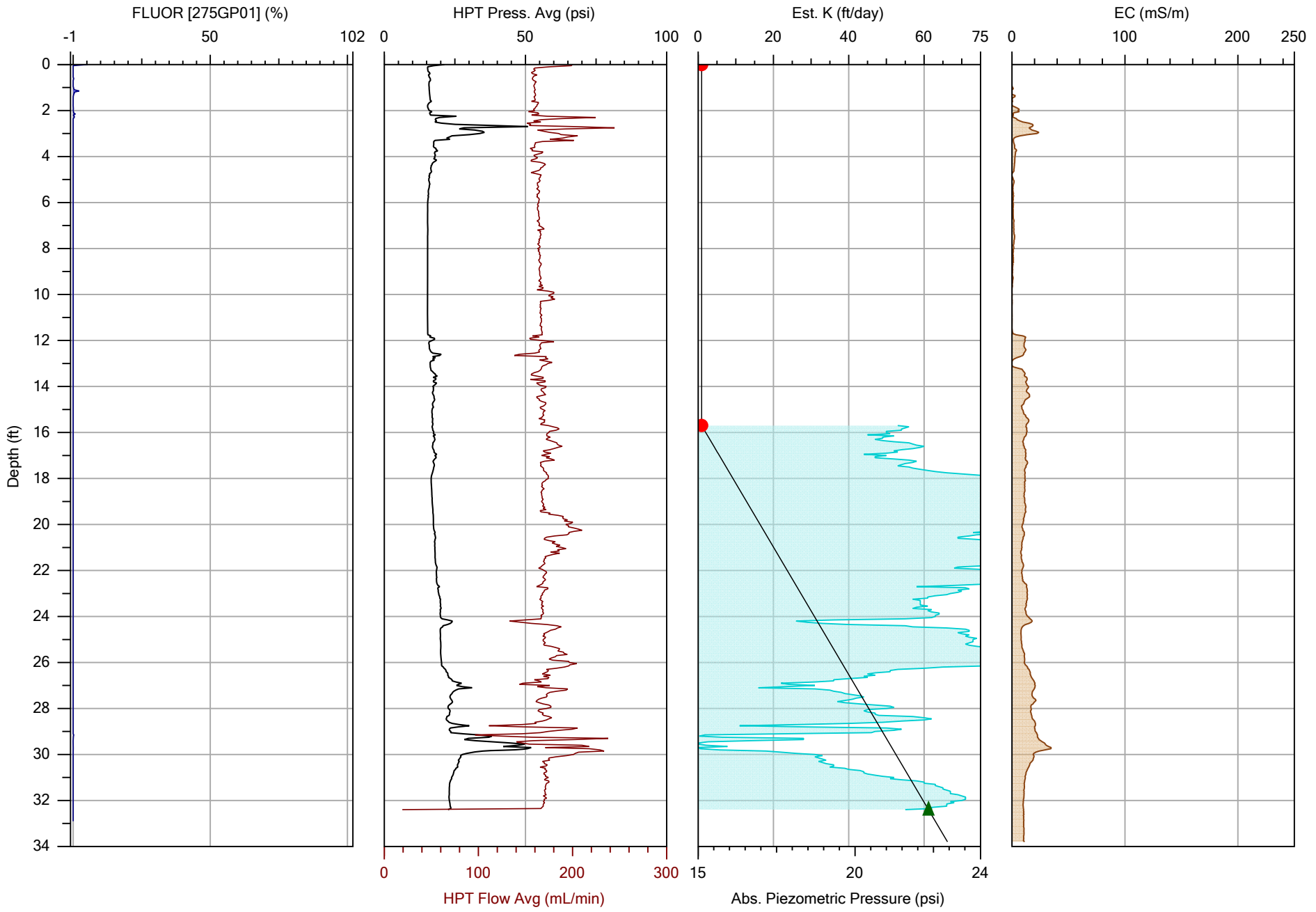
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/13/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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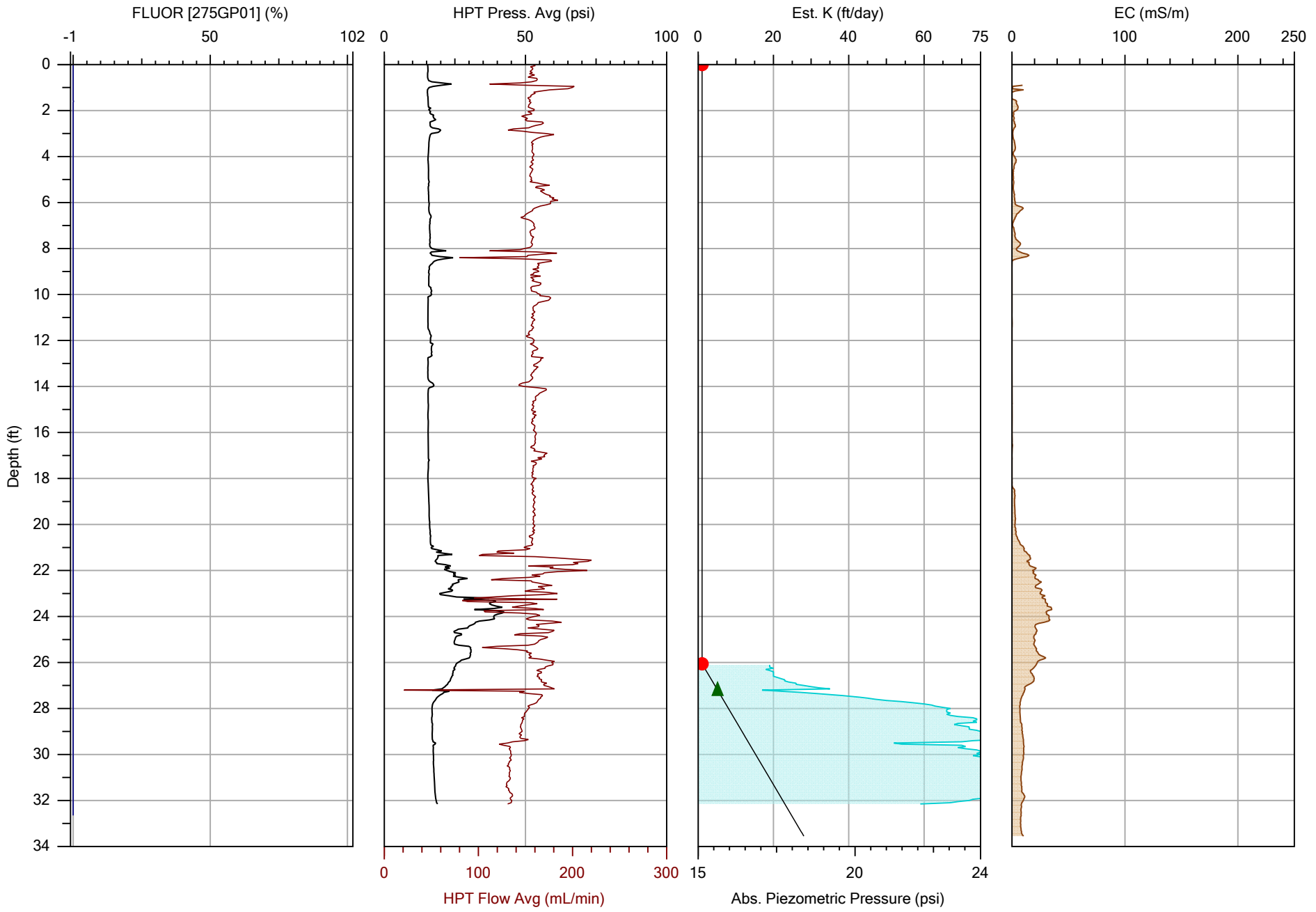
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/13/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

Company: COLUMBIA Technologies	Operator: AJH	File: AOPC3-OIP18.OIHP
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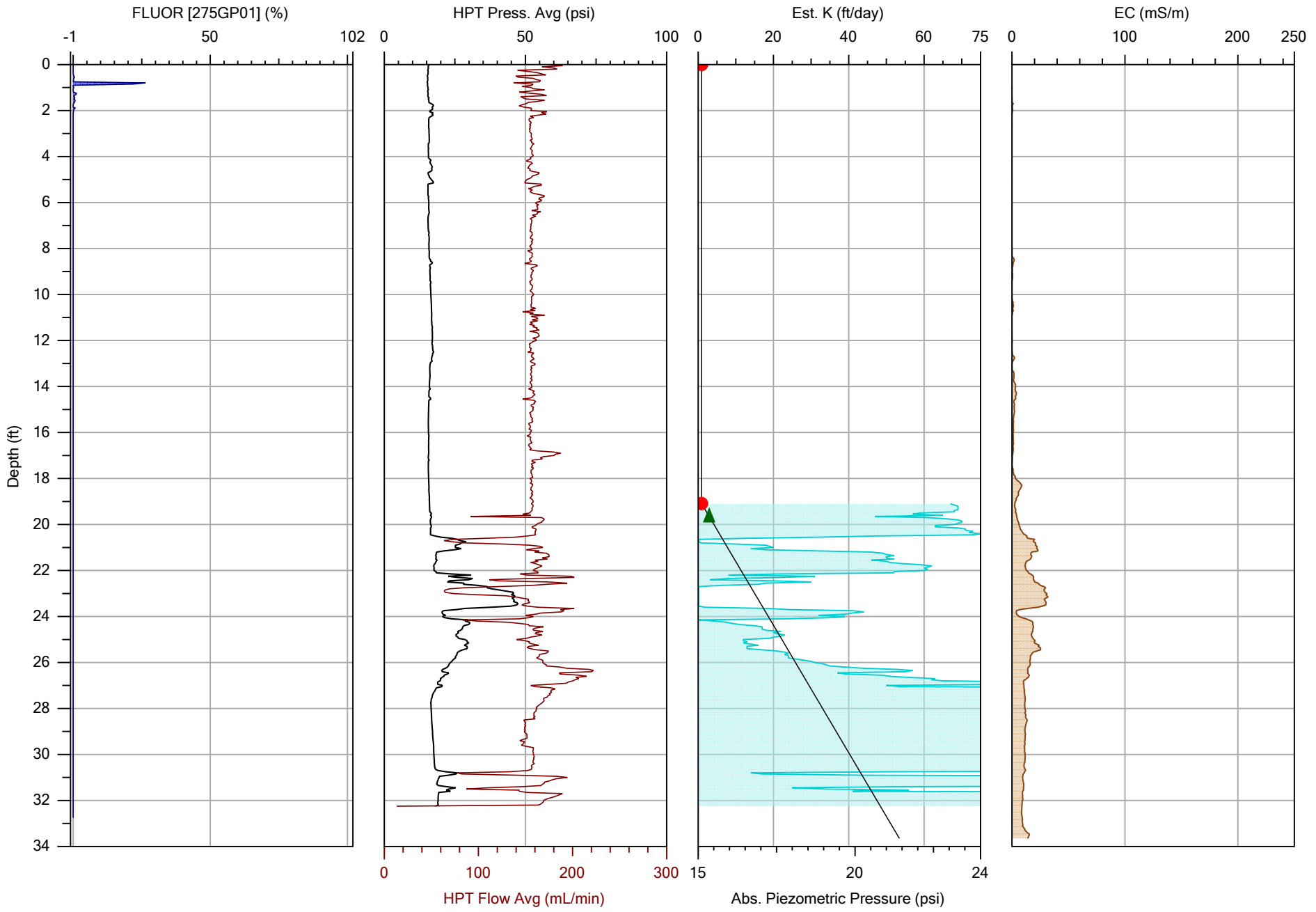
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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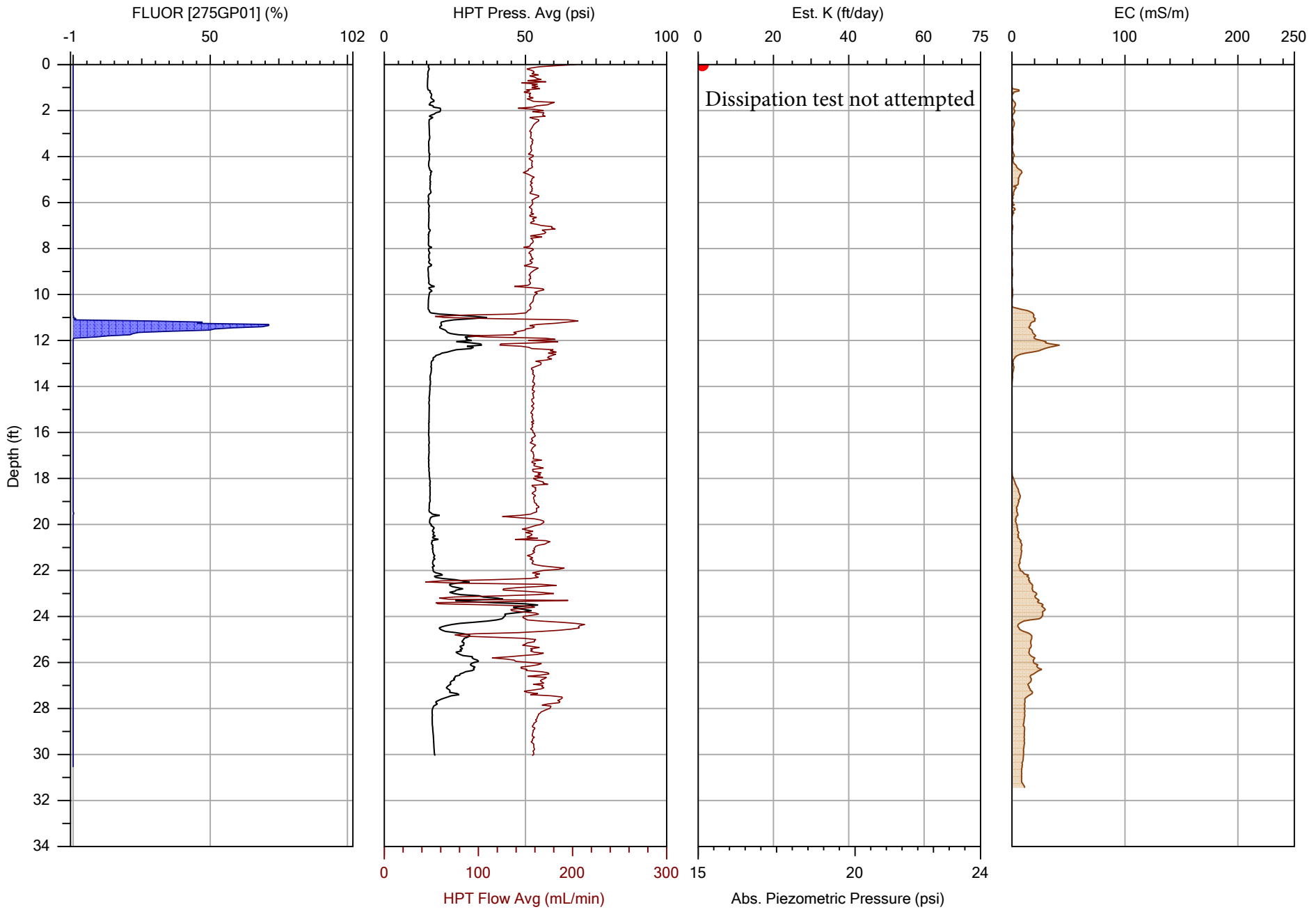
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/15/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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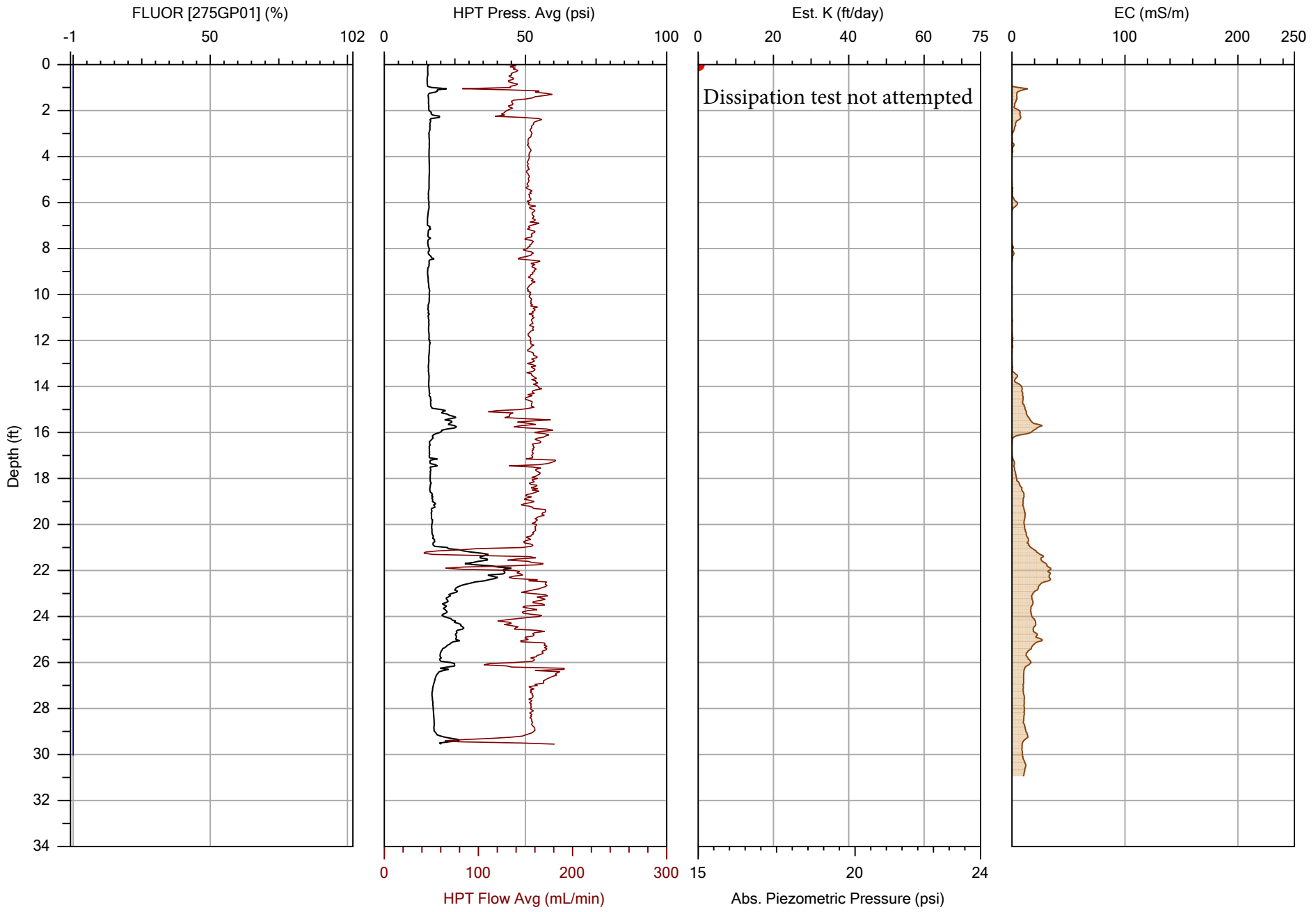
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/15/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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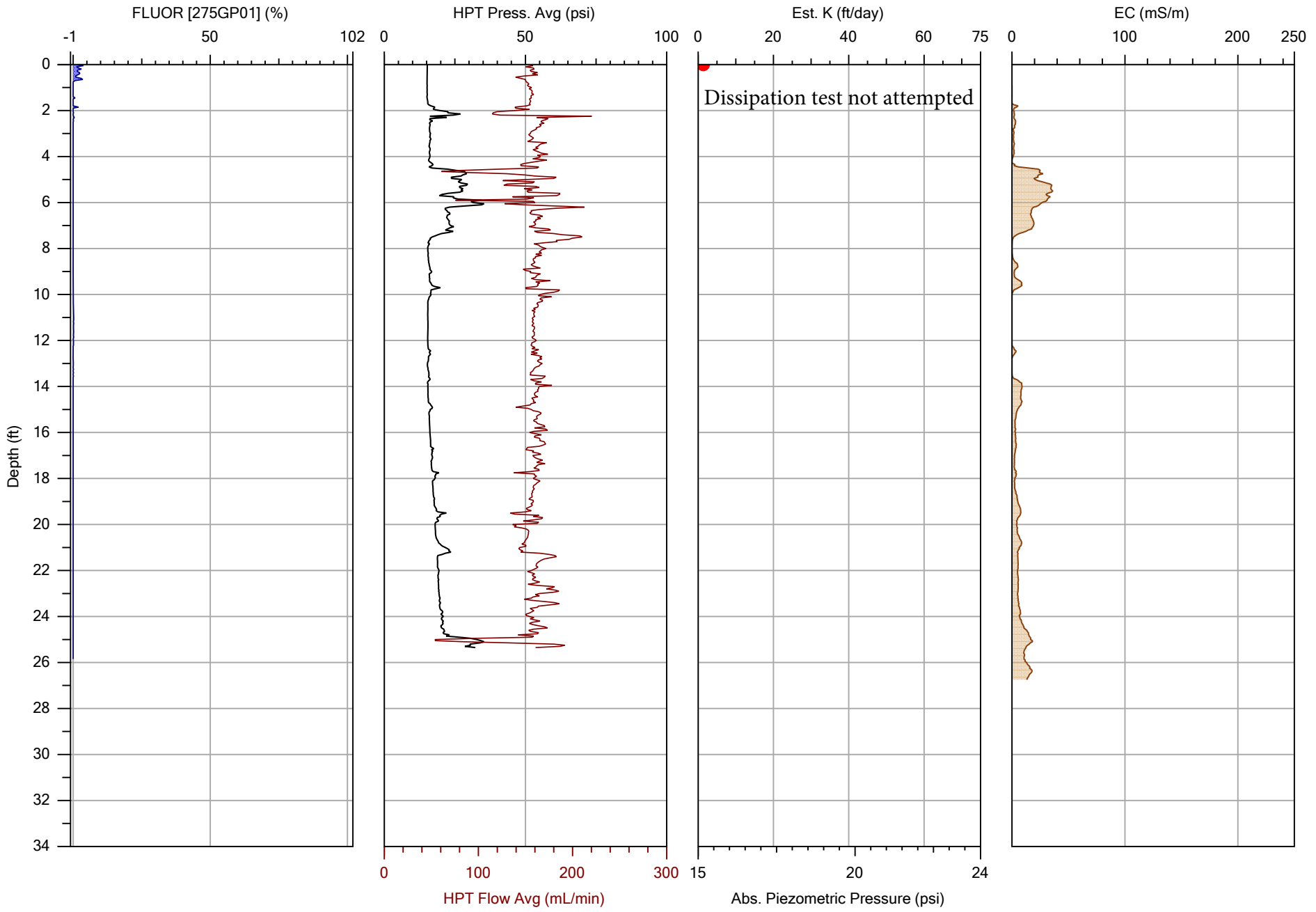
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/18/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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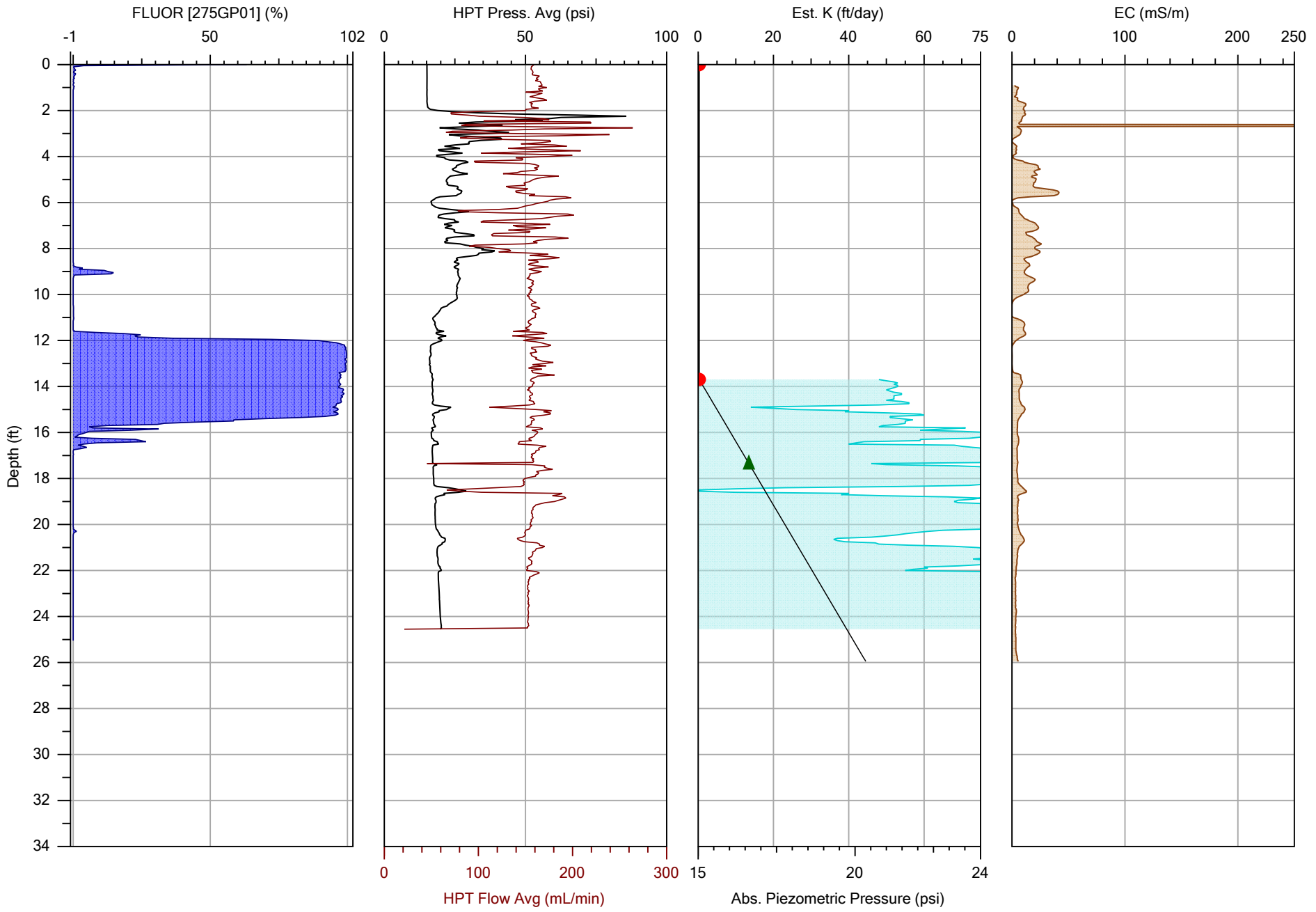
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/21/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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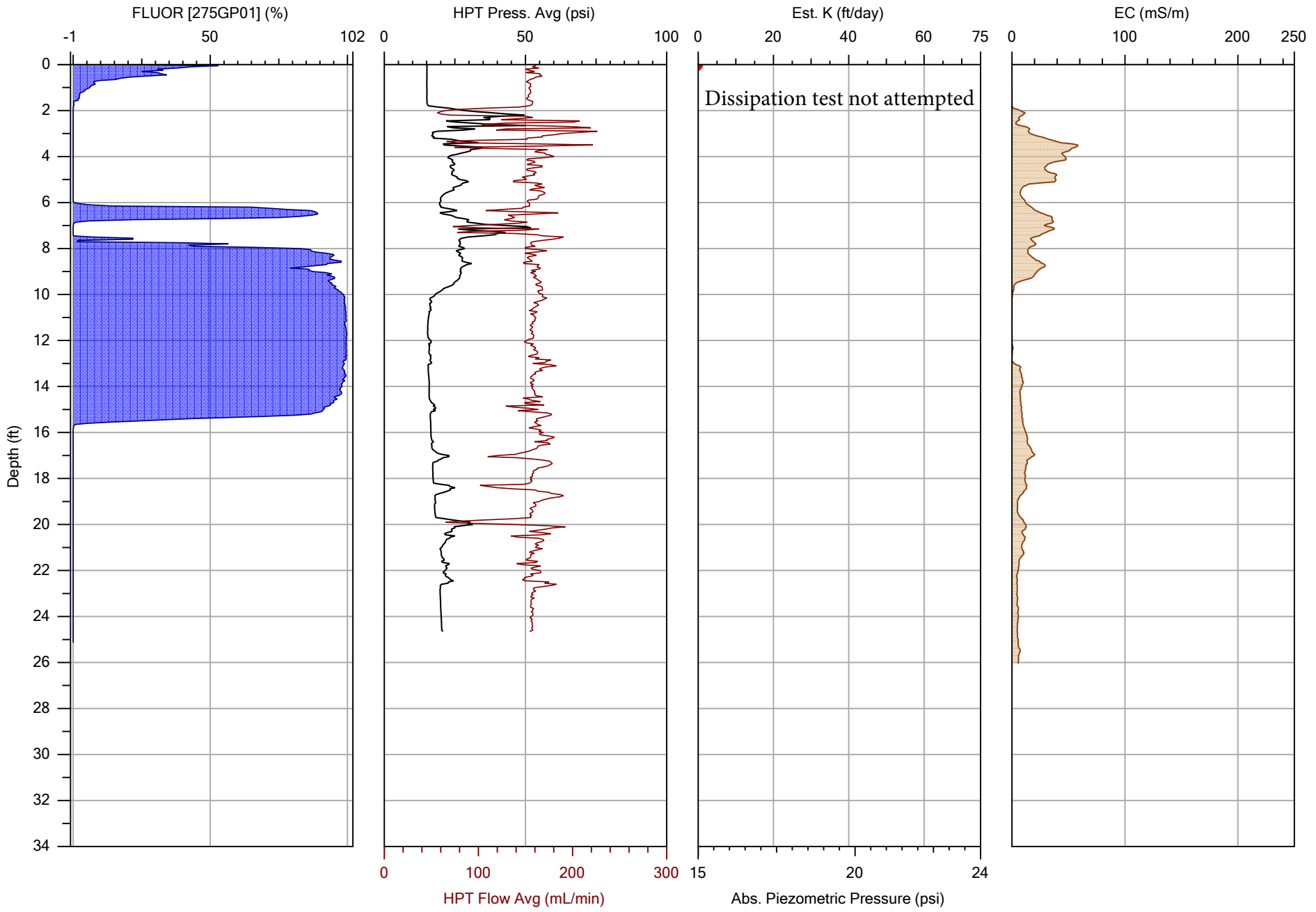
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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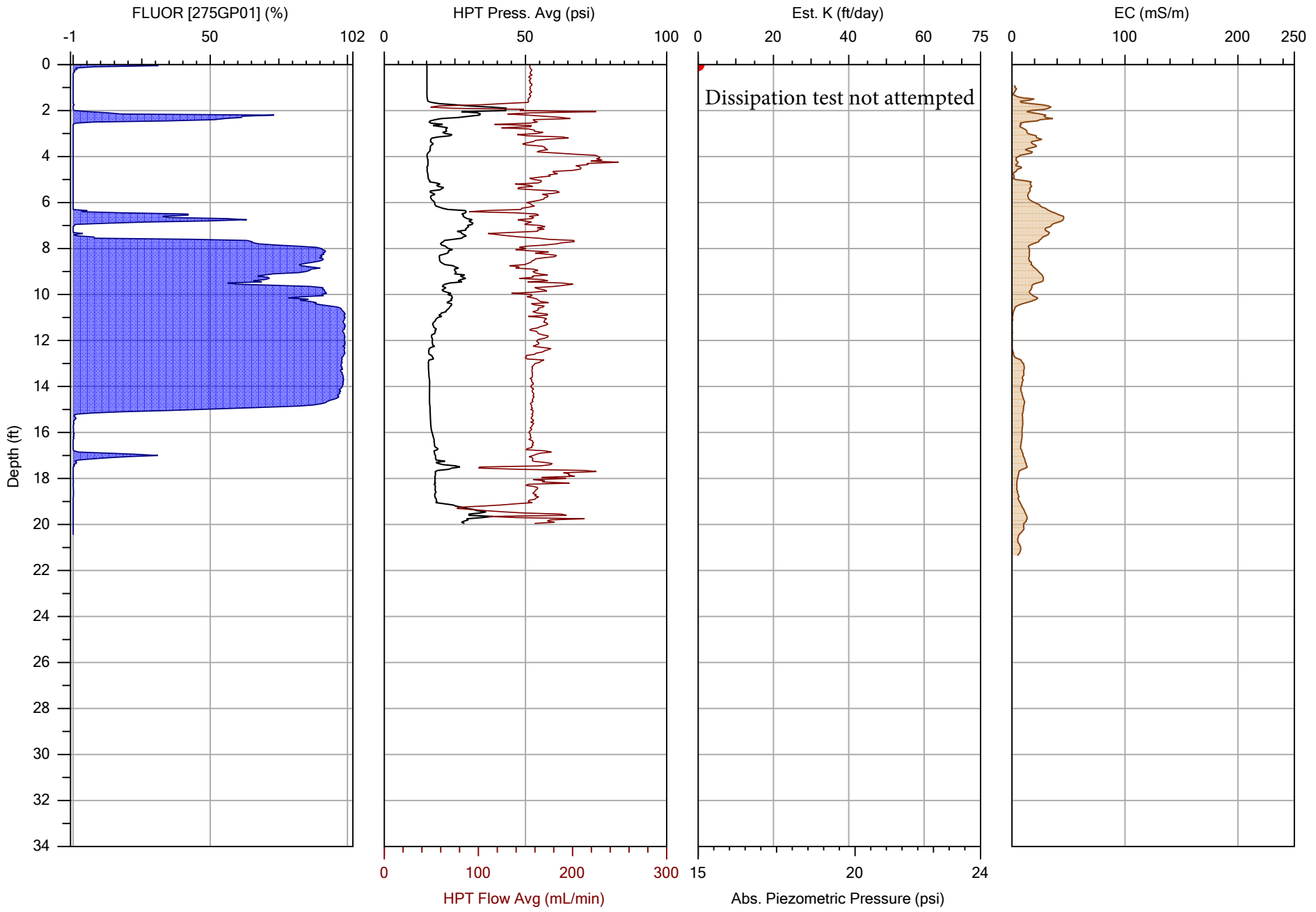
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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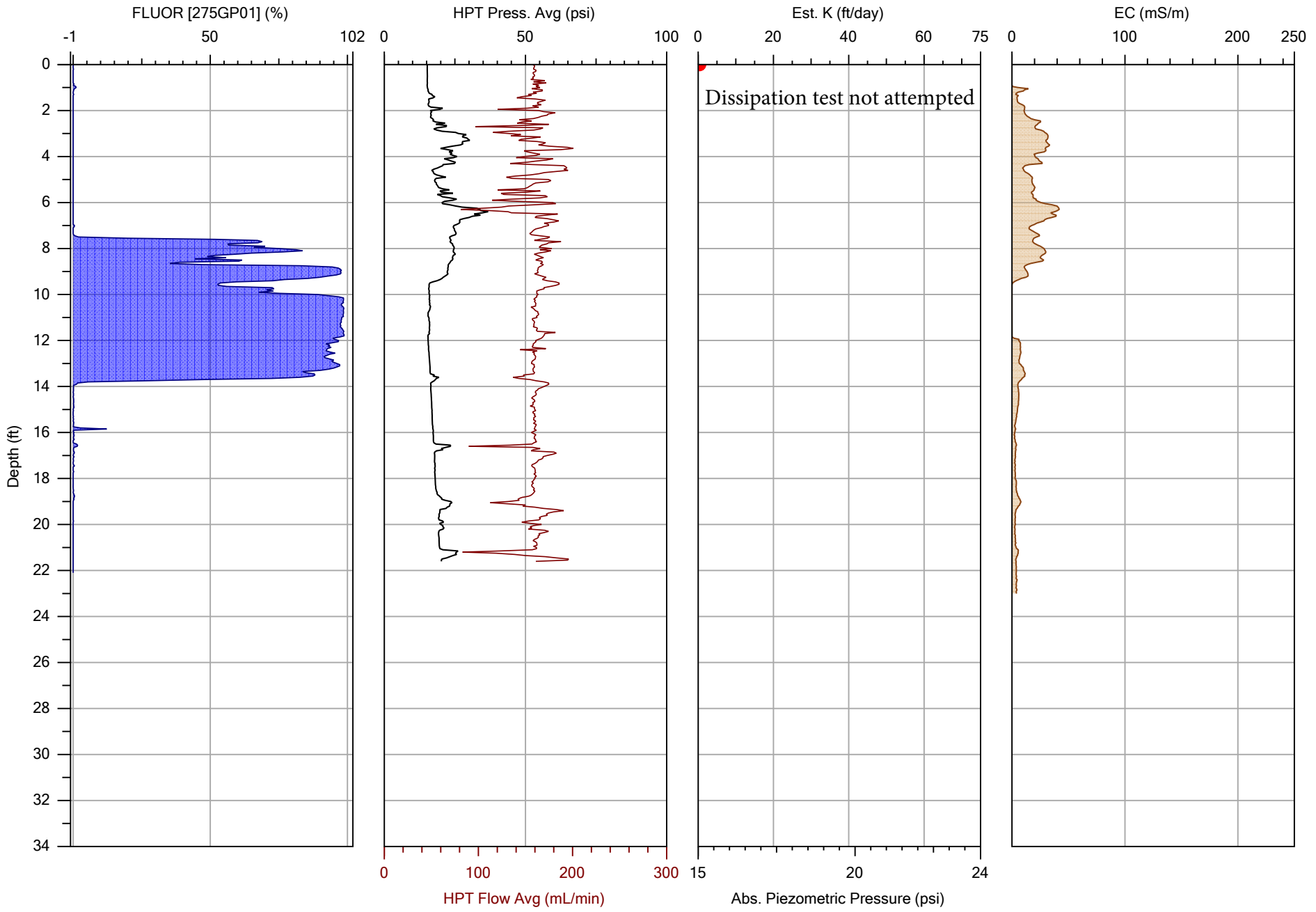
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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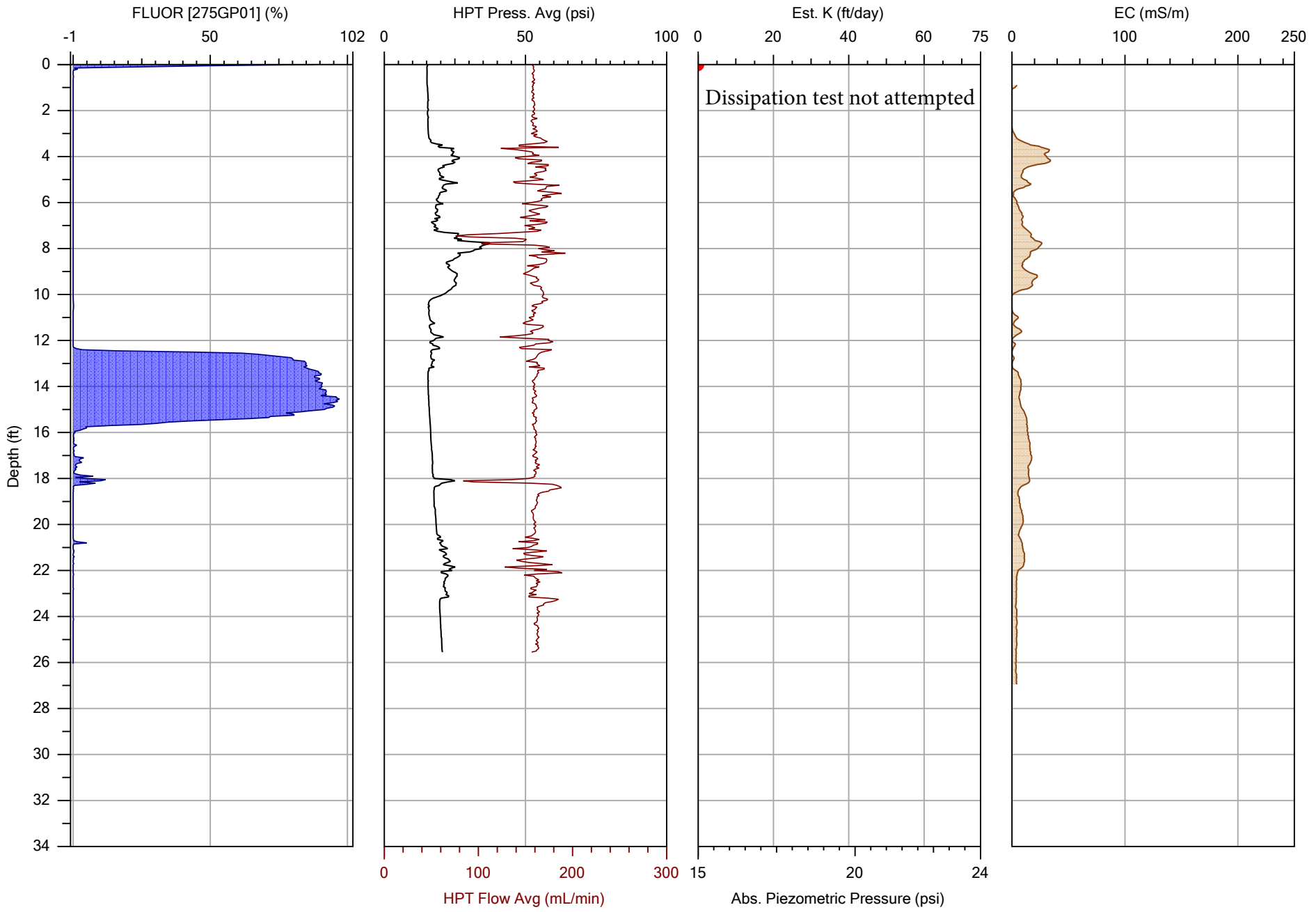
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/21/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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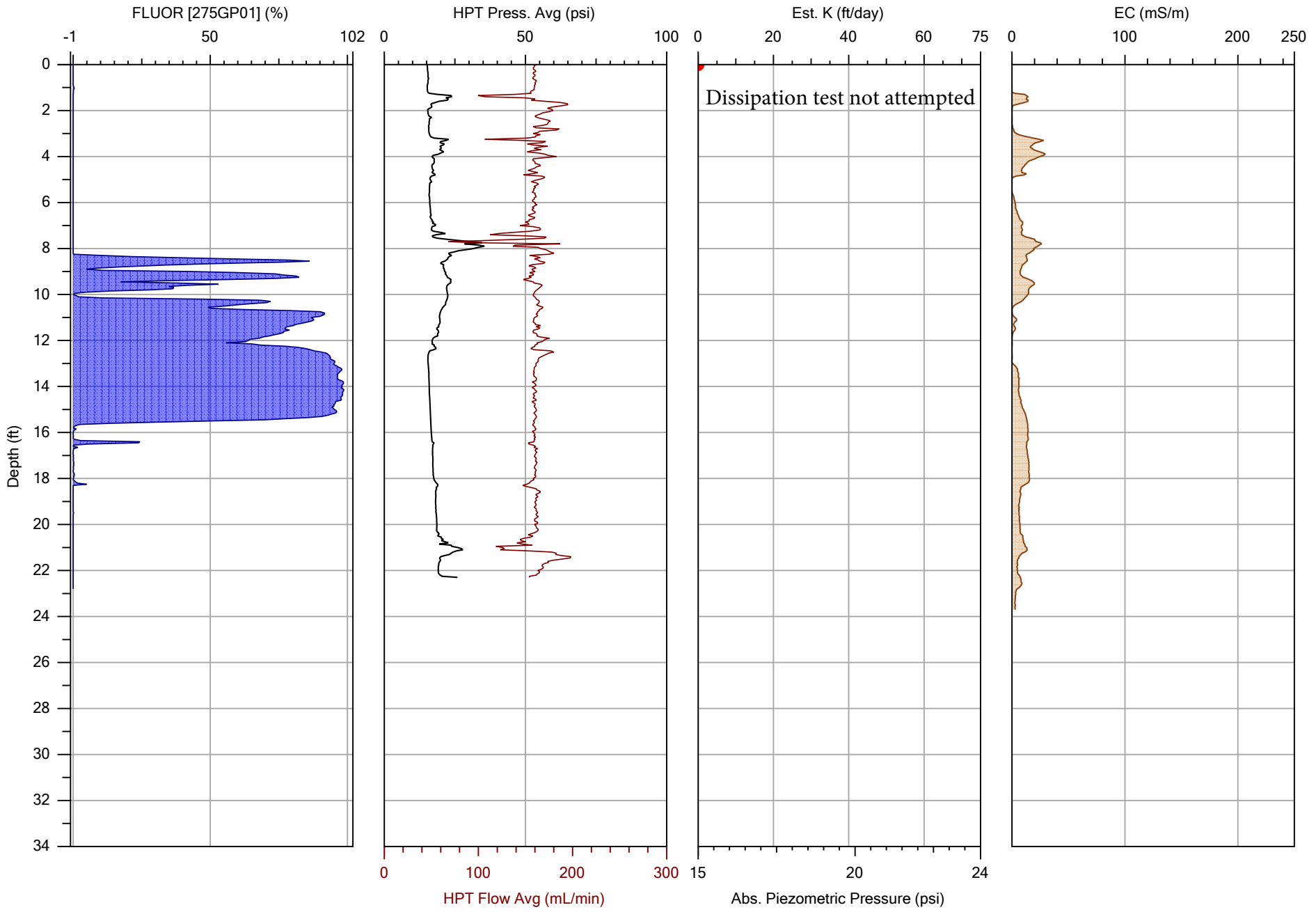
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/21/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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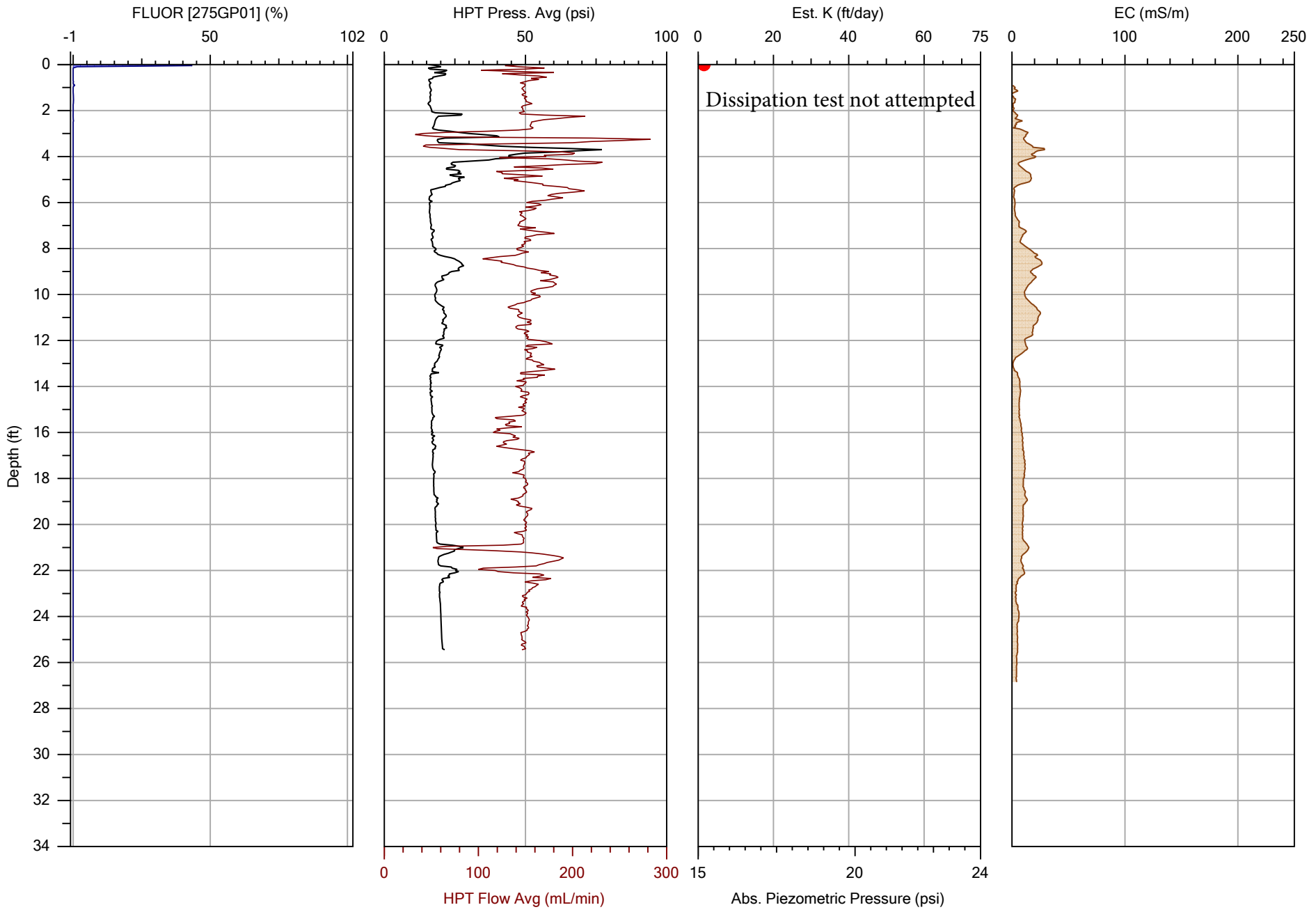
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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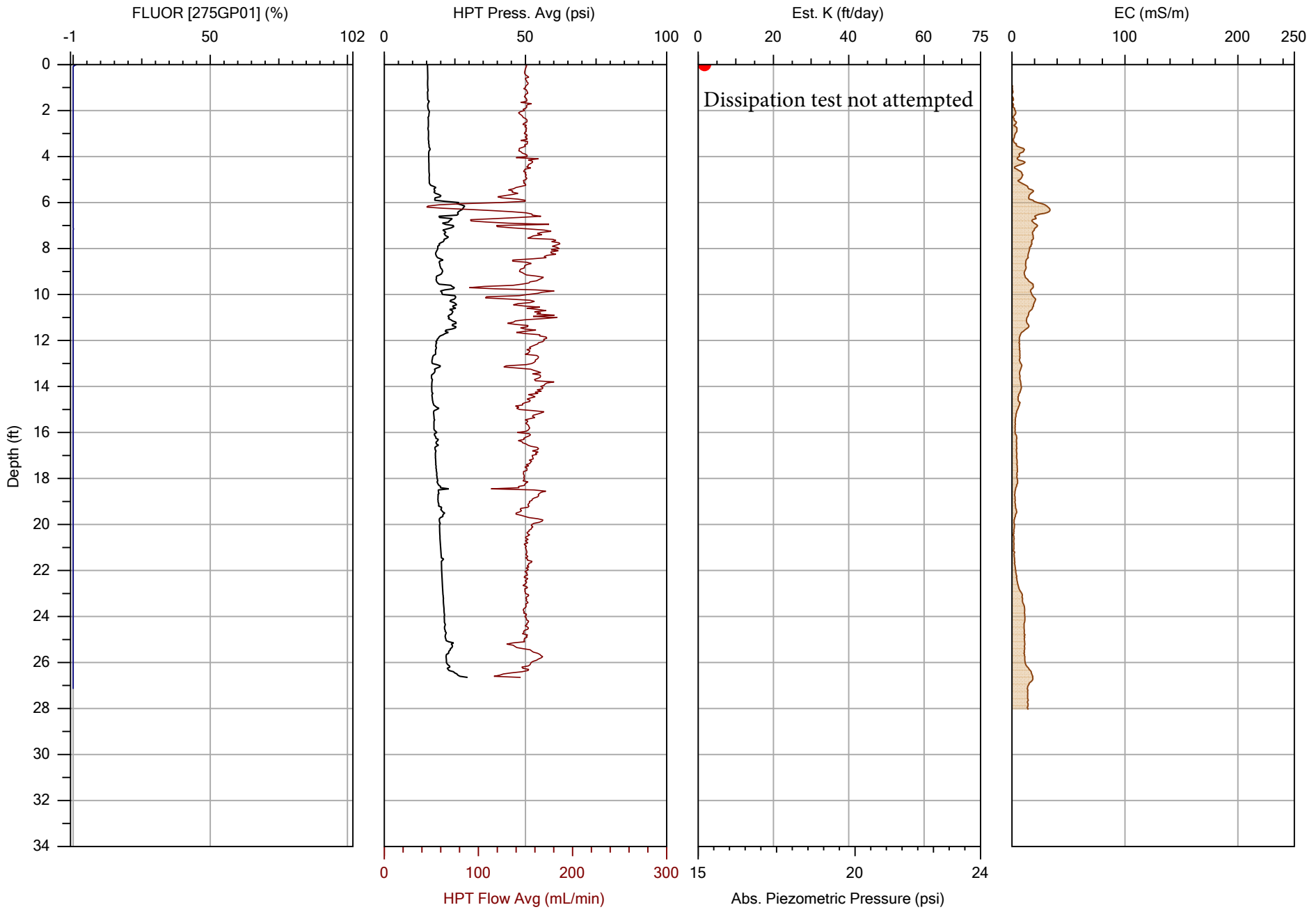
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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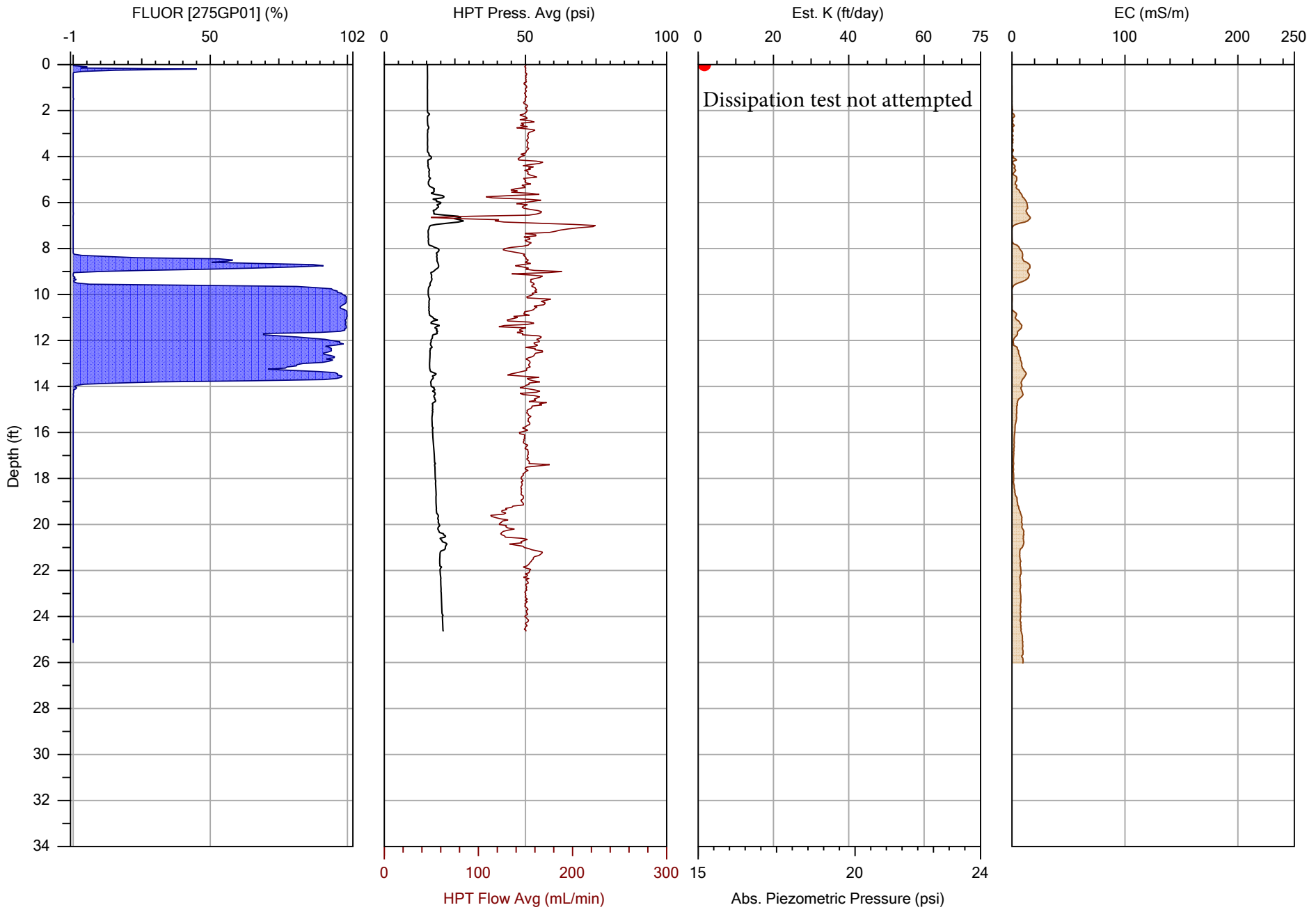
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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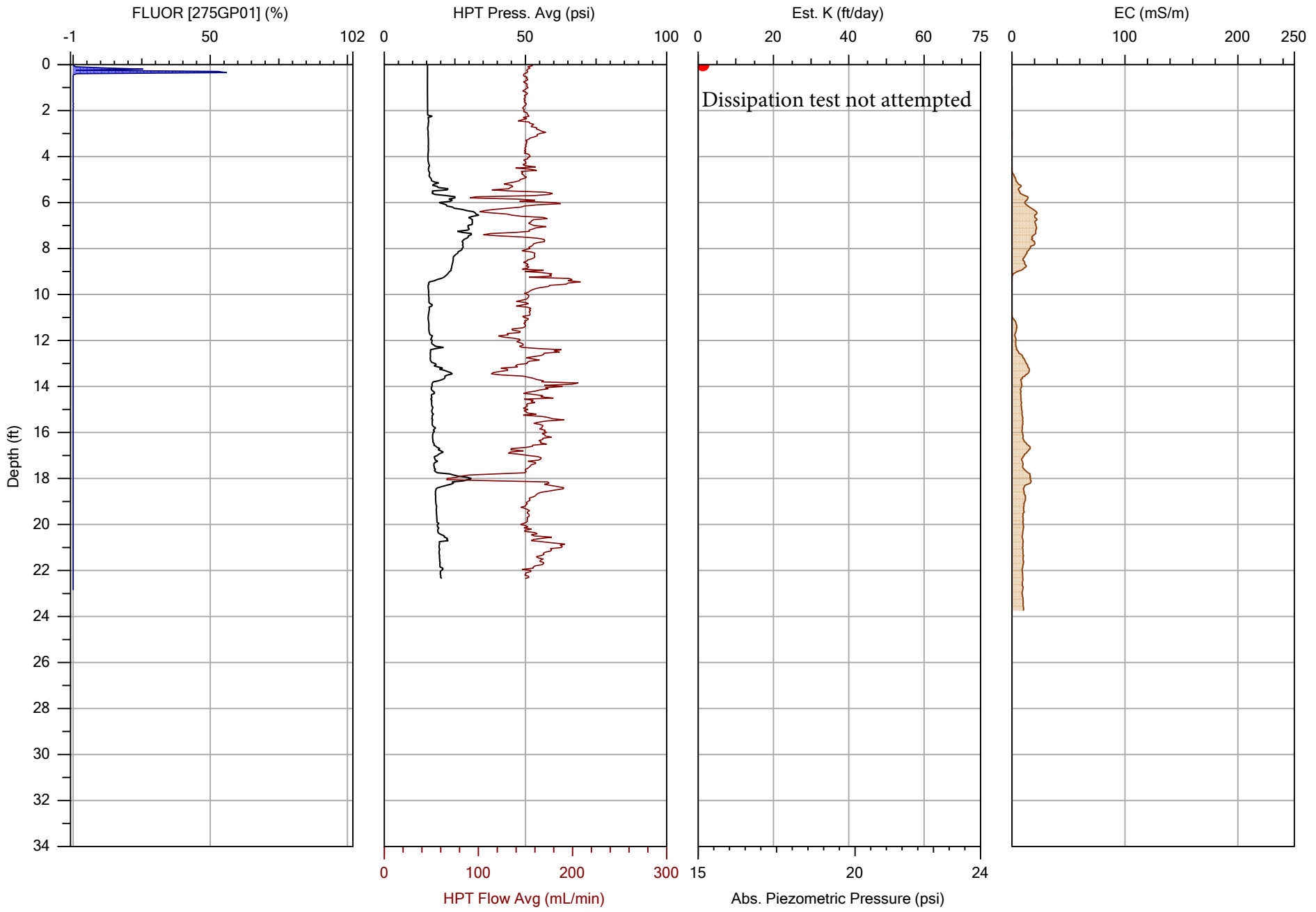
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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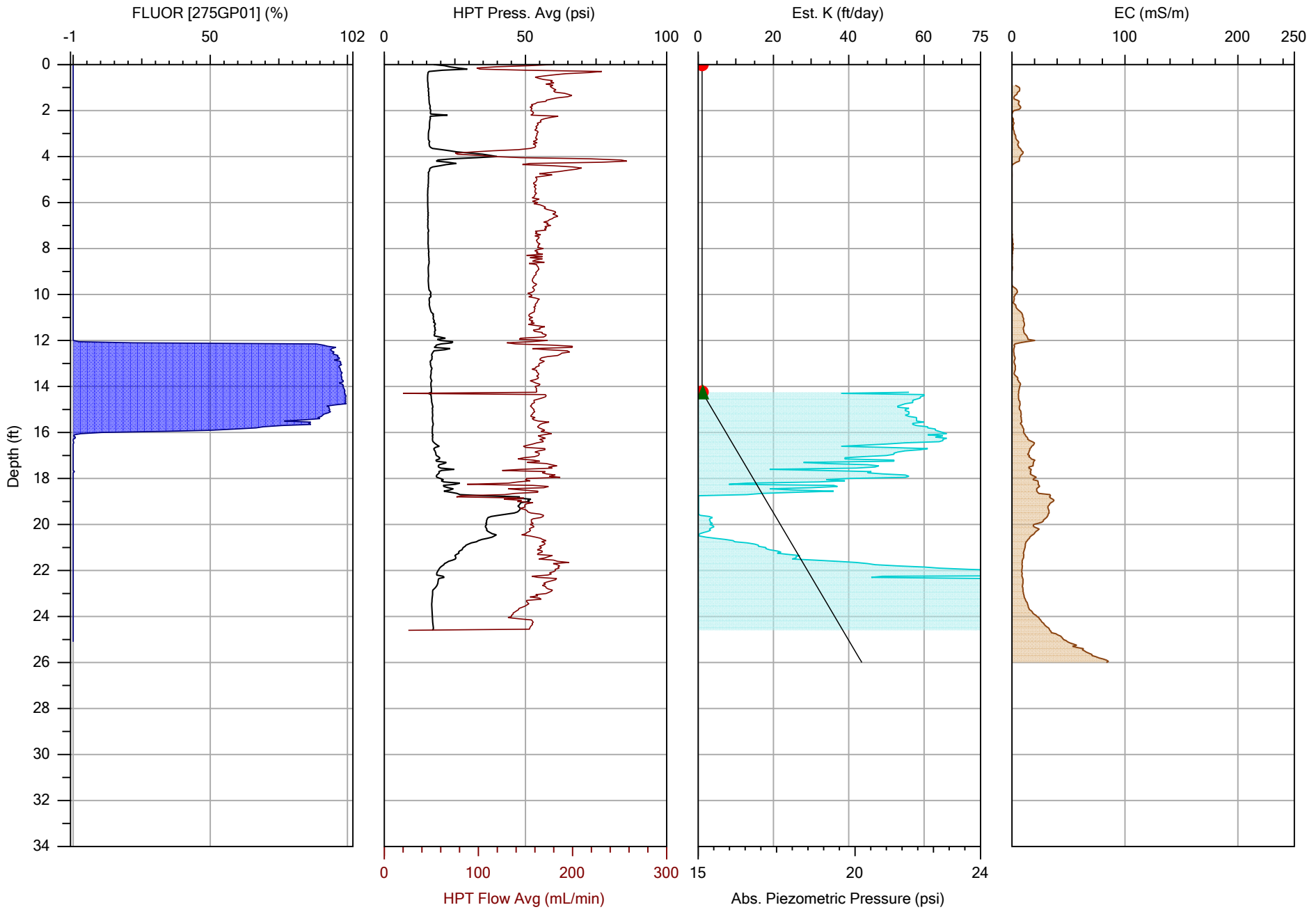
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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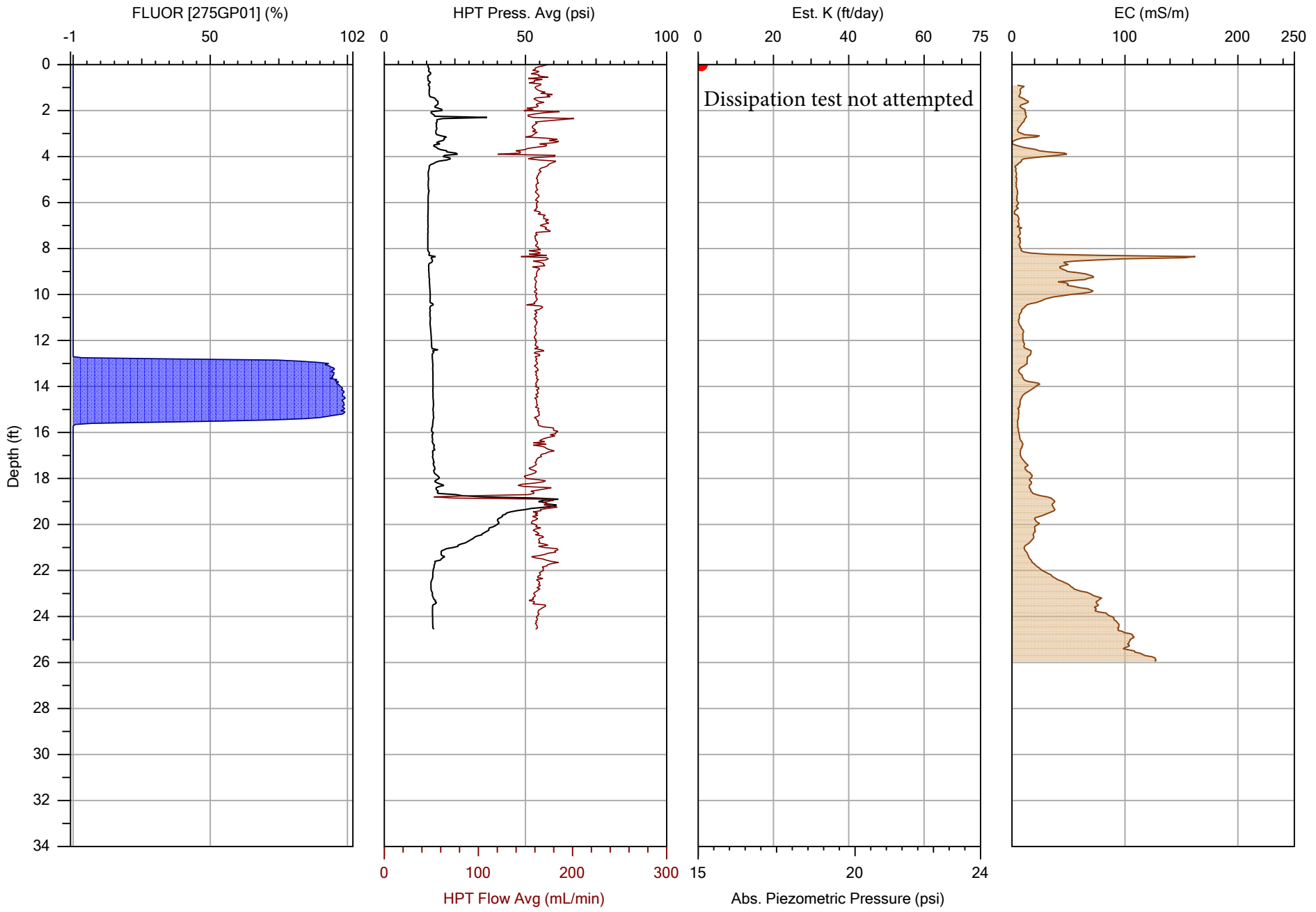
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/15/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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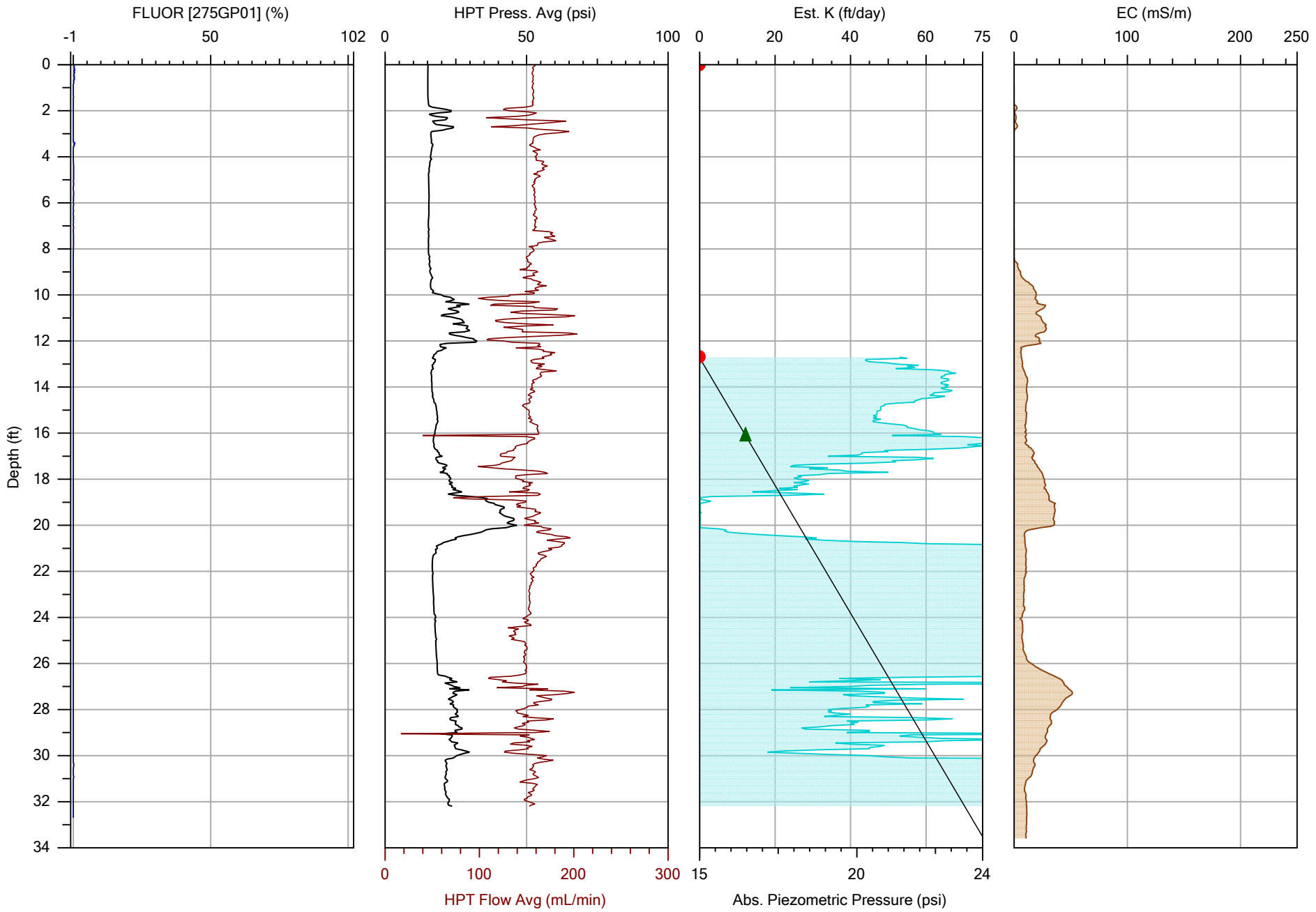
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/15/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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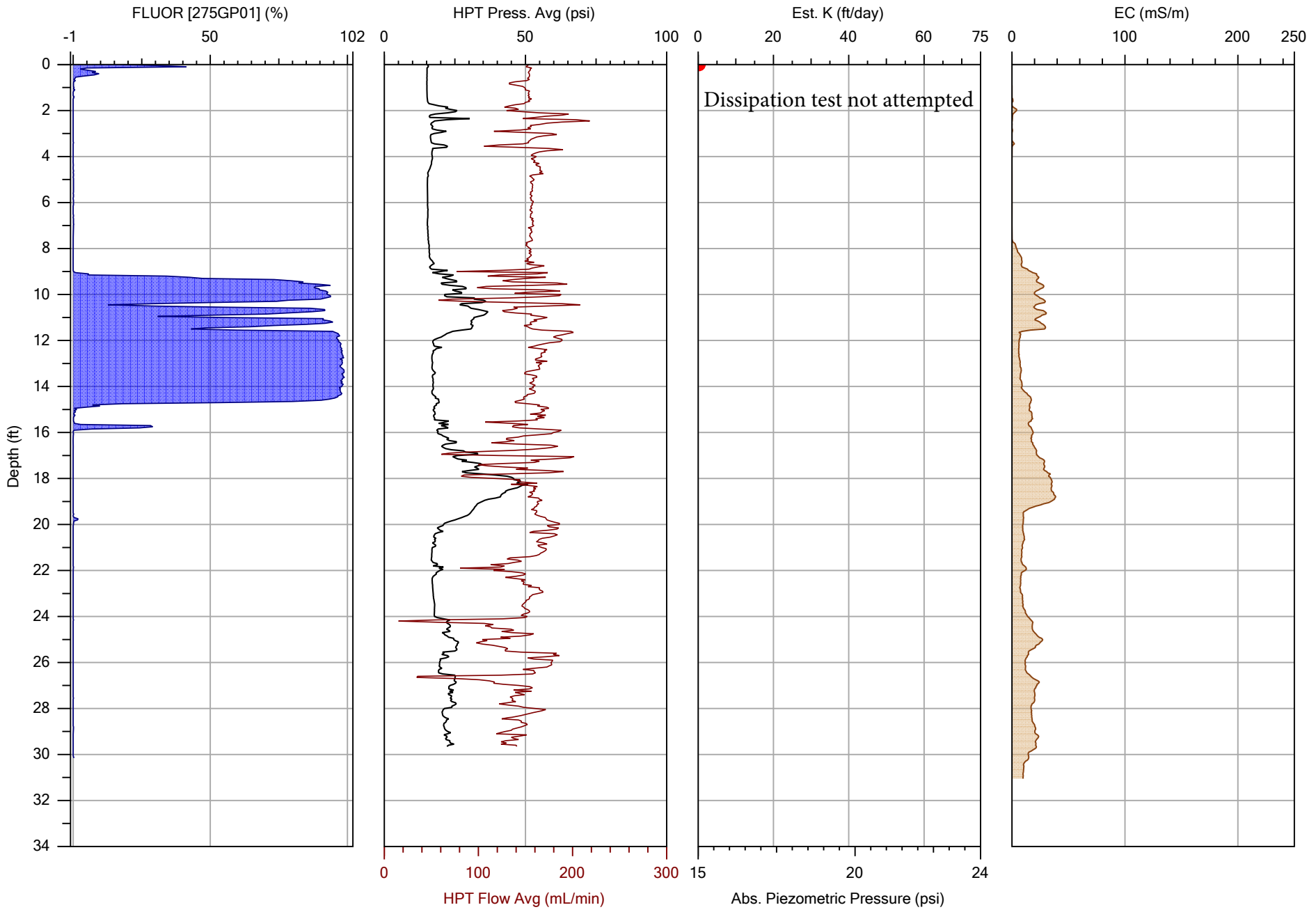
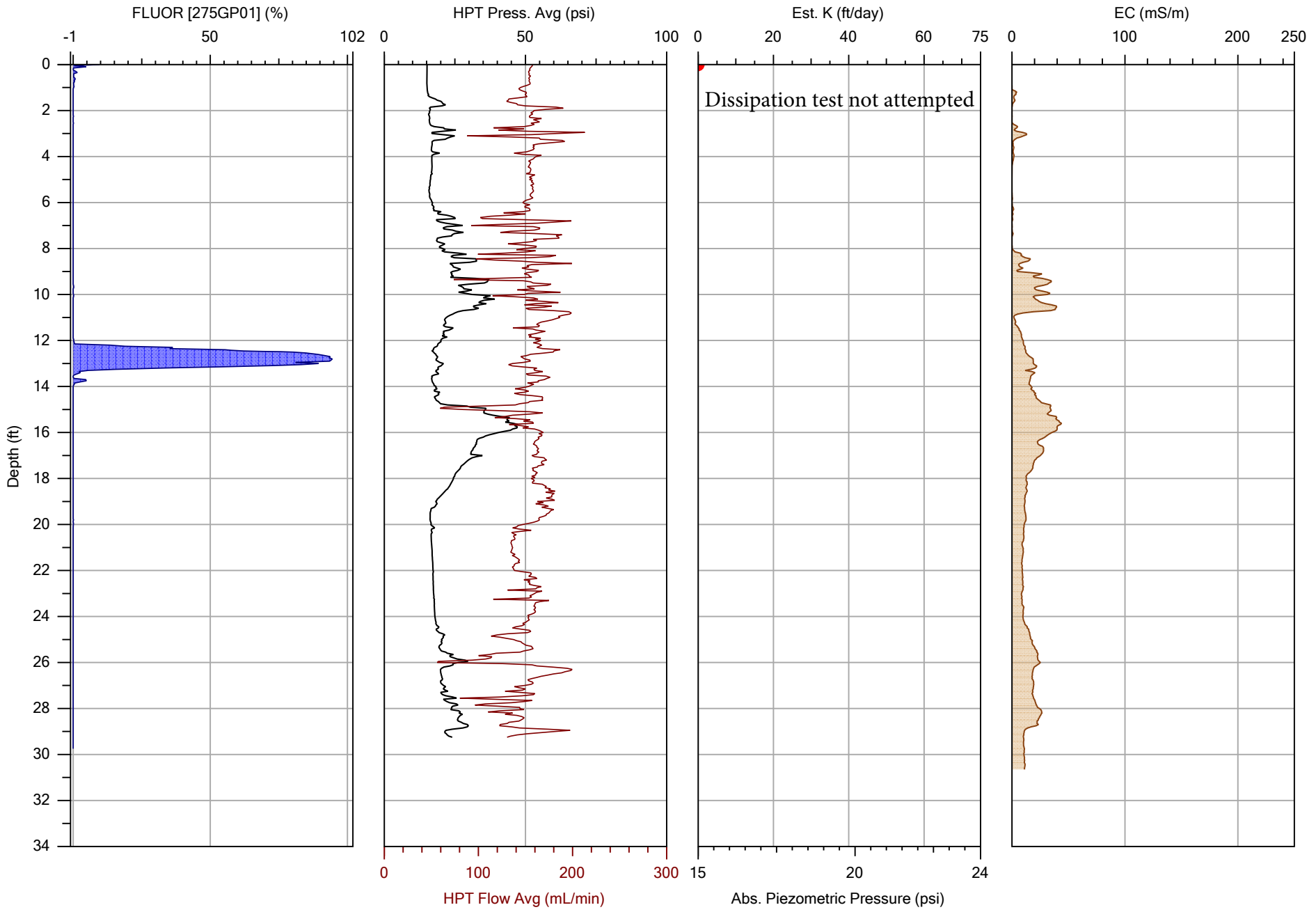
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/19/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

		File: AOPC5-OIP34.OIHP
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/19/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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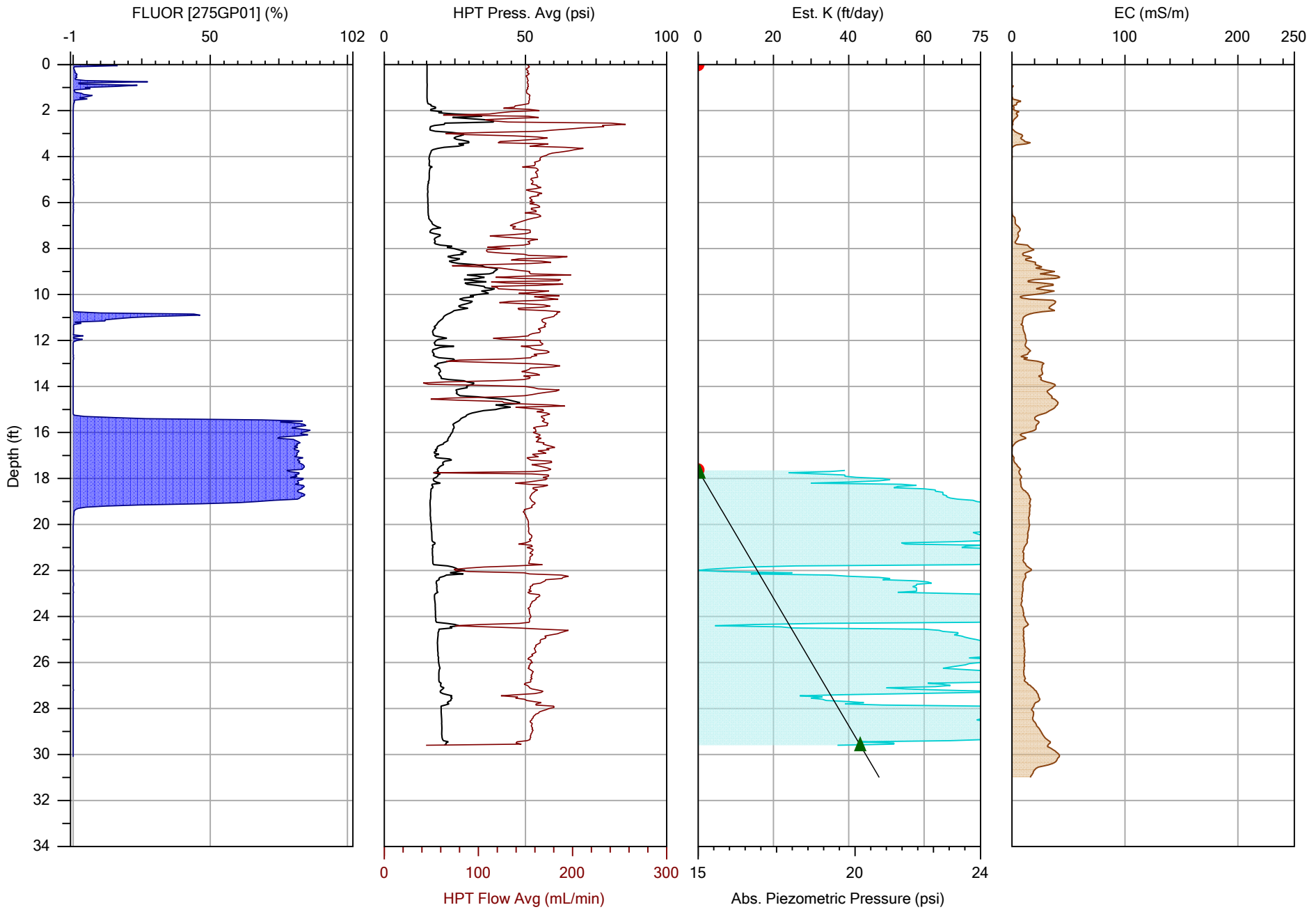
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/19/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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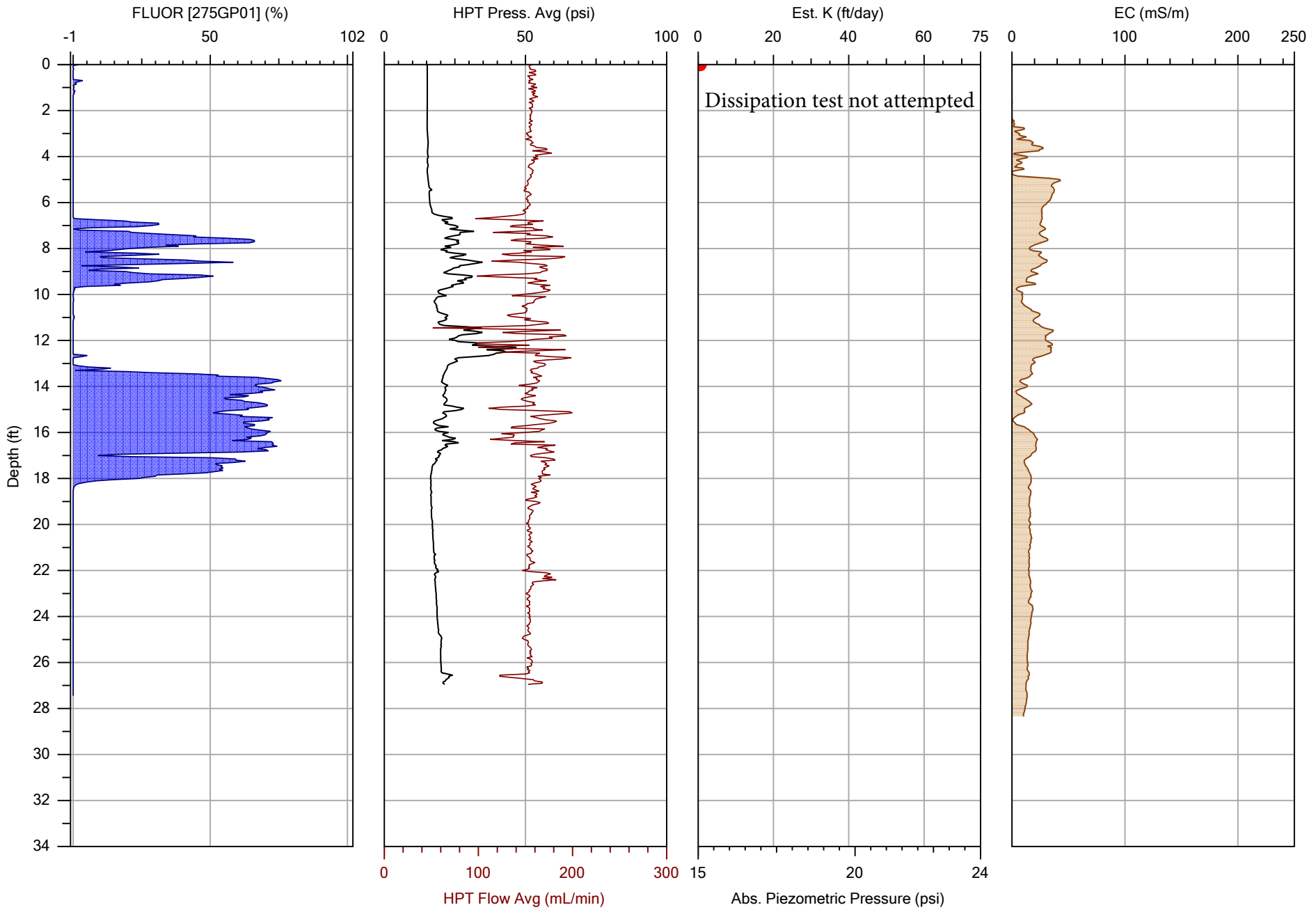
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/19/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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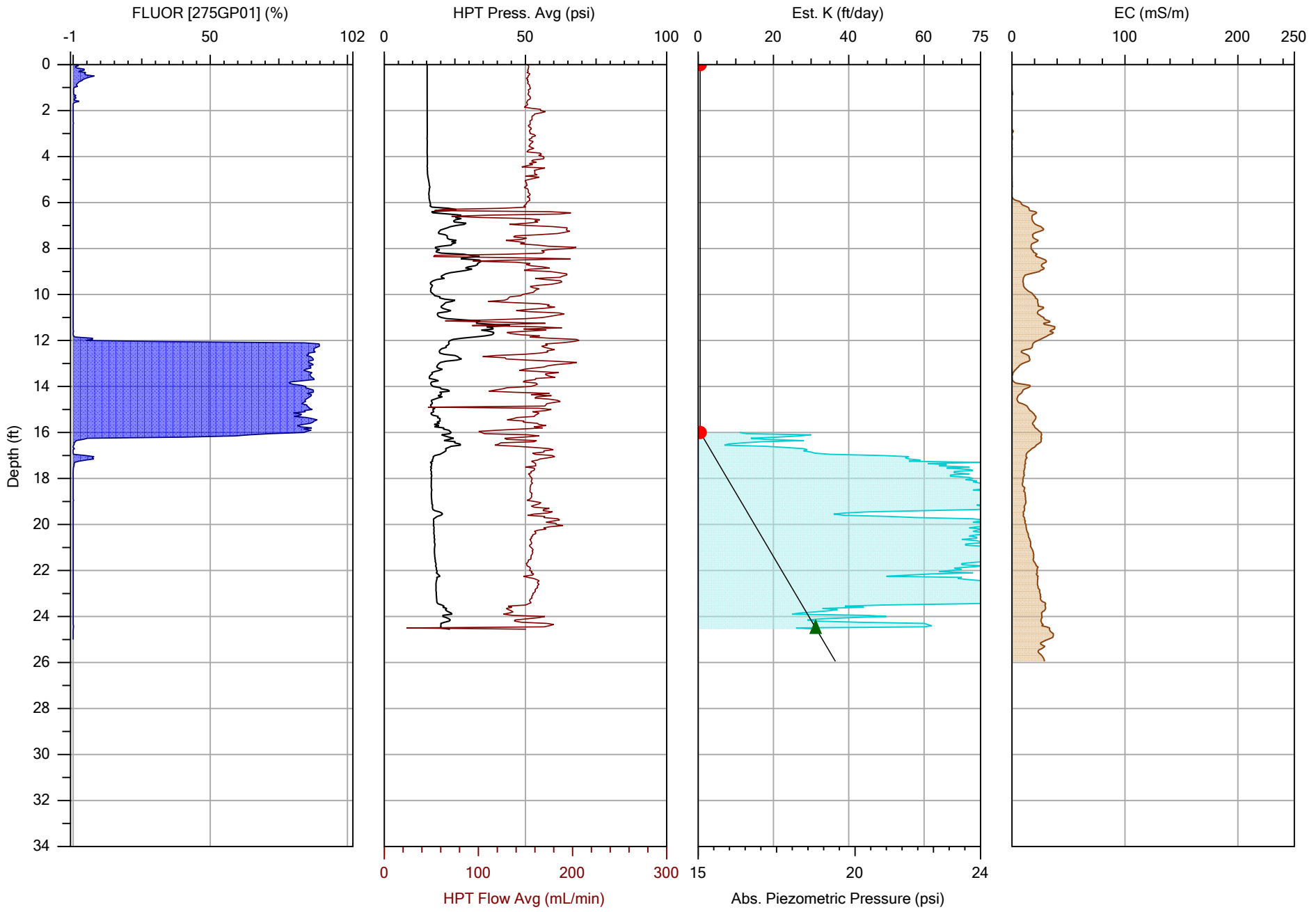
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/20/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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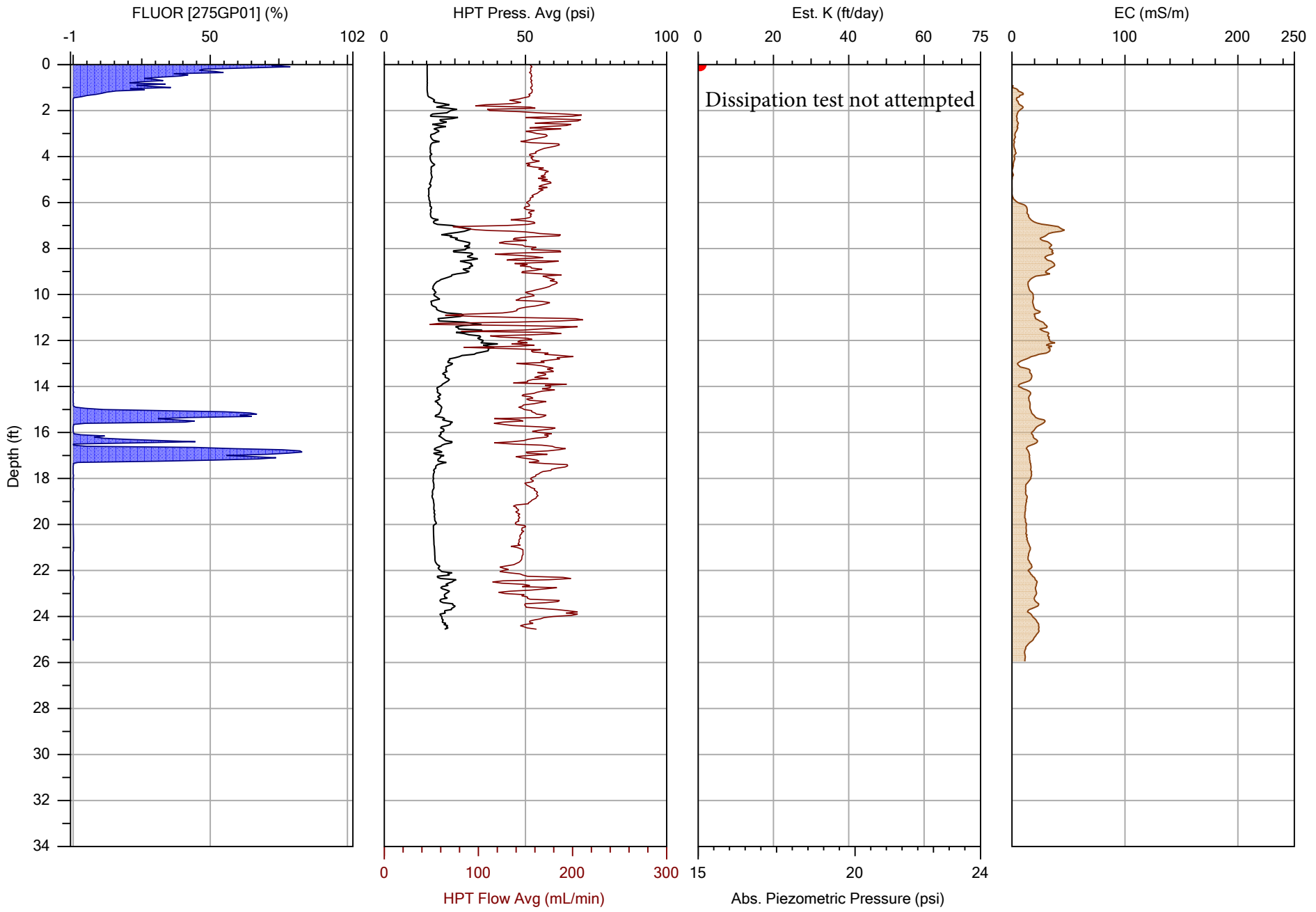
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/20/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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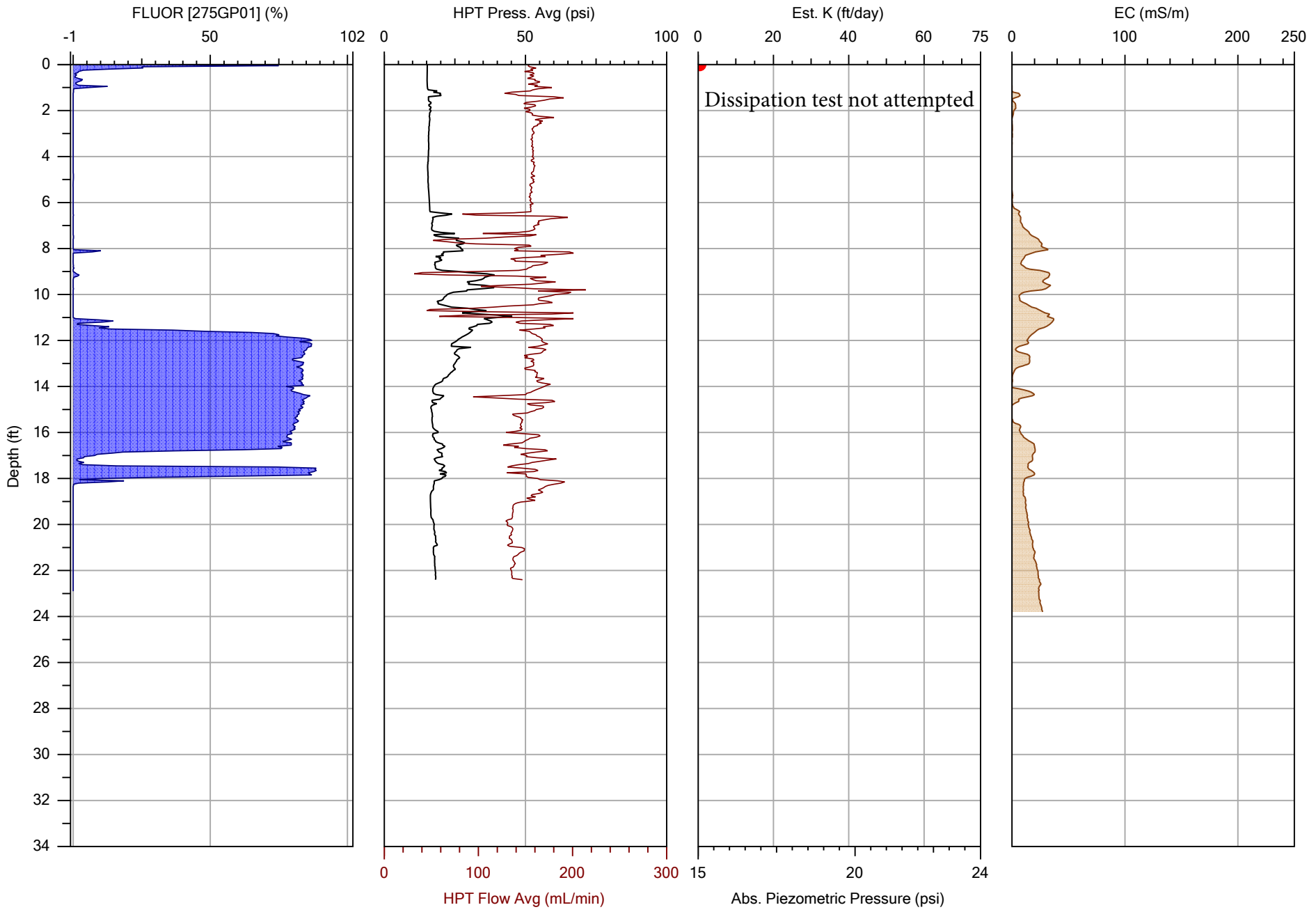
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/20/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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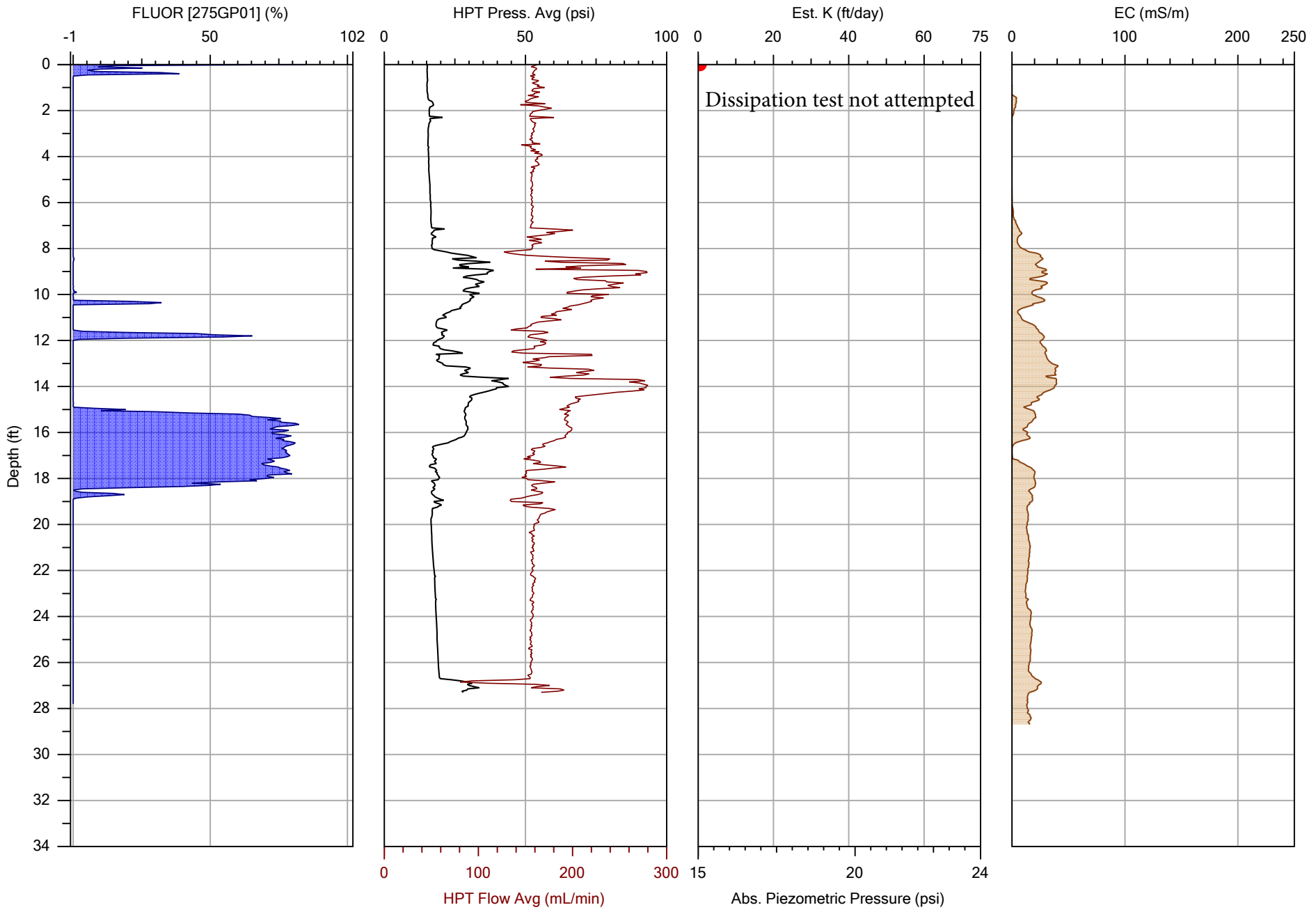
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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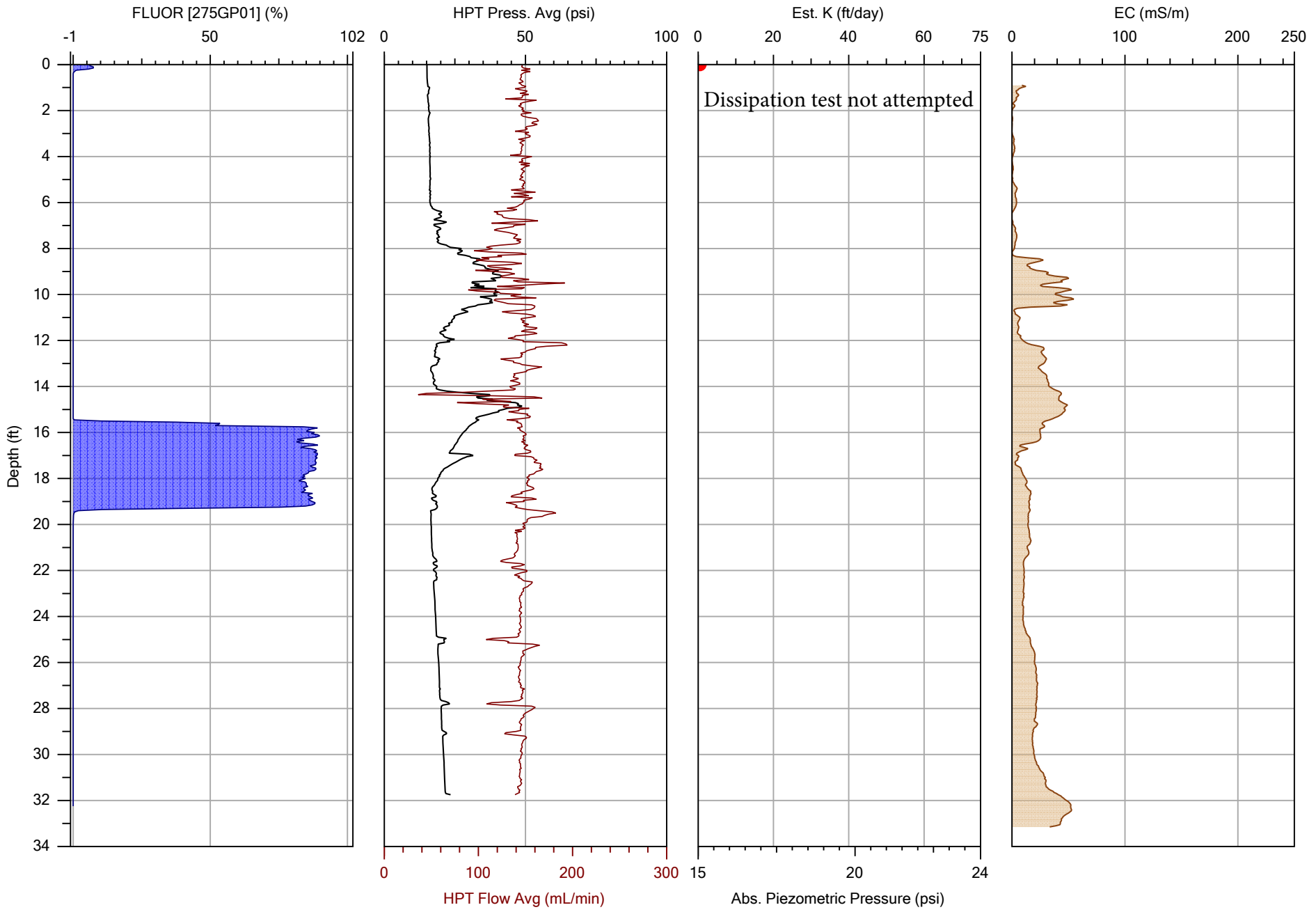
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/20/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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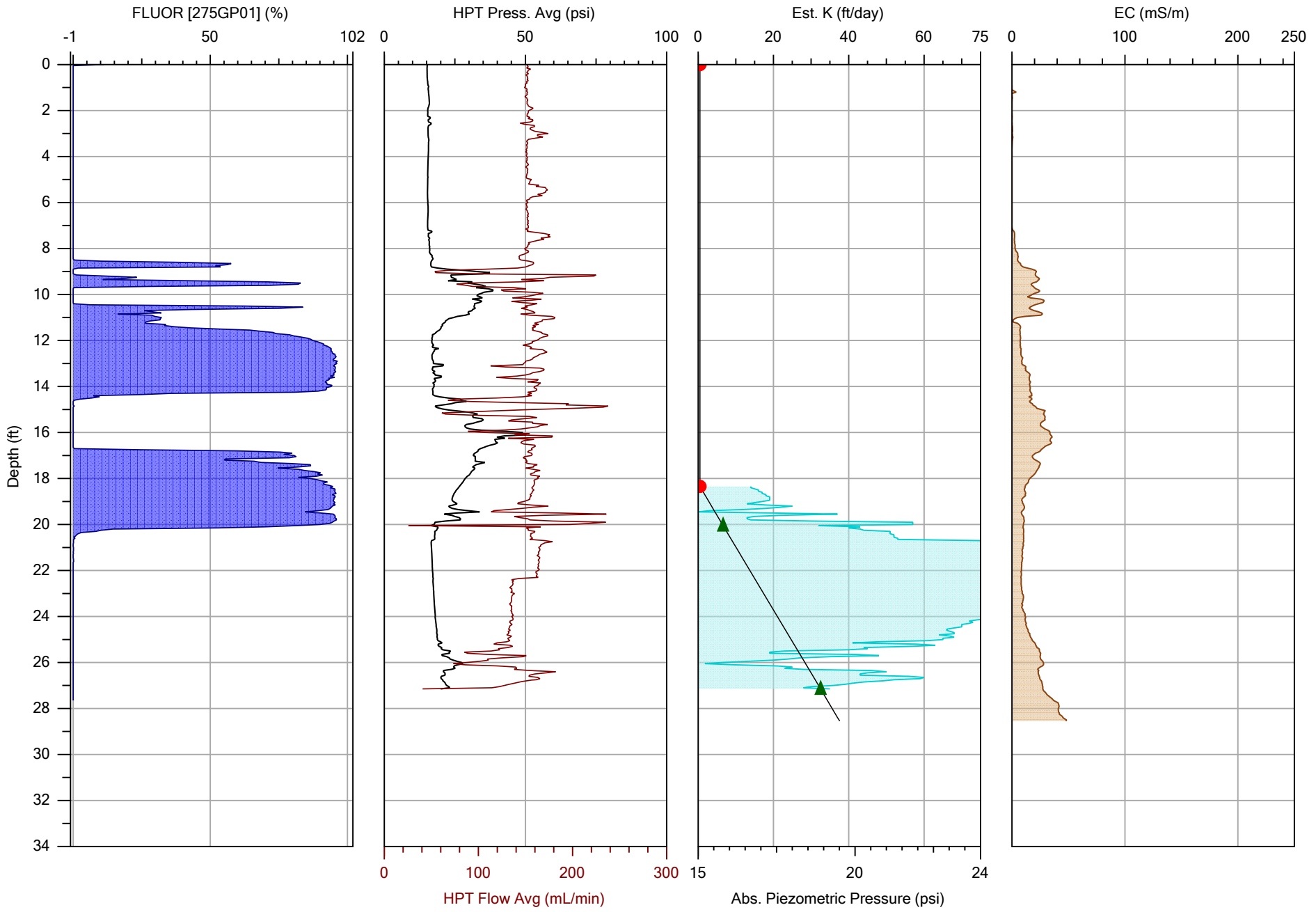
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/20/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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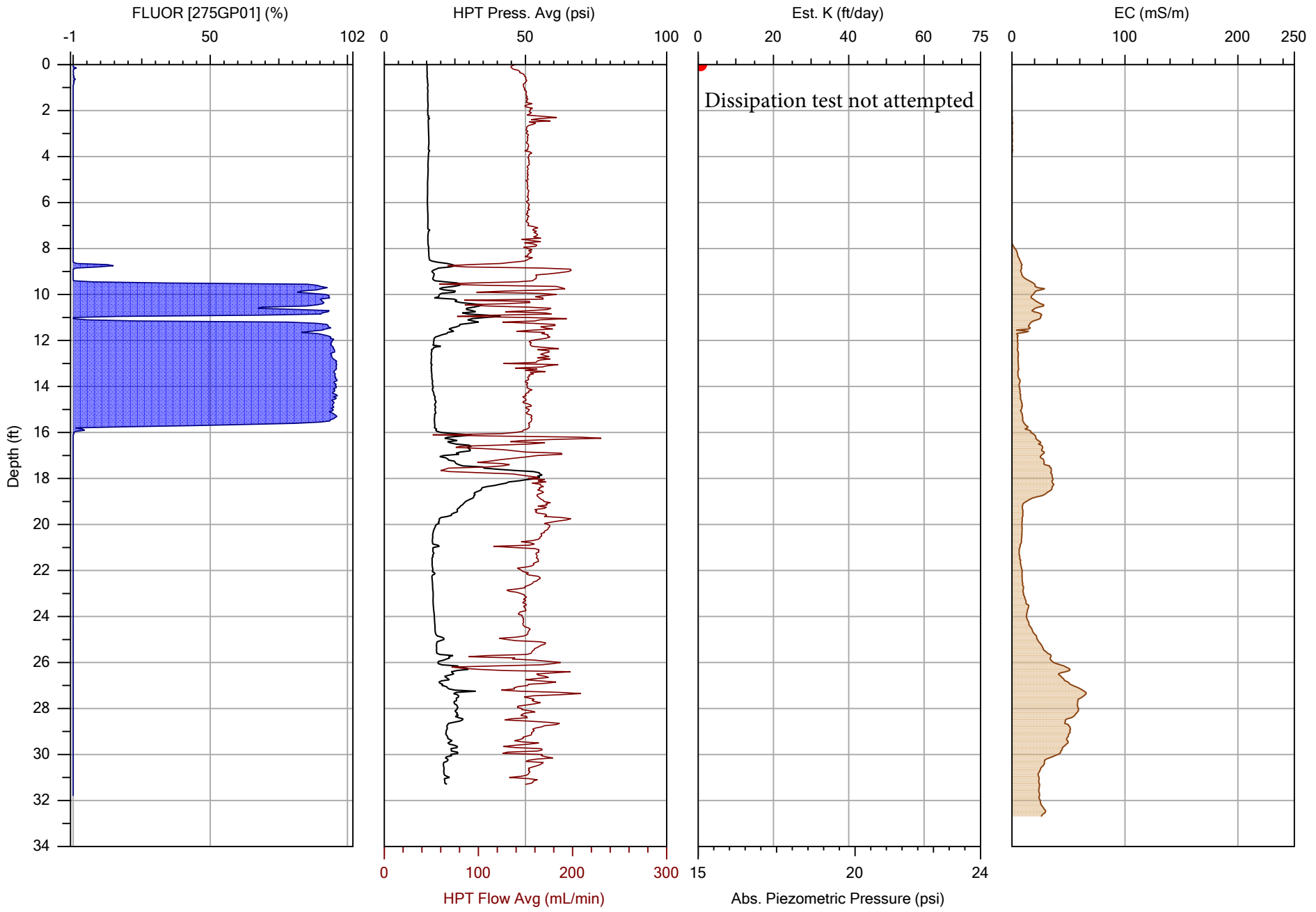
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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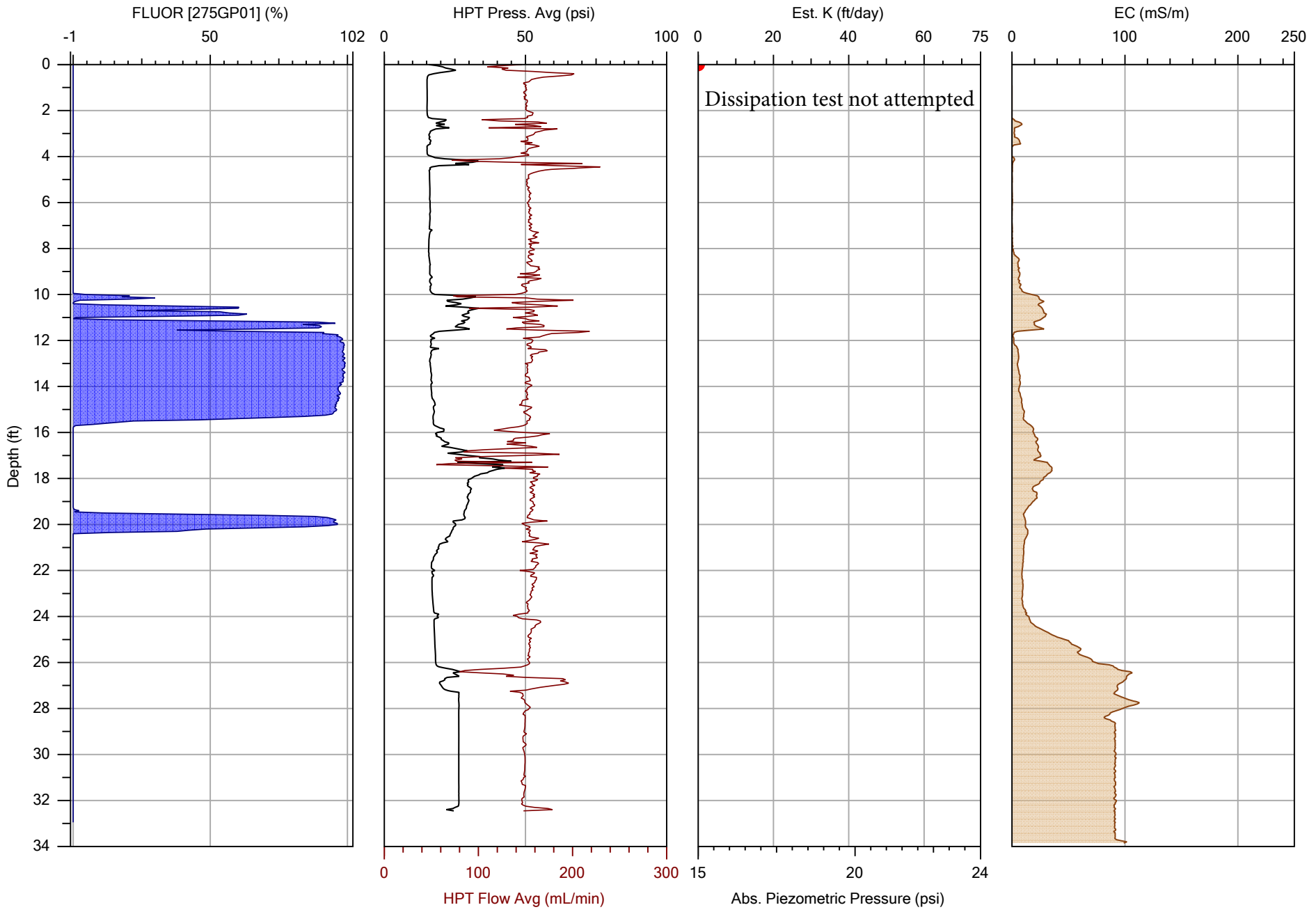
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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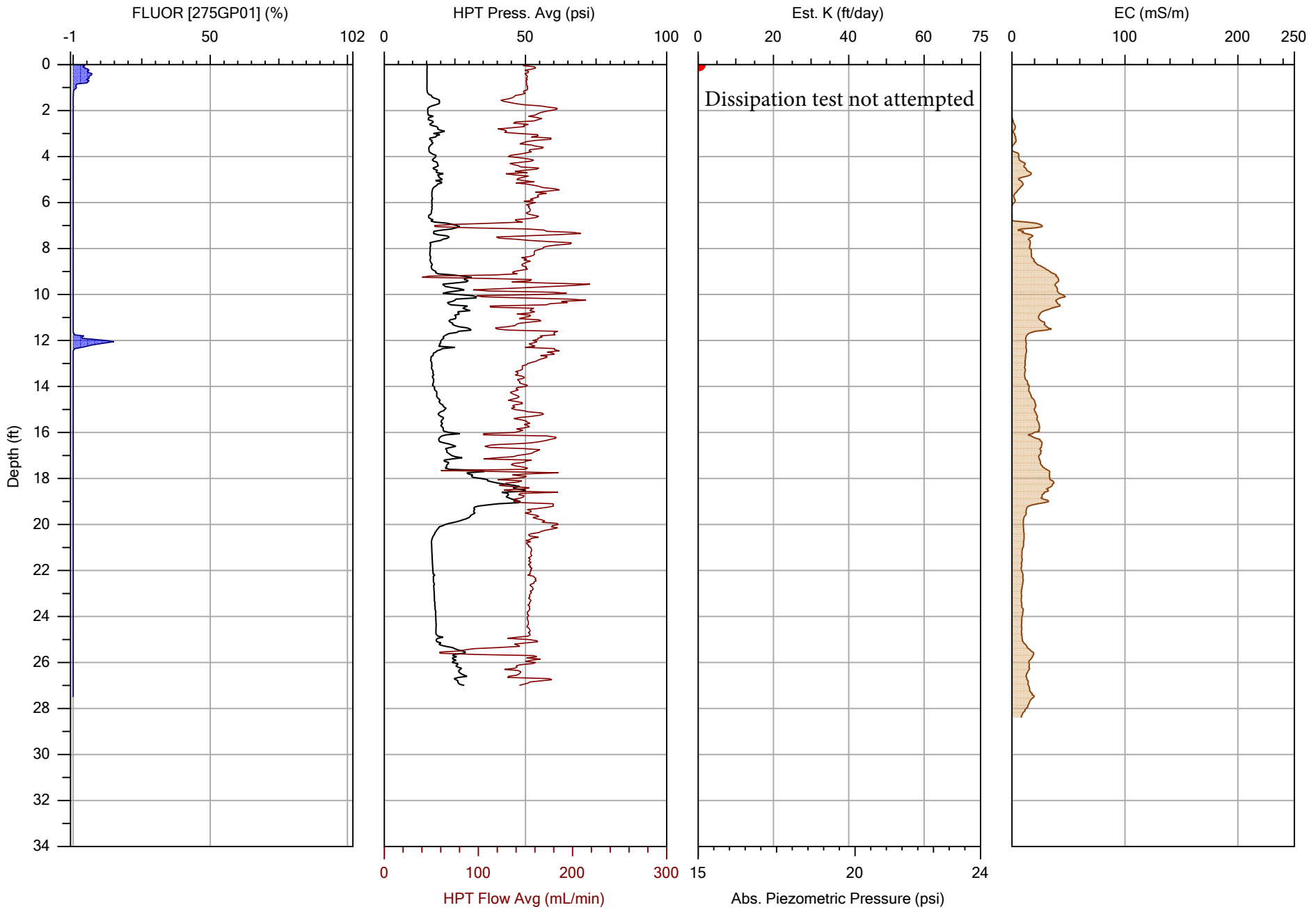

COLUMBIA TECHNOLOGIES

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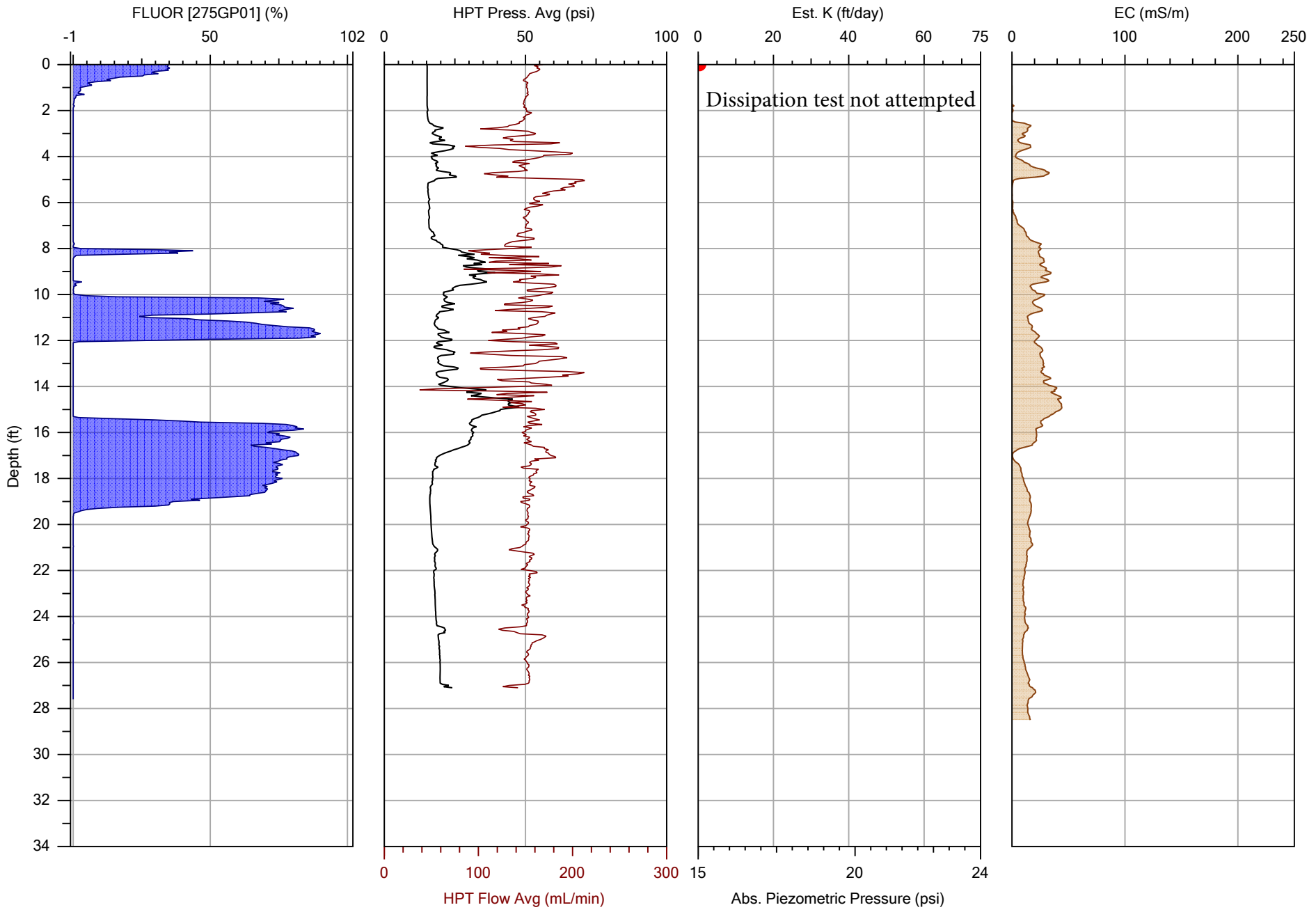
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/20/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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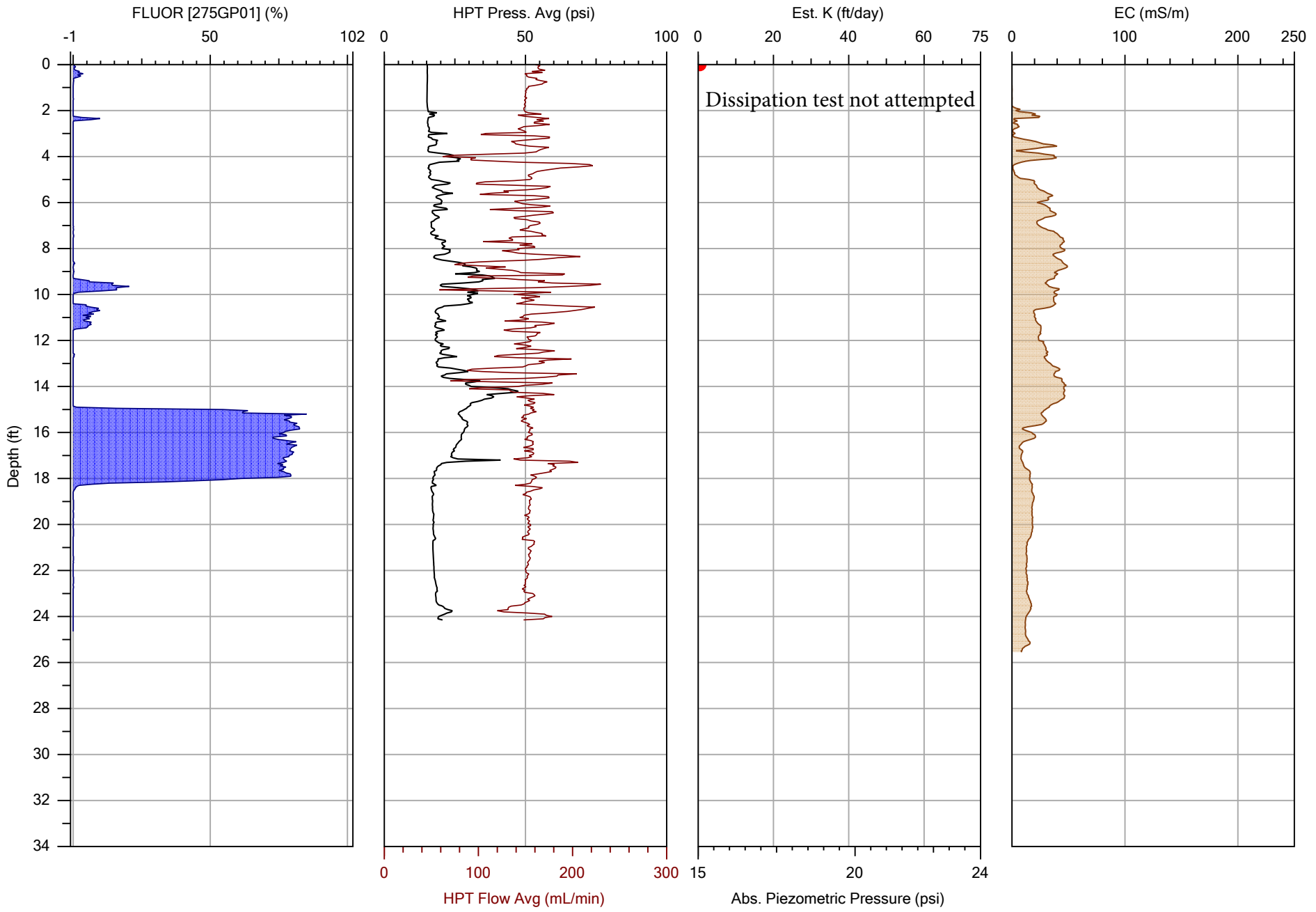
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/20/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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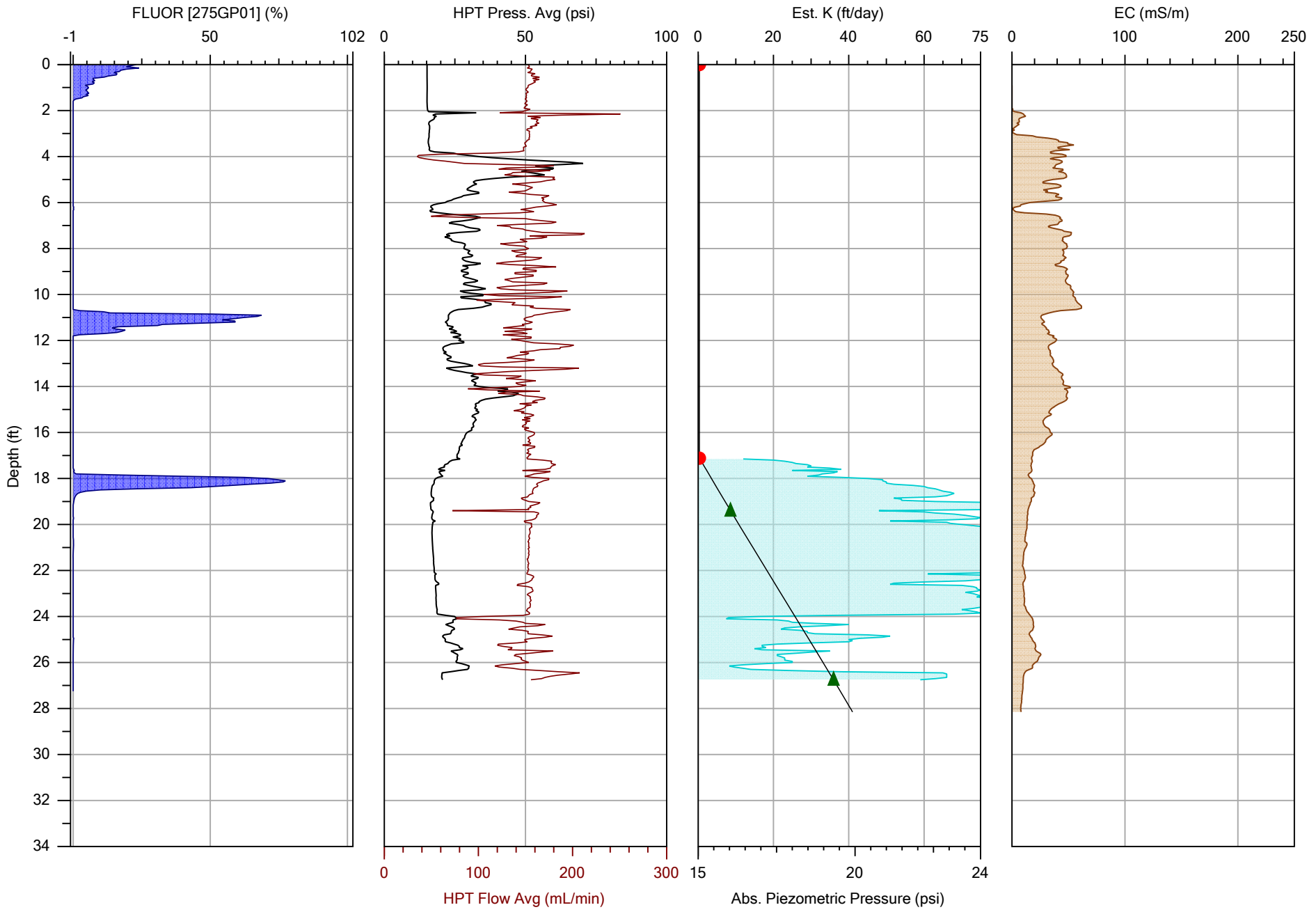
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/20/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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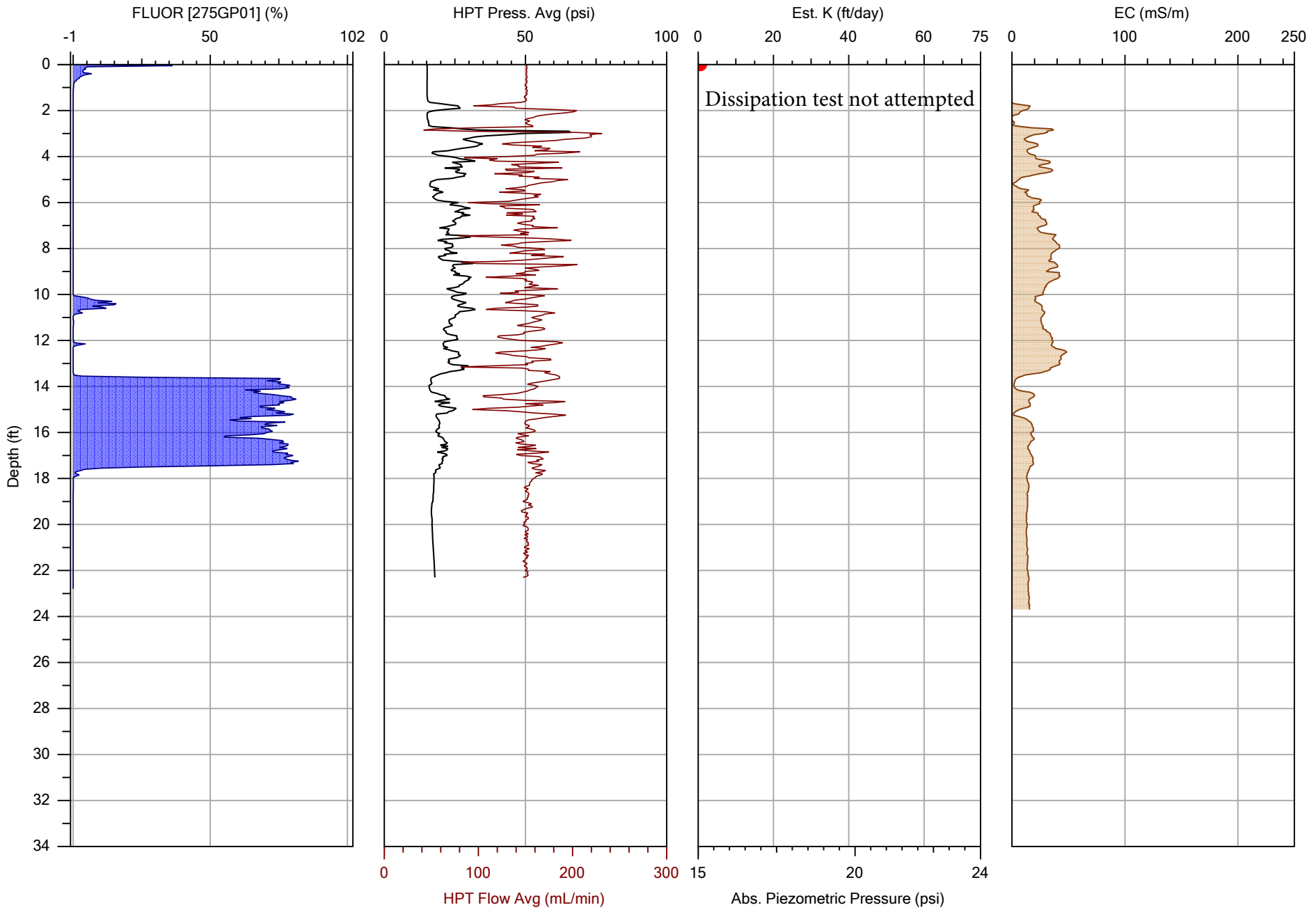
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/20/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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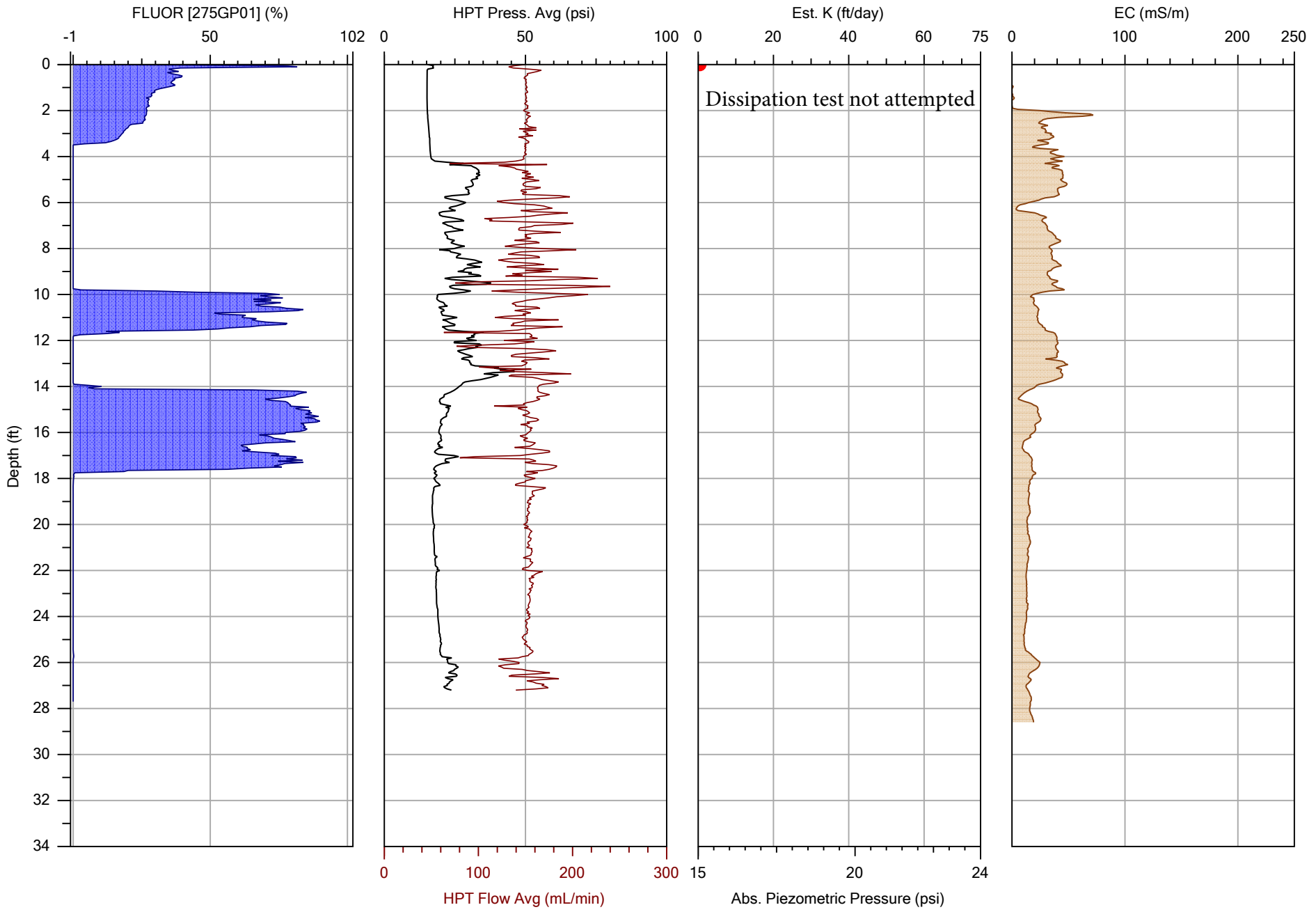
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/20/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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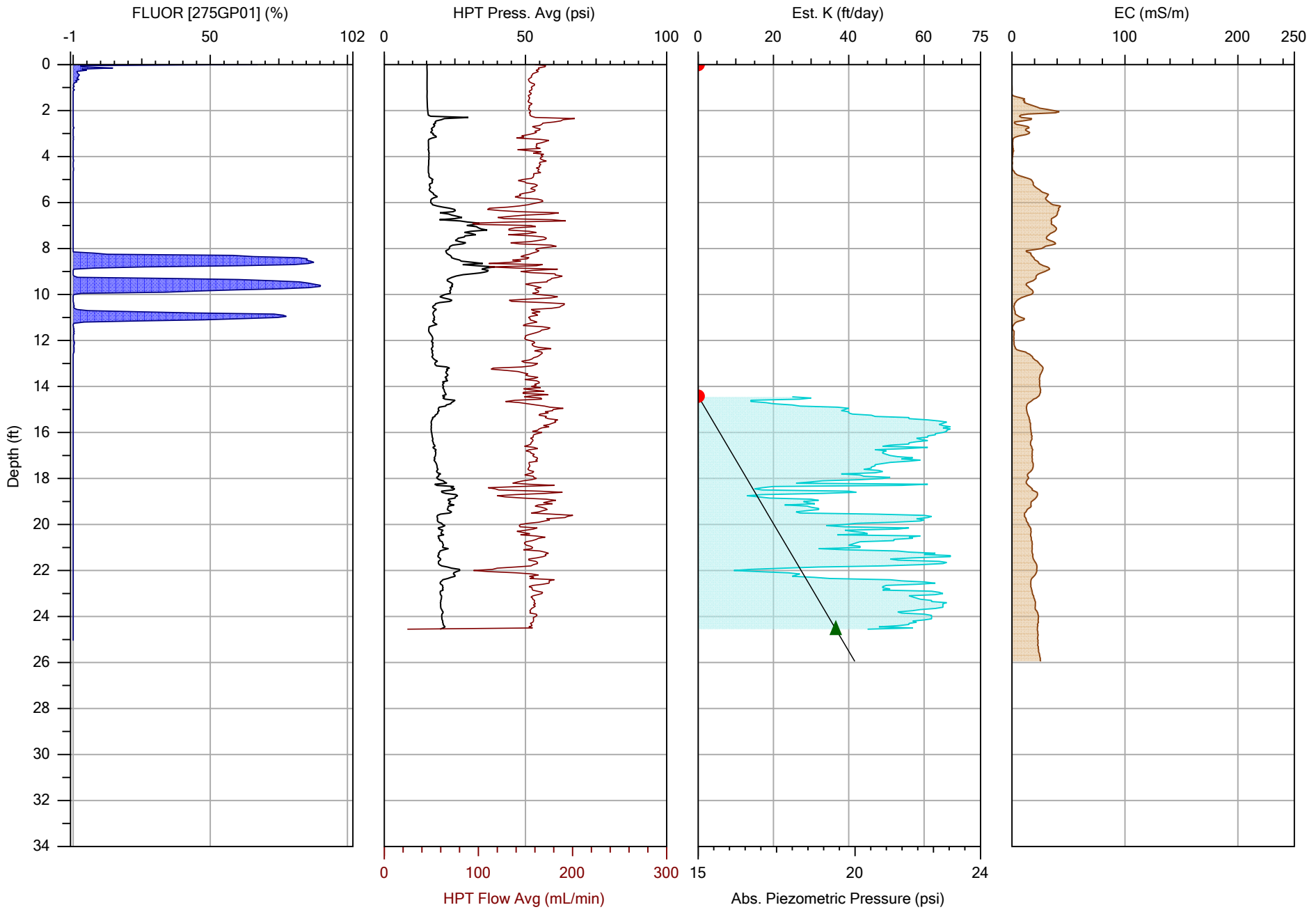
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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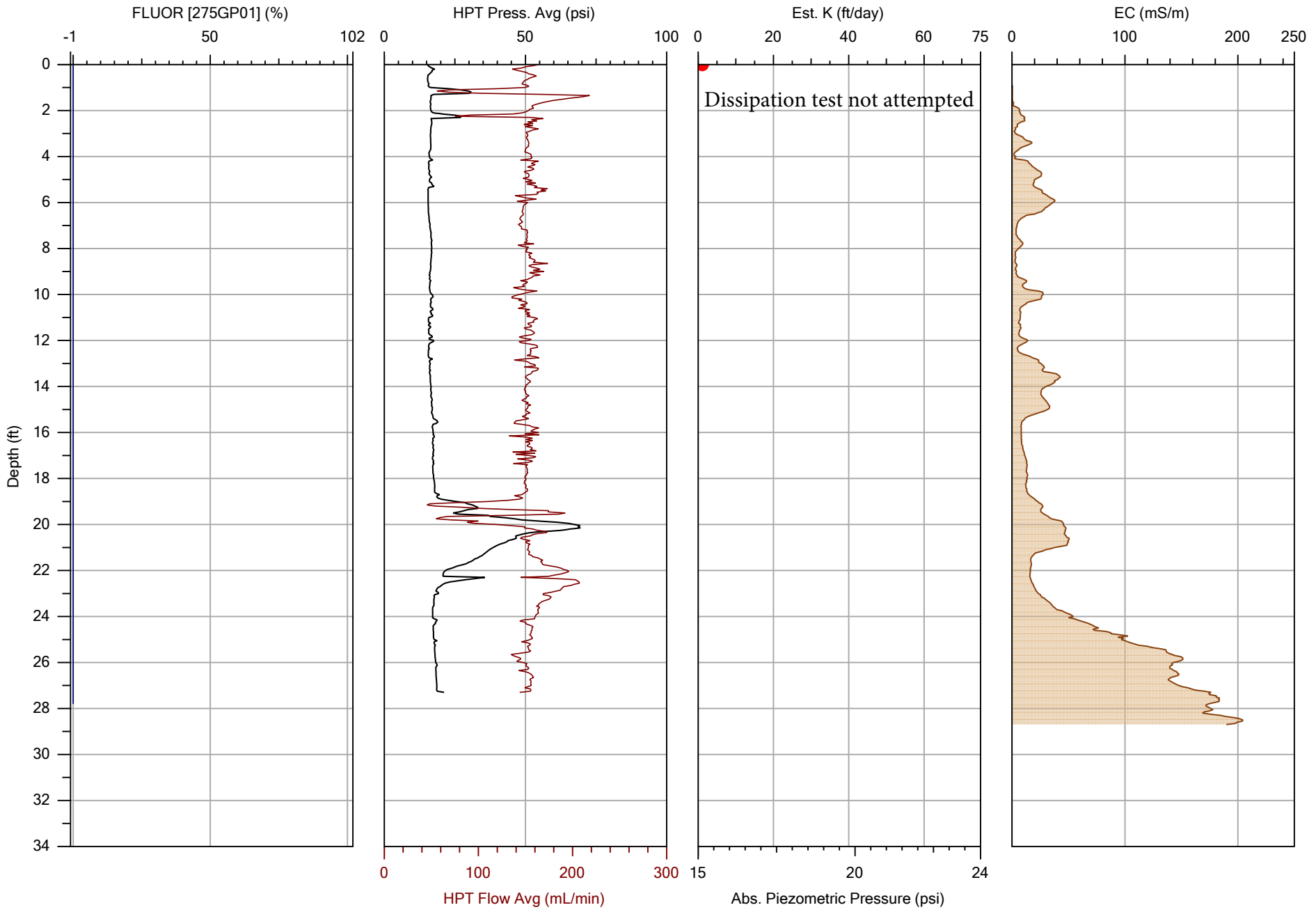
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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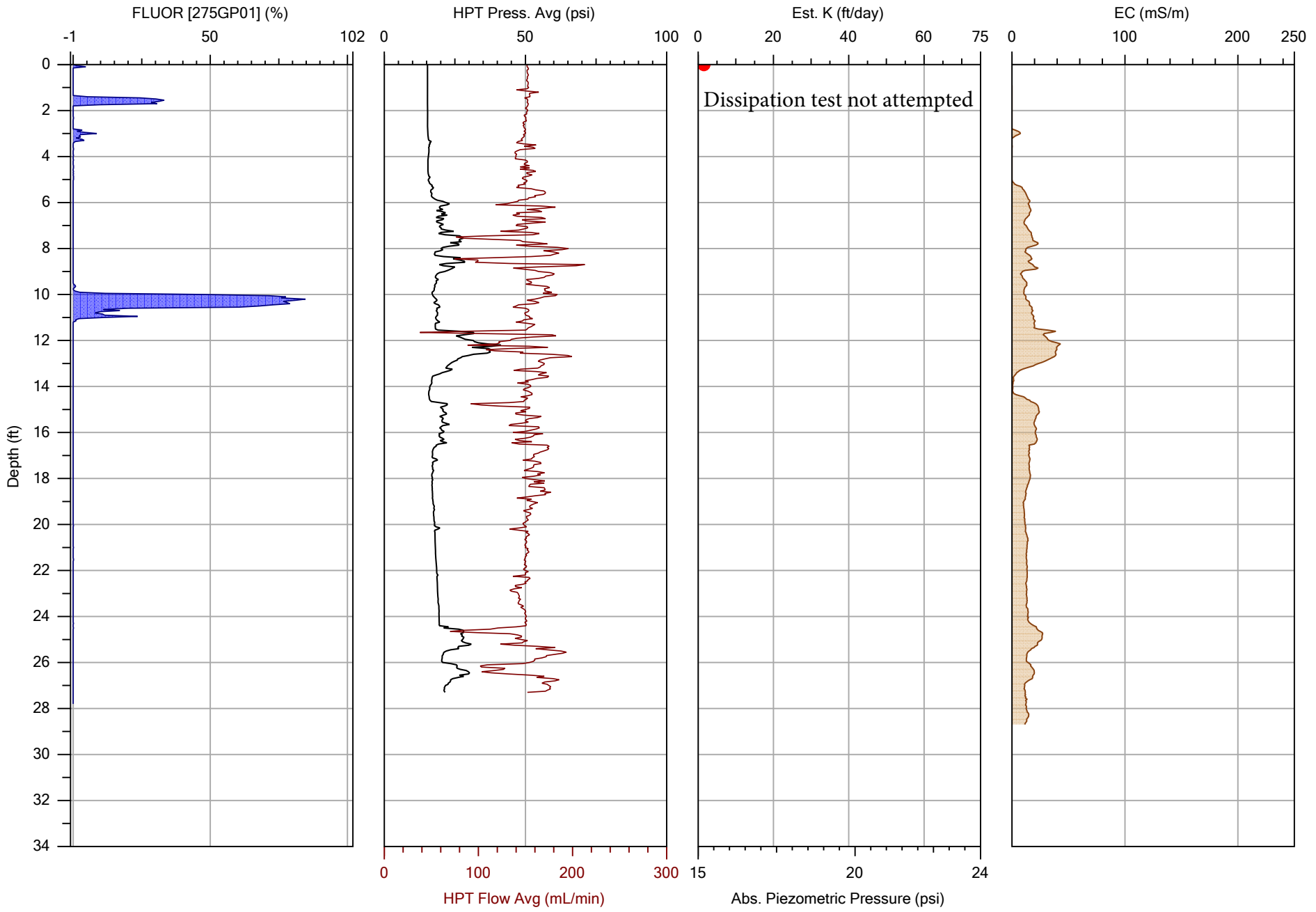
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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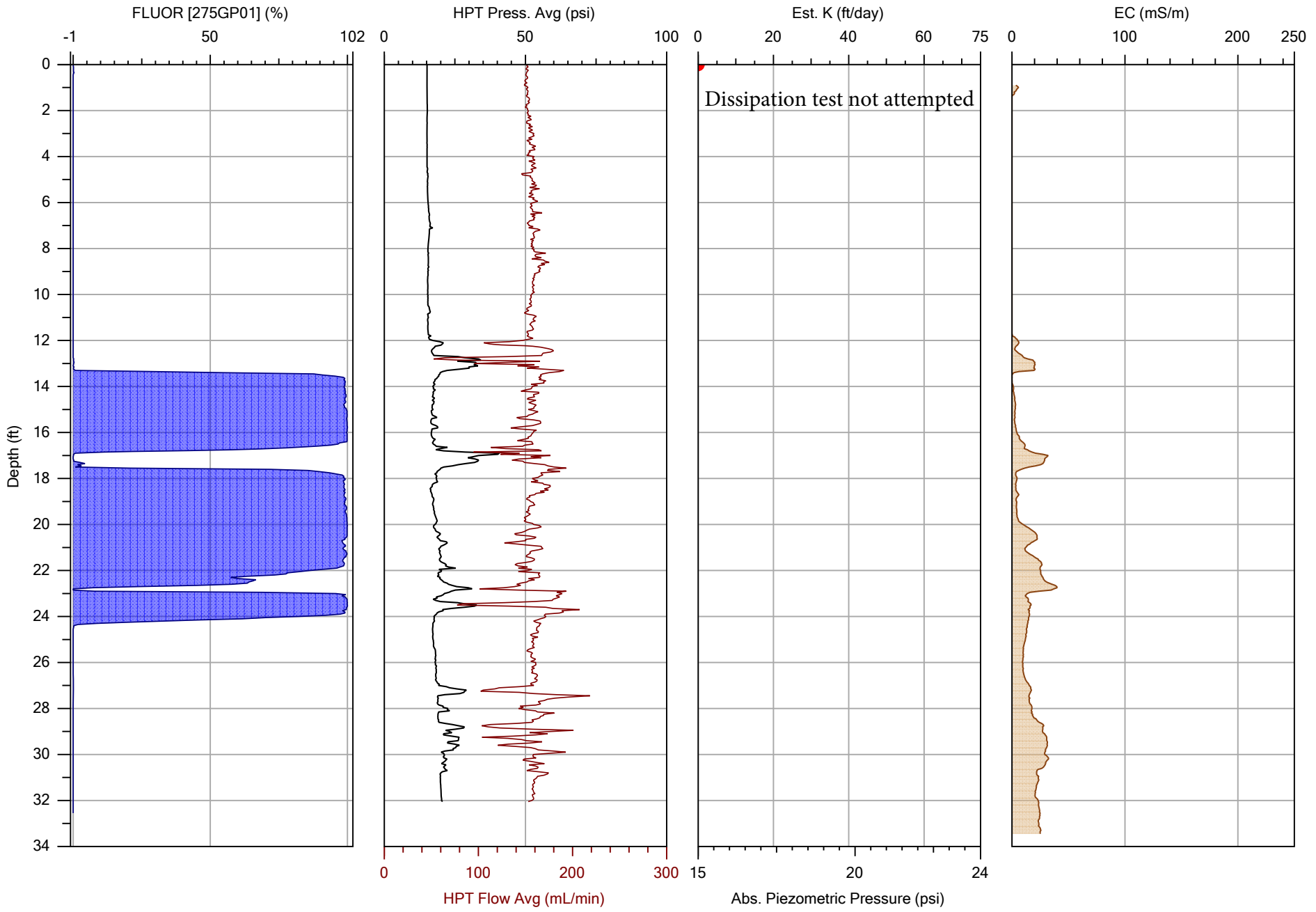
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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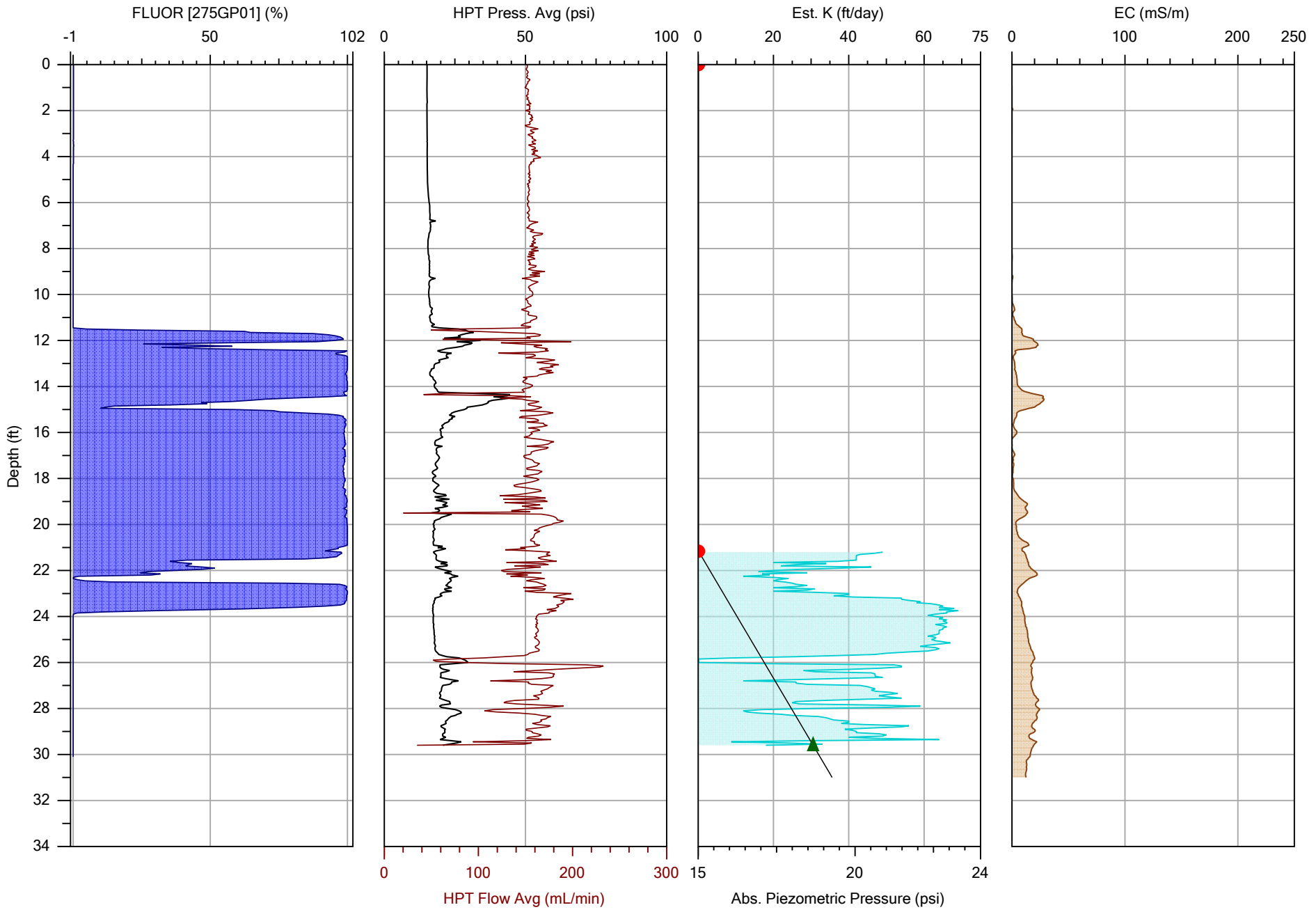
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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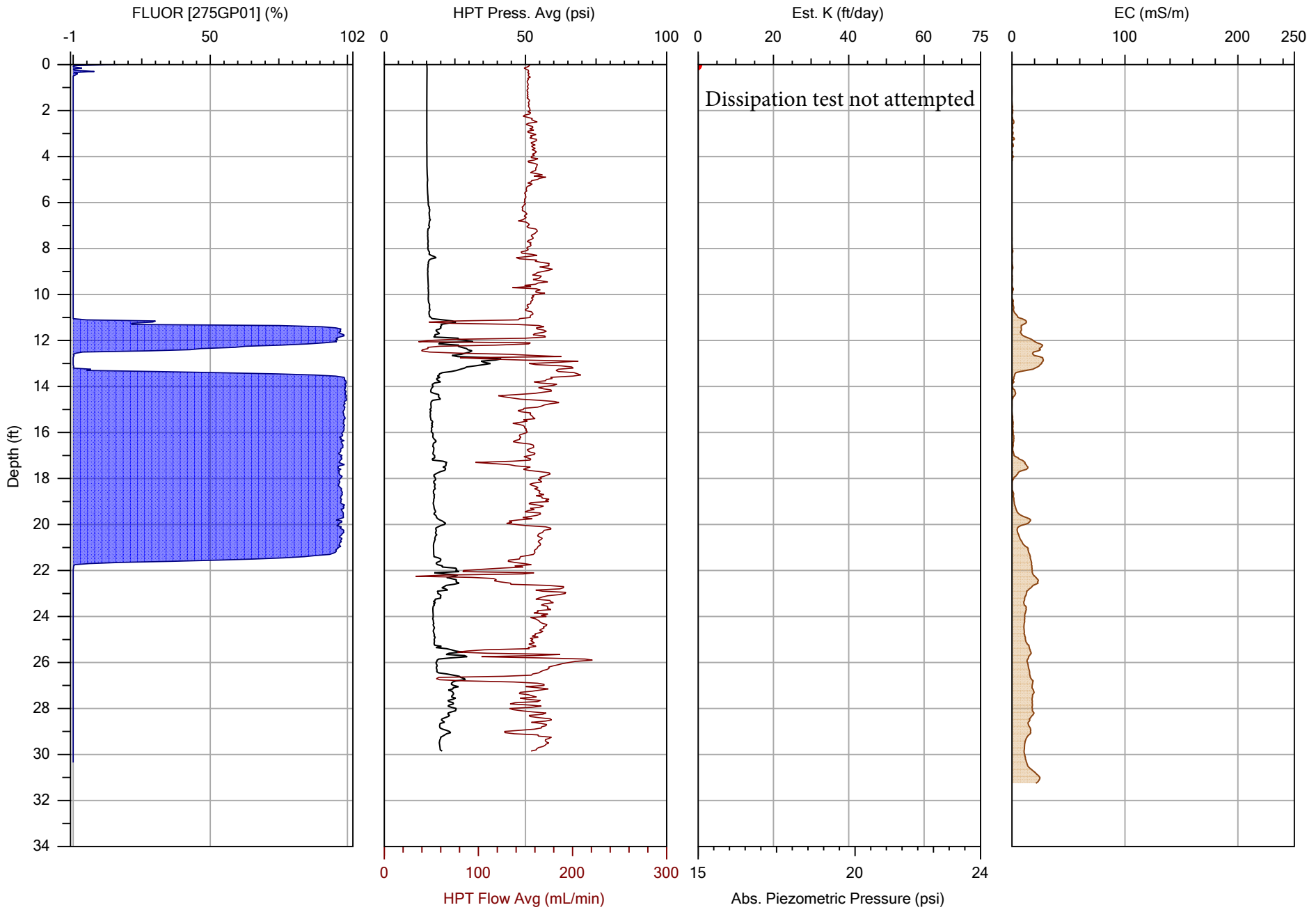
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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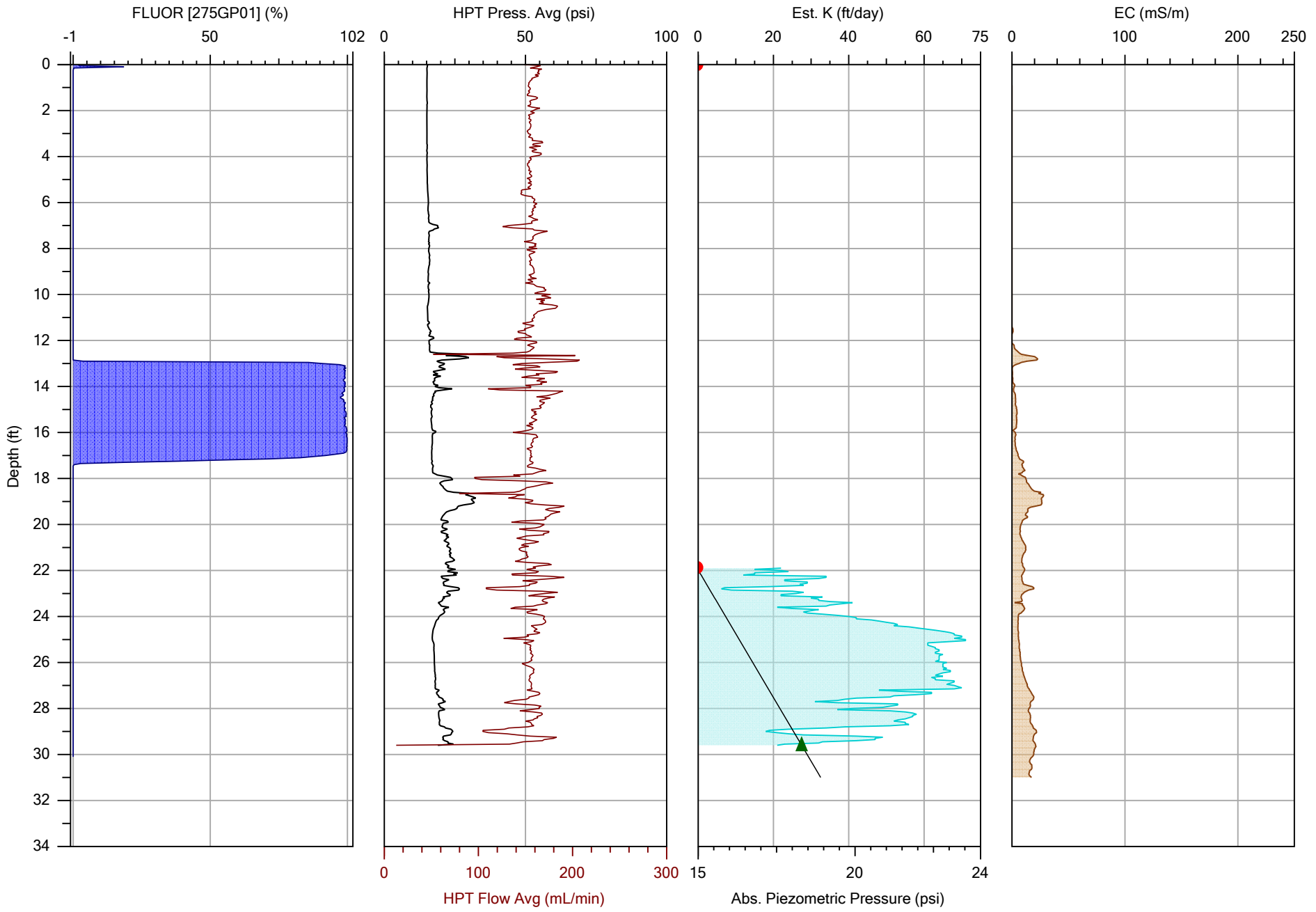
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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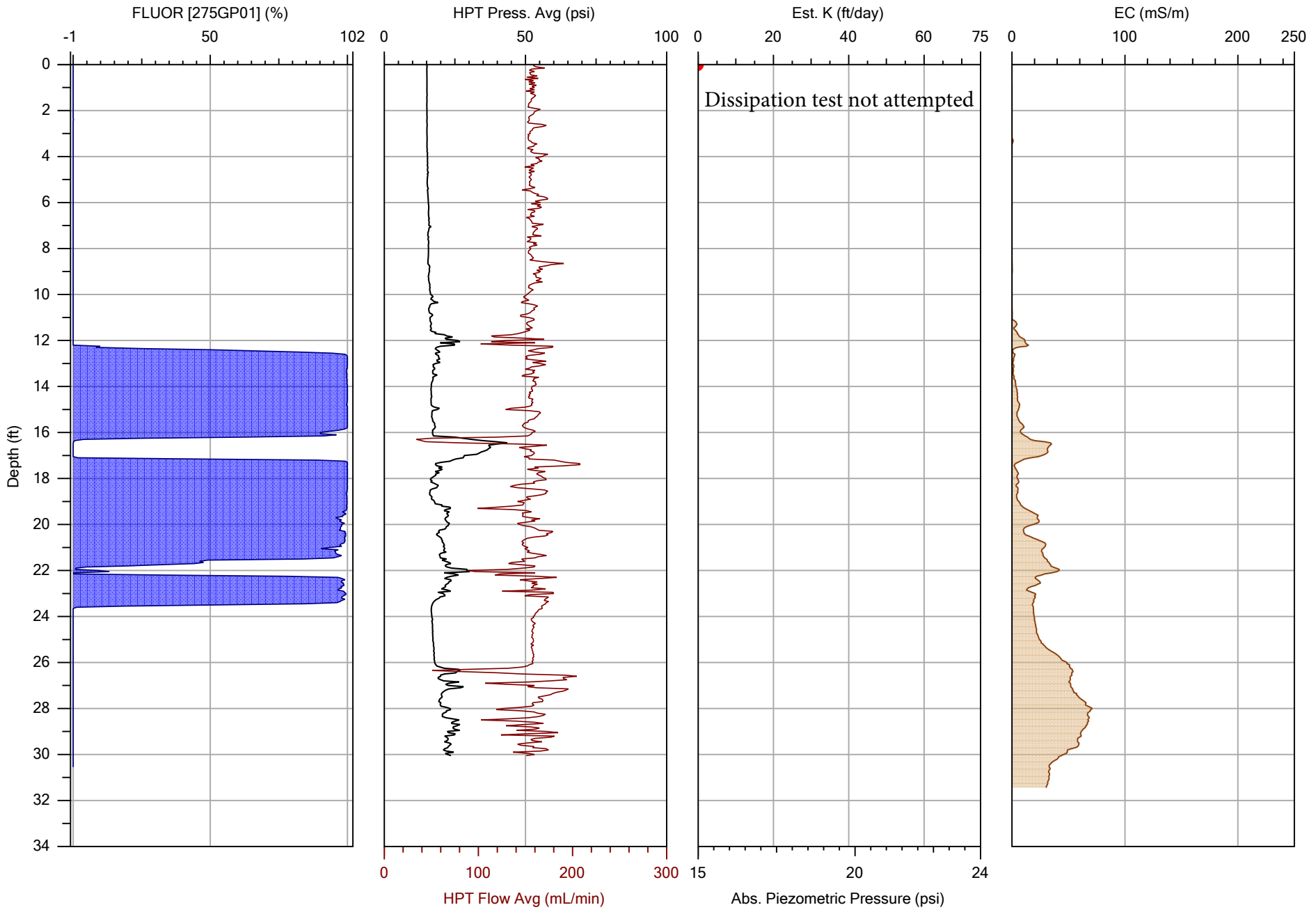
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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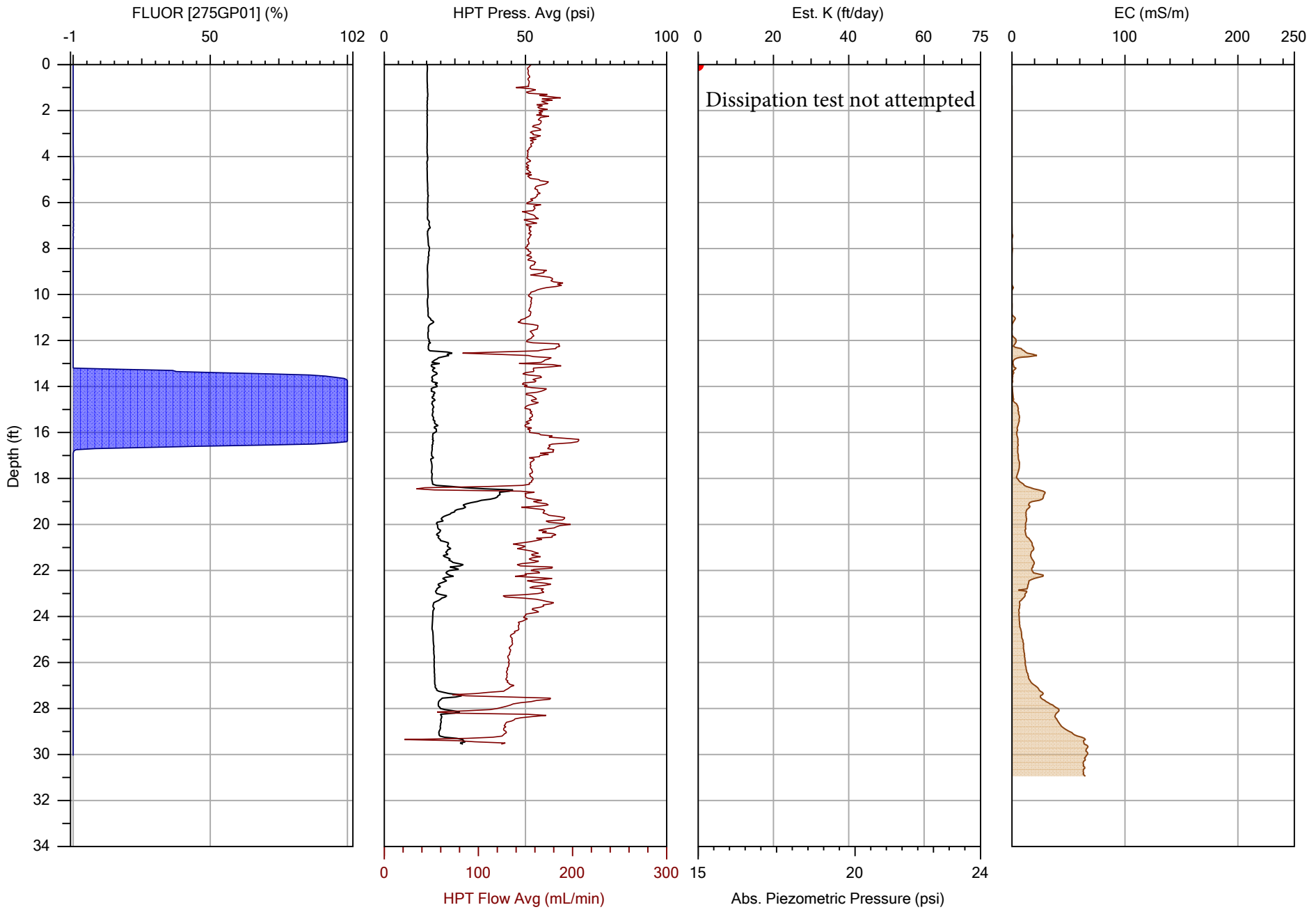
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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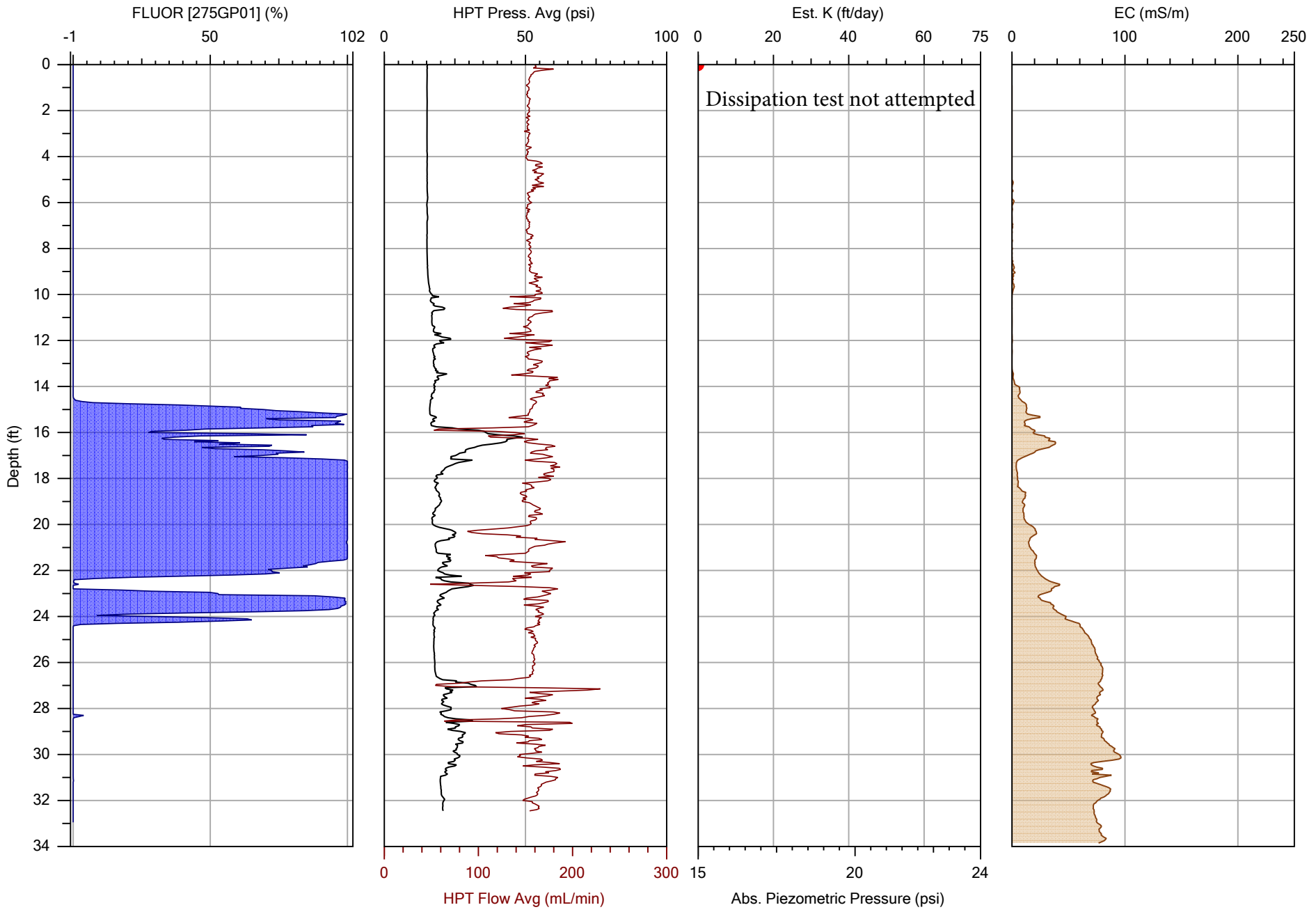
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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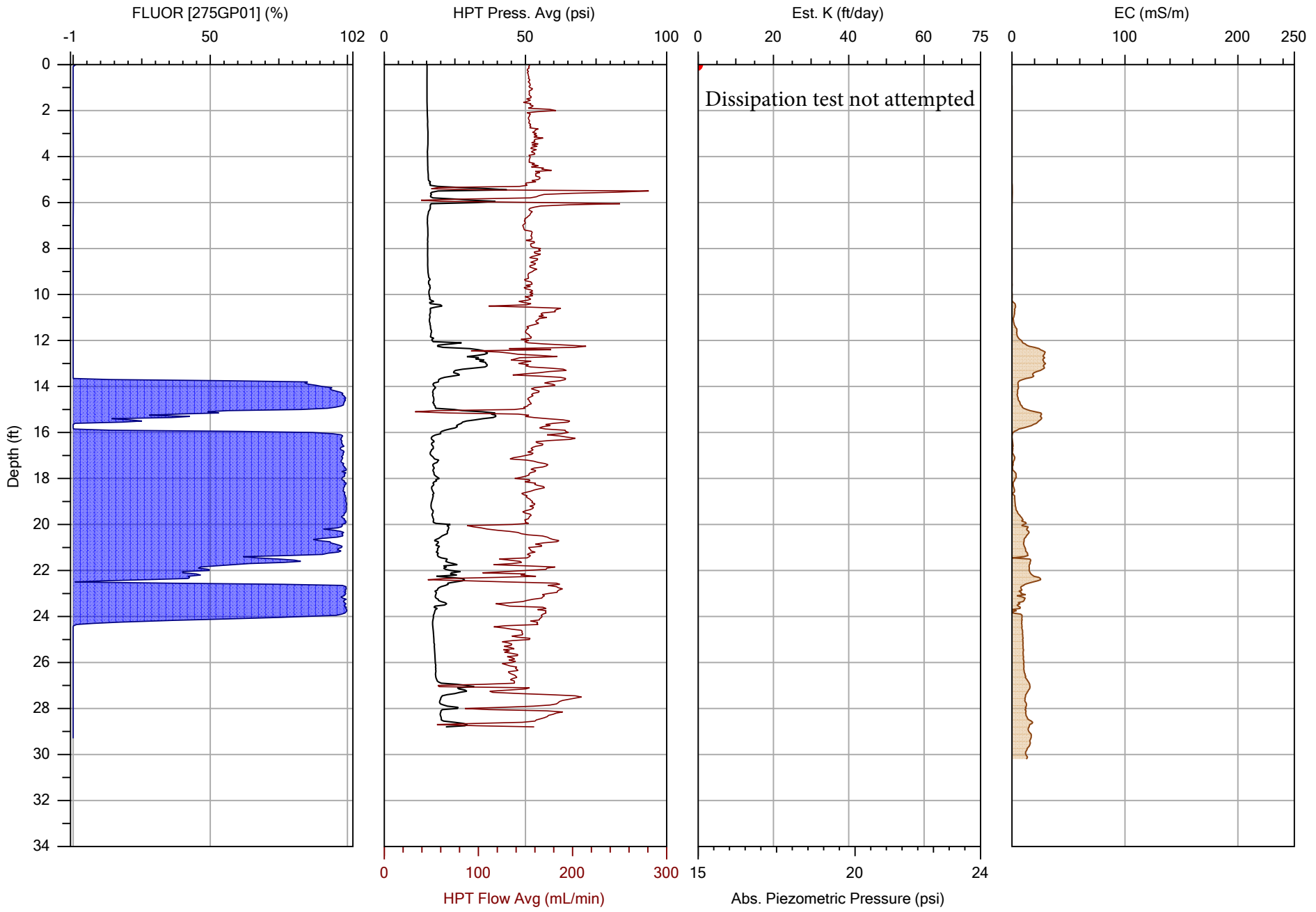
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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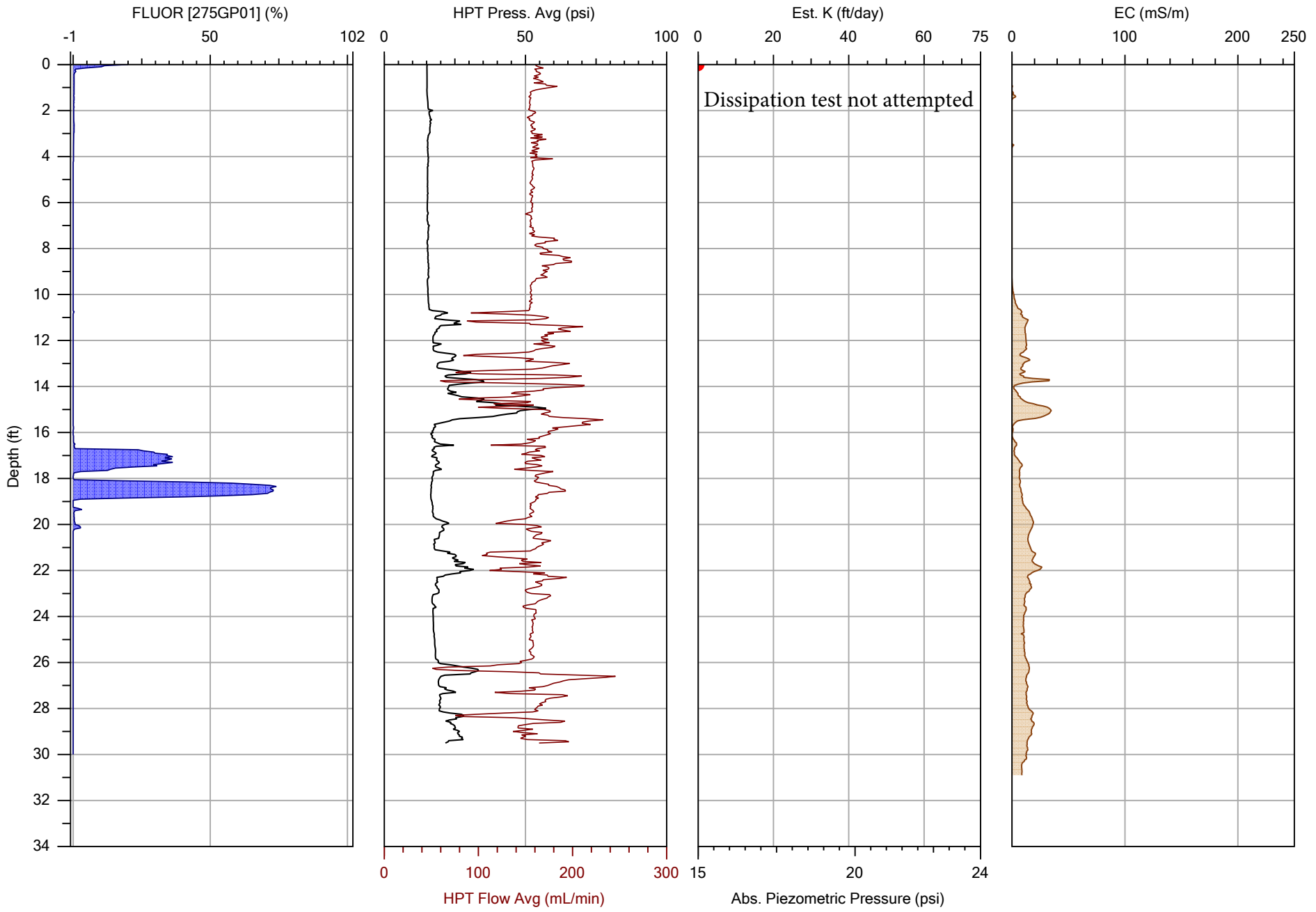
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/19/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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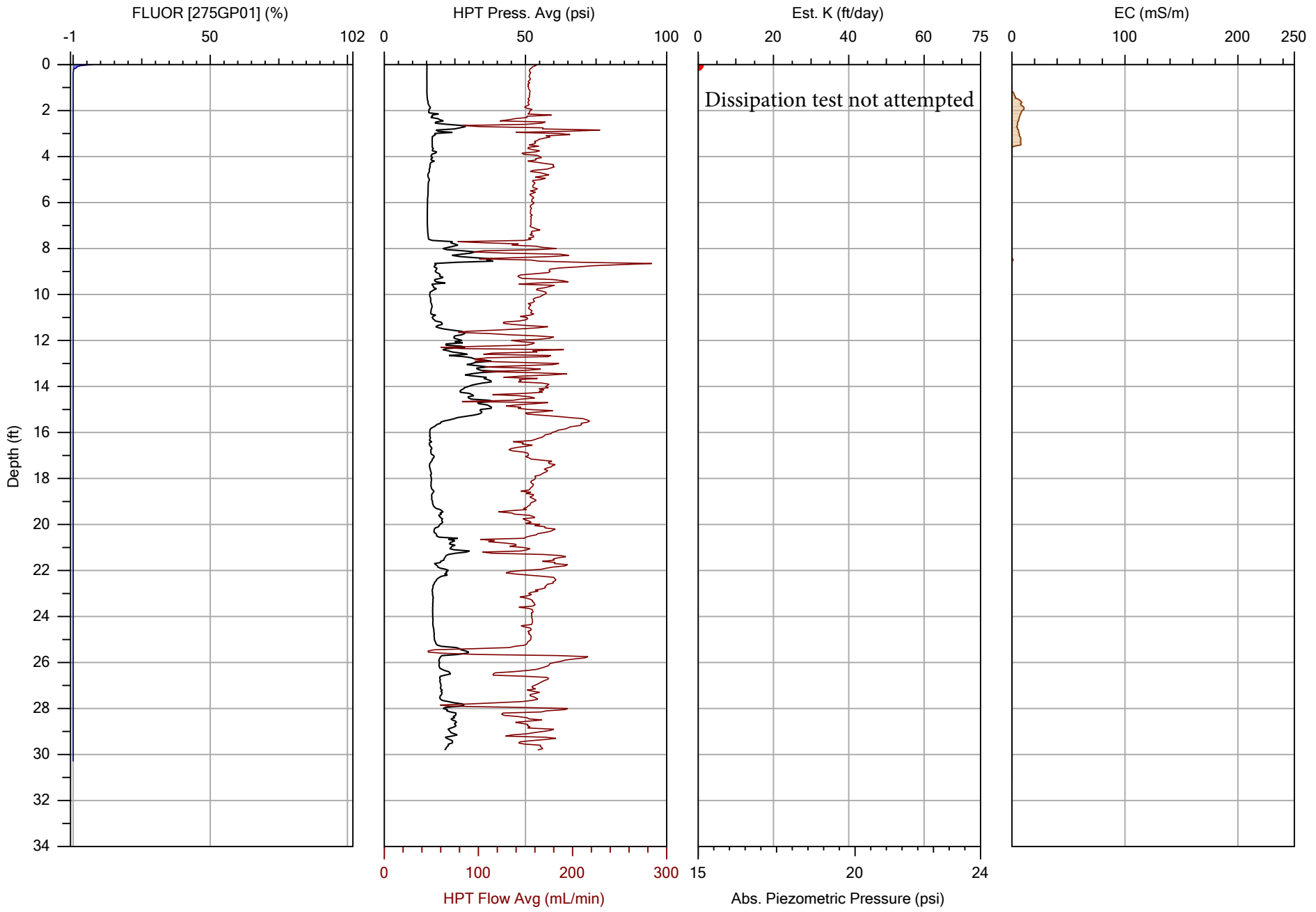

COLUMBIA TECHNOLOGIES

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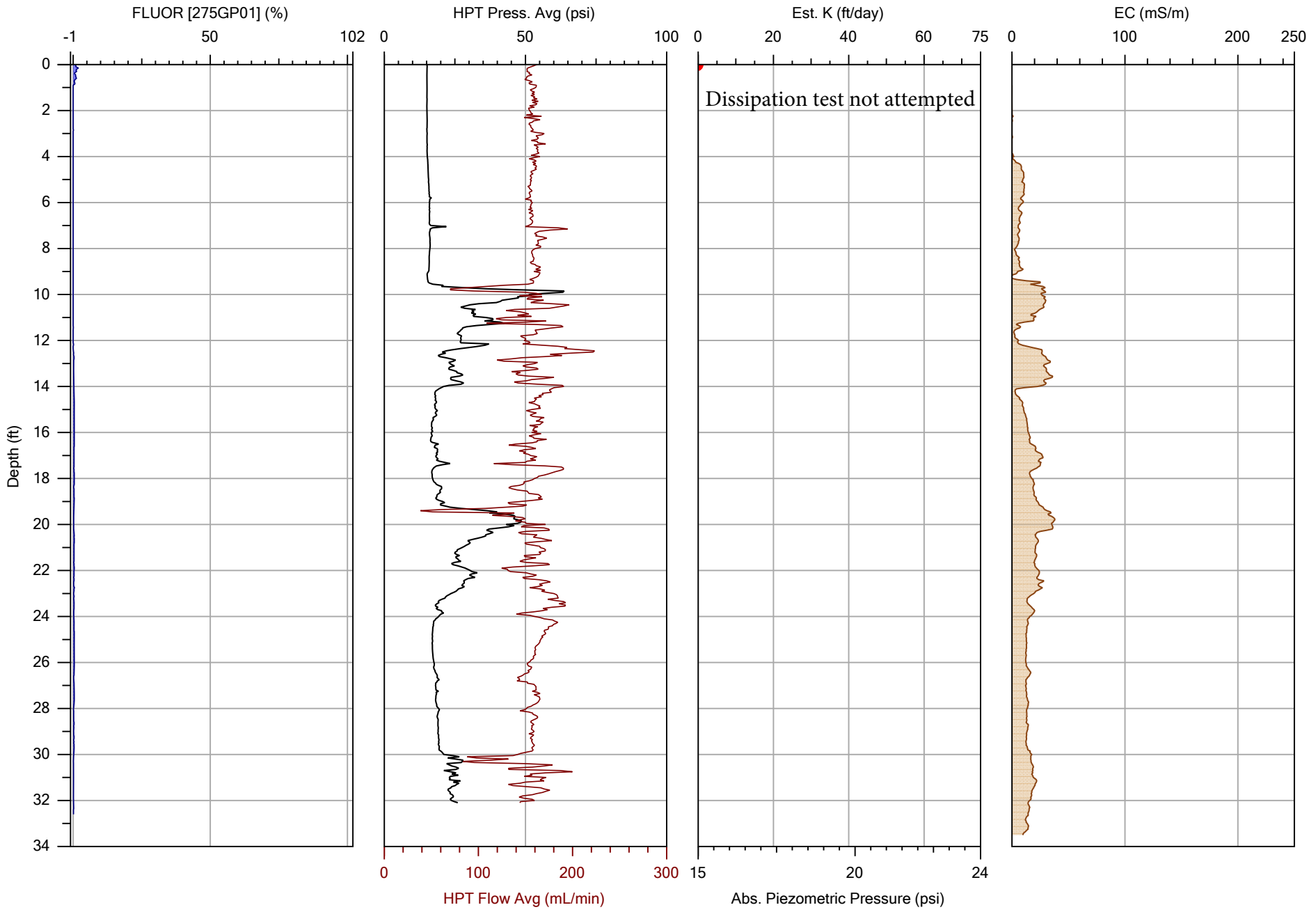
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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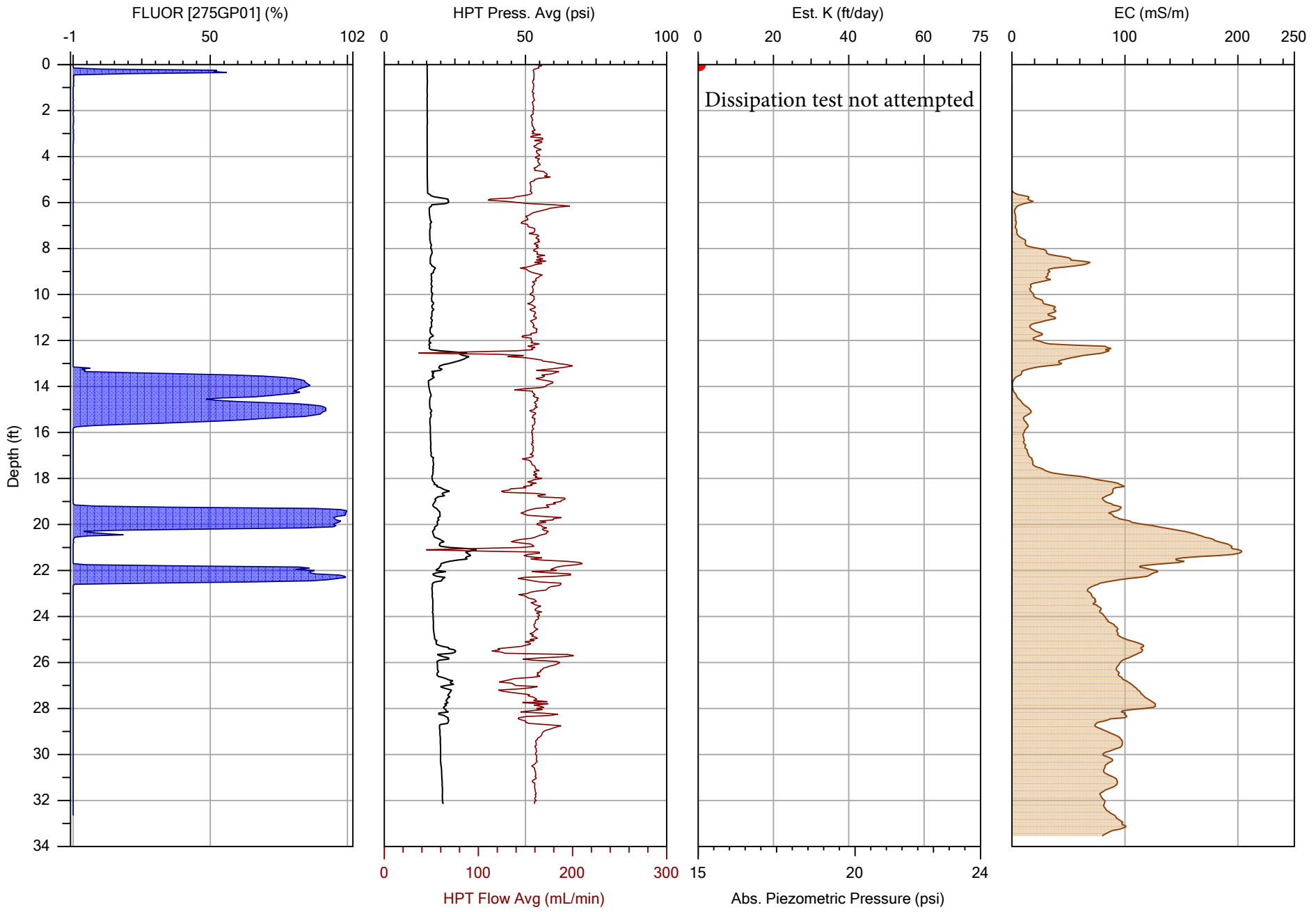
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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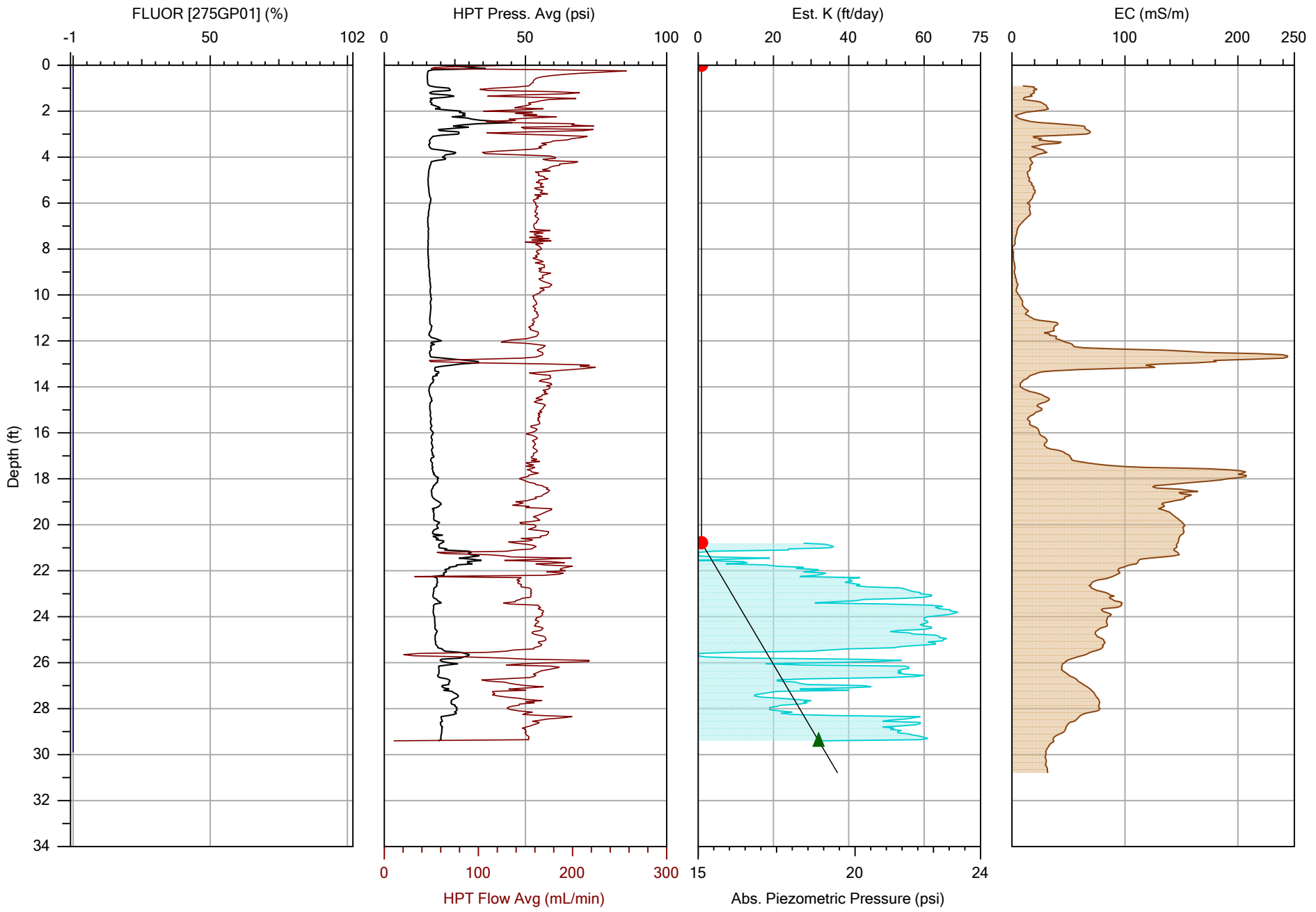
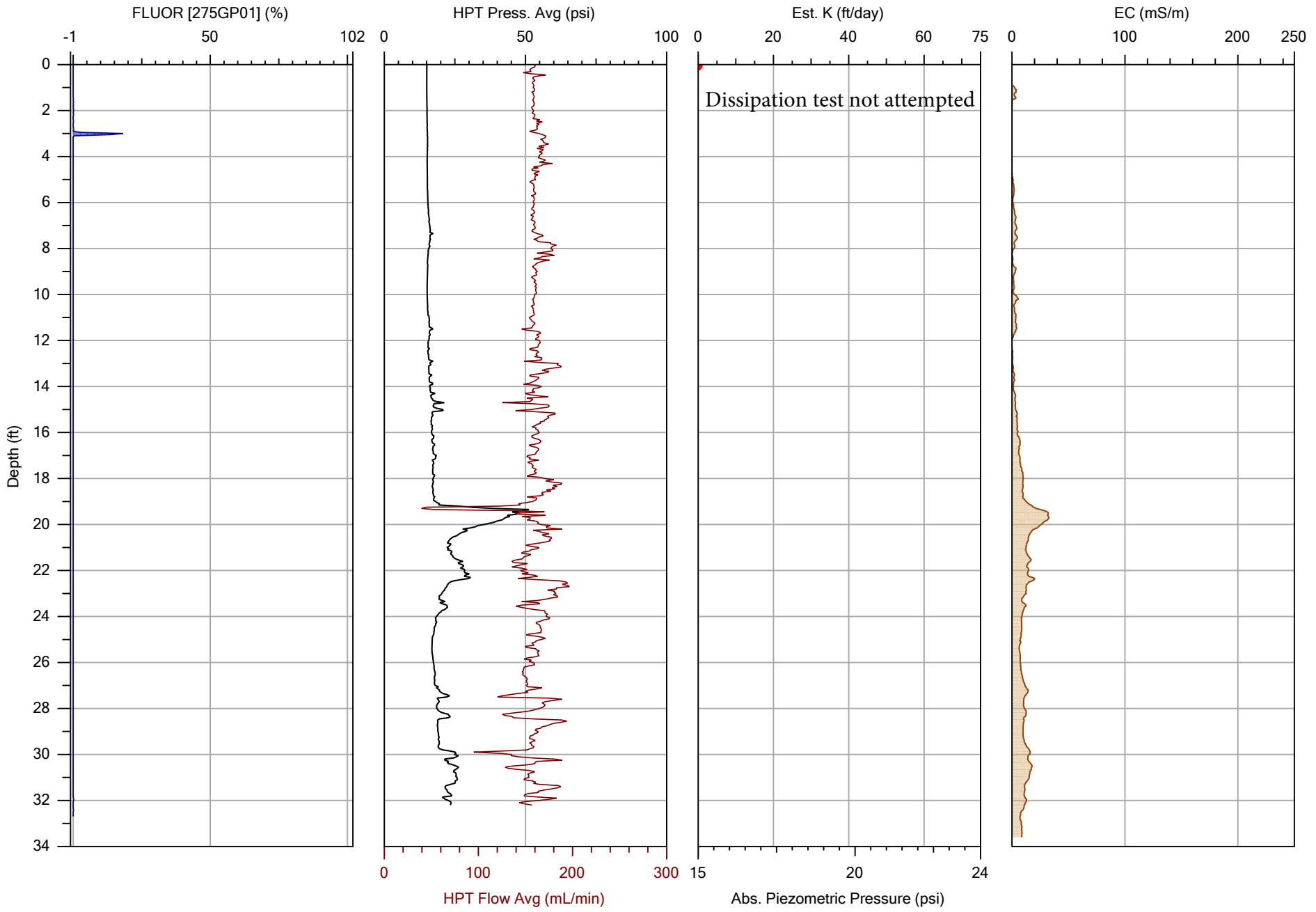
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/21/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

Company: COLUMBIA Technologies	Operator: AJH	File: AOPC7-OIP53.OIHP
Project ID: Port of Longview	Client: Floyd Snider	Date: 11/21/2019
		Location: Longview, WA



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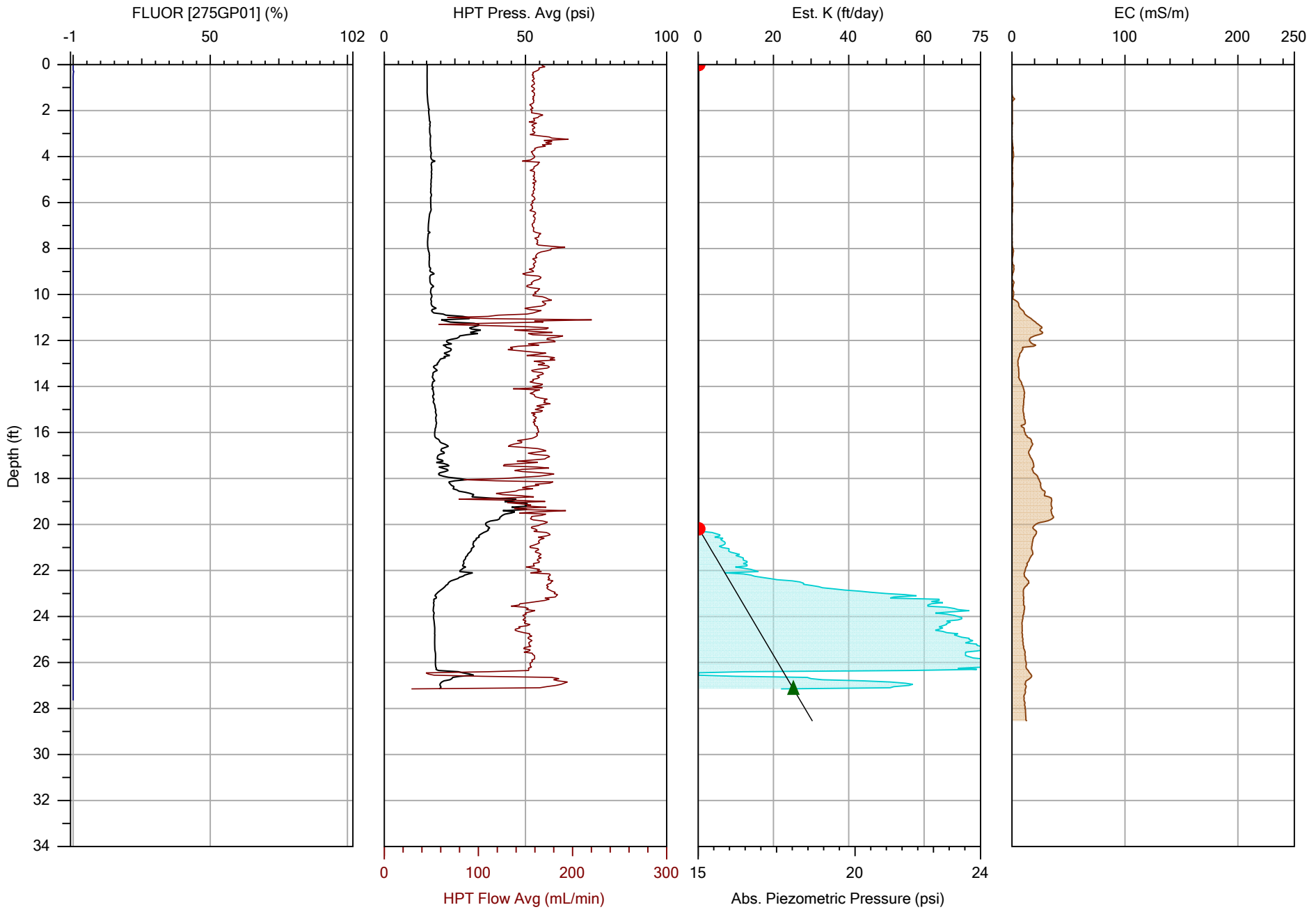
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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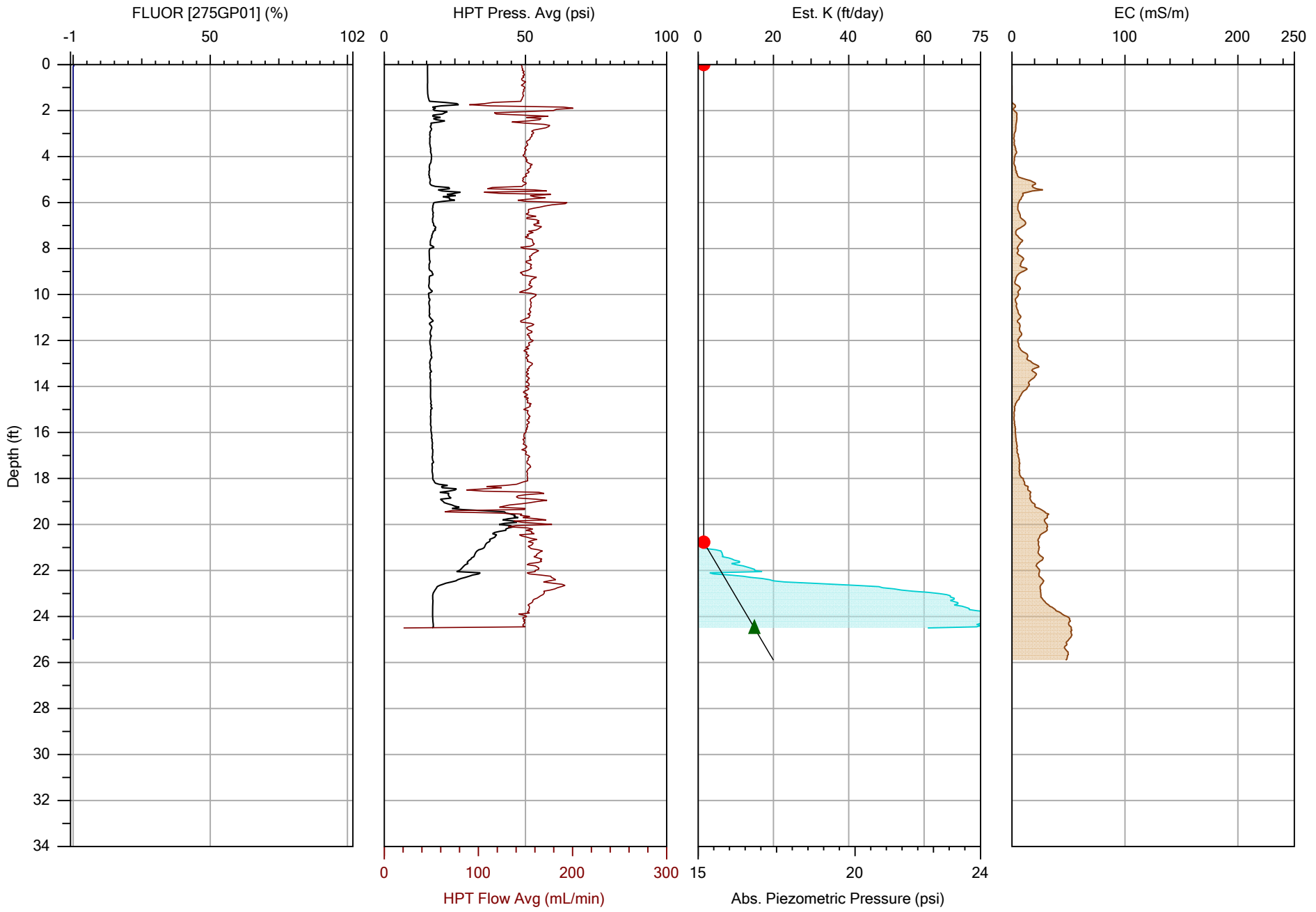

COLUMBIA TECHNOLOGIES

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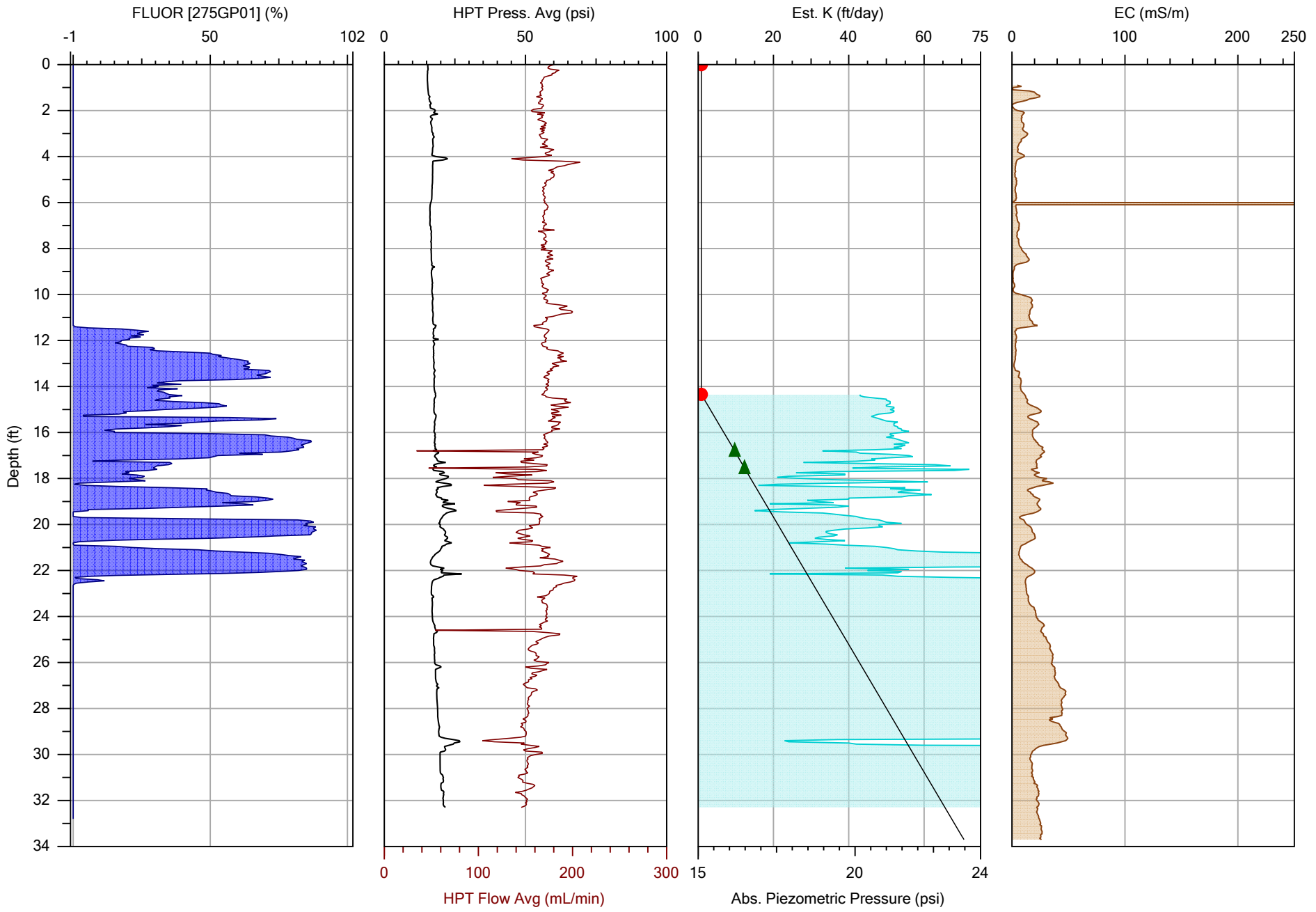

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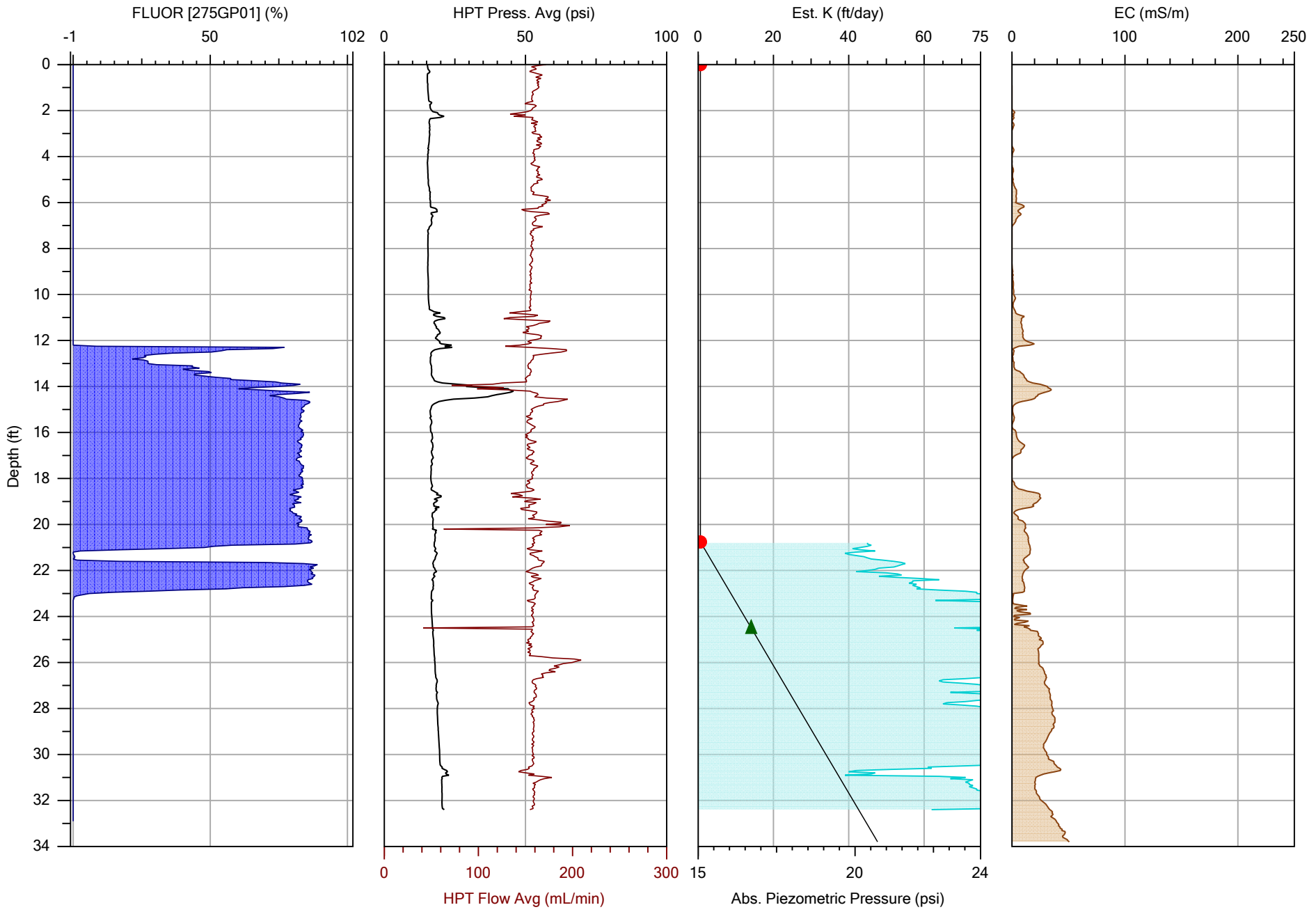
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/14/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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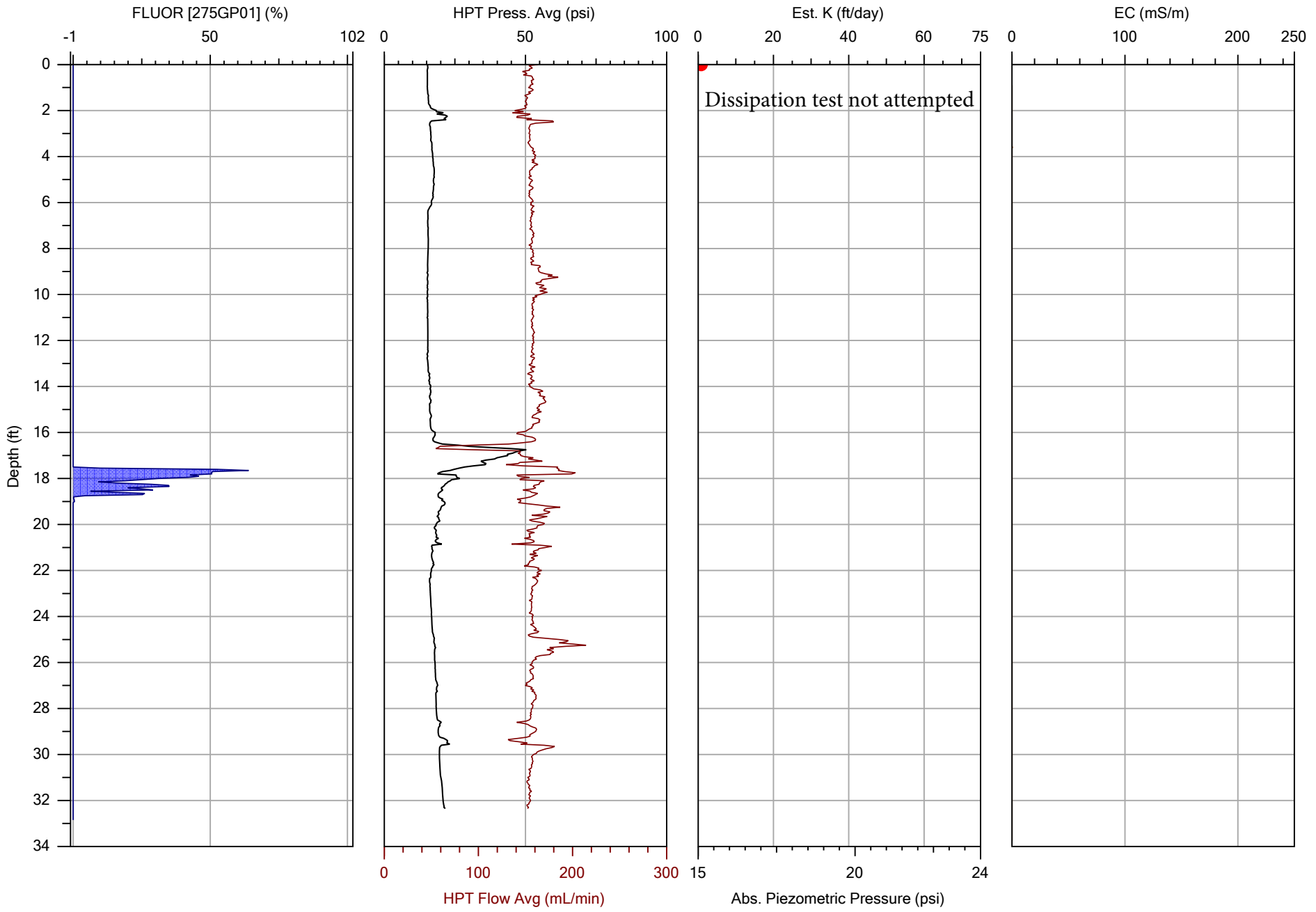
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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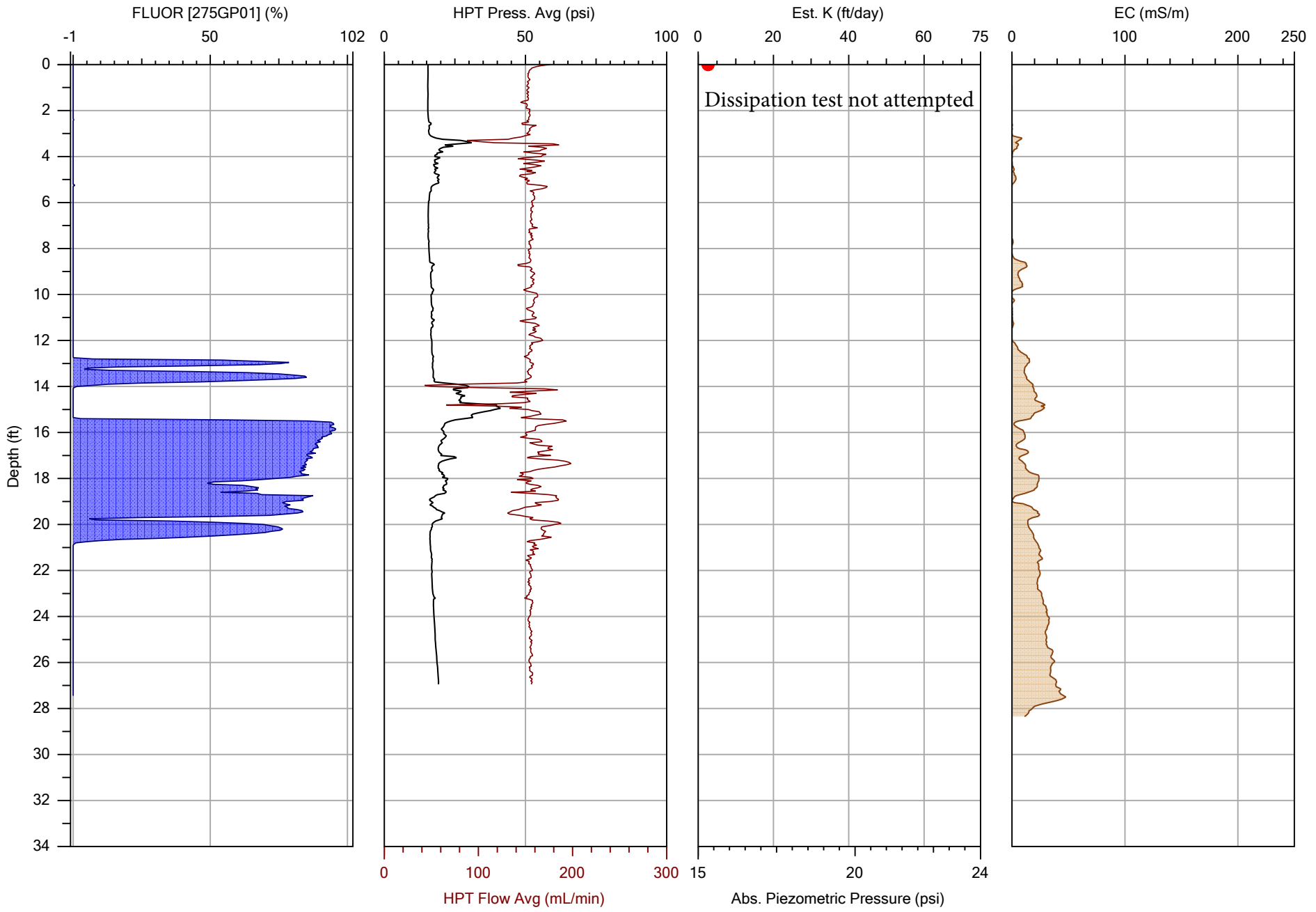
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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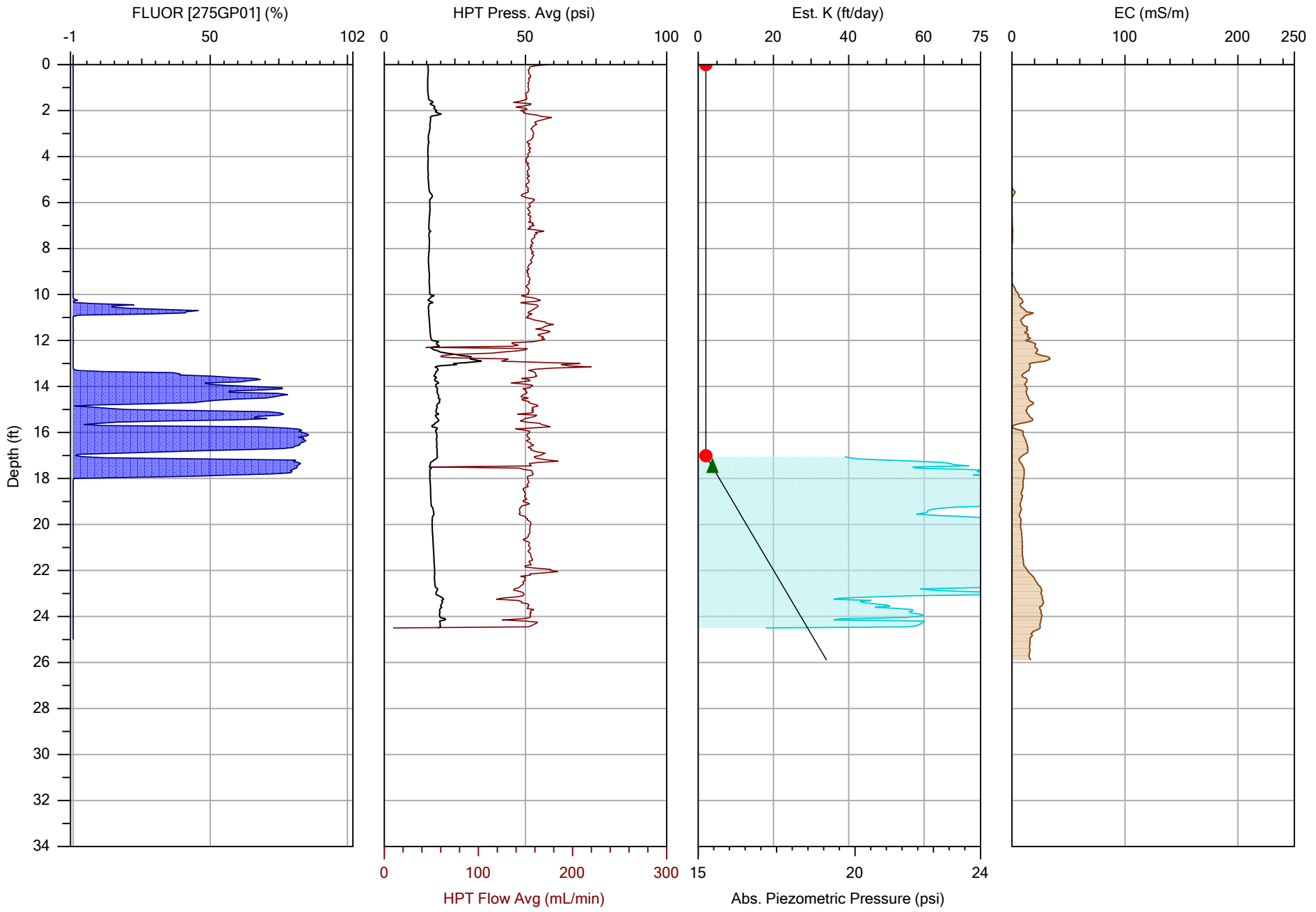
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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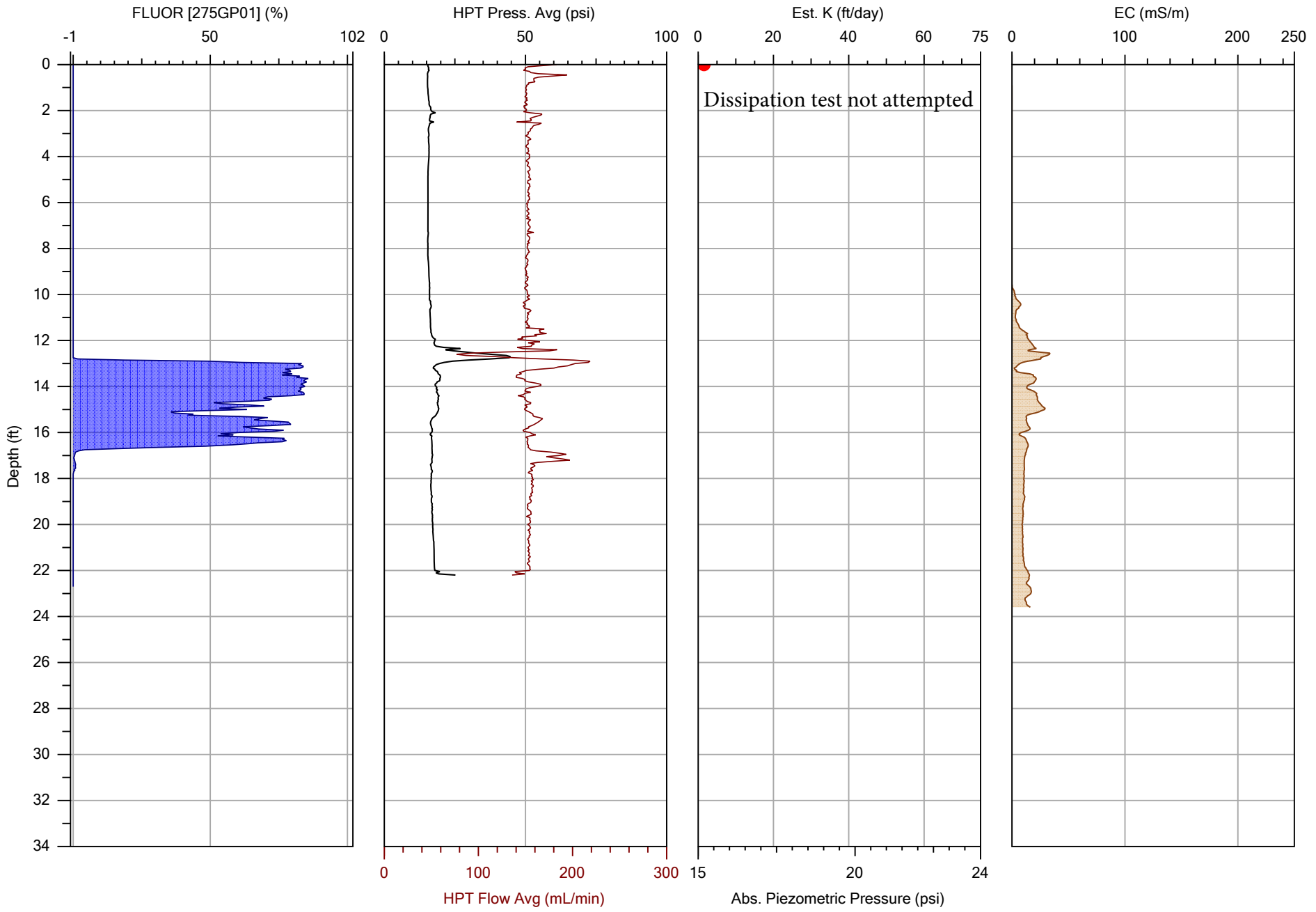
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



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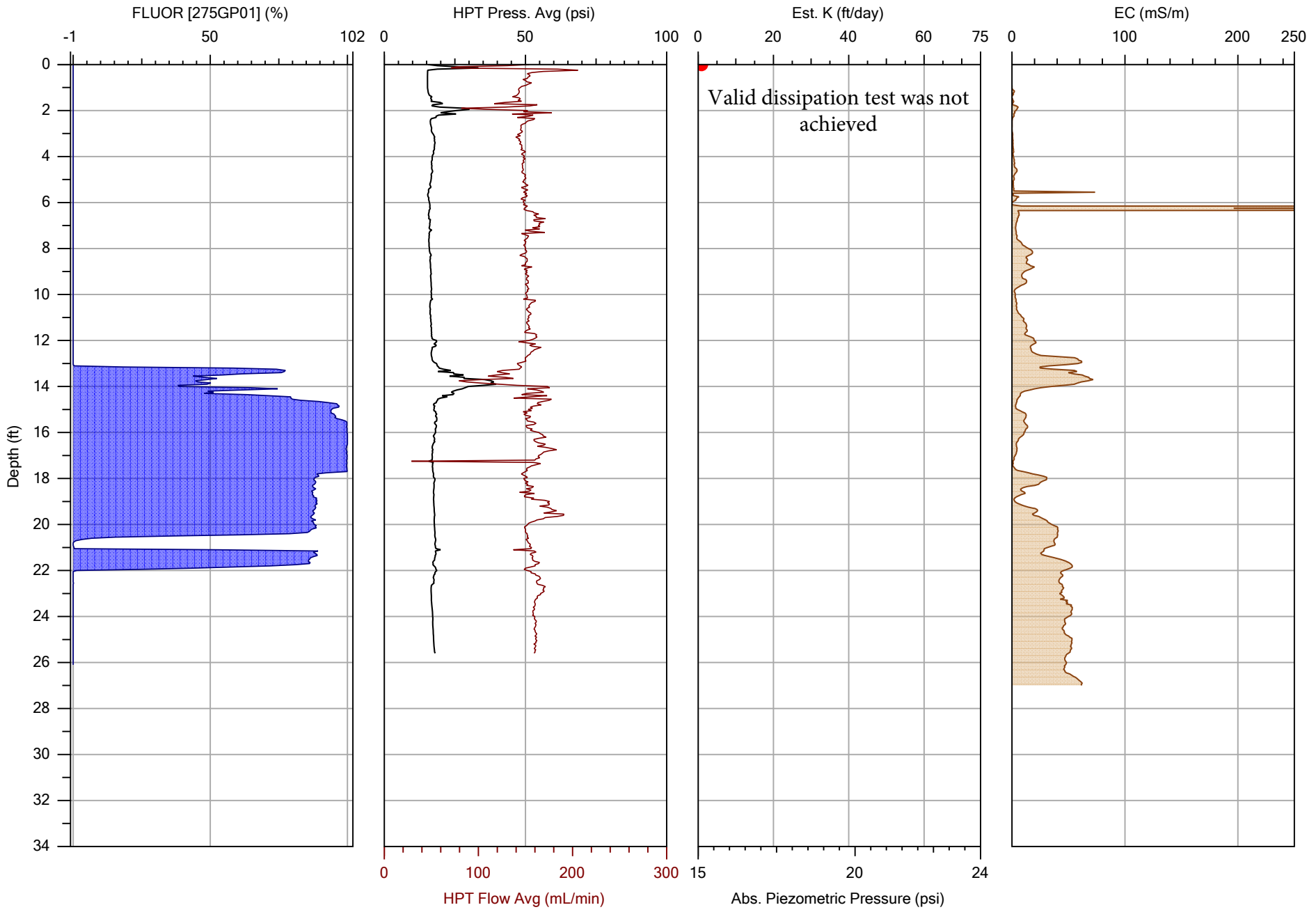
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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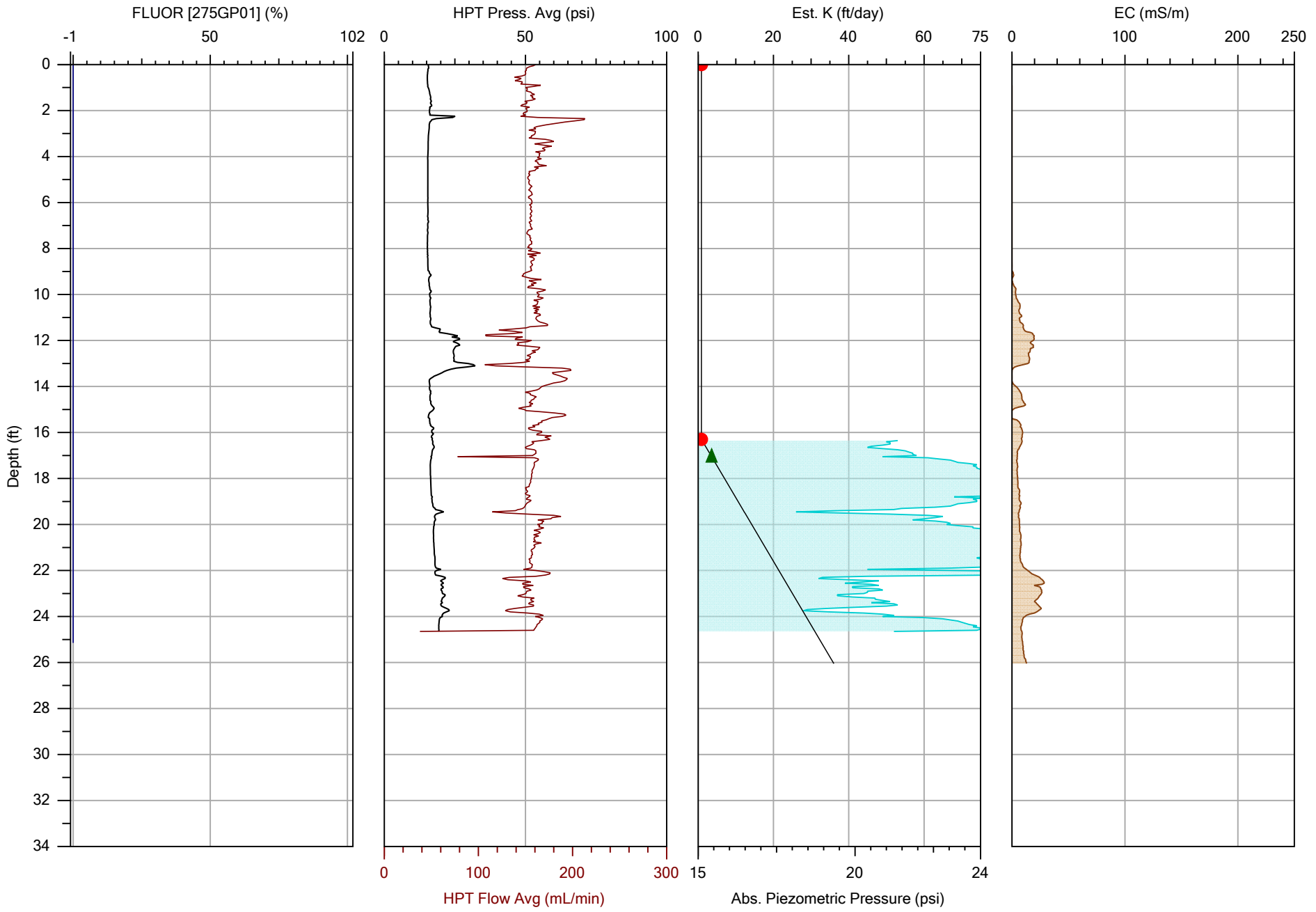
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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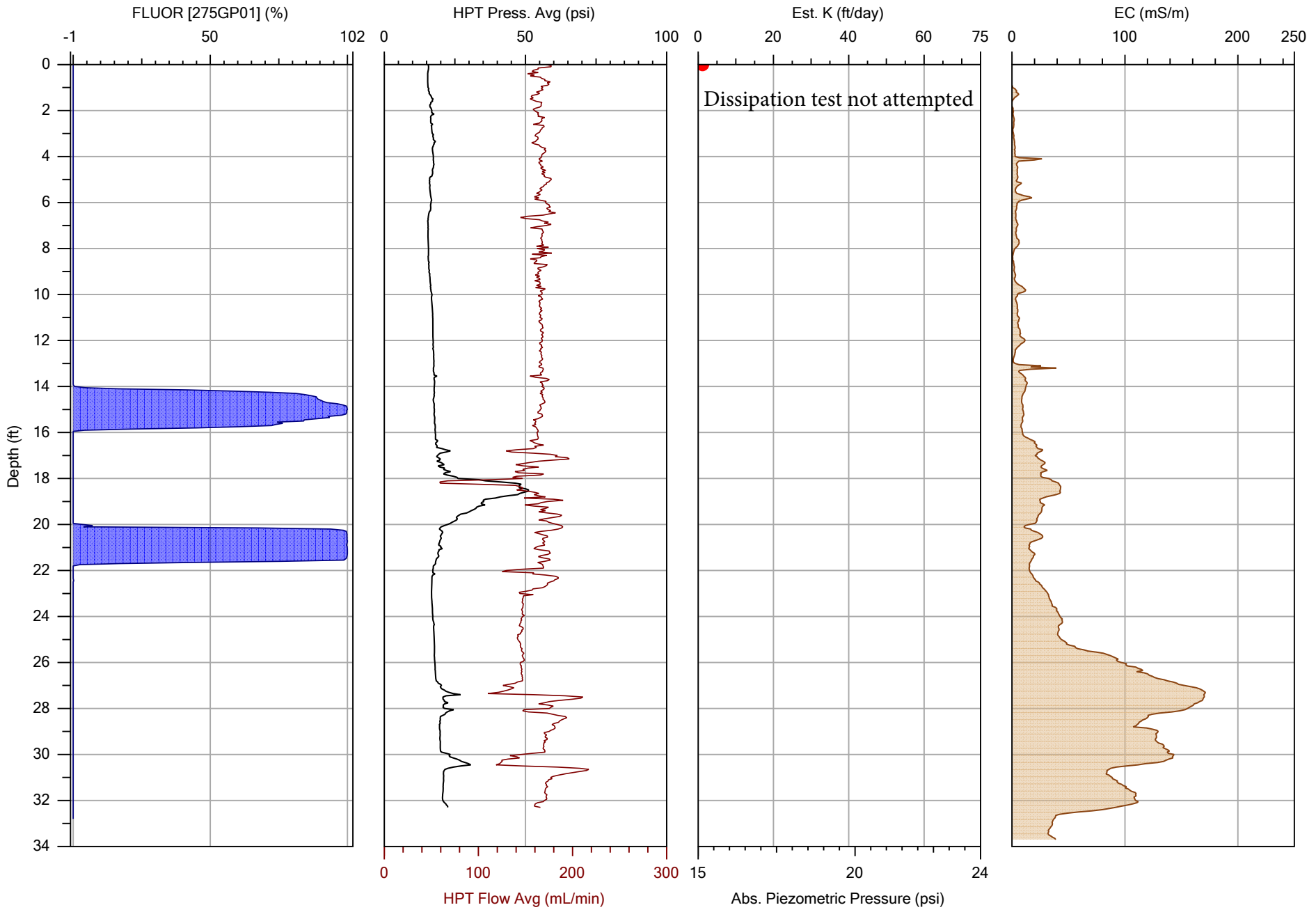

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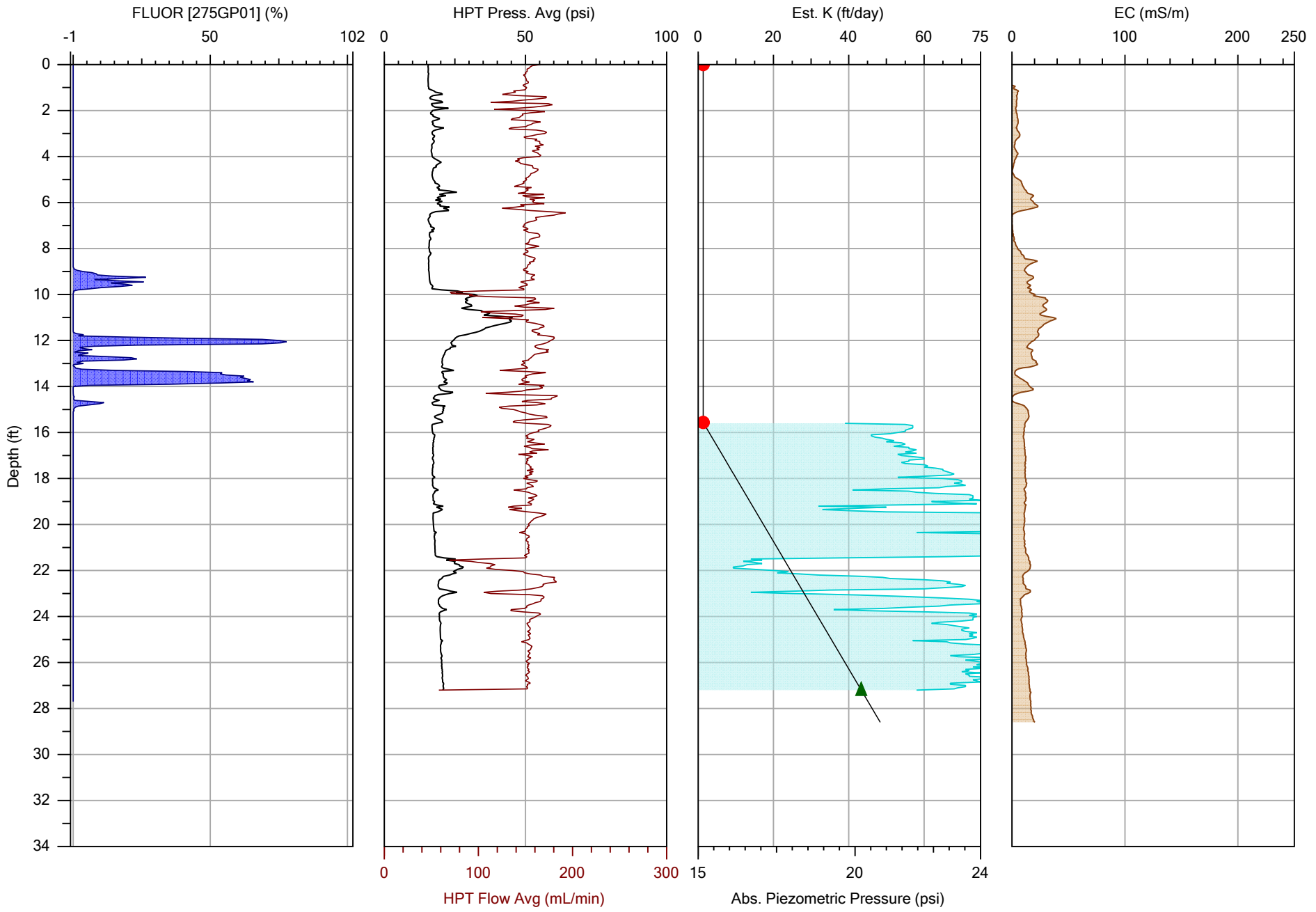

COLUMBIA TECHNOLOGIES

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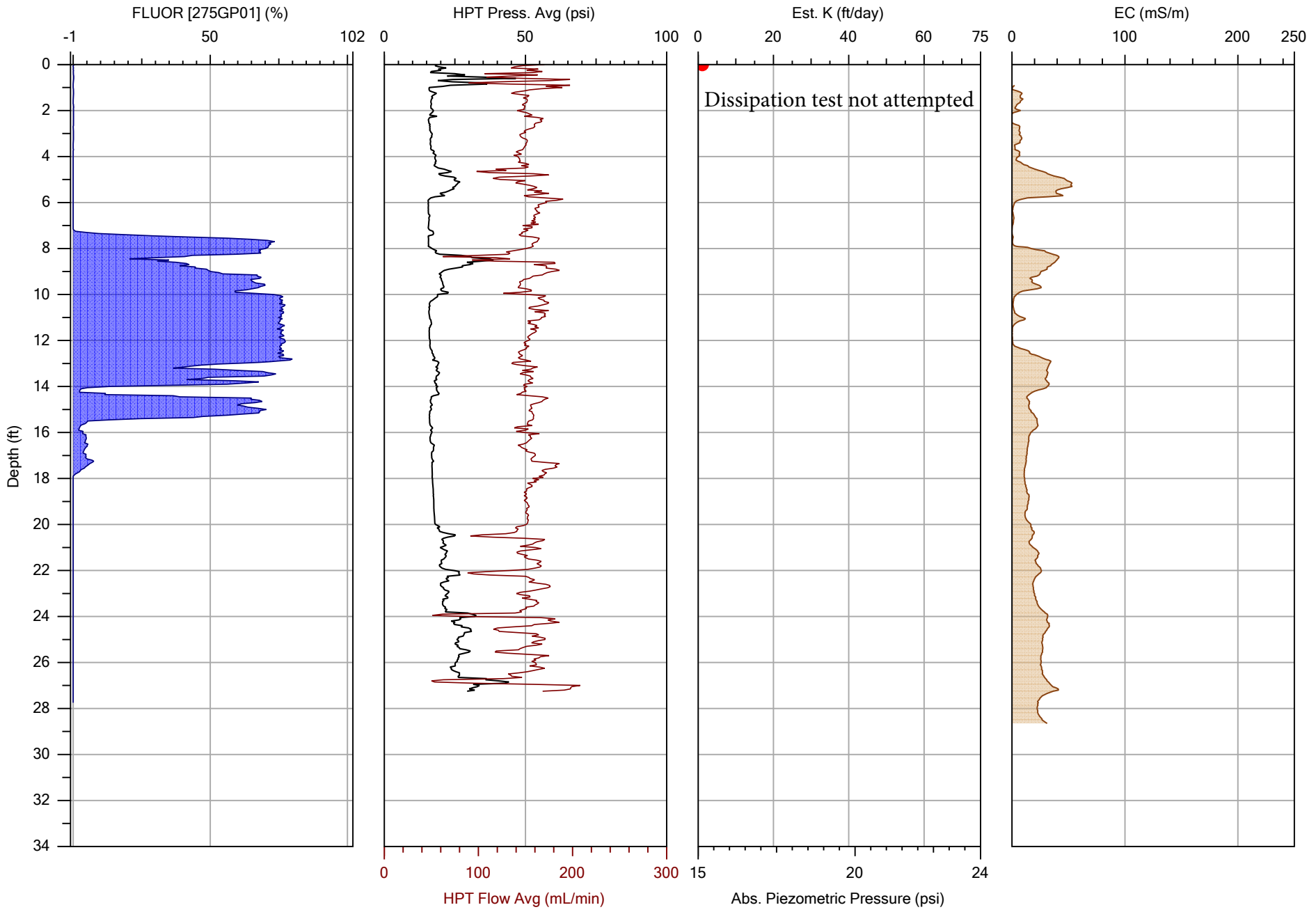
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/22/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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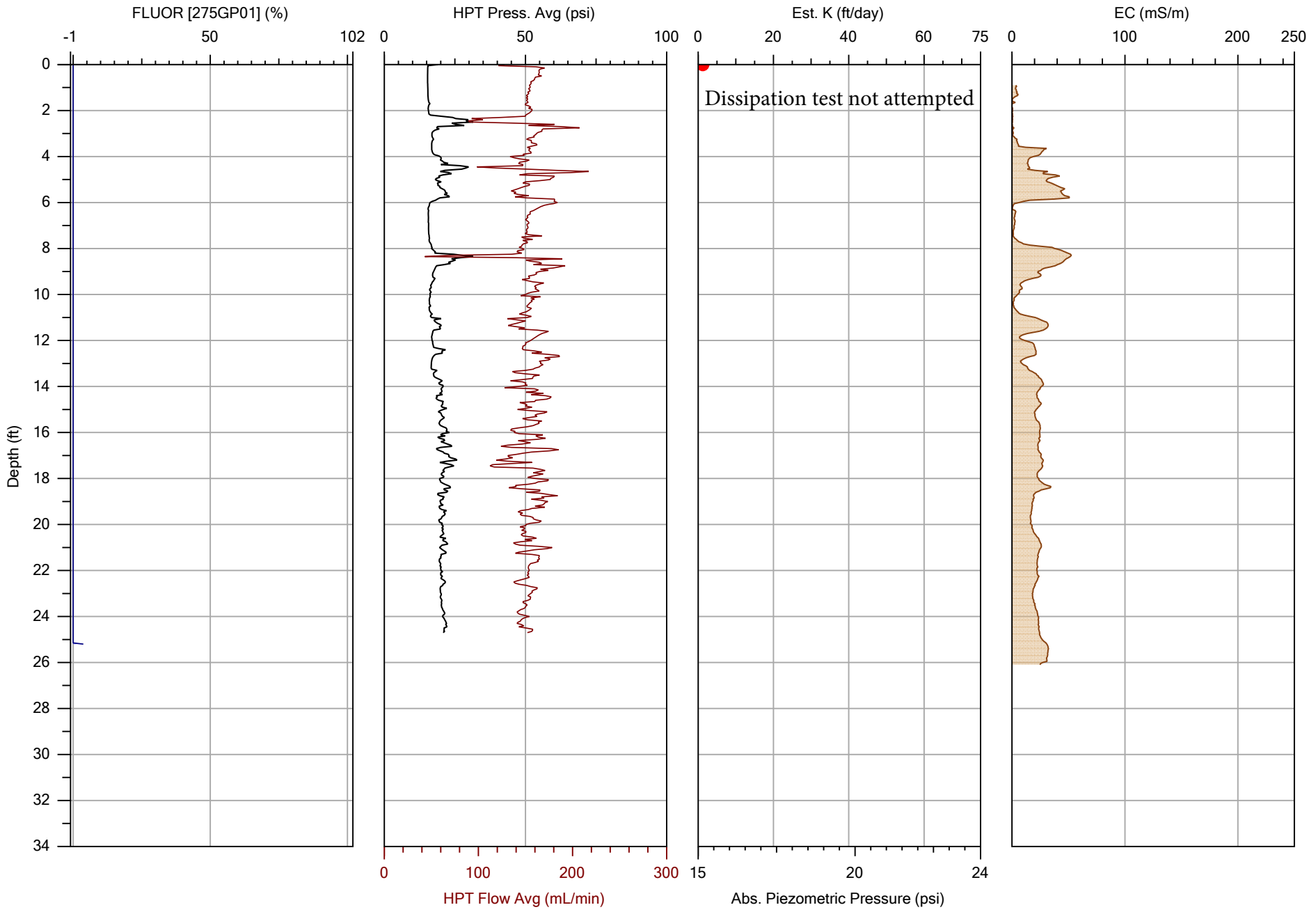
Company: COLUMBIA Technologies	Operator: AJH	Date: 11/22/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA



COLUMBIA TECHNOLOGIES

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Company: COLUMBIA Technologies	Operator: AJH	Date: 11/22/2019
Project ID: Port of Longview	Client: Floyd Snider	Location: Longview, WA

Port of Longview TPH Site

Interim Data Report

Appendix B
Boring Logs, Well and Vapor Point Construction Details, and Surface Sample Logs

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-02**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-2	**DRILL DATE:** 3/11/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292883.8583	**EASTING:** 1017969.462	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 14	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** 14.5-19.5	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 ft.bgs.			
5	OL	Dark brown, organic-rich, firm **SILT**; moist; mild odor; no sheen.			
	CH	Dark brown, silty **CLAY**			OIP-02-5-5.5
6		Gray-brown, sandy **SILT** with wood and grass; mild odor; metallic sheen.		2.3	
7		At 7 ft., becomes wet to saturated (perched); odor dissipates with depth. Interbedded with sandy **SILT** and clayey **SILT**; sheen only on outside of the core.		1.4	
9				1.7	
10				1.5	
12	ML			1.2	
13		At 12.5 ft., becomes firm and damp to moist. At 14 ft., becomes wet to saturated.			
14		At 14.5 ft., becomes soft and loose.		1.1	
15		At 15 ft., mild odor; sheen.			
16				1.1	OIP-02-14-15 OIP-02-GW-14.5-19.5 OIP-02D-GW-14.5-19.5
18	SP	At 18 ft., grades to clean, loose, coarse **SAND**; saturated; no odor; no sheen.		1.1	
20		Boring terminated at 20 ft. bgs.		1.4	

ABBREVIATIONS:
ft bgs = feet below ground surface
USCS = Unified Soil Classification System
ppm = parts per million
▼ = denotes groundwater table

NOTES:

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-04**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-2	**DRILL DATE:** 3/10/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292948.9647	**EASTING:** 1017938.189	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 15	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** 15-20	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	GW	Hand auger to 5 ft. bgs; **GRAVEL** and cobbles observed during clearing.			
4	SP	Hand auger sample collected from 4 to 5 ft. bgs. Gray, clean, loose, fine **SAND** with trace gravel and cobles; damp to dry; no odor.			OIP-04-4-5
6				0.3	
8		Same as above; no odor.		1.2	
10				1.1	
12	SP/SM	Interbedded clean **SAND** and silty **SAND** to **SAND** with silt; trace organics; moist; no odor.		1.0	
14				1.0	
15		At 15 ft., becomes wet.			
16				1.0	OIP-04-15-16
18				0.4	OIP-04-GW-15-20
19		At 19.5 ft., very slight odor; no sheen.			
20		Boring terminated at 20 ft. bgs.		2.4	

ABBREVIATIONS:
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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-05**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-1	**DRILL DATE:** 3/12/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 291921.5893	**EASTING:** 1017503.128	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 30.5	**DEPTH TO WATER (ft bgs):** 29	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	FILL	Asphalt ground surface **FILL**.			
2	SW	Brown, loose, **SAND** with gravel; dry; no odor.		1.7	
4				1.7	
6				1.6	
8		AT 7 ft., 6 inch layer of dark brown to black **SAND** with vitreous sand grains; no odor. Same as above below.		1.3	
10				1.8	
12				1.6	
14		At 14 ft., becomes lighter in color.		1.6	
16	SP			1.7	
18				1.6	
20		Same as above.		1.0	
22				1.7	
24				1.9	
		At 24.5 ft., becomes moist.		1.9	
26		From 25 to 27 ft., potentially slough due to dryness.		1.4	
28		Brown, loose **SAND** with trace gravel; moist; no odor.		1.0	OIP-05-27-28
	SP/ML	At 28.5 ft., becomes gray with lenses of silt and wood; dense; no odor.			
	SM	At 29 ft., becomes saturated.			OIP-05-28-29
30	SP	Gray, medium **SAND**; dense; wet; no odor.		0.9	
		Boring terminated at 30 ft. bgs.			

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-06**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-1	**DRILL DATE:** 3/13/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 291947.8346	**EASTING:** 1017471.699	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 30.5	**DEPTH TO WATER (ft bgs):** 25	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** 25-30	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	FILL	Asphalt ground surface **FILL**.			
		Gray/brown, loose, fine to coarse **SAND** with gravel; dry; no odor.			
2				0.9	
4				1.0	
6				1.2	
8		Same as above; no odor.		1.3	
10				2.5	
12	SW			1.0	
14				0.9	
16		At 16 ft., begins to fine with 5-10% gravel and coarse sand; dry; no odor.		1.0	
18				1.1	
20				1.4	
22				1.6	
				1.3	
24	SP	Brown, poorly-graded, medium **SAND**; dry; no odor.			
		Brown, well-graded **SAND** with <10% gravel; moist to wet; no odor; no sheen.		1.2	
26		At 25 ft., becomes gray and saturated; no odor; no sheen.			
	SW/SM	Brown, well-graded **SAND** with gravel; dry; no odor; no sheen.		0.9	OIP-06-GW-25-30 OIP-06-27-28 OIP-06-29-30
28	SW	At 27 ft., becomes dense.			
	SP/SM	At 29 ft., becomes gray with variable silt; wet; no odor.		1.5	
30		Boring terminated at 30 ft. bgs.			

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PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **OIP-08**	
LOGGED BY: **G. Cisneros**	**BORING LOCATION:** AOPC8	DRILL DATE: **11/22/19**	
DRILLED BY: **HOLT (Mike)**	NORTHING: **292919**	EASTING: **1017662.15**	
DRILLING EQUIPMENT: **Limited Access Drill Rig**	COORDINATE SYSTEM: **NAD 83 WA SP S**		
DRILLING METHOD: **Geoprobe**	TOTAL DEPTH (ft bgs): **25**	DEPTH TO WATER (ft bgs): **21**	
SAMPLING METHOD: **5' Liners**	BORING DIAMETER: **2 inch**		

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	Fill	Subangular gravelly **FILL**			
2	SP	Brown, fine **SAND**; no odor.		0.9	
4				1.0	
		Same as above; no odor; no sheen.			
6				1.0	
8		At 8 ft., becomes medium to fine grained **SAND**.		0.0	
10				0.5	
12				1.0	
	SM	Silty **SAND**; very slight sheen; no odor.			
14	ML	Low plasticity **SILT**; mild odor; no sheen.		0.5	
	SP	Poorly graded **SAND**; with moderate odor; heavy rainbow sheen and droplets.			
16				1723.0	
		At 16.5 ft., moderate sheen.			
18				1985.0	
					OIP08-19-20-112219
20				2260.0	
	ML	Olive gray, sandy **SILT**; strong odor; moderate sheen.			
22				2519.0	
	SP	Poorly graded **SAND**; slight sheen; mild odor.			
24				109.6	
		Bottom of Boring = 25 ft. bgs			

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-15	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-6	**DRILL DATE:** 3/12/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292869.4791	**EASTING:** 1017593.993	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 25.5	**DEPTH TO WATER (ft bgs):** 19	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** 14-19	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	FILL	Asphalt ground surface **FILL**.			
2	GP-GM	**GRAVEL** with silt, sand and cobbles; loose; dry to moist; no odor.		2.3	
4				1.5	
6	SP	Brown, loose, fine **SAND**; moist; no odor.		2.6	
8				2.4	
10				3.2	
12		At 12 ft., slight, solvent-like odor; similar odor to fresh cut wood.		1.9	
14 ▼		At 14 ft., becomes saturated; mild TPH odor; slight rainbow and metallic sheen.		1.8	
16	SM	Brown/gray, silty **SAND** with <10% wood/organics; wood/solvent-like odor; metallic sheen.		6.8 2.8	OIP-15-15-16 OIP-15-GW-15-19
18	ML	At 17 ft., grades to gray/brown sandy to clayey **SILT**; odor and sheen dissipate below 18 ft.		2.1	
20	SM	Loose, silty **SAND**;wet; mild odor; no sheen.		2.2	OIP-15-20-21
22	SM/ML	Interbedded gray, silty **SAND** and sandy **SILT**; wet to saturated; mild odor; no sheen. At 23 ft., odor dissipates.		1.8 1.1	OIP-15-23-24
24		Boring terminates at 25 ft. bgs.		1.3	

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-18	
LOGGED BY: G. Cisneros	**BORING LOCATION:** AOPC-3	**DRILL DATE:** 3/13/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292369.2061	**EASTING:** 1017479.331	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 19.5	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 feet bgs.			
5	SP	Brown, fine to medium **SAND**; moist; no odor; no sheen.		0.5	
6					
7					
8				0.1	
9					
10					
11				0.2	
12				0.1	
13		Same as above; moist; no odor; no sheen.			
14				0.2	
15					
16				0.2	
17				0.1	
18					
19		At 19 ft., becomes wet to saturated.		0.1	OIP-18-19-19.5
		At 19.75 ft., becomes saturated.			
20		Boring terminated at 20 ft. bgs.			

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-19	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-3	**DRILL DATE:** 3/13/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292388.078	**EASTING:** 1017502.731	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 25.5	**DEPTH TO WATER (ft bgs):** 19.5	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 ft. bgs; asphalt ground surface.			
6	SP-SM	Brown, loose, fine to medium **SAND** with trace to 10% silt interbedded moist to dry; no odor.		0.2	
8				0.5	
10		Brown, clean **SAND** with trace silt; no odor.		0.5	
12				0.8	
14				0.7	
16	SP			0.5	
18				0.7	
19		At 19 ft., becomes moist to wet.			OIP-19-19-20
20				0.4	
22				1.2	
	SP/SM	Gray, silty **SAND** interbedded with loose, coarse **SAND**; wet; no odor.		0.6	
24	CH	Gray, firm, silty **CLAY**; wet; no odor.			
	SM	At 24.5 ft., becomes sandy.			
		Boring terminates at 25 ft. bgs.			

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-20**	
LOGGED BY: G. Cisneros	**BORING LOCATION:** AOPC-3	**DRILL DATE:** 3/13/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292415.8279	**EASTING:** 1017466.926	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 19.5	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 ft. bgs; asphalt ground surface.			
5	SP	Brown, fine to medium **SAND**; no odor; no sheen.		0.3	
8				0.5	
11	SM	Gray, silty, fine **SAND** with 30% silt; moderate odor; slight sheen.		505.0	OIP-20-11-11.5
12	ML	Olive-gray, stiff **SILT** with moderate plasticity; moderate odor; slight sheen.			
14	SP	Brown, fine to medium **SAND**; moist; no odor; no sheen.		1.5	
15				1.5	
16	SM	Olive-gray, silty, fine **SAND**; moist; no odor; no sheen.		199.0	
17	SP	Brown, fine to medium **SAND**; moist; no odor; no sheen.			
18				0.4	
19					OIP-20-19-19.5
19.5		▼ At 19.5 ft., becomes wet to saturated.			
20		Boring terminated at 20 ft. bgs.		0.0	

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-21	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-3	**DRILL DATE:** 3/13/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292468.7798	**EASTING:** 1017508.17	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 18	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 ft. bgs; asphalt ground surface.			
5	SP	Brown, loose, fine, clean **SAND**; moist; no odor.		1.6	
8		At 8 ft., becomes coppery in color.		1.8	
9	SP/ML	Gray **SAND** with interbedded silt; wet (perched aquifer?); no odor; no sheen.		1.8	
10	SP	Gray/brown, loose, poorly-graded **SAND**; moist; no odor.		1.9	
10	ML	Gray, **SILT** to sandy **SILT**; saturated; no odor.			
11	SP	Gray/brown, loose, poorly-graded **SAND**.		2.2	
15				2.1	
16				1.3	
17	SM	At 16.5 ft., grades to silty **SAND**.			
17	ML	Gray **SILT**; wet; no odor; no sheen.			
18 ▼	SW	Brown, well-graded **SAND** with 15% gravel; wet; no odor.		1.4	OIP-21-18-19
19		At 20 ft., becomes gray; wet; no odor; no sheen.			
20		Boring terminated at 20 ft. bgs.		1.3	

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-23**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-7	**DRILL DATE:** 3/10/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292621.408	**EASTING:** 1017543.662	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 30.5	**DEPTH TO WATER (ft bgs):** 13.5	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	GW-SW	Railroad spall (fill) then loose, sandy **GRAVEL** to gravelly **SAND**; dry; no odor.			
2				1.4	
4	SP	Brown, loose, clean, medium **SAND** with trace organics (wood); dry; no odor.		1.7	
6				1.4	
8				1.5	
10	SW	At 10 ft., becomes well-graded **SAND** with increased gravel content.		1.4	
12				5.3	
14	SM	Gray **SAND** with silt; saturated; no odor; no sheen.		43.4	OIP-23-14-15
16				130.0	
18				137.0	OIP-23-19-20
20		Gray **SAND** to silty, fine to medium **SAND**; mild to moderate TPH odor; no sheen.		184.0	
22				324.0	OIP-23-23-24
24				209.0	
26				337.0	
28		At 28 ft., odor dissipates.		30.7	
30	ML	At 29.5 ft., becomes **SILT**. Boring terminates at 30 ft. bgs.		10.1	OIP-23-29.5-30

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PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **OIP-30**	
LOGGED BY: **G. Cisneros**	**BORING LOCATION:** AOPC7	DRILL DATE: **11/19/19**	
DRILLED BY: **HOLT (Mike)**	NORTHING: **292549.47**	EASTING: **1017565.76**	
DRILLING EQUIPMENT: **Limited Access Drill Rig**	COORDINATE SYSTEM: **NAD 83 WA SP S**		
DRILLING METHOD: **Geoprobe**	TOTAL DEPTH (ft bgs): **25**	DEPTH TO WATER (ft bgs): **21**	
SAMPLING METHOD: **5' Liners**	BORING DIAMETER: **2 inch**		

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	Fill	Railroad, angular gravelly **FILL**.			
		Brown-gray, fine to medium **SAND**; moist; no odor; no sheen			
2				1.4	
4				6.4	
6	SP	Same as above; no odor; no sheen.			
8				0.3	
10				0.2	
12	SM	Dark gray to black, silty, fine to medium **SAND**; moist; strong hydrocarbon odor; moderately heavy sheen.			
14	ML	Olive gray to black, sandy **SILT** ; moist; strong odor; heavy sheen.		34.0	
16	SP	Brown, medium to coarse **SAND**; moist; slight odor; no sheen.		19.0	
	ML	Olive gray, sandy **SILT**; moderate odor; slight sheen.			
18	SM	Olive, silty, fine **SAND**; moist to wet; moderate odor; slight sheen.		36.0	
	ML	Olive, sandy **SILT**; moist.			
20				43.0	
▼	SP	Black, fine to medium **SAND** with visible LNAPL; wet to saturated; strong odor; heavy sheen.			OIP30-20-21-111919
22	SM	Olive, silty **SAND**; moderate odor; moderate sheen.		19.2	
	ML	Olive **SILT** with low plasticity.			
24	SP	Gray, fine to medium **SAND**; saturated; strong odor; moderate sheen.		34.0	
		Bottom of Boring = 25 ft. bgs			

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-31	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-7	**DRILL DATE:** 3/9/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292534.5724	**EASTING:** 1017589.368	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 15	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 ft bgs; railroad spall (fill) ground surface.			
5	SW	Brown, well-graded **SAND** with gravel; moist; no odor.		0.8	
7	GM	At 7.5 ft., 1 inch lens of gray, silty **GRAVEL**; wet; no odor.			
8	SP	Fine, clean **SAND**; damp; organic odor.		0.7	
9				1.0	
12	GW-SW	At 12 ft., grades to gravelly **SAND** to sandy **GRAVEL**; moist; organic odor.		0.9	
13	SP	Fine **SAND**; no odor.			
14	ML	At 14 ft., grades to **SILT** with some mottling at 14.75 ft; no odor.		0.8	
15 ▼	SW	Gravelly, fine to coarse **SAND**; no odor.		0.8	
17					OIP-31-17
18	ML	At 18 ft., 2 inch **SILT** lens.		1.1	
19	SP	Gray, fine **SAND** with trace silt; moist to wet; no odor.			
20		Boring terminated at 20 ft. bgs.		1.3	OIP-31-20

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-39**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-3	**DRILL DATE:** 3/10/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292989.8741	**EASTING:** 1017795.581	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 25.5	**DEPTH TO WATER (ft bgs):** 9.75	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Railroad spall (fill) ground surface blocked any recovery.			
6	SW	Brown, loose **SAND** with gravel, silt, and 1 inch black, organic lens at 6 ft. bgs; dry; organic odor.		1.8	
8	ML	Brown, firm, mottled **SILT**; moist; no odor.		2.0	
10	SP	At 9 ft., becomes gray; no odor. Gray **SAND**; saturated; mild TPH odor; no sheen.		2.1	
12	SM/ML	Gray, silty **SAND** to **SILT** with organics (moist wood); no odor.		3.2	
14	SP	Clean **SAND**; mild odor; rainbow sheen.		3.7	
16	SM	Silty **SAND; mild to moderate odor; minor metallic sheen.**		4.1	OIP-39-15-15.5 OIP-39-16.5-17
18				2.1	
20	SP	Interbedded clean **SAND** and silty **SAND** to **SAND**; very slight odor; no sheen. Gray, loose **SAND**; saturated; slight pesticide odor; no sheen.		4.2	
22				3.2	OIP-39-21-22
24	SM	Gray, silty **SAND**; saturated; no odor.		2.9	
		Boring terminated at 25 ft. bgs.			

ABBREVIATIONS:
ft bgs = feet below ground surface
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ppm = parts per million
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NOTES:
Ambient PID = 1.7 ppm.

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PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **OIP-42**	
LOGGED BY: **G. Cisneros**	**BORING LOCATION:** AOPC5	DRILL DATE: **11/21/19**	
DRILLED BY: **HOLT (Mike)**	NORTHING: **292857.39**	EASTING: **1017689.02**	
DRILLING EQUIPMENT: **Limited Access Drill Rig**	COORDINATE SYSTEM: **NAD 83 WA SP S**		
DRILLING METHOD: **Geoprobe**	TOTAL DEPTH (ft bgs): **25**	DEPTH TO WATER (ft bgs): **18.5**	
SAMPLING METHOD: **5' Liners**	BORING DIAMETER: **2 inch**		

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	Fill	Railroad, angular gravelly **FILL**.			
		Light brown, fine to medium **SAND**; slight odor at 1 ft. bgs; no sheen.			
2				0.2	
4				0.2	
	SP				
6				0.8	
8		At 8 ft., color changes to dark brown; slight odor; slight sheen.		33.6	
10	ML	Olive gray, organic **SILT**; strong odor; moderate sheen.		460.5	
12	SM	Dark brown, silty, fine **SAND** with thick black product; strong odor; Bunker C-type sheen.		494.6	
	ML	Olive gray, sandy **SILT**; strong odor; heavy sheen.		364.2	
14	SP	Dark Brown, fine to medium **SAND**; strong odor; heavy sheen.			
16	ML	Olive gray **SILT**; strong odor; heavy sheen.		1180.0	
		Brown to black, fine to medium **SAND** with visible product; wet; strong odor; heavy sheen.			OIP42-17-17.5-112119
18 ▼				1107.0	
		At 19.5 ft., grades to brown; saturated; slight odor; slight sheen.			
20	SP			1207.0	
22				64.1	
		At 23 ft., no sheen.			
24				18.0	
		Bottom of Boring = 25 ft. bgs			

ABBREVIATIONS:
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NOTES:

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-46**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-6	**DRILL DATE:** 3/10/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292745.5217	**EASTING:** 1017672.525	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 8	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 ft bgs.			
5	SW	Dark brown **SAND** with angular gravel (fill); no odor; no sheen.		1.6	
7	SM/SP	Brown **SAND** and silty **SAND**; moist; no odor; no sheen.			
8 ▼	SM	At 8 ft., becomes wet.		0.7	OIP-46-8
9		At 8.5 ft., becomes saturated.			
10	SM/ML	Interbedded **SILT** and silty **SAND**.		1.4	OIP-46-10-11
13	SP	Gray, poorly-graded, medium **SAND**; saturated; mild odor; core is shiny, but no sheen.		11.6	
14	SM/SP	Gray to brown, poorly-graded **SAND** to silty **SAND**; no odor; no sheen.		8.6	OIP-46-14
16				1.4	
20		Boring terminated 20 ft. bgs.		1.5	

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NOTES:

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-47**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-5	**DRILL DATE:** 3/9/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292858.0696	**EASTING:** 1017742.196	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 25.5	**DEPTH TO WATER (ft bgs):** 20	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	FILL	Surficial railroad **FILL**.		3.2	
2	ML	Brown **SILT** with trace sand; moist; no odor.			OIP-47-2-3
	SP	Gray-brown, clean, fine to medium **SAND**; no odor.			
	ML	Brown **SILT** with trace sand; moist; no odor.			
4	SP	Brown, fine to medium, clean **SAND**; moist; no odor.		1.5	
6		From 6 to 8 ft. bgs, perched water zone.		6.3	
	SM	At 6.5 ft, becomes gray and silty.			
8	ML	At 7 ft., grades to **SILT**; mild odor; sheen and droplets.		91.0	
10	SP	Poorly-graded **SAND**; strong odor; sheen.		710.0	
				786.0	OIP-47-11-12
12	SM	At 11.5 ft., grades to silty **SAND**; strong odor.		76.0	
14				114.0	
16	SP	At 15 ft., becomes saturated; strong odor.		133.0	
				315.0	OIP-47-17
18	SM	Gray, soft, silty **SAND**; strong odor. At 18 ft., becomes dense.		110.0	
20 ▼	SP	Clean **SAND**; mild odor.			
22		At 22.5 ft., strong odor; brown droplets.		750.0	
		At 23 ft., mild odor; no sheen.		45.0	
24				29.0	
		Boring terminated at 25 ft. bgs.		7.4	OIP-47-25

ABBREVIATIONS:
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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-49**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-5	**DRILL DATE:** 3/9/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292829.7502	**EASTING:** 1017779.565	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 15.25	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Hand cleaed to 2.5 ft. bgs; railroad base fill.			
1					
2					
3	SP	Fine to medium **SAND** with trace grave; moist; no odor.		0.3	
4				0.5	
5	GM	Well-graded, angular, silty **GRAVEL**; moist to dry; no odor.			
6					
7		Interbedded **SILT** and silty **SAND**; moist.		0.2	
8	SP/ML			0.3	
9	SP	At 9 ft., becomes wet, poorly-graded **SAND**.		168.0	
10		At 9.5 ft., grades to **SILT** with wood debris.		0.3	OIP-49-10
11	ML	At 10 ft., mild odor.			
12				0.3	
13	SP	At 13 ft., 2 inch seam of fine to medium **SAND**; strong odor; brown droplets.		38.0	
14	ML	**SILT**. At 14 ft., piece of wood.		713.0 5.2	
15 ▼		At 15.25 ft., becomes saturated.		2.4	
16	SP	**SAND**; strong odor; brown droplets.		25.0	
17	ML	At 17 ft., grades to **SILT**; moist.		33.0	OIP-49-17
18	SM	At 18 ft., grades to silty **SAND**; wet; no odor.		161.0	
19	SP	At 19 ft., grades to clean **SAND**; wet; no odor.		2.5	
20		Boring terminated at 20 ft. bgs.			

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PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **OIP-52**	
LOGGED BY: **G. Cisneros**	**BORING LOCATION:** AOPC7	DRILL DATE: **11/22/19**	
DRILLED BY: **HOLT (Mike)**	NORTHING: **292623.86**	EASTING: **1017450.06**	
DRILLING EQUIPMENT: **Limited Access Drill Rig**	COORDINATE SYSTEM: **NAD 83 WA SP S**		
DRILLING METHOD: **Geoprobe**	TOTAL DEPTH (ft bgs): **25**	DEPTH TO WATER (ft bgs): **21.5**	
SAMPLING METHOD: **5' Liners**	BORING DIAMETER: **2 inch**		

Depth (feet)	USCS Symbol	Soil Description	PID (ppm)	Sample ID
0	ASPHALT	**ASPHALT** ground surface.		
	GW	Angular **GRAVEL** with some sand (fill).		
2	SP	Brown, fine to medium **SAND**; moist; no odor; no sheen.	0.2	
4			0.2	
6			4.0	
		Same as above; no odor; no sheen.		
8			0.6	
10			0.6	
12			0.4	
14		Brown, poorly-graded **SAND**; no odor; no sheen.	19.6	
16			3.9	
		Gray, fine poorly graded **SAND**; moderate odor; moderate sheen.		
18	SM	At 18 ft., grades to silty **SAND**.	55.9	
			94.6	OIP52-19-19.5-112219
20			2.4	
	ML	At 21 ft., grades to **SILT**; moderate odor; heavy sheen.		
22			221.0	OIP52-22-22.5-112219
			220.0	
	SP	Gray **SAND**; moderate odor; moderate sheen.		
24		At 24 ft., color changes to brown; no odor; no sheen.	121.0	
		Bottom of Boring = 25 ft. bgs		

ABBREVIATIONS:
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NOTES:

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PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **OIP-53**	
LOGGED BY: **G. Cisneros**	**BORING LOCATION:** AOPC7	DRILL DATE: **11/22/19**	
DRILLED BY: **HOLT (Mike)**	NORTHING: **292641.02**	EASTING: **1017432.46**	
DRILLING EQUIPMENT: **Limited Access Drill Rig**	COORDINATE SYSTEM: **NAD 83 WA SP S**		
DRILLING METHOD: **Geoprobe**	TOTAL DEPTH (ft bgs): **25**	DEPTH TO WATER (ft bgs): **21**	
SAMPLING METHOD: **5' Liners**	BORING DIAMETER: **2 inch**		

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	ASPHALT	**ASPHALT** ground surface.			
	GW	Angular **GRAVEL** with some sand (fill).			
2	SP	Brown, fine to medium **SAND**; moist; no odor; no sheen.		2.4	
4				2.5	
6				2.4	
8		Same as above; no odor; no sheen.		2.4	
10				3.1	
12				2.5	
14	SM	Olive gray, silty, fine **SAND** with 30% silt; moist; no odor; no sheen.		3.0	
16	SP	Olive gray, fine **SAND**; no odor; no sheen.		4.5	
18				3.2	
20	SM	Olive gray, silty, **SAND**; wet; no odor; no sheen.			
22	ML	Olive gray, sandy **SILT** with moderate plasticity; saturated; no odor; no sheen.		0.5	OIP53-21-21.5-112219
24	SP	Gray to light brown, fine to medium **SAND**; saturated; no odor; no sheen.			
		Bottom of Boring = 25 ft. bgs			

ABBREVIATIONS:
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NOTES:

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-54**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-7	**DRILL DATE:** 3/11/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292508.6819	**EASTING:** 1017439.913	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 18	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 ft. bgs; asphalt ground surface.			
5	SW	Brown, loose **SAND** with gravel and cobbles; damp; no odor.		0.2	
7	SP	Clean, loose **SAND** with trace gravel; damp; no odor.		0.5	
10	SP/SW	Interbedded clean **SAND** and well-graded **SAND** with gravel and trace silt throughout; no odor.		0.4	
12				0.4	
14				0.6	
15					OIP-54-15-16
16				0.6	
18		At 18 ft., becomes wet.		0.7	OIP-54-18-19
19					
20		Becomes saturated at the bottom of the boring.		0.7	
		Boring terminated at 20 ft. bgs.			

ABBREVIATIONS:
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NOTES:

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-57	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-4	**DRILL DATE:** 3/10/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 293157.0647	**EASTING:** 1017913.226	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 15.5	**DEPTH TO WATER (ft bgs):** Not Discernible	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Hand augered to 6 ft. bgs; railroad spall ground surface over silt and sand.			
6	ML	Brown, mottled **SILT**; moist; no odor.		2.4	
9	SP	Brown, loose medium, clean **SAND** with interbedded fine **SAND**; no odor.		2.8	
10	ML	Brown, mottled **SILT**; moist; no odor.		2.3	
12	SM/SP	Brown to gray, medium **SAND** with interbedded, fine, clean **SAND** and silty **SAND**.		3.2	
14				3.8	OIP-57-14
15		Boring terminated at 15 ft. bgs.			

ABBREVIATIONS:
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NOTES:

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-64	
LOGGED BY: G. Cisneros	**BORING LOCATION:** AOPC-6	**DRILL DATE:** 3/12/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292772.4434	**EASTING:** 1017549.348	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 14	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	FILL	Asphalt ground surface **FILL**.			
1		Brown, fine to medium **SAND**; moist; no odor; no sheen throughout boring.			
2				1.0	
3					
4				0.2	
5					
6				0.3	
7					
8				0.4	
9					
10	SP				
11				1.3	
12					
13					
14		At 14 ft., becomes wet; no odor; no sheen.		1.3	OIP-64-14-15
15				0.2	
16					
17				0.2	
18		Gray, fine to medium **SAND** with 10% red grains; saturated; no odor; no sheen.		1.1	
19				2.2	
20		Boring terminated at 20 ft. bgs.			

ABBREVIATIONS:
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NOTES:

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PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **OIP-66**	
LOGGED BY: **G. Cisneros**	**BORING LOCATION:** AOPC8	DRILL DATE: **11/22/19**	
DRILLED BY: **HOLT (Mike)**	NORTHING: **293018.87**	EASTING: **1017712.31**	
DRILLING EQUIPMENT: **Limited Access Drill Rig**	COORDINATE SYSTEM: **NAD 83 WA SP S**		
DRILLING METHOD: **Geoprobe**	TOTAL DEPTH (ft bgs): **20**	DEPTH TO WATER (ft bgs): **17**	
SAMPLING METHOD: **5' Liners**	BORING DIAMETER: **2 inch**		

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	FILL	Gravel, rounded, base **FILL**.			
1	SP	Brown, fine to medium **SAND**; no odor; no sheen.			
5					
6					
7	ML	Olive gray **SILT** with moderate plasticity and some organics; moist; slight odor; moderate sheen.			
9	SP	Brown, medium to coarse **SAND**; slight odor.			
10	SM	Olive gray, silty **SAND**; moderate sheen.			
11	ML	Olive gray **SILT** with low plasticity; moist to wet; strong odor; moderate sheen.			
12					OIP66-12-12.5-112219 OIP166D-12-12.5-112219
13	SP	Brown, medium to coarse **SAND**; moist; strong odor; heavy sheen.			
15	SM	Olive gray, silty, fine **SAND**; wet; slight odor; slight sheen.			
16		Olive gray, fine to medium **SAND**; wet, slight odor, slight sheen.			
17 ▼					
18	SP				
20		Bottom of Boring = 20 ft. bgs			

ABBREVIATIONS:
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NOTES: No PID readings were recorded at this location.

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-67	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-6	**DRILL DATE:** 3/12/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 293057.3205	**EASTING:** 1017737.221	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 25.5	**DEPTH TO WATER (ft bgs):** 14	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** 14-19	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	GP	Brown, loose, sandy **GRAVEL** ground surface; no odor.		2.0	
		No recovery.			
2					
4					
	SM	Dark brown, loose, silty **SAND**; dry; no odor.		3.1	
6	ML	At 6 ft., grades to brown **SILT** with trace organics; dry to moist; no odor; no sheen.			OIP-67-7-8
8	SM/SP	Gray/brown **SAND** and silty **SAND**; moist; moderate to strong odor; heavy sheen and slight brown droplets.		5.5	
10	SM/ML	Gray/brown, interbedded silty **SAND** and sandy **SILT**; moderate to strong odor; heavy sheen throughout.		188.0	OIP-67-11-12
12				573.0	
14 ▼				499.0	
16				268.0	OIP-67-GW-14-19 OIP-67-14.5-15 OIP-67-18-19
18		At 18 ft., odor dissipates; no sheen.		358.0	
20	SP	Clean **SAND**; no odor; no sheen.		5.2	
				1.5	
22					
	ML	SILT; no odor.		2.7	
24	SP	Clean, poorly-graded **SAND**; no odor; no sheen.			
		Boring terminated at 25 ft. bgs.			

ABBREVIATIONS:
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NOTES:

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **OIP-68**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-6	**DRILL DATE:** 3/11/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 293091.7803	**EASTING:** 1017765.909	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 14	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** 13-18	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	GW	**GRAVEL** ground surface. Brown, loose, organic-rich, sandy, silty **GRAVEL**; dry; no odor.		2.1	
4	SP	Gray, fine to medium, loose, clean **SAND** with trace gravels; moist; no odor.		1.4	
6	SM	At 6 ft., becomes silty **SAND**.		1.3	
10	ML	Gray, clayey **SILT**; moist.		1.2	OIP-68-10-11 OIP-68D-10-11
12	SM	Gray, silty **SAND**; moist; no odor.		1.5	
14 ▼	SM	Gray, silty **SAND** and **SAND** with silt; wet to saturated; no odor; no sheen.		1.9	OIP-68-GW-13-18 OIP-68-13.5-14 OIP-68-14-14.5
16	SM			1.4	
18	SM			1.4	
20		Boring terminated at 20 ft. bgs.		1.0	

ABBREVIATIONS:
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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-69	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-4	**DRILL DATE:** 3/11/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 293233.2984	**EASTING:** 1017871.838	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 12	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** 12-17	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	GW	**GRAVEL** ground surface with organics and roots. Brown, loose, sandy, silty **GRAVEL**; moist; no odor.			
1					
2				0.9	
3	SP	Light brown, loose, fine, clean **SAND**; moist; no odor.			
4	SM	Gray, very fine, firm, silty **SAND**; moist.		0.9	
5					
6	SM/SP	Light brown, loose, fine, clean **SAND** with some laminations of silty sand; moist; no odor.		1.2	
7					
8				1.9	
9					
10	CH	Gray, firm to soft **CLAY** with 5-10% organics; no odor.		1.0	
11					OIP-69-11-12
12 ▼	SM	Gray, very fine, silty **SAND**; wet to saturated; no odor; no sheen.		1.5	
13	ML	**SILT**.		1.1	
	SM	Silty **SAND**.			
14	SP	Medium, loose, clean **SAND**; saturated; no odor; no sheen.		1.2	OIP-69-GW-12-17 OIP-69-14.5-15
15					
16					
17				1.3	
18					
19					
20		Boring terminated at 20 ft. bgs.		0.8	

ABBREVIATIONS:
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NOTES:
Turbidity of temp well at time of sample collection = 6.4 NTU

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-70	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-4	**DRILL DATE:** 3/10/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 293256.003	**EASTING:** 1018014.246	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 15.5	**DEPTH TO WATER (ft bgs):** 14	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	GW/SW	Hand auger to 5 ft. bgs; grass and gravel ground surface.			
5	SW	Brown, loose, well-graded **SAND**; saturated (perched groundwater); no odor; no sheen.			
6	SM	At 5.5 ft., grades to silty **SAND**.		10.3	
8				10.2	OIP-70-8
10				5.8	
11		At 11 ft., turns gray and brown.			
12	SM/ML	At 12 ft., becomes denser, very fine, silty **SAND** to sandy **SILT**; wet; no odor; no sheen.		0.6	OIP-70-GW-10-15 OIP-70-12-14
14 ▼	SP	Coarse, gray **SAND**; wet to saturated; no odor; no sheen.		0.7	
15		Boring terminated at 15 ft. bgs.			

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NOTES:

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-72	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-5	**DRILL DATE:** 3/11/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292891.335	**EASTING:** 1017843.702	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 15	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 ft. bgs; concrete ground surface.			
5	SP	Clean, loose, medium **SAND**; moist; no odor; no sheen.		0.9	
6	SM/ML	Brown, fine to very fine, silty **SAND** interbedded with sandy to clayey **SILT** with <10% wood/organics; moist to saturated; no odor; no sheen. From 6 to 13 ft. bgs, perched aquifer.		1.2	
9				8.2	
10	SM	Coarse **SAND** with silt; moderate odor; rainbow sheen.		11.2	OIP-72-10-11
11		At 11 ft., odor becomes mild; sheen becomes minimal.			
13		At 13.5 ft., chunk of wood present; moderate odor; sheen visible on core.		17.0	
14	ML	Gray/brown, firm **SILT**; mild odor; no sheen.			
15	SM/SP	Interbedded **SAND** and silty **SAND**; wet to saturated; no odor; no sheen.		2.3	
16				3.1	OIP-72-16-17
17		At 16.5 ft., becomes saturated; moderate odor; sheen on core.		26.2	
18		At 18 ft., odor dissipates; slight sheen.		19.0	
20		Boring terminated at 20 ft. bgs.		1.3	

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NOTES:

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** OIP-73	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-4	**DRILL DATE:** 3/12/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 293169.6157	**EASTING:** 1018034.585	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 15.5	**DEPTH TO WATER (ft bgs):** 13	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	GW/SW	Airknifed to 5 ft. bgs; Gravel ground surface.			
5	SW	Brown, loose, medium **SAND** with gravel; moist; no odor; no sheen.		0.8	
7	ML	At 7 ft., 3 inches of brown **SILT**.			
	SW	At 7.25 ft., transitions to gray.		0.7	
9	SM	Silty **SAND**.			OIP-73-9-10
10	SP	Brown, poorly-graded **SAND**; moist; no odor; no sheen.		0.9	
12				0.3	
13 ▼		At 13 ft., becomes saturated.			OIP-73-13-14 OIP-73D-13-14
14	SM	Lenses of silty **SAND**.			
	SP	Clean **SAND**.			
15		Boring terminated at 15 ft. bgs.			

ABBREVIATIONS:
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NOTES:

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **GP-31**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-9	**DRILL DATE:** 3/11/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292765.1886	**EASTING:** 1017985.424	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 14	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** 13.5-18.5	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	SP	Airknifed to 6.5 ft bgs; brown, loose **SAND** observed during clearing.			
6				0.8	
7	SM/ML	Brown, silty **SAND**; moist, loose, no odor. Grades to brown **SILT** interbedded with silty, fine, medium **SAND** with 5-20% organics (wood).			
8		At 8 ft., becomes wet (perched).		1.1	
10		At 10 ft., becomes saturated.		1.3	
12				1.4	
13	CH	At 13 ft., 2 inch chunk of wood over gray, firm, silty **CLAY**; moist; no odor.			
14	SM/ML	At 14 ft., grades to silty **SAND** with interbedded sandy **SILT**; soft and loose; saturated; no odor; no sheen.		1.4	
16				1.1	GP-31-14-15 GP-31-GW-13.5-18.5
17	SM	At 16.5 ft., fines decrease; wet; no odor.			
19	SP	At 19 ft., grades to loose, clean **SAND**; wet; no odor.		0.9	
20		Boring terminated at 20 ft. bgs.			

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **GP-32**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-9	**DRILL DATE:** 3/11/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292735.4444	**EASTING:** 1018027.903	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 15	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** 14-19	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	SM	Airknifed to 6.5 ft bgs; grassy ground surface.			
7	OL	Brown, organic-rich, sandy **SILT**; moist; organic odor.		2.0	
8	ML	At 7.5 ft., organics decrease.		1.8	
9	SM-ML	Silty **SAND** to sandy **SILT**.			
	ML	Soft, brown, mottled **SILT**; moist to wet; no odor.			
10	SM	At 12 ft., becomes gray, silty, soft to firm **SAND**; wet; no odor.		1.8	
12				2.6	
13	ML	At 12.5 ft., grades to soft, gray **SILT**; moist.			
14	CH	Gray, firm **CLAY** with organics; moist; no odor.		1.8	
15 ▼	ML	Soft **SILT**; saturated.			GP-32-GW-14-19 GP-32-17.5-18.5
18	SP	Clean, gray, loose, medium **SAND**; saturated; no odor; no sheen.		2.5	
20		Boring terminated at 20 ft. bgs.		1.8	

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **GP-33**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-7	**DRILL DATE:** 3/9/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292489.2593	**EASTING:** 1017559.34	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 30.6	**DEPTH TO WATER (ft bgs):** 18.5	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	GP	Railroad ground road base.			
6	SP	Brown, fine to medium **SAND**; moist; no odor; no sheen to 14 ft.		0.0	
8				0.7	
10				0.9	
12				1.2	
14	ML	Olive-gray **SILT** with moderate plasticity; moist; no odor; no sheen.		1.3	GP-33-14-14.5
16	SP	Brown, fine to medium **SAND**; wet; no odor.		0.9	
				1.2	
18 ▼				1.4	
		At 19 ft., becomes saturated; slight odor; slight sheen.			GP-33-19.5-20
20				80.6	
22				0.6	
	ML	Olive-gray, stiff **SILT** with low plasticity; wet; no odor; no sheen.		1.0	
24	SP	Brown, fine to medium **SAND**; saturated; no odor; no sheen.			GP-33-24-25
				0.7	
26				2.6	
28				0.6	GP-33-28-29
	SM	Olive-gray, silty **SAND**; no odor; no sheen.			
30		Boring terminated at 30 ft. bgs.		0.8	

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NOTES:
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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** GP-34	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-7	**DRILL DATE:** 3/9/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292439.7912	**EASTING:** 1017599.313	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** Not Encountered	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 ft. bgs.			
5	SP	Brown, medium **SAND** with trace gravel; damp; no odor.		0.1	
8	GM	Dark gray, silty **GRAVEL** with sand; moist; no odor; no sheen.		0.3	
10	SP	Fine, gray **SAND**. At 9.5 ft., wood debris.		0.2	
11		Gray, gravelly **SAND**.			
12		At 12 ft., fines downward to very fine **SAND**.		0.6	
13	SM	At 13 ft., grades to silty, very fine **SAND**; wet.			
14	ML	At 14 ft., grades to soft **SILT**; wet; no odor.		0.4	
15	SP	Coarse **SAND**; wet; no odor. Fines downward		0.2	GP-34-GW-14-19 GP-34-14-15
17	SP-SM	Gravelly, fine to coarse **SAND** with trace to 20% silt.		0.4	
18	ML	Gray **SILT** with trace to 20% fine sand; wet; no odor. Organics present below 18.75 ft.		0.5	
20		Boring terminated at 20 ft. bgs.		0.5	

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NOTES:
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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** GP-35	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-5	**DRILL DATE:** 3/10/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 293006.4502	**EASTING:** 1017856.098	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** Not Encountered	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Hand Auger to 5 ft. bgs; no recovery.			
5	SP	Brown **SAND** with gravel.			
6	ML	Gray **SILT**; moderate odor; minor metallic sheen.		3.0	
7				2.2	GP-35-7-8
8				3.0	
10				2.9	
12		At 12 ft., wood chunk.		3.3	
13	SP-SM	Gray **SAND** with layers of sand and silty sand at the bottom of the core; mild to no odor throughout; no sheen.			
15				2.9	
16					GP-35-16-17
20		Boring terminated at 20 ft. bgs.		2.1	

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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** GP-36	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-5	**DRILL DATE:** 3/12/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292959.6519	**EASTING:** 1017705.684	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 25.5	**DEPTH TO WATER (ft bgs):** 14	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 ft. bgs; no recovery.			
2					
4					
6	SP	Brown, loose, fine to medium, **SAND** with gravel,; dry to moist; no odor.		7.8	
8	ML	Brown, clayey **SILT** to fine, sandy **SILT** with 10% organics; moist to wet; no odor. At 8 ft., becomes gray; no odor.		25.6	
10	SP	Clean **SAND**; strong odor; heavy rainbow sheen and brown droplets.		7.6	
12	SM/CH	At 12 ft., grades to silty **SAND** then silty **CLAY** with 15% organics; rainbow sheen.		20.9	
14 ▼	SM	Silty **SAND**; strong odor; sheen and some brown droplets. At 14 ft., becomes wet.		612.0	GP-36-13-14
16				397.0	GP-36-16-17
18				241.0	
20	ML	Gray **SILT**; strong odor; possibly slough.		13.1	
22	SP	Gray, poorly-graded **SAND**; moderate odor; metallic sheen.			GP-36-22-23
24		At 23 ft., odor and sheen dissipate.		13.7	
		Boring terminated at 25 ft. bgs.		3.4	

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NOTES:
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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** GP-37	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-6	**DRILL DATE:** 3/12/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 293081.2618	**EASTING:** 1017687.849	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 15.5	**DEPTH TO WATER (ft bgs):** 14	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0		Airknifed to 5 ft. bgs; Gravel ground surface.			
5	SP	Brown, fine, loose, clean **SAND**; moist; no odor.		0.3	
9		Brown, silty **SAND**; moist; no odor. Interbedded **SAND** and silty **SAND**.		0.2	
10				0.1	
11					
12	SM/SP	At 12 ft., becomes gray.		0.1	GP-37-12-14 GP-37D-12-14
13					
14 ▼		At 14 ft., becomes saturated.		0.3	
15		Boring terminated at 15 ft. bgs.			

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NOTES:
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PROJECT: POL-TPH	**LOCATION:** Longview, WA	**BORING ID:** **GP-38**	
LOGGED BY: P. Osterhout	**BORING LOCATION:** AOPC-3	**DRILL DATE:** 3/13/2020	
DRILLED BY: Holt: Mike Running	**NORTHING:** 292423.0772	**EASTING:** 1017421.518	
DRILLING EQUIPMENT: LAR Geoprobe	**COORDINATE SYSTEM:** NAD 83 WA SP S		
DRILLING METHOD: Direct Push	**TOTAL DEPTH (ft bgs):** 20.5	**DEPTH TO WATER (ft bgs):** 19	
SAMPLING METHOD/SAMPLER LENGTH: 5' x 2" Liner	**BORING DIAMETER:** 2 inch	**TEMP. WELL INTERVAL:** Not Applicable	

Depth (feet)	USCS Symbol	Soil Description	Drive/ Recovery	PID (ppm)	Sample ID
0	GP	Railroad ground road base.			
1					
2		Brown, fine to medium **SAND**; moist; no odor; no sheen.			
3					
4					
5					
6				1.5	
7					
8				0.9	
9					
10	SP	Same as above; no odor; no sheen throughout the boring.		0.9	
11				0.5	GP-38-11-11.5
12				1.4	
13				1.1	
14					
15					
16				0.8	
17					
18				1.4	
19		At 19 ft., becomes wet.			
20		Boring terminated at 20 ft. bgs.			

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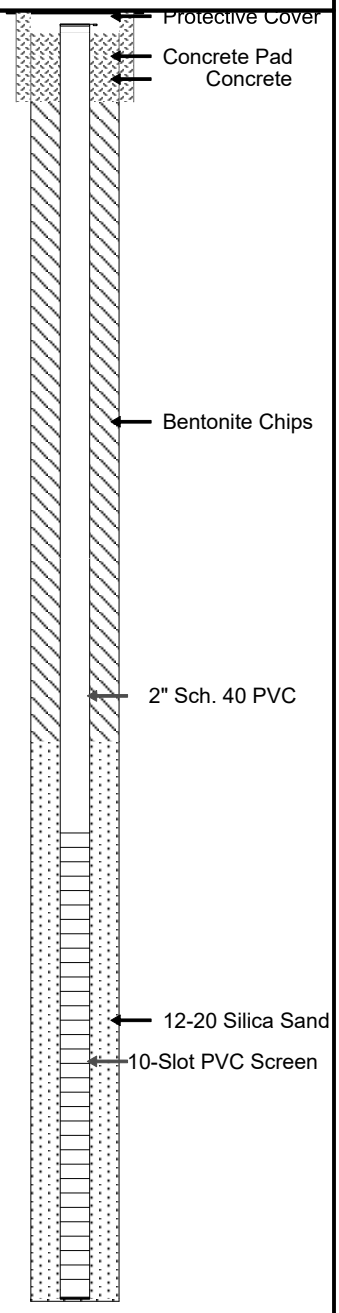
PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **MW-33**	
DRILL DATE: **3/9/2020**	COORDINATE SYSTEM: **NAD 83 WA SP S/ NAVD88**	ECOLOGY WELL ID: **BME 942**	
DRILLED BY: **Holt: John Bennett**	LOGGED BY: **G. Cisneros**	NORTHING: **292780.64**	EASTING: **1017605.9**
DRILLING EQUIPMENT: **Truck Mounted Auger**		GROUND SURFACE ELEV.: **26.1**	TOC ELEVATION: **25.91**
DRILLING METHOD: **Hollow Stem Auger**		TOTAL DEPTH (ft bgs): **28.2**	DEPTH TO WATER (ft bgs): **18.18**
SAMPLING METHOD: **1.5 ft. Interval Split Spoon**		BORING DIAMETER: **8 inch**	SCREENED INTERVAL: **18-28**

Depth (feet)	USCS Symbol	Description	Drive/ Recovery	# of Blows	PID (ppm)	Sample ID
0	SP	Airknifed to 7 ft. bgs; clean **SAND** observed.				
8	SP	Brown, fine to medium **SAND**; moist; no odor; no sheen.		3 7 5	0.9 1.3	
10	ML	Olive-gray, sandy **SILT** with moderate plasticity; no odor; no sheen.		3 2 1	0.6 0.7	
12	SP	Gray, fine to medium **SAND**; wet; strong odor; heavy sheen,		3 6 9 1 6 9	194.0 102.0 116.0 39.0	MW-33-12-12.5
16	SP	At 17 ft., moderate odor and moderate sheen.		2 4 5 3 2 1	52.0 20.0 22.8 11.5	MW-33-19.5-20
18	ML	Olive-gray **SILT** with low plasticity; slight odor; no sheen.				
22	SP	Gray to brown, fine to medium **SAND**; wet; slight odor; no sheen.		3 8 10 1 8 10	11.9 8.6 3.3 3.1	MW-33-22.5-23
28		Depth to bottom of well = 28.20 ft. bgs.				

Well Construction



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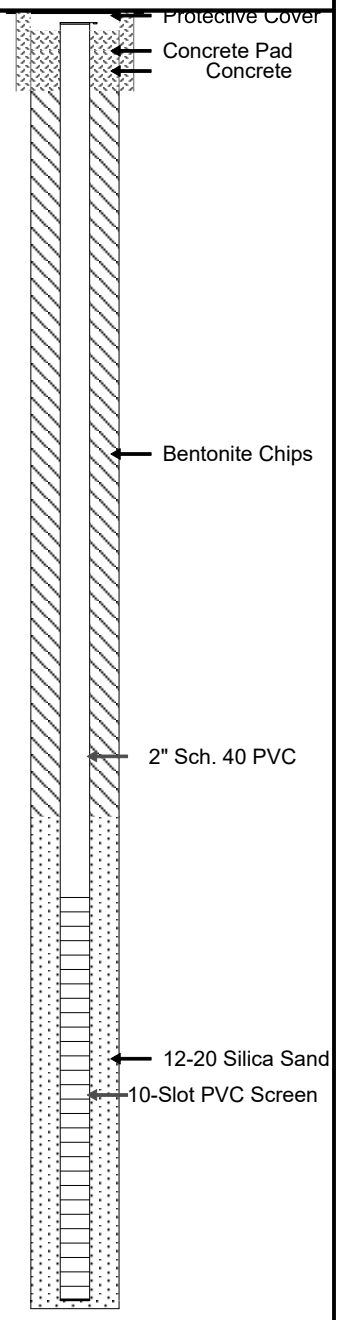
PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **MW-34**	
DRILL DATE: **3/10/2020**	COORDINATE SYSTEM: **NAD 83 WA SP S/ NAVD88**	ECOLOGY WELL ID: **BME 944**	
DRILLED BY: **Holt: John Bennett**	LOGGED BY: **G. Cisneros**	NORTHING: **292630.78**	EASTING: **1017483.21**
DRILLING EQUIPMENT: **Truck Mounted Auger**		GROUND SURFACE ELEV.: **26.96**	TOC ELEVATION: **26.67**
DRILLING METHOD: **Hollow Stem Auger**		TOTAL DEPTH (ft bgs): **32**	DEPTH TO WATER (ft bgs): **18.92**
SAMPLING METHOD: **1.5 ft. Interval Split Spoon**		BORING DIAMETER: **8 inch**	SCREENED INTERVAL: **22-32**

Depth (feet)	USCS Symbol	Description	Drive/ Recovery	# of Blows	PID (ppm)	Sample ID
0		Airknifed to 10 ft. bgs; asphalt ground surface; road base fill to 0.5 ft.				
10	SP	Brown, fine to medium **SAND**; moist; no odor; no sheen.		9 15 15	0.1	
12				9 5 6	0.3	
14	ML	Olive, sandy **SILT** with low plasticity; moist; slight odor; no sheen.			63.0	
16	SM	Gray, silty, fine **SAND**; moderate odor; slight sheen.		3 7 7	377.0	MW-34-15-15.5
	SP-SM	Gray, fine to medium **SAND** with 10% silt.		4 5 6	372.0 95.0 96.0	
18	SM/ML	From 18 to 20.5 ft., interbedded silty **SAND** and sandy **SILT**.		4 4 4	116.0 73.0	
20	ML	Olive-gray **SILT** with medium plasticity; moist; slight odor; no sheen.		2 2 2	315.0 23.0	MW-34-20-20.5
22	SM	Gray, silty, fine **SAND**; wet; slight odor; no sheen.				
24	SP	Brown, fine to medium **SAND**; wet; slight odor; no sheen.		3 5 7 4 4 3	29.6 14.8 42.0 8.2	MW-34-24-24.5
26						
28	SM	Gray, silty, fine **SAND**; moist; slight odor; no sheen.		1 3 5	58.0 9.4	MW-34-28-28.5
	SP	Gray, fine to medium **SAND**; wet; very slight odor; no sheen.				
30						
32		Depth to bottom of well = 32 ft. bgs.				

Well Construction



ABBREVIATIONS:
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ppm = parts per million
USCS = Unified Soil Classification System
▼ = denotes groundwater table

NOTES:

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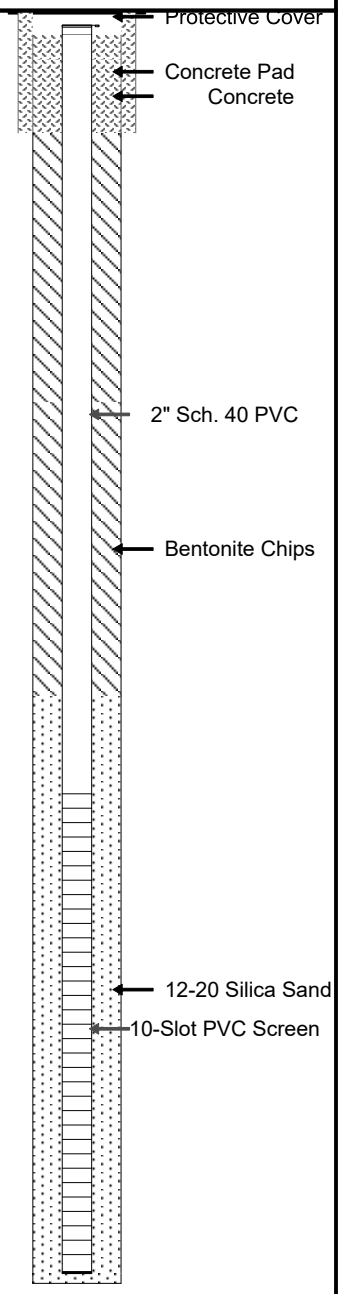
PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **MW-35**	
DRILL DATE: **3/10/2020**	COORDINATE SYSTEM: **NAD 83 WA SP S/ NAVD88**	ECOLOGY WELL ID: **BME 943**	
DRILLED BY: **Holt: John Bennett**	LOGGED BY: **G. Cisneros**	NORTHING: **292571.93**	EASTING: **1017321.65**
DRILLING EQUIPMENT: **Truck Mounted Auger**		GROUND SURFACE ELEV.: **27.4**	TOC ELEVATION: **26.95**
DRILLING METHOD: **Hollow Stem Auger**		TOTAL DEPTH (ft bgs): **25.8**	DEPTH TO WATER (ft bgs): **13.71**
SAMPLING METHOD: **1.5 ft. Interval Split Spoon**		BORING DIAMETER: **8 inch**	SCREENED INTERVAL: **16-26**

Depth (feet)	USCS Symbol	Description	Drive/ Recovery	# of Blows	PID (ppm)	Sample ID
0		Airknifed to 6 ft. bgs; asphalt ground surface.				
6	SP	Brown, fine to medium **SAND**; moist; no odor; no sheen.		4 12 12	1.2 1.0	
12				3 10 10	2.1 1.3	
14		At 19 ft., becomes wet.		2 7 8	0.3 0.2	MW-35-15.5-16
18				1 2 3	0.2 0.2	
20	ML	Olive-gray **SILT** with moderate plasticity; moist; no odor; no sheen.		2 3 4	0.2 0.2	
22						
24	SP	Brown to gray, fine to medium **SAND** with shell fragments; wet; no odor; no sheen.		2 5 9	0.3	
26		Depth to bottom of well = 25.80 ft. bgs.				

Well Construction



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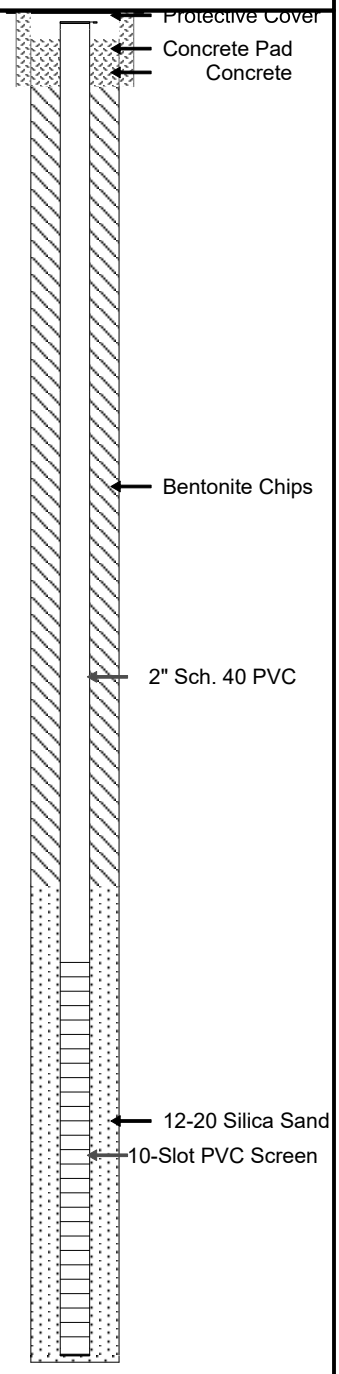
PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **MW-36**	
DRILL DATE: **3/11/2020**	COORDINATE SYSTEM: **NAD 83 WA SP S/ NAVD88**	ECOLOGY WELL ID: **BME 945**	
DRILLED BY: **Holt: John Bennett**	LOGGED BY: **G. Cisneros**	NORTHING: **292270.4**	EASTING: **1017406**
DRILLING EQUIPMENT: **Truck Mounted Auger**		GROUND SURFACE ELEV.: **31.88**	TOC ELEVATION: **31.59**
DRILLING METHOD: **Hollow Stem Auger**		TOTAL DEPTH (ft bgs): **35.33**	DEPTH TO WATER (ft bgs): **24.45**
SAMPLING METHOD: **1.5 ft. Interval Split Spoon**		BORING DIAMETER: **8 inch**	SCREENED INTERVAL: **25-35**

Depth (feet)	USCS Symbol	Description	Drive/ Recovery	# of Blows	PID (ppm)	Sample ID
0		Airknifed to 8 ft. bgs.				
8	SP	Brown, fine to medium **SAND**; moist; no odor; no sheen.		7 4 5	0.0	
12	ML	Reddish-brown, stiff **SILT** with moderate plasticity; moist; no odor; no sheen.				
14	SP	Brown, fine to medium **SAND**; moist; no odor; no sheen.		2 4 4	0.0	
18				3 5 5	0.0	
20				3 3 3	0.0	
22	ML	Brown to olive, stiff **SILT** with moderate to high plasticity; moist; no odor; no sheen.		0 0 0	0.1	
24 ▼					0.1	
26	SP-SM	Gray, fine to medium **SAND** with 10% silt; wet; no odor; no sheen.		1 2 1	0.2 0.3	
28	SP	Brown, fine to medium **SAND** with 10% fine red grains; saturated; no odor; no sheen.		1 2 2		MW-36-27.5-28
34		Depth to bottom of well = 35.33 ft. bgs.				

Well Construction



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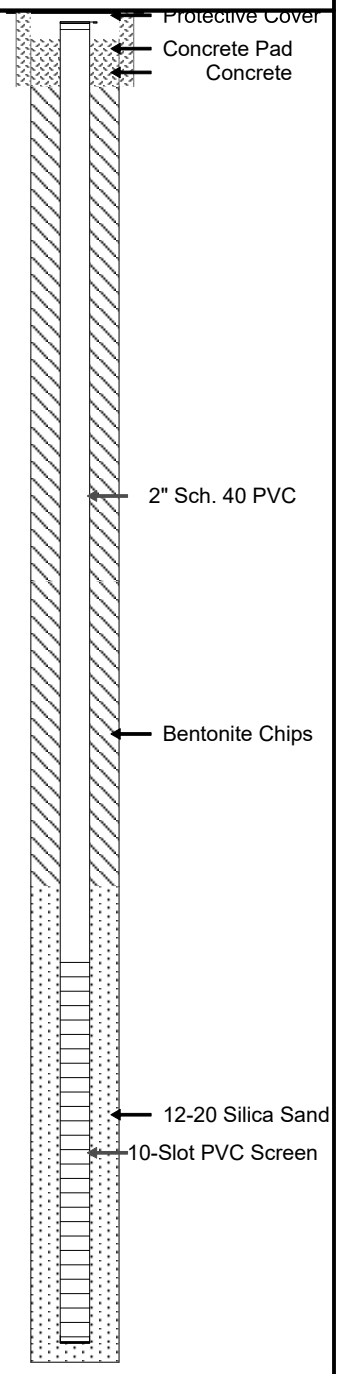
PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **MW-37**	
DRILL DATE: **3/12/2020**	COORDINATE SYSTEM: **NAD 83 WA SP S/ NAVD88**	ECOLOGY WELL ID: **BME 947**	
DRILLED BY: **Holt: John Bennett**	LOGGED BY: **G. Cisneros**	NORTHING: **292043.9**	EASTING: **1017170.7**
DRILLING EQUIPMENT: **Truck Mounted Auger**		GROUND SURFACE ELEV.: **31.67**	TOC ELEVATION: **31.13**
DRILLING METHOD: **Hollow Stem Auger**		TOTAL DEPTH (ft bgs): **35**	DEPTH TO WATER (ft bgs): **27.5**
SAMPLING METHOD: **1.5 ft. Interval Split Spoon**		BORING DIAMETER: **8 inch**	SCREENED INTERVAL: **25-35**

Depth (feet)	USCS Symbol	Description	Drive/ Recovery	# of Blows	PID (ppm)	Sample ID
0		Airknifed to 8 ft. bgs; asphalt ground surface with sand and cobbles below.				
8		Brownish-gray, fine to medium **SAND**; moist; no odor; no sheen.				
10				0 0 1	0.0	
16				0 0 0	0.0	
18				0 0 0	0.0	
20	SP	Brown, very loose, fine to medium **SAND** with 10% red grains; moist; no odor; no sheen.		0 0 0	0.0	
22				0 0 0	0.0	
24				1 2 3	0.0	
26		At 26 ft., becomes moist to wet; no odor; no sheen.				
28		Gray, poorly-graded **SAND** with 10% red grains; moist; no odor; no sheen.		3 3 3	0.2	MW-37-27.5-28 and MW-37D-27.5-28
34		Depth to bottom of well = 35 ft. bgs.				



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PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **MW-38**	
DRILL DATE: **3/11/2020**	COORDINATE SYSTEM: **NAD 83 WA SP S/ NAVD88**	ECOLOGY WELL ID: **BME 946**	
DRILLED BY: **Holt: John Bennett**	LOGGED BY: **G. Cisneros**	NORTHING: **291808.13**	EASTING: **1017497.79**
DRILLING EQUIPMENT: **Truck Mounted Auger**		GROUND SURFACE ELEV.: **31.46**	TOC ELEVATION: **31.09**
DRILLING METHOD: **Hollow Stem Auger**		TOTAL DEPTH (ft bgs): **35**	DEPTH TO WATER (ft bgs): **24**
SAMPLING METHOD: **1.5 ft. Interval Split Spoon**		BORING DIAMETER: **8 inch**	SCREENED INTERVAL: **25-35**

Depth (feet)	USCS Symbol	Description	Drive/ Recovery	# of Blows	PID (ppm)	Sample ID
0	FILL	Asphalt ground surface **FILL**.				
2	SW	**SAND** and cobbles.				
4		Brown-gray, loose **SAND**; no odor; no sheen.				
10		Brown to gray, fine to medium **SAND**; moist; no odor; no sheen.		8 9 9	0.0 0.0	
16		Brown, fine to medium **SAND**; moist; no odor; no sheen.		4 4 4	0.0 0.0	
18		At 18 ft., rock in sampler; no recovery.		3 2 2		
20	SP	Brown, fine to medium **SAND** with 10% fine red grains; moist; no odor; no sheen.		2 2 2	0.0 0.0	
22		At 23 ft., becomes moist to wet.		4 7 7	0.0 0.0	MW-38-23.5-24
24 ▼		At 25 ft., becomes saturated; no odor; no sheen.		4 4 4	0.0 0.0	
28				2 2 4	0.0	
30		Same as above.				
32						
34		Depth to bottom of well = 35 ft. bgs.				

Well Construction: Protective Cover; Concrete Pad; Concrete; Bentonite Chips; 2" Sch. 40 PVC; 12-20 Silica Sand; 10-Slot PVC Screen

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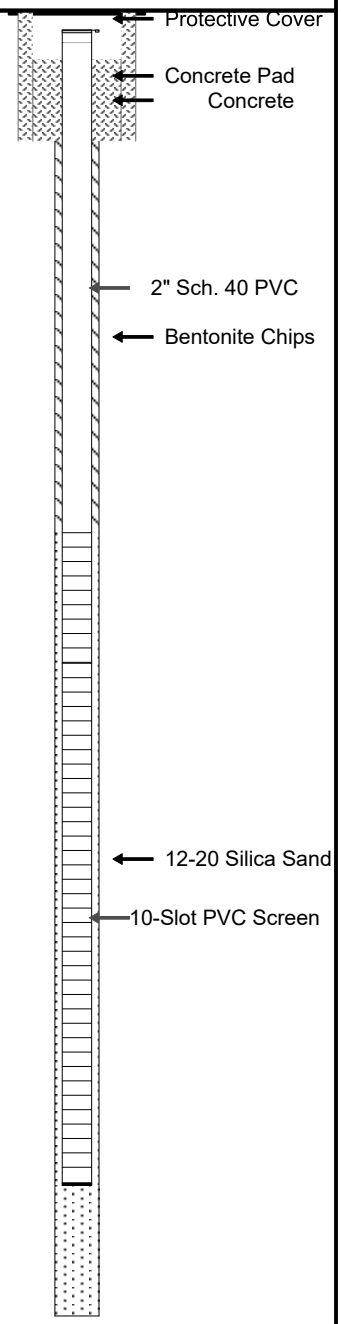
PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **MW-39**	
DRILL DATE: **3/12/2020**	COORDINATE SYSTEM: **NAD 83 WA SP S/ NAVD88**	ECOLOGY WELL ID: **BME 948**	
DRILLED BY: **Holt: Mike Running**	LOGGED BY: **P. Osterhout**	NORTHING: **293200.28**	EASTING: **1017952.25**
DRILLING EQUIPMENT: **LAR Geoprobe**		GROUND SURFACE ELEV.: **19.23**	TOC ELEVATION: **18.95**
DRILLING METHOD: **Direct Push**		TOTAL DEPTH (ft bgs): **20**	DEPTH TO WATER (ft bgs): **14.5**
SAMPLING METHOD: **5' x 2" Liner**		BORING DIAMETER: **3 inch**	SCREENED INTERVAL: **8-18**

Depth (feet)	USCS Symbol	Description	Drive/ Recovery	# of Blows	PID (ppm)	Sample ID
0–1	FILL	Railroad spall, gravelly **FILL** ground surface.				
2	GM	Brown, silty, sandy **GRAVEL**; moist; no odor.				
3	SP	Brown, loose, clean **SAND**; dry; no odor.			2.8	MW-39-2-4
4–6	SM/ML	Interbedded brown, silty **SAND** and mottled brown/coppery, sandy **SILT**; moist to wet; no odor; no sheen.			2.1 1.8	
7–10	ML	Gray **SILT** and clayey **SILT** with < 10% organics (wood); dry to moist. At 8 ft., moderate odor; rainbow sheen.			4.8 17.4	MW-39-8-9
11–14	SP	Gray, loose, fine to coarse, clean **SAND** with trace silt.; moist to wet; moderate odor; rainbow sheen. At 14.5 ft., becomes saturated.			69.6 67.6	MW-39-13-14
15–17					2.4	
18	SM/SP	Interbedded silty **SAND** and clean **SAND**.			1.2	
19	SP	Gray, clean **SAND**; moderate odor; rainbow sheen.				MW-39-18.5-20
20		Depth to bottom of well = 20 ft. bgs.			1.0	

Well Construction



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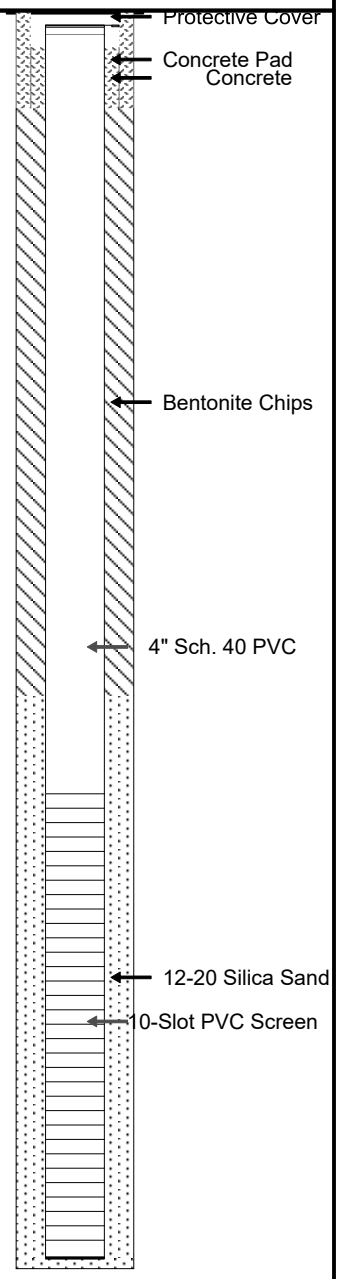
PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **MW-40**	
DRILL DATE: **3/9/2020**	COORDINATE SYSTEM: **NAD 83 WA SP S/ NAVD88**	ECOLOGY WELL ID: **BME 941**	
DRILLED BY: **Holt: John Bennett**	LOGGED BY: **P. Osterhout**	NORTHING: **292857.32**	EASTING: **1017668.47**
DRILLING EQUIPMENT: **Truck Mounted Auger**		GROUND SURFACE ELEV.: **24.77**	TOC ELEVATION: **24.65**
DRILLING METHOD: **Hollow Stem Auger**		TOTAL DEPTH (ft bgs): **26**	DEPTH TO WATER (ft bgs): **14.95**
SAMPLING METHOD: **1.5 ft. Interval Split Spoon**		BORING DIAMETER: **10 inch**	SCREENED INTERVAL: **16-26**

Depth (feet)	USCS Symbol	Description	Drive/ Recovery	# of Blows	PID (ppm)	Sample ID
0		Hand Augered to 2 ft. bgs.				
2		Airknifed to 5 ft. bgs.				
4						
6	SP	Fine **SAND** with angular, coarse gravel.				
8						
10	GM	Silty **GRAVEL**.				
	SP	Fine **SAND**; moist; strong odor; brown droplets.		0 3 6	351.0	MW-40-10.5-11
12	SM	At 12 ft., trace gravel present and wood at the bottom of sampler.		2 3 3	460.0 172.0 36.0	MW-40-11-13
		At 12.5 ft., grades to silty **SAND**.				
14	ML	At 13.5 ft., grades to dark brown **SILT** with 5 -10% sand and organics; slight odor.		0 0 1	47.0 86.0	
16		At 15 ft., becomes gray; slight to moderate odor; no sheen.				MW-40-17 and MW-40D-17
18	SP-SM	Brown, fine **SAND** with 10% silt; wet; moderate odor; slight sheen.		5 6 11	650.0 391.0	
20	SP	Gray, fine to medium **SAND**; slight odor; wet; slight sheen.		3 4 8	414.0 391.0	
22					157.0	
24		At 23.5 ft., odor dissipates.		2 4 7	170.0 10.7	MW-40-24-24.5
26		Depth to bottom of well = 25.70 ft. bgs.				

Well Construction



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NOTES:

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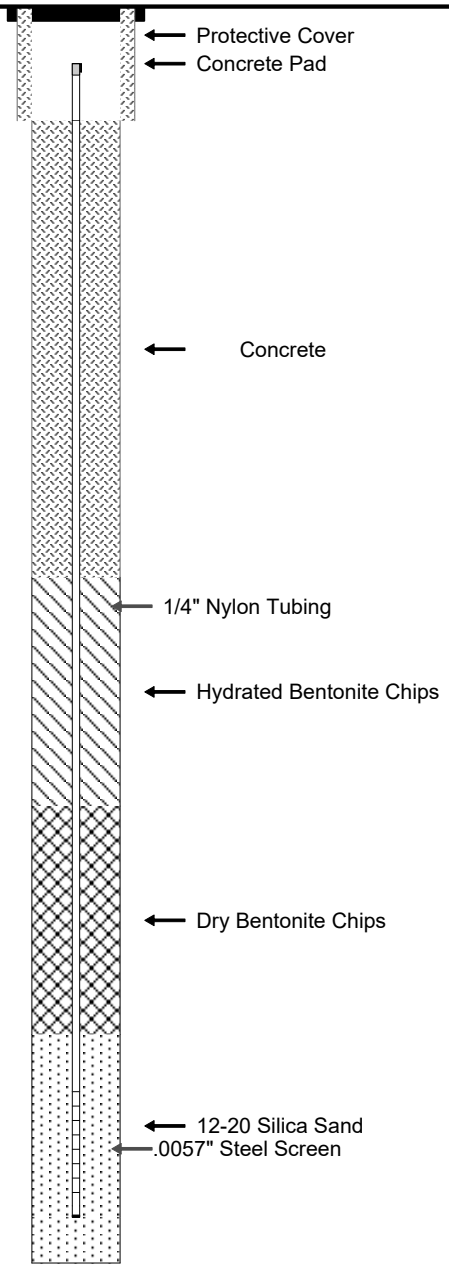
PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **VP-1**	
DRILL DATE: **3/11/2020**	COORDINATE SYSTEM: **NAD 83 WA SP S/ NAVD88**	ECOLOGY WELL ID: **BME 938**	
DRILLED BY: **Holt: Mike Running**	LOGGED BY: **G. Cisneros**	NORTHING: **292929.39**	EASTING: **1017680.61**
DRILLING EQUIPMENT: **LAR Geoprobe**		GROUND SURFACE ELEV.: **27.05**	TOC ELEVATION: **26.69**
DRILLING METHOD: **Direct Push**		TOTAL DEPTH (ft bgs): **5.5**	DEPTH TO WATER (ft bgs): **Not Encountered**
SAMPLING METHOD: **Not Applicable**		BORING DIAMETER: **2 inch**	SCREENED INTERVAL: **4.75-5.25**

Depth (feet)	USCS Symbol	Description
0	FILL	Asphalt ground surface **FILL**.
0.4	SP	Brown, fine to medium **SAND**.
5.6		Bottom of vapor point = 5.5 ft. bgs.

Well Construction



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NOTES: No samples collected for drive/recovery, PID, or analytical sampling.

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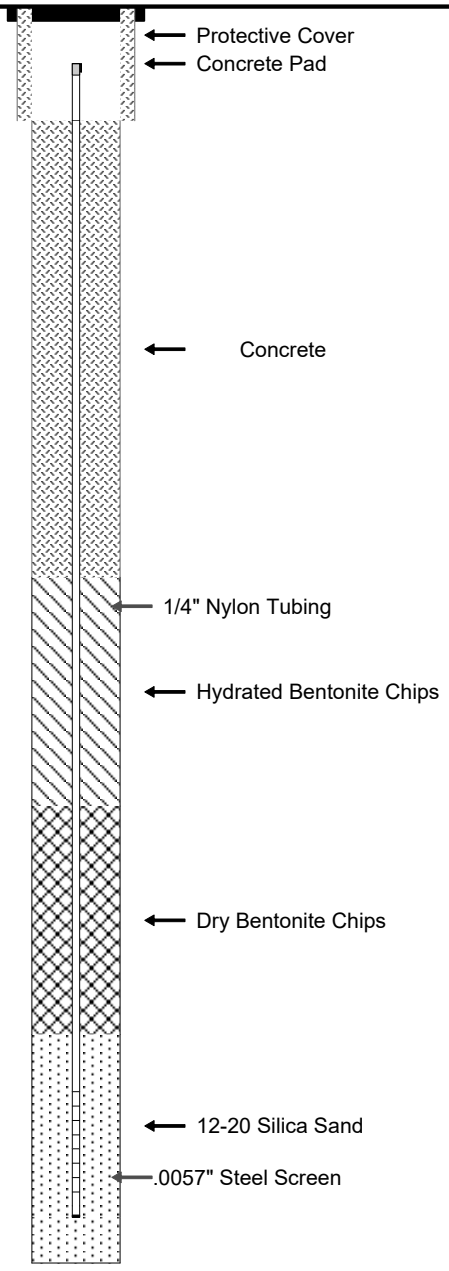
PROJECT: **POL-TPH**	LOCATION: **Longview, WA**	WELL ID: **VP-2**	
DRILL DATE: **3/11/2020**	COORDINATE SYSTEM: **NAD 83 WA SP S/ NAVD88**	ECOLOGY WELL ID: **BME 939**	
DRILLED BY: **Holt: Mike Running**	LOGGED BY: **G. Cisneros**	NORTHING: **292840.01**	EASTING: **1017581.2**
DRILLING EQUIPMENT: **LAR Geoprobe**		GROUND SURFACE ELEV.: **27**	TOC ELEVATION: **26.77**
DRILLING METHOD: **Direct Push**		TOTAL DEPTH (ft bgs): **5.5**	DEPTH TO WATER (ft bgs): **Not Encountered**
SAMPLING METHOD: **Not Applicable**		BORING DIAMETER: **2 inch**	SCREENED INTERVAL: **4.75-5.25**

Depth (feet)	USCS Symbol	Description
0	FILL	Asphalt ground surface **FILL**.
0.4		Brown, fine to medium **SAND**.
0.8		
1.2		
1.6		
2		
2.4		
2.8	SP	
3.2		
3.6		
4		
4.4		
4.8		
5.2		
5.6		Bottom of vapor point = 5.5 ft. bgs.

Well Construction



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NOTES: No samples collected for drive/recovery, PID, or analytical sampling.

Surface

Project: POL-TPH	~~Test Pit~~ Sampling Sheet	Date: 3/12/20
~~Test Pit #~~ Surface Sample	P3	
Total Depth	6 inches	
Lithology?	Brown, fine to coarse sand & gravel with rip rap; no odor; no sheen.	
Depth to Native	No Native	
Photo taken (list ID#)?	yes	
Photo with ruler?	N/A	
Presence of debris? Depth?	None	
PID Concentration (ppm) & Depth?	0.1 ppm 0-6"	
Sheen?	None	
Odor?	None	
GPS measurement taken?	No satellites available below Berth	
Other Observations:	Just below Pipe E & within rip rap ~21 feet South of Bulkhead	
Samples Details (ID, depth, date, time, analyses) collected at depths of ..... Lead? cPAH? GRO/DRO?	P3-0-0.5 @ 1440	

Surface

Project: POL-TPH ~~Test Pit~~ Sampling Sheet	Date: 3/12/20
~~Test Pit #~~ Surface Sample	P4
Total Depth	6 inches
Lithology?	Rip Rap Armor; Brown sand & gravel accumulated within riprap; No odor; No sheen
Depth to Native	N/A
Photo taken (list ID#)?	yes
Photo with ruler?	N/A
Presence of debris? Depth?	N/A - None except for riprap
PID Concentration (ppm) & Depth?	0.1 ppm 0-6"
Sheen?	None
Odor?	None
GPS measurement taken?	N/A
Other Observations:	East & below PipeE & within riprap of unknown thickness; ~21 feet south of Bulkhead
Samples Details (ID, depth, date, time, analyses) collected at depths of ..... Lead? cPAH? GRO/DRO?	P4-0-0.5 @ 1450

Surface

Project: POL-TPH ~~Test Pit~~ Sampling Sheet	Date: 3/12/20
~~Test Pit #~~ Surface Sample	P5
Total Depth	6 inches
Lithology?	Brown fine sand w/some gravel; no odor; No sheen
Depth to Native	N/A
Photo taken (list ID#)?	yes
Photo with ruler?	No
Presence of debris? Depth?	N/A Some wood debris & sqft disturbed soil @ top 1 inch
PID Concentration (ppm) & Depth?	0.0 ppm 0-6 inches
Sheen?	None
Odor?	None
GPS measurement taken?	N/A
Other Observations:	Soil disturbed @ top 1 inch. Adjacent to pipes A&B ~ 3 to 11 ft south of bulkhead.
Samples Details (ID, depth, date, time, analyses) collected at depths of ..... Lead? cPAH? GRO/DRO?	P5-0-0.5 @1455

Surface 3/12/20

Project: POC-TPH ~~Test Pit~~ Sampling Sheet	Date: 03/12/20
~~Test Pit #~~ Surface Sample	P6
Total Depth	6-12"
Lithology?	Brown, dense, fine to medium SAND; no odor; NO sheen
Depth to Native	N/A
Photo taken (list ID#)?	yes
Photo with ruler?	no
Presence of debris? Depth?	yes, abundant wood, fabric & other debris in to 6 inches. 5qft disturbed ~~soils~~ soil, that appears to be fresh soil in top 6 inches
PID Concentration (ppm) & Depth?	0.0 ppm
Sheen?	None
Odor?	None
GPS measurement taken?	N/A
Other Observations:	Abundant debris & 5qft disturbed soil in top 6 inches including cloth fabric Not in-place. Removed top 6 inches to collect a representative sample
Samples Details (ID, depth, date, time, analyses) collected at depths of ..... Lead? cPAH? GRO/DRO?	~~P6-6.0-12.0 @ 1315~~ P6-0.5-1.0' @ 1315 P6-0.5-1.0D @ 1320 Duplicate

Port of Longview TPH Site

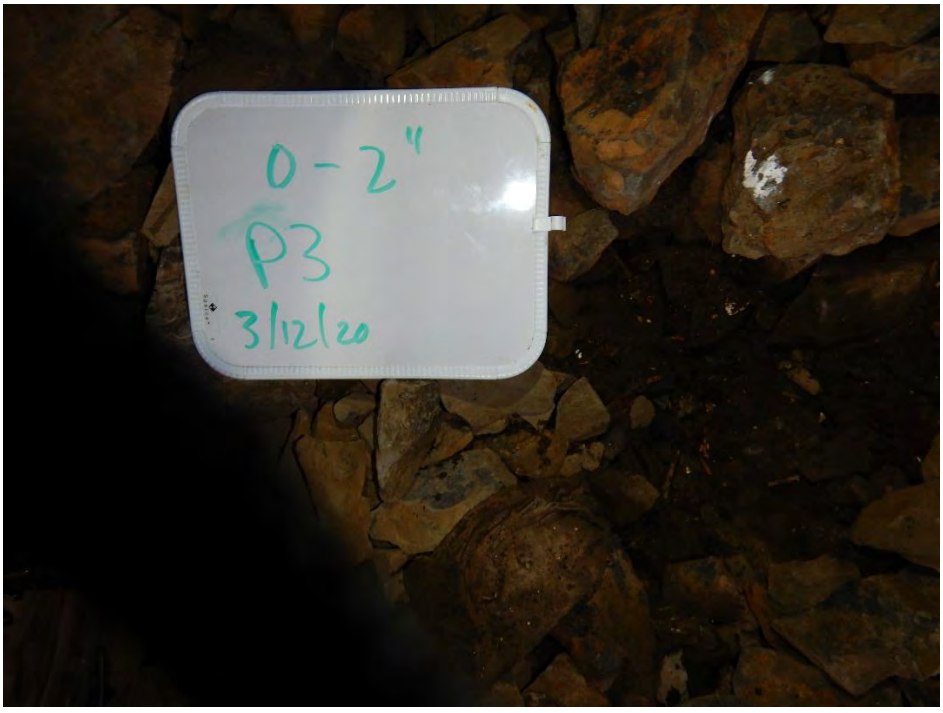
Interim Data Report

Appendix C
Photographs

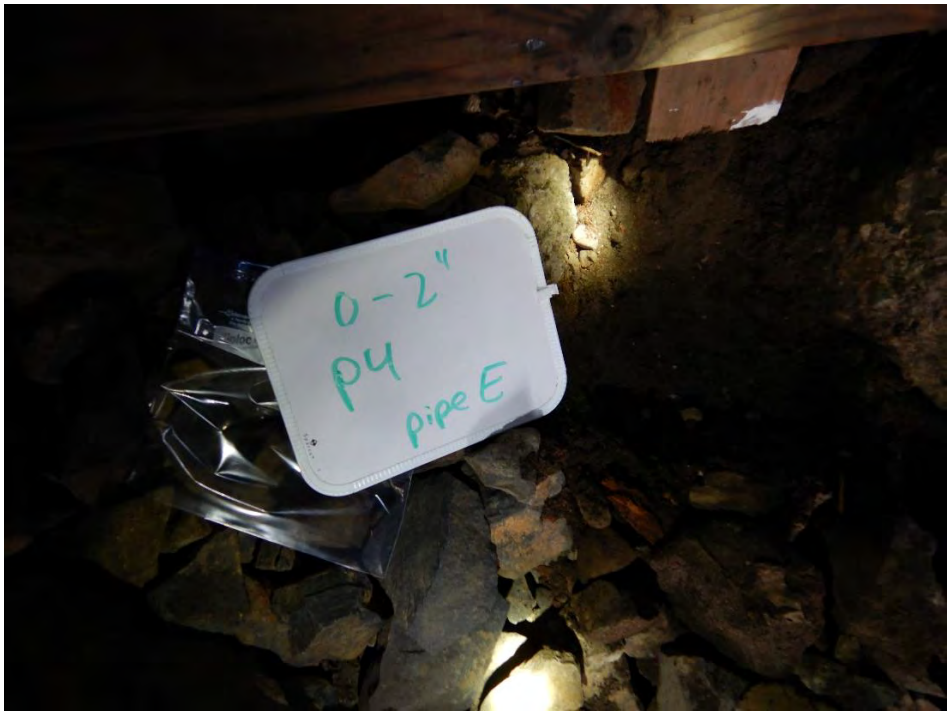
Photograph 1. Direct-push and Optical Image Profiler (OIP)/hydraulic profiling tool (HPT) technology within former mechanic's shop building, looking west-southwest.

Photograph 2. OIP and HPT probe with rods.

Photograph 3. View of eastern pipeline beneath Berth 2 and locations of P3 and P4. Accumulated soil was sparce due to abundant riprap.

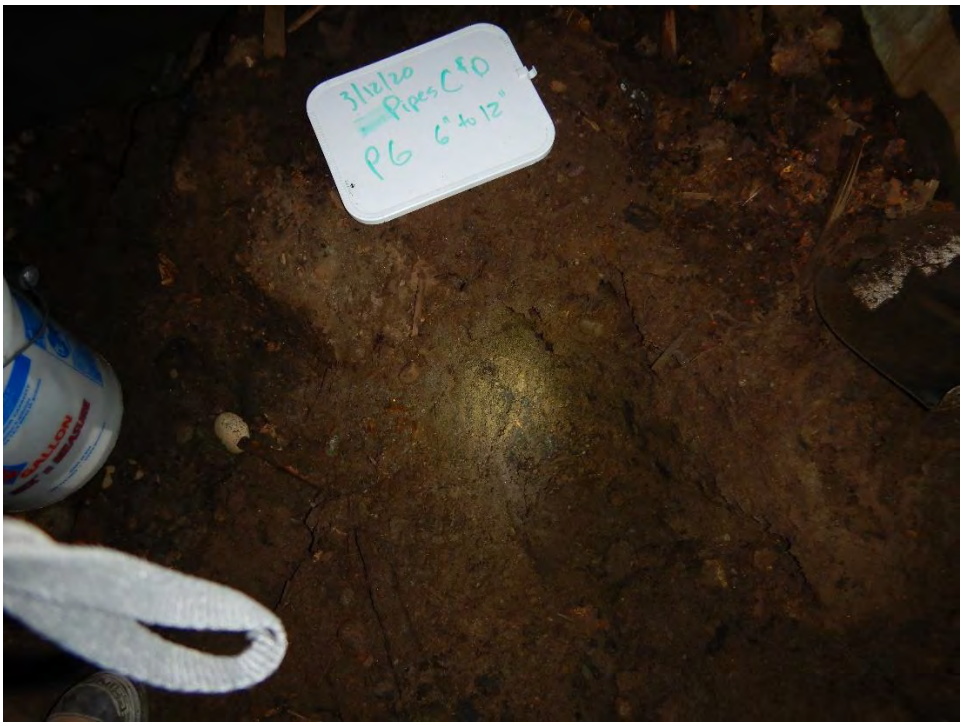


Photograph 4. P3 location collected from soil accumulated within the riprap.



Photograph 5. P4 location collected from soil accumulated within the riprap beneath Berth 2.

Photograph 6. P5 location adjacent to westernmost pipelines A and B.



Photograph 7. P6 located adjacent to the westernmost pipeline stubs (pipelines C and D). Collected from 6 to 12 inches below ground surface due to freshly disturbed soil in the top 6 inches.

Photograph 8. View of pipelines C and D and debris on soil surface.

Port of Longview TPH Site

Interim Data Report

Appendix D
Field Forms

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: _____ Date of Collection: _____

Project Number: _____ Field Personnel: G. Cisneros

Purge Data

Well ID: MW-01 Secure: ☐ Yes ☐ No Well Condition/Damage Description: Total = 12.76

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 11.17 Well Casing Type/Diameter/Screened Interval: 4"

After 5 minutes of purging (from top of casing): 11.25

Begin purge (time): 1250

End purge (time): 1320

Volume purged: 5.2 Liters

Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged (Liters)	pH	DO (mg/L)	Sp. Conductivity (mS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments (and mS/cm)
1307	11.25	2.2	6.45	5.12	228.1	5.7	13.0	-29.5	0.190
1310	11.25	2.9	6.41	4.41	227.7	5.5	13.0	-33.3	0.189
1313	11.25	3.5	6.40	3.85	226.3	6.5	13.0	-36.4	0.188
1316	11.25	4.5	6.40	3.38	225.4	6.8	13.0	-39.3	0.187
1319	11.25	5.2	6.40	3.26	225.0	5.7	13.0	-39.8	0.187

Sampling Data

Sample No: MW-01-050620 Location and Depth: MW-01 N. Side of Site

Date Collected (mo/dy/yr): 5/6 Time Collected: 1321 Weather: Sunny

Type: ☑ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☐ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☑ Pump Other: _____ Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): Clear

Sample Analyses

cPAHs

TPH-D	(HCl) ☑	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☑	BTEX	(HCl) ☑	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
500ml Amber	2		Ferrous Iron ☑
40ml VOAs	6		

Signature: _____ Date: 5/6/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH
Date of Collection: 5/6/20
Project Number:
Field Personnel: G-Cisneros

Purge Data

Well ID: MW-2 Secure: ☐ Yes ☐ No Well Condition/Damage Description: Total Depth = 11.90

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No
One Casing Volume (gal):

Depth of water (from top of well casing): 9.76
Well Casing Type/Diameter/Screened Interval: 4"

After 5 minutes of purging (from top of casing): 9.76

Begin purge (time): 1142

End purge (time): 1208

Volume purged: 4.9 Liters

Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO (7.26)	Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments (mS/cm Cond)
1156	9.82	2.9L	6.52	7.32	536	13.0	13.6	81.1	0.449
1159	9.82	3.2	6.42	7.09	537	10.3	13.2	81.8	0.448
1202	9.82	3.8	6.36	6.85	541	8.6	13.5	81.9	0.453
1205	9.82	4.3	6.32	6.73	541	8.5	13.5	83.2	0.454
1208	9.82	4.9	6.29	6.58	544	8.9	13.6	84.2	0.456

Sampling Data

Sample No: MW-02-GW-050620
Location and Depth: MW-02 4" well

Date Collected (mo/dy/yr): 5/6/20 Time Collected: 1208
Weather: Rainy/Sunny

Type: ☑ Ground Water ☐ Surface Water Other:
Sample: ☐ Filtered ☐ Unfiltered Other:

Sample Collected with: ☐ Bailer ☑ Pump Other:
Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; (disposable and/or dedicated silicon and poly tubing) Other:

Sample Description (Color, Turbidity, Odor, Other): Clear

Sample Analyses

(TPH-D)	(HCl) ☑	Chlor / Fluor	(unpres) ☐	COD / TOC (cPAHs)	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
(TPH-G)	(HCl) ☑	(BTEX)	(HCl) ☑	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
500ml Amber	2		
40ml VOAs	6		
	8		

Signature: [signature] **Date:** 5/6/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 05/06/2020

Project Number: _____ Field Personnel: TS

Purge Data

Well ID: MW-3 Secure: ☒ Yes ☐ No Well Condition/Damage Description: OK, cap could use replacement soon.

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 13.43' Well Casing Type/Diameter/Screened Interval: 4"

After 5 minutes of purging (from top of casing): 13.50'

Begin purge (time): 12:28

End purge (time): 13:08

Gallons purged: 5.5 Liters

Purge water disposal method: Drum on site

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (')	Vol. Purged (L)	pH	DO (mg/L)	Conductivity (mS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
12:33	13.50	.75	6.54	~~8.6~~	0.426	4.6	14.7	-196.7	Wrong DO unit (%)
12:38	13.52	1.6	6.38	0.35	0.410	3.7	14.5	-177.6	
12:43	13.52	2.75	6.37	0.20	0.407	3.9	14.3	-176.5	
12:48	13.52	3.5	6.36	0.16	0.405	3.4	14.7	-175.7	
12:53	13.52	4.25	6.36	0.14	0.400	~~3.8~~ 3.5	14.7	-175.6	

Sampling Data

Sample No: MW-03-050620 Location and Depth: _____

Date Collected (mo/dy/yr): 05/06/20 Time Collected: 12:54 ☐ AM ☒ PM Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☒ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☒ Pump Other: _____ Type: Peri

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): Slight yellow tint, small black flock, moderate odor

Sample Analyses

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOA	6		
1/2 L Amber	2		
Poly	2		

Signature: _____ Date: 05/06/2020

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: PDC Date of Collection: 5/6/20

Project Number: _____ Field Personnel: SC

Purge Data

Well ID: MW-05 Secure: ☐ Yes ☐ No Well Condition/Damage Description: _____

Total Depth = 16.70

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 14.97 Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing): _____

Begin purge (time): 1230

End purge (time): 1231

Volume purged: Dry in 1 min

Purge water disposal method: _____

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO	Conductivity	Turbidity	Temp	ORP	Comments
		Purged Dry				No Sample			

Sampling Data

Sample No: _____ Location and Depth: _____

Date Collected (mo/dy/yr): _____ Time Collected: _____ Weather: _____

Type: ☐ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☐ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☐ Pump Other: _____ Type: _____

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: _____

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): _____

Sample Analyses

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER)☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
	1		Purged Dry Instantly

Signature: _____ **Date:** _____

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL - TPH Date of Collection: 5/6/20

Project Number: _____ Field Personnel: P.D.

Purge Data

Well ID: MW-6 Secure: ☒ Yes ☐ No Well Condition/Damage Description: fine 2 of 3 bolt flanges are broken

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 10.61' @ 14:22 Well Casing Type/Diameter/Screened Interval: 4" PVC

After 5 minutes of purging (from top of casing): 10.62'

Begin purge (time): 14:23

End purge (time): 15:01

Gallons purged: 7 liters

Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	Spc. Conductivity µS/cm	Turbidity NTU	Temp °C	ORP MV	Comments
14:31	10.62'	2L	6.65	1.16	186.3	13.62	13.1	-68.0	
14:36	10.63'	3L	6.62	0.36	184.7	11.52	13.0	-76.3	
14:41	10.63'	4L	6.62	0.27	184.6	11.43	13.0	-79.3	
14:46	10.63'	5L	6.62	0.19	184.8	12.42	13.0	-82.8	
14:51		6L	6.61	0.15	185.0	10.65	13.1	-86.4	

Sampling Data

Sample No: MW-6-050620 Location and Depth: _____

Date Collected (mo/dy/yr): 5/6/20 Time Collected: 14:54 ☐ AM ☒ PM Weather: partly cloudy

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☒ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☒ Pump Other: _____ Type: ~~perfi~~peri

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): Clear (v. slight yellow), v. slight TPH odor, trace coppery floc.

Sample Analyses

TPH-D (CPAHs ☒)	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐		
TPH-G	(HCl) ☒	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐		

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
½ L Amber	2	None	Total Depth = 20.69'
40 mL VOA w/ HCl	6		Some coppery floc in purge water, otherwise water is clear. → may affect turbidity readings (biased high) in flow cell.

Signature: _____ Date: 5/6/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POC-TPH Date of Collection: 5/6/20

Project Number: _____ Field Personnel: G. Cisneros

Purge Data

Well ID: MW-07 Secure: ☐ Yes ☐ No Well Condition/Damage Description: Good

Total 23.80

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 14.85 Well Casing Type/Diameter/Screened Interval: 4"

After 5 minutes of purging (from top of casing): 14.85

Begin purge (time): 1349

End purge (time): _____

Volume purged: _____

Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	Sp. Conductivity mS/cm	Turbidity NTU	Temp °C	ORP mV	Comments mS/cm Cond
1407	14.85	1.8	6.75	6.00	461.5	50.3	14.9	25.9	0.396
1410	14.85	2.0	6.57	4.22	461.6	44.4	14.9	12.1	0.394
1413	14.85	2.4	6.56	3.81	458.7	45.9	14.6	8.0	0.391
1416	14.85	3.0	6.57	3.38	458.0	51.2	14.7	2.9	0.392
1419	14.85	3.5	6.57	3.19	457.9	41.9	14.6	1.2	0.391
1422	14.8	4.0	6.57	3.08	457.4	45.0	14.4	-0.3	0.385

Sampling Data

Sample No: MW-07-050620 Location and Depth: MW-07 by tracks

Date Collected (mo/dy/yr): 5/6/20 Time Collected: 1422 Weather: Sunny

Type: ☑ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☐ Unfiltered Other: Both Lab

Sample Collected with: ☐ Bailer ☑ Pump Other: _____ Type: _____

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): Yellow color no odor; Sock in Well

Sample Analyses

cPAHs Diss & Total Pb

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☑
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☑	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
500ml Amber	2		
40ml VOAs	6		Filter in lab
250ml Poly HNO3	1		
250ml Poly	1		
			Sock in well
Total = 10			

Signature: _____ Date: 5/6/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL - TPH Date of Collection: 5/6/20

Project Number: Field Personnel: P.O.

Purge Data

Well ID: MW-8 Secure: ☒ Yes ☐ No Well Condition/Damage Description: one bolt stripped, otherwise fine

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal):

Depth of water (from top of well casing): 13.15 Well Casing Type/Diameter/Screened Interval: 4" PVC / 14-24?

After 5 minutes of purging (from top of casing): 13.22'

Begin purge (time): 11:23

End purge (time): 7 Liters

Gallons purged: 12:06

Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	Conductivity SPC ms/cm	Turbidity NTU	Temp °C	ORP	Comments
11:38	13.20'	3L	6.49	0.39	544	15.10	13.8	-93.4	
11:43	13.20'	3.75L	6.51	0.17	544	13.87	13.8	-89.0	
11:48	13.20'	4.5L	6.51	0.11	544	15.15	13.9	-88.8	
11:53	13.20'	5.25L	6.51	0.08	543	11.17	13.9	-87.9	

Sampling Data

Sample No: MW-8-050620 Location and Depth:

Date Collected (mo/dy/yr): 5/6/20 Time Collected: 11:55 ☒ AM ☐ PM Weather: partly cloudy, 55°F

Type: ☒ Ground Water ☐ Surface Water Other: Sample: ☐ Filtered ☒ Unfiltered Other:

Sample Collected with: ☐ Bailer ☒ Pump Other: Type: peri pump

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other:

Sample Description (Color, Turbidity, Odor, Other): yellow, some small flock, minor to mod. TPH odor

Sample Analyses

CPAHs ☑

TPH-D	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☒	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
½ L Ambers	2	None	Total depth = 23.105'
40 mL VOAs	6		Initial purge very turbid.
			Bio-sheen in purge water.

Signature: Date: 5/6/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TP14 Date of Collection:

Project Number: Field Personnel:

Purge Data

Well ID: MW-10 Secure: ☐ Yes ☑ No Well Condition/Damage Description: New well cap to replace old unsecure cap

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal):

Depth of water (from top of well casing): 15.43 ft Well Casing Type/Diameter/Screened Interval:

After 5 minutes of purging (from top of casing): ~~15.44~~ 15.44

Begin purge (time): ~~11:32~~ 11:41

End purge (time): 12:27

Volume purged: 15 L

Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. L Purged	pH	DO mg/L	Conductivity µS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
11:50	15.44	1	6.59	2.49	216.9	28.99	13.8	46.4	
11:55	15.44	1.5	5.94	2.04	192.7	28.71	13.7	55.4	
12:00	15.44	2	5.87	0.52	192.2	20.14	13.7	54.6	
12:05	15.44	2.5	5.84	0.43	193.0	23.55	13.7	52.8	
12:10	15.44	3	5.83	0.42	193.4	25.44	13.6	52.7	

Sampling Data

Sample No: MW-10-040620 Location and Depth:

Date Collected (mo/dy/yr): 4/6/20 Time Collected: 12:21 Weather: 60 and partly cloudy

Type: ☑ Ground Water ☐ Surface Water Other: Sample: ☐ Filtered ☑ Unfiltered Other:

Sample Collected with: ☐ Bailer ☑ Pump Other: Type: peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other:

Sample Description (Color, Turbidity, Odor, Other): Colorless, some floc, no apparent odor

Sample Analyses

TPH-D	(HCl) ☑	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☑	BTEX	(HCl) ☑	Total Metals	(HNO3) ☑	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Lead (total + dissolved)

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOAs	6	N/A	Missed MNA parameters during
1/2 L amber	2		initial purge, returned & purged 10
250 mL poly	2		min prior to collecting MNA bottles
4 preserved + 1 unpreserved			
MNA VOAs	2		Ferrous Iron: 1.10 mg/L
1x 250 mL poly	Total = 14		
1x 500 mL poly			

Signature: Date: 4/6/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/7/20

Project Number: _____ Field Personnel: G. Cisneros

Purge Data

Well ID: MW-11 Secure: ☐ Yes ☐ No Well Condition/Damage Description: _____

Total Depth = 15.60

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal): 2.1 gals

Depth of water (from top of well casing): 12.39 Well Casing Type/Diameter/Screened Interval: 4"

After 5 minutes of purging (from top of casing): 1269

Begin purge (time): 1209

End purge (time): _____

Volume purged: _____ Liters

Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged (Liters)	pH	DO (mg/L)	Sp. Conductivity (mS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Cond. (mS/cm) Comments
1223	12.95	1.5	6.97	8.49	534	37.0	14.5	51.3	0.454
1226	13.04	1.6	6.94	8.55	533	37.8	14.4	54.1	0.452
1229	13.11	1.8	6.92	8.60	535	37.0	14.4	57.3	0.455
1232	13.19	2.1	6.90	8.65	535	39.4	14.5	59.4	0.456
1235	13.25	2.5	6.90	8.66	535	39.8	14.6	61.6	0.458

Sampling Data

Sample No: MW-11-050720 Location and Depth: Middle of Tracts

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 1237 Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☐ Unfiltered Other: _____

Sample Collected with: ☒ Bailer ☐ Pump Other: _____ Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): slight Orange tint

Sample Analyses

cPAHs ☒

TPH-D	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☒	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
500 ml Amber	2		
40 ml VOAs	6		

Signature: _____ Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TP1+ Date of Collection: 5/7/20

Project Number: _____ Field Personnel: AJ+PD + GC + TS

Purge Data

Well ID: MW-12 Secure: ☑ Yes ☐ No Well Condition/Damage Description: Rusted but decent

Depth Sounder decontaminated Prior to Placement in Well: ☑ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 13.60 Well Casing Type/Diameter/Screened Interval: _____

After 5 minutes of purging (from top of casing): 13.60

Begin purge (time): 1358

End purge (time): _____

Gallons purged: _____

Purge water disposal method: _____

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	Conductivity µS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
1408	13.60	1	6.99	3.14	131.4	8.03	14.7	41.7	
1413	13.60	1.25	6.58	2.81	129.9	5.95	14.6	61.9	
1418	13.60	2.5	6.43	2.74	129.6	6.01	14.4	71.4	
1423	13.60	3.25	6.39	2.71	129.5	6.15	14.4	76.2	
1428	13.60	4	6.38	2.69	129.5	6.28	14.5	80.2	

Sampling Data

Sample No: MW-12-050720 Location and Depth: _____

Date Collected (mo/dy/yr): _____ Time Collected: 1441 ☐ AM ☐ PM Weather: _____

Type: ☑ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☑ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☑ Pump Other: _____ Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): Clear, colorless, no apparent odor

Sample Analyses

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
1/2 L amber	6	MS/MSD	Potential preservative leak
VOAs (FB)	18		of MNA poly
MNA			
VOAs	2		Ferrous Iron = 2.62 mg/L
250 mL poly	1		
500 mL poly	1		
Total: 28			

Signature: _____ **Date:** 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/7/20

Project Number: 2020 GW Sampling Field Personnel: G. Cisneros

Purge Data

Well ID: MW-13 Secure: ☐ Yes ☐ No Well Condition/Damage Description: No bolts

Total 16.85'

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal): 0.99 gals

Depth of water (from top of well casing): 11.03 Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing): 11.56

Begin purge (time): 1101

End purge (time): 1138

Volume purged: 2.4 Liters

Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	Sp Conductivity mS/cm	Turbidity NTU	Temp °C	ORP mV	Comments mS/cm Cond.
~~1119~~	~~12.05~~	~~1.6~~	~~7.10~~	~~8.82~~	~~0.8~~	~~4.8~~			
1126	12.18	1.8	6.98	5.36	612	20.2	14.7	2.1	0.523
1129	12.20	1.9	6.91	4.24	605	20.1	14.6	-21.3	0.515
1132	12.21	2.05	6.90	3.76	593	24.2	14.7	-32.0	0.504
1135	12.22	2.2	6.89	3.42	575	26.1	14.7	-38.9	0.490
1138	12.23	2.4	6.88	3.36	568	27.0	14.5	-40.2	0.483

Sampling Data

Sample No: MW-13-050720 Location and Depth: Centennial Trails

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 1138 Weather: Sunny / Winds

Type: ☑ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☐ Unfiltered Other: N/A

Sample Collected with: ☐ Bailer ☑ Pump Other: _____ Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): Brown & silty @ first but cleared up

Sample Analyses

cPAHs ☒

TPH-D	(HCl) ☑	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☑	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
500ml Ambers	2		
40ml VOAs	6		

Signature: _____ Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/7/2020

Project Number: _____ Field Personnel: P.O.

Purge Data

Well ID: MW-14 Secure: ☒ Yes ☐ No Well Condition/Damage Description: fine, rusty

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 6.43 Well Casing Type/Diameter/Screened Interval: 4" PVC

After 5 minutes of purging (from top of casing): 6.97 @ 13:44

Begin purge (time): 13:36

End purge (time): 14:29

Gallons purged: 2 gals

Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	Spc Conductivity uS/cm	Turbidity	Temp °C	ORP mV	Comments
13:48	7.11'	2.5L	6.65	2.97	328.4	69.5	14.0	166.3	
13:53	7.15'	4L	6.64	2.71	330.4	58.3	14.8	70.8	
13:58	7.22'	5L	6.63	2.40	332.0	36.9	15.4	73.2	
14:03	7.24'	6L	6.63	2.25	334.1	25.3	15.2	75.3	
14:08	7.25'	7L	6.63	2.14	333.8	216.6	15.4	76.6	
14:13	7.27'	8L	6.63	2.16	334.3	25.4	15.3	78.1	

Sampling Data

Sample No: MW-14-050720 Location and Depth: _____

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 14:14 ☐ AM ☒ PM Weather: Sunny, 70°F

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☒ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☒ Pump Other: _____ Type: peri

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI ProDSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): clear, slight orange color, some small turbidity, no odor

Sample Analyses

cPAHs ☑ ☑ MNA parameters

TPH-D	(HCl)	☒	Chlor / Fluor	(unpres)	☐	COD / TOC	(H2SO4)	☐	Orthophos	(FILTER)	☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl)	☒	BTEX	(HCl)	☒	Total Metals	(HNO3)	☐	TKN/Phos	(N2SO4)	☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
1/2 L Amber	2	None	Total Depth = 11.56'
40 mL VOA w/ HCl	8		Ferrous iron = 0.02 mg/L
1/2 L poly	1		
1/4 L poly w/ HNO_3	1		

Signature: _____ Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL - TPH Date of Collection: 5/7/20

Project Number: _____ Field Personnel: AS + PO + GC + TC

Purge Data

Well ID: MW-15 Secure: ☑ Yes ☐ No Well Condition/Damage Description: well box completely rusted over. Screws and bolts sealed

Depth Sounder decontaminated Prior to Placement in Well: ☑ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 14.11 Well Casing Type/Diameter/Screened Interval: _____

After 5 minutes of purging (from top of casing): 14.19

Begin purge (time): 1240

End purge (time): 1324

Gallons purged: 6 L

Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged L	pH	DO mg/L	Conductivity µs/cm	Turbidity NTU	Temp °C	ORP mV	Comments
1250	14.19	1	6.73	1.39	438.9	11.14	15.7	81.3	
1255	14.19	1.5	6.30	0.53	435.4	10.41	15.2	-87.9	
1300	14.19	2.25	6.24	0.42	434.6	11.07	15.4	-91.9	
1305	14.19	3	6.24	0.38	434.1	9.30	15.2	-95.4	
1310	14.19	3.75	6.24	0.35	434.5	9.64	15.2	-96.6	

Sampling Data

Sample No: MW-15-050720 Location and Depth: _____

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 1321 ☐ AM ☐ PM Weather: 65 and sunny

Type: ☑ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☑ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☑ Pump Other: _____ Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): Clear, colorless, no apparent odor

Sample Analyses

CPAHs

TPH-D	(HCl) ☑	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☑	BTEX	(HCl) ☑	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOAs	6	NA	
1/2 L amber	2		

Signature: _____ Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/7/20

Project Number: _____ Field Personnel: AJ + PO + GC + TS

Purge Data

Well ID: MW-16 Secure: ☐ Yes ☐ No Well Condition/Damage Description: Poor! Well cap broken and unsecure, casing taller than well monument 60%

Depth Sounder decontaminated Prior to Placement in Well: ☑ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 9.92 Well Casing Type/Diameter/Screened Interval: _____

After 5 minutes of purging (from top of casing): 10.10

Begin purge (time): 11:20

End purge (time): 12:02

Gallons purged: 5 L

Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged L	pH	DO mg/L	Conductivity mS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
1130	10.25	1.5	6.68	3.33	287.7	3.46	14.4	49.8	
1135	10.35	2	6.48	2.80	287.3	3.13	14.2	61.6	
1140	10.49	2.75	6.45	2.76	286.6	3.62	14.1	65.8	
1145	10.00	3.5	6.44	2.78	286.9	3.12	14.1	68.9	

Sampling Data

Sample No: MW-16-050720 Location and Depth: _____

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 1151 ☐ AM ☐ PM Weather: 65 and Sunny

Type: ☑ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☑ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☑ Pump Other: _____ Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): clear, colorless, no apparent odor

Sample Analyses

TPH-D	(HCl) ☑	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☑	BTEX	(HCl) ☑	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOAs	6	NA	
½ L amber	2		

Signature: _____ Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 05/07/2020

Project Number: _____ Field Personnel: TS

Purge Data

Well ID: MW-17 Secure: ☒ Yes ☐ No Well Condition/Damage Description: ok - replace bolts next visit Total depth = 17.85'

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 10.07' Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing): 10.32'

Begin purge (time): 09:48

End purge (time): 11:57

Gallons purged: 8 Liters

Purge water disposal method: Drum on site

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	Conductivity mS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
09:53	10.32'	.75	6.88	8.98	0.420	9.8	12.5	101.1	
09:58	10.60	1.75	6.84	8.96	0.419	9.7	12.5	113.6	pump rate slowed
10:03	10.81	2.5	6.83	8.98	0.419	8.7	12.8	123.4	↓
10:08	10.88	3	6.83	8.96	0.420	9.5	12.9	127.8	
10:13	11.09	3.75	6.83	8.89	0.418	9.0	13.1	135.0	pump rate slowed
10:18	11.17	4	6.82	8.83	0.419	8.6	13.3	138.0	
10:23	11.20	4.25	6.83	8.81	0.417	6.7	14.2	140.8	
10:28	11.20	4.25	6.83	8.78	0.418	8.0	14.6	145.0	cont. on back...

Sampling Data

Sample No: MW-17-050720 Location and Depth: _____

Date Collected (mo/dy/yr): 05/07/20 Time Collected: 11:03 ☒ AM ☐ PM Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☒ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☒ Pump Other: _____ Type: Peri

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): clear; no odor

Sample Analyses

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOA	6		
1/2 L Amber	2		Ferrous Fe = 0.05 mg/L
250 mL Poly	1		
500 mL Poly	1		
VOA	2		

Signature: _____ Date: 05/07/2020

Cont. from front.

Time	DTW	Vol purged	pH	DO	Cond.	Turb	Temp	ORP	
10:33	11.30	✱4.75	6.81	8.77	0.418	8.0	13.5	146.0	
10:38	11.35	5	6.82	8.69	0.416	8.0	14.5	150.0	✱
10:43	11.36	5.15	6.81	8.71	0.420	8.1	13.8	152.5	
10:48	11.46	5.75	6.81	8.71	0.417	7.9	13.5	155.1	✱✱
10:53	11.55	6	6.81	8.57	0.418	5.1	14.2	157.8	
10:58	11.60	6.15	6.81	8.55	0.417	6.5	14.7	159.5	
11:03	11.63	6.25	6.80	8.55	0.419	6.8	14.5	161.3	

✱✱✱

Notes

✱ pump rate so slow pump intermittently stops, changing water temp in flow cell

✱✱ Pump rate increased on it's own

✱✱✱ Drawdown continued at a rate of no more than 0.02'/5 min. during sample collection. End DTW 12.23'

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 05/07/2020

Project Number: _____ Field Personnel: TS

Purge Data

Well ID: MW-18 Secure: ☒ Yes ☐ No Well Condition/Damage Description: (1) Bolts need replacement.

Total depth = 18.18'

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 12.50 Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing): 12.62

Begin purge (time): 12:32

End purge (time): 13:34

Gallons purged: 4.75 Liters

Purge water disposal method: Drum on site

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (')	Vol. Purged (L)	pH	DO (mg/L)	Conductivity (mS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
12:37	12.62	.25	7.53	9.64	0.220	14.2	16.7	-2.6	
12:42	12.72	.75	6.84	9.57	0.195	13.0	13.6	52.6	
12:47	12.76	1.25	6.82	9.58	0.196	10.6	14.0	75.2	
12:52	12.77	1.75	6.81	9.56	0.195	7.1	14.1	88.2	
12:57	12.77	2.25	6.81	9.72	0.196	6.3	14.1	96.8	
13:02	12.78	3	6.81	9.68	0.195	5.8	13.8	108.2	
13:07	12.78	3.5	6.80	9.63	0.194	5.5	13.7	114.1	

Sampling Data

Sample No: MW-18-050720 Location and Depth: _____

Date Collected (mo/dy/yr): 05/07/20 Time Collected: 13:08 ☐ AM ☒ PM Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☒ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☒ Pump Other: _____ Type: Peri

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): clear; no odor

Sample Analyses

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER)☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOA	6		
½ L Amber	2		Ferrous Fe = 0.15 mg/L
250 mL Poly	1		
500 mL Poly	1		
VOA	2		

Signature: _____ **Date:** _____

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POC-TPH
Date of Collection: 5/7/20
Project Number:
Field Personnel: Gabe Cisneros

Purge Data

Well ID: MW-19
Secure: ☐ Yes ☐ No
Well Condition/Damage Description: All 3 bolts stripped
Total Depth = 18.70

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No
One Casing Volume (gal):
Depth of water (from top of well casing): 13.30
Well Casing Type/Diameter/Screened Interval: 4"
After 5 minutes of purging (from top of casing):
Begin purge (time): 1400
End purge (time): 1428
Volume purged: 2.3 Liters
Purge water disposal method:

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged (Liters)	pH	DO (mg/L)	Sp. Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments (Cond. mS/cm)
1416	13.31	1.3	6.13	3.82	353.9	3.7	15.0	3.8	0.300
1419	13.31	1.6	6.04	3.63	315.8	3.8	14.5	69.3	0.268
1422	13.31	1.9	6.01	3.51	294.1	3.6	14.5	69.6	0.249
1425	13.31	2.1	5.99	3.37	278.3	3.8	14.6	71.1	0.237
1428	13.31	2.3	5.98	3.34	273.8	3.8	14.6	71.1	0.233

Sampling Data

Sample No: MW-19-050720
Location and Depth: N. End between tracks
Date Collected (mo/dy/yr): 5/7/20
Time Collected: 1429
Weather: Sunny
Type: ☒ Ground Water ☐ Surface Water Other:
Sample: ☐ Filtered ☐ Unfiltered Other:
Sample Collected with: ☐ Bailer ☒ Pump Other:
Type: Peristaltic
Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI
Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing (circled) Other:
Sample Description (Color, Turbidity, Odor, Other): Clear

Sample Analyses

TPH-D (circled)	(HCl) ☒	Chlor / Fluor	(unpres) ☐ cPAHs ☒	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G (circled)	(HCl) ☒	BTEX (circled)	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs (circled)	(HCl) ☒

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
FBI { 500ml Amber	2		
40ml VOAs	6		
			Ferrous Fe = 0.02 mg/L
Remed { 40ml VOA (Methane)	2		
250ml Poly HNO_3 (Mn)	1		
500ml Poly (Alk, Ni, Sulfate)	1		

Signature: [signature]
Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/7/20

Project Number: _____ Field Personnel: P.O.

Purge Data

Well ID: MW-20 Secure: ☒ Yes ☐ No Well Condition/Damage Description: fine.

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): 1 gallon

Depth of water (from top of well casing): 15.55' Well Casing Type/Diameter/Screened Interval: 4" PVC

After 5 minutes of purging (from top of casing): 15.72'

Begin purge (time): 12:04

End purge (time): 13:06

Gallons purged: 1/2 gal

Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	Spc. Conductivity µS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
12:13	15.78'	1L	6.69	3.36↓	821	51.4	17.6	-102.3	
12:18	15.83	1.5L	6.76	2.08	815	49.2	16.6	-121.2	
12:23	15.89'	2L	6.77	1.92	804	44.6	16.5	-124.0	
12:28	15.89'	2.1L	6.76	2.23	802	43.4	16.6	-123.8	
	DTW at end of Sampling = 16.00'								Ferrous iron = 4.8 mg/L

Sampling Data

Sample No: MW-20-050720 Location and Depth: _____

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 12:27 ☐ AM ☒ PM Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☒ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☒ Pump Other: _____ Type: peri

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): slight yellow discoloration, moderate odor, effervescent.

Sample Analyses

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:
1L poly	1
1/4 L poly w/ H_2SO_4	1
1/2 L Amber	2
1/2 L poly	1
1/4 L poly w/ HNO_3	1
40 ML VOA w/ HCl	8

Duplicate Sample Numbers: None

Comments: Total Depth = 17'

Purging v. slow. (odor when opened well. No NAPL on water meter probe, but did not measure w/ interface probe).

Sheen in purge water

Signature: _____ Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POC-TPH Date of Collection: 5/7/20

Project Number: Field Personnel: G. Cisneros

Purge Data

Well ID: MW-22 Secure: ☐ Yes ☐ No Well Condition/Damage Description:

Total Depth = 29.60

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal): 4.5 gals

Depth of water (from top of well casing): 22.84 Well Casing Type/Diameter/Screened Interval: 4" well

After 5 minutes of purging (from top of casing): 22.95

Begin purge (time): 0853

End purge (time):

Volume purged:

Purge water disposal method:

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged (Liters)	pH	DO (mg/L)	Sp. Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments (mS/cm Cond.)
0906	23.02	2.5	6.40	6.17	286.6	6.9	14.7	32.8	0.245
0909	23.02	3.0	6.27	6.27	289.9	8.7	14.8	34.3	0.245
0920	23.02	5.0	6.23	6.23	284.2	7.1	14.7	30.0	0.243
0923	23.02	5.5	6.23	2.86	284.2	8.9	14.8	28.5	0.243
0927	23.2	6.0	6.23	2.74	284.2	9.9	14.8	27.3	0.243

Sampling Data

Sample No: MW-22-050720 Location and Depth: MW-22 SE corner/side

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 0927 Weather: SUNNY

Type: ☑ Ground Water ☐ Surface Water Other: Sample: ☐ Filtered ☐ Unfiltered Other: N/A

Sample Collected with: ☐ Bailer ☒ Pump Other: Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other:

Sample Description (Color, Turbidity, Odor, Other): Clear No Odor

Sample Analyses

CPAHs MNA Parameters

TPH-D	(HCl) ☑	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☑	BTEX	(HCl) ☑	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
FBT { 500ml Ambers	2		
40ml VOAs	6		Ferrous Fe = 5.26 mg/L
40ml VOAs	2		
250ml Poly (HNO_3)	1		
500ml Poly	1		

Frequent

Signature: Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH
Project Number:
Date of Collection: 5/6/20
Field Personnel: P.O

Purge Data

Well ID: MW-23
Secure: ☒ Yes ☐ No
Well Condition/Damage Description: fine, missing all 3 bolts

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No
One Casing Volume (gal):
Depth of water (from top of well casing): 22.80'
Well Casing Type/Diameter/Screened Interval: 4" PVC
After 5 minutes of purging (from top of casing): 22.90'
Begin purge (time): 15:28
End purge (time): 16:11
Gallons purged: 1.8 gal
Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	SPC Conductivity µS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
15:38	22.88'	2.25L	6.45	0.31	619	9.51	15.7	-81.4	
15:43	22.86'	3L	6.49	0.21	623	5.86	15.6	-91.6	
15:48	22.85'	4L	6.50	0.16	628	4.69	15.6	-97.5	
15:53	22.82'	5L	6.50	0.15	633	4.14	15.5	-99.1	

Sampling Data

Sample No: MW-23-050620
Location and Depth:
Date Collected (mo/dy/yr): 5/6/20
Time Collected: 15:55 ☐ AM ☒ PM
Weather: Sunny
Type: ☒ Ground Water ☐ Surface Water Other:
Sample: ☐ Filtered ☒ Unfiltered Other:
Sample Collected with: ☐ Bailer ☒ Pump Other:
Type: peristaltic
Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS
Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other:
Sample Description (Color, Turbidity, Odor, Other): Clear, trace floc, v. slight reducing odor.

Sample Analyses

CPAH ☐ ☐ MNA parameters: Mn, Alkalinity, Sulfate, Nitrate, Methane

TPH-D	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☒	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☒

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
½ L Amber	2	None	Total depth = 32.60'
1/2 L poly	1		
1/4 L poly w/ HNO_3	1		Tidally influenced?
40 mL VOA w/ HCl	8		Ferrous Iron Field Test: 9.64 mg/L
			Purge water is clear, but slightly cloudy

Signature:
Date: 5/6/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/7/20

Project Number: _____ Field Personnel: P.O

Purge Data

Well ID: MW-24 Secure: ☒ Yes ☐ No Well Condition/Damage Description: fine

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): 5 gallons

Depth of water (from top of well casing): 12.55' Well Casing Type/Diameter/Screened Interval: 4" PVC

After 5 minutes of purging (from top of casing): 13.03'

Begin purge (time): 09:20

End purge (time): 10:12

Gallons purged: 2 gal

Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	Spc. Conductivity µS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
09:30	13.42'	2.25 L	7.04	6.11	188.2	48.5	12.8	101.9	slowed pump
09:35	13.71'	3L	7.12	6.00	188.6	38.4	13.1	105.1	
09:40	13.94'	4L	6.95	5.92	188.0	25.9	13.1	107.2	
09:45	14.20'	5L	6.92	5.89	188.0	17.2	13.1	109.0	
									Ferrous Iron = 0 (non-detect)

Sampling Data

Sample No: MW-24-050720 Location and Depth: _____

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 09:47 ☒ AM ☐ PM Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☒ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☒ Pump Other: _____ Type: peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): turbid (chunks), no odor

Sample Analyses

CPAHs ☒ + MNA parameters: Mn, Methane, Alkalinity, Sulfate, nitrate

TPH-D	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐		
TPH-G	(HCl) ☒	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐		

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:
½ L Amber	2	None
40 mL VOA w/ HCl	8	
½L poly	1	
¼L poly w/ HNO3	1	

Comments:

Total Depth = 20.15' (soft bottom)

Purge water very turbid at start of pumping (probe caked w/ 4" of mud after measuring total depth).

Perched aquifer - No recharge.

Signature: _____ Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/7/20

Project Number: Field Personnel: P.D.

Purge Data

Well ID: MW-25 Secure: ☒ Yes ☐ No Well Condition/Damage Description: Well cap not sealed. Monument partially overgrown with grass.

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): 6.3 gallons

Depth of water (from top of well casing): 8.02' Well Casing Type/Diameter/Screened Interval: 4" PVC

After 5 minutes of purging (from top of casing): 8.35'

Begin purge (time): 10:37

End purge (time): 11:23

Gallons purged: 2 gal

Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH SU	DO mg/L	Spc. Conductivity mS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
10:45	8.54'	2L	6.52	0.31	301.6	20.9	12.4	-42.8	
10:50	8.80'	3L	6.52	0.18	301.5	10.6	12.4	-56.5	
10:55	9.01'	4L	6.52	0.12	301.4	6.6	12.4	-64.6	
11:00	9.12'	5L	6.52	0.10	301.5	6.3	12.4	-68.0	
11:05	9.23'	6L	6.52	0.08	301.9	7.3	12.4	-70.9	Ferrous Iron = 3.11 mg/L

Sampling Data

Sample No: MW-25-050720 Location and Depth:

Date Collected (mo/dy/yr): 5/7/2020 Time Collected: 11:07 ☒ AM ☐ PM Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: Sample: ☐ Filtered ☒ Unfiltered Other:

Sample Collected with: ☐ Bailer ☒ Pump Other: Type: peri

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other:

Sample Description (Color, Turbidity, Odor, Other): Clear, trace flock, mild reducing (sulphury?) odor

Sample Analyses

CPAHs – ☒ + MNA parameters: Mn, Methane, Alk, Nitrate, Sulfate

TPH-D	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐		
TPH-G	(HCl) ☒	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐		

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
½ L Amber	2	None	Total Depth = 17.58' (soft bottom)
40 mL Vial w/ HCl	8		Well cap not sealed. Signs of mud/sediment
½ L poly	1		getting into well casting.
¼ L poly w/ HNO_3	1		

Signature: [signature] Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: _____ Date of Collection: _____

Project Number: _____ Field Personnel: _____

Purge Data

Well ID: MW-26 Secure: ☑ Yes ☐ No Well Condition/Damage Description: good

Depth Sounder decontaminated Prior to Placement in Well: ☑ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 12.80 Well Casing Type/Diameter/Screened Interval: _____

After 5 minutes of purging (from top of casing): ~~9.69~~ 13.02

Begin purge (time): 919

End purge (time): 10:50

Gallons purged: 7L

Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. L Purged	pH	DO mg/L	Conductivity µS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
932	13.24	1	6.50	2.22	117.4	44.28	13.3	-9.2	
937	13.34	1.5	6.35	1.76	187.0	33.65	13.1	-18.0	
942	13.44	2	6.32	1.50	192.6	34.50	13.1	-24.6	
947	13.52	2.5	6.30	1.44	195.7	28.60	13.3	-26.1	
952	13.58	3	6.29	1.57	195.1	27.81	13.2	-28.3	

Sampling Data

Sample No: MW-26-050720 Location and Depth: _____

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 10:11 ☐ AM ☐ PM Weather: _____

Type: ☑ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☑ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☑ Pump Other: _____ Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): _____

Sample Analyses

TPH-D	(HCl) ☑	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☑	BTEX	(HCl) ☑	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOAs	18	MS/MSD	
1/2 L amber	6		

Signature: _____ **Date:** 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/7/20

Project Number: Field Personnel: G. Cisneros

Purge Data

Well ID: MW-27 Secure: ☐ Yes ☐ No Well Condition/Damage Description:

Total 28.20

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal): 1.7 gals

Depth of water (from top of well casing): 18.10 Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing):

Begin purge (time): 1001

End purge (time): 1029

Volume purged: 4.0 Liters

Purge water disposal method:

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged (Liters)	pH	DO (mg/L)	Sp. Conductivity (mS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments (Cond. mS/cm)
1014	18.10	1.9	6.61	9.82	543	12.8	14.6	61.2	0.464
1017	18.10	2.1	6.40	4.93	529	15.0	13.9	45.3	0.446
1020	18.10	2.5	6.41	4.13	530	16.0	13.9	37.3	0.448
1023	18.10	3.0	6.42	3.46	531	20.4	13.9	29.7	0.448
1026	18.10	3.5	6.43	3.19	532	22.0	13.9	21.0	0.449
1029	18.10	3.9	6.48	3.12	531	22.2	13.9	21.6	0.449

Sampling Data

Sample No: MW-27-050720 Location and Depth: Between tracks

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 1027 Weather: Sunny

Type: ☑ Ground Water ☐ Surface Water Other: Sample: ☐ Filtered ☐ Unfiltered Other: N/A

Sample Collected with: ☐ Bailer ☑ Pump Other: Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other:

Sample Description (Color, Turbidity, Odor, Other): Slight yellow No odor

Sample Analyses

cPAHs

TPH-D	(HCl) ☑	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☑	BTEX	(HCl) ☑	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
500ml Ambers	2	MW-127-050720 @ 1041	
40ml VOAs	6		
500ml Ambers	2		
40ml VOAs	6		

Dup

Signature: Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 05/06/2020

Project Number: _____ Field Personnel: TS

Purge Data

Well ID: MW-28 Secure: ☒ Yes ☐ No Well Condition/Damage Description: OK-flooded monument damage to cap seal - Total depth 19.34' Replaced 20' tubing

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 17.91' Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing): 18.41

Begin purge (time): ~~15:38~~ 15:50

End purge (time): _____

Gallons purged: _____

Purge water disposal method: _____

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water '	Vol. Purged L	pH	DO mg/L	Conductivity mS/cm	Turbidity	Temp °C	ORP	Comments
15:55	18.41	.25	6.31	4.84	0.169	85.5	16.3	69.1	
16:00	18.46	.5	6.06	1.24	0.163	51.6	15.7	62.7	
16:05	/	/	/	/	/	/	/	/	Ran dry.

Sampling Data

Sample No: MW-28-050620 Location and Depth: _____

Date Collected (mo/dy/yr): 05/06/20 Time Collected: / ☐ AM ☐ PM Weather: _____

Type: ☐ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☐ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☐ Pump Other: _____ Type: _____

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: _____

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): No Sample taken

Sample Analyses

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER)☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
	0		No Sample taken. Well ran dry @ 16:04.

Signature: _____ Date: 05/06/2020

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL - TPH Date of Collection: 4/6/20

Project Number: _____ Field Personnel: AJ + PD + TS + GC

Purge Data

Well ID: MW-29 Secure: ☑ Yes ☐ No Well Condition/Damage Description: _____

Total depth 27.10

Depth Sounder decontaminated Prior to Placement in Well: ☑ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 15.82 Well Casing Type/Diameter/Screened Interval: _____

After 5 minutes of purging (from top of casing): 15.82

Begin purge (time): 1505

End purge (time): 1600

Volume purged: 5L

Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. L Purged	pH	DO mg/L	Conductivity mS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
1515	15.84	1	6.44	4.30	150.7	5.10	14.4	94.2	
1520	15.84	1.75	6.29	4.32	146.1	0.22	14.3	106.8	
1525	15.84	2.5	6.21	4.48	141.2	1.01	14.2	113.6	
1530	15.84	3.25	6.18	4.51	139.8	0.33	14.2	118.2	
1535	15.84	4.00	6.17	4.13	120.0	0.17	14.2	120.8	

Sampling Data

Sample No: MW-29-040620 Location and Depth: 65 and partly cloudy

Date Collected (mo/dy/yr): 4/6/20 Time Collected: 1541 Weather: _____

Type: ☑ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☑ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☑ Pump Other: _____ Type: peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: 451

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): clear, colorless, no apparent odor

Sample Analyses

TPH-D	(HCl) ☑	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☑	BTEX	(HCl) ☑	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOAs	6	N/A	Ferrous iron = 0.0 mg/L
½ L amber	2		
MNA Voas	2		
250 mL poly	1		
500 mL poly	1		

Signature: _____ **Date:** 4/6/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL - TPH Date of Collection: 5/6/20

Project Number: Field Personnel: P.D.

Purge Data

Well ID: MW-31 Secure: ☒ Yes ☐ No Well Condition/Damage Description: fine, buried under 6" gravel/dirt

ECY Tag: AEG 864

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal):

Depth of water (from top of well casing): 13.13' Well Casing Type/Diameter/Screened Interval: 2" PVC

After 5 minutes of purging (from top of casing): 13.40'

Begin purge (time): 12:33

End purge (time): 13:18

Gallons purged: 7 Liters

Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	Conductivity SPC µS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
12:43	13.41'	2L	6.53	4.40	363.7	29.14	14.1	96.9	
12:48	13.40'	3L	6.53	3.93	369.7	13.61	14.3	109.1	
12:53	" "	4L	6.53	3.79	371.7	10.64	14.3	113.6	
12:58	" "	5L	6.53	3.64	373.8	7.78	14.3	117.8	
13:03	" "	6L	6.53	3.53	375.8	6.03	14.3	124.1	

Sampling Data

Sample No: MW-31-050620 Location and Depth:

Date Collected (mo/dy/yr): 05/6/2020 Time Collected: 13:05 ☐ AM ☒ PM Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: Sample: ☐ Filtered ☒ Unfiltered Other:

Sample Collected with: ☐ Bailer ☒ Pump Other: Type: peri

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other:

Sample Description (Color, Turbidity, Odor, Other): clear, no discoloration or odor.

Sample Analyses

cPAHs ☒ + MNA parameters: Mn, methane, nitrate, sulfate, Alk

TPH-D	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐		
TPH-G	(HCl) ☒	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐		

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
1/2 L Amber	2	None	Total Depth = 18.38' (Soft bottom)
40 mL VOA	8		Ferrous Iron colorometer Field test: 0 mg/L nondetect
500 mL poly (No head)	1		
250 mL poly w/ HNO_3	1		Well next to creosote treated lumber pile.

Signature: Date: 5/6/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/7/20

Project Number: _____ Field Personnel: AJ+PD + GS+TT

Purge Data

Well ID: MW-32 Secure: ☑ Yes ☐ No Well Condition/Damage Description: well cap is good but well box is poor condition

Poor condition, needs new well box

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 13.20 Well Casing Type/Diameter/Screened Interval: _____

After 5 minutes of purging (from top of casing): 13.52

Begin purge (time): 8:03

End purge (time): 855

Volume purged: 7 L

Purge water disposal method: _____

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. L Purged	pH	DO mg/L	Conductivity µS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
8:13	13.60	1	6.31	1.05	362.9	23.21	13.4	-101.2	
8:18	13.60	2	6.26	0.70	352.7	21.48	13.5	-112.1	
8:23	13.66	2.75	6.26	0.63	352.7	14.66	13.6	-116.8	
8:28	13.66	3.5	6.26	0.77	351.5	12.44	13.7	-118.4	
8:33	13.66	4.25	6.26	0.63	351.7	9.07	13.6	-118.8	

Sampling Data

Sample No: MW-32-050720 Location and Depth: _____

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 8:41 Weather: 60 and partly cloudy

Type: ☑ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☑ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☑ Pump Other: _____ Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: 451

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): Clear, colorless, no apparent odor

Sample Analyses

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOAs	6	N/A	
1/2 L amber	2		

Signature: _____ **Date:** 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/6/20

Project Number: Tank 5 GW Field Personnel: G. Cisneros

Purge Data

Well ID: MW-133 MW-33 Secure: ☐ Yes ☐ No Well Condition/Damage Description: Total = 28.15

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal):

Depth of water (from top of well casing): 18.32 Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing): 18.32

Begin purge (time): 1508

End purge (time): 1547

Volume purged: Liters

Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged (Liters)	pH	DO (mg/L)	Sp. Conductivity (mS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Cond (mS/cm) Comments
1532	18.32	3.8	6.49	3.43	461.9	143.6	14.9	-48.6	0.357
1535	18.32	4.0	6.49	3.20	466.1	128.7	14.9	-50.1	0.400
1538	18.32	4.3	6.47	2.98	468.0	107.0	14.8	-51.6	0.401
1541	18.32	4.8	6.46	2.84	473.7	86.6	14.9	-52.7	0.406
1544	18.32	5.2	6.46	2.80	474.7	80.3	14.9	-53.4	0.407
1547	18.32	5.6	6.46	2.74	474.6	72.5	14.8	-53.8	0.407

Sampling Data

Sample No: MW-33-050620 Location and Depth:

Date Collected (mo/dy/yr): 5/6 Time Collected: 1547 Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: Sample: ☐ Filtered ☐ Unfiltered Other: N/A

Sample Collected with: ☐ Bailer ☒ Pump Other: Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other:

Sample Description (Color, Turbidity, Odor, Other): Clear

Sample Analyses

CPAHs

TPH-D	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☒	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
500ml Amber	4		
40ml VOAs	12	MW-133 @ 1601	MW-133-050620
			Dup @ 1601

Signature: Date: 5/6/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 4/6/20

Project Number: _____ Field Personnel: AJ + PORTS + GC

Purge Data

Well ID: MW-34 Secure: ☑ Yes ☐ No Well Condition/Damage Description: _____

EWT: BME 944 Total depth 29.87

Depth Sounder decontaminated Prior to Placement in Well: ☑ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 18.87 Well Casing Type/Diameter/Screened Interval: _____

After 5 minutes of purging (from top of casing): 18.98

Begin purge (time): 10:17

End purge (time): 11:03

Volume purged: 5 L

Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. L Purged	pH	DO mg/L	Conductivity µS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
10:25	18.99	1.5	5.88	1.41	1680	30.74	14.5	-76.5	
10:33	18.99	2	5.80	0.63	1679	19.39	15.0	-64.3	
10:38	18.99	2.5	5.79	0.52	1683	6.43	15.2	-58.2	
10:43	18.99	3	5.79	0.46	1678	4.77	16.3	-56.2	

Sampling Data

Sample No: MW-34-5406220 Location and Depth: _____

Date Collected (mo/dy/yr): 4/6/20 Time Collected: 10:51 Weather: 60 and partly cloudy

Type: ☑ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☑ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☑ Pump Other: _____ Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): Clear, colorless, tph odor

Sample Analyses

TPH-D	(HCl) ☑	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☑	BTEX	(HCl) ☑	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☑

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOAs	6	MW-2	
1 L amber	2		

Signature: _____ Date: _____

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH
Date of Collection: 5/6/2020
Project Number:
Field Personnel: P.O.

Purge Data

Well ID: MW-35
Secure: ☒ Yes ☐ No
Well Condition/Damage Description: good, new
ECM tag: BME 943
Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No
One Casing Volume (gal):
Depth of water (from top of well casing): 14.29' @ 10:01
Well Casing Type/Diameter/Screened Interval: 2" PVC, 16-26
After 5 minutes of purging (from top of casing): 14.76'
Begin purge (time): 10:08
End purge (time): 10:47
Gallons purged: 1.5 gals
Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	SPC Conductivity µS/cm	Turbidity	Temp °C	ORP mV	Comments
10:08	14.79'	2L	6.60	0.35	352.6	4.90	13.1	111.2	
10:13	14.80'	2.75L	6.58	0.22	354.6	6.27	13.1	117.3	
10:28	14.80'	4L	6.55	0.16	368.1	6.60	13.3	119.6	
10:33	14.80'	5L	6.55	0.13	364.8	7.70	13.2	119.9	

Sampling Data

Sample No: MW-35
Location and Depth:
Date Collected (mo/dy/yr): 5/6/2020
Time Collected: 10:35 ☒ AM ☐ PM
Weather: Rain storm, then sunny
Type: ☒ Ground Water ☐ Surface Water Other:
Sample: ☐ Filtered ☒ Unfiltered Other:
Sample Collected with: ☐ Bailer ☒ Pump Other:
Type: peristaltic
Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS
Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other:
Sample Description (Color, Turbidity, Odor, Other): v. slight yellow coloration, clear. No obvious odor

Sample Analyses

CPAHs ☑

TPH-D	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐	
TPH-G	(HCl) ☒	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☒	

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
1/2 L Amber	2	None	Total depth = 25.64'
40 mL VOA	6		

Signature: [signature]
Date: 5/6/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 05/06/20

Project Number: _____ Field Personnel: TB

Purge Data

Well ID: MW-36 Secure: ☒ Yes ☐ No Well Condition/Damage Description: good - new tubing

installed 29' Total depth = 34.90'

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 22.88' Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing): 22.89

Begin purge (time): 16:42

End purge (time): 17:20

Gallons purged: 4.75 Liters

Purge water disposal method: Drum on site

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged L	pH	DO mg/L	Conductivity mS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
16:47	22.89'	.5	6.41	1.28	0.271	9.0	15.7	94.6	
16:52	22.89'	1.25	6.40	0.61	0.270	13.4	15.6	97.8	
16:57	22.89	2	6.41	0.39	0.269	13.2	15.5	98.9	
17:02	22.90	2.75	6.42	0.26	0.270	9.4	15.5	99.8	
17:07	22.90	3.5	6.42	0.24	0.270	10.7	15.5	100.3	

Sampling Data

Sample No: MW-36-050620 Location and Depth: _____

Date Collected (mo/dy/yr): 05/06/20 Time Collected: 17:08 ☐ AM ☒ PM Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☒ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☒ Pump Other: _____ Type: Peri

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): mostly clear, low/no odor

Sample Analyses

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOA	6		
1/2 L Amber	2		

Signature: _____ Date: _____

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 05/07/2020

Project Number: _____ Field Personnel: TS

Purge Data

Well ID: MW-37 Secure: ☒ Yes ☐ No Well Condition/Damage Description: good - new tubing

installed = 35' Total depth = 34.50' # 13ME947

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 22.40 Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing): 22.38'

Begin purge (time): 08:13

End purge (time): 08:58

Gallons purged: 6 Liters

Purge water disposal method: Drum on site

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (')	Vol. Purged (L)	pH	DO (mg/L)	Conductivity (mS/cm)	Turbidity (NTU)	Temp (oC)	ORP (mV)	Comments
08:18	22.38	1	6.97	2.91	2.041	10.1	14.6	-107.3	
08:23	22.38	1.75	6.85	0.36	1.958	9.8	14.6	-128.1	
08:28	22.38	2.25	6.85	0.24	1.895	10.2	14.6	-128.7	
08:33	22.38	3	6.85	0.18	1.856	10.3	14.5	-129.6	
08:38	22.38	4	6.84	0.14	1.816	8.8	14.4	-130.0	
08:43	22.38	4.75	6.84	0.12	1.799	8.7	14.6	-130.8	

Sampling Data

Sample No: MW-37-050720 Location and Depth: _____

Date Collected (mo/dy/yr): 05/07/20 Time Collected: 08:45 ☒ AM ☐ PM Weather: Sunny 48°

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☒ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☒ Pump Other: _____ Type: Peri

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): Dark yellow/orange color; clear; ~~moderate~~ low odor

Sample Analyses

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER)☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOA	6		
1/2 L Amber	2		

Signature: _____ Date: 05/07/2020

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/7/20

Project Number: Field Personnel: 5/7/20 JC

Purge Data

Well ID: MW-38 Secure: ☐ Yes ☐ No Well Condition/Damage Description:

Total 35.05

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal): 2.2 gals

Depth of water (from top of well casing): 22.12 Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing): 22.13

Begin purge (time): 0807

End purge (time): 0836

Volume purged: 3.5 Liters

Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged	pH	DO mg/L	Sp. Conductivity mS/cm	Turbidity NTU	Temp °C	ORP mV	Comments mS/cm
0822	22.13	2.0	6.41	5.73	466.7	31.9	14.4	31.1	0.397
0825	22.13	2.2	6.32	4.52	467.3	130.8	14.6	10.5	0.399
0828	22.13	2.5	6.30	4.06	467.7	167.0	14.7	3.5	0.400
0831	22.13	2.8	6.30	3.72	468.2	201.0	14.6	3.7	0.399
0834	22.13	3.1	6.30	3.55	466.0	221.0	14.7	-5.4	0.398
0836	22.13	3.4	6.30	3.49	466.3	230.1	14.6	-6.5	0.398

Sampling Data

Sample No: MW-38-050720 Location and Depth: MW-38

Date Collected (mo/dy/yr): 5/7/20 Time Collected: ~~0836~~ 0836 Weather: SUNNY

Type: ☒ Ground Water ☐ Surface Water Other: Sample: ☐ Filtered ☐ Unfiltered Other: N/A

Sample Collected with: ☐ Bailer ☒ Pump Other: Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing (NEW) Other:

Sample Description (Color, Turbidity, Odor, Other):

Sample Analyses

cPAHs JJ

TPH-D	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
500mL Amber	2		
40mL VOAs	6		
Total 8 Bottles			

Signature: Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POC-TPH Date of Collection: 5/7/20

Project Number: 2020 GW Field Personnel: Sabe Cisneros

Purge Data

Well ID: MW-39 Secure: ☐ Yes ☐ No Well Condition/Damage Description: New

Total Depth = 17.55

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal):

Depth of water (from top of well casing): 12.08 Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing): 12.08

Begin purge (time): 1318

End purge (time): 1344

Volume purged: Liters

Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged (Liters)	pH	DO (mg/L)	Sp. Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments (Cond. mS/cm)
1332	12.08	1.5	6.61	4.63	533	6.7	15.7	36.8	0.463
1335	12.08	1.7	6.50	3.83	527	6.0	15.5	17.5	0.456
1338	12.08	1.9	6.47	3.37	524	6.1	15.7	4.1	0.456
1341	12.08	2.1	6.46	3.06	523	5.9	15.9	-6.3	0.456
1344	12.08	2.3	6.45	2.93	522	5.8	16.0	-7.9	0.456

Sampling Data

Sample No: MW-39-050720 Location and Depth: N. end of Site

Date Collected (mo/dy/yr): 5/7/20 Time Collected: 1344 Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: Sample: ☐ Filtered ☐ Unfiltered Other:

Sample Collected with: ☐ Bailer ☒ Pump Other: Type: Peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other:

Sample Description (Color, Turbidity, Odor, Other): Clean

Sample Analyses

cPAHs ☒

TPH-D	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☒	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☒

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
500ml Amber	2		
40ml VOAs	6		

Signature: Date: 5/7/20

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 05/06/2020

Project Number: _____ Field Personnel: TS

Purge Data

Well ID: MW-40 Secure: ☒ Yes ☐ No Well Condition/Damage Description: No tubing

Total Depth - 25.55' 30' tubing installed

Depth Sounder decontaminated Prior to Placement in Well: ☒ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 17.05' Well Casing Type/Diameter/Screened Interval: 4"

After 5 minutes of purging (from top of casing): 17.09

Begin purge (time): ~~14:14~~

End purge (time): 15:01

Gallons purged: 6.25 Liters

Purge water disposal method: Drum on site

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged L	pH	DO mg/L	Conductivity mS/cm	Turbidity NTU	Temp °C	ORP mV	Comments
~~14:19~~	17.09	.5	6.49	1.13	0.417	6.1	14.4	-196.0	
14:24	17.09	1.25	6.52	0.57	0.410	5.3	14.1	-178.3	
14:29	17.09	2	6.54	0.35	0.405	3.9	13.7	-164.6	
14:34	17.09	3	6.54	0.26	0.406	3.9	14.0	-160.3	
14:39	17.09	4	6.54	0.21	0.407	3.7	14.0	-156.0	

Sampling Data

Sample No: MW-40-050620 Location and Depth: _____

Date Collected (mo/dy/yr): 05/06/20 Time Collected: 14:40 ☐ AM ☒ PM Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☒ Unfiltered Other: _____

Sample Collected with: ☐ Bailer ☒ Pump Other: _____ Type: Peri

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-22 ☐ Horiba U-50 Other: YSI Pro DSS

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: New

Sample Description (Color, Turbidity, Odor, Other): yellow color, clear but effervescent, moderate odor

Sample Analyses

TPH-D	(HCl) ☐	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☐	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
VOA	6		
½ L Amber	2		
1 L Poly	1		
~~40z~~ Poly 250mL	1		

Signature: Tyler Booth Date: 05/06/2020

2

GROUNDWATER OR SURFACE WATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 5/6/20

Project Number: _____ Field Personnel: G. Cisneros

Purge Data

Well ID: UST-4 Secure: ☐ Yes ☐ No Well Condition/Damage Description: Total = 23.38

Depth Sounder decontaminated Prior to Placement in Well: ☐ Yes ☐ No One Casing Volume (gal): _____

Depth of water (from top of well casing): 17.36 Well Casing Type/Diameter/Screened Interval: 2"

After 5 minutes of purging (from top of casing): 17.38

Begin purge (time): 1432

End purge (time): 1503

Volume purged: 3.8 Liters

Purge water disposal method: _____

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water	Vol. Purged (L)	pH	DO (mg/L)	Conductivity (mS/cm Sp.)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Cond mS/cm Comments
1448	17.38	1.8	6.45	8.59	286.4	12.1	14.9	78.7	0.246
1451	17.38	2.0	6.13	8.38	284.6	11.7	14.8	85.7	0.244
1454	17.38	2.2	5.98	8.25	283.9	11.2	14.8	90.5	0.243
1457	17.38	2.6	5.91	8.20	283.6	15.2	14.8	93.9	0.243
1500	17.38	3.1	5.91	8.17	279.4	17.9	14.8	94.2	0.239
1503	17.38	3.5	5.90	8.13	277.5	19.1	14.8	94.7	0.237

Sampling Data

Sample No: UST-04-050620 Location and Depth: Former Mechanics Shop

Date Collected (mo/dy/yr): 5/6 Time Collected: 1504 Weather: Sunny

Type: ☒ Ground Water ☐ Surface Water Other: _____ Sample: ☐ Filtered ☐ Unfiltered Other: Lab filtered

Sample Collected with: ☐ Bailer ☒ Pump Other: _____ Type: peristaltic

Water Quality Instrument Data Collected with: Type: ☐ Horiba U-50 Other: YSI

Sample Decon Procedure: Sample collected with (circle one): decontaminated all tubing; disposable and/or dedicated silicon and poly tubing Other: _____

Sample Description (Color, Turbidity, Odor, Other): Clear No Odor

Sample Analyses

Total & Dissolved Lead

TPH-D	(HCl) ☒	Chlor / Fluor	(unpres) ☐	COD / TOC	(H2SO4) ☐	Orthophos	(FILTER) ☐	Diss. Metals	(HNO3) ☐
TPH-G	(HCl) ☐	BTEX	(HCl) ☒	Total Metals	(HNO3) ☐	TKN/Phos	(N2SO4) ☐	VOCs	(HCl) ☐

Additional Information

Types of Sample Containers:	Quantity:	Duplicate Sample Numbers:	Comments:
250ml HNO3	1	← Total lead	
250ml	1	← Dissolved	
500ml Amber	2		
40ml VOAs	6		

Signature: _____ Date: 5/6/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: _____ Field Personnel: TS

Purge Data

Location ID: **MW-01**

Ecology Tag: ~

Diameter: **4.0** Screened Interval: **6.2-16.3**

GPS: _____

Total Depth: **16.3** Transducer S/N: _____

Location Condition (Well damage, well cap damaged, silted up): _____

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers: _____

One Casing Volume (gal): _____

Depth of water (from top of casing): 11.73

After 5 minutes of purging (from TOC): 11.75

Begin purge (time): 11:54 End purge (time): 12:55

Volume purged: 11 Litres Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
12:15	11.76'	3	6.55	0.08	282.6	-2.3	15.1	-85.5	*water clear
12:20	11.76'	4.25	6.51	0.02	280.7	-1.5	15.1	-92.0	
12:25	11.76'	6	6.50	-0.01	278.8	-2.0	15.0	-97.6	
12:30	11.76'	7	6.50	-0.01	276.9	-2.0	15.2	-82.4	
12:35	11.76	~~7.8~~	6.51	-0.02	275.3	-2.1	15.3	-85.9	
12:40	11.76	8.8	6.51	-0.03	274.6	-2.0	15.1	-93.2	

Ferrous Iron Field Test — mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-01-081020 Location: North outside of gate

Date Collected (mo/dy/yr): 08/10/20 Time Sample Collected: 12:45 Weather: Sunny

Duplicate Sample No: — Time Duplicate Sample Collected: _____

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐ _____

Sample Collected with: ☐ Grab ☒ Pump Other: _____ Type: ☒ Peristaltic ☐ Bladder Other: _____ Flow Rate (L/min): .25

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other: _____

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear; no odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
			☐ MS/MSD	
500 mL Glass Amber (1) none & (1) HCl		2	☐ Field Blank	
			☐ Rinsate	
			Total Bottles =	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: _____ **Date:** 08/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: Qtrly GW Monitoring Field Personnel: P.O.

Purge Data

Location ID: **MW-02**

Ecology Tag: Not found

Diameter: **4.0** Screened Interval: **6.2-12.4**

GPS:

Total Depth: **12.4**

Location Condition (Well damage, well cap damaged, silted up): missing 1 bolt

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers: None

One Casing Volume (gal):

Depth of water (from top of casing): 10.16

After 5 minutes of purging (from TOC): 10.23

Begin purge (time): 16:04 End purge (time): 16:36

Volume purged: 2 gal Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged (L/ gal)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
16:09	10.23	2L	6.28	1.62	483.8	9.22	16.8	122.2	
16:14	10.25	3L	6.27	1.53	484.1	5.08	16.7	122.9	
16:19	10.26	4.25	6.25	1.46	483.0	4.40	16.6	121.1	
16:24	10.26	5.5	6.28	1.47	481.7	4.22	16.6	119.8	
16:29	10.26	7L	6.28	1.49	481.5	4.22	16.6	119.2	

Ferrous Iron Field Test NM mg/L or ☐ Not Detected **MNA Samples Required? Yes (No)**

Sampling Data

Sample No: MW-02-081020 Location: Calloway ROSS – Former Site

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 16:30 Weather: Sunny, 85° F

Duplicate Sample No: None Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: : ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear, no odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☒

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane? (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles = 8	

Signature: **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: Qrtly GW Monitoring Field Personnel: F.O.

Purge Data

Location ID: **MW-03**

Ecology Tag: Not found

Diameter: 4.0 Screened Interval: 8.4-18.4

GPS: NA

Total Depth: 18.4

Location Condition (Well damage, well cap damaged, silted up): fine - grass overgrown and well casing a bit slimy

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers: None

One Casing Volume (gal):

Depth of water (from top of casing): 14.27'

After 5 minutes of purging (from TOC): 14.36

Begin purge (time): 14:18 End purge (time): 15:16

Volume purged: 14L Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged (L) gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
14:23	14.36	2L	6.15	0.47	228.6	12.35	16.8	96.8	
14:28	14.36	3.5L	6.10	0.34	230.5	11.17	16.7	88.6	
14:33	14.37	5L	6.10	0.30	232.4	11.85	16.6	79.3	
14:38	14.37	6.5L	6.12	0.27	233.8	10.08	16.7	61.5	
14:43	14.38	8L	6.12	0.25	235.8	8.40	16.5	45.1	
14:48	14.38	9L	6.15	0.24	237.4	8.06	16.6	31.2	
14:53	14.38	10.25L	6.20	0.23	249.7	7.83	16.6	12.7	
14:58	14.38	11.5L	6.28	0.21	268.9	8.63	16.6	-1.6	(go to back)

Ferrous Iron Field Test NM mg/L or ☐ Not Detected MNA Samples Required? Yes/No

Sampling Data

Sample No: MW-3-081020 Location:

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 1455 Weather: Sunny, 85°F

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: : ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear, Slight HC odor

Sample Analyses

TPH-Dx Diss Mg (lab filtered)	(HCl) ☒ (unpres) ☐ + lead (total)	TPH-G Total Alkalinity	(HCl) ☒ (unpres) ☐	BTEX Nitrate/Sulfate	(HCl) ☒ (unpres) ☐	cPAHs Methane	(unpres) ☒ (HCl) ☐	EDB/EDC/MTBE and Naph. VOCs	(HCl) ☐ (HCl) ☒

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane? (Yes/No)
250 mL Poly - Pb	HNO3	1	☐ MS/MSD	
500 mL Glass Amber (1) none & (1) HCl		2	☐ Field Blank	
			☐ Rinsate	
			Total Bottles = 9	

Signature: Date: 8/10/20

Time	DTW	Vol	pH	D.O.	SpC.	NTU	Temp	ORP
15:03	14.38	12.5 L	6.31	0.21	274.2	6.66	16.7	-10.8
15:08	14.38	13.5L	6.32	0.20	276.3	6.95	16.7	-16.5

- Sampled @ 15:10 (Sample time on COC = 14:55)

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: Qtrly GW Monitoring Field Personnel: P.O.

Purge Data

Location ID: **MW-05**

Ecology Tag

Diameter: **2.0** Screened Interval: **12.5-22.5**

GPS:

Total Depth: **22.5** (16.64')

Location Condition (Well damage, well cap damaged, silted up):

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 15.90

After 5 minutes of purging (from TOC):

Begin purge (time): End purge (time):

Volume purged: Purge water disposal method:

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
No Sample attempted, too little water									

Ferrous Iron Field Test NM mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: Location:

Date Collected (mo/dy/yr): Time Sample Collected: Weather:

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☐ Groundwater ☐ Surface Water ☐ Other Sample: ☐ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☐ Pump Other: Type: ☐ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: : ☐ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other):

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:
40 mL VOAs	HCl	6
500 mL Glass Amber (1) none & (1) HCl		2

QA/QC Samples:
☐ Field Duplicate
☐ MS/MSD
☐ Field Blank
☐ Rinsate
Total Bottles =

Comments: 2 extra VOAs required for Methane (Yes/No)

Signature: **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: _____ Field Personnel: TG

Purge Data

Location ID: **MW-06**

Ecology Tag: —

Diameter: **4.0** Screened Interval: **16-21**

GPS: _____

Total Depth: **21**

Location Condition (Well damage, well cap damaged, silted up): ~~replaced 4" cap~~

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers: _____

One Casing Volume (gal): _____

Depth of water (from top of casing): 11.35'

After 5 minutes of purging (from TOC): 11.35'

Begin purge (time): 13:20 End purge (time): 14:10

Volume purged: 8 Liters Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
13:35	11.36	3.75	6.56	0.16	231.7	1.8	15.9	-117.7	
13:40	11.36	4.25	6.56	0.16	236.8	~~2.3~~ 1.9	16.3	-115.8	
13:45	11.36	5	6.55	0.13	238.3	1.8	16.3	-115.9	
13:50	11.36	5.75	6.55	0.10	239.4	2.4	16.3	-116.1	

Ferrous Iron Field Test — mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-06-081020 Location: NE just inside gate

Date Collected (mo/dy/yr): 08/10/20 Time Sample Collected: 13:55 Weather: Sunny-hot

Duplicate Sample No: — Time Duplicate Sample Collected: _____

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐ _____

Sample Collected with: ☐ Grab ☒ Pump Other: _____ Type: ☒ Peristaltic ☐ Bladder Other: _____ Flow Rate (L/min): ~.25

Water Quality Instrument Data Collected with: Type: : ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other: _____

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear; no odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles =	

Signature: _____ **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: _____ Field Personnel: TS

Purge Data

Location ID: **MW-07**

Ecology Tag n/a

Diameter: **4.0** Screened Interval: **18-23**

GPS: _____

Total Depth: **23**

Location Condition (Well damage, well cap damaged, silted up): Casing bent.

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers: _____

One Casing Volume (gal): _____

Depth of water (from top of casing): 15.70

After 5 minutes of purging (from TOC): 15.73

Begin purge (time): 8:~~35~~21 End purge (time): 09:20

Volume purged: 14L Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L/gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
08:40	15.71	5.75	6.70	0.14	494.9	0.5	14.1	-112.9	
08:45	15.71	7	6.70	0.09	495.2	0.4	14.1	-121.0	
08:50	15.71	8.5	6.69	0.05	495.0	0.5	14.0	-125.1	
08:55	15.71	9.75	6.69	0.03	494.9	0.6	14.1	-128.0	

Ferrous Iron Field Test — mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-07-081120 Location: west of train tracks

Date Collected (mo/dy/yr): 08/11/20 Time Sample Collected: 09:00 Weather: overcast ~ cool

Duplicate Sample No: MW-107-081120 Time Duplicate Sample Collected: 09:05

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐ _____

Sample Collected with: ☐ Grab ☒ Pump Other: _____ Type: ☒ Peristaltic ☐ Bladder Other: _____ Flow Rate (L/min): ~~25~~

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other: _____

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☒ Tubing replaced = 40'

Sample Description (Color, Turbidity, Odor, Other): slight yellowish tint; mild odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☒ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
250 mL Poly - Pb	HNO3	1	☐ MS/MSD	
500 mL Glass Amber (1) none & (1) HCl		2	☐ Field Blank	
250mL Poly Pb	None	1	☐ Rinsate	
			Total Bottles = ~~9~~ 20	

Signature: _____ **Date:** 08/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH

Date of Collection: 8/10/20

Field Event: Quarterly GW Monitoring

Field Personnel: P.O.

Purge Data

Location ID: **MW-08**

Ecology Tag: Not found

Diameter: **4.0** Screened Interval: **18-23**

GPS: —

Total Depth: **23.65**

Location Condition (Well damage, well cap damaged, silted up): one bolt sheared off

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers: None

One Casing Volume (gal):

Depth of water (from top of casing): 13.96

After 5 minutes of purging (from TOC): 14.06

Begin purge (time): 13:00 End purge (time): 14:01

Volume purged: 14 L Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1305	14.06'	2L	6.38	0.44	576	20.07	15.6	76.2	slowed pump
1310	14.06	3.5L	6.44	0.31	572	7.31	15.6	-8.7	
1315	14.07'	5L	6.46	0.26	567	8.20	15.4	-40.5	
1321	14.08	7L	6.48	0.24	567	6.36	15.5	-58.7	
1326	14.08'	9L	6.47	0.22	569	6.80	15.4	-70.3	
1331	14.08'	10.5L	6.49	0.21	570	6.90	15.5	-78.8	
1336	14.06'	11.75	6.47	0.21	571	7.36	15.9	-85.0	

Ferrous Iron Field Test NM mg/L or ☐ Not Detected

MNA Samples Required? Yes/No

Sampling Data

Sample No: MW-8-081020 Location: Former Calloway Ross Site

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 1338 Weather: Sunny, 75°F

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: : ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear, slightly yellow moderate to strong HC odor, light sheen in purge bucket effervescent

Sample Analyses

TPH-Dx Diss Mg (lab filtered)	(HCl) ☒ (unpres) ☐	TPH-G Total Alkalinity	(HCl) ☒ (unpres) ☐	BTEX Nitrate/Sulfate	(HCl) ☒ (unpres) ☐	cPAHs Methane	(unpres) ☒ (HCl) ☐	EDB/EDC/MTBE and Naph. VOCs	(HCl) ☐ (HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6 x2	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2 x3	☒ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles = 18	

Signature: [signature] **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH

Date of Collection: 8/10/20

Field Event: Quarterly GWM

Field Personnel: AJ + TS + PO + GC

Purge Data

Location ID: **MW-09**

Ecology Tag Couldn't locate

Diameter: **4.0** Screened Interval: **8-18**

GPS:

Total Depth: **18**

Location Condition (Well damage, well cap damaged, silted up): Okay

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☐ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 16.73

After 5 minutes of purging (from TOC):

Begin purge (time): 17:04 End purge (time): 15:07

Volume purged: 6.25L Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
NO PURGED - PRODUCT									

Ferrous Iron Field Test X mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: Location:

Date Collected (mo/dy/yr): Time Sample Collected: Weather:

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☐ Groundwater ☐ Surface Water ☐ Other Sample: ☐ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☐ Pump Other: Type: ☐ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

NO SAMPLES COLLECTED

Water Quality Instrument Data Collected with: Type: ☐ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Product in well

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles =	

Signature: Date: 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: Qtrly GW Monitoring Field Personnel: P.O.

Purge Data

Location ID: **MW-10**

Ecology Tag: Not found

Diameter: **4.0** Screened Interval: **18-23**

GPS:

Total Depth: **23**

Location Condition (Well damage, well cap damaged, silted up): bolt flanges broken, missing 2/3 bolts

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☐ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 16.34'

After 5 minutes of purging (from TOC): 16.36'

Begin purge (time): 16:45 End purge (time): 15:37

Volume purged: 2.5 gal Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
16:51	16.36	1L	6.28	0.70	389.0	5.81	15.6	107.4	
16:56	16.36	2.25	6.32	0.39	394.7	4.73	15.4	67.4	
17:01	16.37	3.25L	6.33	0.30	403.8	4.15	15.2	39.6	
17:06	16.37	4.75	6.34	0.28	411.4	4.14	15.1	20.5	
17:11	16.38	6L	6.34	0.25	421.0	3.95	15.2	3.4	
17:16	16.38	7.25	6.34	0.24	426.4	4.15	15.1	-6.5	

Ferrous Iron Field Test 3.0 mg/L or ☐ Not Detected MNA Samples Required? (Yes)/No

Sampling Data

Sample No: MW-10-081020 Location: Calloway Ross - Former Site

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 17:17 Weather: Sunny, 80°F

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-um ☐

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear, slight HC odor, purge water slightly yellow

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☒	Total Alkalinity	(unpres) ☒	Nitrate/Sulfate	(unpres) ☒	Methane	(HCl) ☒	VOCs	(HCl) ☒

† total lead

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
250 mL Poly - Pb	HNO3	1	☐ MS/MSD	
500 mL Glass Amber (1) none & (1) HCl		2	☐ Field Blank	
MNA: 250 mL Poly	none	1	☐ Rinsate	FBI/Fremont
MNA: 500 ml Poly	none	1	Total Bottles = 8/4 = 12	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: Date: 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: Quarterly GWM Field Personnel: AT + PD + TS + GC

Purge Data

Location ID: **MW-11**

Ecology Tag

Diameter: **4.0** Screened Interval: **6.7-16.7**

GPS:

Total Depth: **16.7** Measured TD = 15.53

Location Condition (Well damage, well cap damaged, silted up): Very silty, build up on water level

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☐ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 15.44

After 5 minutes of purging (from TOC): Not located

Begin purge (time): 1621 End purge (time):

Volume purged: Ø Purge water disposal method:

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments

NO WATER PURGED

Ferrous Iron Field Test mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: Location:

Date Collected (mo/dy/yr): Time Sample Collected: Weather:

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☐ Groundwater ☐ Surface Water ☐ Other Sample: ☐ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☐ Pump Other: Type: ☐ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: : ☐ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): NO SAMPLE COLLECTED

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles =	

Signature: **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 08/11/20

Field Event: _____ Field Personnel: TS

Purge Data

Location ID: **MW-12**

Ecology Tag _____

Diameter: **4.0** Screened Interval: **22-27**

GPS: _____

Total Depth: **27**

Location Condition (Well damage, well cap damaged, silted up): _____

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers: _____

One Casing Volume (gal): _____

Depth of water (from top of casing): 14.60

After 5 minutes of purging (from TOC): 14.61

Begin purge (time): 12:28 End purge (time): 13:25

Volume purged: ~~3~~ 2 gal Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
12:40	14.61	2.5	6.46	1.59	478.7	0.6	14.6	-86.2	
12:45	14.62	3.5	6.44	0.28	482.9	2.0	14.4	-85.8	
12:50	14.62	4.5	6.44	0.16	517.0	4.2	14.5	-85.0	
12:55	14.62	5.5	6.45	0.08	554.0	8.1	14.5	-102.8	
13:00	14.62	6.25	6.45	0.03	556.0	13.2	14.7	-106.8	
13:05	14.62	7.25	6.45	0.02	554.0	9.0	14.6	-108.6	

Ferrous Iron Field Test 2-3 mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-12-08120 Location: _____

Date Collected (mo/dy/yr): 08/11/20 Time Sample Collected: 13:10 Weather: Sunny

Duplicate Sample No: _____ Time Duplicate Sample Collected: _____

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☐ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-um ☐ _____

Sample Collected with: ☐ Grab ☒ Pump Other: _____ Type: ☒ Peristaltic ☐ Bladder Other: _____ Flow Rate (L/min): _____

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other: _____

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): mostly clear, slight tint; no odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☒	Total Alkalinity	(unpres) ☒	Nitrate/Sulfate	(unpres) ☒	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1)	none & (1) HCl	2	☐ MS/MSD	
MNA: 250 mL Poly	none	1	☐ Field Blank	
MNA: 500 ml Poly	none	1	☐ Rinsate	
			Total Bottles =	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: _____ **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH

Date of Collection: 8/10/20

Field Event: Quarterly GWM

Field Personnel: AJ + GC + PO + TJ

Purge Data

Location ID: **MW-13** couldn't locate

Ecology Tag

Diameter: **2.0** Screened Interval: **13-18**

GPS:

Total Depth: **18**

Location Condition (Well damage, well cap damaged, silted up): good

Secure: ☑ Yes ☐ No

Depth Sounder decontaminated prior to use: ☑ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 11.42

After 5 minutes of purging (from TOC): 12.09

Begin purge (time): 1525 End purge (time):

Volume purged: 6.5 L Purge water disposal method:

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged (L / gal)	pH (s.u.)	DO (mg/L)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1537	12.33	2	7.01	0.76	526	6.82	16.6	-119.9	
1542	12.71	3.25	6.73	0.60	505	6.10	16.7	-118.9	slowed a little
1547	12.91	4.5	6.69	0.54	523	5.16	16.4	-124.1	
1552	13.17	5.25	6.66	0.53	533	4.28	16.4	-128.1	

Ferrous Iron Field Test X mg/L or ☐ Not Detected

MNA Samples Required? Yes/No

Sampling Data

Sample No: MW13-081020 Location:

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: ~~1609~~ 1559 Weather: sunny & 75

Duplicate Sample No: NA Time Duplicate Sample Collected: NA

Type: ☑ Groundwater ☐ Surface Water ☐ Other

Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☑ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: : ☑ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): colorless, clear, no apparent odor

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles =	

Signature: Colin Gray **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH
Date of Collection: 8/11/20
Field Event: Quarterly GWM
Field Personnel: AJ + TS + GC + PO

Purge Data

Location ID: **MW-14**
Ecology Tag: Not found
Diameter: **4.0** Screened Interval: **7-12**
GPS:
Total Depth: **12**

Location Condition (Well damage, well cap damaged, silted up): Rusty but okay
Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☑ Yes ☐ No
Photograph Numbers:
One Casing Volume (gal):

Depth of water (from top of casing): 8.09
After 5 minutes of purging (from TOC): 8.39
Begin purge (time): 1316 End purge (time):
Volume purged: Purge water disposal method:

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1328	8.62	1.5	6.56	1.03	0.422	20.7	18.3	51.3	
1333	8.82	2	6.57	0.69	0.424	18.2	18.2	43.8	
1338	9.14	2.5	6.57	0.59	0.425	16.5	18.1	33.5	
1343	9.45	3	6.56	0.56	0.426	12.4	18.0	36.5	

Ferrous Iron Field Test mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW14-081120 Location:
Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 1346 Weather:
Duplicate Sample No: NA Time Duplicate Sample Collected: NA
Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☐ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-um ☐
Sample Collected with: ☐ Grab ☑ Pump Other: Type: ☐ Peristaltic ☐ Bladder Other: Flow Rate (L/min):
Water Quality Instrument Data Collected with: Type: ☑ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other:
Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced
Sample Description (Color, Turbidity, Odor, Other): Colorless, trace flock, no apparent odor

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
250 mL Poly - Pb	HNO3	0	☐ MS/MSD	
500 mL Glass Amber (1) none & (1) HCl		2	☑ Field Blank	
MNA: 250 mL Poly	none	1	☐ Rinsate	
MNA: 500 ml Poly	none	1	**Total Bottles =** 0	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: Date: 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: _____ Field Personnel: TS

Purge Data

Location ID: **MW-15**

Ecology Tag _____

Diameter: **4.0** Screened Interval: **8.5-18.5**

GPS: _____

Total Depth: **18.5**

Location Condition (Well damage, well cap damaged, silted up): Muddy, hard to take DTW

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers: _____

One Casing Volume (gal): _____

Depth of water (from top of casing): 15.19

After 5 minutes of purging (from TOC): 15.27

Begin purge (time): 17:08 End purge (time): 17:52

Volume purged: 10 liters Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
17:25	15.27	4.25	6.61	0.40	661.0	0.9	15.1	-132.3	Very silty @ start of purge
17:30	15.27	5.25	6.62	0.14	656.0	3.3	15.0	-132.2	
17:35	15.27	6.5	6.62	0.05	647.0	4.1	14.9	-131.9	
17:40	15.27	8	6.59	0.03	643.0	5.2	14.8	-132.5	

Ferrous Iron Field Test _____ mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-15-081020 Location: _____

Date Collected (mo/dy/yr): 08/10/20 Time Sample Collected: 17:45 Weather: Sunny + hot

Duplicate Sample No: _____ Time Duplicate Sample Collected: _____

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-um ☐ _____

Sample Collected with: ☐ Grab ☒ Pump Other: _____ Type: ☒ Peristaltic ☐ Bladder Other: _____ Flow Rate (L/min): _____

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other: _____

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear w/ black flock; no odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles =	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: _____ **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: _____ Field Personnel: TS

Purge Data

Location ID: **MW-16**

Ecology Tag: —

Diameter: **4.0** Screened Interval: **4.5-14.5**

GPS: _____

Total Depth: **14.5**

Location Condition (Well damage, well cap damaged, silted up): _____

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers: _____

One Casing Volume (gal): _____

Depth of water (from top of casing): 12.47

After 5 minutes of purging (from TOC): 12.74

Begin purge (time): 10:37 End purge (time): _____

Volume purged: _____ Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
10:50	13.22	3	6.59	0.22	420.3	-0.9	15.7	20.0	Pump slowed to slowest rate ≈ 200mL/min
10:55	13.34	3.5	6.56	0.16	422.7	-1.3	15.7	-6.9	
11:00	13.53	4.25	6.55	0.16	420.7	-1.3	15.6	-17.8	
11:05	13.74	5.25	6.53	0.19	415.7	-1.3	15.3	-21.3	
11:10	13.90	6	6.53	0.28	415.1	-1.3	15.6	-19.3	
11:15	14.06	7	6.52	0.31	414.4	-1.2	15.8	-15.9	
11:20	14.25	7.75	6.52	0.37	414.4	-0.9	15.9	-18.0	
11:25									Switched pump

Ferrous Iron Field Test — mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: ~~MW-16-081120~~ Location: _____

Date Collected (mo/dy/yr): ~~08/11/20~~ Time Sample Collected: _____ Weather: Sunny + warm

Duplicate Sample No: _____ Time Duplicate Sample Collected: _____

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐ _____

Sample Collected with: ☐ Grab ☒ Pump Other: _____ Type: ☒ Peristaltic ☐ Bladder Other: _____ Flow Rate (L/min): ~2

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other: _____

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): No sample collected. Well dry; no recharge.

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles =	

Signature: _____ **Date:** 8/11/20

Time	DTW	Vol Purged	pH	DO	SPC Cond.	Turb.	Temp	ORP	Notes
11:30	14.39	—	—	—	—	—	—	—	• Pump off @ 11:30 to swap equip. & recharge for 30min (well)
11:50	14.37	—	—	—	—	—	—	—	
12:00	14.37	—	—	—	—	—	—	—	• No change in DTW after 30 mins w/ pump off.
—	—	—	—	—	—	—	—	—	

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: Qtrly GW Monitoring Field Personnel: P.O.

Purge Data

Location ID: **MW-17**

Ecology Tag: Not Found

Diameter: **4.0** Screened Interval: **7.5-17.5**

GPS:

Total Depth: **17.5**

Location Condition (Well damage, well cap damaged, silted up): all 3 bolts rusted

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 12.67

After 5 minutes of purging (from TOC): 12.87

Begin purge (time): 11:56 End purge (time): 12:40

Volume purged: 7.25 L Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged (L/gal)	pH (s.u.)	DO (mg/L)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1201	12.87	1.75	6.95	5.76	299.6	8.03	14.6	112.3	
1206	13.07	2.5	6.93	5.48	298.4	9.80	14.5	110.8	
1211	13.25	3.5	6.91	5.37	297.6	10.47	14.5	108.9	
1216	13.51	4.75	6.91	5.38	297.2	9.46	14.5	108.3	
1221	13.71	5.75	6.91	5.38	296.3	8.70	14.5	107.8	

Ferrous Iron Field Test ____ mg/L or ☒ Not Detected **MNA Samples Required?** (Yes)/No

Sampling Data

Sample No: MW-17-081120 Location: perched aquifer

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 1225 Weather: 75°F, Sunny

Duplicate Sample No: – Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐ _____

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear, no odor

Sample Analyses

TPH-Dx Diss Mg (lab filtered)	(HCl) ☐ (unpres) ☐	TPH-G Total Alkalinity	(HCl) ☐ (unpres) ☐	BTEX Nitrate/Sulfate	(HCl) ☐ (unpres) ☐	cPAHs Methane	(unpres) ☐ (HCl) ☐	EDB/EDC/MTBE and Naph. VOCs	(HCl) ☐ (HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes)/No
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
MNA: 250 mL Poly	none	1	☐ Field Blank	
MNA: 500 ml Poly	none	1	☐ Rinsate B/4	
			Total Bottles = 12	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: [signature] **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: Quarterly GWM Field Personnel: AJ + TS + PO + GC

Purge Data

Location ID: **MW-18**

Ecology Tag: Not located

Diameter: **2.0** Screened Interval: **8-18**

GPS:

Total Depth: **18**

Location Condition (Well damage, well cap damaged, silted up): rusted but decent, needs 1 new bolt (at least)

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 13.04

After 5 minutes of purging (from TOC): 13.12

Begin purge (time): 920 End purge (time): 1020

Volume purged: 5.5L Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged (L/ gal)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
933	13.25	1.5	6.65	2.80	184.7	13.85	14.2	99.0	
938	13.25	2	6.59	2.91	184.8	12.48	14.7	84.0	
943	13.25	2.5	6.58	2.68	185.3	12.52	15.1	81.3	Pump stopped
948	13.29	3	6.54	2.22	196.6	8.22	14.7	73.9	
953	13.29	3.5	6.52	2.30	196.1	7.03	14.5	67.6	
958	13.29	4	6.51	2.13	198.2	6.09	14.6	63.8	
					198				

Ferrous Iron Field Test ____ mg/L or ☒ Not Detected **MNA Samples Required? Yes / No**

Sampling Data

Sample No: MW18-081120 Location:

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 10:04 Weather: Partly cloudy ~60°

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☑ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min): .20

Water Quality Instrument Data Collected with: Type: : ☑ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other):

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1)	none & (1) HCl	2	☐ MS/MSD	
MNA: 250 mL Poly	none	1	☐ Field Blank	
MNA: 500 ml Poly	none	1	☑ Rinsate	
			Total Bottles = 6	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH

Date of Collection: 8/10/20

Field Event:

Field Personnel: TS

Purge Data

Location ID: **MW-19**

Ecology Tag: —

Diameter: **4.0** Screened Interval: **13.5-18.5**

GPS:

Total Depth: **18.5**

Location Condition (Well damage, well cap damaged, silted up):

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 14.07'

After 5 minutes of purging (from TOC): 14.09'

Begin purge (time): 15:40 End purge (time): 16:30

Volume purged: 7.5 Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
16:00	14.09	3.75	6.13	1.05	424.2	-1.6	15.4	111.3	
16:05	14.09	4.75	6.14	1.01	424.1	-0.3	15.3	121.3	
16:10	14.09	5.75	6.13	0.97	422.8	0.0	15.4	126.4	

Ferrous Iron Field Test mg/L or ☒ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-19-081020 Location:

Date Collected (mo/dy/yr): 08/10/20 Time Sample Collected: 16:15 Weather: Sunny ~hot

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): mostly clear; no odor

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
MNA: 250 mL Poly	none	1	☐ Field Blank	
MNA: 500 ml Poly	none	1	☐ Rinsate	
			Total Bottles =	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: Date: 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: _____

Field Event: _____ Field Personnel: _____

Purge Data

Location ID: **MW-20**

Ecology Tag: Missing

Diameter: **4.0** Screened Interval: **11.5-21.5**

GPS: _____

Total Depth: **21.5** Measured total depth=17.20'

Location Condition (Well damage, well cap damaged, silted up): _____

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers: _____

One Casing Volume (gal): _____

Depth of water (from top of casing): 16.75

After 5 minutes of purging (from TOC): 16.99

Begin purge (time): 13:55 End purge (time): _____

Volume purged: _____ Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1402	Well	went dry.	2.5 L			purged – no			readings

Ferrous Iron Field Test NA mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-20-081120 Location: _____

Date Collected (mo/dy/yr): _____ Time Sample Collected: _____ Weather: _____

Duplicate Sample No: _____ Time Duplicate Sample Collected: _____

Type: ☐ Groundwater ☐ Surface Water ☐ Other Sample: ☐ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-um ☐ _____

Sample Collected with: ☐ Grab ☐ Pump Other: _____ Type: ☐ Peristaltic ☐ Bladder Other: _____ Flow Rate (L/min): _____

Water Quality Instrument Data Collected with: Type: ☐ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other: _____

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): _____

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1)	none & (1) HCl	2	☐ MS/MSD	
MNA: 250 mL Poly	none	1	☐ Field Blank	
MNA: 500 ml Poly	none	1	☐ Rinsate	
			Total Bottles =	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: _____ **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: **MW-22**

Ecology Tag

Diameter: **4.0** Screened Interval: **20.2-30.2**

GPS:

Total Depth: **30.2**

Location Condition (Well damage, well cap damaged, silted up): No bolts

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☑ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 24.92

After 5 minutes of purging (from TOC): 25.25

Begin purge (time): 0743 End purge (time): 0814

Volume purged: 4.6 Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
0802	25.23	3.0	6.42	0.75	0.266	4.1	15.3	-45.9	
0805	25.24	3.3	6.39	0.63	0.267	4.3	15.2	-47.4	
0808	25.24	3.9	6.38	0.57	0.266	4.6	15.3	-48.2	
0811	25.24	4.2	6.38	0.53	0.266	5.4	15.4	-49.4	
0814	25.24	4.6	6.38	0.51	0.266	6.0	15.4	-49.6	

Ferrous Iron Field Test 4.0 mg/L or ☐ Not Detected **MNA Samples Required? Yes (No)**

Sampling Data

Sample No: MW-22-081120 Location: MW-22

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 0814 Weather: Cloudy

Duplicate Sample No: MW-122-081120 ← ONLY FOR MNA Time Duplicate Sample Collected: 0821

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☑ Grab ☐ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: : ☑ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☑ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear slight odor

Sample Analyses

TPH-Dx	(HCl) ☑	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☑	Nitrate/Sulfate	(unpres) ☒	Methane	(HCl) ☒	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:
40 mL VOAs	HCl	8
500 mL Glass Amber (1) none & (1) HCl		2
MNA: 250 mL Poly	none	1
MNA: 500 ml Poly	none	1

QA/QC Samples:
- ☒ Field Duplicate
- ☐ MS/MSD
- ☐ Field Blank
- ☐ Rinsate

Total Bottles = 12 + 4 for Dup

Comments: For MNA only
2 extra VOAs required for Methane (Yes) No
Dup collected for MNA Analysis
Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: [signature] **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH

Date of Collection: 8/11/20

Field Event: Qtrly GW Monitoring

Field Personnel: P.O.

Purge Data

Location ID: **MW-23**

Ecology Tag Not Found

Diameter: **4.0** Screened Interval: **22.4-32.4**

GPS:

Total Depth: **32.4**

Location Condition (Well damage, well cap damaged, silted up): missing all 3 bolts

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 25.01'

After 5 minutes of purging (from TOC): 25.15

Begin purge (time): 0749 End purge (time): 0840

Volume purged: 2.5 gal Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
0754	25.15	3L	6.38	0.62	598	4.33	15.2	94↓	slowed pump rate
0759	25.07	4L	6.40	0.47	614	3.92	15.4	50.2	
0804	25.05	5L	6.42	0.39	642	3.69	15.4	17.9	
0809	25.03	6L	6.43	0.35	667	3.49	15.4	-3.9	
0814	25.01	7L	6.44	0.32	684	3.43	15.4	-20.6	
0819	24.99	8L	6.44	0.30	706	3.35	15.5	-34.4	
0824	24.97	9L	6.44	0.29	712	3.35	15.5	-38.5	

Ferrous Iron Field Test 2.5 mg/L or ☐ Not Detected **MNA Samples Required?** Yes/No

Sampling Data

Sample No: MW-23-081120 Location:

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 0826 Weather: 60°F, partly sunny

Duplicate Sample No: — Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear, v. slight yellow, moderate reducing odor. Slight sheen in purge water

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☒	Total Alkalinity	(unpres) ☒	Nitrate/Sulfate	(unpres) ☒	Methane	(HCl) ☒	VOCs	(HCl) ☒

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1)	none & (1) HCl	2	☐ MS/MSD	
MNA: 250 mL Poly	none	1	☐ Field Blank	
MNA: 500 ml Poly	none	1	☐ Rinsate	
			Total Bottles = 12	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: [signature] **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: Quarterly GWM Field Personnel: AJ+PO+GC+TS

Purge Data

Location ID: **MW-24**

Ecology Tag Not found

Diameter: **4.0** Screened Interval: **9.6-19.6**

GPS:

Total Depth: **19.6**

Location Condition (Well damage, well cap damaged, silted up): good

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☑ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 13.36

After 5 minutes of purging (from TOC): 13.69

Begin purge (time): 805 End purge (time): 855

Volume purged: 7.5L Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
820	14.21	2	6.97	7.10	252.8	43.75	14.0	108.0	let purge due to high turbidity
825	14.49	3	6.88	7.12	250.8	40.27	14.0	110.7	
830	14.71	4	6.83	7.10	250.0	42.37	14.0	112.6	
835	14.81	5	6.80	7.11	247.9	39.87	14.0	113.9	

Ferrous Iron Field Test mg/L or ☒ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW24-081120 Location:

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 841 Weather: Partly cloudy & 60

Duplicate Sample No: N/A Time Duplicate Sample Collected: N/A

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☑ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min): .20

Water Quality Instrument Data Collected with: Type: ☑ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Colorless, some flock, no apparent odor

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:
40 mL VOAs	HCl	8
500 mL Glass Amber (1) none & (1) HCl		2
MNA: 250 mL Poly	none	1
MNA: 500 ml Poly	none	1

QA/QC Samples:
☐ Field Duplicate
☐ MS/MSD
☐ Field Blank
☐ Rinsate
Total Bottles =

Comments:
2 extra VOAs required for Methane (Yes/No)
Negative ferrous iron test
Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: **MW-25**

Ecology Tag

Diameter: **4.0** Screened Interval: **7.8-17.8**

GPS:

Total Depth: **17.8**

Location Condition (Well damage, well cap damaged, silted up):

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☑ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 9.68

After 5 minutes of purging (from TOC): 10.27

Begin purge (time): 1131 End purge (time): 1202

Volume purged: 7.2 Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1150	10.50	5.0	6.49	1.29	0.397	4.2	15.7	-97.4	
1153	10.55	5.5	6.48	1.03	0.398	4.2	15.9	-99.4	
1156	10.66	6.0	6.48	0.87	0.398	4.0	15.9	-100.4	
1159	10.74	6.5	6.47	0.72	0.399	4.1	15.8	-101.3	
1202	10.81	7.0	6.47	0.67	0.398	3.9	15.8	-101.7	

Ferrous Iron Field Test 4.5 mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-25-081120 Location: E. of Rails

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 1203 Weather: SUNNY

Duplicate Sample No: N/A Time Duplicate Sample Collected:

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-um ☐

Sample Collected with: ☑ Grab ☑ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min): .2

Water Quality Instrument Data Collected with: Type: ☑ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☑ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear w/ slight yellow tint

Sample Analyses

TPH-Dx	(HCl) ☑	TPH-G	(HCl) ☑	BTEX	(HCl) ☑	cPAHs	(unpres) ☑	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☑	Total Alkalinity	(unpres) ☑	Nitrate/Sulfate	(unpres) ☑	Methane	(HCl) ☑	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
MNA: 250 mL Poly	none	1	☐ Field Blank	
MNA: 500 ml Poly	none	1	☐ Rinsate	
			Total Bottles = 12	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 7/10/20

Field Event: Quarterly GWM Field Personnel: AJ + ~~TS~~ + PO + GC

Purge Data

Location ID: **MW-26**

Ecology Tag Can't locate

Diameter: **4.0** Screened Interval: **9.4-19.4**

GPS:

Total Depth: **19.4**

Location Condition (Well damage, well cap damaged, silted up): good

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☑ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 13.18

After 5 minutes of purging (from TOC): 13.52

Begin purge (time): 1225 End purge (time): 1325

Volume purged: 7.5 L Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged (L) gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1235	13.72	2.25	6.82	16.1	187.1	23.29	16.5	-21.9	
1240	13.72	2.75	6.38	3.82	197.3	24.71	18.9	-36.7	
1245	13.72	3.25	6.42	5.48	207.1	14.27	20.4	-53.6	Extra bubbles in cell
1250	13.85	3.75	6.45	2.96	225.3	18.52	16.9	-51.9	
1255	13.92	4.25	6.36	4.15	217.7	40.06	18.8	-56.2	
1300	14.01	5	6.36	4.13	227.6	38.86	17.9	-57.0	Bubbles in cell
1305	14.05	5.5	6.48	6.91	220.8	23.4	20.8	-64.2	
1310	14.05	6	6.52	7.29	218.5	20.87	22.2	-67.7	

Ferrous Iron Field Test X mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW26-071020 Location:

Date Collected (mo/dy/yr): 7/10/20 Time Sample Collected: 1315 Weather: Sunny & 75

Duplicate Sample No: NA Time Duplicate Sample Collected: NA

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☑ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: ☑ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Colorless, no apparent odor, some floc

* water level dropped during sample collection — dropped in bailer to water ↑ floc - allowed for some additional stabilization but collected sample to avoid another drop

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles =	

Signature: Colin Jm **Date:** 7/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH

Date of Collection: 8/10/20

Field Event: Quarterly GWM

Field Personnel: AJ+GC+PO+TS

Purge Data

Location ID: **MW-27**

Ecology Tag not located

Diameter: **4.0** Screened Interval: **18-28**

GPS:

Total Depth: **28**

Location Condition (Well damage, well cap damaged, silted up): good

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☑ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 19.72

After 5 minutes of purging (from TOC): 19.79

Begin purge (time): 1345 End purge (time): 1428

Volume purged: 5.5L Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged (gal)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1358	19.80	1.75	6.40	0.81	444.6	20.13	16.4	-25.0	
1403	19.80	2.50	6.30	0.76	441.7	17.33	16.3	-33.0	
1408	19.81	3	6.31	0.75	444.1	16.36	16.4	-35.8	
1413	19.81	3.5	6.31	0.73	445.0	18.24	16.3	-37.8	

Ferrous Iron Field Test X mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW27-081020 Location:

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 1418 Weather: Sunny + 76°

Duplicate Sample No: NA Time Duplicate Sample Collected: NA

Type: ☐ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-um ☐

Sample Collected with: ☐ Grab ☑ Pump Other: Type: ☐ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: : ☑ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): colorless, clear, no apparent odor

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/**No**)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles =	

Signature: Date: 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH

Date of Collection: 8/11/20

Field Event: Quarterly GWM

Field Personnel: AJ + TS + GC + PO

Purge Data

Location ID: **MW-28**

Ecology Tag: Not Located

Diameter: **2.0** Screened Interval: **9.8-19.8**

GPS:

Total Depth: **19.8** Measured 19.29

Location Condition (Well damage, well cap damaged, silted up): Okay, needs new bolts -- new monument needed

Secure: ☒ Yes ☐ No

Depth Sounder decontaminated prior to use: ☐ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 17.54

After 5 minutes of purging (from TOC): 18.86

Begin purge (time): 1050 End purge (time):

Volume purged: 5.5L Purge water disposal method: on site drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2:5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged (gal)	pH (s.u.)	DO (mg/L)	Specific Conductivity (uS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1104	18.86	1	6.43	1.06	194.1	33.50	17.2	22.8	
1109	18.12	1.75	6.28	0.83	196.5	22.10	17.0	13.5	Lots of bubbles in tubing
1114	18.39	2	6.23	1.86	198.9	32.80	17.7	-8.6	
1119	18.39	2.5	6.24	0.96	201.7	19.36	16.9	6.1	
1124	18.39	3	6.22	0.70	203.6	17.32	16.9	3.6	
1129	18.39	3.5	6.20	1.57	203.4	17.02	17.5	2.8	
1210	19.00	Well	ran dry - measured total depth = 19.29						

Ferrous Iron Field Test mg/L or ☐ Not Detected

MNA Samples Required? Yes/No * Allowed 20 min recharge → 18.85 not enough water to purge

Sampling Data

Sample No: MW28-081120 Location:

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 1134 Weather: Sunny & 62°

Duplicate Sample No: NA Time Duplicate Sample Collected: NA

Type: ☒ Groundwater ☐ Surface Water ☐ Other

Sample: ☐ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-um ☐

Sample Collected with: ☐ Grab ☒ Pump Other:

Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min): .20

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): * Lots of bubbles into water level drop

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☐	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
MNA: 250 mL Poly	none	1	☐ Field Blank	
MNA: 500 ml Poly	none	1	☐ Rinsate	Bottles for Manganese, Alkalinity, Nitrate, Sulfate
MNA samples NOT collected			Total Bottles = 12	

Signature: Date: 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH

Date of Collection: 8/11/20

Field Event: Qtrly GW Monitoring

Field Personnel: P.O.

Purge Data

Location ID: **MW-29**

Ecology Tag Not Found

Diameter: **2.0** Screened Interval: **15-27.7**

GPS:

Total Depth: **27.7**

Location Condition (Well damage, well cap damaged, silted up): good

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 16.33'

After 5 minutes of purging (from TOC): 16.31'

Begin purge (time): 0859 End purge (time): 0947

Volume purged: 9 L Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
0904	16.31'	2L	6.48	2.87	170.1	4.08	14.4	53.9	
0911	16.31'	3.5L	6.37	2.75	167.0	3.44	14.2	59.3	
0916	16.31'	4.5L	6.36	2.87	165.7	3.93	14.1	61.0	
0921	16.31'	5.5L	6.36	2.76	167.7	3.75	14.0	62.6	
0926	16.31'	6.5L	6.35	2.78	167.0	3.69	14.1	63.7	

Ferrous Iron Field Test mg/L or ☒ Not Detected **MNA Samples Required?** (Yes) No

Sampling Data

Sample No: MW-29-081120 Location:

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 0929 Weather 75°F, Partly Sunny

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or (dedicated) silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear, no odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☒	Total Alkalinity	(unpres) ☒	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	☒ 6x2+2	☐ Field Duplicate	2 extra VOAs required for Methane (Yes) No
500 mL Glass Amber (1) none & (1) HCl		2 x 3	☒ MS/MSD	
MNA: 250 mL Poly	none	1	☐ Field Blank	MS/MSD for TPH analyses only
MNA: 500 ml Poly	none	1	☐ Rinsate (18/4)	
			Total Bottles = ~~20~~ 22	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: [signature] **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: **MW-30**

Ecology Tag

Diameter: **2.0** Screened Interval: **9-26**

GPS:

Total Depth: ~~26~~ 24.35

Location Condition (Well damage, well cap damaged, silted up): NO BOLTS

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 19.21

After 5 minutes of purging (from TOC): 19.62

Begin purge (time): 0851 End purge (time): 0920

Volume purged: 3.5 Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
0908	19.85	2.0	6.29	3.72	1.164	5.4	15.5	116.9	
0911	19.88	2.3	6.27	3.18	1.166	6.5	15.5	121.6	
0914	19.92	2.9	6.28	2.28	1.168	5.0	15.3	124.3	
0917	19.95	3.1	6.28	2.66	1.168	4.6	15.4	126.0	
0920	19.94	3.5	6.28	2.49	1.167	4.2	15.5	127.3	

Ferrous Iron Field Test <0.5 mg/L or ☒ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-30-081120 Location: Below Lewis Clark Bridge

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 0921 Weather: Cloudy

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☑ Grab ☐ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min): 0.10

Water Quality Instrument Data Collected with: Type: ☑ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☑ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other):

Sample Analyses

TPH-Dx	(HCl) ☑	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☑	Total Alkalinity	(unpres) ☒	Nitrate/Sulfate	(unpres) ☒	Methane	(HCl) ☒	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	Redevelop! ← Yes
MNA: 250 mL Poly	none	1	☐ Field Blank	
MNA: 500 ml Poly	none	1	☐ Rinsate	
			Total Bottles = 12	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: **MW-31**

Ecology Tag: N/A

Diameter: **2.0** Screened Interval: **9-19**

GPS:

Total Depth: **19**

Location Condition (Well damage, well cap damaged, silted up): In depression & risk of being buried

Secure: ☐ Yes ☒ No Depth Sounder decontaminated prior to use: ☑ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 13.72

After 5 minutes of purging (from TOC): 14.05

Begin purge (time): 1705 End purge (time): 1738

Volume purged: ~~1738~~ Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1726	14.01	2.0	6.48	~~5.72~~ 5.72	0.383	14.3	16.7	108.4	
1729	14.00	2.3	6.46	5.90	0.383	8.3	16.2	112.7	
1732	14.00	2.9	6.46	5.98	0.383	7.8	16.2	115.5	
1735	14.00	3.3	6.46	6.05	0.385	6.8	16.1	120.3	
1738	14.00	3.8	6.42	6.09	0.386	6.0	16.0	127.3	

Ferrous Iron Field Test <0.5 mg/L or ☒ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-31-081020 Location: Former Calloway Ross Area

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 1738 Weather: Sunny

Duplicate Sample No: N/A Time Duplicate Sample Collected:

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☐ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☑ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min): 0.11

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Slight reddish color

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☑	Total Alkalinity	(unpres) ☒	Nitrate/Sulfate	(unpres) ☑	Methane	(HCl) ☒	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (**Yes**/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
MNA: 250 mL Poly	none	1	☐ Field Blank	Transducer removed @ 1715
MNA: 500 ml Poly	none	1	☐ Rinsate	
			Total Bottles = 12	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH | Date of Collection: 8/11/20

Field Event: 3Q2020 | Field Personnel: G. Cisneros

Purge Data

Location ID: **MW-32**

Ecology Tag

Diameter: **2.0** Screened Interval: **8-18**

GPS:

Total Depth: **18**

Location Condition (Well damage, well cap damaged, silted up): Damaged well box needs replacement

Secure: ☐ Yes ☐ No | Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 14.35

After 5 minutes of purging (from TOC): 14.63

Begin purge (time): 0849 End purge (time): 1015

Volume purged: 3.6 Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1003	14.86	2.0	6.50	0.86	0.403	7.2	16.3	-106.5	
1006	14.81	2.2	6.51	0.64	0.402	6.6	16.3	-109.5	
1009	14.81	2.7	6.50	0.57	0.403	6.7	16.2	-110.9	
1012	14.81	3.1	6.50	0.48	0.403	6.1	16.3	-112.3	
1015	14.81	3.6	6.50	0.50	0.403	5.8	16.1	-112.5	

Ferrous Iron Field Test ____ mg/L or ☐ Not Detected

MNA Samples Required? Yes/No

Sampling Data

Sample No: MW-32-081120 Location: Maintenance Yard

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 1016 Weather: SUNNY 70°

Duplicate Sample No:: N/A Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other

Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☒ Grab ☐ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min): 0.15

Water Quality Instrument Data Collected with: Type: : ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear No odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:
40 mL VOAs	HCl	6 ✓
500 mL Glass Amber (1) none & (1) HCl		2 ✓

QA/QC Samples:

☐ Field Duplicate

☐ MS/MSD

☐ Field Blank

☐ Rinsate

Total Bottles = 8

Comments:

2 extra VOAs required for Methane (Yes/No)

Signature: [signature] **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: Qtrly GW Monitoring Field Personnel: P.O.

Purge Data

Location ID: **MW-33**

Ecology Tag BME 942

Diameter: **2.0** Screened Interval: **18.2-28.2**

GPS:

Total Depth: **28.2**

Location Condition (Well damage, well cap damaged, silted up):

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 19.25

After 5 minutes of purging (from TOC): 19.25'

Begin purge (time): 10:25 End purge (time): 11:11

Volume purged: 9L Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged (L/gal)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
10:35	19.26	2.5	6.31	0.79	298.7	38.13	14.4	103.0	
10:40	19.26	4L	6.29	0.57	297.6	27.23	14.4	97.6	
10:45	19.26	5L	6.29	0.50	297.6	27.30	14.1	94.3	
10:50	19.26	6L	6.29	0.43	296.6	27.35	14.4	90.3	
10:55	19.26	7.25	6.29	0.41	297.8	22.88	14.1	89.0	
11:00	19.26	8.25	6.30	0.40	298.6	19.33	14.2	88.4	

Ferrous Iron Field Test NM mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-33-081120 Location:

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 11:03 Weather: 70°F, Sunny

Duplicate Sample No: — Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: : ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Slightly cloudy, light yellow, v. slight odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	Dropped Rite in the rain pen down well at start of purge
			☐ Rinsate	
			Total Bottles = 8	

Signature: Date: 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: **MW-34**

Ecology Tag BME-944

Diameter: **2.0** Screened Interval: **20.9-30.9**

GPS:

Total Depth: **30.9**

Location Condition (Well damage, well cap damaged, silted up):

Secure: ☐ Yes ☐ No Depth Sounder decontaminated prior to use: ☐ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 20.95

After 5 minutes of purging (from TOC): 20.97

Begin purge (time): 1521 End purge (time): 1551

Volume purged: 4.9 Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1542	20.97	3.5	5.88	0.79	1.914	3.2	17.3	-25.4	
1545	20.97	3.9	5.80	0.68	1.912	3.2	17.2	-26.0	
1548	20.97	4.3	5.89	0.63	1.914	3.3	17.1	-26.5	
1551	20.97	4.9	5.88	0.56	1.906	3.3	17.3	-25.5	

Ferrous Iron Field Test _____ mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-34-081020 Location: Parking Lot

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 1552 Weather: Sunny 75°

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☒ Grab ☐ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min): 0.16

Water Quality Instrument Data Collected with: Type: : ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear No odor, Slight Sheen

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☒

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles = 8	

Signature: **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: **MW-35**

Ecology Tag

Diameter: **2.0** Screened Interval: **15.7-25.7**

GPS:

Total Depth: **25.7**

Location Condition (Well damage, well cap damaged, silted up):

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 15.18

After 5 minutes of purging (from TOC): 15.17

Begin purge (time): 1610 End purge (time): 1643

Volume purged: 3.4 Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged (L/ gal)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1631	15.62	2.0	6.53	1.66	0.419	4.1	18.3	45.9	
1634	15.60	2.4	6.49	1.30	0.426	4.8	18.3	61.5	
1637	15.60	2.9	6.46	1.13	0.428	6.3	18.4	69.0	
1640	15.60	3.1	6.45	1.06	0.431	8.6	18.5	73.5	
1643	15.60	3.4	6.44	1.05	0.433	9.6	18.4	74.9	

Ferrous Iron Field Test <0.5 mg/L or ☒ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-35-081020 Location: Parking lot

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 1643 Weather: Sunny 90°

Duplicate Sample No: N/A Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min): 0.11

Water Quality Instrument Data Collected with: Type: : ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear

Sample Analyses

TPH-Dx	(HCl) ☐	TPH-G	(HCl) ☒	BTEX	(HCl) ☐	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☒	Total Alkalinity	(unpres) ☒	Nitrate/Sulfate	(unpres) ☒	Methane	(HCl) ☒	VOCs	(HCl) ☒

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
MNA: 250 mL Poly	none	1	☐ Field Blank	
MNA: 500 ml Poly	none	1	☐ Rinsate	
			Total Bottles =	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: **MW-36**
Ecology Tag: BME 945
Diameter: **2.0** Screened Interval: **25-35**
GPS:
Total Depth: **35**

Location Condition (Well damage, well cap damaged, silted up):

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No
Photograph Numbers:
One Casing Volume (gal):

Depth of water (from top of casing): 25.31
After 5 minutes of purging (from TOC): 25.38
Begin purge (time): 1307 End purge (time): 1348
Volume purged: 5.5 Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe				
Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1336	25.39	3.5	6.31	1.29	0.231	12.9	16.8	60.2	
1339	25.39	4.0	6.31	1.29	0.231	11.1	17.0	61.9	
1342	25.39	4.5	6.30	1.31	0.231	10.7	17.1	63.5	
1345	25.39	5.0	6.24	1.26	0.230	9.3	17.2	64.0	
1348	25.39	5.5	6.26	1.29	0.232	9.3	17.1	61.1	

Ferrous Iron Field Test ______ mg/L or ☐ Not Detected **MNA Samples Required? Yes/No** (No circled)

Sampling Data

Sample No: MW-36-081020 Location:
Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 1349 Weather: Sunny 75°
Duplicate Sample No: MW-136-081020 @1341 Time Duplicate Sample Collected: 1341

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐ Ø

Sample Collected with: ☒ Grab ☐ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min): 0.14

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Fe-Orange Biosludge on well @ First minute of purging. Then clear

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:		QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	12	☒ Field Duplicate	2 extra VOAs required for Methane (Yes/No) (No circled)
500 mL Glass Amber (1) none & (1) HCl		2	4	☐ MS/MSD	Dupe 1341
				☐ Field Blank	
				☐ Rinsate	
				Total Bottles = 16	

Signature: [signature] **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: 3Q2020 GW Sampling Field Personnel: G. Cisneros

Purge Data

Location ID: **MW-37**

Ecology Tag: BME 947

Diameter: **2.0** Screened Interval: **24.5-34.5**

GPS:

Total Depth: **34.5**

Location Condition (Well damage, well cap damaged, silted up): Good

Secure: ☐ Yes ☐ No Depth Sounder decontaminated prior to use: ☑ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 23.89

After 5 minutes of purging (from TOC): 23.90

Begin purge (time): 1128 End purge (time): 1156

Volume purged: 5 L Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1141	23.91	2.1	6.85	0.88	1.297	13.9	18.3	-102.1	
1144	23.91	2.9	6.85	0.63	1.288	27.9	18.5	-105.8	
1147	23.91	3.5	6.85	0.52	1.266	52.5	18.2	-107.7	
1150	23.91	3.9	6.85	0.47	1.250	66.4	18.5	-109.0	
1153	23.91	4.3	6.85	0.43	1.255	77.0	18.5	-110.5	
1156	23.91	4.9	6.83	0.40	1.267	87.3	18.5	-110.5	

Ferrous Iron Field Test: mg/L or ☐ Not Detected MNA Samples Required? Yes/No

Sampling Data

Sample No: MW-37-081020 Location: MW37

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 1157 Weather: Sunny 70°

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☑ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min): 0.16

Water Quality Instrument Data Collected with: Type: ☑ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☐ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Slight orange tint

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:
40 mL VOAs	HCl	6 ✓
500 mL Glass Amber (1) none & (1) HCl		2 ✓

QA/QC Samples:
- ☐ Field Duplicate
- ☐ MS/MSD
- ☐ Field Blank
- ☐ Rinsate

Total Bottles = 8

Comments: 2 extra VOAs required for Methane (Yes/No)

Signature: **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: **MW-38**

Ecology Tag: BME 946

Diameter: **2.0** Screened Interval: **24.8-34.8**

GPS:

Total Depth: **34.8**

Location Condition (Well damage, well cap damaged, silted up): Good

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☑ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 24.69

After 5 minutes of purging (from TOC): 24.11

Begin purge (time): 1220 End purge (time):

Volume purged: Purge water disposal method:

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1237	24.12	2.0	6.66	0.80	0.377	15.5	17.2	-80.1	
1240	24.11	2.7	6.62	0.54	0.377	40.7	17.1	-82.7	
1243	24.11	3.1	6.62	0.49	0.380	57.5	17.1	-82.7	
1246	24.12	3.6	6.62	0.49	0.380	88.6	17.1	-83.3	
1249	24.12	4.1	6.61	0.43	0.381	104.4	17.2	-83.2	

Ferrous Iron Field Test mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-38-081020 Location: Transit Shed 2

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 1249 Weather: Sunny 75°

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☑ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min): 0.15

Water Quality Instrument Data Collected with: Type: ☑ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☑ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Slight Yellow Tint

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles = 8	

Signature: **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: _____ Field Personnel: TS

Purge Data

Location ID: **MW-39**

Ecology Tag BME 948

Diameter: **2.0** Screened Interval: **7.6-17.6**

GPS: _____

Total Depth: **17.6**

Location Condition (Well damage, well cap damaged, silted up): _____

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers: _____

One Casing Volume (gal): _____

Depth of water (from top of casing): 12.83'

After 5 minutes of purging (from TOC): 12.85'

Begin purge (time): 14:30 End purge (time): 15:19

Volume purged: 8.75 Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
14:45	12.85	3.25	6.52	0.16	564.0	0.3	16.3	-132.5	
14:50	12.85	4	6.51	0.08	563.0	-0.3	16.3	-137.9	water clear
14:55	12.85	5	6.51	0.03	563.0	-0.4	16.3	-140.1	despite neg. turb
15:00	12.85	6	6.51	0.01	562.0	-0.4	16.1	-144.4	

Ferrous Iron Field Test — mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-39-081020 Location: _____

Date Collected (mo/dy/yr): 08/10/20 Time Sample Collected: 15:05 Weather: Sunny ~ hot

Duplicate Sample No: — Time Duplicate Sample Collected: _____

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐ _____

Sample Collected with: ☐ Grab ☒ Pump Other: _____ Type: ☒ Peristaltic ☐ Bladder Other: _____ Flow Rate (L/min): _____

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other: _____

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): slight yellow tint; clear; slight odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	
			☐ Field Blank	
			☐ Rinsate	
			Total Bottles =	

Signature: _____ **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: Qtrly GW Monitoring Field Personnel: P.O.

Purge Data

Location ID: **MW-40**

Ecology Tag BME 941

Diameter: **4.0** Screened Interval: **15.6-25.6**

GPS:

Total Depth: **25.6**

Location Condition (Well damage, well cap damaged, silted up): fine

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 17.89'

After 5 minutes of purging (from TOC): 18.06'

Begin purge (time): 13:07 End purge (time): 13:47

Volume purged: 2.25 gal Purge water disposal method: drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / (gal)	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
13:12	18.10'	0.5	6.45	5.99	281.6	17.16	15.0	106.1	
13:17	18.12	0.8	6.39	5.75	280.4	10.94	14.9	106.2	
13:27	18.12	1.1	6.38	5.68	280.0	7.68	14.9	106.1	
13:32	18.13	1.4	6.38	5.65	279.5	6.15	14.8	105.2	
13:37	18.13	1.8	6.37	5.600	279.1	5.89	14.8	104.3	

Ferrous Iron Field Test NM mg/L or ☐ Not Detected **MNA Samples Required? Yes (No)**

Sampling Data

Sample No: MW-40-081120 Location:

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 13:39 Weather: 75° F, Sunny

Duplicate Sample No: — Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☒ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): clear, mild HC odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☐	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☒

Type of Sample Containers:	Preservative	Quantity:
40 mL VOAs	HCl	6
500 mL Glass Amber (1) none & (1) HCl		2

QA/QC Samples:
- ☐ Field Duplicate
- ☐ MS/MSD
- ☐ Field Blank
- ☐ Rinsate

Total Bottles = 8

Comments:
2 extra VOAs required for Methane (Yes) No

Signature: **Date:** 8/11/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/10/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: **UST-4**

Ecology Tag

Diameter: **2.0** Screened Interval: **14.3-24.3**

GPS:

Total Depth: **24.3**

Location Condition (Well damage, well cap damaged, silted up):

Secure: ☒ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 17.69

After 5 minutes of purging (from TOC): 17.71

Begin purge (time): 1426 End purge (time):

Volume purged: Purge water disposal method:

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1441	17.72	2.2	6.04	5.06	0.209	7.2	17.6	112.2	
1444	17.71	3.0	6.05	4.72	0.209	7.6	17.4	119.3	
1447	17.71	3.3	6.05	4.61	0.209	8.4	17.5	122.1	
1450	17.71	3.8	6.05	4.55	0.211	10.8	17.4	124.9	
1453	17.71	4.2	6.05	4.48	0.211	15.3	17.5	127.4	

Ferrous Iron Field Test mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: UST-4-081020 Location: Mechanic's Shop

Date Collected (mo/dy/yr): 8/10/20 Time Sample Collected: 1451 Weather: Sunny

Duplicate Sample No: ~ 1A Time Duplicate Sample Collected:

Type: ☒ Groundwater ☐ Surface Water ☐ Other Sample: ☐ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☐ Grab ☒ Pump Other: Type: ☒ Peristaltic ☐ Bladder Other: Flow Rate (L/min): 0.15

Water Quality Instrument Data Collected with: Type: ☒ YSI Pro DSS ☐ Horiba U-50 ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☒ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear No Odor

Sample Analyses

TPH-Dx	(HCl) ☒	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☒
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☐

Lead ☒

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	6	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
250 mL Poly - Pb	HNO3	1	☐ MS/MSD	
500 mL Glass Amber (1) none & (1) HCl		2	☐ Field Blank	
			☐ Rinsate	
			Total Bottles = 9	

Signature: **Date:** 8/10/20

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: T-2

Ecology Tag

Diameter: 2" Screened Interval:

GPS:

Total Depth: 19.80

Location Condition (Well damage, well cap damaged, silted up): Bent Casing ~2' bgs

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☑ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 12.89

After 5 minutes of purging (from TOC): 13.29

Begin purge (time): 1037 End purge (time):

Volume purged: Purge water disposal method:

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1050	13.28	2.2	6.48	3.72	0.331	28.0	14.3	-57.7	
1053	13.28	2.8	6.48	3.36	0.333	24.4	14.3	-62.6	
1056	13.28	3.2	6.48	2.61	0.333	25.5	14.5	-64.5	
1059	13.28	3.6	6.48	2.53	0.334	24.0	14.5	-65.3	
1102	13.28	4.0	6.47	2.63	0.333	22.3	14.4	-65.5	

Ferrous Iron Field Test mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: T-2-081120 Location: Maintenance Yard near AST Farm

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 1103 Weather: Sunny

Duplicate Sample No: N/A Time Duplicate Sample Collected:

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☑ Grab ☐ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: ☑ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☑ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear w/slight orange tint

Sample Analyses

TPH-Dx	(HCl) ☑	TPH-G	(HCl) ☒	BTEX	(HCl) ☐	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☒

Type of Sample Containers:	Preservative	Quantity:
40 mL VOAs	HCl	6
500 mL Glass Amber (1) none & (1) HCl		2

QA/QC Samples:
- ☐ Field Duplicate
- ☐ MS/MSD
- ☐ Field Blank
- ☐ Rinsate

Total Bottles =

Comments:
2 extra VOAs required for Methane (Yes/No)

Redevelop! - Yes on 8/10/20

Signature: **Date:** 8/11/20

SOIL VAPOR SAMPLING SHEET

Site Reference: POL-TP41

Address: 10 Portway, Longview, WA

Date: 5/8/20

Personnel: G.C., P.O. and T.J.

Soil Vapor Sampling Point ID	Vacuum Test: Time Start Vacuum Testing	Vacuum Test: Time Stop Vacuum Testing	Purging: Time Start Purging	Purging: Time Stop Purging	Purging: Purging Rate (mL/min)	Purging: Total Volume Purged (mL)	Helium: Time of Helium Reading	Helium: Helium Reading (%)	Sampling: Time Start Sampling	Sampling: Time Stop Sampling	Sampling: Canister Vacuum Before Sampling (in Hg)	Sampling: Canister Vacuum After Sampling (in Hg)	PID: Time of PID Reading	PID: PID Reading	Can S/N Notes	Manifold
SVP-01	0749	0754	0800	0802	~~167~~ 150		0810	1%	0804	0810	30	4.5	0811	0.2	3257	240
SVP-101	0754	0759	0800	0802	~~167~~ 150		" "	" "	0804	0810	30	4.5	" "	0.2	2297	222
SVP-02	0842	0847	0848	0850	150		0852	11%	0851	0857	30	4.5	0858	0.3	3255	224

Notes:

Well Development Field Form

FLOYD | SNIDER

Project Name: POL - TPH

Project Number:

Driller (if applicable): N/A

Date: 8/10/20

Field Personnel: G. Cisneros

Purge Data

Well ID:	Total Well Depth:	Well Condition/Damage Description:
MW-30	24.35	Bolts Stripped
Well Casing Type/Diameter/Screened Level: 2" Screen 9-26'	**One Casing Volume (gal):** 1.7 gals	
Method of Development (Circle): Surge Block (Pump Surge) Bailer	**Equipment Used (type of pump, etc.):** Whale pump	

Begin Purge (time): 0845

End Purge (time): 0920

Gallons Purged (time): ~11.0 gals

Purge Water Disposal Method (circle):

On-site Storage Tank On-site Treatment (Drum) Other:

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
(2")	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (feet)	Vol. Purged (gallons)	Rate (gpm)	pH	Conductivity	Turbidity	Temp	Comments
0845	16.80	—	--	--	--	--	--	Prior to purging
0851	Dry	~2.5						purged dry - Allowed time to recharge
0900	~3' of water			purged ~ 4.5 gals & allowed to recharge				
	Surged casing again w/ pump & purged dry.							
0911	~5 ft	7 gals	—	water clear & free of turbidity, Faint orange color				
0920	~3 ft	11 gals		purged till dry. Last 4 gals were clear.				

Notes:

Surged w/ pump for 10 minutes prior to purging. Water orange brown - biogrowth / iron-reducing bacteria color. After ~7 gals purged water became clear

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: **MW-30**

Ecology Tag

Diameter: **2.0** Screened Interval: **9-26**

GPS:

Total Depth: ~~26~~ 24.35

Location Condition (Well damage, well cap damaged, silted up): NO BOLTS

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☒ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 19.21

After 5 minutes of purging (from TOC): 19.62

Begin purge (time): 0851 End purge (time): 0920

Volume purged: 3.5 Purge water disposal method: Drum

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
0908	19.85	2.0	6.29	3.72	1.164	5.4	15.5	116.9	
0911	19.88	2.3	6.27	3.18	1.166	6.5	15.5	121.6	
0914	19.92	2.9	6.28	2.28	1.168	5.0	15.3	124.3	
0917	19.95	3.1	6.28	2.66	1.168	4.6	15.4	126.0	
0920	19.94	3.5	6.28	2.49	1.167	4.2	15.5	127.3	

Ferrous Iron Field Test <0.5 mg/L or ☒ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: MW-30-081120 Location: Below Lewis Clark Bridge

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 0921 Weather: Cloudy

Duplicate Sample No: Time Duplicate Sample Collected:

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☑ Grab ☐ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min): 0.10

Water Quality Instrument Data Collected with: Type: ☑ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☑ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other):

Sample Analyses

TPH-Dx	(HCl) ☑	TPH-G	(HCl) ☒	BTEX	(HCl) ☒	cPAHs	(unpres) ☐	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☑	Total Alkalinity	(unpres) ☒	Nitrate/Sulfate	(unpres) ☒	Methane	(HCl) ☒	VOCs	(HCl) ☐

Type of Sample Containers:	Preservative	Quantity:	QA/QC Samples:	Comments:
40 mL VOAs	HCl	8	☐ Field Duplicate	2 extra VOAs required for Methane (Yes/No)
500 mL Glass Amber (1) none & (1) HCl		2	☐ MS/MSD	Redevelop! ← Yes
MNA: 250 mL Poly	none	1	☐ Field Blank	
MNA: 500 ml Poly	none	1	☐ Rinsate	
			Total Bottles = 12	Bottles for Manganese, Alkalinity, Nitrate, Sulfate

Signature: **Date:** 8/11/20

Well Development Field Form

FLOYD | SNIDER

Project Name: POL-TPH

Date: 8/10/20

Project Number:

Field Personnel: G. Cisneros

Driller (if applicable): N/A

Purge Data

Well ID:	Total Well Depth:	Well Condition/Damage Description:
T-2	19.80	Bent Casing ~2' bgs
Well Casing Type/Diameter/Screened Level: UNKNOWN	**One Casing Volume (gal):** 1.1 gal	
Method of Development (Circle): Surge Block Pump Surge Bailer Can't get a bailer or pump down casing	**Equipment Used (type of pump, etc):** Peristaltic pump	

Begin Purge (time):	1000
End Purge (time):	1030
Gallons Purged (time):	1.75 gals
Purge Water Disposal Method (circle): On-site Storage Tank On-site Treatment (Drum) Other:	

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
1 ¼"	1.660"	1.380"	0.08	0.64
2"	2.375"	2.067"	0.17	1.45
3"	3.500"	3.068"	0.38	3.2
4"	4.500"	4.026"	0.66	5.51
6"	6.625"	6.065"	1.5	12.5

Time	Depth to Water (feet)	Vol. Purged (gallons)	Rate (gpm)	pH	Conductivity	Turbidity	Temp	Comments
Surged w/ DTW Meter				--	--	--		Prior to purging
1002	~~10.85~~	0.5	-					Reddish brown color
1010	12.91	1.0	0.1 gpm					Clear after 1-gal
1018	-	1.7	"					Clear
		↑	Bottom of casing felt hard; no silt present					
Purged another gal on 8/11/20 during sampling @ 1037								

Notes:

Casing bent. Surged w/ DTW level meter. Silty bottom ~2' bgs

After 1 gallon purged the water cleared & the casing bottom felt hard.

GROUNDWATER SAMPLE COLLECTION FORM

Project Name: POL-TPH Date of Collection: 8/11/20

Field Event: 3Q2020 Field Personnel: G. Cisneros

Purge Data

Location ID: T-2

Ecology Tag

Diameter: 2" Screened Interval:

GPS:

Total Depth: 19.80

Location Condition (Well damage, well cap damaged, silted up): Bent Casing ~2' bgs

Secure: ☑ Yes ☐ No Depth Sounder decontaminated prior to use: ☑ Yes ☐ No

Photograph Numbers:

One Casing Volume (gal):

Depth of water (from top of casing): 12.89

After 5 minutes of purging (from TOC): 13.29

Begin purge (time): 1037 End purge (time):

Volume purged: Purge water disposal method:

Volume of Schedule 40 PVC Pipe

Diameter	O.D.	I.D.	Volume (Gal/Linear Ft.)	Weight of Water (Lbs/Lineal Ft.)
¾	1.050"	0.804"	0.0229	0.2916
2"	2.375"	2.067"	0.17	1.45
2.5"	2.875"	2.445"	0.255	2.129
4"	4.500"	4.026"	0.66	5.51

Time	DTW (decimal ft below TOC)	Vol. Purged L / gal	pH (s.u.)	DO (mg/L)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Temp (°C)	ORP (mV)	Comments
1050	13.28	2.2	6.48	3.72	0.331	28.0	14.3	-57.7	
1053	13.28	2.8	6.48	3.36	0.333	24.4	14.3	-62.6	
1056	13.28	3.2	6.48	2.61	0.333	25.5	14.5	-64.5	
1059	13.28	3.6	6.48	2.53	0.334	24.0	14.5	-65.3	
1102	13.28	4.0	6.47	2.63	0.333	22.3	14.4	-65.5	

Ferrous Iron Field Test mg/L or ☐ Not Detected **MNA Samples Required? Yes/No**

Sampling Data

Sample No: T-2-081120 Location: Maintenance Yard near AST Farm

Date Collected (mo/dy/yr): 8/11/20 Time Sample Collected: 1103 Weather: Sunny

Duplicate Sample No: N/A Time Duplicate Sample Collected:

Type: ☑ Groundwater ☐ Surface Water ☐ Other Sample: ☑ Unfiltered ☐ Filtered Filter Type: ☐ disposable 0.45-µm ☐

Sample Collected with: ☑ Grab ☐ Pump Other: Type: ☑ Peristaltic ☐ Bladder Other: Flow Rate (L/min):

Water Quality Instrument Data Collected with: Type: ☑ YSI Pro DSS ☐ Horiba U-50 : ☐ LaMotte (Turbidity only) Other:

Sample Decon Procedure: Sample collected with: ☑ disposable and/or dedicated silicon and poly tubing ☐ Tubing replaced

Sample Description (Color, Turbidity, Odor, Other): Clear w/slight orange tint

Sample Analyses

TPH-Dx	(HCl) ☑	TPH-G	(HCl) ☒	BTEX	(HCl) ☐	cPAHs	(unpres) ☒	EDB/EDC/MTBE and Naph.	(HCl) ☐
Diss Mg (lab filtered)	(unpres) ☐	Total Alkalinity	(unpres) ☐	Nitrate/Sulfate	(unpres) ☐	Methane	(HCl) ☐	VOCs	(HCl) ☒

Type of Sample Containers:	Preservative	Quantity:
40 mL VOAs	HCl	6
500 mL Glass Amber (1) none & (1) HCl		2

QA/QC Samples:
- ☐ Field Duplicate
- ☐ MS/MSD
- ☐ Field Blank
- ☐ Rinsate

Total Bottles =

Comments:
2 extra VOAs required for Methane (Yes/No)

Redevelop! - Yes on 8/10/20

Signature: **Date:** 8/11/20

Port of Longview TPH Site

Interim Data Report

Appendix E
Data Validation Summary Memorandum and Laboratory Reports

FLOYD | SNIDER
strategy ▪ science ▪ engineering

Two Union Square
601 Union Street, Suite 600
Seattle, WA 98101
tel: 206.292.2078 fax: 206.682.7867

Data Validation Summary

Prepared by:	Gretchen Heavner
Date:	September 17, 2020
Project No.:	POL-TPH
Sample Event(s):	November 2019 RI Phase I Field Investigation March 2020 RI Phase II Field Work May 2020 Groundwater Sampling August 2020 Groundwater Sampling
Sample Delivery Group(s):	Friedman & Bruya 911363, 003244, 005111, 005097, and 008152 Fremont Analytical 1911358, 2003439, 2003268, 2005072, and 2008153
Sample Media:	Soil and Groundwater

NOVEMBER 2019 RI PHASE I FIELD INVESTIGATION

A Compliance Screening (Stages 1 & 2A) data quality review was performed on total petroleum hydrocarbons (TPH), volatile organic compound (VOC), semivolatile organic compound (SVOC), metals, extractable petroleum hydrocarbons (EPH)/volatile petroleum hydrocarbons (VPH) and total organic carbon data resulting from laboratory analysis. The analytical data were validated in accordance with the *National Functional Guidelines for Inorganic Superfund Methods Data Review* (USEPA 2017a) and/or *National Functional Guidelines for Organic Superfund Methods Data Review* (USEPA 2017b).

A total of eight soil samples were submitted in two sample delivery groups: 911363 to Friedman & Bruya for chemical analysis by NWTPH-Gx, NWTPH-Dx, USEPA 6020B, USEPA 8260D, and USEPA 8270D-SIM and 1911358 to Fremont Analytical for chemical analysis by NWEPH, NWVPH, and USEPA 9060. For all sample delivery groups, the holding times were met and the method blanks had no detections. The surrogate, matrix spike (MS), matrix spike duplicate (MSD), blank spike (BS), and blank spike duplicate (BSD) recoveries and MS/MSD, BS/BSD, and sample/sample duplicate relative percent differences (RPDs) all met U.S. Environmental Protection Agency (USEPA) requirements, except where noted below.

The laboratory flagged the surrogate recoveries for samples OIP52-19-19.5-112219, OIP52-22-22.5-112219, and OIP166D-12-12.5-112219 “ip” due to recoveries that fell outside of control

limits due to sample matrix effects. Because only one surrogate was run, the gasoline-range organics (GRO) result for these samples will be flagged "J."

The laboratory flagged the aliphatic hydrocarbon (C8-C10), aromatic hydrocarbon (C8-C10) and methyl *tert*-butyl ether (MTBE) results for samples OIP30-20-21-111919, OIP42-17-17.5-112119, OIP08-19-20-112219, and OIP66-12-12.5-112219 "*" due to laboratory control sample (LCS) recoveries that were outside the control limits with a potential low bias. This will be retained as a "J" qualifier.

The laboratory flagged the MTBE results for samples OIP30-20-21-111919, OIP42-17-17.5-112119, OIP08-19-20-112219, and OIP66-12-12.5-112219 "Q*" because the values were not within established control limits and continuing calibration did not meet established acceptance criteria. This will be retained as a "J" qualifier.

Based on the data quality review, data are determined to be of acceptable quality for use as reported by the laboratory unless specifically qualified above.

MARCH 2020 RI PHASE II FIELD WORK

A Compliance Screening (Stages 1 & 2A) data quality review was performed on TPH, VOC, SVOC, metals, EPH/VPH, and total organic carbon data resulting from laboratory analysis. The analytical data were validated in accordance with USEPA's National Functional Guidelines (USEPA 2017a, 2017b).

A total of 109 soil samples were submitted in three sample delivery groups: 003244 to Friedman & Bruya for chemical analysis by NWTPH-Gx, NWTPH-Dx, USEPA 6020B, USEPA 8260D, and USEPA 8270D-SIM and 2003268 and 2003439 to Fremont Analytical for chemical analysis by NWEPH, NWVPH, and USEPA 9060. For all sample delivery groups, the holding times were met and the method blanks had no detections, except where noted below. The surrogate, MS, MSD, BS, and BSD recoveries and MS/MSD, BS/BSD, and sample/sample duplicate RPDs all met USEPA requirements, except where noted below.

NWEPH/NWVPH: Sample 01P-67-14.5-15 was analyzed outside of holding time. The results will be flagged "J."

NWEPH: The laboratory flagged the aliphatic and aromatic hydrocarbon (C8-C10) results for sample 01P-67-14.5-15 "*" because the LCS and MS recoveries were outside the control limits with a potential low bias. This will be retained as a "J" qualifier.

The laboratory flagged the aliphatic and aromatic hydrocarbon (C8-C10) and aliphatic hydrocarbon (C21-C34) results for all samples "*" to indicate the LCS and MS recoveries for were not within established control limits with a potential low bias. This will be retained as a "J" qualifier.

NWVPH: The laboratory flagged the aromatic hydrocarbon (C12-C13) result for samples 01P-67-14.5-15, MW-33-12-12.5, and OIP-23-14-15 "E" because they exceeded the linear working range of the instruments and are estimates. This will be retained as a "J" qualifier.

The laboratory flagged the aromatic hydrocarbon (C8-C10) results in samples OIP-47-17, MW-33-12-12.5, OIP-23-14-15, and OIP-23-19-20 "Q*" to indicate that continuing calibration did not meet established acceptance criteria. This will be retained as a "J" qualifier.

The laboratory noted that the aromatic hydrocarbon (C12-C13) result in sample MW-33-19.5-20 was analyzed outside of holding time. The results will be flagged "J."

NWTPH-Gx: The laboratory flagged several results "ip" because the surrogate recovery fell outside of control limits for several samples due to sample matrix effects. Because only one surrogate was run, this will be retained as a "J" qualifier.

USEPA Method 8260D: The laboratory flagged the MS/MSD RPD for toluene in sample MW-39-18.5-20 and hexane in sample MW-39-8-9 "vo" to indicate the value fell outside the control limits established for these analytes. Only the parent samples will be qualified "J."

The laboratory noted that the naphthalene result in sample MW-33-19.5-20 was analyzed outside of holding time. This will be retained as a "J" qualifier.

USEPA Method 8270E-SIM: The laboratory flagged the MS/MSD RPDs for dibenzo(a,h)anthracene in sample MW-39-8-9 and benzo(a)anthracene and benzo(a)pyrene in sample OIP-67-GW-14-19 "vo" to indicate the value fell outside the control limits established for these analytes. Only the parent samples will be qualified "J."

One surrogate recovery was out of control limits for sample P6-0.5-1. The sample was diluted and re-run, and the surrogate recovery was 0. This information will be noted as a "J" qualifier.

USEPA Method 8021B: The laboratory flagged detected results in samples OIP-49-17 and OIP-72-10-11 "ip" to indicate the surrogate recovery fell outside of control limits due to sample matrix effects and "ve" to indicate that the detected ethylbenzene and total xylene results exceeded the valid instrument calibration range. This will be retained as a "J" qualifier.

Based on the data quality review, data are determined to be of acceptable quality for use as reported by the laboratory unless specifically qualified above.

MAY 2020 SOIL VAPOR SAMPLING

A Compliance Screening (Stages 1 & 2A) data quality review was performed on VPH, VOC, and helium data resulting from laboratory analysis. The analytical data were validated in accordance with USEPA's National Functional Guidelines (USEPA 2017a, 2017b).

A total of three soil vapor samples were submitted in sample delivery group 005111 to Friedman & Bruya for chemical analysis by MA-APH, TO-15, and ASTM D1946. The holding times were met and the method blanks had no detections. The surrogate, MS, MSD, BS, and BSD recoveries and MS/MSD, BS/BSD, and sample/sample duplicate RPDs all met USEPA requirements.

Based on the data quality review, data are determined to be of acceptable quality for use as reported by the laboratory.

MAY 2020 GROUNDWATER SAMPLING

A Compliance Screening (Stages 1 & 2A) data quality review was performed on TPH, VOC, SVOC, metals, dissolved gases, nitrate/sulfate, chemical oxygen demand (COD), biochemical oxygen demand (BOD), and alkalinity data resulting from laboratory analysis. The analytical data were validated in accordance with USEPA's National Functional Guidelines (USEPA 2017a, 2017b).

A total of 37 groundwater samples were submitted in two sample delivery groups: 005097 to Friedman & Bruya for chemical analysis by NWTPH-Gx, NWTPH-Dx, USEPA 6020B, USEPA 8260D, USEPA 8270E, and USEPA 8011 and 2005072 to Fremont Analytical for chemical analysis by RSK-175, USEPA 300.0, USEPA 200.8, USEPA 2320B, SM 5210B, and SM 5220d. For all sample delivery groups, the holding times were met and the method blanks had no detections. The MS, MSD, BS, and BSD recoveries and MS/MSD, BS/BSD, and sample/sample duplicate RPDs all met USEPA requirements.

USEPA Method 8260D: The laboratory flagged the benzene result in sample MW-40-050620 "ve" to indicate that the analyte response exceeded the valid instrument calibration range and the value reported is an estimate. This will be retained as a "J" qualifier.

USEPA Method 8270E SIM: The laboratory flagged all fluorene results "jl" to indicate that the LCS percent recovery and/or RPD were out of control limits and should be considered an estimate. This will be retained as a "J" qualifier.

The laboratory flagged the benzo(b)fluoranthene, benzo(a)pyrene, indeno(1,2,3-c,d)pyrene, dibenzo(a,h)anthracene, and benzo(g,h,i)perylene recoveries and RPDs in the MS/MSD of sample MW-12-50720 "vo" to indicate that they fell outside the control limits established for these analytes. These results will be flagged "J" in sample MW-12-50720 only because there was an additional MS/MSD run on a different sample that met all requirements.

SM 5210B and USEPA Method 300.0: The laboratory noted that the several nitrate and BOD results were analyzed for this analyte outside of holding times. These results will be flagged "J."

RSK-175: The laboratory flagged the methane result for sample MW-20-050720 "E" because it exceeds the quantitation range. This will be retained as a "J" for this result.

Based on the data quality review, data are determined to be of acceptable quality for use as reported by the laboratory unless specifically qualified above.

AUGUST 2020 GROUNDWATER SAMPLING

A Compliance Screening (Stages 1 & 2A) data quality review was performed on TPH, VOC, SVOC, metals, dissolved gases, nitrate/sulfate, and alkalinity data resulting from laboratory analysis. The analytical data were validated in accordance with USEPA's National Functional Guidelines (USEPA 2017a, 2017b).

A total of 37 groundwater samples were submitted in two sample delivery groups: 008152 to Friedman & Bruya for chemical analysis by NWTPH-Gx, NWTPH-Dx, USEPA 6020B, USEPA 8260D, USEPA 8270E, and USEPA 8011 and 2008153 to Fremont Analytical for chemical analysis by RSK-175, USEPA 300.0, USEPA 200.8, and USEPA 2320B. For all sample delivery groups, the holding times were met and the method blanks had no detections. The MS, MSD, BS, and BSD recoveries and MS/MSD, BS/BSD, and sample/sample duplicate RPDs all met USEPA requirements.

NWTPH-Dx: The laboratory flagged the surrogate recovery for sample MW-37-081020 "ip" to indicate that it fell outside of control limits due to sample matrix effects. The surrogate recovery was low at 22% and the diesel-range and oil-range results were nondetect; so it is with professional judgement that these results be qualified "UJ."

USEPA EPA Method 300.0: Samples MW-19-081020, MW-35-081020, and MW-30-081120 required dilutions due to nitrate exceeding the calibration range of the detector. The analysis of the dilution was not within holding time, and thus those results will be flagged "J."

Based on the data quality review, data are determined to be of acceptable quality for use as reported by the laboratory unless specifically qualified above.

REFERENCES

U.S. Environmental Protection Agency (USEPA). 2017a. *National Functional Guidelines for Inorganic Superfund Methods Data Review.* Prepared by the Office of Superfund Remediation and Technology Innovation. EPA-540-R-2017-001/OLEM 9355.0-135. January.

_____. 2017b. *National Functional Guidelines for Organic Superfund Methods Data Review.* Prepared by the Office of Superfund Remediation and Technology Innovation. EPA-540-R-2017-002/OLEM 9355.0-136. January.

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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December 5, 2019

Gabriel Cisneros, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Cisneros:

Included are the results from the testing of material submitted on November 23, 2019 from the POC-TPH, F&BI 911363 project. There are 37 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Scott Adamek
FDS1205R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on November 23, 2019 by Friedman & Bruya, Inc. from the Floyd-Snider POC-TPH, F&BI 911363 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
911363 -01	OIP30-20-21-111919
911363 -02	OIP42-17-17.5-112119
911363 -03	OIP52-19-19.5-112219
911363 -04	OIP52-22-22.5-112219
911363 -05	OIP53-21-21.5-112219
911363 -06	OIP08-19-20-112219
911363 -07	OIP66-12-12.5-112219
911363 -08	OIP166D-12-12.5-112219

Samples OIP30-20-21-111919, OIP42-17-17.5-112119, OIP08-19-20-112219, and OIP66-12-12.5-112219 were sent to Fremont Analytical for EPH/VPH analyses. In addition, sample OIP53-21-21.5-112219 was sent to Fremont for TOC analysis. The report will be forwarded to your office upon receipt.

All quality control requirements were acceptable.

Date of Report: 12/05/19
Date Received: 11/23/19
Project: POC-TPH, F&BI 911363
Date Extracted: 11/25/19
Date Analyzed: 11/25/19

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
OIP30-20-21-111919 911363-01	61	149
OIP42-17-17.5-112119 911363-02 1/50	3,600	112
OIP52-19-19.5-112219 911363-03	86	ip
OIP52-22-22.5-112219 911363-04	260	ip
OIP53-21-21.5-112219 911363-05	<5	80
OIP08-19-20-112219 911363-06 1/50	4,900	145
OIP66-12-12.5-112219 911363-07 1/10	1,500	140
OIP166D-12-12.5-112219 911363-08 1/20	2,000	ip
Method Blank 09-2739 MB	<5	89

Date of Report: 12/05/19
Date Received: 11/23/19
Project: POC-TPH, F&BI 911363
Date Extracted: 11/25/19
Date Analyzed: 11/25/19

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
OIP30-20-21-111919 911363-01	11,000	12,000	99
OIP42-17-17.5-112119 911363-02	17,000	1,500 x	102
OIP52-19-19.5-112219 911363-03	530	<250	96
OIP52-22-22.5-112219 911363-04	2,200	<250	93
OIP53-21-21.5-112219 911363-05	<50	<250	100
OIP08-19-20-112219 911363-06	12,000	1,000 x	101
OIP66-12-12.5-112219 911363-07	760	<250	107
OIP166D-12-12.5-112219 911363-08	490	<250	102
Method Blank 09-2880 MB	<50	<250	98

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP52-19-19.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-03
Date Analyzed:	11/25/19	Data File:	911363-03.110
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP52-22-22.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-04
Date Analyzed:	11/25/19	Data File:	911363-04.111
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	1.24

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP53-21-21.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-05
Date Analyzed:	11/25/19	Data File:	911363-05.112
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP66-12-12.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-07
Date Analyzed:	11/25/19	Data File:	911363-07.113
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	3.02

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP166D-12-12.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-08
Date Analyzed:	11/25/19	Data File:	911363-08.118
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	3.76

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/26/19	Lab ID:	I9-751 mb
Date Analyzed:	11/26/19	Data File:	I9-751 mb.035
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	<1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OIP30-20-21-111919	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-01 1/50
Date Analyzed:	12/02/19	Data File:	120223.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	113 d	31	163
Benzo(a)anthracene-d12	124 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.1
Acenaphthylene	<0.1
Acenaphthene	0.94
Fluorene	4.3
Phenanthrene	8.4
Anthracene	2.1
Fluoranthene	0.58
Pyrene	3.4
Benz(a)anthracene	0.81
Chrysene	2.0
Benzo(a)pyrene	0.40
Benzo(b)fluoranthene	0.24
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1
Benzo(g,h,i)perylene	0.11
1-Methylnaphthalene	13
2-Methylnaphthalene	15

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OIP42-17-17.5-112119	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-02 1/25
Date Analyzed:	11/26/19	Data File:	112528.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	109 d	31	163
Benzo(a)anthracene-d12	118 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	1.3
Fluorene	8.0
Phenanthrene	12 ve
Anthracene	<0.05
Fluoranthene	0.24
Pyrene	0.71
Benz(a)anthracene	0.13
Chrysene	0.40
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05
1-Methylnaphthalene	41 ve
2-Methylnaphthalene	29 ve

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OIP42-17-17.5-112119	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-02 1/250
Date Analyzed:	11/25/19	Data File:	112521.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	205 d	31	163
Benzo(a)anthracene-d12	131 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.5
Acenaphthylene	<0.5
Acenaphthene	1.3
Fluorene	7.8
Phenanthrene	11
Anthracene	<0.5
Fluoranthene	<0.5
Pyrene	0.65
Benz(a)anthracene	<0.5
Chrysene	<0.5
Benzo(a)pyrene	<0.5
Benzo(b)fluoranthene	<0.5
Benzo(k)fluoranthene	<0.5
Indeno(1,2,3-cd)pyrene	<0.5
Dibenz(a,h)anthracene	<0.5
Benzo(g,h,i)perylene	<0.5
1-Methylnaphthalene	38
2-Methylnaphthalene	27

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OIP52-19-19.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-03 1/5
Date Analyzed:	11/25/19	Data File:	112518.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	91	31	163
Benzo(a)anthracene-d12	100	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	0.077
Fluorene	0.57
Phenanthrene	0.87
Anthracene	<0.01
Fluoranthene	0.011
Pyrene	0.026
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01
1-Methylnaphthalene	0.55
2-Methylnaphthalene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OIP52-22-22.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-04 1/5
Date Analyzed:	11/25/19	Data File:	112519.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	90	31	163
Benzo(a)anthracene-d12	107	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	0.37
Fluorene	2.5 ve
Phenanthrene	3.7 ve
Anthracene	<0.01
Fluoranthene	0.045
Pyrene	0.10
Benz(a)anthracene	<0.01
Chrysene	0.010
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01
1-Methylnaphthalene	7.4 ve
2-Methylnaphthalene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OIP52-22-22.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-04 1/50
Date Analyzed:	12/02/19	Data File:	120217.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	ya

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	110 d	31	163
Benzo(a)anthracene-d12	111 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.1
Acenaphthylene	<0.1
Acenaphthene	0.39
Fluorene	3.5
Phenanthrene	4.0
Anthracene	<0.1
Fluoranthene	<0.1
Pyrene	<0.1
Benz(a)anthracene	<0.1
Chrysene	<0.1
Benzo(a)pyrene	<0.1
Benzo(b)fluoranthene	<0.1
Benzo(k)fluoranthene	<0.1
Indeno(1,2,3-cd)pyrene	<0.1
Dibenz(a,h)anthracene	<0.1
Benzo(g,h,i)perylene	<0.1
1-Methylnaphthalene	8.1
2-Methylnaphthalene	<0.1

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OIP53-21-21.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-05 1/5
Date Analyzed:	11/25/19	Data File:	112520.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	87	31	163
Benzo(a)anthracene-d12	87	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01
1-Methylnaphthalene	<0.01
2-Methylnaphthalene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OIP08-19-20-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-06 1/25
Date Analyzed:	11/26/19	Data File:	112525.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	110 d	31	163
Benzo(a)anthracene-d12	111 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	0.86
Fluorene	6.1
Phenanthrene	8.6 ve
Anthracene	<0.05
Fluoranthene	0.16
Pyrene	0.43
Benz(a)anthracene	0.057
Chrysene	0.16
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05
1-Methylnaphthalene	31 ve
2-Methylnaphthalene	27 ve

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OIP08-19-20-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-06 1/250
Date Analyzed:	11/25/19	Data File:	112522.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	196 d	31	163
Benzo(a)anthracene-d12	79 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.5
Acenaphthylene	<0.5
Acenaphthene	1.0
Fluorene	6.8
Phenanthrene	8.8
Anthracene	<0.5
Fluoranthene	<0.5
Pyrene	<0.5
Benz(a)anthracene	<0.5
Chrysene	<0.5
Benzo(a)pyrene	<0.5
Benzo(b)fluoranthene	<0.5
Benzo(k)fluoranthene	<0.5
Indeno(1,2,3-cd)pyrene	<0.5
Dibenz(a,h)anthracene	<0.5
Benzo(g,h,i)perylene	<0.5
1-Methylnaphthalene	32
2-Methylnaphthalene	27

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OIP66-12-12.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-07 1/25
Date Analyzed:	11/26/19	Data File:	112526.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	120 d	31	163
Benzo(a)anthracene-d12	108 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	0.053
Fluorene	0.28
Phenanthrene	0.32
Anthracene	<0.05
Fluoranthene	<0.05
Pyrene	<0.05
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05
1-Methylnaphthalene	1.7
2-Methylnaphthalene	1.9

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	OIP166D-12-12.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-08 1/25
Date Analyzed:	11/26/19	Data File:	112527.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	119 d	31	163
Benzo(a)anthracene-d12	103 d	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.05
Acenaphthylene	<0.05
Acenaphthene	<0.05
Fluorene	0.24
Phenanthrene	0.30
Anthracene	<0.05
Fluoranthene	<0.05
Pyrene	<0.05
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05
Benzo(g,h,i)perylene	<0.05
1-Methylnaphthalene	1.4
2-Methylnaphthalene	1.6

Analysis For Semivolatile Compounds By EPA Method 8270D SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	09-2878 mb 1/5
Date Analyzed:	11/25/19	Data File:	112513.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	96	31	163
Benzo(a)anthracene-d12	99	24	168

Compounds:	Concentration mg/kg (ppm)
Naphthalene	<0.01
Acenaphthylene	<0.01
Acenaphthene	<0.01
Fluorene	<0.01
Phenanthrene	<0.01
Anthracene	<0.01
Fluoranthene	<0.01
Pyrene	<0.01
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01
Benzo(g,h,i)perylene	<0.01
1-Methylnaphthalene	<0.01
2-Methylnaphthalene	<0.01

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OIP30-20-21-111919	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-01
Date Analyzed:	11/27/19	Data File:	112724.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	145
Toluene-d8	96	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	0.063
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OIP42-17-17.5-112119	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-02 1/10
Date Analyzed:	11/27/19	Data File:	112729.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	145
Toluene-d8	99	55	145
4-Bromofluorobenzene	98	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	45
Methyl t-butyl ether (MTBE)	<0.5
1,2-Dichloroethane (EDC)	<0.5
Benzene	2.4
Toluene	0.99
1,2-Dibromoethane (EDB)	<0.5
Ethylbenzene	41
m,p-Xylene	4.1
o-Xylene	<0.5
Naphthalene	<0.5

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OIP52-19-19.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-03
Date Analyzed:	11/27/19	Data File:	112727.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	62	145
Toluene-d8	97	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OIP52-22-22.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-04
Date Analyzed:	11/27/19	Data File:	112726.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	145
Toluene-d8	98	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OIP53-21-21.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-05
Date Analyzed:	11/27/19	Data File:	112725.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	145
Toluene-d8	97	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OIP08-19-20-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-06 1/5
Date Analyzed:	11/27/19	Data File:	112728.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	62	145
Toluene-d8	99	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	23
Methyl t-butyl ether (MTBE)	<0.25
1,2-Dichloroethane (EDC)	<0.25
Benzene	1.1
Toluene	0.74
1,2-Dibromoethane (EDB)	<0.25
Ethylbenzene	27
m,p-Xylene	3.2
o-Xylene	<0.25
Naphthalene	<0.25

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OIP66-12-12.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-07
Date Analyzed:	11/27/19	Data File:	112731.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	62	145
Toluene-d8	98	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	1.1
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	0.12
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	OIP166D-12-12.5-112219	Client:	Floyd-Snider
Date Received:	11/23/19	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	911363-08
Date Analyzed:	11/27/19	Data File:	112730.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	62	145
Toluene-d8	99	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	0.25
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260C

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POC-TPH, F&BI 911363
Date Extracted:	11/25/19	Lab ID:	09-2844 mb
Date Analyzed:	11/25/19	Data File:	112513.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	62	145
Toluene-d8	94	55	145
4-Bromofluorobenzene	96	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Date of Report: 12/05/19
Date Received: 11/23/19
Project: POC-TPH, F&BI 911363

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 911362-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	95	71-131

Date of Report: 12/05/19
Date Received: 11/23/19
Project: POC-TPH, F&BI 911363

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 911363-04 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	2,000	116	114	73-135	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	98	74-139

Date of Report: 12/05/19
Date Received: 11/23/19
Project: POC-TPH, F&BI 911363

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 911372-02 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/kg (ppm)	10	9.69	85	87	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/kg (ppm)	10	100	80-120

Date of Report: 12/05/19
Date Received: 11/23/19
Project: POC-TPH, F&BI 911363

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: 911362-01 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Acceptance Criteria
Naphthalene	mg/kg (ppm)	0.17	<0.01	76	44-129
2-Methylnaphthalene	mg/kg (ppm)	0.17	<0.01	75	45-135
1-Methylnaphthalene	mg/kg (ppm)	0.17	<0.01	79	40-141
Acenaphthylene	mg/kg (ppm)	0.17	<0.01	79	52-121
Acenaphthene	mg/kg (ppm)	0.17	<0.01	78	51-123
Fluorene	mg/kg (ppm)	0.17	<0.01	83	37-137
Phenanthrene	mg/kg (ppm)	0.17	<0.01	83	34-141
Anthracene	mg/kg (ppm)	0.17	<0.01	83	32-124
Fluoranthene	mg/kg (ppm)	0.17	<0.01	89	16-160
Pyrene	mg/kg (ppm)	0.17	<0.01	74	10-180
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	88	23-144
Chrysene	mg/kg (ppm)	0.17	<0.01	89	32-149
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	77	23-176
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	78	42-139
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	76	21-163
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	81	23-170
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	81	31-146
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	<0.01	77	37-133

Date of Report: 12/05/19
Date Received: 11/23/19
Project: POC-TPH, F&BI 911363

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270D SIM

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	mg/kg (ppm)	0.17	87	90	58-121	3
2-Methylnaphthalene	mg/kg (ppm)	0.17	86	90	58-123	5
1-Methylnaphthalene	mg/kg (ppm)	0.17	90	95	60-124	5
Acenaphthylene	mg/kg (ppm)	0.17	88	87	54-121	1
Acenaphthene	mg/kg (ppm)	0.17	91	90	54-123	1
Fluorene	mg/kg (ppm)	0.17	90	95	56-127	5
Phenanthrene	mg/kg (ppm)	0.17	91	95	55-122	4
Anthracene	mg/kg (ppm)	0.17	91	94	50-120	3
Fluoranthene	mg/kg (ppm)	0.17	94	99	54-129	5
Pyrene	mg/kg (ppm)	0.17	77	82	53-127	6
Benz(a)anthracene	mg/kg (ppm)	0.17	95	100	51-115	5
Chrysene	mg/kg (ppm)	0.17	95	99	55-129	4
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	80	84	56-123	5
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	86	86	54-131	0
Benzo(a)pyrene	mg/kg (ppm)	0.17	78	81	51-118	4
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	82	88	49-148	7
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	85	89	50-141	5
Benzo(g,h,i)perylene	mg/kg (ppm)	0.17	79	83	52-131	5

Date of Report: 12/05/19
Date Received: 11/23/19
Project: POC-TPH, F&BI 911363

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260C

Laboratory Code: 911361-03 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Hexane	mg/kg (ppm)	2.5	<0.25	75	75	10-137	0
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	101	99	21-145	2
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	94	92	12-160	2
Benzene	mg/kg (ppm)	2.5	<0.03	91	90	29-129	1
Toluene	mg/kg (ppm)	2.5	<0.05	97	97	35-130	0
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	93	91	28-142	2
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	98	98	32-137	0
m,p-Xylene	mg/kg (ppm)	5	<0.1	99	99	34-136	0
o-Xylene	mg/kg (ppm)	2.5	<0.05	101	101	33-134	0
Naphthalene	mg/kg (ppm)	2.5	<0.05	92	95	14-157	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Hexane	mg/kg (ppm)	2.5	95	43-142
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	92	60-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	88	56-135
Benzene	mg/kg (ppm)	2.5	87	68-114
Toluene	mg/kg (ppm)	2.5	101	66-126
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	92	74-132
Ethylbenzene	mg/kg (ppm)	2.5	99	64-123
m,p-Xylene	mg/kg (ppm)	5	100	78-122
o-Xylene	mg/kg (ppm)	2.5	101	77-124
Naphthalene	mg/kg (ppm)	2.5	92	63-140

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

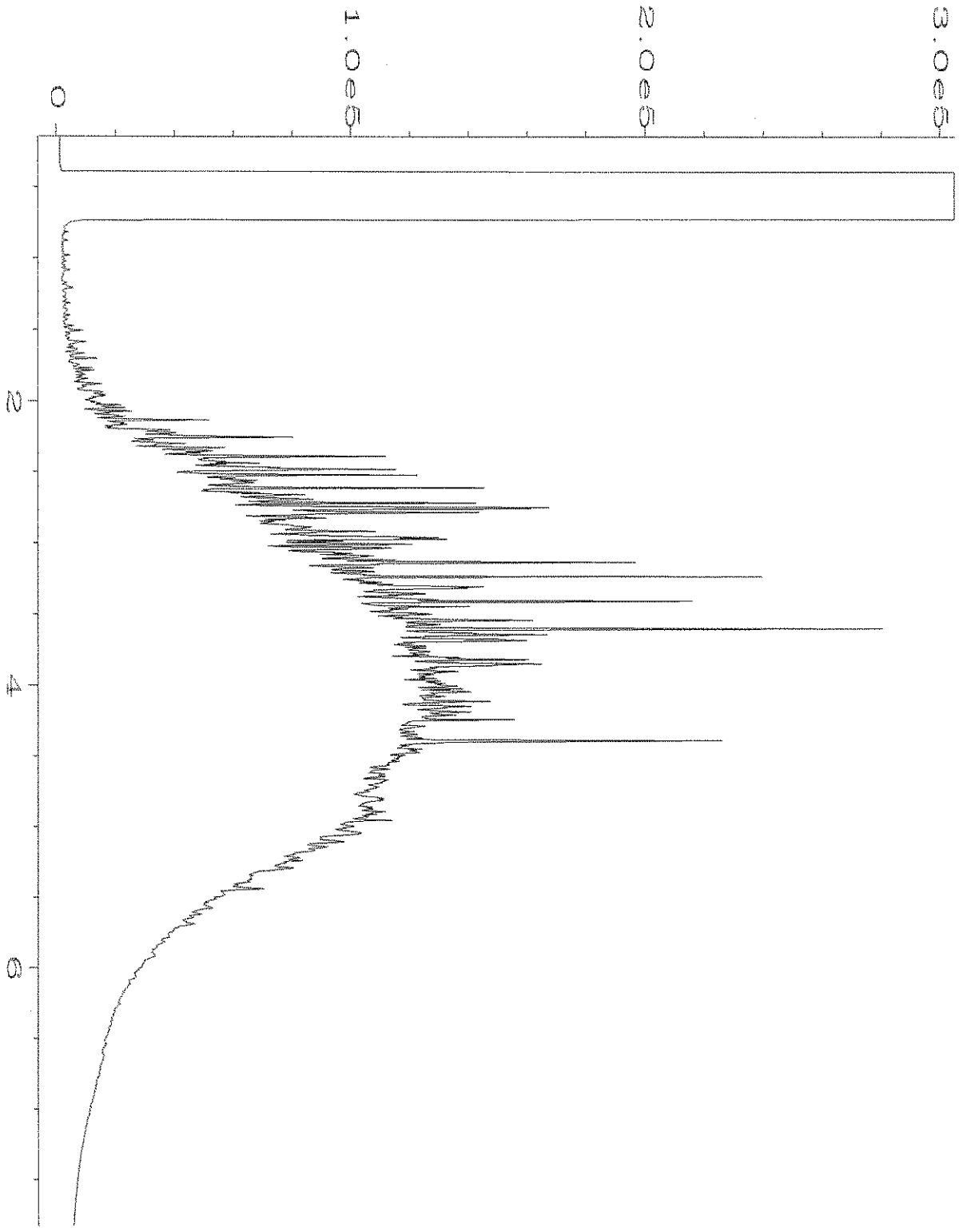
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

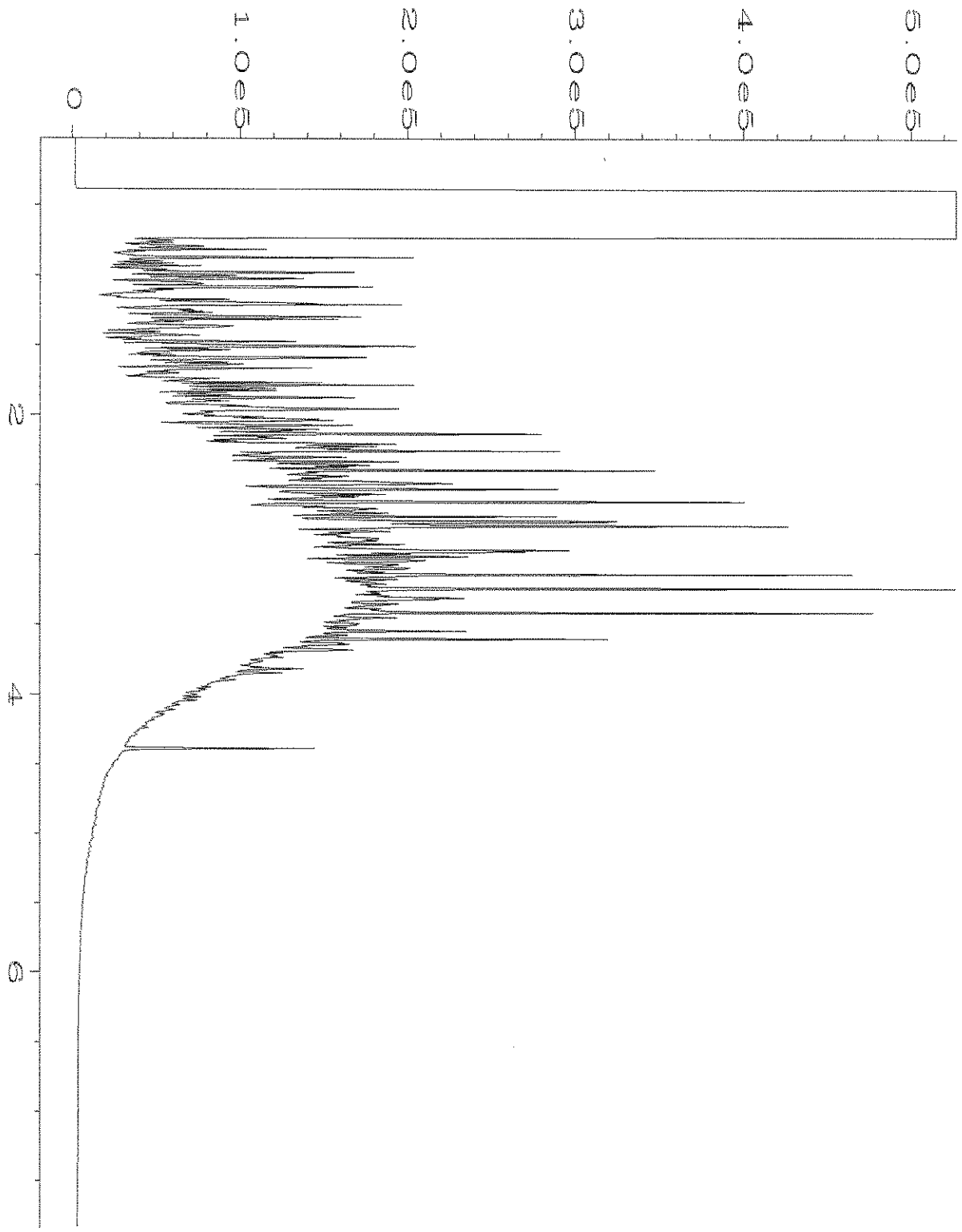
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



Data File Name	: C:\HPCHEM\4\DATA\11-25-19\012F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 12
Sample Name	: 911363-01	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 25 Nov 19 12:17 PM	Instrument Method	: DX.MTH
Report Created on	: 04 Dec 19 12:28 PM	Analysis Method	: DEFAULT.MTH



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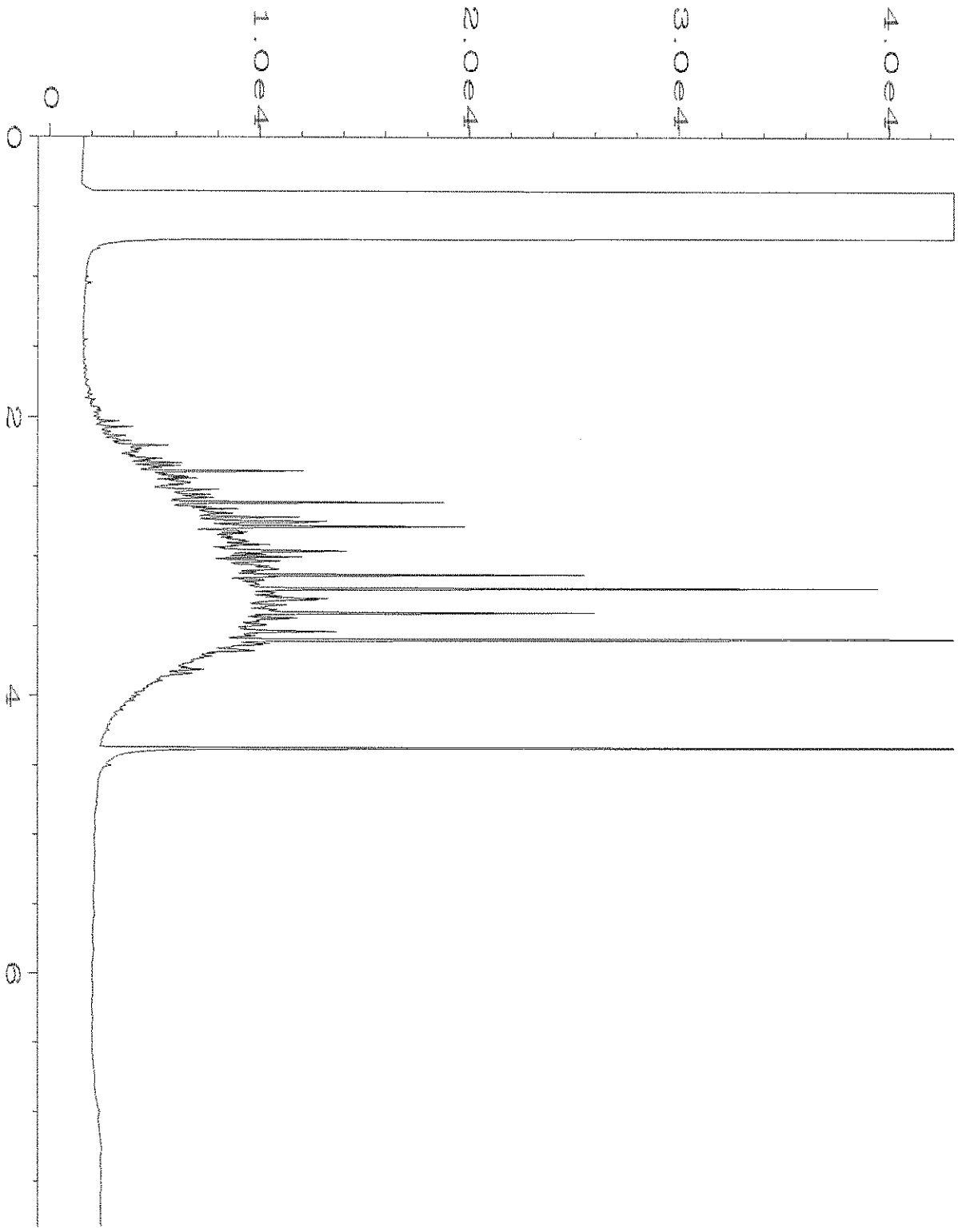
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 13
Sample Name	: 911363-02	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 25 Nov 19 12:29 PM	Instrument Method	: DX.MTH
Report Created on	: 04 Dec 19 12:29 PM	Analysis Method	: DEFAULT.MTH



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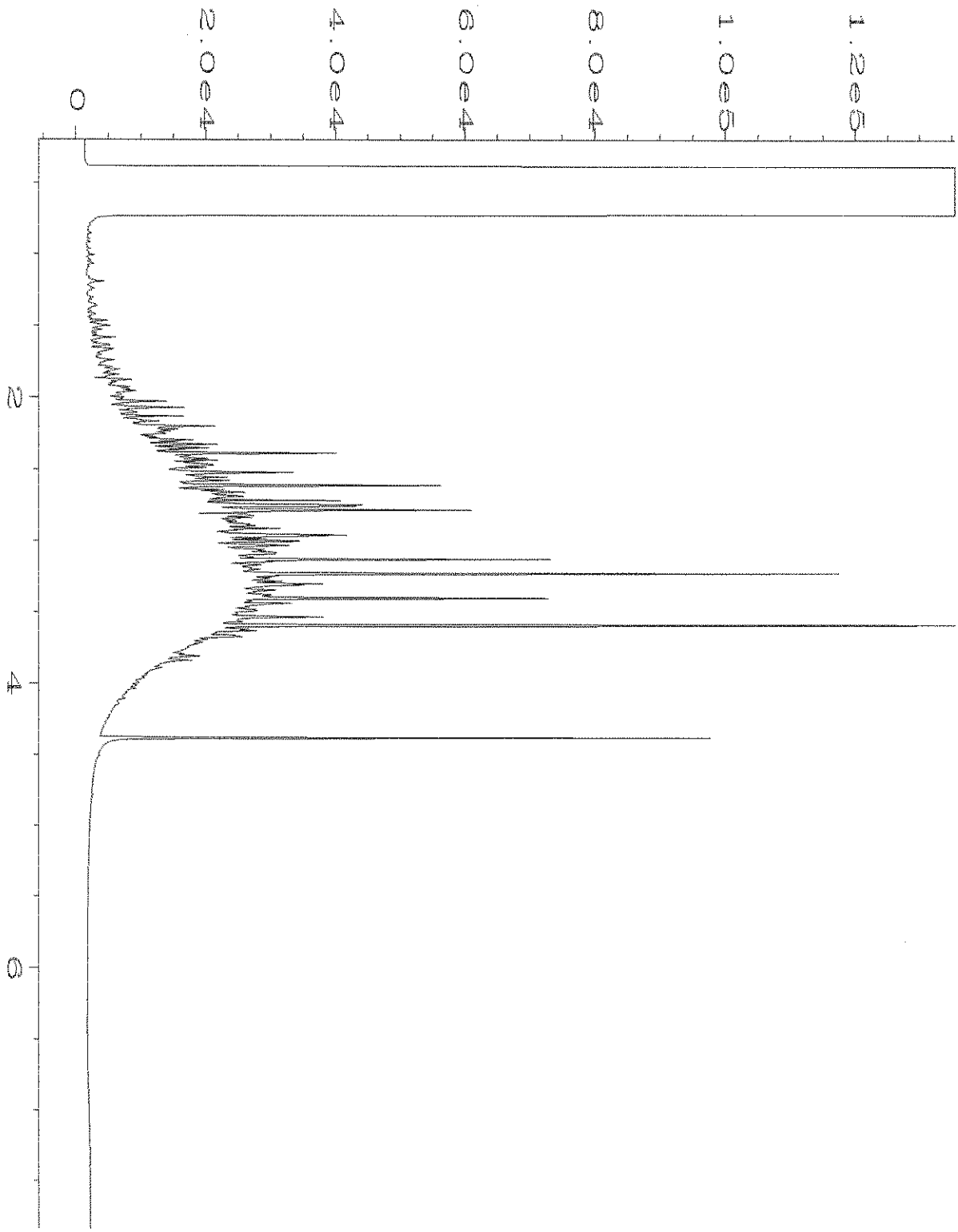
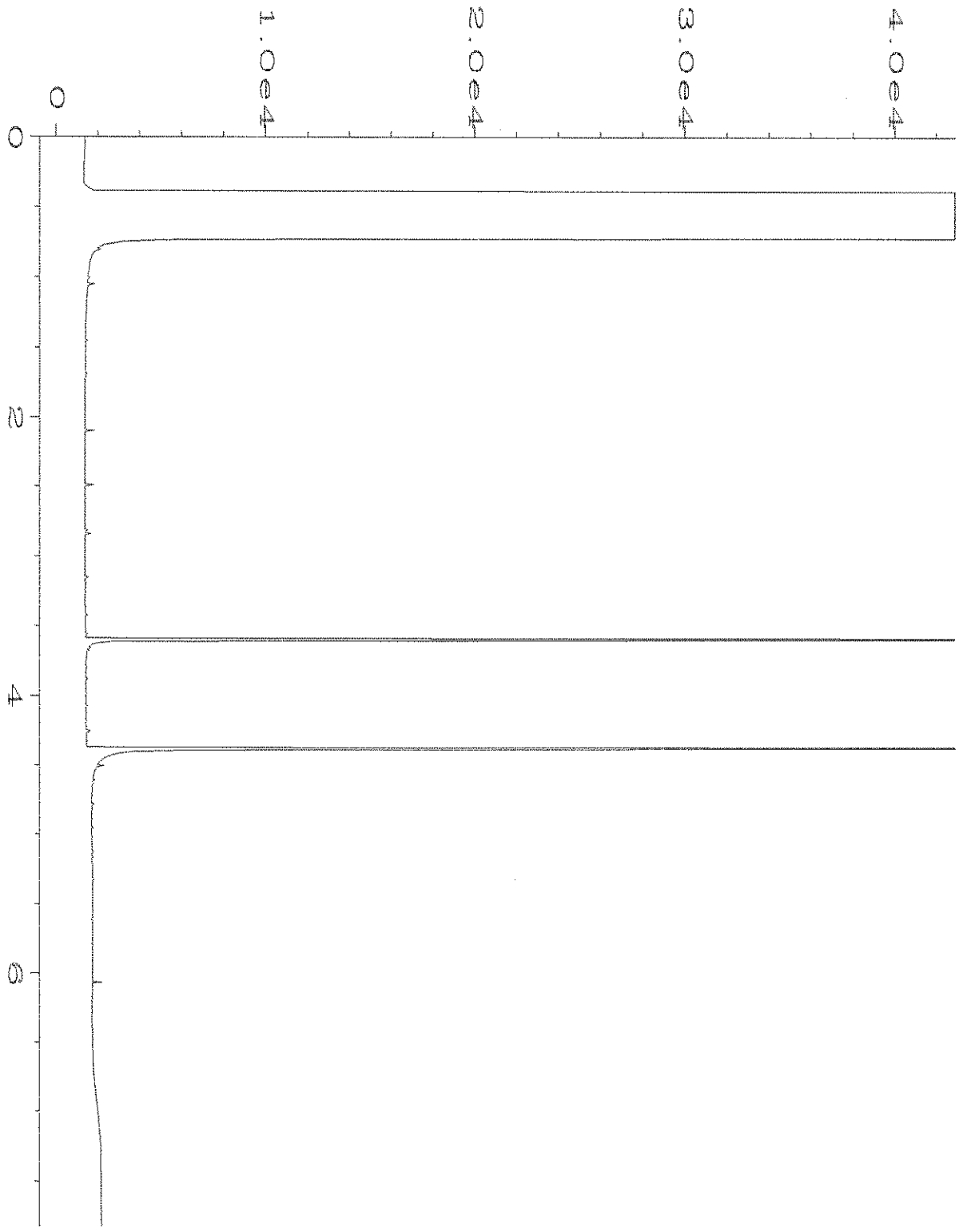
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 14
Sample Name	: 911363-03	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 25 Nov 19 12:41 PM	Instrument Method	: DX.MTH
Report Created on	: 04 Dec 19 12:29 PM	Analysis Method	: DEFAULT.MTH



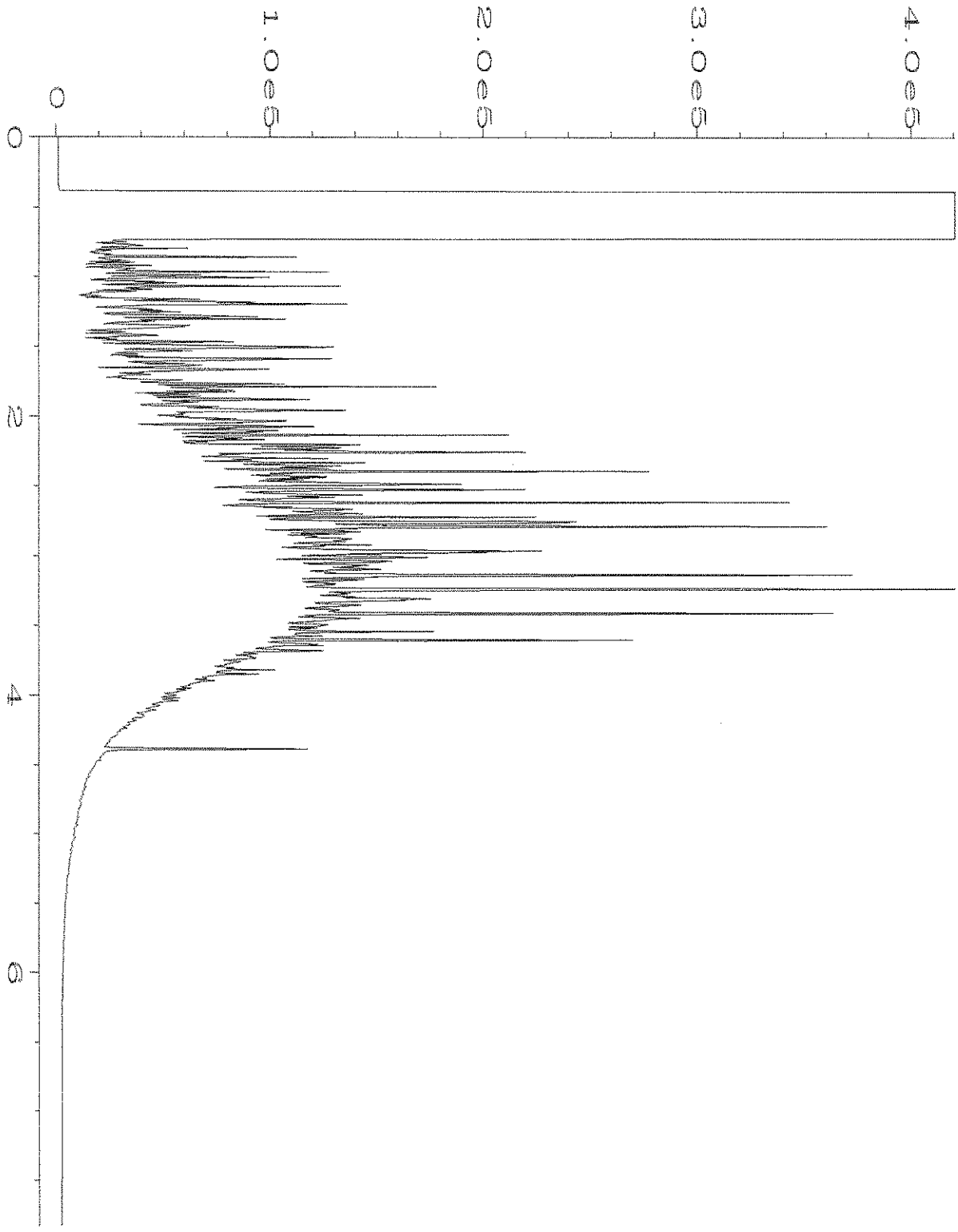
Data File Name : C:\HPCHEM\4\DATA\11-25-19\015F0501.D
Operator : TL
Instrument : GC#4
Sample Name : 911363-04
Run Time Bar Code:
Acquired on : 25 Nov 19 12:53 PM
Report Created on: 04 Dec 19 12:29 PM

Page Number : 1
Vial Number : 15
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

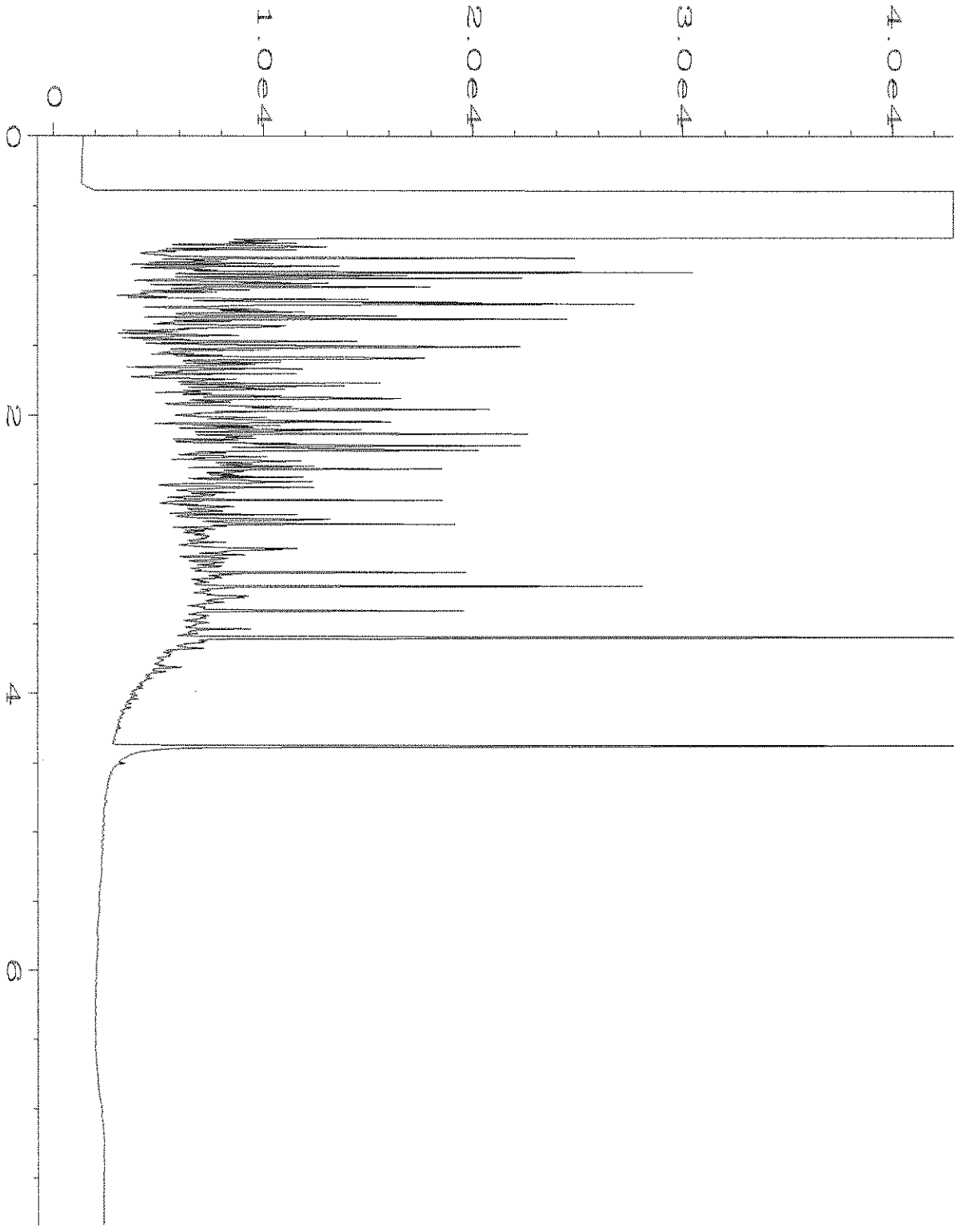


Data File Name : C:\HPCHEM\4\DATA\11-25-19\016F0501.D
Operator : TL
Instrument : GC#4
Sample Name : 911363-05
Run Time Bar Code:
Acquired on : 25 Nov 19 01:05 PM
Report Created on: 04 Dec 19 12:30 PM

Page Number : 1
Vial Number : 16
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\11-25-19\017F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 17
Sample Name	: 911363-06	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 25 Nov 19 01:17 PM	Instrument Method	: DX.MTH
Report Created on	: 04 Dec 19 12:30 PM	Analysis Method	: DEFAULT.MTH



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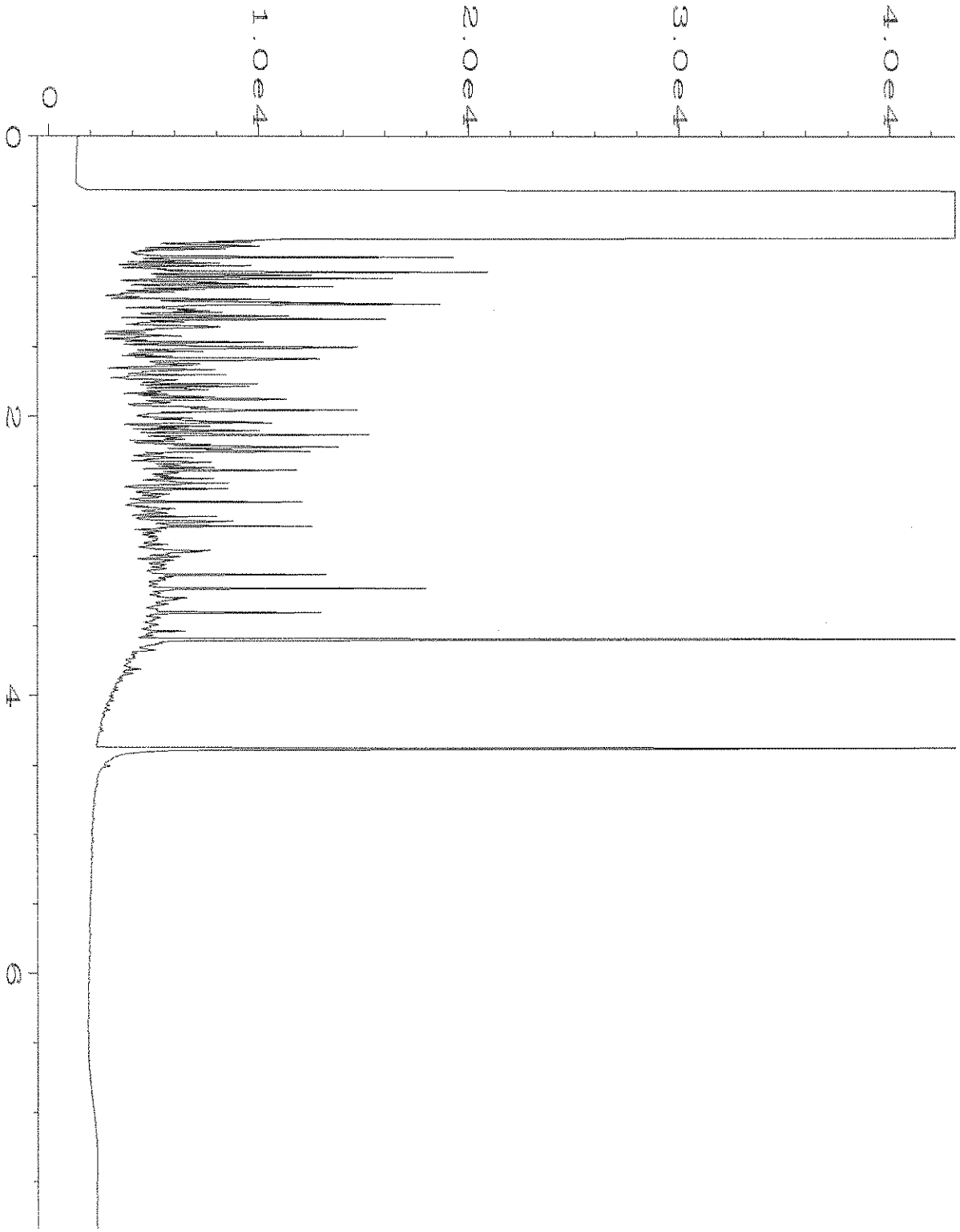
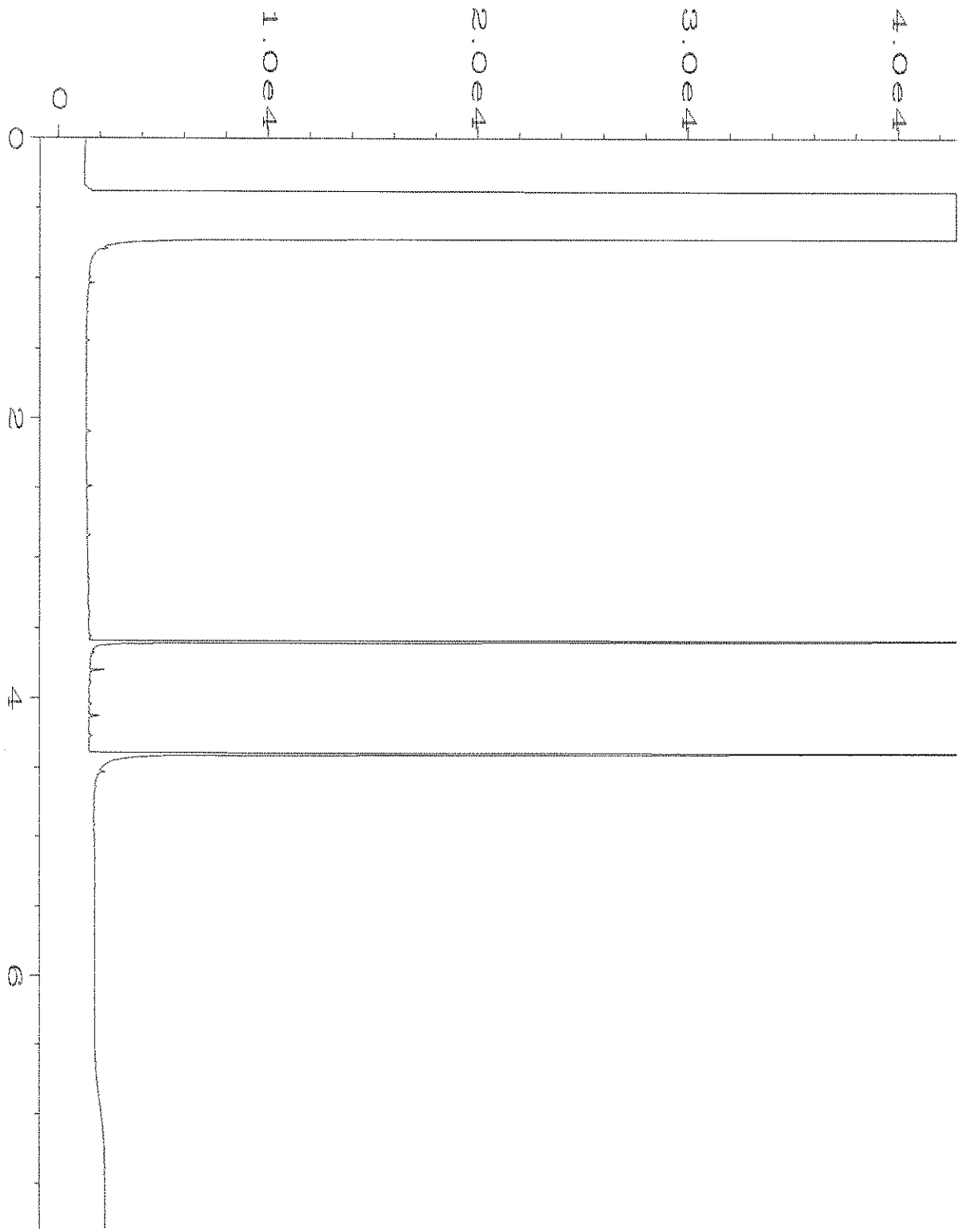
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 18
Sample Name	: 911363-07	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 25 Nov 19 01:29 PM	Instrument Method	: DX.MTH
Report Created on	: 04 Dec 19 12:30 PM	Analysis Method	: DEFAULT.MTH

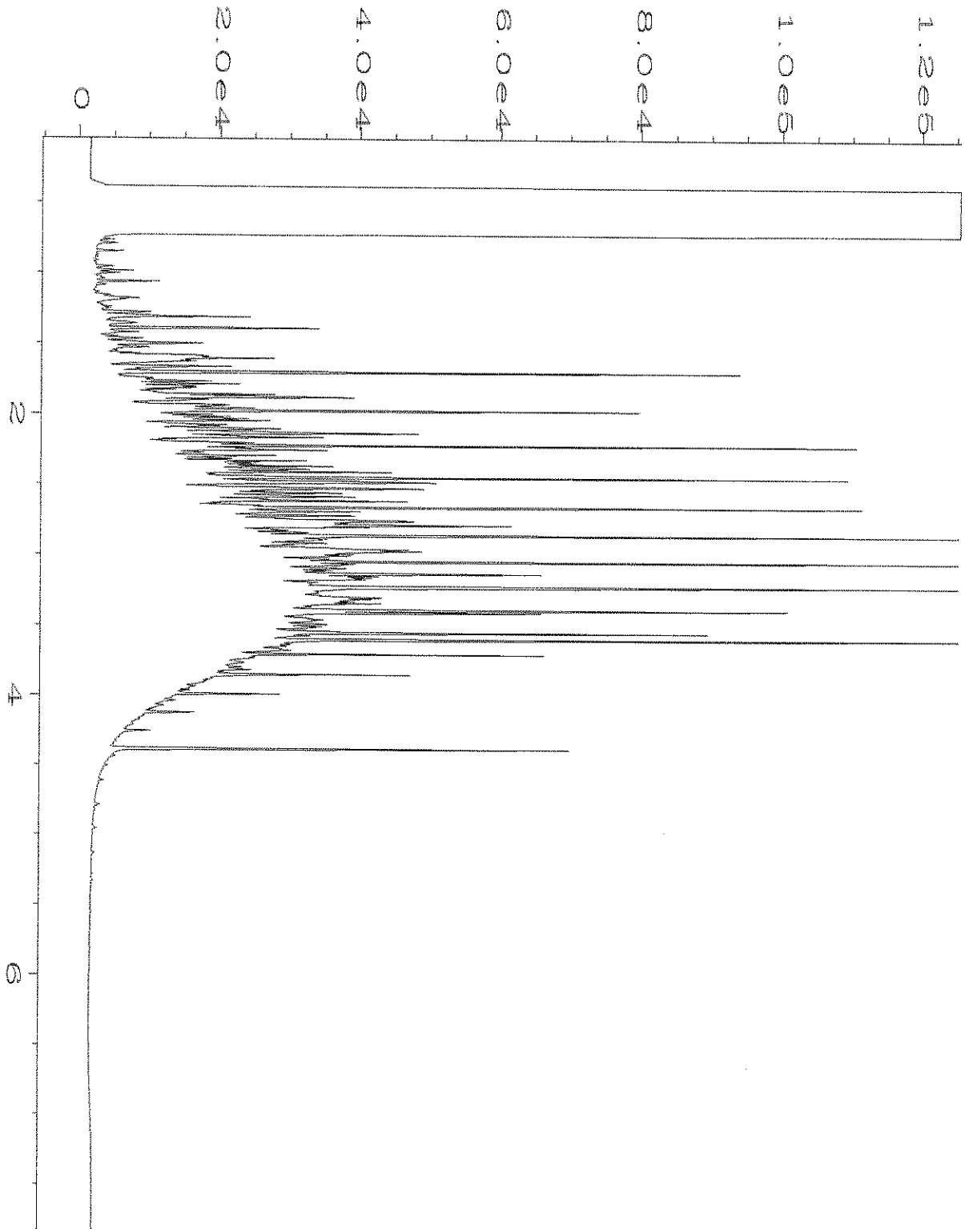


Data File Name : C:\HPCHEM\4\DATA\11-25-19\019F0501.D
Operator : TL
Instrument : GC#4
Sample Name : 911363-08
Run Time Bar Code:
Acquired on : 25 Nov 19 01:41 PM
Report Created on: 04 Dec 19 12:30 PM

Page Number : 1
Vial Number : 19
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\11-25-19\008F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 8
Sample Name	: 09-2880 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 25 Nov 19 11:31 AM	Instrument Method	: DX.MTH
Report Created on	: 04 Dec 19 12:30 PM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\11-25-19\003F0201.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 3
Sample Name	: 500 Dx 58-146B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 2
Acquired on	: 25 Nov 19 05:27 AM	Instrument Method	: DX.MTH
Report Created on	: 04 Dec 19 12:30 PM	Analysis Method	: DEFAULT.MTH

911363

SAMPLE CHAIN OF CUSTODY ME 11-23-19

BE3/VSY

Page # 1 of 1

Report To Gabe Cisneros & Scott Adamek

Company 601 Union Street Floyd/Snider

Address Suite 600

City, State, ZIP Seattle, WA

Phone 206 292-2078 Email gabe.cisneros@floydsnider.com

SAMPLERS (*signature*)

PROJECT NAME: POL-TPH

PO #

REMARKS: All samples placed in freezer day of collection to preserve.

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	VPH/EPH	Lead by 6020	TOC Total Organic Carbon	BTEX 8260	Notes
OIP30-20-21-111919	01 A-H	11/19/19	1415	Soil	8	X	X			X	X		X				include BTEX, MTBE, EDB, EDC and n-hexane in VOCs & Naphthalenes
OIP42-17-17.5-112119	02 A-H	11/21/19	1815	Soil	8	X	X			X	X		X				
OIP52-19-19.5-112219	03 A-E	11/22/19	0827	Soil	5	X	X				X			X		X	
OIP52-22-22.5-112219	04 A-E		0845	Soil	5	X	X				X			X		X	
OIP53-21-21.5-112219	05 A-E		0900	Soil	5	X	X				X			X	X	X	
OIP08-19-20-112219	06 A-H		1109	Soil	8	X	X			X	X		X				
OIP66-12-12.5-112219	07 A-H		1145	Soil	8	X	X			X	X		X	X			
OIP166D-12-12.5-112219	08 A-E		1150	Soil	5	X	X				X			X		X	

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Pamela Osterhout	Floyd/Snider	11/22/19	1953
Received by:	Eric Sauer	FRB	11/22/19	1953
Relinquished by:				
Received by:			Samples received at 4 °C	

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

March 30, 2020

Gabriel Cisneros, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Cisneros:

Included are the results from the testing of material submitted on March 13, 2020 from the POL-TPH, F&BI 003244 project. There are 156 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0330R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 13, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider POL-TPH, F&BI 003244 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
003244 -01	MW-40-10.5'-11'
003244 -02	MW-40-17D
003244 -03	MW-40-17'
003244 -04	MW-40-24-24.5
003244 -05	MW-40-1.0-1.5
003244 -06	OIP-49-10
003244 -07	OIP-49-17
003244 -08	OIP-47-2-3
003244 -09	OIP-47-25
003244 -10	OIP-47-17
003244 -11	OIP-47-11-12
003244 -12	OIP-31-17
003244 -13	OIP-31-20
003244 -14	GP-33-28-29
003244 -15	GP-33-14-14.5
003244 -16	GP-33-19.5-20
003244 -17	GP-33-24-25
003244 -18	GP-34-14-15
003244 -19	GP-34-GW-14-19
003244 -20	MW-33-12-12.5
003244 -21	MW-33-19.5-20
003244 -22	MW-33-22.5-23
003244 -23	MW-35-15.5-16
003244 -24	MW-34-15-15.5
003244 -25	MW-34-20-20.5
003244 -26	MW-34-24-24.5
003244 -27	MW-34-28-28.5
003244 -28	OIP-23-14-15
003244 -29	OIP-23-19-20
003244 -30	OIP-23-23-24
003244 -31	OIP-23-29.5-30
003244 -32	OIP-46-8
003244 -33	OIP-46-10-11
003244 -34	OIP-46-14
003244 -35	OIP-70-8
003244 -36	OIP-70-12-14

CASE NARRATIVE

Laboratory ID	Floyd-Snider
003244 -37	OIP-70-GW-10-15
003244 -38	OIP-57-14
003244 -39	OIP-39-15-15.5
003244 -40	OIP-39-16.5-17
003244 -41	OIP-39-21-22
003244 -42	GP-35-7-8
003244 -43	GP-35-16-17
003244 -44	OIP-04-4-5
003244 -45	OIP-04-15-16
003244 -46	OIP-04-GW-15-20
003244 -47	MW-36-25.5-26
003244 -48	MW-38-23.5-24
003244 -49	GP-31-14-15
003244 -50	OIP-72-10-11
003244 -51	OIP-72-16-17
003244 -52	GP-32-17.5-18.5
003244 -53	GP-32-GW-14-19
003244 -54	OIP-68-13.5-14
003244 -55	OIP-68-14-14.5
003244 -56	OIP-68-10-11
003244 -57	OIP-68D-10-11
003244 -58	OIP-68-GW-13-18
003244 -59	OIP-69-GW-12-17
003244 -60	OIP-69-14.5-15
003244 -61	OIP-69-11-12
003244 -62	OIP-54-15-16
003244 -63	OIP-54-18-19
003244 -64	GP-31-GW-13.5-18.5
003244 -65	OIP-02-14-15
003244 -66	OIP-02-GW-14.5-19.5
003244 -67	OIP-02D-GW-14.5-19.5
003244 -68	OIP-02-5-5.5
003244 -69	OIP-15-15-16
003244 -70	MW-37-27.5-28
003244 -71	MW-37-27.5-28 D
003244 -72	P3-0-0.5
003244 -73	P4-0-0.5
003244 -74	P5-0-0.5
003244 -75	P6-0.5-1.0

CASE NARRATIVE

Laboratory ID	Floyd-Snider
003244 -76	P6-0.5-1.0 D
003244 -77	OIP-64-14-15
003244 -78	GP-36-22-23
003244 -79	GP-36-13-14
003244 -80	OIP-15-20-21
003244 -81	GP-37-12-14
003244 -82	GP-37D-12-14
003244 -83	GP-36-16-17
003244 -84	OIP-15-23-24
003244 -85	OIP-15-GW-14-19
003244 -86	OIP-73-13-14
003244 -87	OIP-73D-13-14
003244 -88	OIP-73-9-10
003244 -89	OIP-67-11-12
003244 -90	OIP-67-GW-14-19
003244 -91	OIP-67-18-19
003244 -92	OIP-67-7-8
003244 -93	OIP-67-14.5-15
003244 -94	MW-39-2-4
003244 -95	MW-39-8-9
003244 -96	MW-39-13-14
003244 -97	MW-39-18.5-20
003244 -98	GP-38-11-11.5
003244 -99	OIP-18-19-19.5
003244 -100	OIP-20-11-11.5
003244 -101	OIP-20-19-19.5
003244 -102	OIP-19-19-20
003244 -103	OIP-21-18-19
003244 -104	OIP-06-27-28
003244 -105	OIP-06-29-30
003244 -106	OIP-06-GW-25-30
003244 -107	OIP-05-27-28
003244 -108	OIP-05-29-30
003244 -109	Trip Blank

Samples OIP-47-17, OIP-47-11-12, MW-33-12-12.5, MW-33-19.5-20, OIP-23-14-15, OIP-23-19-20, OIP-23-23-24, OIP-39-16.5-17, OIP-15-15-16, GP-36-13-14, OIP-15-20-21, GP-36-16-17, OIP-67-11-12, MW-39-13-14, and OIP-20-11-11.5 were sent to Fremont Analytical for EPH and VPH analyses. In addition, samples OIP-46-8, OIP-02-14-15, OIP-69-14.5-15, and OIP-54-18-19 were sent to Fremont for TOC analysis. The report is enclosed.

CASE NARRATIVE (continued)

Sample OIP-67-14.5-15 sent to Fremont Analytical for EPH and VPH analyses. The data will be submitted as an additional report.

The 8260D matrix spike and matrix spike duplicate failed the relative percent difference for toluene. The laboratory control sample passed the acceptance criteria, therefore the results are due to matrix effect.

The 8270E matrix spike and matrix spike duplicate failed the relative percent difference for several compounds. The laboratory control sample passed the acceptance criteria, therefore the results are due to matrix effect.

An 8270E internal standard failed the acceptance criteria for sample P6-0.5-1.0 D. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20
Date Analyzed: 03/17/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
MW-40-10.5'-11' 003244-01	D	D	D	ip
MW-40-24-24.5 003244-04	ND	ND	ND	90
MW-40-1.0-1.5 003244-05	ND	ND	D	86
OIP-49-10 003244-06	D	ND	D	86
OIP-49-17 003244-07	D	ND	ND	91
OIP-47-2-3 003244-08	ND	ND	ND	85
OIP-47-25 003244-09	ND	ND	ND	91
OIP-31-17 003244-12	ND	ND	ND	92
OIP-31-20 003244-13	ND	ND	ND	84
GP-33-28-29 003244-14	ND	ND	ND	87
GP-33-14-14.5 003244-15	D	D	D	89

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20
Date Analyzed: 03/17/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
GP-33-19.5-20 003244-16	ND	ND	ND	90
GP-33-24-25 003244-17	ND	ND	ND	93
GP-34-14-15 003244-18	ND	ND	ND	88
MW-33-22.5-23 003244-22	ND	ND	ND	87
MW-35-15.5-16 003244-23	ND	ND	ND	83
MW-34-28-28.5 003244-27	ND	ND	ND	89
OIP-23-29.5-30 003244-31	ND	ND	ND	93
OIP-46-10-11 003244-33	ND	ND	ND	94
OIP-46-14 003244-34	ND	ND	ND	85
OIP-70-8 003244-35	ND	ND	ND	82
OIP-70-12-14 003244-36	ND	ND	ND	93

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20
Date Analyzed: 03/17/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
OIP-57-14 003244-38	ND	ND	ND	85
OIP-39-21-22 003244-41	ND	ND	ND	87
GP-35-7-8 003244-42	ND	D	D	94
GP-35-16-17 003244-43	ND	ND	ND	88
OIP-04-4-5 003244-44	ND	ND	ND	82
OIP-04-15-16 003244-45	ND	ND	ND	64
MW-36-25.5-26 003244-47	ND	ND	ND	85
MW-38-23.5-24 003244-48	ND	ND	ND	90
GP-31-14-15 003244-49	ND	ND	ND	86
OIP-72-10-11 003244-50	D	ND	ND	83
OIP-72-16-17 003244-51	D	ND	ND	81

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20
Date Analyzed: 03/17/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
GP-32-17.5-18.5 003244-52	ND	ND	ND	86
OIP-68-13.5-14 003244-54	ND	ND	ND	80
OIP-68-10-11 003244-56	ND	ND	ND	86
OIP-68D-10-11 003244-57	ND	ND	ND	87
OIP-69-14.5-15 003244-60	ND	ND	ND	83
OIP-69-11-12 003244-61	ND	ND	ND	84
OIP-54-15-16 003244-62	ND	ND	D	85
OIP-02-14-15 003244-65	ND	ND	ND	89
OIP-02-5-5.5 003244-68	ND	D	D	ip
MW-37-27.5-28 003244-70	ND	ND	ND	95
MW-37-27.5-28 D 003244-71	ND	ND	ND	93

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20
Date Analyzed: 03/17/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
OIP-64-14-15 003244-77	ND	ND	ND	90
GP-36-22-23 003244-78	ND	ND	ND	98
GP-37-12-14 003244-81	ND	ND	ND	88
GP-37D-12-14 003244-82	ND	ND	ND	96
OIP-15-23-24 003244-84	ND	ND	ND	92
OIP-73-13-14 003244-86	ND	ND	ND	87
OIP-73D-13-14 003244-87	ND	ND	ND	95
OIP-73-9-10 003244-88	ND	ND	ND	87
OIP-67-18-19 003244-91	ND	ND	ND	87
OIP-67-7-8 003244-92	ND	ND	ND	87
MW-39-2-4 003244-94	ND	ND	ND	86

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20
Date Analyzed: 03/17/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR GASOLINE, DIESEL AND HEAVY OIL BY NWTPH-HCID

Results Reported on a Dry Weight Basis
Results Reported as Not Detected (ND) or Detected (D)

THE DATA PROVIDED BELOW WAS PERFORMED PER THE GUIDELINES ESTABLISHED BY THE WASHINGTON DEPARTMENT OF ECOLOGY AND WERE NOT DESIGNED TO PROVIDE INFORMATION WITH REGARDS TO THE ACTUAL IDENTIFICATION OF ANY MATERIAL PRESENT

Sample ID Laboratory ID	Gasoline	Diesel	Heavy Oil	Surrogate (% Recovery) (Limit 53-144)
GP-38-11-11.5 003244-98	ND	ND	ND	95
OIP-18-19-19.5 003244-99	ND	ND	ND	94
OIP-20-19-19.5 003244-101	ND	ND	ND	95
OIP-19-19-20 003244-102	ND	ND	ND	86
OIP-21-18-19 003244-103	ND	ND	ND	95
OIP-06-27-28 003244-104	ND	ND	ND	87
OIP-05-27-28 003244-107	ND	ND	ND	96
Method Blank 00-686 MB	ND	ND	ND	87
Method Blank 00-687 MB	ND	ND	ND	86
Method Blank 00-688 MB	ND	ND	ND	81
Method Blank 00-689 MB	ND	ND	ND	87

ND - Material not detected at or above 20 mg/kg gas, 50 mg/kg diesel and 250 mg/kg heavy oil.

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20 and 03/24/20
Date Analyzed: 03/18/20, 03/19/20, 03/23/20, 03/24/20 and 03/25/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
MW-40-10.5'-11' 003244-01 1/50	2,000	83
MW-40-17D 003244-02 1/10	1,700	115
MW-40-17' 003244-03 1/5	170	ip
OIP-49-10 003244-06	22	80
OIP-49-17 003244-07 1/20	960	119
OIP-47-17 003244-10	49	87
OIP-47-11-12 003244-11 1/20	5,700	ip
GP-33-14-14.5 003244-15	170	ip
MW-33-12-12.5 003244-20 1/5	230	ip
MW-33-19.5-20 003244-21	<5	81
MW-34-15-15.5 003244-24 1/5	760	ip

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20 and 03/24/20
Date Analyzed: 03/18/20, 03/19/20, 03/23/20, 03/24/20 and 03/25/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
MW-34-20-20.5 003244-25 1/5	280	85
MW-34-24-24.5 003244-26	46	88
OIP-23-14-15 003244-28 1/5	420	99
OIP-23-19-20 003244-29 1/5	790	139
OIP-23-23-24 003244-30	200	ip
OIP-39-15-15.5 003244-39	<5	135
OIP-39-16.5-17 003244-40	7.3	78
OIP-72-10-11 003244-50 1/10	520	121
OIP-72-16-17 003244-51	270	ip
OIP-15-15-16 003244-69	35	74
P3-0-0.5 003244-72 1/5	<25	79

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20 and 03/24/20
Date Analyzed: 03/18/20, 03/19/20, 03/23/20, 03/24/20 and 03/25/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
P4-0-0.5 003244-73 1/5	<25	78
P5-0-0.5 003244-74 1/5	<25	66
P6-0.5-1.0 003244-75 1/5	<25	80
P6-0.5-1.0 D 003244-76 1/5	<25	80
GP-36-13-14 003244-79 1/10	4,100	ip
OIP-15-20-21 003244-80	<5	98
GP-36-16-17 003244-83 1/100	950	137
OIP-67-11-12 003244-89 1/100	1,500	ip
OIP-67-14.5-15 003244-93 1/100	2,200	139
MW-39-8-9 003244-95	150	ip
MW-39-13-14 003244-96 1/5	990	ip

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20 and 03/24/20
Date Analyzed: 03/18/20, 03/19/20, 03/23/20, 03/24/20 and 03/25/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 58-139)
MW-39-18.5-20 003244-97	<5	68
OIP-20-11-11.5 003244-100 1/5	630	104
Method Blank 00-647 MB	<5	77
Method Blank 00-648 MB	<5	95
Method Blank 00-650 MB	<5	69
Method Blank 00-659 MB	<5	83

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20
Date Analyzed: 03/17/20 and 03/18/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
GP-34-GW-14-19 003244-19	<100	97
OIP-70-GW-10-15 003244-37	<100	96
OIP-04-GW-15-20 003244-46	130	96
GP-32-GW-14-19 003244-53	<100	97
OIP-68-GW-13-18 003244-58	860	107
OIP-69-GW-12-17 003244-59	<100	95
GP-31-GW-13.5-18.5 003244-64	<100	93
OIP-02-GW-14.5-19.5 003244-66	<100	93
OIP-02D-GW-14.5-19.5 003244-67	<100	93
OIP-15-GW-14-19 003244-85	380	104
OIP-67-GW-14-19 003244-90	3,200	98

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20
Date Analyzed: 03/17/20 and 03/18/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
OIP-06-GW-25-30 003244-106	<100	89
Method Blank 00-643 MB	<100	90

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20 and 03/19/20
Date Analyzed: 03/17/20, 03/19/20 and 03/20/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
MW-40-10.5'-11' 003244-01 1/10	18,000	7,900 x	101
MW-40-17D 003244-02	2,100	320 x	101
MW-40-17' 003244-03	2,400	<250	100
MW-40-1.0-1.5 003244-05	200 x	2,400	88
OIP-49-10 003244-06	<50	360	91
OIP-47-17 003244-10	360	<250	101
OIP-47-11-12 003244-11	210 x	<250	101
GP-33-14-14.5 003244-15	830 x	3,800	88
MW-33-12-12.5 003244-20	15,000	600 x	97
MW-33-19.5-20 003244-21	<50	<250	95
MW-34-15-15.5 003244-24	23,000	540 x	99

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20 and 03/19/20
Date Analyzed: 03/17/20, 03/19/20 and 03/20/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
MW-34-20-20.5 003244-25	17,000	480 x	91
MW-34-24-24.5 003244-26	300	<250	100
OIP-23-14-15 003244-28	13,000	<250	95
OIP-23-19-20 003244-29	48,000	1,300 x	ip
OIP-23-23-24 003244-30	5,700	<250	92
OIP-39-15-15.5 003244-39	<50	<250	92
OIP-39-16.5-17 003244-40	<50	<250	93
GP-35-7-8 003244-42	590	<250	91
OIP-54-15-16 003244-62	<50	660	92
OIP-02-5-5.5 003244-68	1,900 x	3,400	92

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20 and 03/19/20
Date Analyzed: 03/17/20, 03/19/20 and 03/20/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
OIP-15-15-16 003244-69	2,300	370 x	94
P3-0-0.5 003244-72	620 x	4,200	98
P4-0-0.5 003244-73	300 x	1,900	103
P5-0-0.5 003244-74	860	1,200	98
P6-0.5-1.0 003244-75	580	2,300	104
P6-0.5-1.0 D 003244-76	560	2,100	100
GP-36-13-14 003244-79	3,500	<250	90
OIP-15-20-21 003244-80	<50	<250	100
GP-36-16-17 003244-83	15,000	970 x	96
OIP-67-11-12 003244-89	4,300	310 x	96

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/17/20 and 03/19/20
Date Analyzed: 03/17/20, 03/19/20 and 03/20/20

RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis
Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 48-168)
OIP-67-14.5-15 003244-93	2,100	<250	100
MW-39-8-9 003244-95	4,400	<250	105
MW-39-13-14 003244-96	18,000	340 x	114
MW-39-18.5-20 003244-97	<50	<250	99
OIP-20-11-11.5 003244-100	440 x	<250	94
Method Blank 00-683 MB	<50	<250	87
Method Blank 00-684 MB	<50	<250	101
Method Blank 00-724 MB	<50	<250	87

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/16/20 and 03/17/20
Date Analyzed: 03/17/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
GP-34-GW-14-19 003244-19	330 x	<250	93
OIP-70-GW-10-15 003244-37	220 x	<250	114
OIP-04-GW-15-20 003244-46	660 x	870 x	109
GP-32-GW-14-19 003244-53	150 x	<250	90
OIP-68-GW-13-18 003244-58	900 x	290 x	99
OIP-69-GW-12-17 003244-59	140	<250	113
GP-31-GW-13.5-18.5 003244-64	55 x	<250	105
OIP-02-GW-14.5-19.5 003244-66	110 x	<250	105
OIP-02D-GW-14.5-19.5 003244-67	94 x	<250	98
OIP-15-GW-14-19 003244-85	1,300	380 x	105
OIP-67-GW-14-19 003244-90	2,000	<250	101

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244
Date Extracted: 03/16/20 and 03/17/20
Date Analyzed: 03/17/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
OIP-06-GW-25-30 003244-106	200 x	<250	109
Method Blank 00-680 MB	<50	<250	112
Method Blank 00-636 MB	<50	<250	87

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-40-17D	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-02
Date Analyzed:	03/17/20	Data File:	003244-02.151
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	1.54

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-40-17'	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-03
Date Analyzed:	03/17/20	Data File:	003244-03.152
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	2.10

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP-47-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-10
Date Analyzed:	03/17/20	Data File:	003244-10.153
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	2.61

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP-47-11-12	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-11
Date Analyzed:	03/17/20	Data File:	003244-11.154
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	3.34

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-33-12-12.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-20
Date Analyzed:	03/17/20	Data File:	003244-20.155
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	1.05

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-33-19.5-20	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-21
Date Analyzed:	03/17/20	Data File:	003244-21.164
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	3.61

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-34-15-15.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-24
Date Analyzed:	03/17/20	Data File:	003244-24.165
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	1.06

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-34-20-20.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-25
Date Analyzed:	03/17/20	Data File:	003244-25.166
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	1.25

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-34-24-24.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-26
Date Analyzed:	03/17/20	Data File:	003244-26.167
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP-39-16.5-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-40
Date Analyzed:	03/17/20	Data File:	003244-40.168
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	1.18

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP-15-15-16	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-69
Date Analyzed:	03/17/20	Data File:	003244-69.175
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	1.06

Analysis For Total Metals By EPA Method 6020B

Client ID:	GP-36-13-14	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-79
Date Analyzed:	03/17/20	Data File:	003244-79.176
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	2.69

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP-15-20-21	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-80
Date Analyzed:	03/17/20	Data File:	003244-80.177
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	1.91

Analysis For Total Metals By EPA Method 6020B

Client ID:	GP-36-16-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-83
Date Analyzed:	03/17/20	Data File:	003244-83.178
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	3.82

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP-67-11-12	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-89
Date Analyzed:	03/17/20	Data File:	003244-89.179
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	4.96

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP-67-14.5-15	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-93
Date Analyzed:	03/17/20	Data File:	003244-93.180
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	1.60

Analysis For Total Metals By EPA Method 6020B

Client ID:	OIP-20-11-11.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	003244-100
Date Analyzed:	03/17/20	Data File:	003244-100.181
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	8.16

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	I0-155 mb2
Date Analyzed:	03/17/20	Data File:	I0-155 mb2.116
Matrix:	Soil	Instrument:	ICPMS2
Units:	mg/kg (ppm) Dry Weight	Operator:	SP

Analyte:	Concentration mg/kg (ppm)
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-40-17D	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-02
Date Analyzed:	03/16/20	Data File:	031653.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)
Benzene	0.088
Toluene	<0.05
Ethylbenzene	0.19
m,p-Xylene	0.12
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-40-17'	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-03
Date Analyzed:	03/16/20	Data File:	031654.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration mg/kg (ppm)
Benzene	0.33
Toluene	<0.05
Ethylbenzene	0.14
m,p-Xylene	0.13
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-47-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-10
Date Analyzed:	03/16/20	Data File:	031655.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	108	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration mg/kg (ppm)
Hexane	1.3
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	0.089
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	7.0
m,p-Xylene	1.6
o-Xylene	0.15
Naphthalene	6.3

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-47-11-12	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-11
Date Analyzed:	03/16/20	Data File:	031657.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	131	50	150
4-Bromofluorobenzene	110	50	150

Compounds:	Concentration mg/kg (ppm)
Hexane	23 ve
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	0.12
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	23 ve
m,p-Xylene	1.5
o-Xylene	0.30
Naphthalene	13

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-47-11-12	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-11 1/10
Date Analyzed:	03/24/20	Data File:	032359.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration mg/kg (ppm)
Hexane	3.6
Methyl t-butyl ether (MTBE)	<0.5
1,2-Dichloroethane (EDC)	<0.5
Benzene	<0.3
Toluene	<0.5
1,2-Dibromoethane (EDB)	<0.5
Ethylbenzene	27
m,p-Xylene	1.9
o-Xylene	<0.5
Naphthalene	18

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-33-12-12.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-20
Date Analyzed:	03/23/20	Data File:	032345.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-33-19.5-20	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-21
Date Analyzed:	03/23/20	Data File:	032344.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-34-15-15.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-24
Date Analyzed:	03/17/20	Data File:	031716.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	62	145
Toluene-d8	103	55	145
4-Bromofluorobenzene	104	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-34-20-20.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-25
Date Analyzed:	03/16/20	Data File:	031614.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	62	145
Toluene-d8	101	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-34-24-24.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-26
Date Analyzed:	03/16/20	Data File:	031615.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	62	145
Toluene-d8	98	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-23-14-15	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-28
Date Analyzed:	03/16/20	Data File:	031616.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	62	145
Toluene-d8	101	55	145
4-Bromofluorobenzene	94	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-23-19-20	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-29
Date Analyzed:	03/17/20	Data File:	031717.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	62	145
Toluene-d8	107	55	145
4-Bromofluorobenzene	110	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	0.42
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	0.081
Naphthalene	1.0

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-23-23-24	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-30
Date Analyzed:	03/16/20	Data File:	031617.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	62	145
Toluene-d8	92	55	145
4-Bromofluorobenzene	94	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-39-15-15.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-39
Date Analyzed:	03/16/20	Data File:	031618.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	62	145
Toluene-d8	96	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-39-16.5-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-40
Date Analyzed:	03/16/20	Data File:	031619.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	62	145
Toluene-d8	98	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-15-15-16	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-69
Date Analyzed:	03/16/20	Data File:	031620.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	62	145
Toluene-d8	117	55	145
4-Bromofluorobenzene	92	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	P3-0-0.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-72
Date Analyzed:	03/16/20	Data File:	031621.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	62	145
Toluene-d8	98	55	145
4-Bromofluorobenzene	101	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	P4-0-0.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-73
Date Analyzed:	03/16/20	Data File:	031622.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	62	145
Toluene-d8	99	55	145
4-Bromofluorobenzene	100	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	P5-0-0.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-74
Date Analyzed:	03/16/20	Data File:	031623.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	62	145
Toluene-d8	94	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	P6-0.5-1.0	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-75
Date Analyzed:	03/16/20	Data File:	031624.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	62	145
Toluene-d8	105	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	P6-0.5-1.0 D	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-76
Date Analyzed:	03/16/20	Data File:	031625.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	62	145
Toluene-d8	99	55	145
4-Bromofluorobenzene	95	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GP-36-13-14	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-79
Date Analyzed:	03/17/20	Data File:	031709.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	62	145
Toluene-d8	107	55	145
4-Bromofluorobenzene	104	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	33 ve
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	0.25
Toluene	0.27
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	4.7
m,p-Xylene	1.5
o-Xylene	<0.05
Naphthalene	0.93

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GP-36-13-14	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-79 1/10
Date Analyzed:	03/24/20	Data File:	032361.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration mg/kg (ppm)
Hexane	18
Methyl t-butyl ether (MTBE)	<0.5
1,2-Dichloroethane (EDC)	<0.5
Benzene	<0.3
Toluene	<0.5
1,2-Dibromoethane (EDB)	<0.5
Ethylbenzene	4.6
m,p-Xylene	1.5
o-Xylene	<0.5
Naphthalene	1.1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-15-20-21	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-80
Date Analyzed:	03/17/20	Data File:	031710.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	87	62	145
Toluene-d8	107	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GP-36-16-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-83
Date Analyzed:	03/17/20	Data File:	031711.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	90	62	145
Toluene-d8	105	55	145
4-Bromofluorobenzene	96	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	60 ve
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	0.60
Toluene	0.47
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	7.6
m,p-Xylene	2.5
o-Xylene	0.056
Naphthalene	1.2

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GP-36-16-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-83 1/10
Date Analyzed:	03/24/20	Data File:	032360.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	104	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration mg/kg (ppm)
Hexane	32
Methyl t-butyl ether (MTBE)	<0.5
1,2-Dichloroethane (EDC)	<0.5
Benzene	0.61
Toluene	<0.5
1,2-Dibromoethane (EDB)	<0.5
Ethylbenzene	7.2
m,p-Xylene	2.3
o-Xylene	<0.5
Naphthalene	2.0

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-67-11-12	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-89
Date Analyzed:	03/17/20	Data File:	031712.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	62	145
Toluene-d8	108	55	145
4-Bromofluorobenzene	108	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	0.32
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	0.062
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	0.48

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-67-14.5-15	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-93
Date Analyzed:	03/17/20	Data File:	031713.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	62	145
Toluene-d8	105	55	145
4-Bromofluorobenzene	104	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	1.0
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	0.15

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-39-8-9	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-95
Date Analyzed:	03/16/20	Data File:	031627.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	62	145
Toluene-d8	98	55	145
4-Bromofluorobenzene	94	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-39-13-14	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-96
Date Analyzed:	03/17/20	Data File:	031714.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	62	145
Toluene-d8	100	55	145
4-Bromofluorobenzene	102	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	0.43

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-39-18.5-20	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-97
Date Analyzed:	03/16/20	Data File:	031626.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	62	145
Toluene-d8	99	55	145
4-Bromofluorobenzene	97	65	139

Compounds:	Concentration mg/kg (ppm)
Benzene	<0.03
Toluene	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-20-11-11.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-100
Date Analyzed:	03/17/20	Data File:	031715.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	62	145
Toluene-d8	102	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	0.11
m,p-Xylene	0.11
o-Xylene	<0.05
Naphthalene	1.5

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	00-620 mb3
Date Analyzed:	03/16/20	Data File:	031631.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	00-623 mb
Date Analyzed:	03/16/20	Data File:	031612.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	90	62	145
Toluene-d8	83	55	145
4-Bromofluorobenzene	104	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	00-624 mb
Date Analyzed:	03/16/20	Data File:	031613.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	92	62	145
Toluene-d8	101	55	145
4-Bromofluorobenzene	99	65	139

Compounds:	Concentration mg/kg (ppm)
Hexane	<0.25
Methyl t-butyl ether (MTBE)	<0.05
1,2-Dichloroethane (EDC)	<0.05
Benzene	<0.03
Toluene	<0.05
1,2-Dibromoethane (EDB)	<0.05
Ethylbenzene	<0.05
m,p-Xylene	<0.1
o-Xylene	<0.05
Naphthalene	<0.05

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GP-34-GW-14-19	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-19
Date Analyzed:	03/16/20	Data File:	031641.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	109	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-70-GW-10-15	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-37
Date Analyzed:	03/16/20	Data File:	031642.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-04-GW-15-20	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-46
Date Analyzed:	03/16/20	Data File:	031643.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GP-32-GW-14-19	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-53
Date Analyzed:	03/16/20	Data File:	031644.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-68-GW-13-18	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-58
Date Analyzed:	03/16/20	Data File:	031645.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	104	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-69-GW-12-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-59
Date Analyzed:	03/16/20	Data File:	031646.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	GP-31-GW-13.5-18.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-64
Date Analyzed:	03/16/20	Data File:	031647.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-02-GW-14.5-19.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-66
Date Analyzed:	03/16/20	Data File:	031648.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-02D-GW-14.5-19.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-67
Date Analyzed:	03/16/20	Data File:	031649.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-15-GW-14-19	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-85
Date Analyzed:	03/16/20	Data File:	031650.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-67-GW-14-19	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-90
Date Analyzed:	03/16/20	Data File:	031651.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	1.3
Toluene	2.3
Ethylbenzene	1.3
m,p-Xylene	2.2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	OIP-06-GW-25-30	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-106
Date Analyzed:	03/16/20	Data File:	031652.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	00-621 mb
Date Analyzed:	03/16/20	Data File:	031615.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-40-17D	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-02 1/25
Date Analyzed:	03/19/20	Data File:	031911.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	83 d	31	163
Benzo(a)anthracene-d12	99 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	0.088
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-40-17'	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-03 1/25
Date Analyzed:	03/19/20	Data File:	031912.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	82 d	31	163
Benzo(a)anthracene-d12	100 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	0.068
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-47-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-10 1/5
Date Analyzed:	03/19/20	Data File:	031913.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	163
Benzo(a)anthracene-d12	100	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-47-11-12	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-11 1/5
Date Analyzed:	03/19/20	Data File:	031914.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	74	31	163
Benzo(a)anthracene-d12	94	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-33-12-12.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-20 1/25
Date Analyzed:	03/19/20	Data File:	031915.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	93 d	31	163
Benzo(a)anthracene-d12	117 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	0.10
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-33-19.5-20	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-21 1/5
Date Analyzed:	03/19/20	Data File:	031916.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	63	31	163
Benzo(a)anthracene-d12	79	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-34-15-15.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-24 1/25
Date Analyzed:	03/19/20	Data File:	031917.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	95 d	31	163
Benzo(a)anthracene-d12	108 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	0.14
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-34-20-20.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-25 1/25
Date Analyzed:	03/21/20	Data File:	032033.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	93 d	31	163
Benzo(a)anthracene-d12	103 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	0.072
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-34-24-24.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-26 1/5
Date Analyzed:	03/21/20	Data File:	032034.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	70	31	163
Benzo(a)anthracene-d12	100	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-23-14-15	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-28 1/25
Date Analyzed:	03/21/20	Data File:	032035.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86 d	31	163
Benzo(a)anthracene-d12	95 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	0.058
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-23-19-20	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-29 1/25
Date Analyzed:	03/21/20	Data File:	032036.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	160 d	31	163
Benzo(a)anthracene-d12	100 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.16
Chrysene	0.23
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-23-23-24	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-30 1/25
Date Analyzed:	03/21/20	Data File:	032037.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	101 d	31	163
Benzo(a)anthracene-d12	104 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-39-15-15.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-39 1/5
Date Analyzed:	03/21/20	Data File:	032038.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	46	31	163
Benzo(a)anthracene-d12	79	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-39-16.5-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-40 1/5
Date Analyzed:	03/21/20	Data File:	032039.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	74	31	163
Benzo(a)anthracene-d12	85	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-15-15-16	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-69 1/25
Date Analyzed:	03/21/20	Data File:	032040.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	83 d	31	163
Benzo(a)anthracene-d12	104 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	P3-0-0.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-72 1/500
Date Analyzed:	03/21/20	Data File:	032051.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	287 d	31	163
Benzo(a)anthracene-d12	126 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	1.8
Chrysene	3.1
Benzo(a)pyrene	1.5
Benzo(b)fluoranthene	3.5
Benzo(k)fluoranthene	1.0
Indeno(1,2,3-cd)pyrene	1.3
Dibenz(a,h)anthracene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	P4-0-0.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-73 1/50
Date Analyzed:	03/24/20	Data File:	032413.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	93 d	31	163
Benzo(a)anthracene-d12	110 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.46
Chrysene	0.63
Benzo(a)pyrene	0.35
Benzo(b)fluoranthene	0.66
Benzo(k)fluoranthene	0.22
Indeno(1,2,3-cd)pyrene	0.19
Dibenz(a,h)anthracene	<0.1

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	P5-0-0.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-74 1/500
Date Analyzed:	03/21/20	Data File:	032048.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	257 d	31	163
Benzo(a)anthracene-d12	142 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<1
Chrysene	<1
Benzo(a)pyrene	<1
Benzo(b)fluoranthene	<1
Benzo(k)fluoranthene	<1
Indeno(1,2,3-cd)pyrene	<1
Dibenz(a,h)anthracene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	P6-0.5-1.0	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-75 1/500
Date Analyzed:	03/21/20	Data File:	032049.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	221 d	31	163
Benzo(a)anthracene-d12	72 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<1
Chrysene	<1
Benzo(a)pyrene	<1
Benzo(b)fluoranthene	<1
Benzo(k)fluoranthene	<1
Indeno(1,2,3-cd)pyrene	<1
Dibenz(a,h)anthracene	<1

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	P6-0.5-1.0 D	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-76 1/500
Date Analyzed:	03/21/20	Data File:	032050.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	238 d	31	163
Benzo(a)anthracene-d12	120 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<1
Chrysene	<1
Benzo(a)pyrene	<1 J
Benzo(b)fluoranthene	<1 J
Benzo(k)fluoranthene	<1 J
Indeno(1,2,3-cd)pyrene	<1 J
Dibenz(a,h)anthracene	<1 J

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	P6-0.5-1.0 D	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-76 1/5000
Date Analyzed:	03/23/20	Data File:	032316.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	0 d	31	163
Benzo(a)anthracene-d12	0 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<10
Chrysene	<10
Benzo(a)pyrene	<10
Benzo(b)fluoranthene	<10
Benzo(k)fluoranthene	<10
Indeno(1,2,3-cd)pyrene	<10
Dibenz(a,h)anthracene	<10

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	GP-36-13-14	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-79 1/25
Date Analyzed:	03/21/20	Data File:	032041.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	80 d	31	163
Benzo(a)anthracene-d12	100 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	0.064
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-15-20-21	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-80 1/5
Date Analyzed:	03/21/20	Data File:	032042.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	68	31	163
Benzo(a)anthracene-d12	89	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	GP-36-16-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-83 1/25
Date Analyzed:	03/21/20	Data File:	032043.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86 d	31	163
Benzo(a)anthracene-d12	102 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.091
Chrysene	0.11
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-67-11-12	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-89 1/25
Date Analyzed:	03/21/20	Data File:	032044.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84 d	31	163
Benzo(a)anthracene-d12	102 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	0.080
Chrysene	0.093
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	0.063
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-67-14.5-15	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-93 1/25
Date Analyzed:	03/21/20	Data File:	032045.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	76 d	31	163
Benzo(a)anthracene-d12	95 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-39-8-9	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-95 1/5
Date Analyzed:	03/18/20	Data File:	031819.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	76	31	163
Benzo(a)anthracene-d12	104	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	0.023
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-39-13-14	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-96 1/25
Date Analyzed:	03/21/20	Data File:	032046.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	125 d	31	163
Benzo(a)anthracene-d12	105 d	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.05
Chrysene	0.071
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-39-18.5-20	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-97 1/5
Date Analyzed:	03/18/20	Data File:	031820.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	76	31	163
Benzo(a)anthracene-d12	99	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-20-11-11.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	003244-100 1/5
Date Analyzed:	03/21/20	Data File:	032047.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	163
Benzo(a)anthracene-d12	88	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	00-681 mb 1/5
Date Analyzed:	03/19/20	Data File:	031903a.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	74	31	163
Benzo(a)anthracene-d12	100	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/18/20	Lab ID:	00-682 mb 1/5
Date Analyzed:	03/18/20	Data File:	031818.D
Matrix:	Soil	Instrument:	GCMS6
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	75	31	163
Benzo(a)anthracene-d12	101	24	168

Compounds:	Concentration mg/kg (ppm)
Benz(a)anthracene	<0.01
Chrysene	<0.01
Benzo(a)pyrene	<0.01
Benzo(b)fluoranthene	<0.01
Benzo(k)fluoranthene	<0.01
Indeno(1,2,3-cd)pyrene	<0.01
Dibenz(a,h)anthracene	<0.01

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	GP-34-GW-14-19	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-19 1/2
Date Analyzed:	03/17/20	Data File:	031706.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	82	31	160
Benzo(a)anthracene-d12	102	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-70-GW-10-15	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-37 1/2
Date Analyzed:	03/18/20	Data File:	031804.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86	31	160
Benzo(a)anthracene-d12	110	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-04-GW-15-20	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-46 1/2
Date Analyzed:	03/18/20	Data File:	031805.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	79	31	160
Benzo(a)anthracene-d12	112	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	GP-32-GW-14-19	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-53 1/2
Date Analyzed:	03/18/20	Data File:	031809.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	160
Benzo(a)anthracene-d12	113	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-68-GW-13-18	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-58 1/2
Date Analyzed:	03/18/20	Data File:	031810.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84	31	160
Benzo(a)anthracene-d12	108	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-69-GW-12-17	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-59 1/2
Date Analyzed:	03/18/20	Data File:	031811.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84	31	160
Benzo(a)anthracene-d12	110	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	GP-31-GW-13.5-18.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-64 1/2
Date Analyzed:	03/18/20	Data File:	031812.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	82	31	160
Benzo(a)anthracene-d12	108	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-02-GW-14.5-19.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-66 1/2
Date Analyzed:	03/18/20	Data File:	031813.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	79	31	160
Benzo(a)anthracene-d12	100	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-02D-GW-14.5-19.5	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-67 1/2
Date Analyzed:	03/18/20	Data File:	031816.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	102	31	160
Benzo(a)anthracene-d12	109	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-15-GW-14-19	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-85 1/2
Date Analyzed:	03/19/20	Data File:	031910.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	63	31	160
Benzo(a)anthracene-d12	87	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-67-GW-14-19	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-90 1/2
Date Analyzed:	03/18/20	Data File:	031830.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	80	31	160
Benzo(a)anthracene-d12	111	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	OIP-06-GW-25-30	Client:	Floyd-Snider
Date Received:	03/13/20	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	003244-106 1/2
Date Analyzed:	03/19/20	Data File:	031909.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	77	31	160
Benzo(a)anthracene-d12	101	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/16/20	Lab ID:	00-679 mb
Date Analyzed:	03/17/20	Data File:	031705.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	YA

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	76	31	160
Benzo(a)anthracene-d12	91	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 003244
Date Extracted:	03/17/20	Lab ID:	00-679 mb2
Date Analyzed:	03/18/20	Data File:	031803.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	76	31	160
Benzo(a)anthracene-d12	89	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 003244-74 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	20	<25	71	69	50-150	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	95	71-131

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 003244-95 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	20	150	305 b	154 b	50-143	66 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	100	61-153

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 003244-97 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	mg/kg (ppm)	20	<5	63	63	50-150	0

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	85	71-131

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 003232-02 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	mg/kg (ppm)	20	90	71-131

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 003244-90 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,000	3,200	155 b	110 b	53-117	42 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	98	69-134

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 003244-74 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	1,400	102	88	73-135	15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	108	74-139

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 003244-95 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	52 b	75 b	73-135	36 b

Laboratory Code: 003244-97 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	106	96	73-135	10

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	106	74-139

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 003331-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	100	82	64-133	20

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	mg/kg (ppm)	5,000	102	58-147

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	76	84	63-142	10

Date of Report: 03/30/20
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Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 003244-90 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	1,900	177 b	154 b	50-150	14 b

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	100	104	63-142	4

Date of Report: 03/30/20
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Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 003226-04 x5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	mg/kg (ppm)	50	<5	98	99	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	mg/kg (ppm)	50	105	80-120

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003236-08 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Hexane	mg/kg (ppm)	2.5	<0.25	70	70	10-95	0
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	99	99	17-134	0
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	84	83	22-124	1
Benzene	mg/kg (ppm)	2.5	<0.03	90	90	26-114	0
Toluene	mg/kg (ppm)	2.5	<0.05	93	94	34-112	1
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	95	92	32-126	3
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	96	95	34-115	1
m,p-Xylene	mg/kg (ppm)	5	<0.1	99	100	25-125	1
o-Xylene	mg/kg (ppm)	2.5	<0.05	101	102	27-126	1
Naphthalene	mg/kg (ppm)	2.5	<0.05	99	97	24-139	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Hexane	mg/kg (ppm)	2.5	85	55-107
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	93	72-122
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	92	73-111
Benzene	mg/kg (ppm)	2.5	94	72-106
Toluene	mg/kg (ppm)	2.5	97	74-111
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	102	77-117
Ethylbenzene	mg/kg (ppm)	2.5	98	75-112
m,p-Xylene	mg/kg (ppm)	5	101	77-115
o-Xylene	mg/kg (ppm)	2.5	100	76-115
Naphthalene	mg/kg (ppm)	2.5	83	73-122

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003244-97 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Hexane	mg/kg (ppm)	2.5	<0.25	48	43	10-137	11
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	70	72	21-145	3
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	59	57	12-160	3
Benzene	mg/kg (ppm)	2.5	<0.03	61	58	29-129	5
Toluene	mg/kg (ppm)	2.5	<0.05	81	65	35-130	22 vo
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	72	69	28-142	4
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	69	68	32-137	1
m,p-Xylene	mg/kg (ppm)	5	<0.1	69	68	34-136	1
o-Xylene	mg/kg (ppm)	2.5	<0.05	70	68	33-134	3
Naphthalene	mg/kg (ppm)	2.5	<0.05	73	72	14-157	1

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Hexane	mg/kg (ppm)	2.5	104	43-142
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	108	60-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	88	56-135
Benzene	mg/kg (ppm)	2.5	93	68-114
Toluene	mg/kg (ppm)	2.5	100	66-126
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	105	74-132
Ethylbenzene	mg/kg (ppm)	2.5	101	64-123
m,p-Xylene	mg/kg (ppm)	5	102	78-122
o-Xylene	mg/kg (ppm)	2.5	103	77-124
Naphthalene	mg/kg (ppm)	2.5	114	63-140

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003244-74 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Hexane	mg/kg (ppm)	2.5	<0.25	89	76	10-137	16
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	84	83	21-145	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	84	75	12-160	11
Benzene	mg/kg (ppm)	2.5	<0.03	88	81	29-129	8
Toluene	mg/kg (ppm)	2.5	<0.05	99	89	35-130	11
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	91	94	28-142	3
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	89	93	32-137	4
m,p-Xylene	mg/kg (ppm)	5	<0.1	88	97	34-136	10
o-Xylene	mg/kg (ppm)	2.5	<0.05	90	93	33-134	3
Naphthalene	mg/kg (ppm)	2.5	<0.05	92	94	14-157	2

Laboratory Code: 003244-95 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Hexane	mg/kg (ppm)	2.5	<0.25	54	43	10-137	23 vo
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	<0.05	101	93	21-145	8
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	<0.05	68	66	12-160	3
Benzene	mg/kg (ppm)	2.5	<0.03	70	72	29-129	3
Toluene	mg/kg (ppm)	2.5	<0.05	73	63	35-130	15
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	<0.05	79	69	28-142	14
Ethylbenzene	mg/kg (ppm)	2.5	<0.05	71	69	32-137	3
m,p-Xylene	mg/kg (ppm)	5	<0.1	72	67	34-136	7
o-Xylene	mg/kg (ppm)	2.5	<0.05	76	73	33-134	4
Naphthalene	mg/kg (ppm)	2.5	0.18	85	86	14-157	1

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Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Hexane	mg/kg (ppm)	2.5	92	43-142
Methyl t-butyl ether (MTBE)	mg/kg (ppm)	2.5	104	60-123
1,2-Dichloroethane (EDC)	mg/kg (ppm)	2.5	90	56-135
Benzene	mg/kg (ppm)	2.5	96	68-114
Toluene	mg/kg (ppm)	2.5	98	66-126
1,2-Dibromoethane (EDB)	mg/kg (ppm)	2.5	108	74-132
Ethylbenzene	mg/kg (ppm)	2.5	104	64-123
m,p-Xylene	mg/kg (ppm)	5	105	78-122
o-Xylene	mg/kg (ppm)	2.5	105	77-124
Naphthalene	mg/kg (ppm)	2.5	112	63-140

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Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 003244-90 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	50	1.3	99	100	75-114	1
Toluene	ug/L (ppb)	50	2.3	98	99	73-117	1
Ethylbenzene	ug/L (ppb)	50	1.3	103	106	66-124	3
m,p-Xylene	ug/L (ppb)	100	2.2	108	111	63-128	3
o-Xylene	ug/L (ppb)	50	<1	111	115	64-129	4
Naphthalene	ug/L (ppb)	50	<1	93	100	60-145	7

Laboratory Code: 003245-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Acceptance Criteria
Benzene	ug/L (ppb)	50	1.4	95	75-114
Toluene	ug/L (ppb)	50	<1	99	73-117
Ethylbenzene	ug/L (ppb)	50	<1	97	66-124
m,p-Xylene	ug/L (ppb)	100	<2	101	63-128
o-Xylene	ug/L (ppb)	50	<1	100	64-129
Naphthalene	ug/L (ppb)	50	<1	99	60-145

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Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benzene	ug/L (ppb)	50	100	96	75-116	4
Toluene	ug/L (ppb)	50	103	99	79-115	4
Ethylbenzene	ug/L (ppb)	50	102	97	83-111	5
m,p-Xylene	ug/L (ppb)	100	105	101	81-112	4
o-Xylene	ug/L (ppb)	50	105	98	81-117	7
Naphthalene	ug/L (ppb)	50	104	98	72-131	6

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Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270E SIM

Laboratory Code: 003244-95 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	98	92	23-144	6
Chrysene	mg/kg (ppm)	0.17	0.018	77	74	32-149	4
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	79	77	23-176	3
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	81	78	42-139	4
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	86	81	21-163	6
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	73	62	23-170	16
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	77	62	31-146	22 vo

Laboratory Code: 003244-97 1/5 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.17	<0.01	92	85	23-144	8
Chrysene	mg/kg (ppm)	0.17	<0.01	85	80	32-149	6
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	<0.01	85	82	23-176	4
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	<0.01	92	89	42-139	3
Benzo(a)pyrene	mg/kg (ppm)	0.17	<0.01	83	77	21-163	7
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	<0.01	65	55	23-170	17
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	<0.01	66	59	31-146	11

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	mg/kg (ppm)	0.17	92	51-115
Chrysene	mg/kg (ppm)	0.17	90	55-129
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	84	56-123
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	92	54-131
Benzo(a)pyrene	mg/kg (ppm)	0.17	71	51-118
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	82	49-148
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	86	50-141

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Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR PAHS BY EPA METHOD 8270E SIM

Laboratory Code: Laboratory Control Sample 1/5

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	mg/kg (ppm)	0.17	92	91	51-115	1
Chrysene	mg/kg (ppm)	0.17	90	87	55-129	3
Benzo(b)fluoranthene	mg/kg (ppm)	0.17	80	81	56-123	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.17	86	84	54-131	2
Benzo(a)pyrene	mg/kg (ppm)	0.17	78	81	51-118	4
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.17	95	91	49-148	4
Dibenz(a,h)anthracene	mg/kg (ppm)	0.17	101	98	50-141	3

Date of Report: 03/30/20
Date Received: 03/13/20
Project: POL-TPH, F&BI 003244

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR PAHS BY EPA METHOD 8270E SIM

Laboratory Code: 003244-90 1/2 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	1	<0.04	95 vo	96 vo	60-93	1
Chrysene	ug/L (ppb)	1	<0.04	86	89	60-102	3
Benzo(b)fluoranthene	ug/L (ppb)	1	<0.04	89	83	62-91	7
Benzo(k)fluoranthene	ug/L (ppb)	1	<0.04	86	86	51-98	0
Benzo(a)pyrene	ug/L (ppb)	1	<0.04	88 vo	87 vo	60-86	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	<0.04	65	67	10-98	3
Dibenz(a,h)anthracene	ug/L (ppb)	1	<0.04	64	62	10-97	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	1	96	92	60-118	4
Chrysene	ug/L (ppb)	1	90	90	66-125	0
Benzo(b)fluoranthene	ug/L (ppb)	1	83	81	55-135	2
Benzo(k)fluoranthene	ug/L (ppb)	1	87	90	62-125	3
Benzo(a)pyrene	ug/L (ppb)	1	83	85	58-127	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	91	93	36-142	2
Dibenz(a,h)anthracene	ug/L (ppb)	1	95	102	37-133	7

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

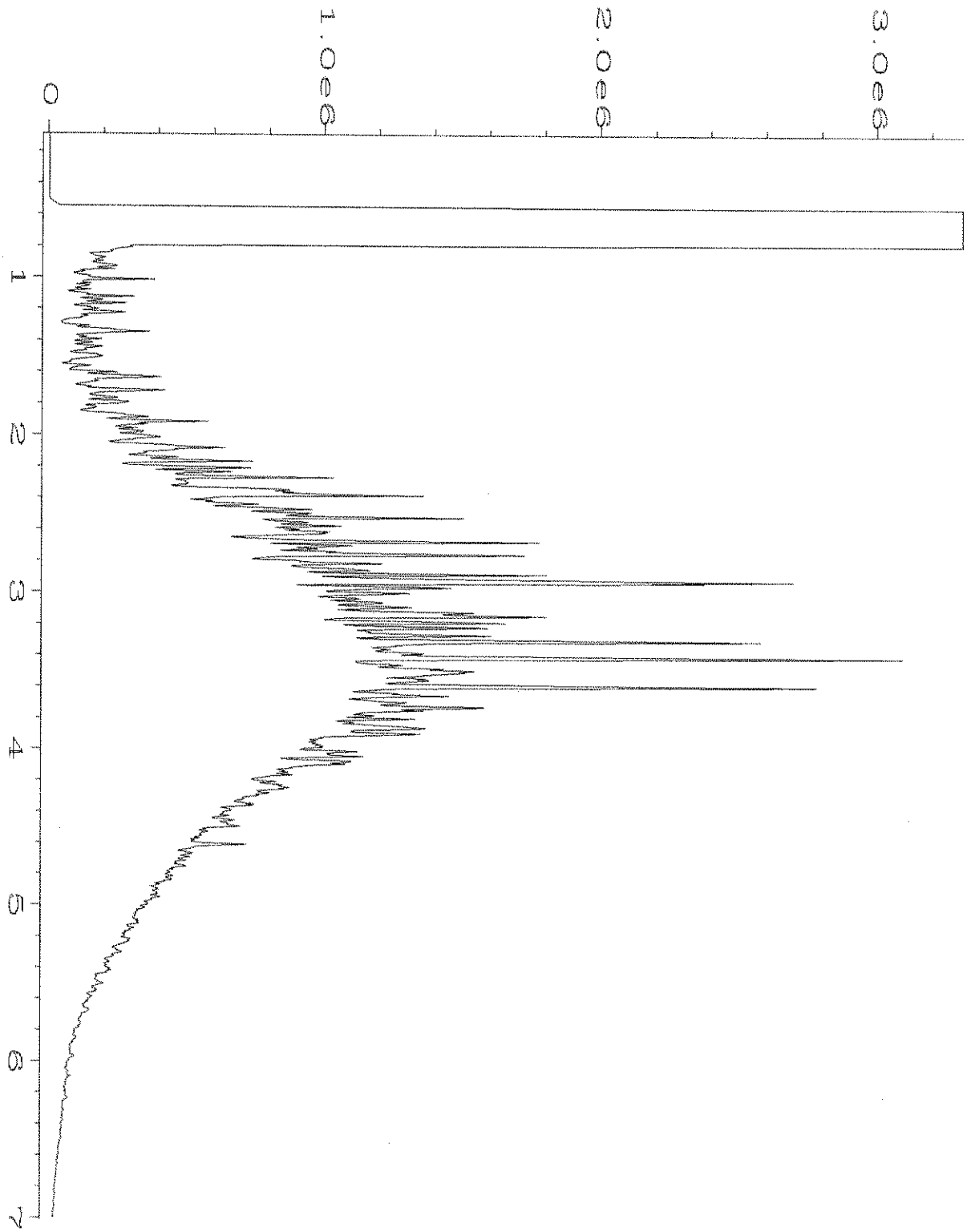
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

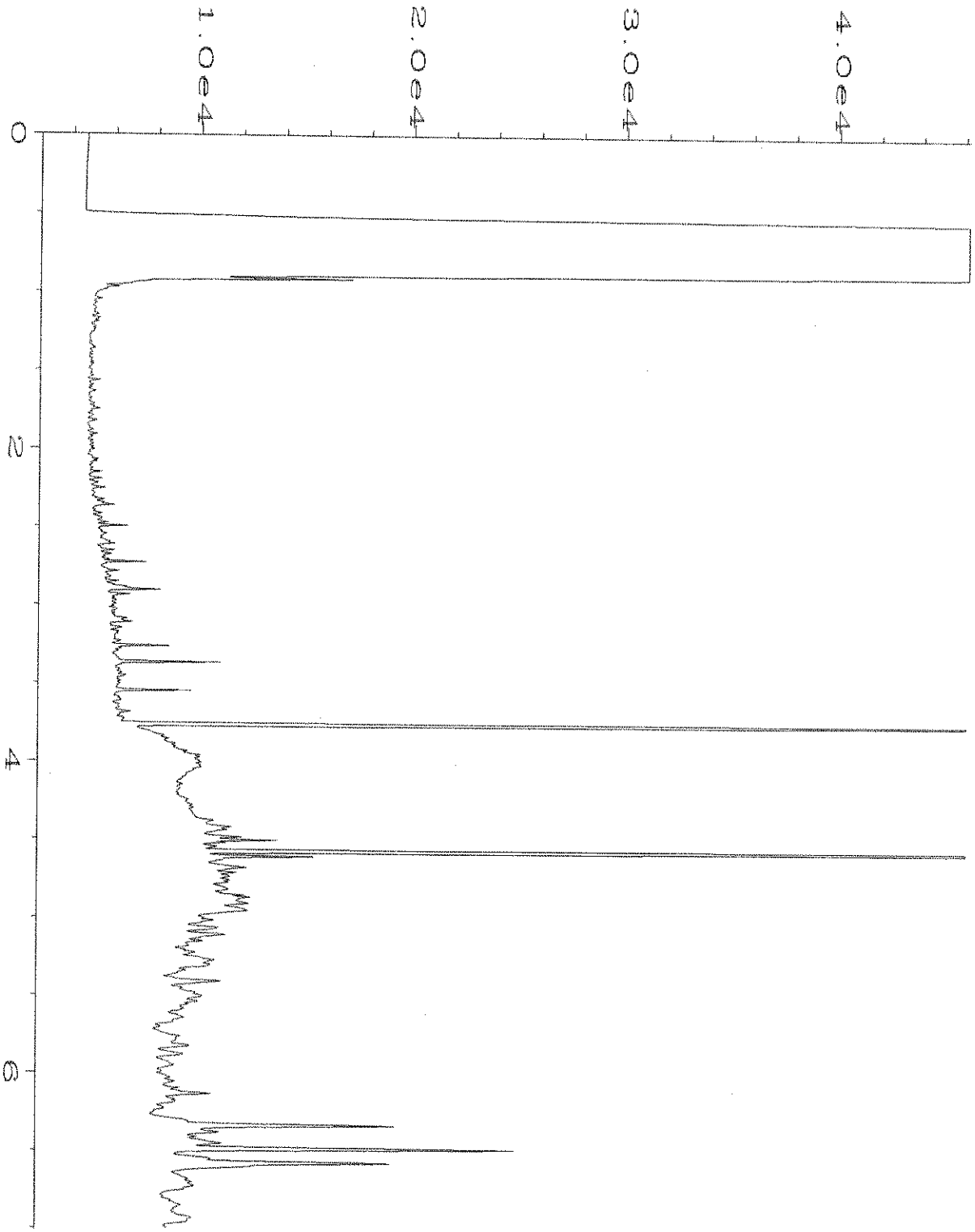
ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

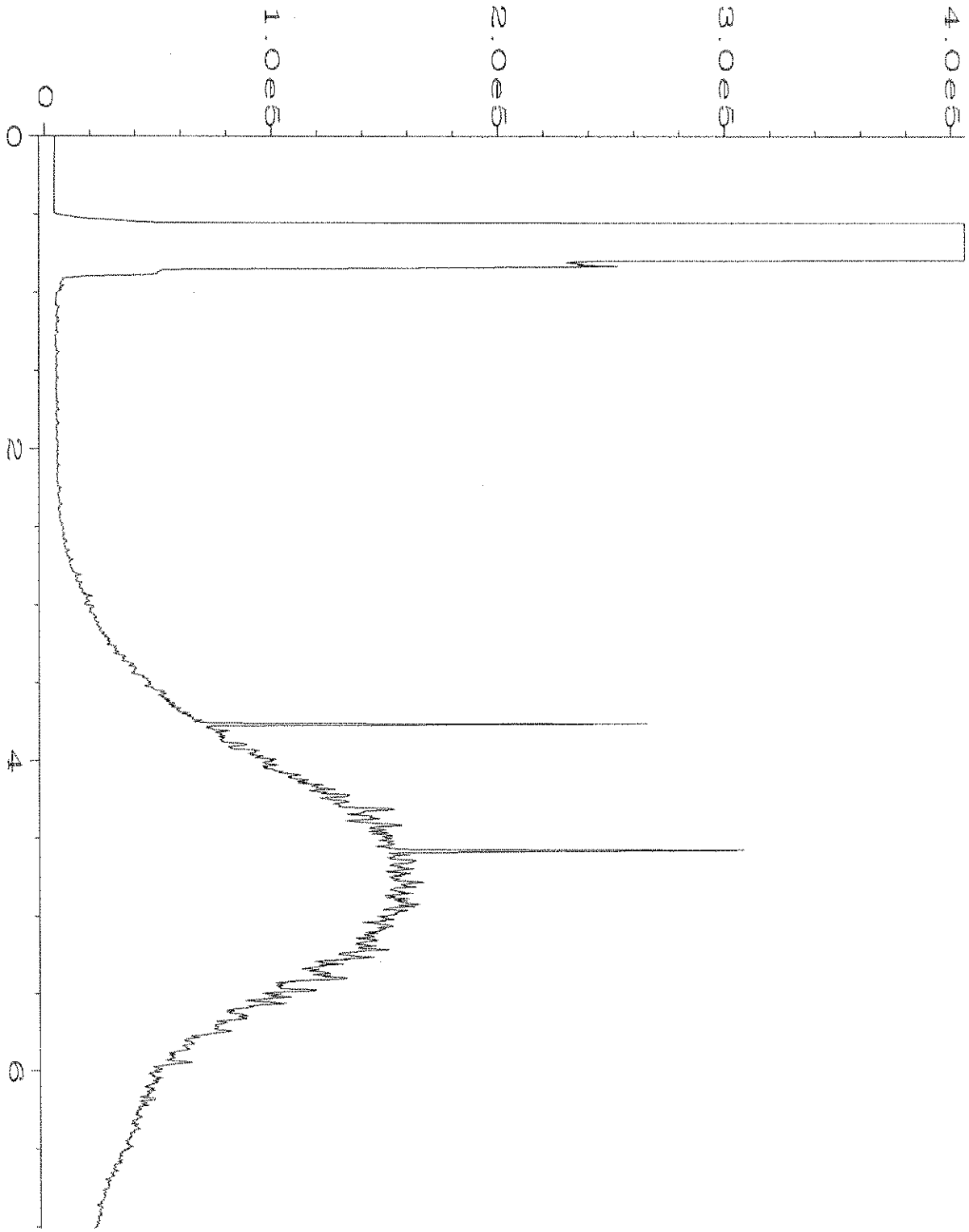


Data File Name	: C:\HPCHEM\6\DATA\03-17-20\033F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 33
Sample Name	: 003244-01	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 05:36 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 10:59 AM	Analysis Method	: DEFAULT.MTH

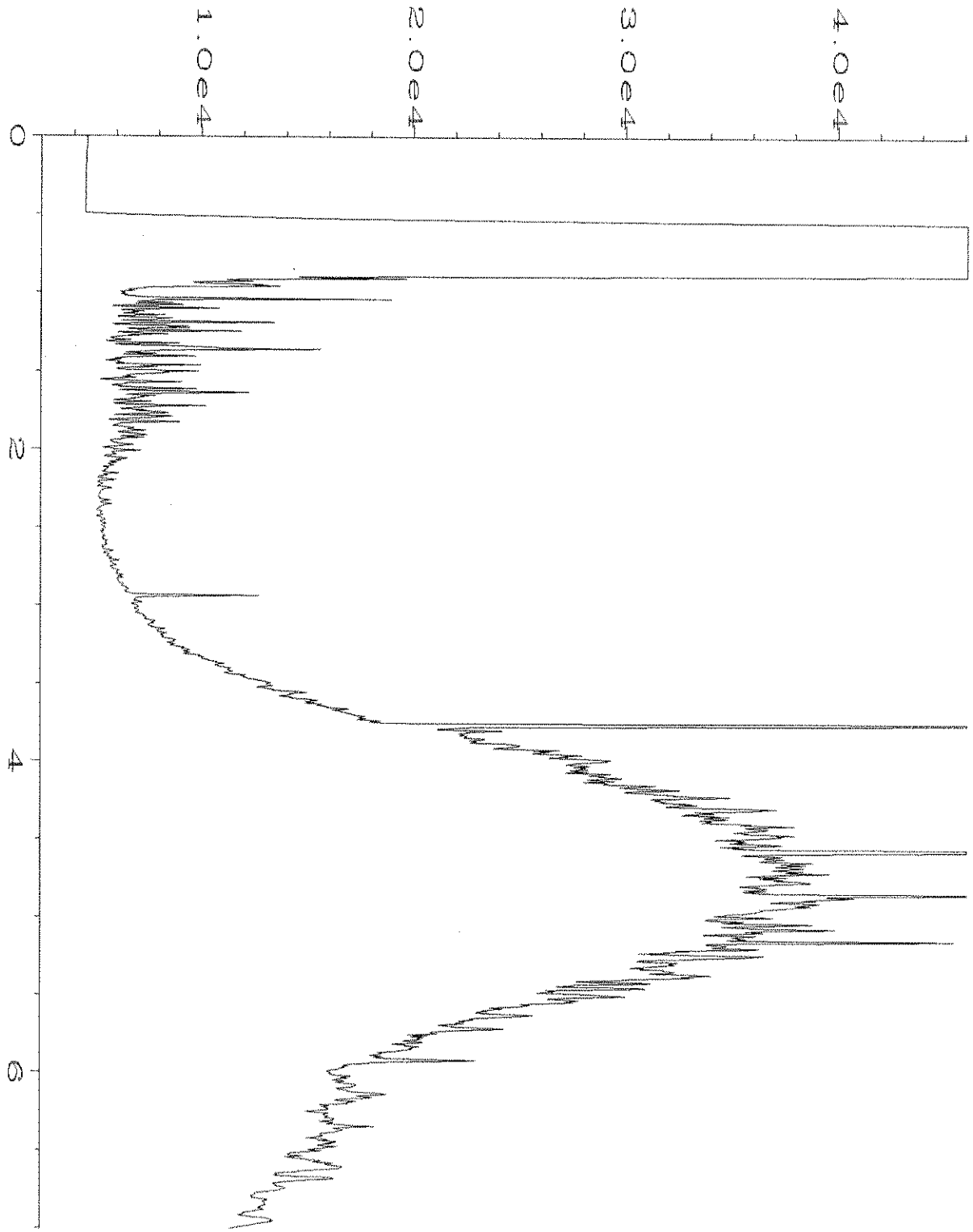


Data File Name : C:\HPCHEM\6\DATA\03-17-20\034F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-04
Run Time Bar Code:
Acquired on : 17 Mar 20 05:47 PM
Report Created on: 18 Mar 20 10:59 AM

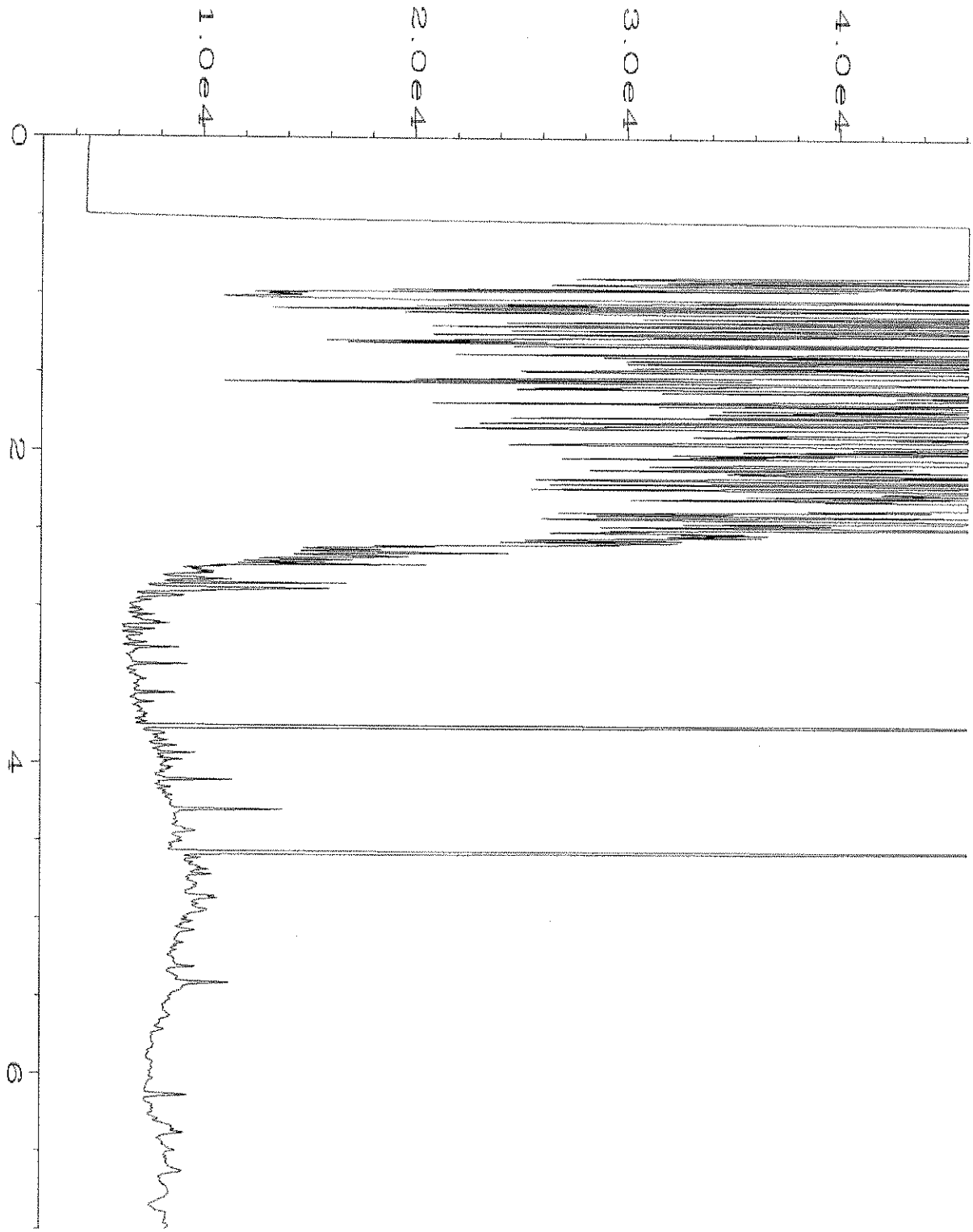
Page Number : 1
Vial Number : 34
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\6\DATA\03-17-20\035F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 35
Sample Name	: 003244-05	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 05:58 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:00 AM	Analysis Method	: DEFAULT.MTH

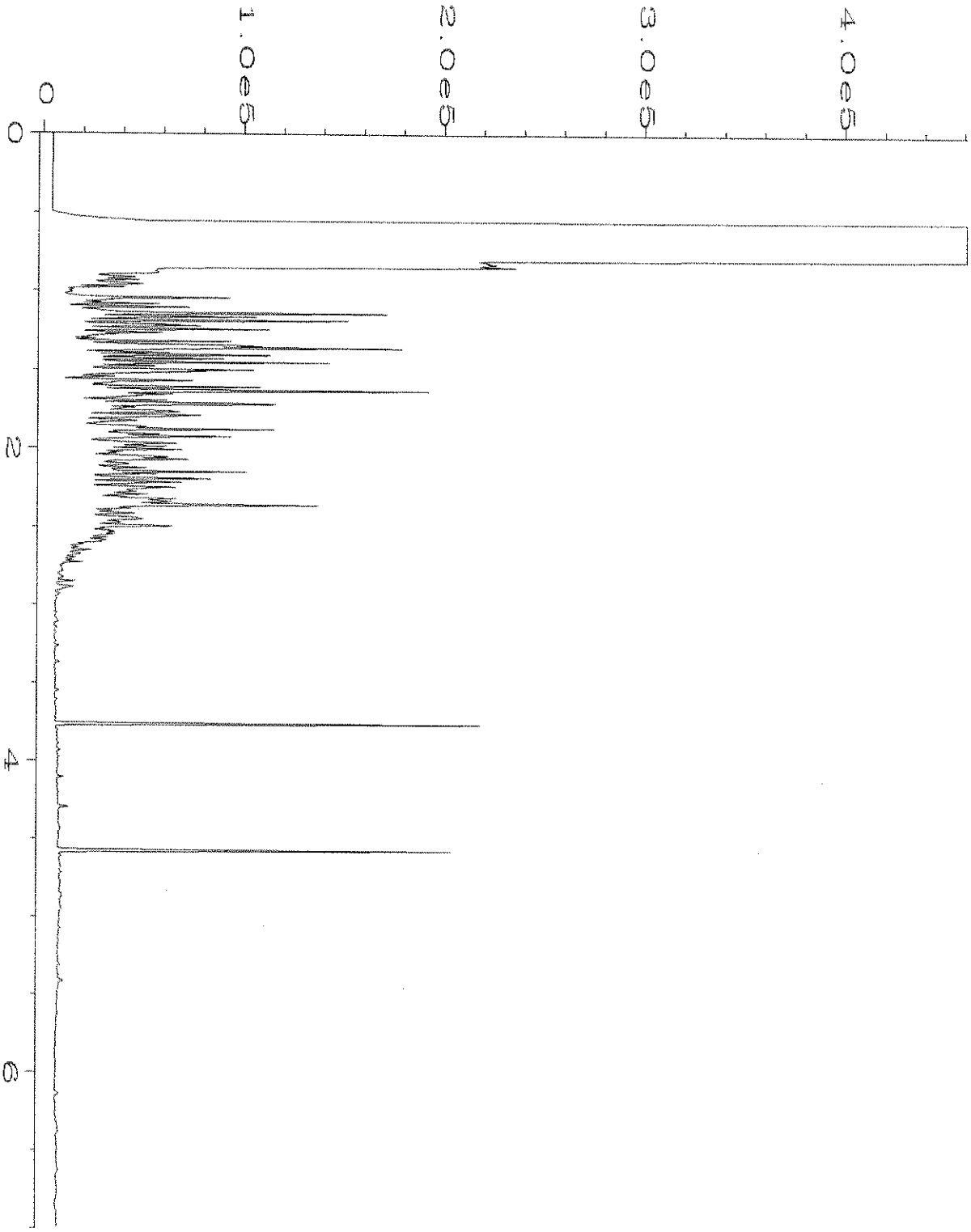


Data File Name	: C:\HPCHEM\6\DATA\03-17-20\036F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 36
Sample Name	: 003244-06	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 06:09 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:00 AM	Analysis Method	: DEFAULT.MTH

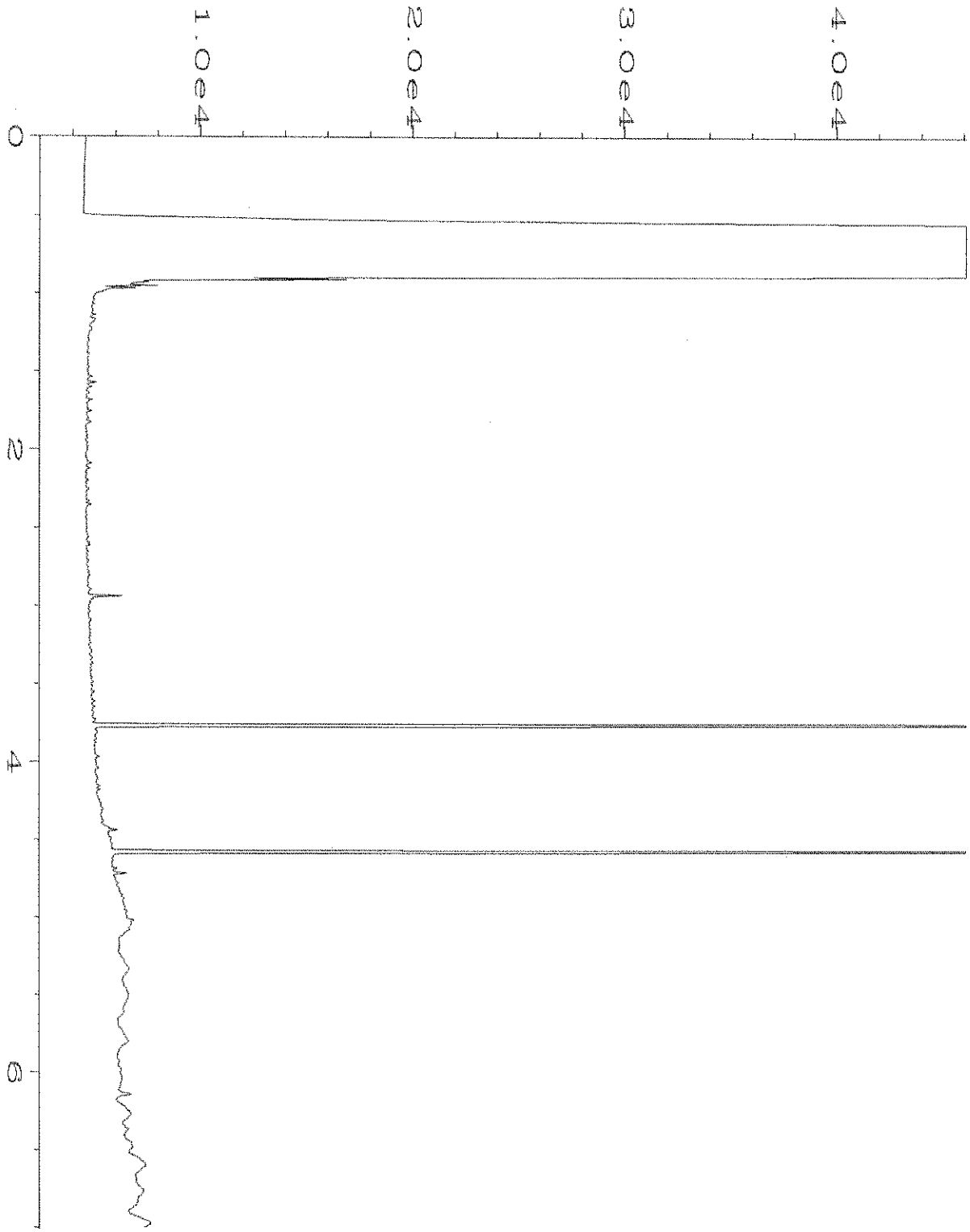


Data File Name : C:\HPCHEM\6\DATA\03-17-20\037F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-07
Run Time Bar Code:
Acquired on : 17 Mar 20 06:20 PM
Report Created on: 18 Mar 20 11:01 AM

Page Number : 1
Vial Number : 37
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

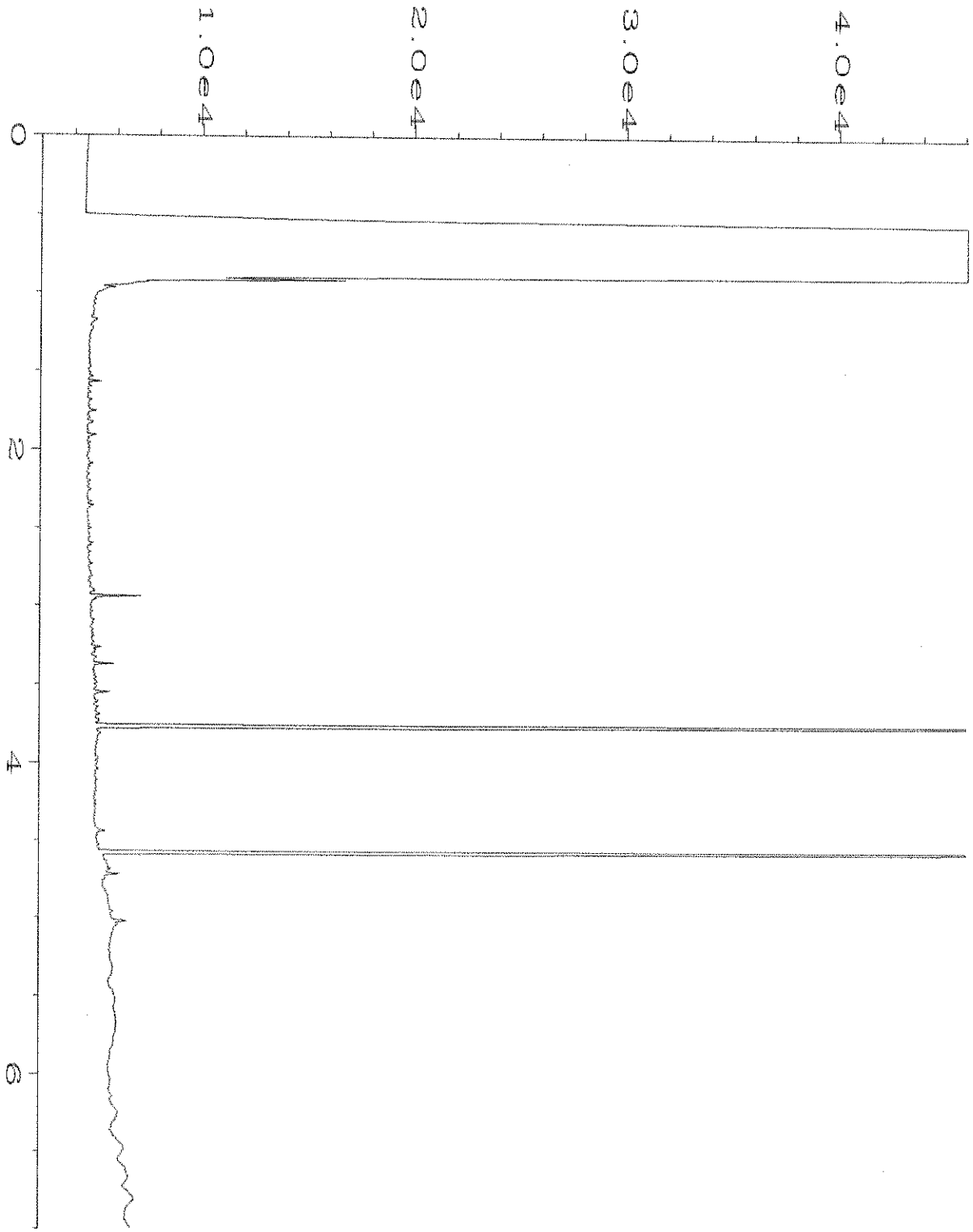


Data File Name	: C:\HPCHEM\6\DATA\03-17-20\037F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 37
Sample Name	: 003244-07	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 06:20 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 11:01 AM	Analysis Method	: DEFAULT.MTH



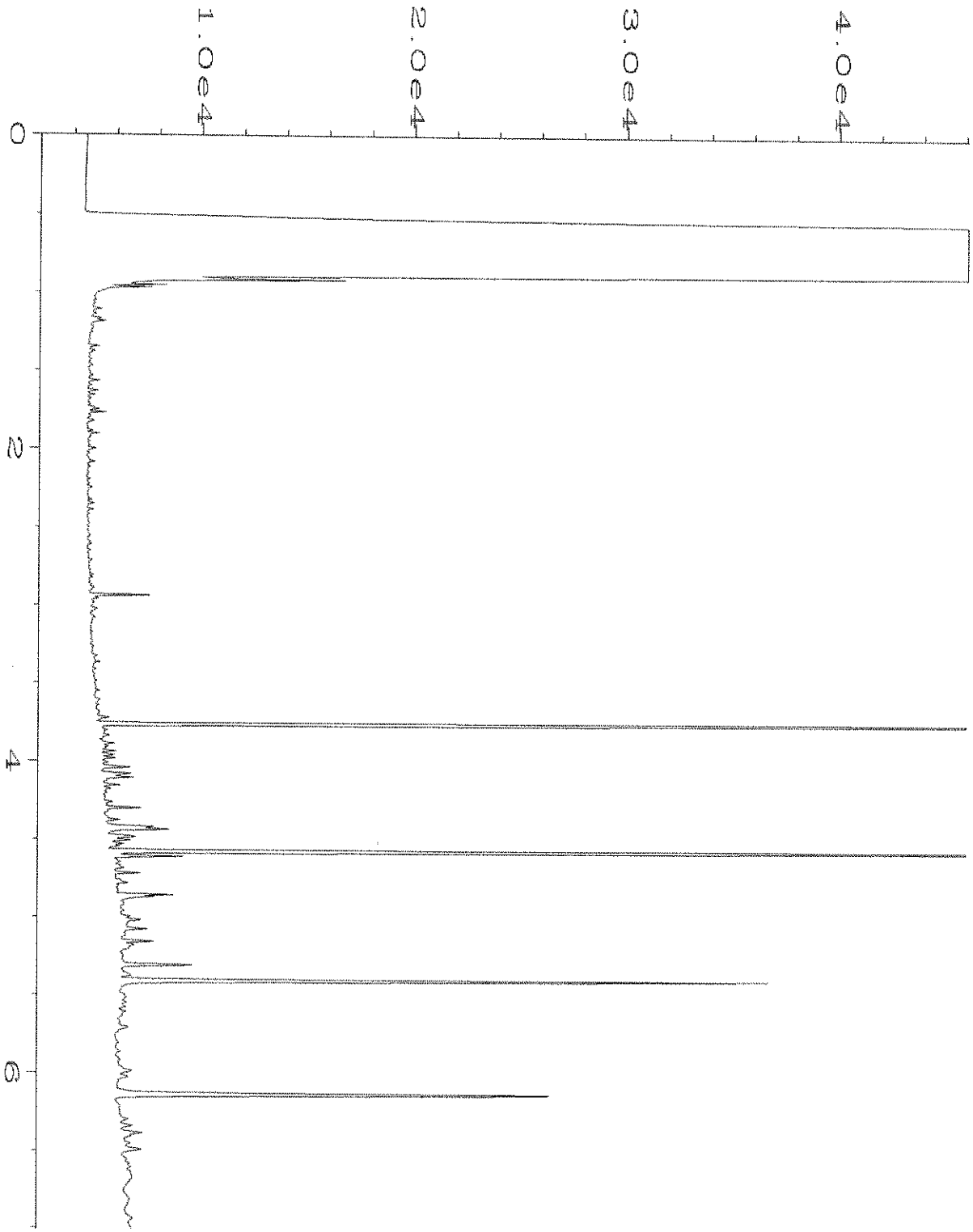
Data File Name : C:\HPCHEM\6\DATA\03-17-20\038F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-08
Run Time Bar Code:
Acquired on : 17 Mar 20 06:31 PM
Report Created on: 18 Mar 20 11:01 AM

Page Number : 1
Vial Number : 38
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



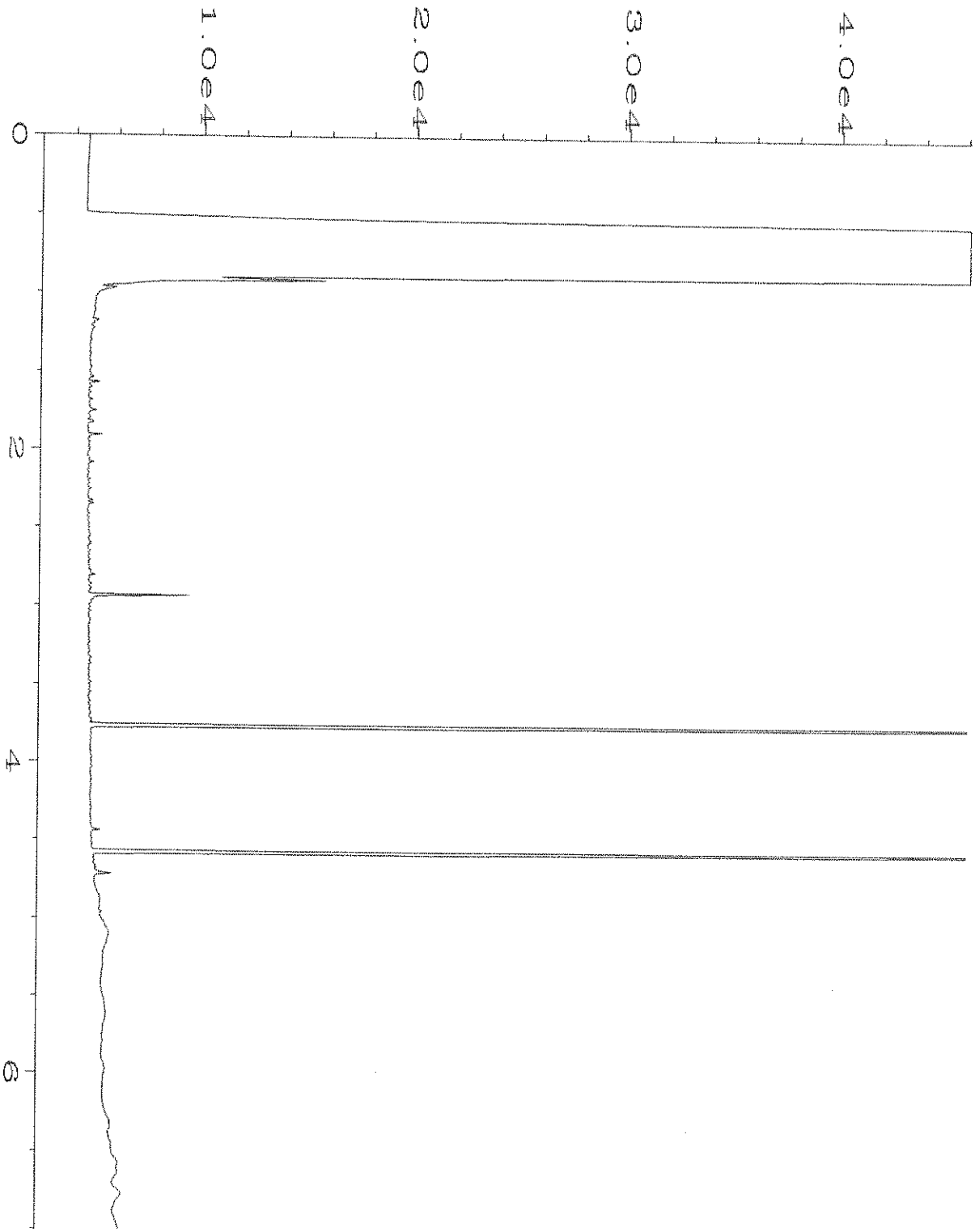
Data File Name : C:\HPCHEM\6\DATA\03-17-20\039F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-09
Run Time Bar Code:
Acquired on : 17 Mar 20 06:42 PM
Report Created on: 18 Mar 20 11:01 AM

Page Number : 1
Vial Number : 39
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

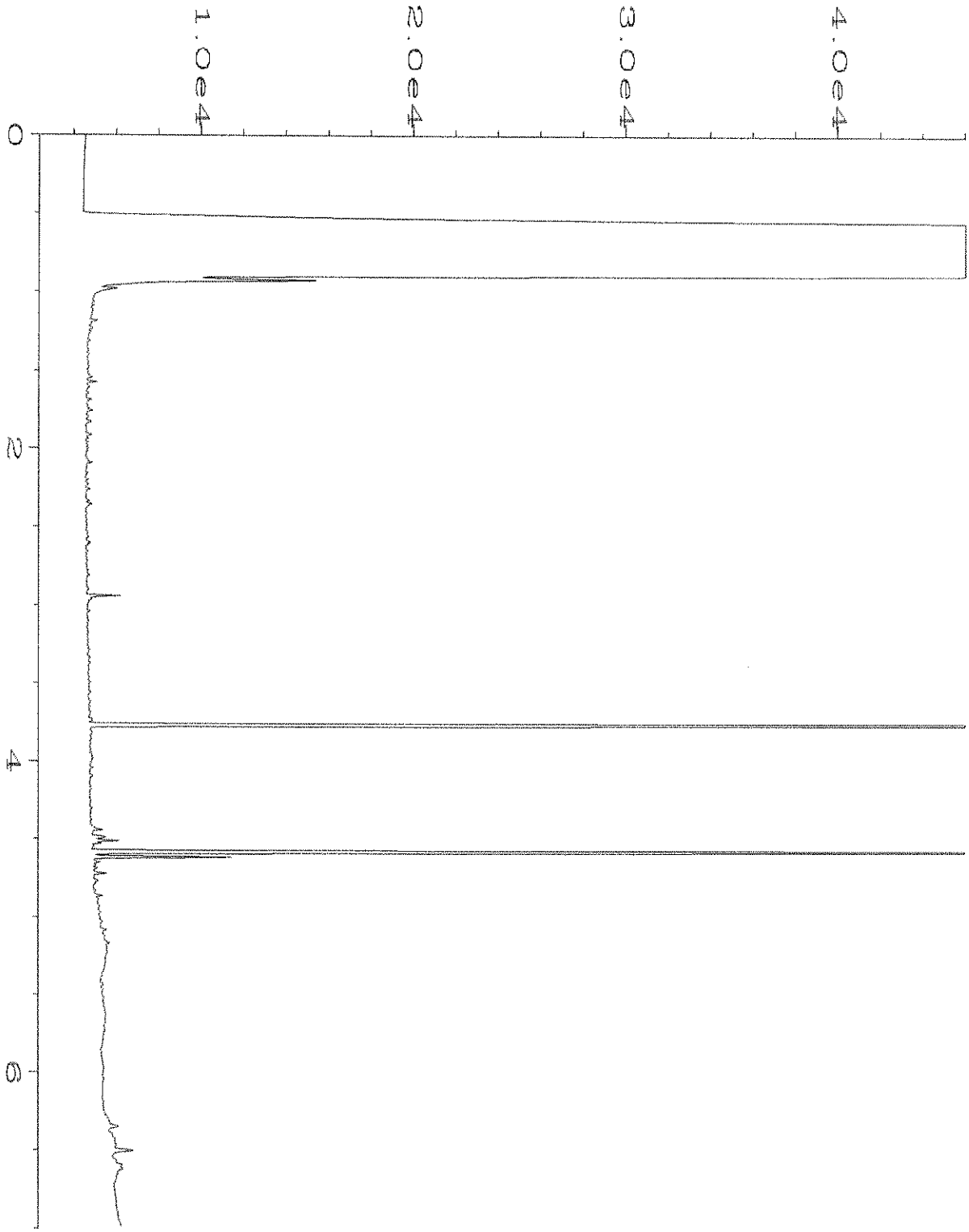


Data File Name : C:\HPCHEM\6\DATA\03-17-20\040F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-12
Run Time Bar Code:
Acquired on : 17 Mar 20 06:53 PM
Report Created on: 18 Mar 20 11:01 AM

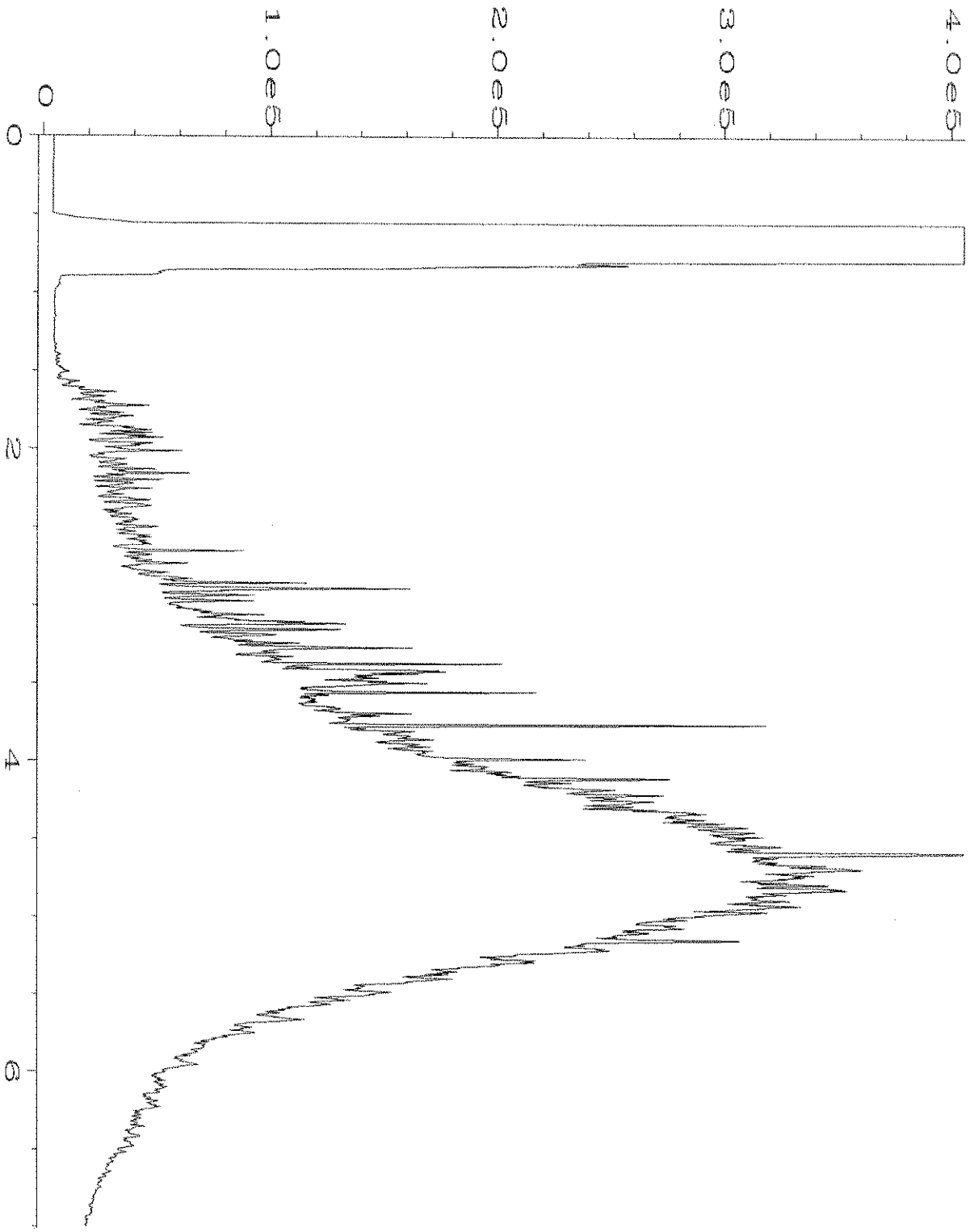
Page Number : 1
Vial Number : 40
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



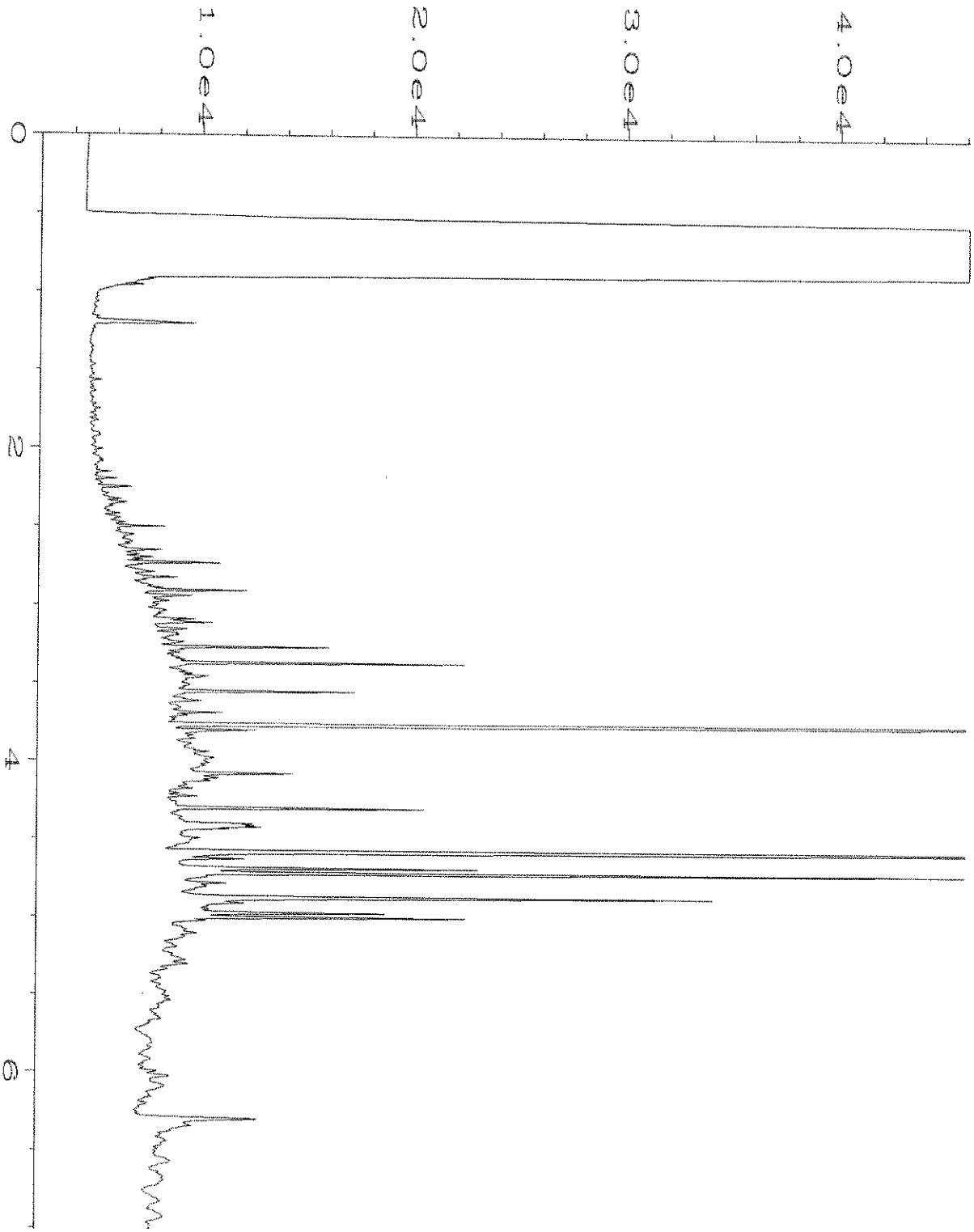
Data File Name	: C:\HPCHEM\6\DATA\03-17-20\041F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 41
Sample Name	: 003244-13	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 07:04 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:03 AM	Analysis Method	: DEFAULT.MTH



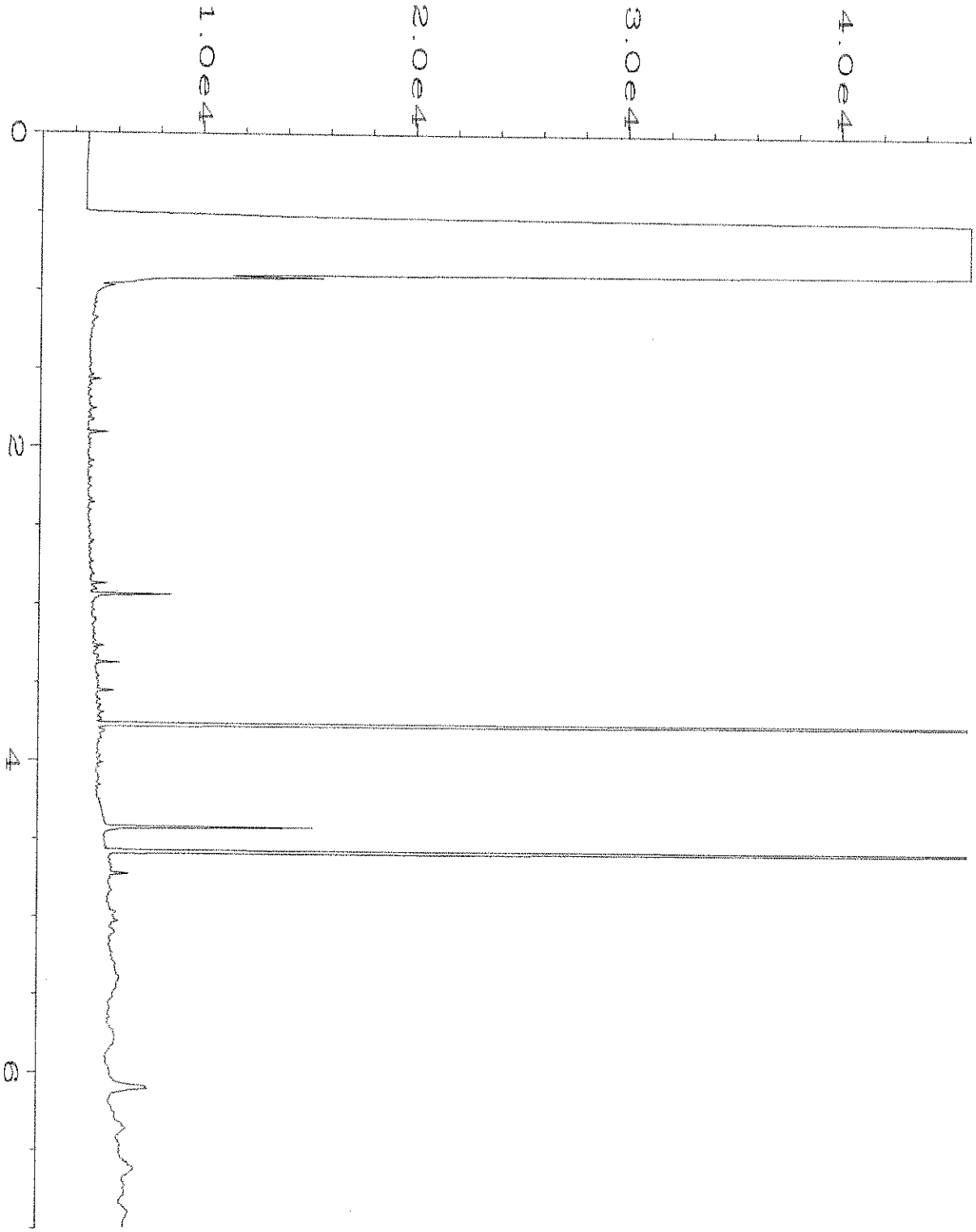
Data File Name	: C:\HPCHEM\6\DATA\03-17-20\042F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 42
Sample Name	: 003244-14	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 07:15 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:06 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\6\DATA\03-17-20\043F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 43
Sample Name	: 003244-15	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 07:26 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:06 AM	Analysis Method	: DEFAULT.MTH

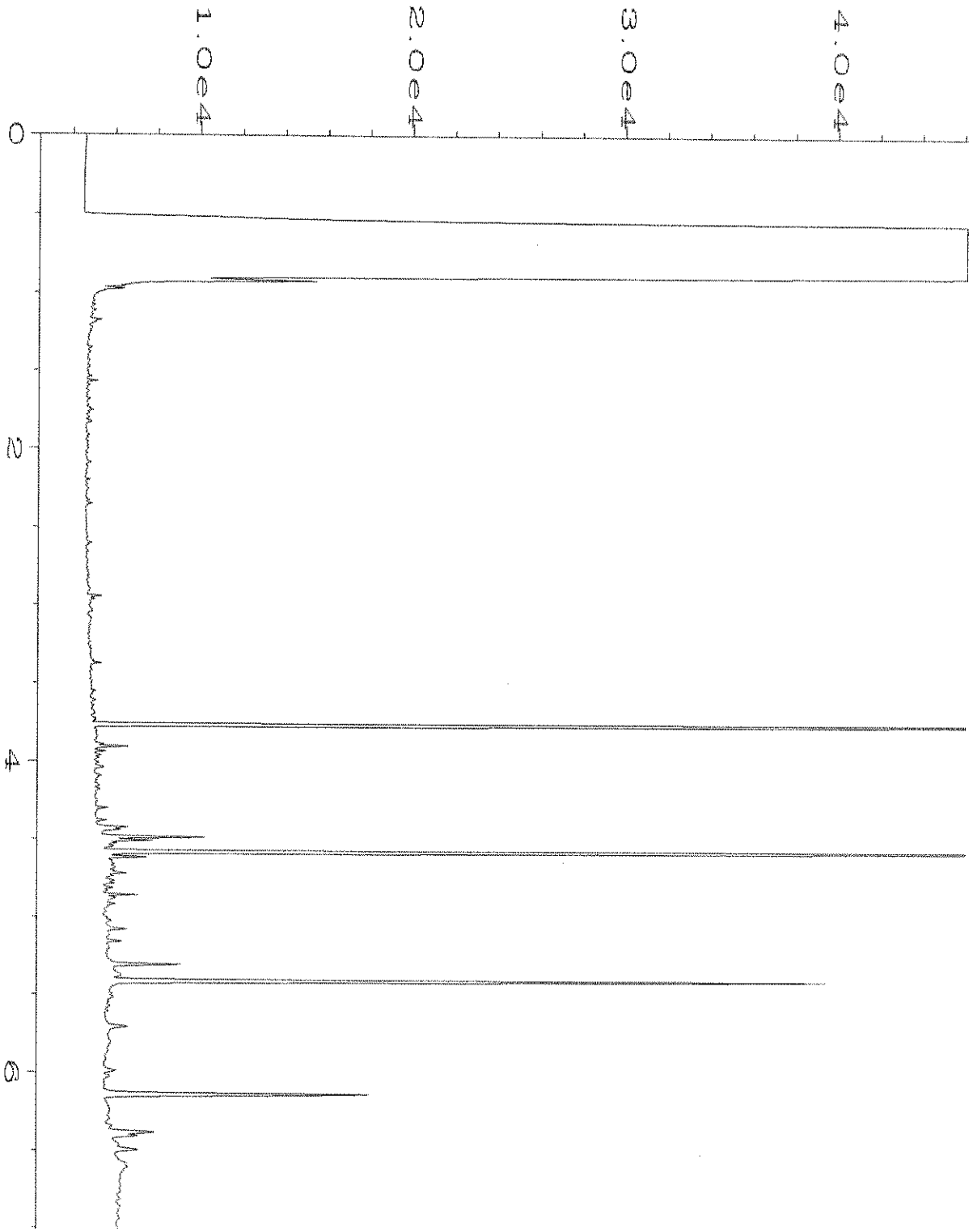


Data File Name	: C:\HPCHEM\6\DATA\03-17-20\045F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 45
Sample Name	: 003244-16	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 07:47 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:07 AM	Analysis Method	: DEFAULT.MTH



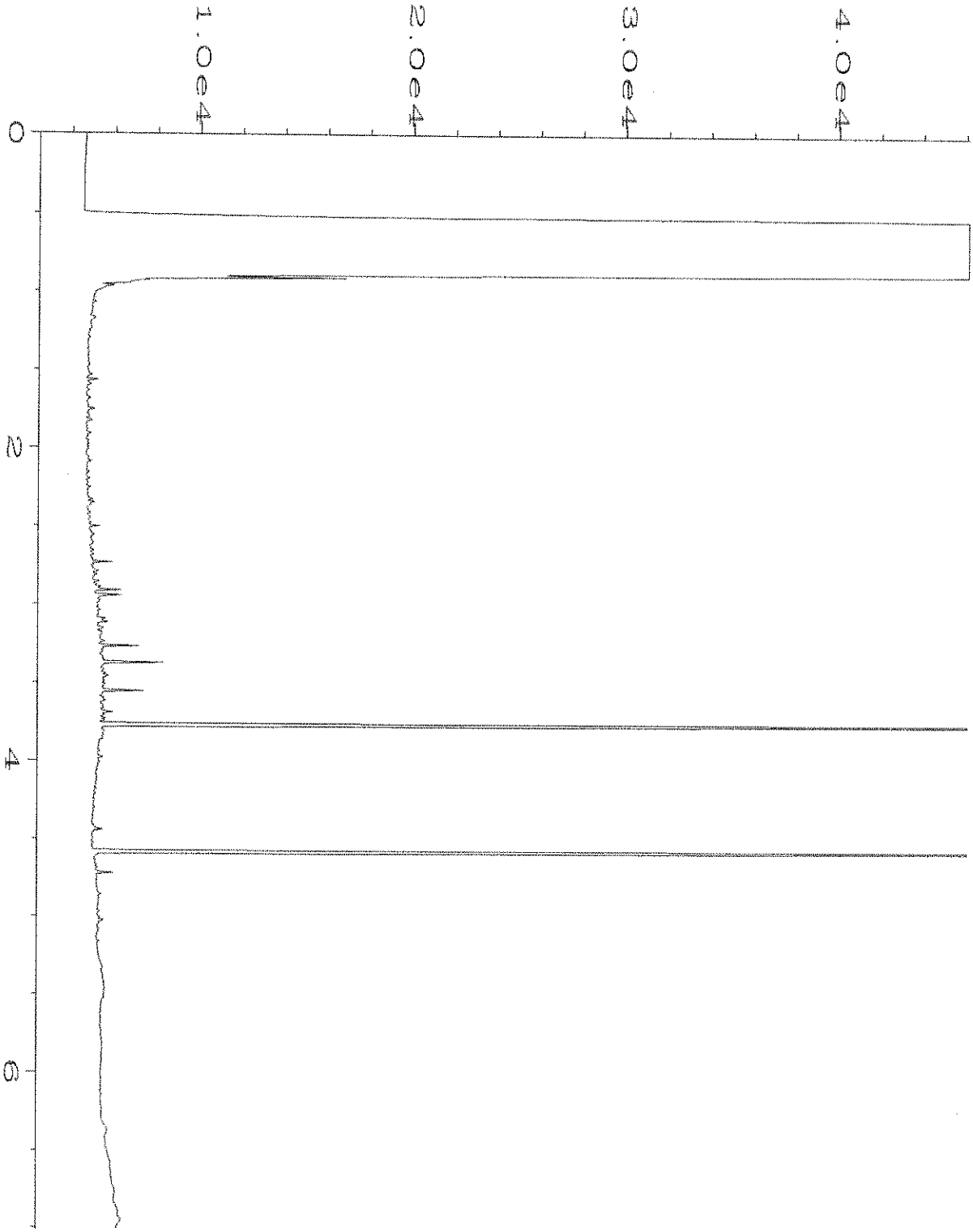
Data File Name : C:\HPCHEM\6\DATA\03-17-20\046F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-17
Run Time Bar Code:
Acquired on : 17 Mar 20 07:58 PM
Report Created on: 18 Mar 20 11:07 AM

Page Number : 1
Vial Number : 46
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

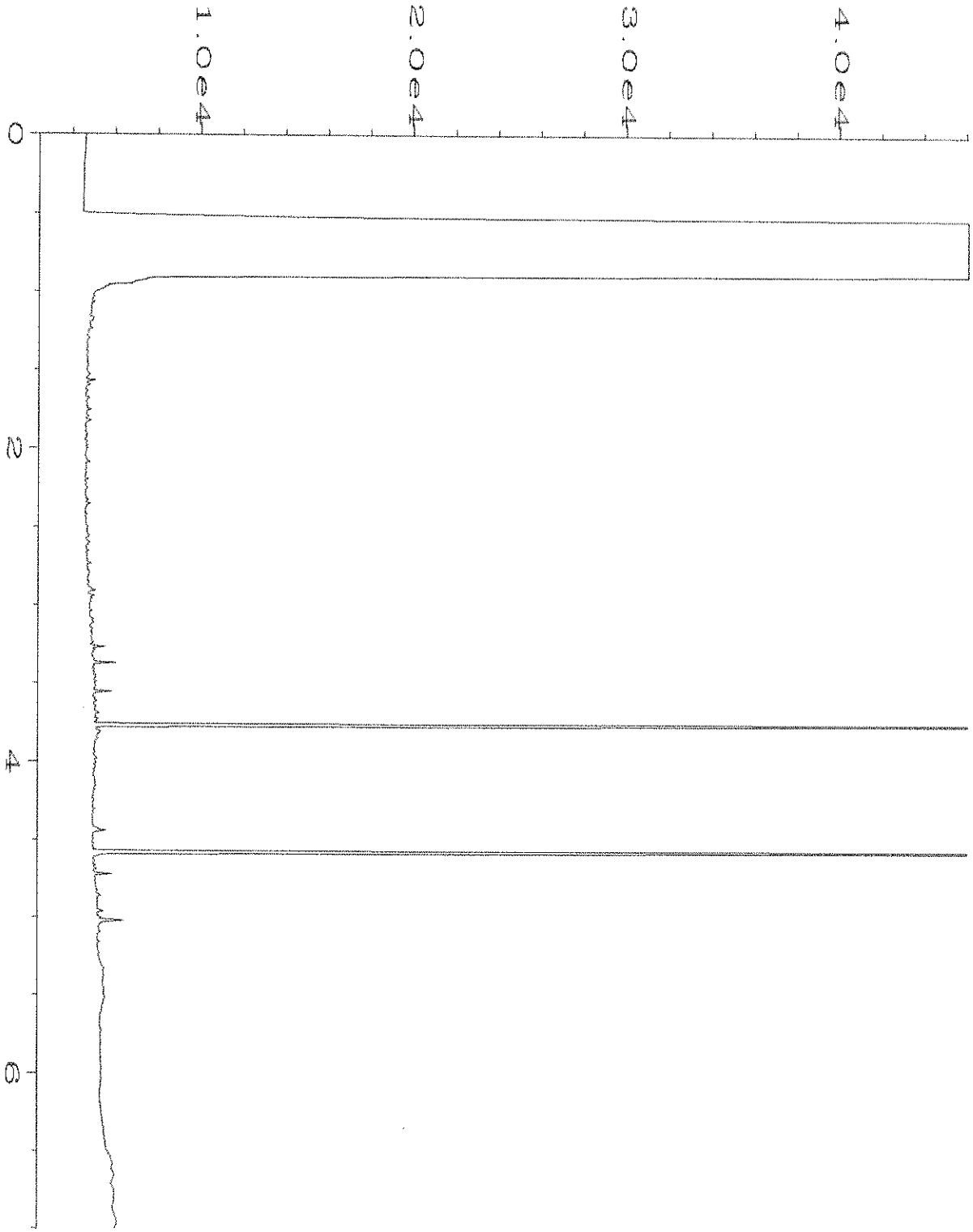


Data File Name : C:\HPCHEM\6\DATA\03-17-20\047F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-18
Run Time Bar Code:
Acquired on : 17 Mar 20 08:09 PM
Report Created on: 18 Mar 20 11:07 AM

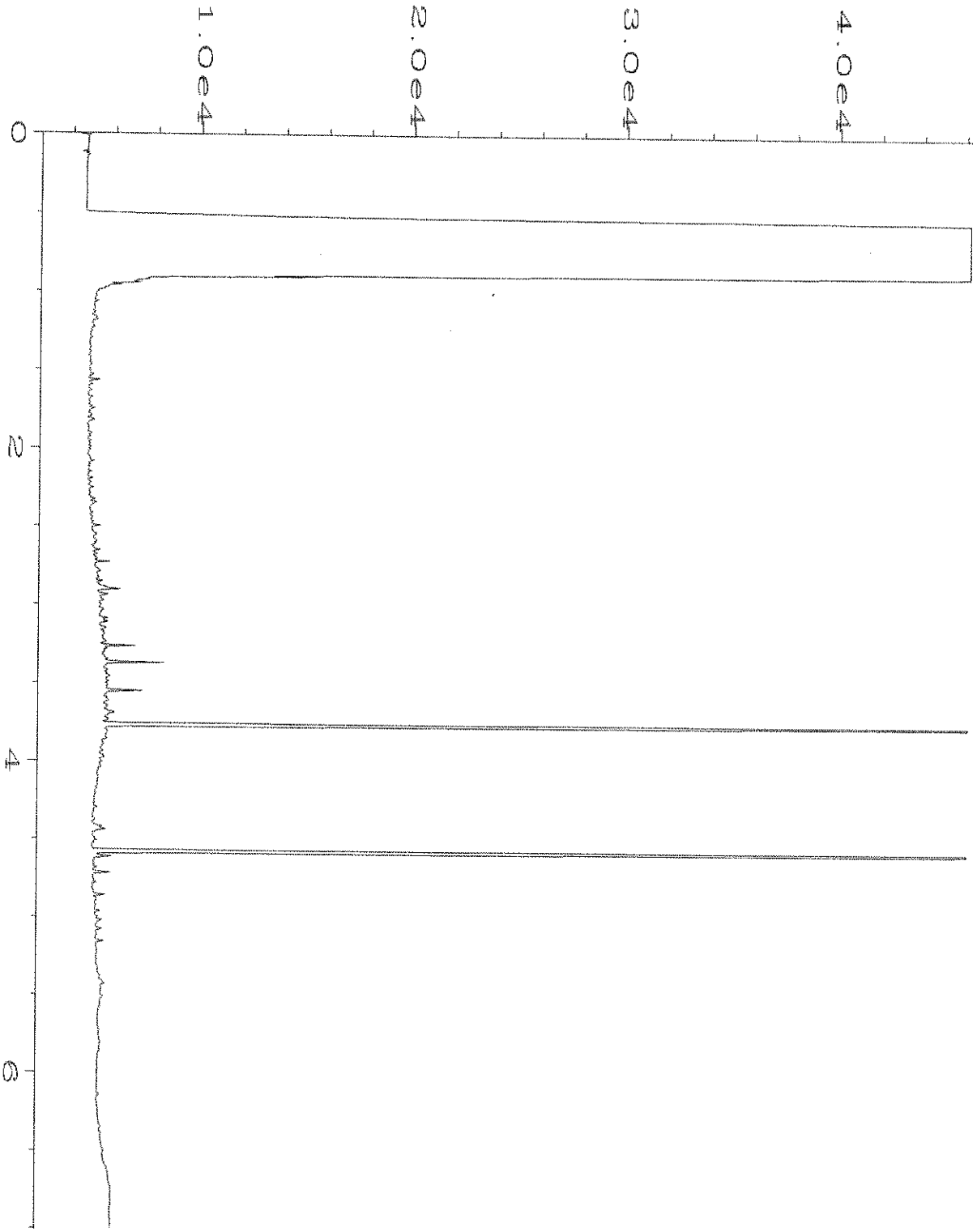
Page Number : 1
Vial Number : 47
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



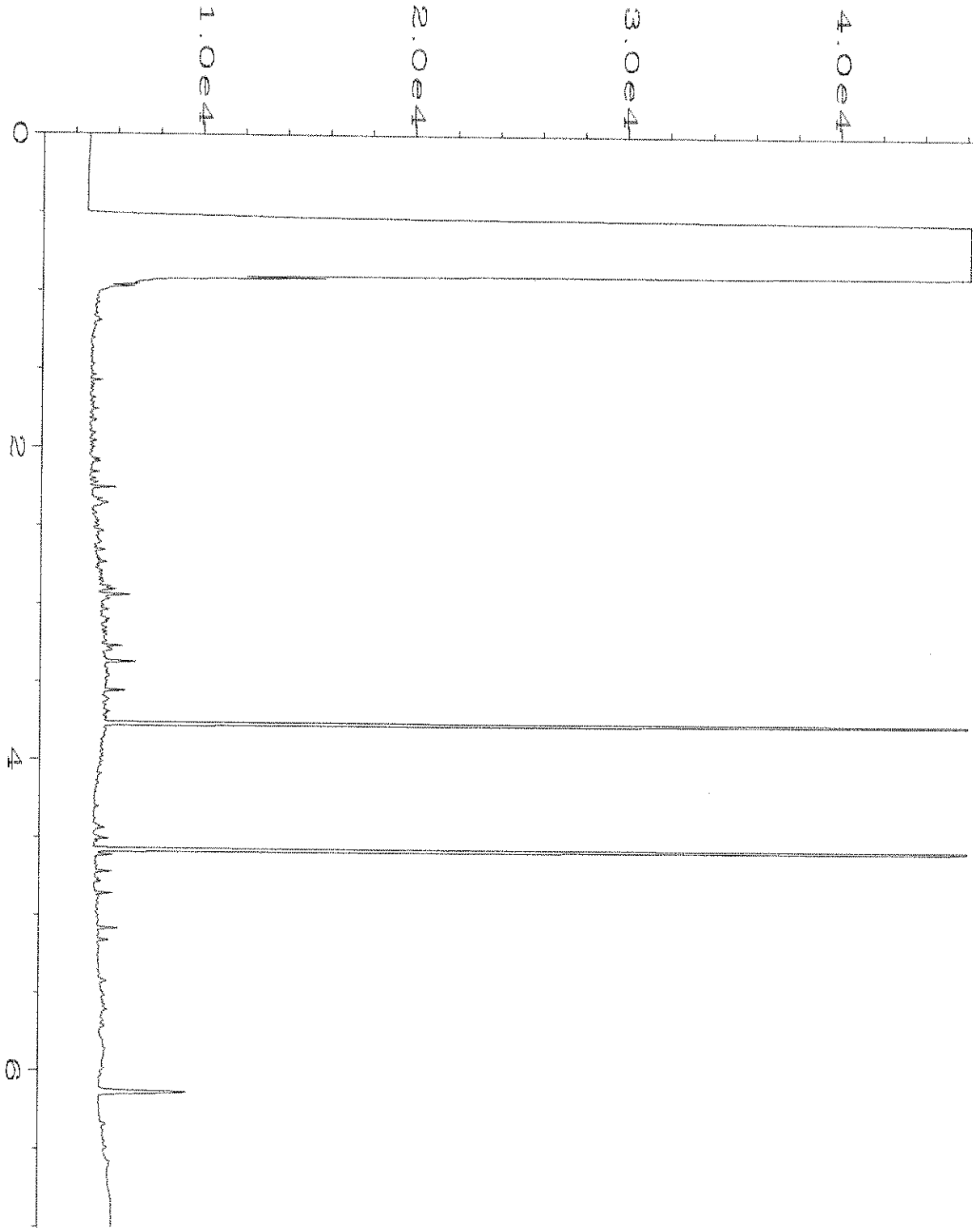
Data File Name	: C:\HPCHEM\6\DATA\03-17-20\048F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 48
Sample Name	: 003244-22	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 08:20 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 11:07 AM	Analysis Method	: DEFAULT.MTH



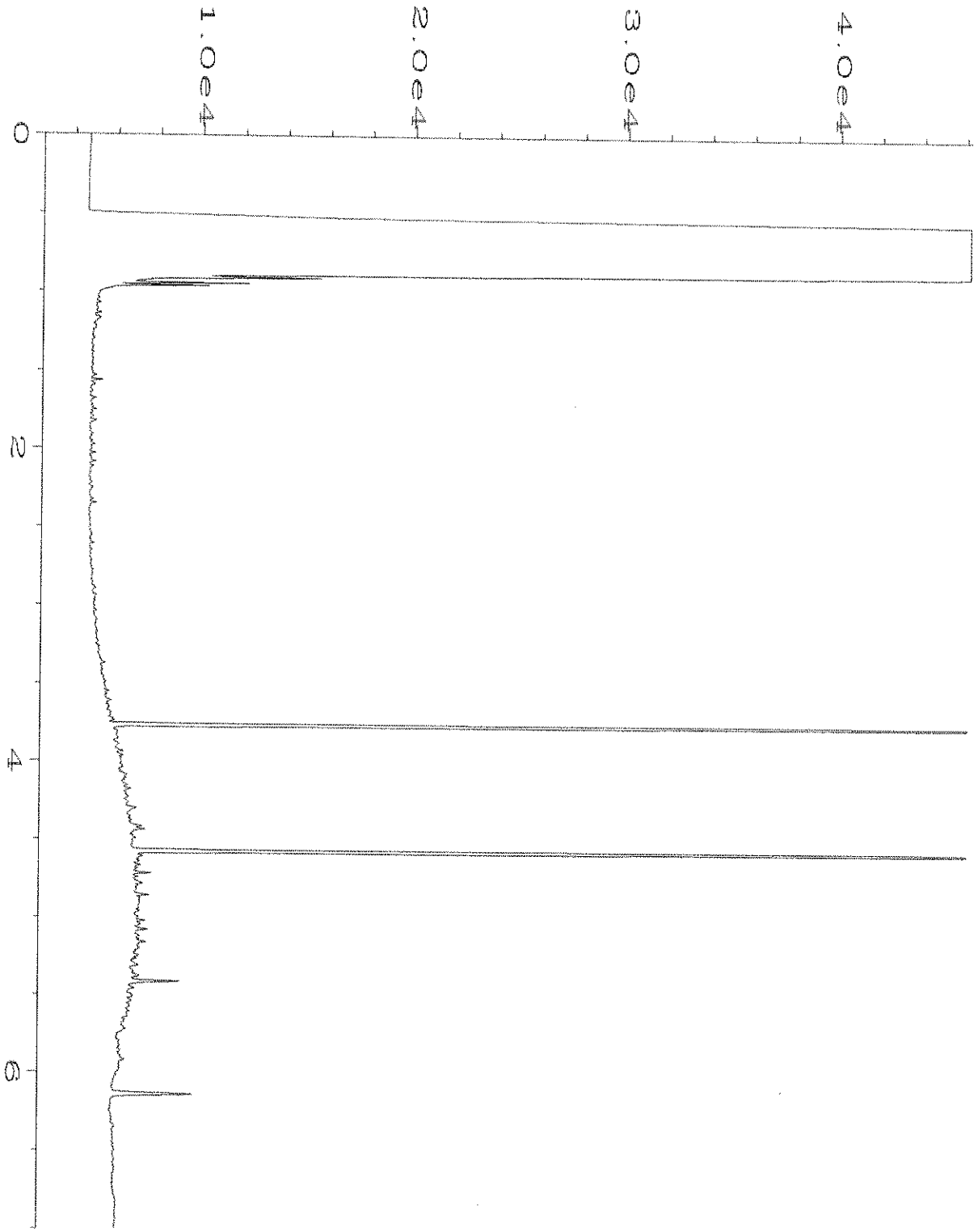
Data File Name	: C:\HPCHEM\6\DATA\03-17-20\049F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 49
Sample Name	: 003244-23	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 08:31 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 11:07 AM	Analysis Method	: DEFAULT.MTH



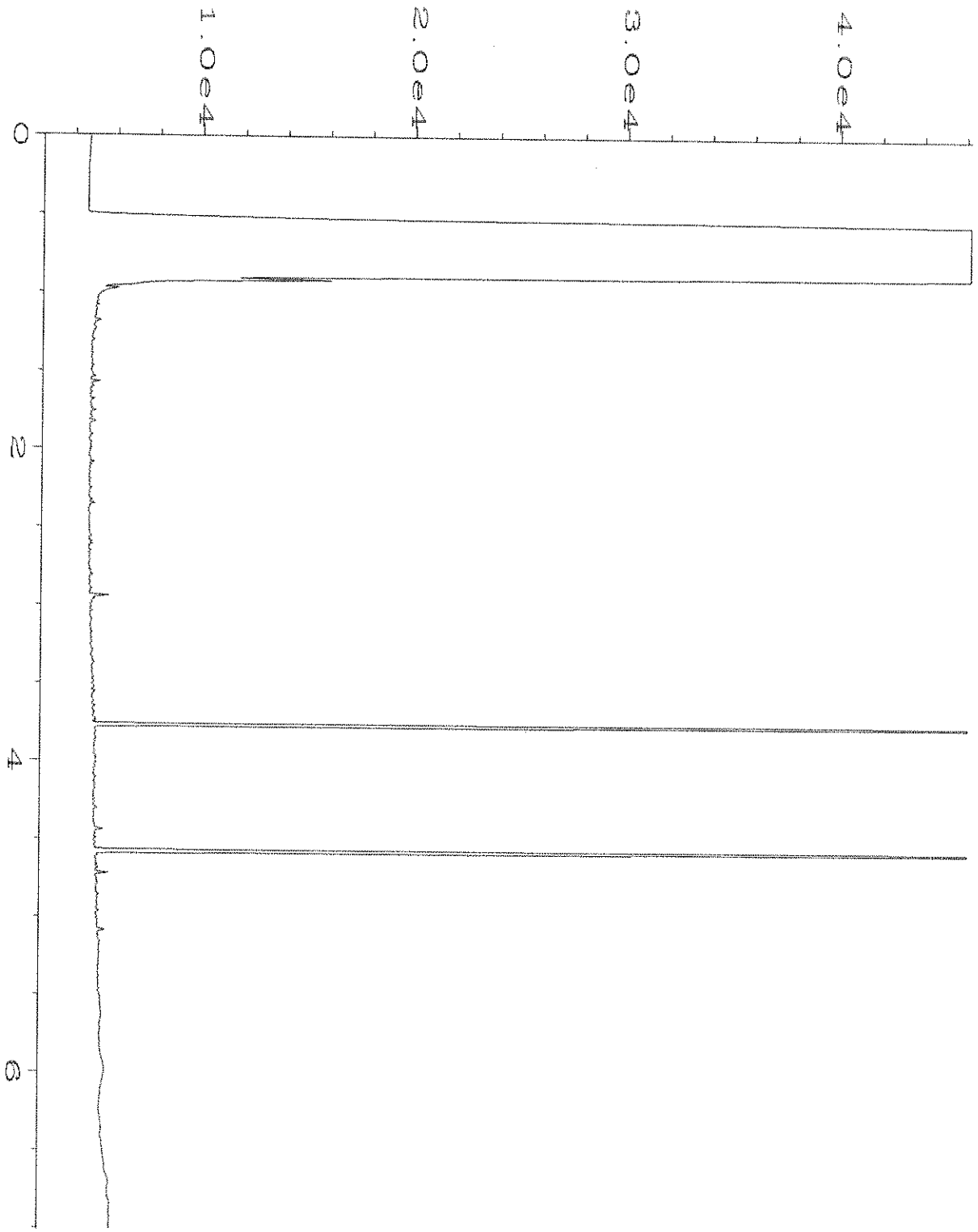
Data File Name	: C:\HPCHEM\6\DATA\03-17-20\050F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 50
Sample Name	: 003244-27	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 08:42 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:07 AM	Analysis Method	: DEFAULT.MTH



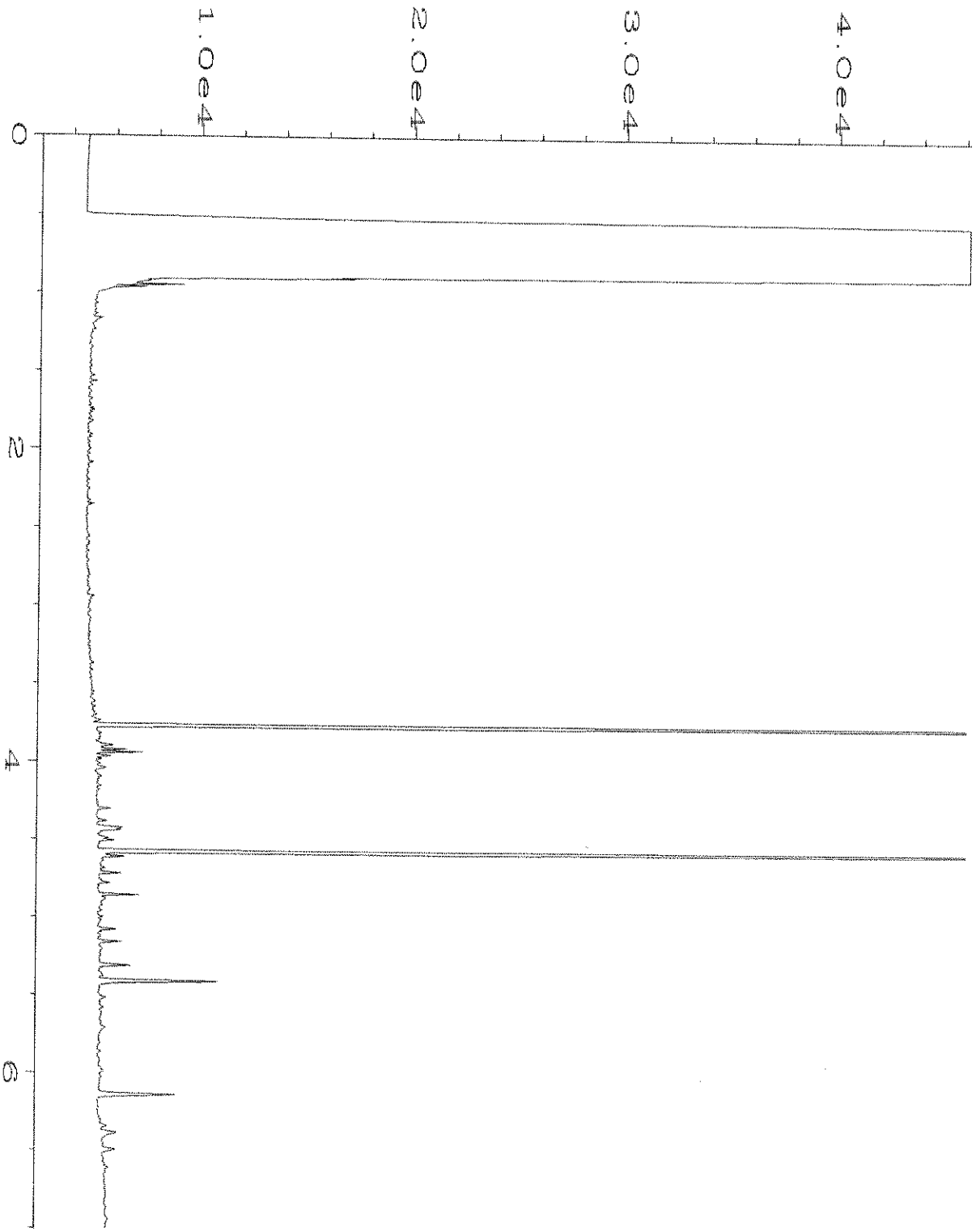
Data File Name	: C:\HPCHEM\6\DATA\03-17-20\051F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 51
Sample Name	: 003244-31	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 08:53 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:07 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\6\DATA\03-17-20\052F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 52
Sample Name	: 003244-33	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 09:04 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:07 AM	Analysis Method	: DEFAULT.MTH

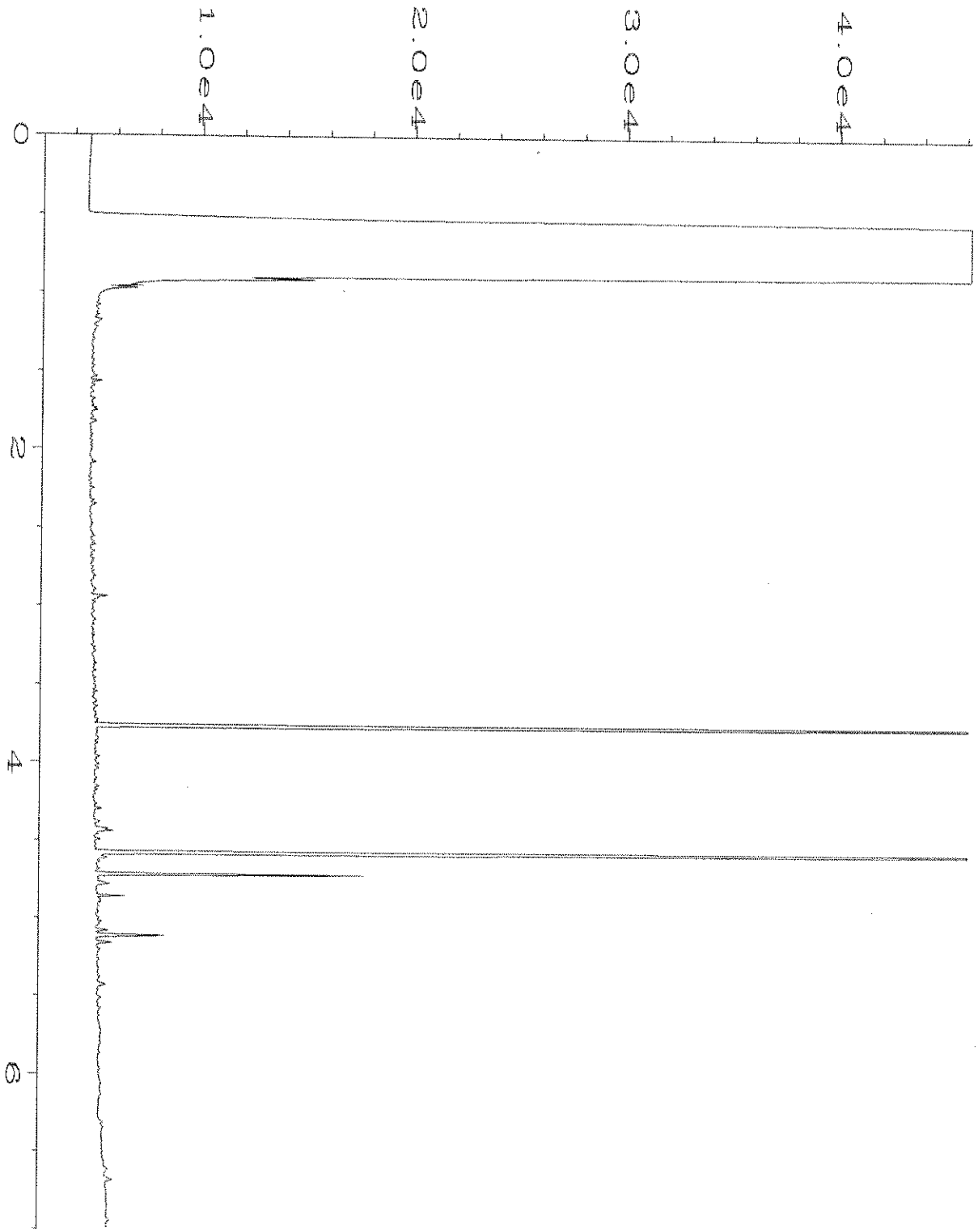


Data File Name	: C:\HPCHEM\6\DATA\03-17-20\053F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 53
Sample Name	: 003244-34	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 09:15 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:08 AM	Analysis Method	: DEFAULT.MTH

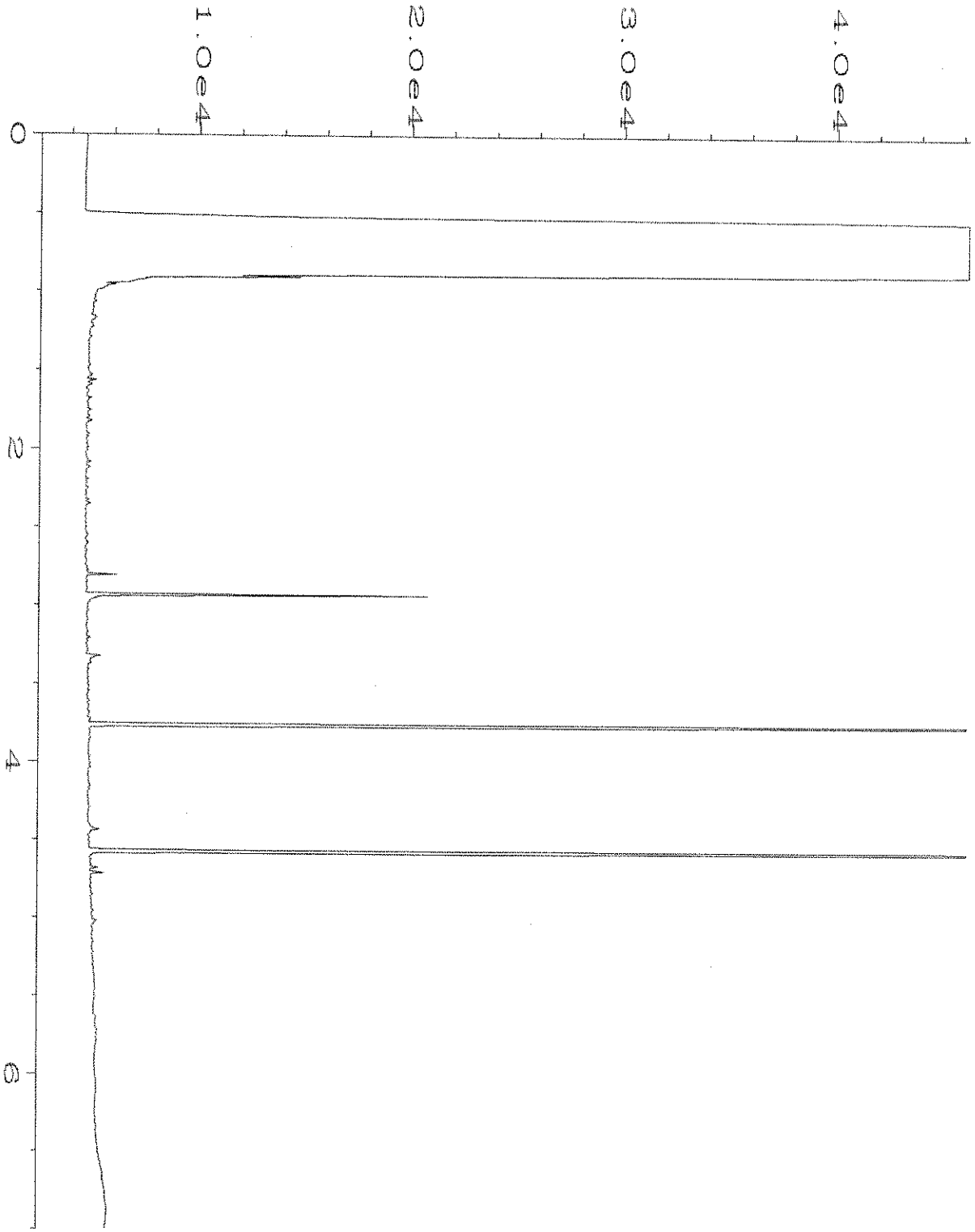


Data File Name : C:\HPCHEM\6\DATA\03-17-20\055F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-35
Run Time Bar Code:
Acquired on : 17 Mar 20 09:37 PM
Report Created on: 18 Mar 20 11:08 AM

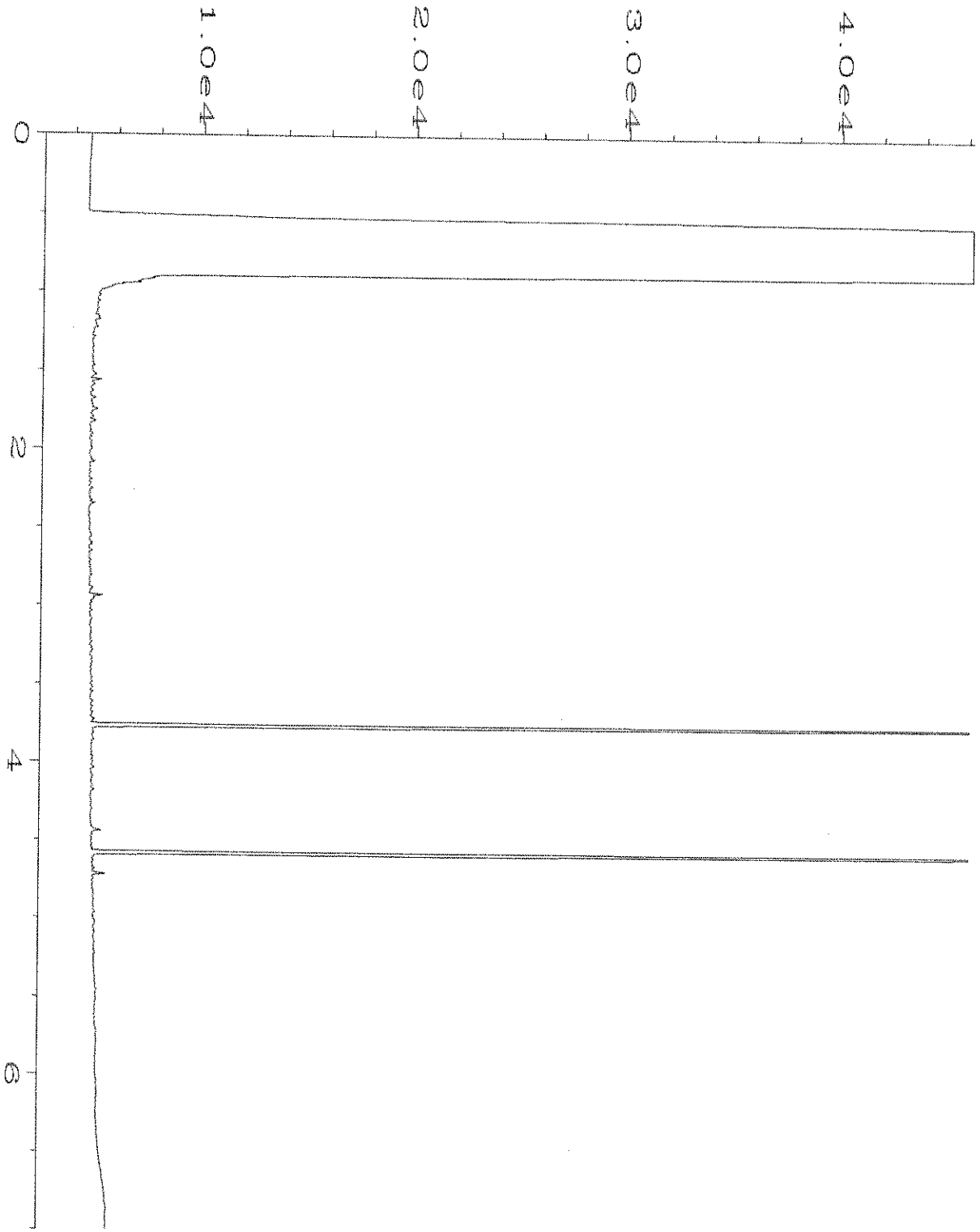
Page Number : 1
Vial Number : 55
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\6\DATA\03-17-20\057F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 57
Sample Name	: 003244-36	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 09:59 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:08 AM	Analysis Method	: DEFAULT.MTH

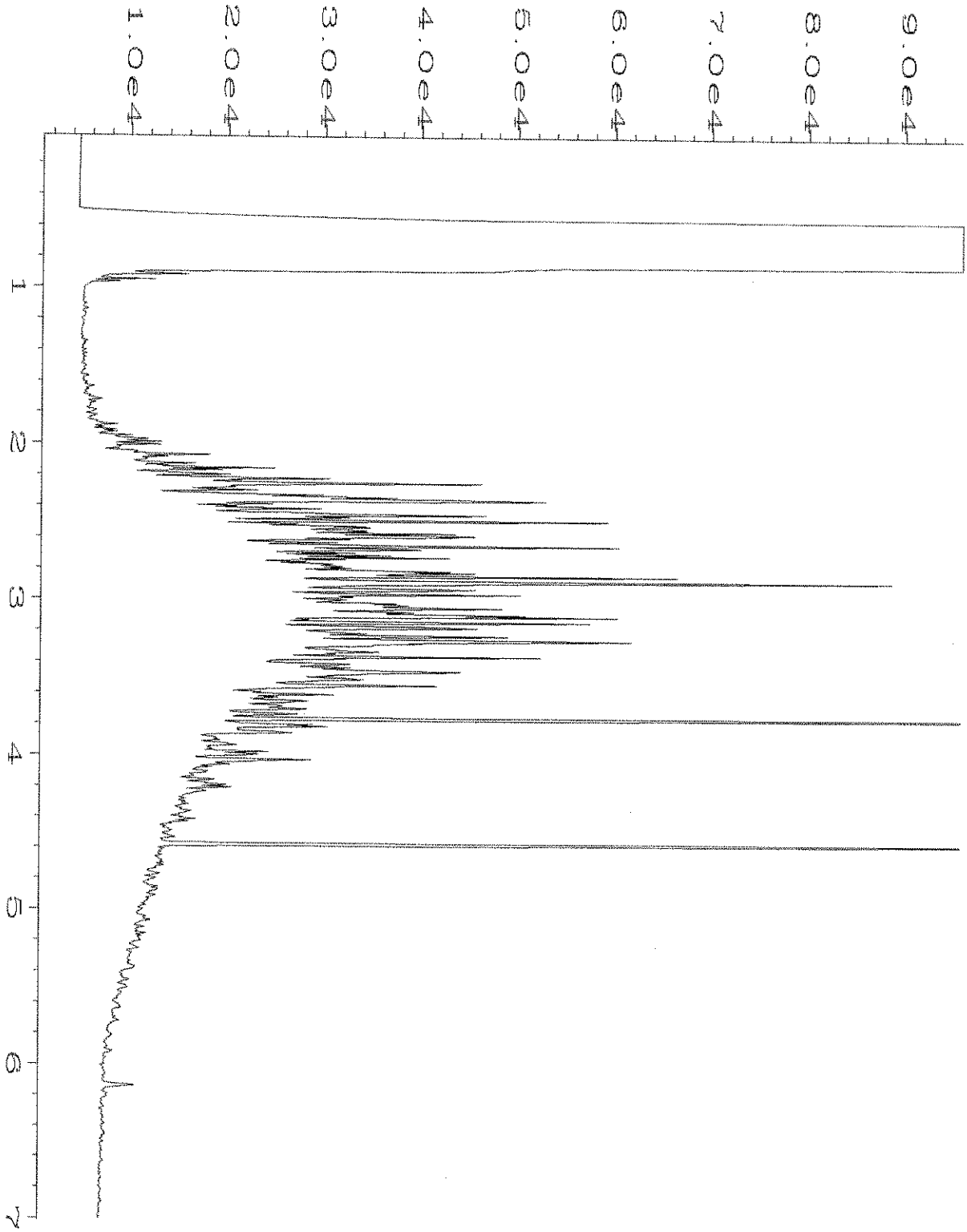


Data File Name	: C:\HPCHEM\6\DATA\03-17-20\058F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 58
Sample Name	: 003244-38	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 10:10 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 11:08 AM	Analysis Method	: DEFAULT.MTH



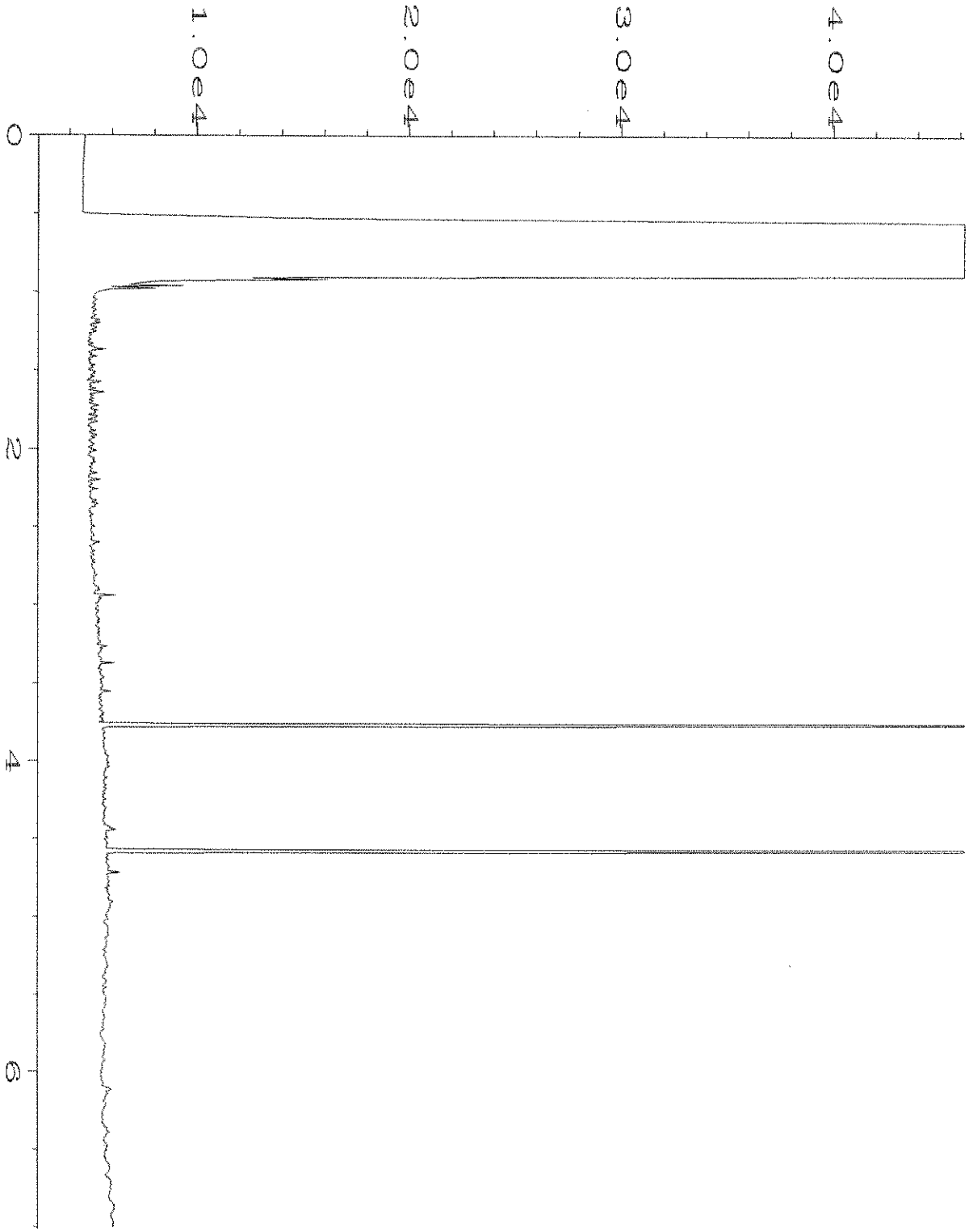
Data File Name : C:\HPCHEM\6\DATA\03-17-20\059F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-41
Run Time Bar Code:
Acquired on : 17 Mar 20 10:20 PM
Report Created on: 18 Mar 20 11:08 AM

Page Number : 1
Vial Number : 59
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

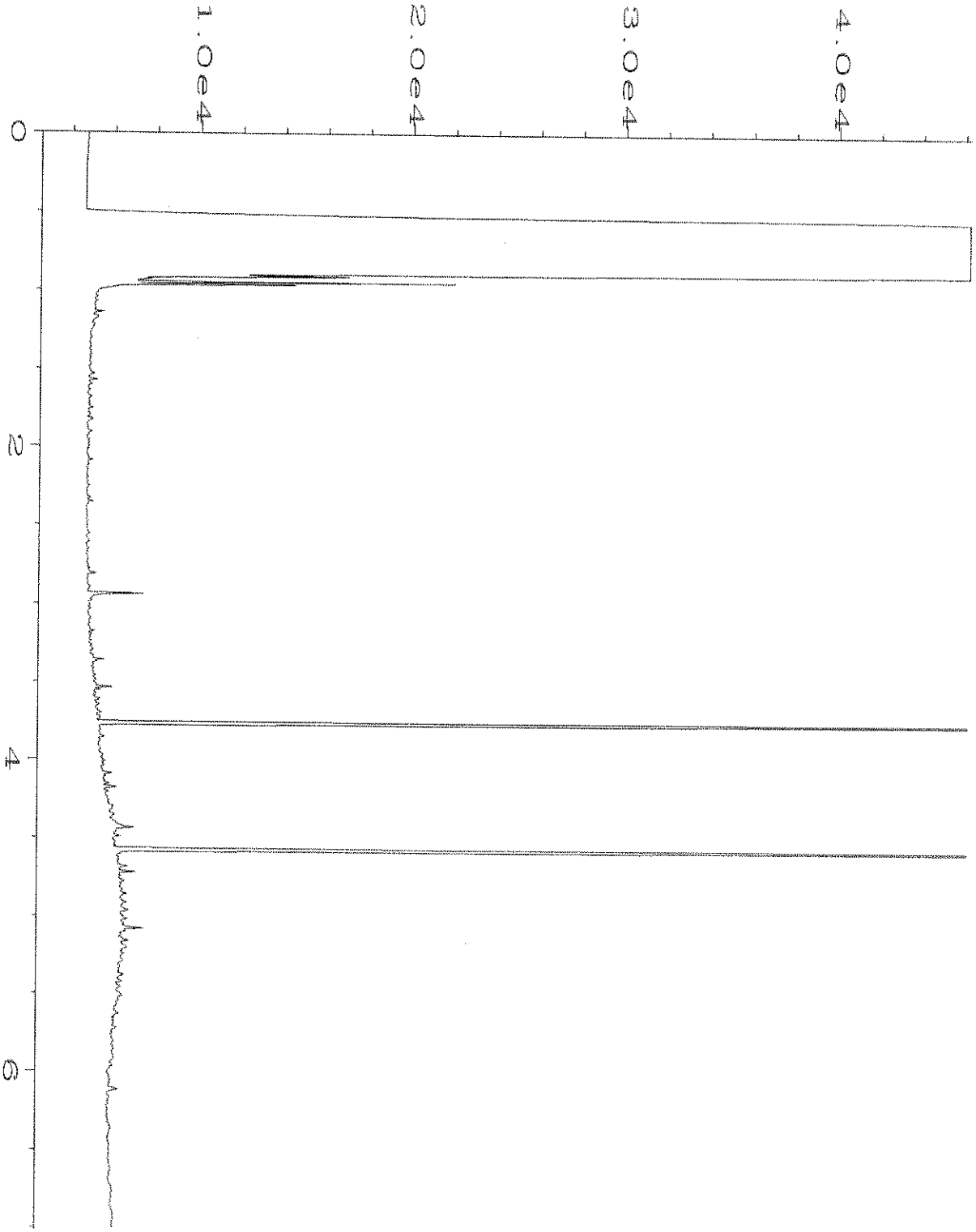


Data File Name : C:\HPCHEM\6\DATA\03-17-20\060F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-42
Run Time Bar Code:
Acquired on : 17 Mar 20 10:31 PM
Report Created on: 18 Mar 20 11:09 AM

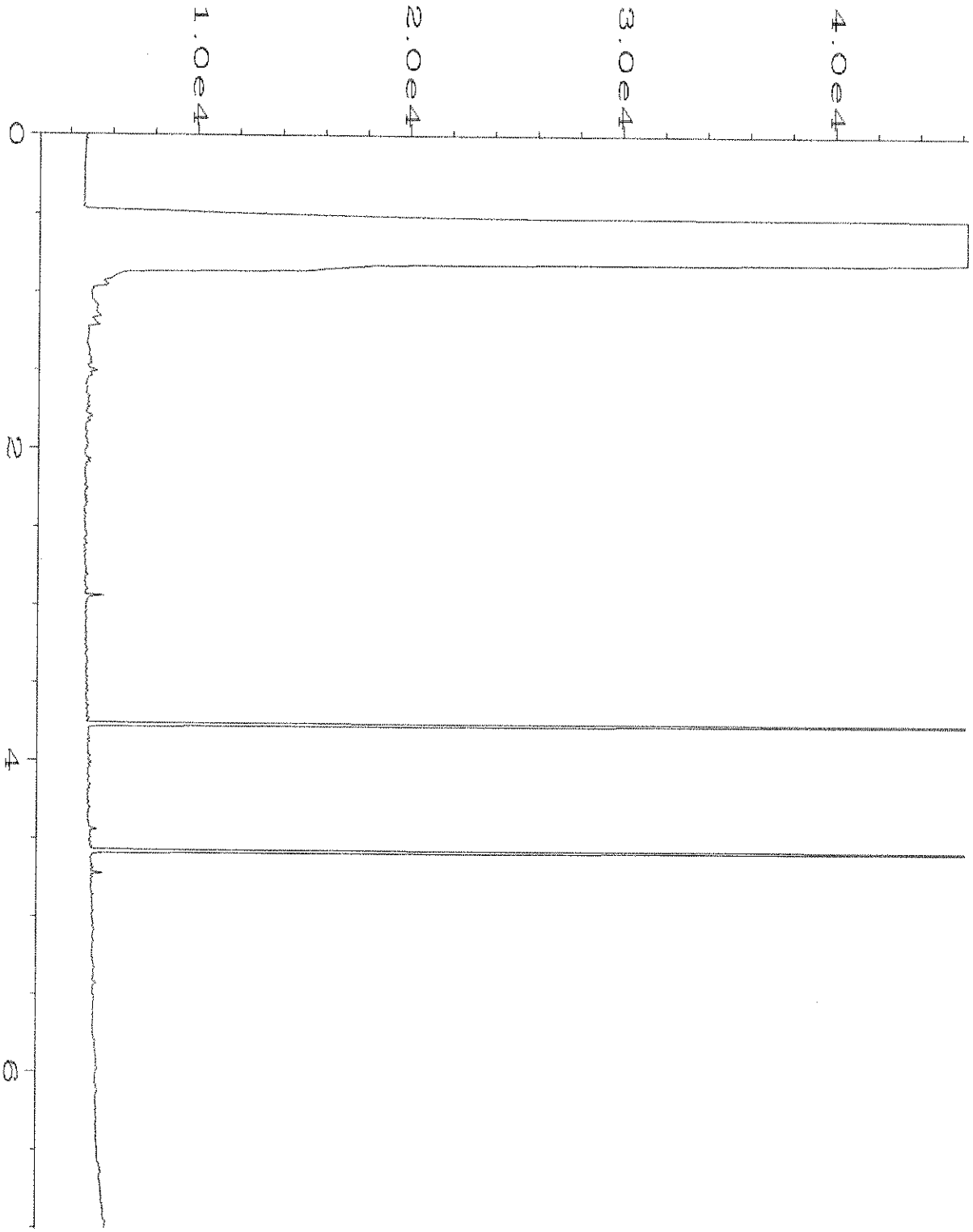
Page Number : 1
Vial Number : 60
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



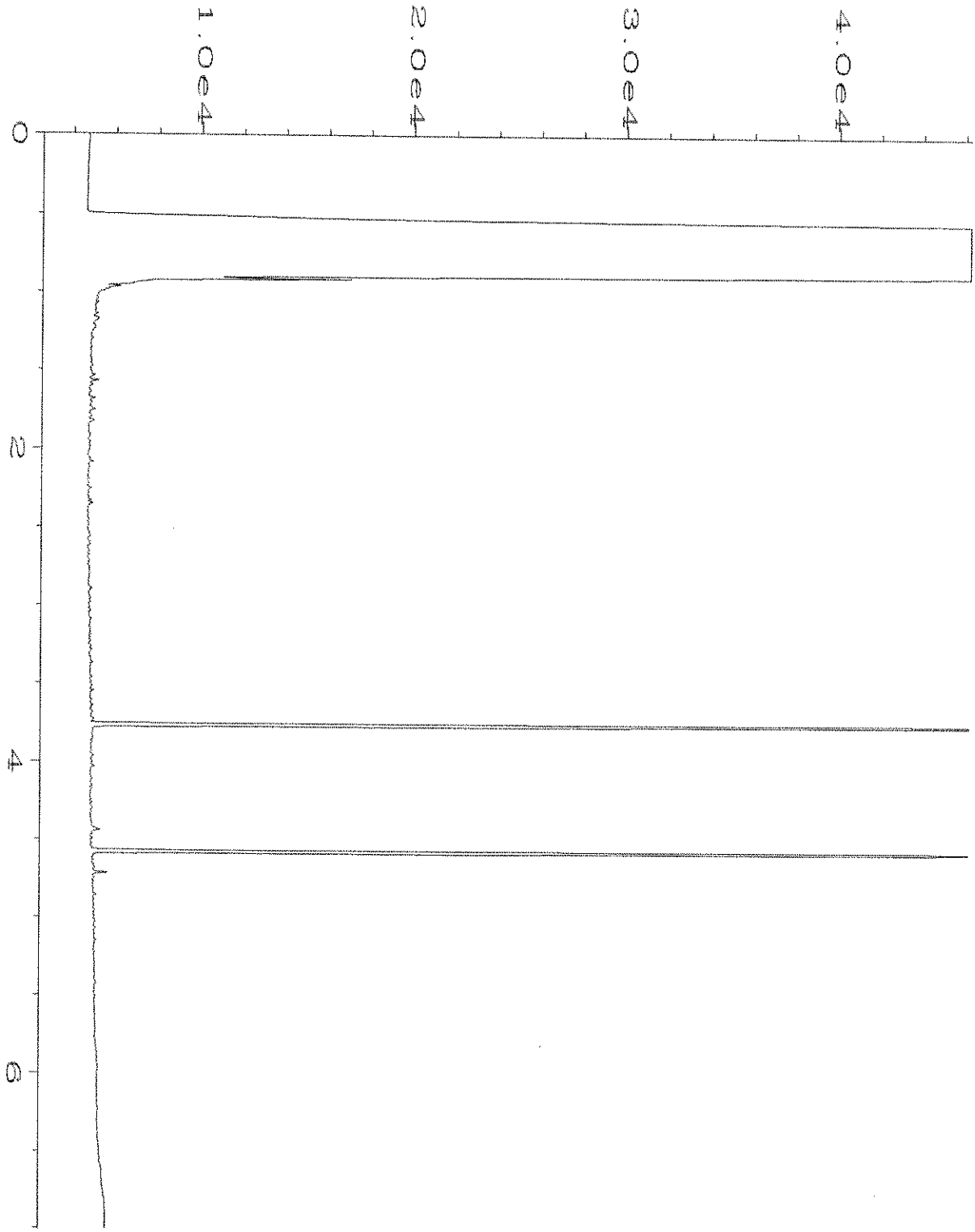
Data File Name	: C:\HPCHEM\6\DATA\03-17-20\061F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 61
Sample Name	: 003244-43	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 10:42 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:09 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\6\DATA\03-17-20\062F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 62
Sample Name	: 003244-44	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 10:53 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:09 AM	Analysis Method	: DEFAULT.MTH

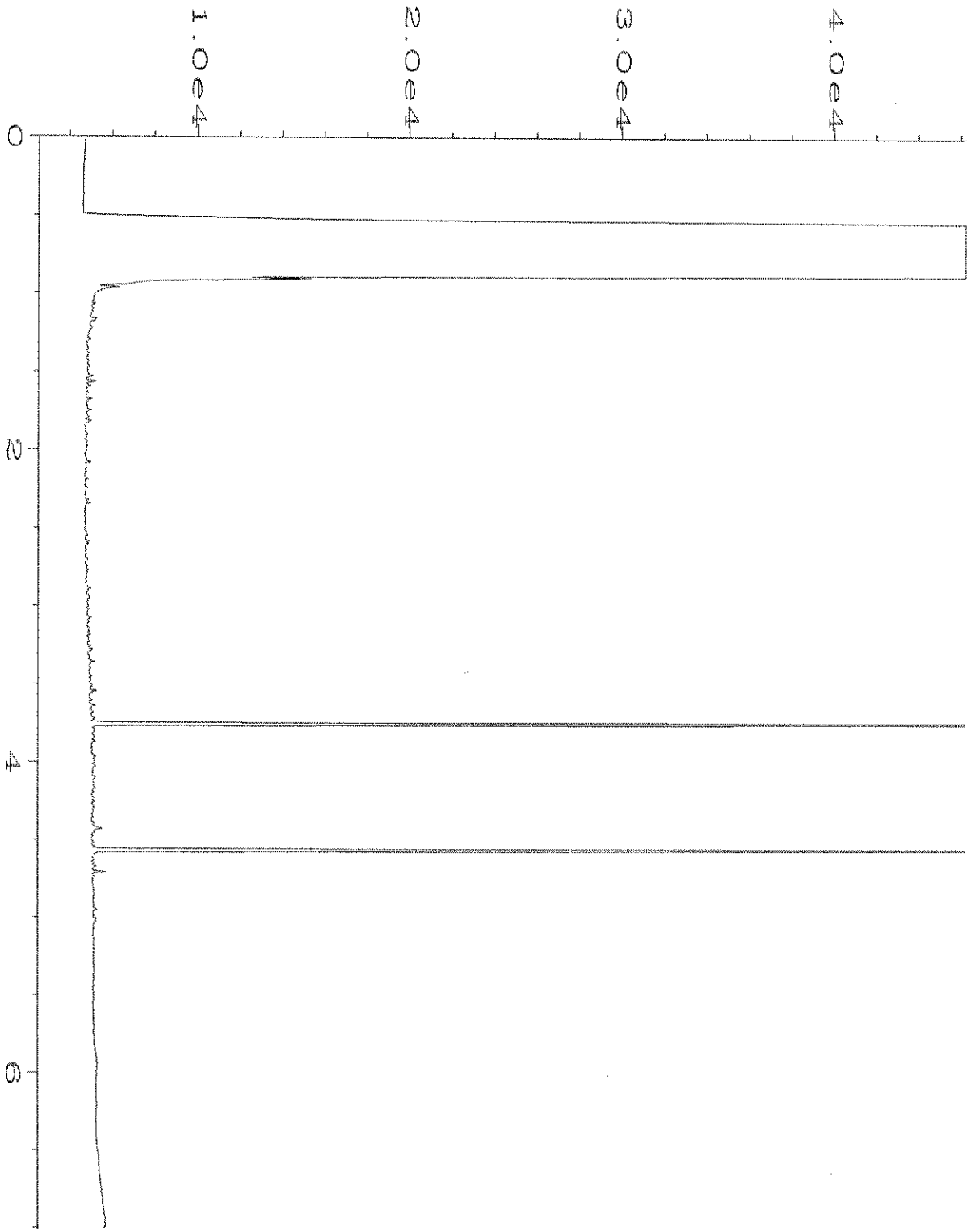


Data File Name	: C:\HPCHEM\6\DATA\03-17-20\063F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 63
Sample Name	: 003244-45	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 11:04 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 11:09 AM	Analysis Method	: DEFAULT.MTH

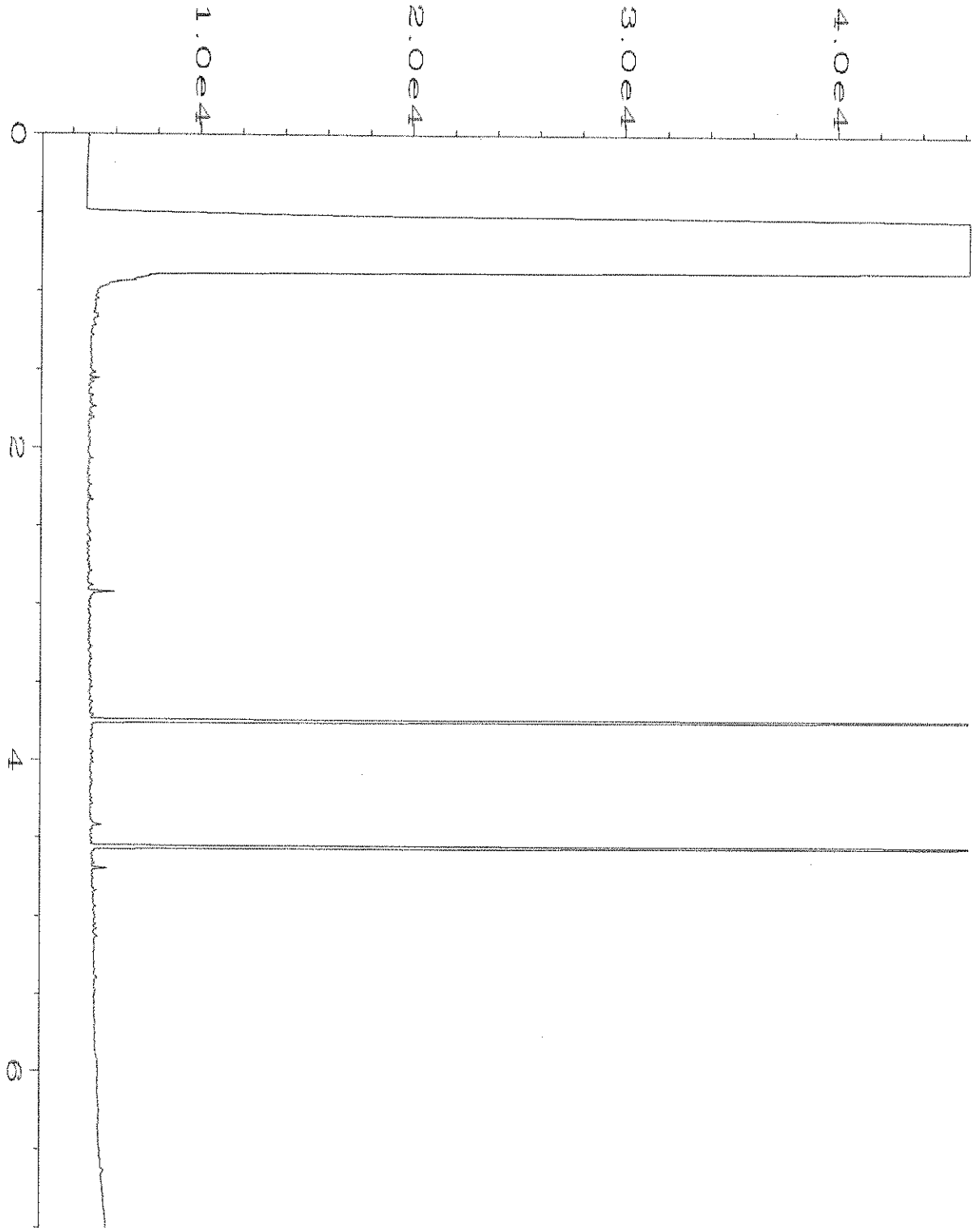


Data File Name : C:\HPCHEM\6\DATA\03-17-20\064F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-47
Run Time Bar Code:
Acquired on : 17 Mar 20 11:15 PM
Report Created on: 18 Mar 20 11:09 AM

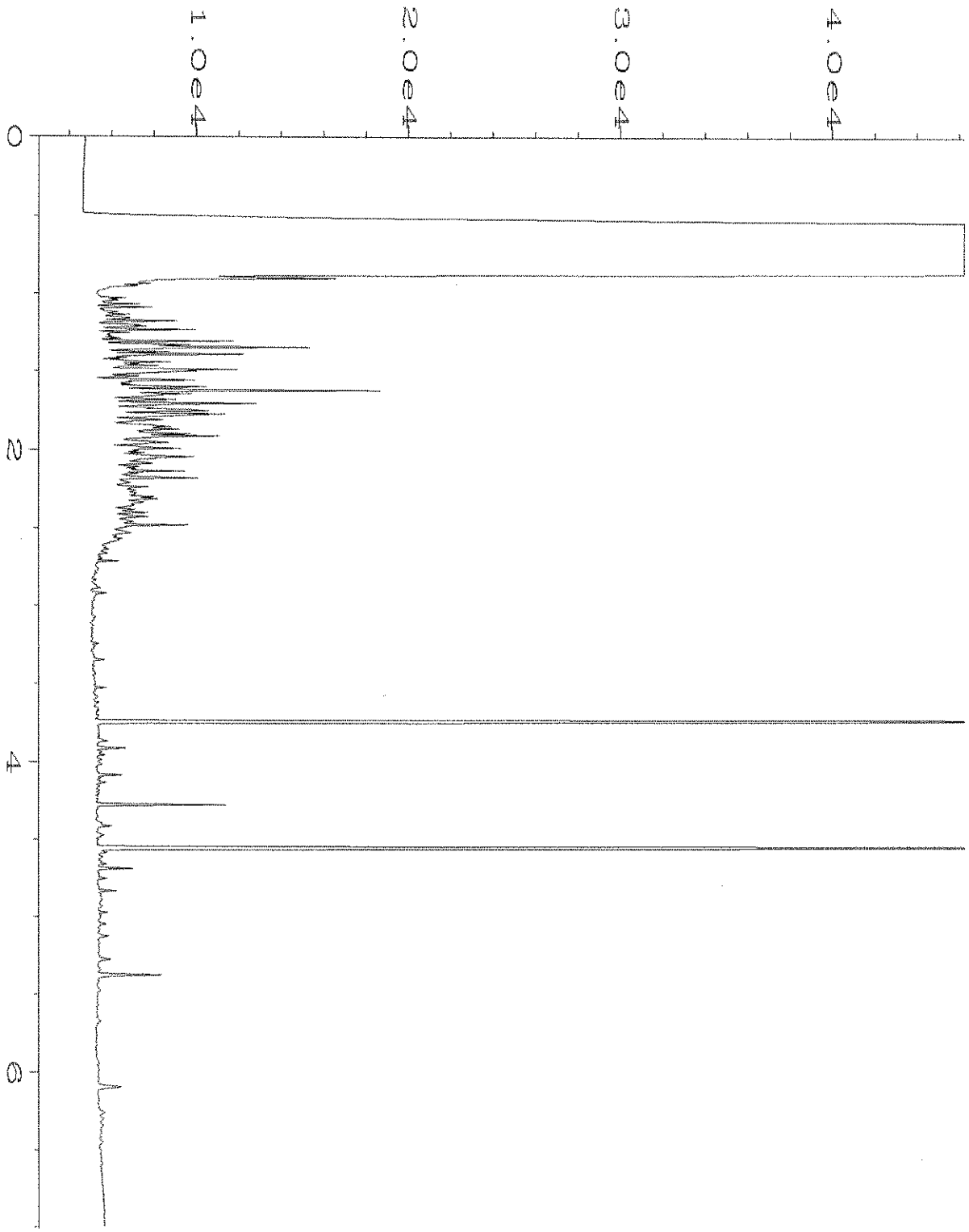
Page Number : 1
Vial Number : 64
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



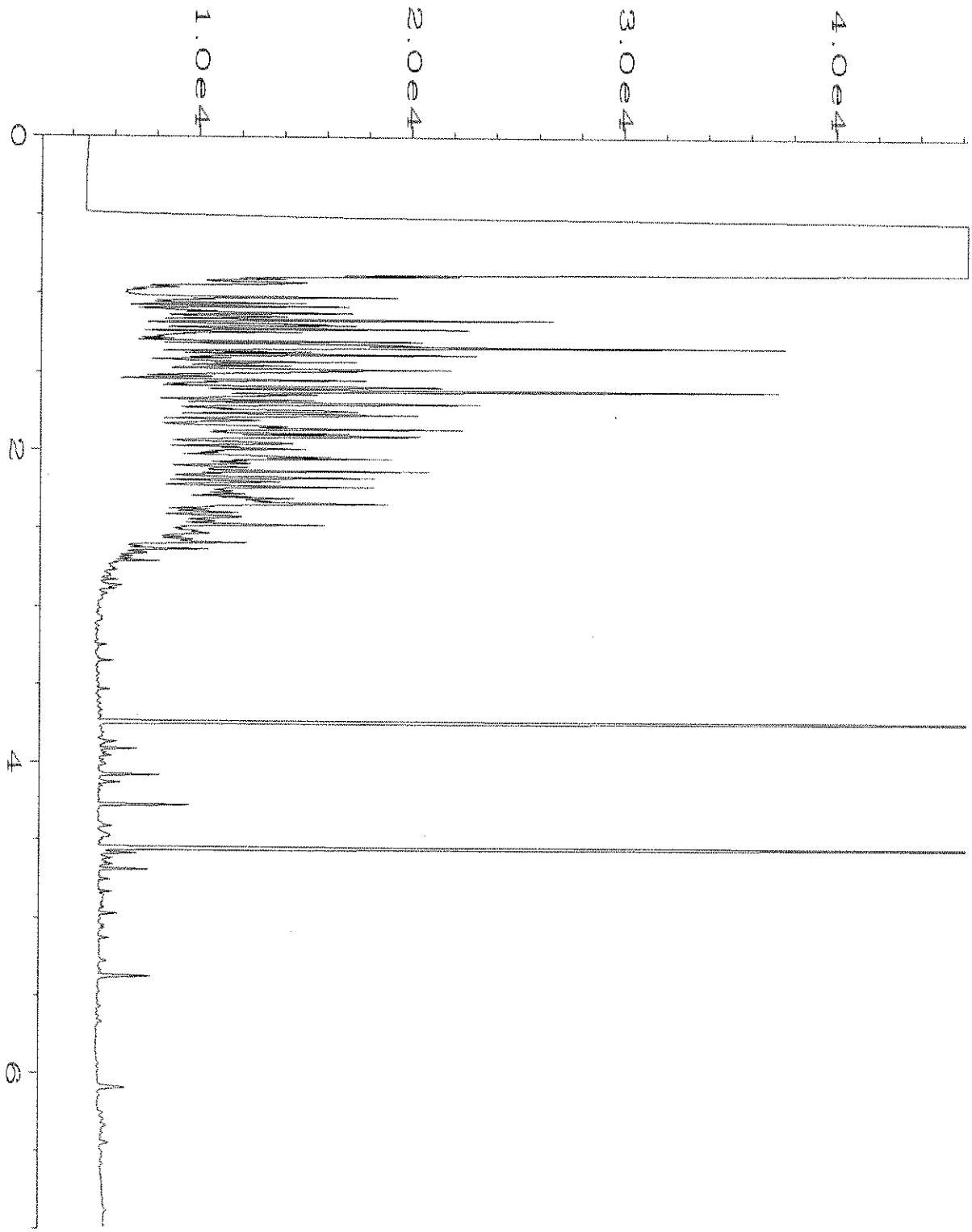
Data File Name	: C:\HPCHEM\6\DATA\03-17-20\065F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 65
Sample Name	: 003244-48	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 11:26 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:10 AM	Analysis Method	: DEFAULT.MTH



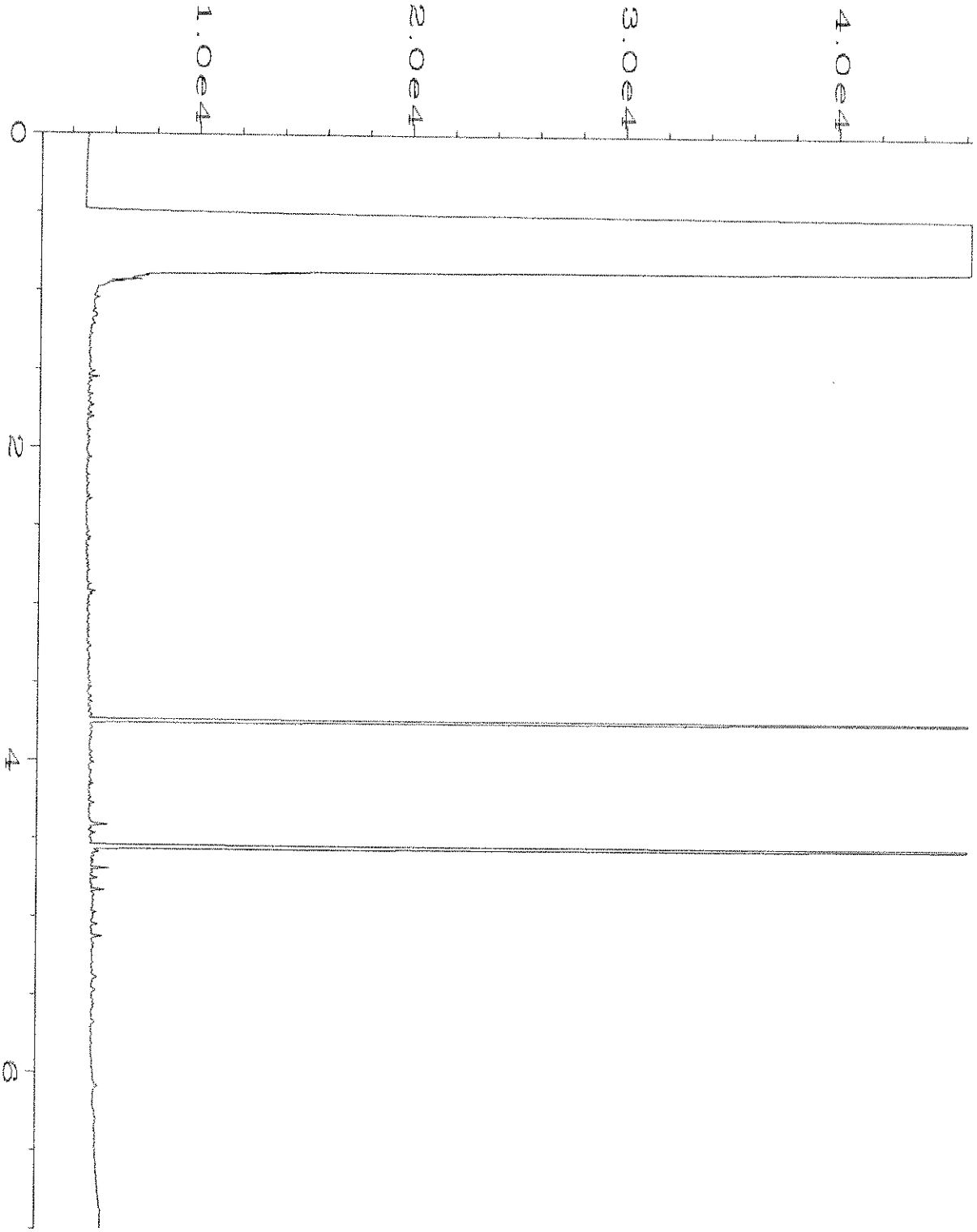
Data File Name	: C:\HPCHEM\6\DATA\03-17-20\067F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 67
Sample Name	: 003244-49	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 11:48 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:10 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\6\DATA\03-17-20\068F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 68
Sample Name	: 003244-50	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 11:59 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:10 AM	Analysis Method	: DEFAULT.MTH

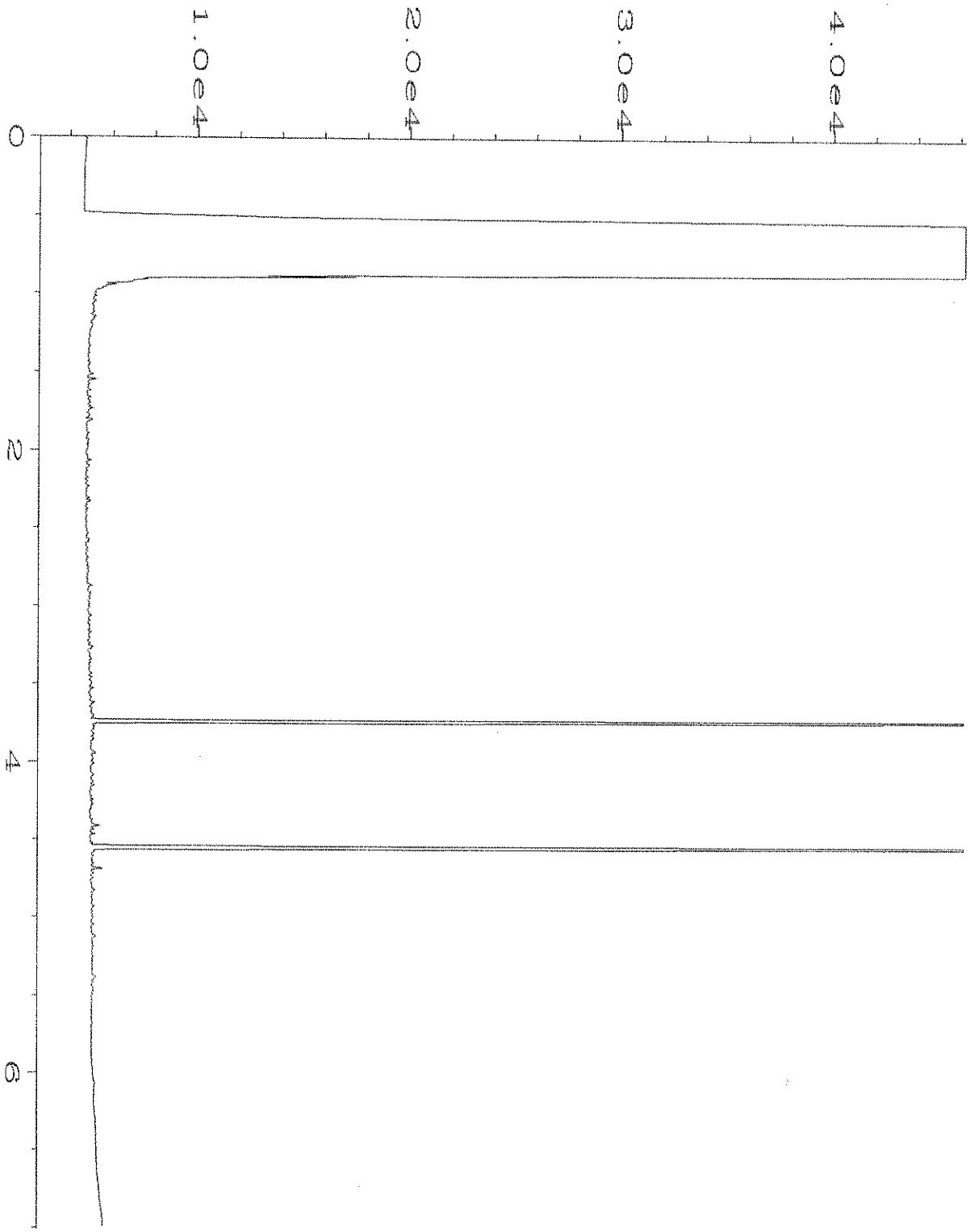


Data File Name	: C:\HPCHEM\6\DATA\03-17-20\069F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 69
Sample Name	: 003244-51	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 18 Mar 20 00:10 AM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:10 AM	Analysis Method	: DEFAULT.MTH



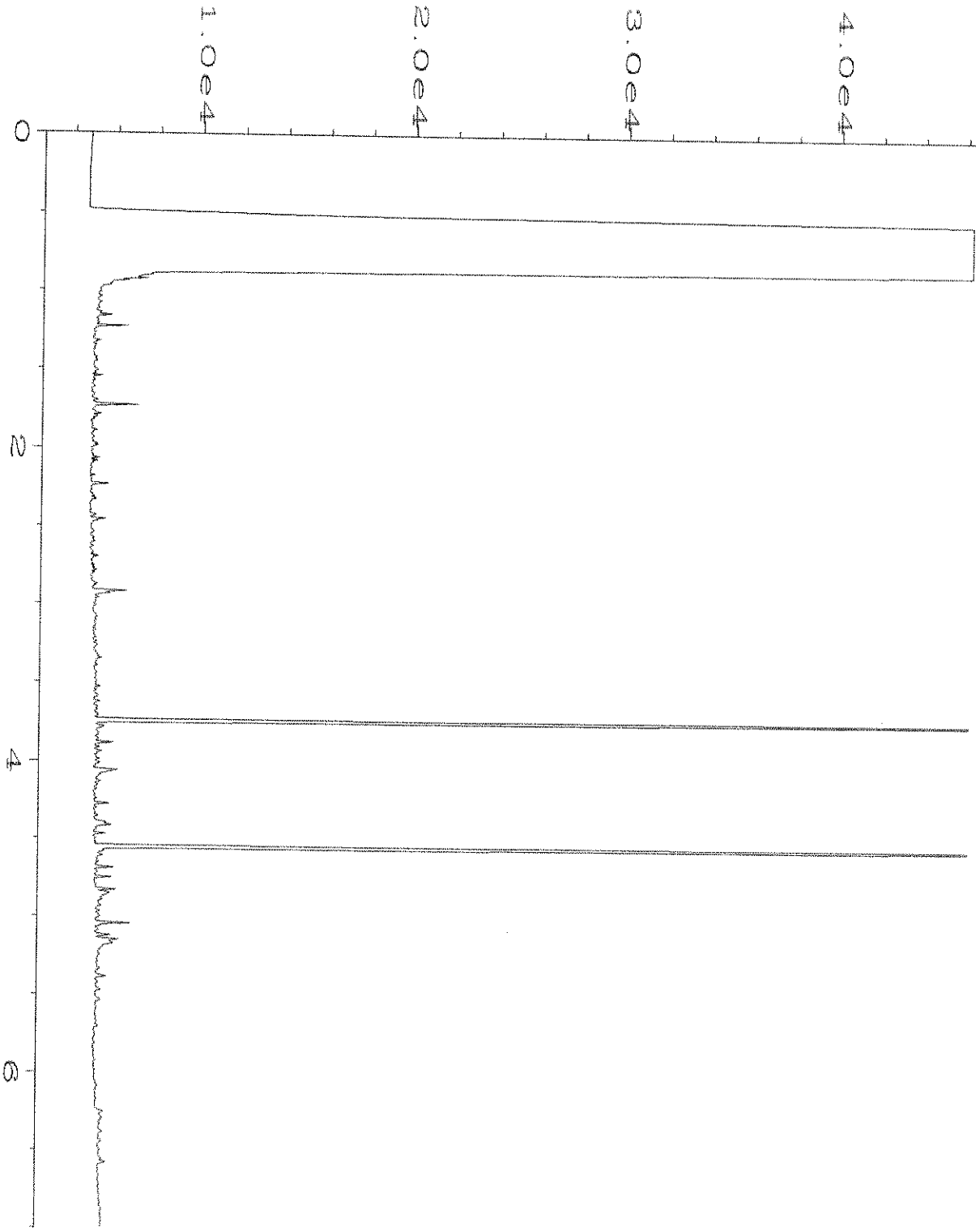
Data File Name : C:\HPCHEM\6\DATA\03-17-20\070F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-52
Run Time Bar Code:
Acquired on : 18 Mar 20 00:21 AM
Report Created on: 18 Mar 20 11:10 AM

Page Number : 1
Vial Number : 70
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



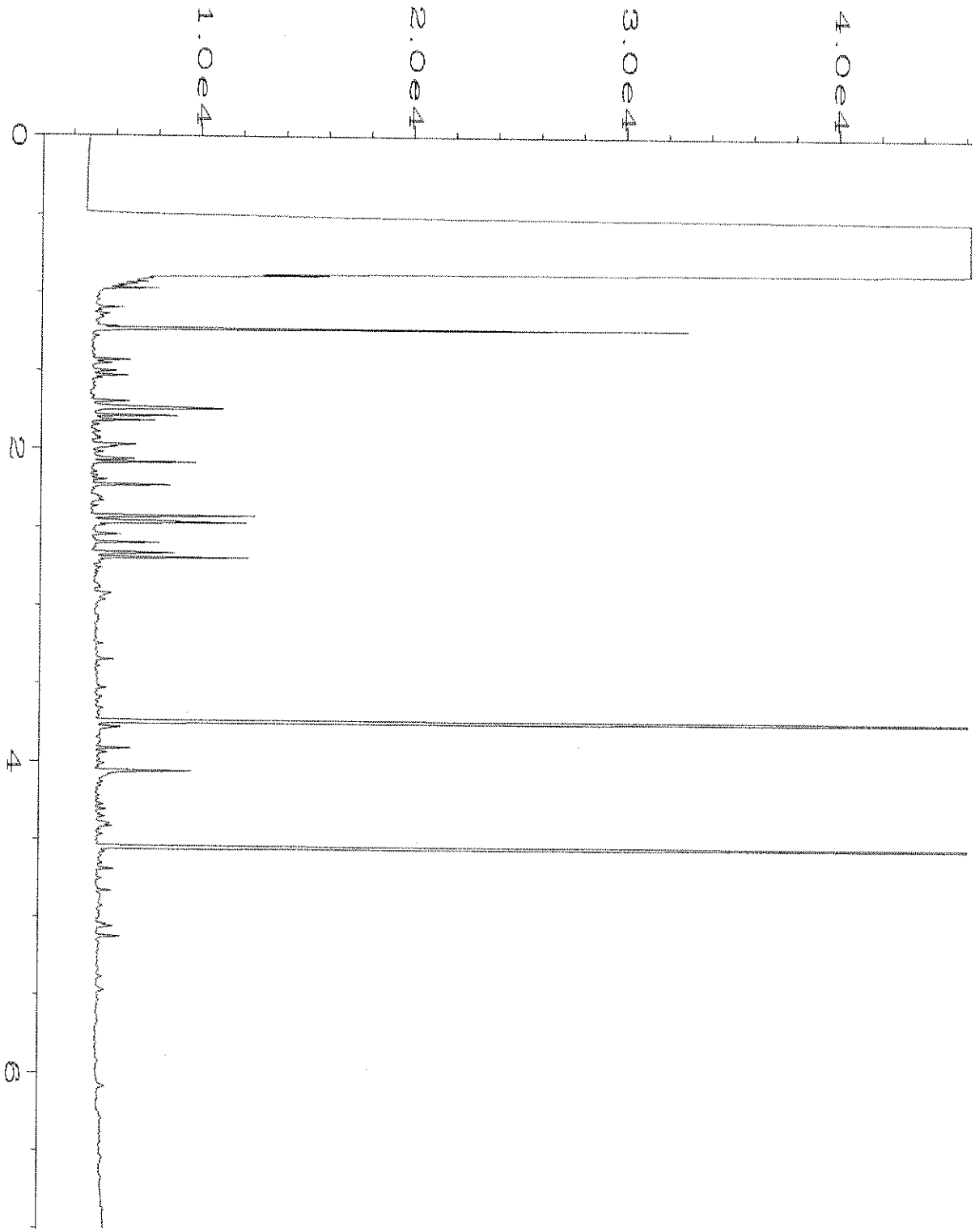
Data File Name : C:\HPCHEM\6\DATA\03-17-20\071F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-54
Run Time Bar Code:
Acquired on : 18 Mar 20 00:31 AM
Report Created on: 18 Mar 20 11:10 AM

Page Number : 1
Vial Number : 71
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

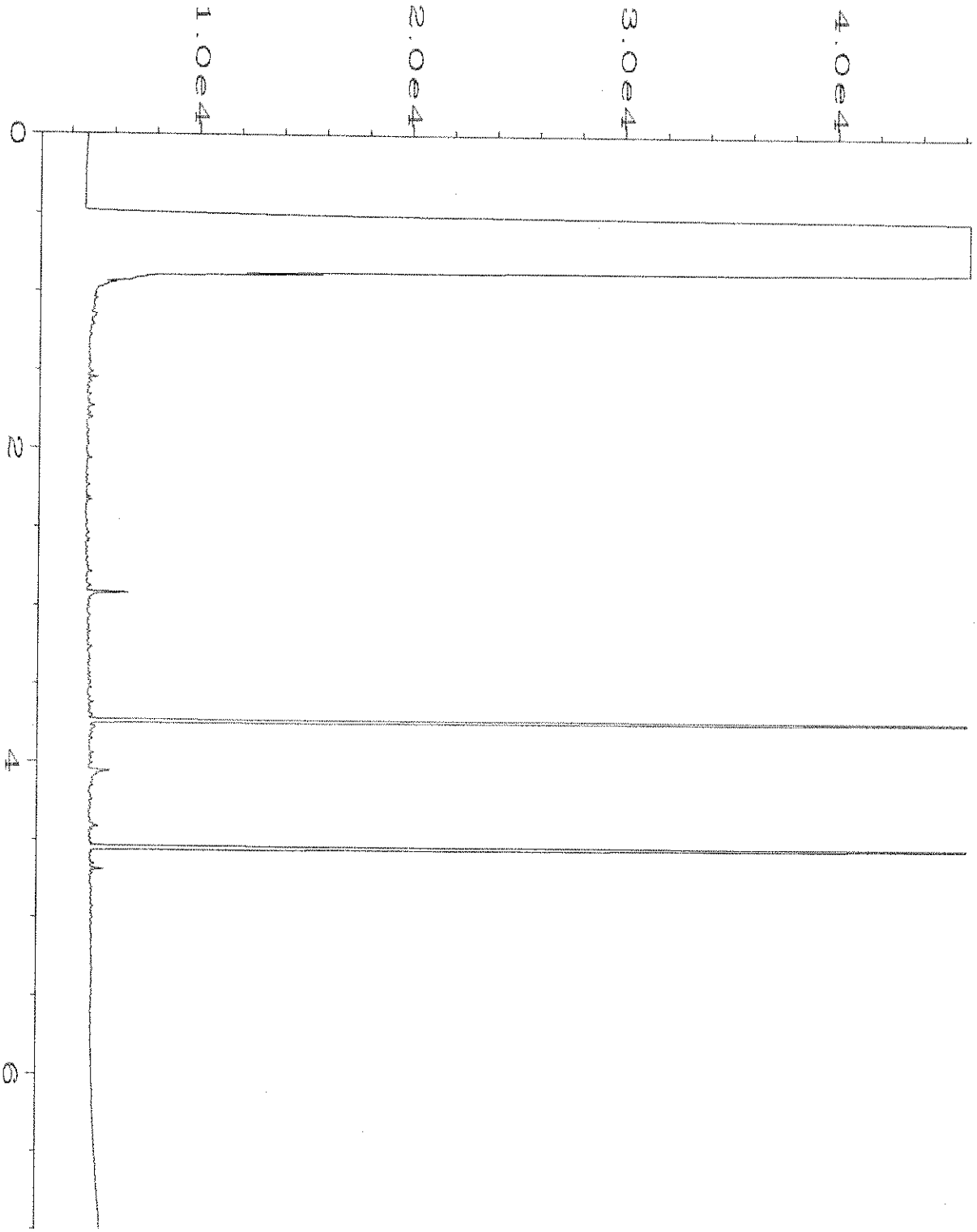


Data File Name : C:\HPCHEM\6\DATA\03-17-20\072F0801.D
Operator : TL
Instrument : GC6
Sample Name : 003244-56
Run Time Bar Code:
Acquired on : 18 Mar 20 00:42 AM
Report Created on: 18 Mar 20 11:10 AM

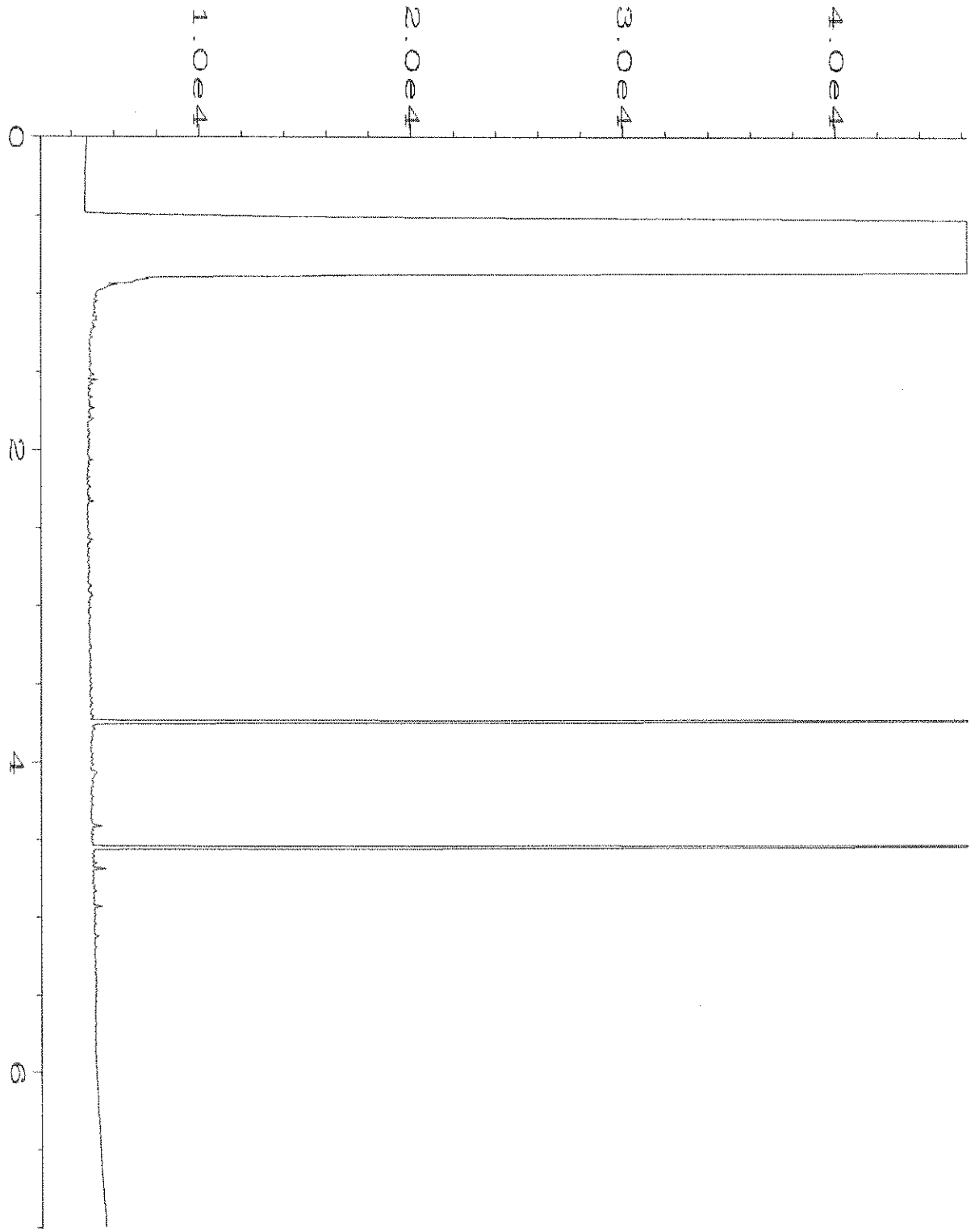
Page Number : 1
Vial Number : 72
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



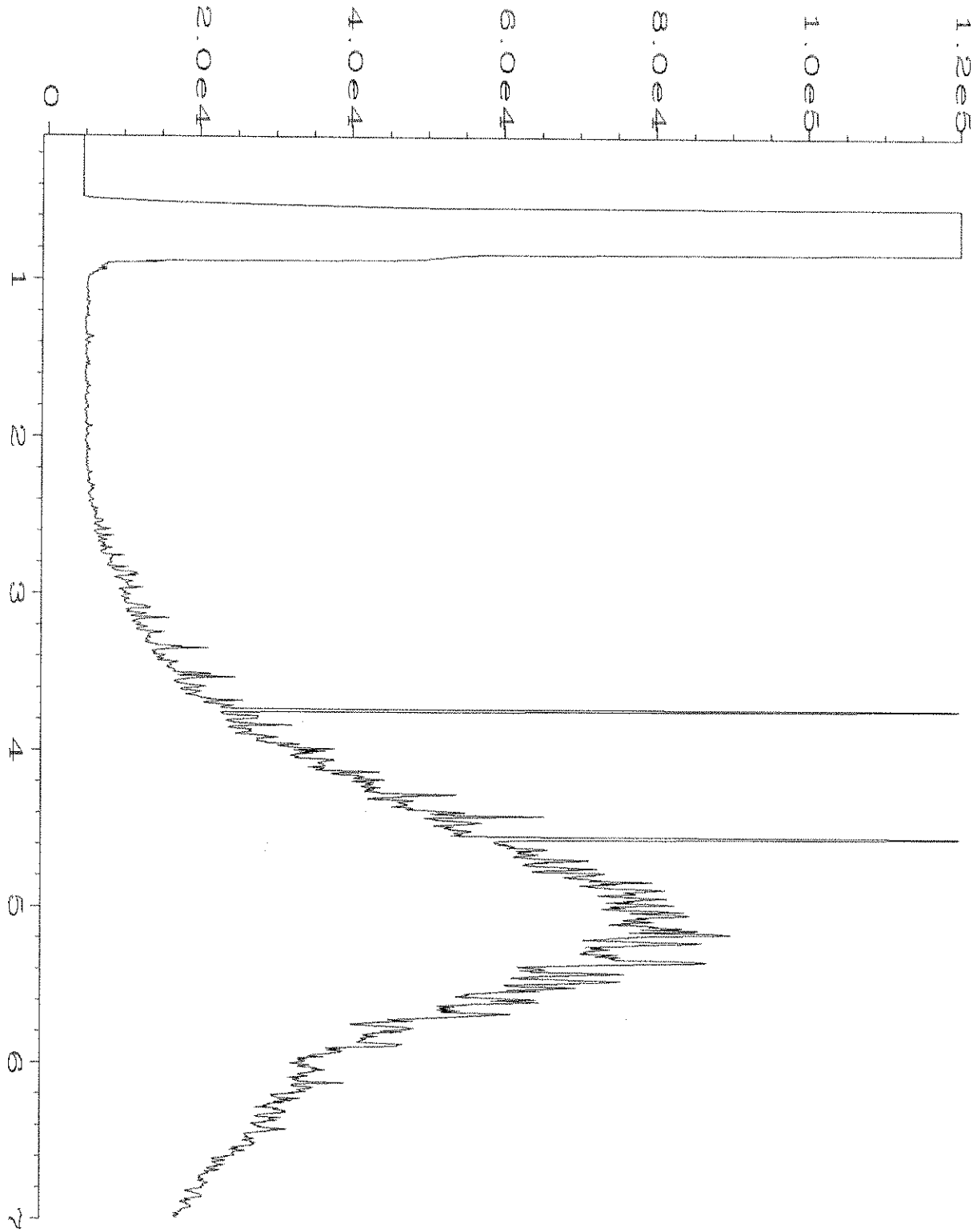
Data File Name	: C:\HPCHEM\6\DATA\03-17-20\073F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 73
Sample Name	: 003244-57	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 18 Mar 20 00:53 AM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:10 AM	Analysis Method	: DEFAULT.MTH



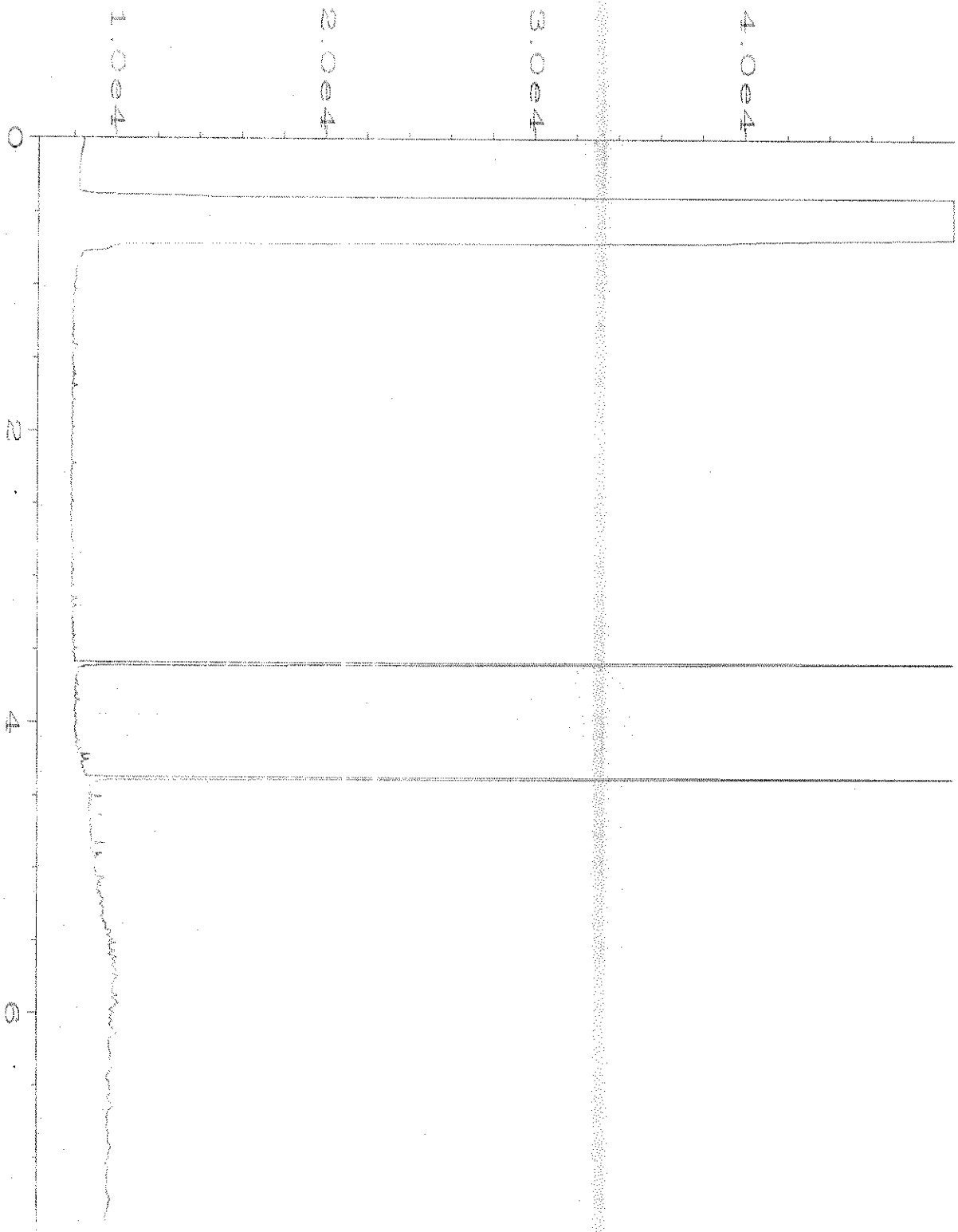
Data File Name	: C:\HPCHEM\6\DATA\03-17-20\074F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 74
Sample Name	: 003244-60	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 18 Mar 20 01:04 AM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:11 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\6\DATA\03-17-20\075F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 75
Sample Name	: 003244-61	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 18 Mar 20 01:15 AM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 11:11 AM	Analysis Method	: DEFAULT.MTH

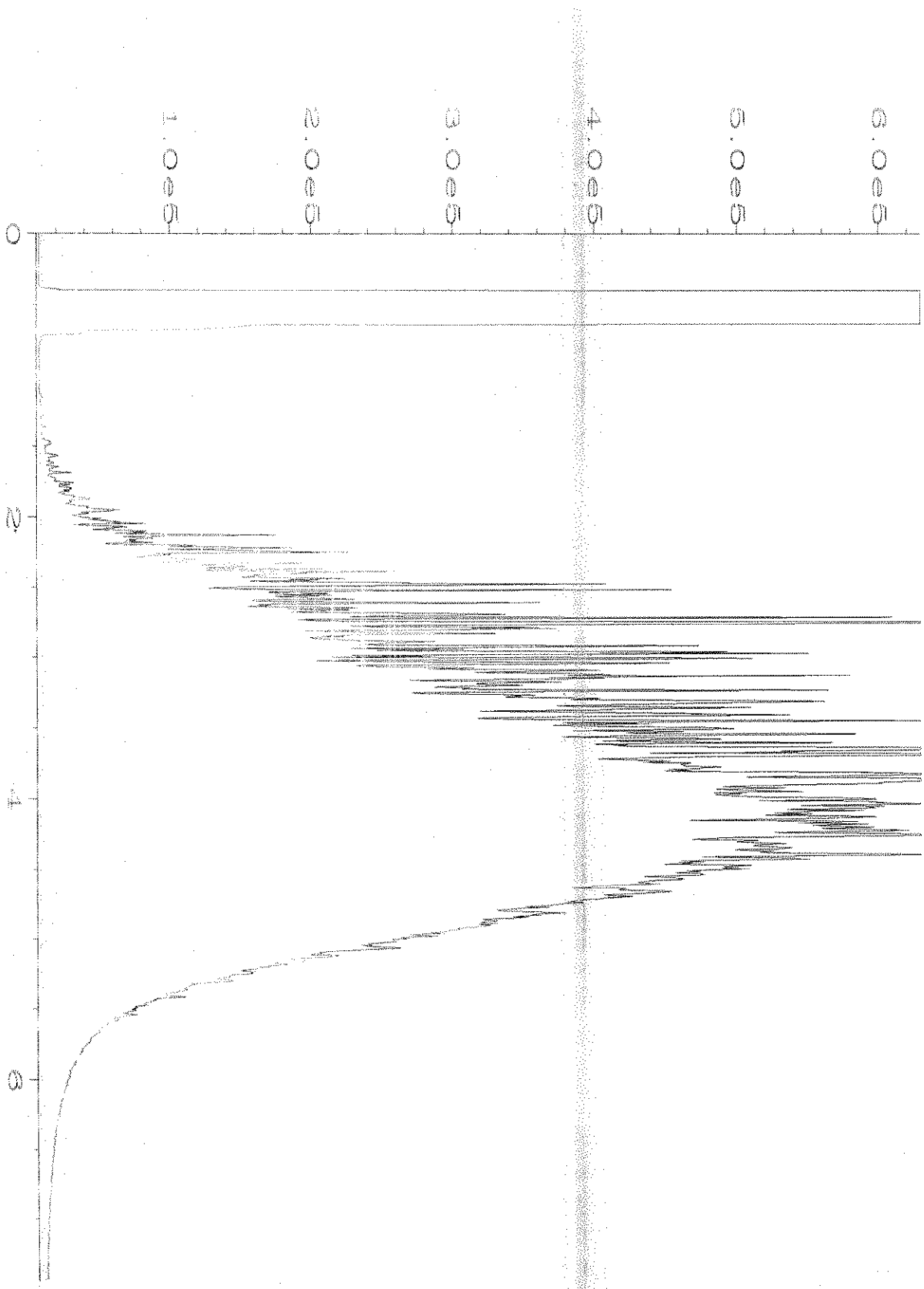


Data File Name	: C:\HPCHEM\6\DATA\03-17-20\076F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 76
Sample Name	: 003244-62	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 18 Mar 20 01:26 AM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:11 AM	Analysis Method	: DEFAULT.MTH



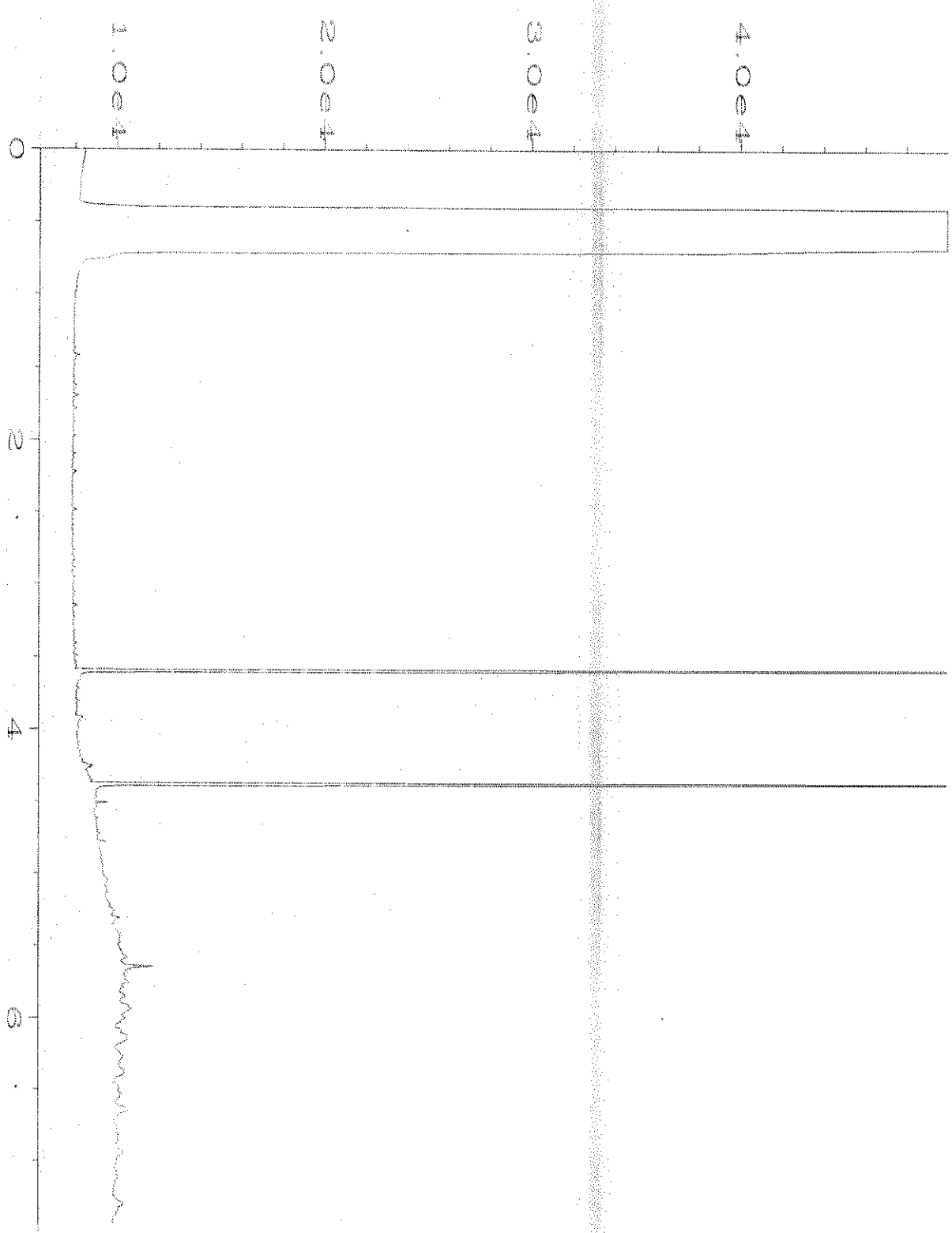
Data File Name : C:\HPCHEM\1\DATA\03-17-20\046F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-65
Run Time Bar Code:
Acquired on : 17 Mar 20 06:02 PM
Report Created on: 18 Mar 20 09:29 AM

Page Number : 1
Vial Number : 46
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH



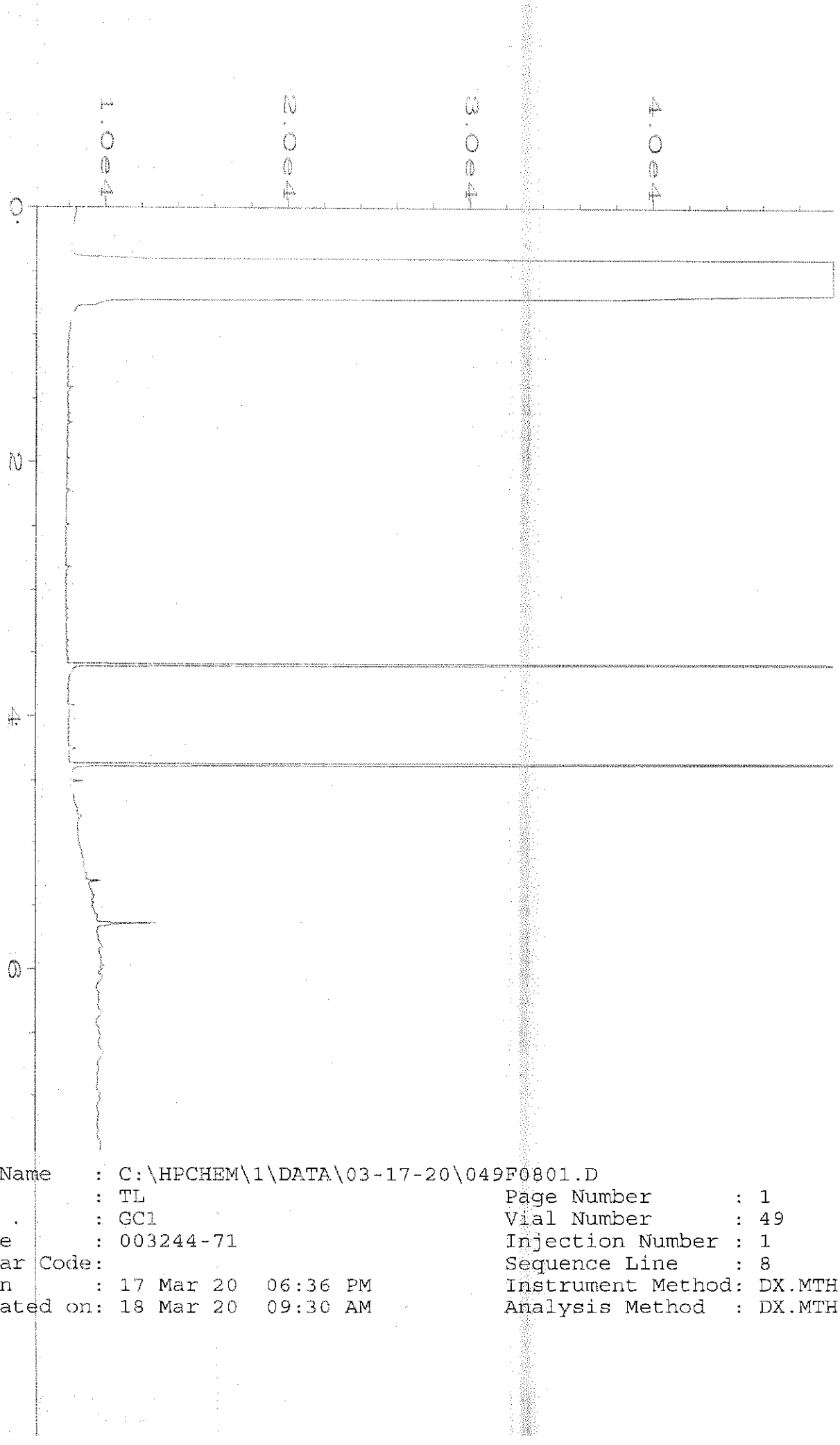
Data File Name : C:\HPCHEM\1\DATA\03-17-20\047F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-68
Run Time Bar Code:
Acquired on : 17 Mar 20 06:13 PM
Report Created on: 18 Mar 20 09:29 AM

Page Number : 1
Vial Number : 47
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH



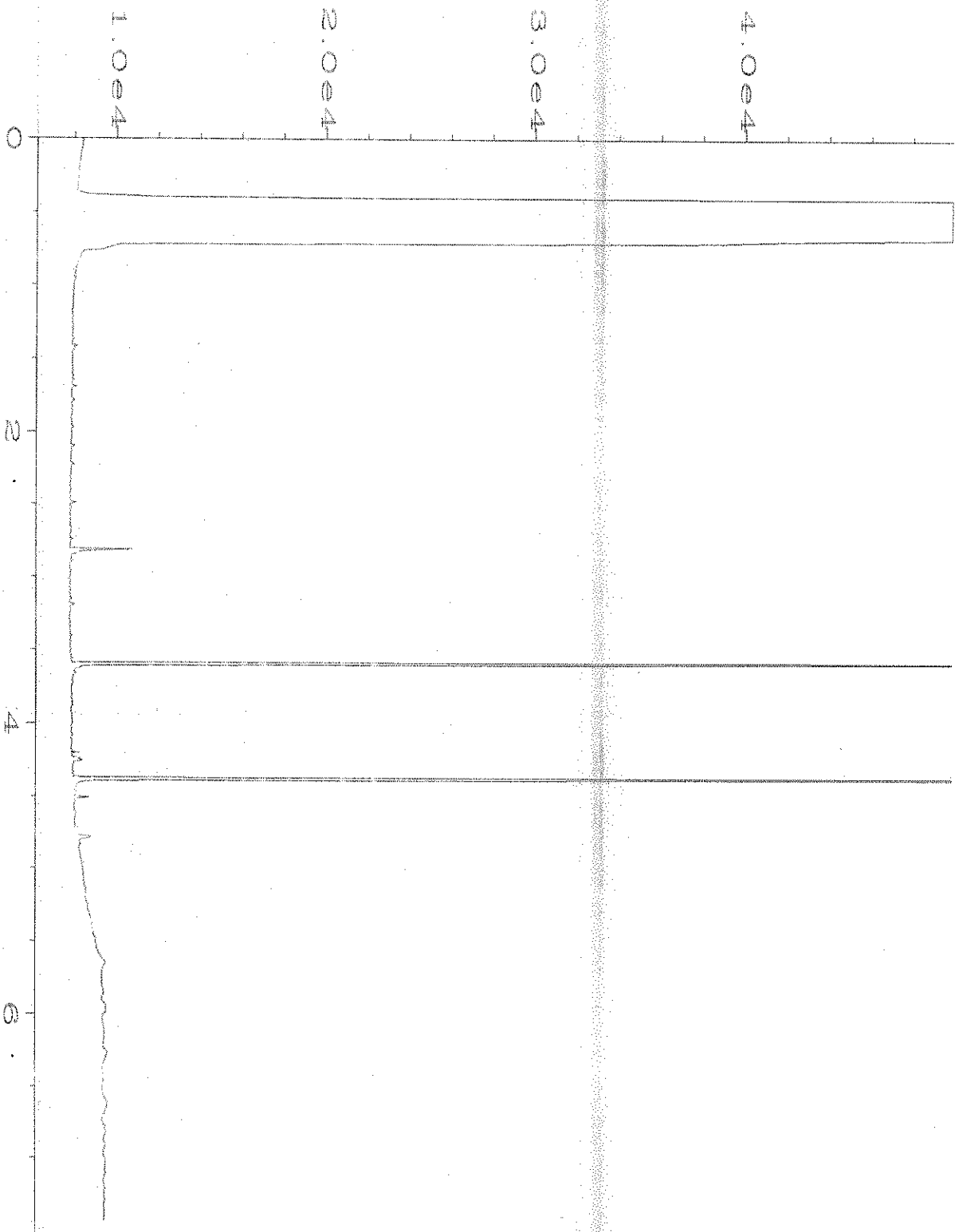
Data File Name : C:\HPCHEM\1\DATA\03-17-20\048F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-70
Run Time Bar Code:
Acquired on : 17 Mar 20 06:25 PM
Report Created on: 18 Mar 20 09:30 AM

Page Number : 1
Vial Number : 48
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH

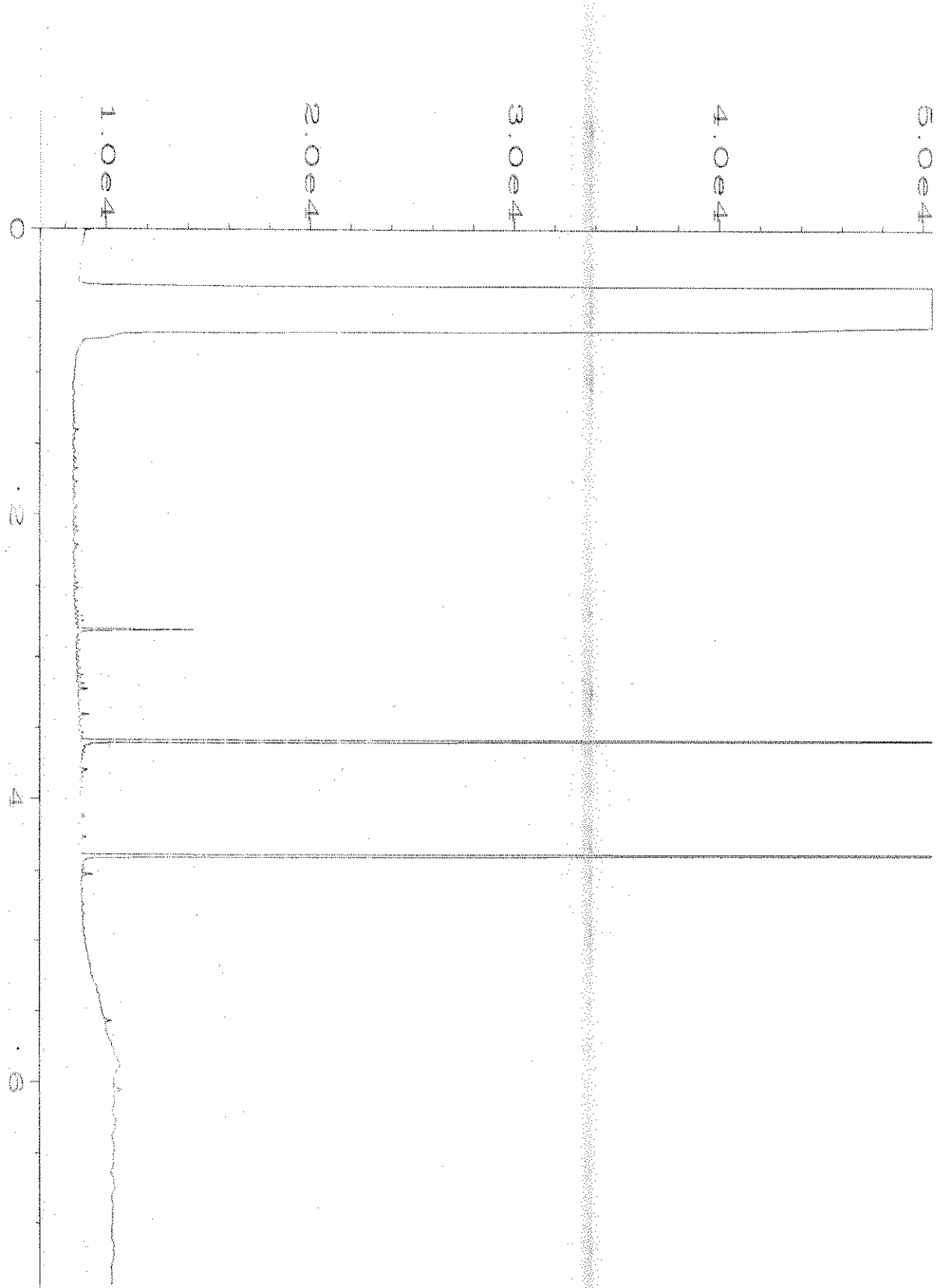


Data File Name : C:\HPCHEM\1\DATA\03-17-20\049F0801.D
Operator : TL
Instrument . : GC1
Sample Name : 003244-71
Run Time Bar Code:
Acquired on : 17 Mar 20 06:36 PM
Report Created on: 18 Mar 20 09:30 AM

Page Number : 1
Vial Number : 49
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH

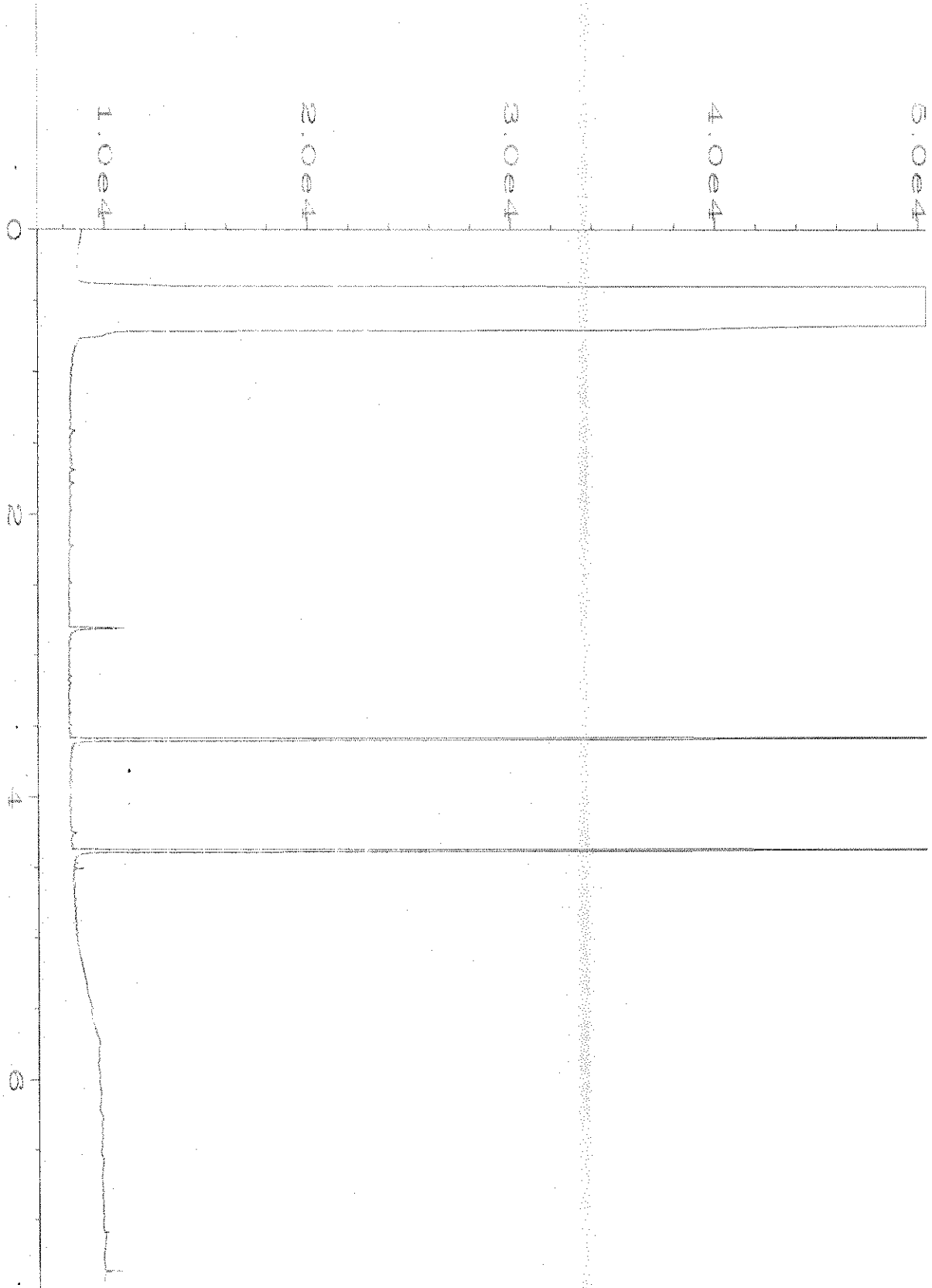


Data File Name	: C:\HPCHEM\1\DATA\03-17-20\050F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 50
Sample Name	: 003244-77	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 06:48 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:30 AM	Analysis Method	: DX.MTH



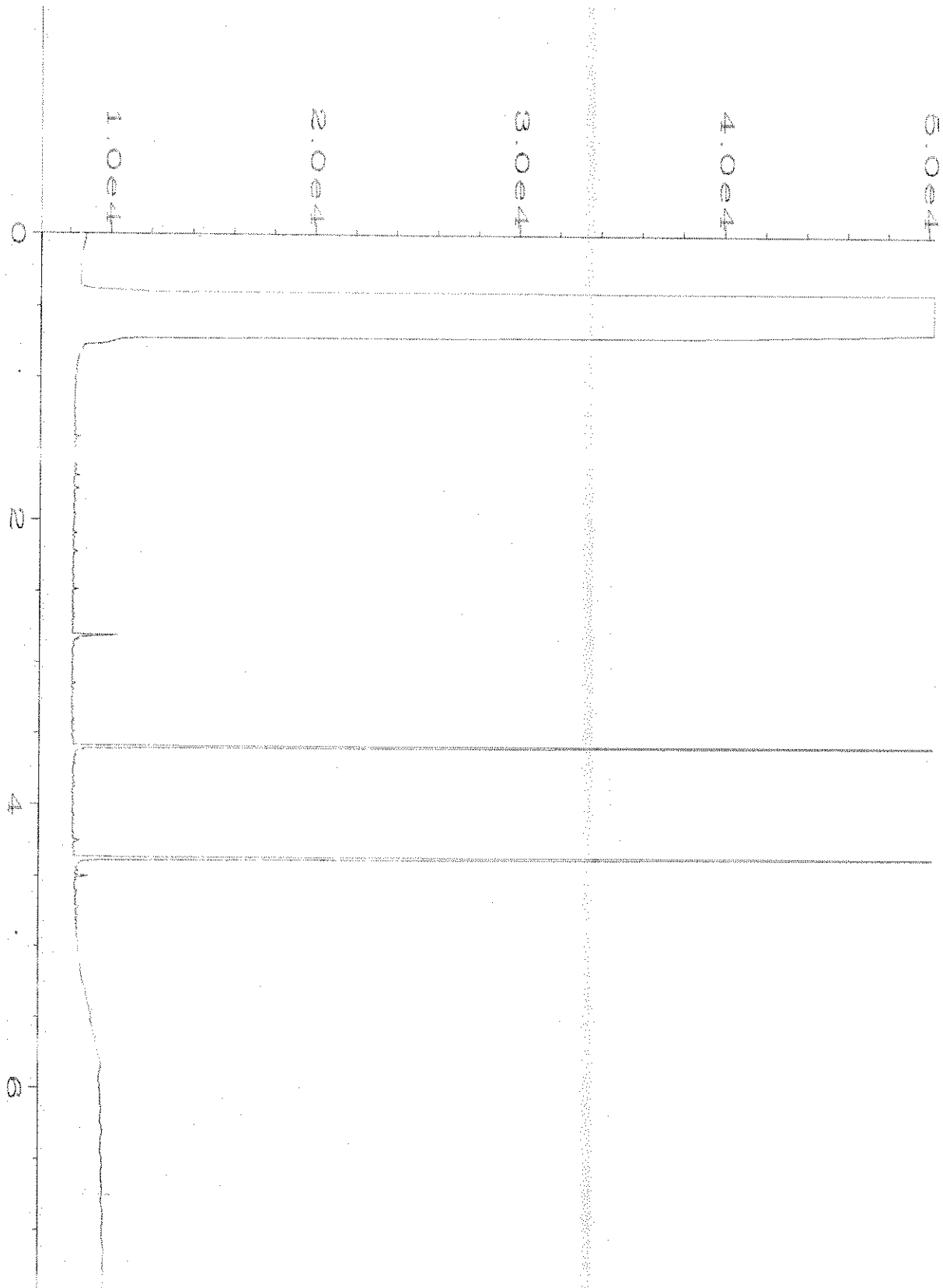
Data File Name : C:\HPCHEM\1\DATA\03-17-20\051F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-78
Run Time Bar Code:
Acquired on : 18 Mar 20 04:07 AM
Report Created on: 18 Mar 20 09:30 AM

Page Number : 1
Vial Number : 51
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH



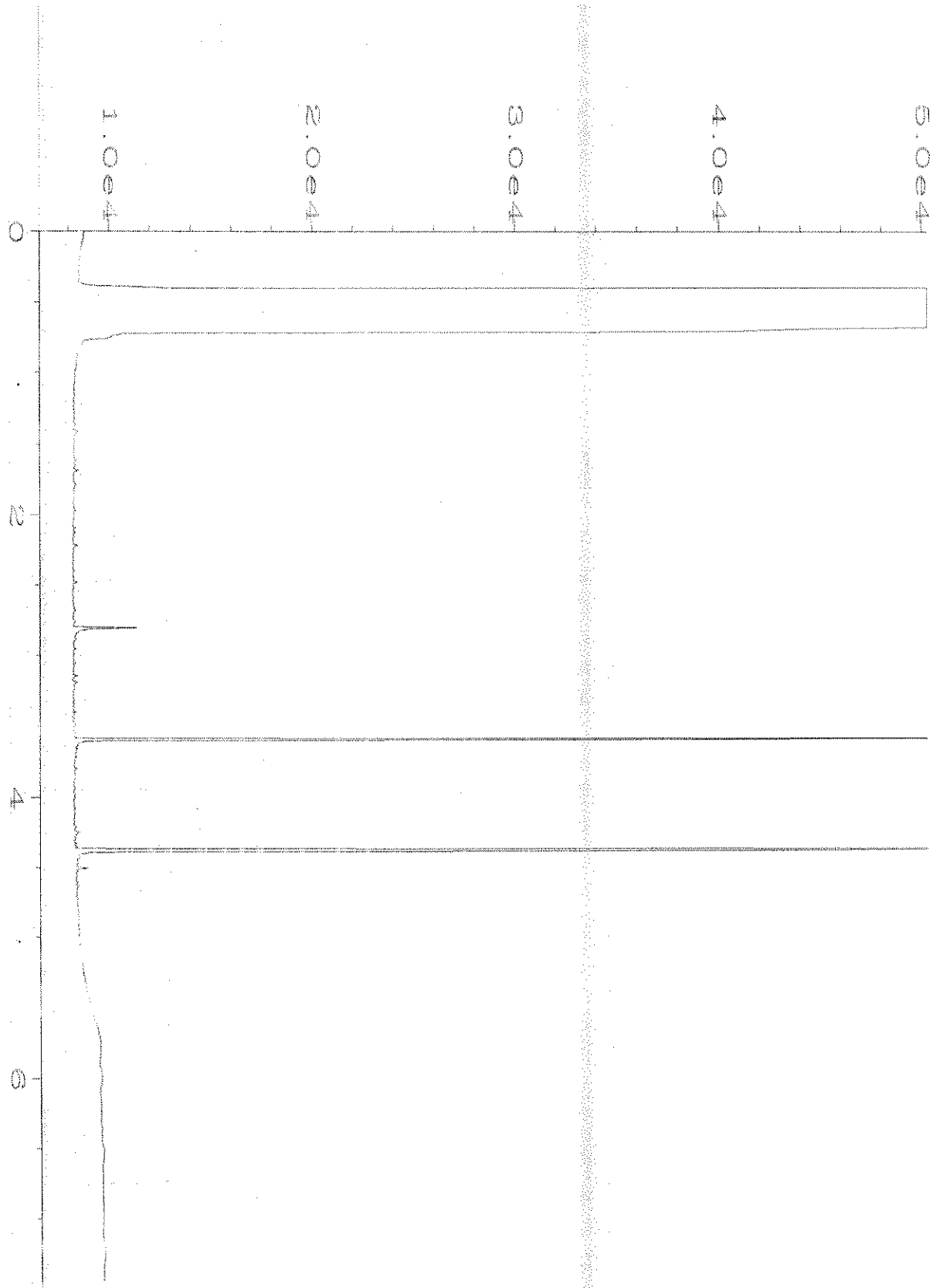
Data File Name : C:\HPCHEM\1\DATA\03-17-20\052F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-81
Run Time Bar Code:
Acquired on : 18 Mar 20 04:16 AM
Report Created on: 18 Mar 20 09:30 AM

Page Number : 1
Vial Number : 52
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH

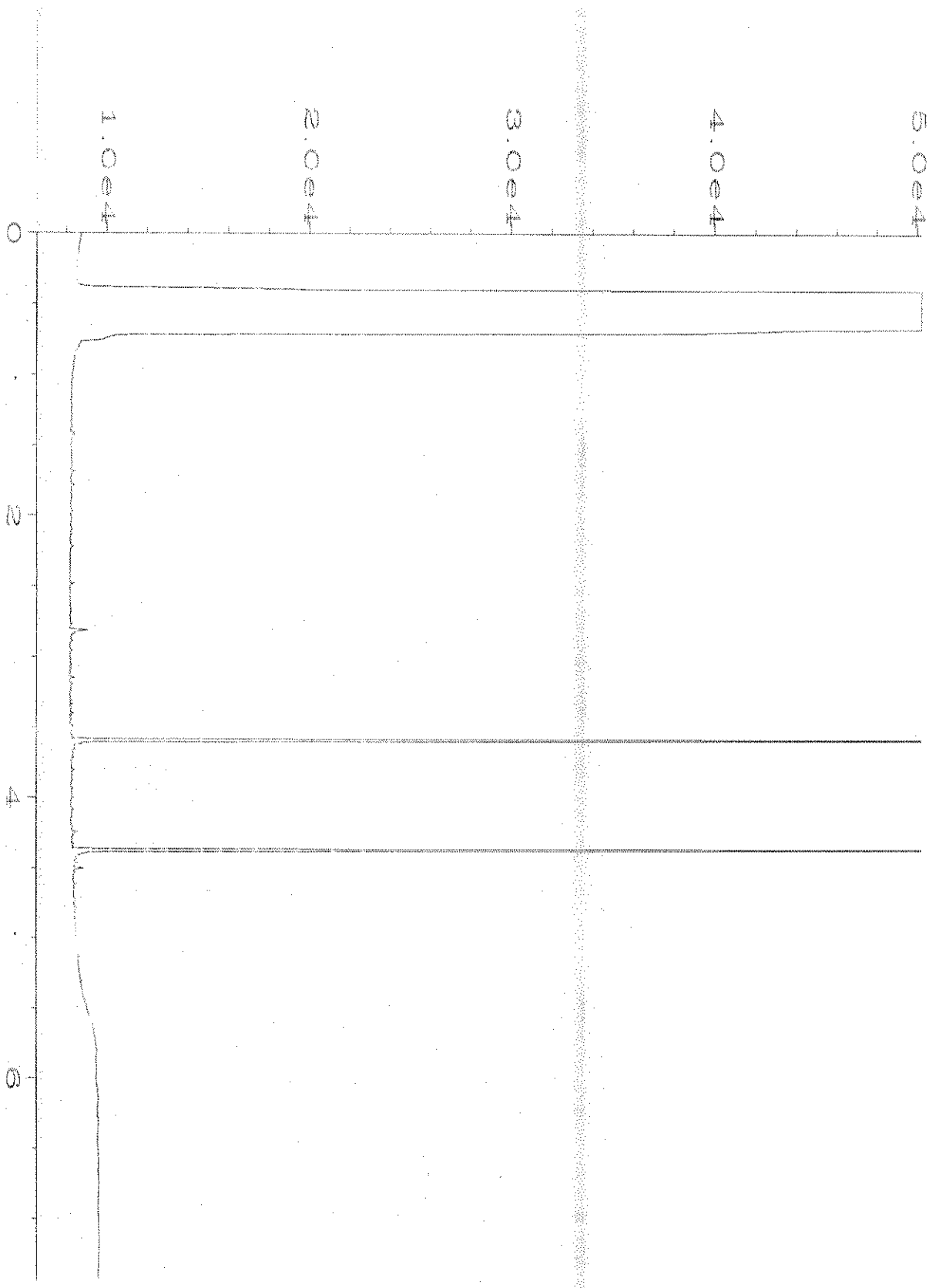


Data File Name : C:\HPCHEM\1\DATA\03-17-20\053F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-82
Run Time Bar Code:
Acquired on : 18 Mar 20 04:27 AM
Report Created on: 18 Mar 20 09:30 AM

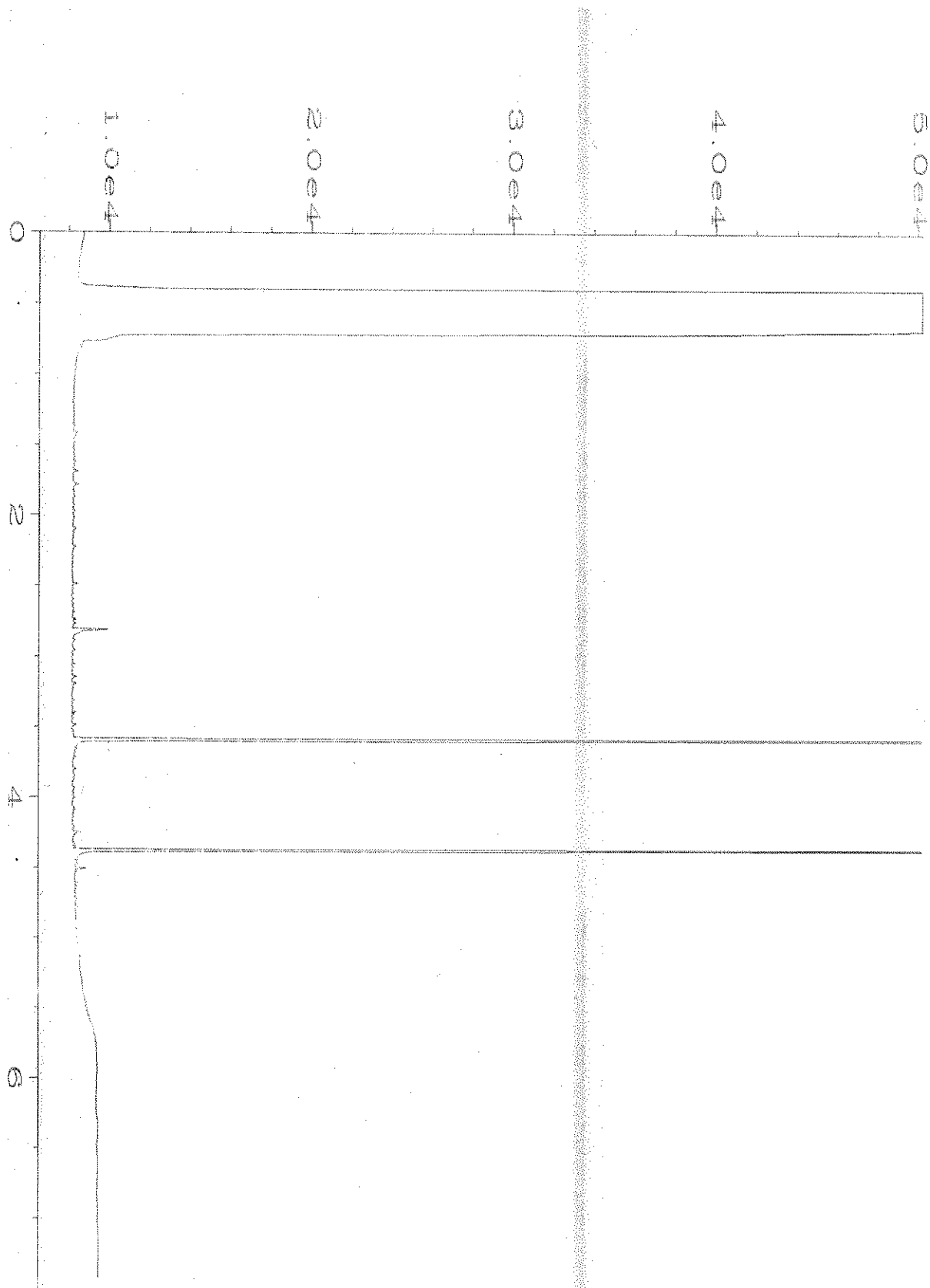
Page Number : 1
Vial Number : 53
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH



Data File Name	: C:\HPCHEM\1\DATA\03-17-20\054F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 54
Sample Name	: 003244-84	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 18 Mar 20 04:39 AM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:30 AM	Analysis Method	: DX.MTH

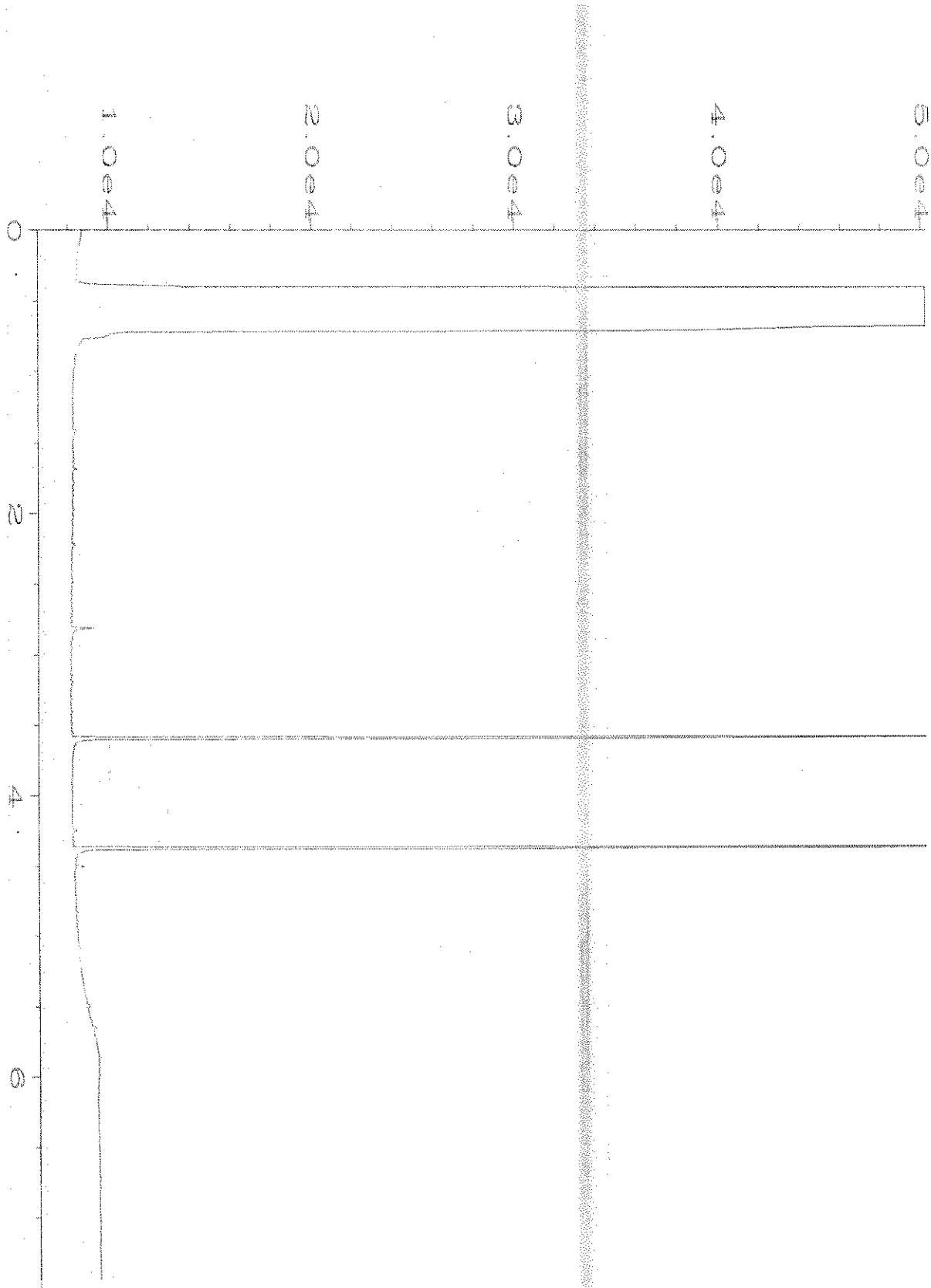


Data File Name	: C:\HPCHEM\1\DATA\03-17-20\055F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 55
Sample Name	: 003244-86	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 18 Mar 20 04:50 AM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:30 AM	Analysis Method	: DX.MTH



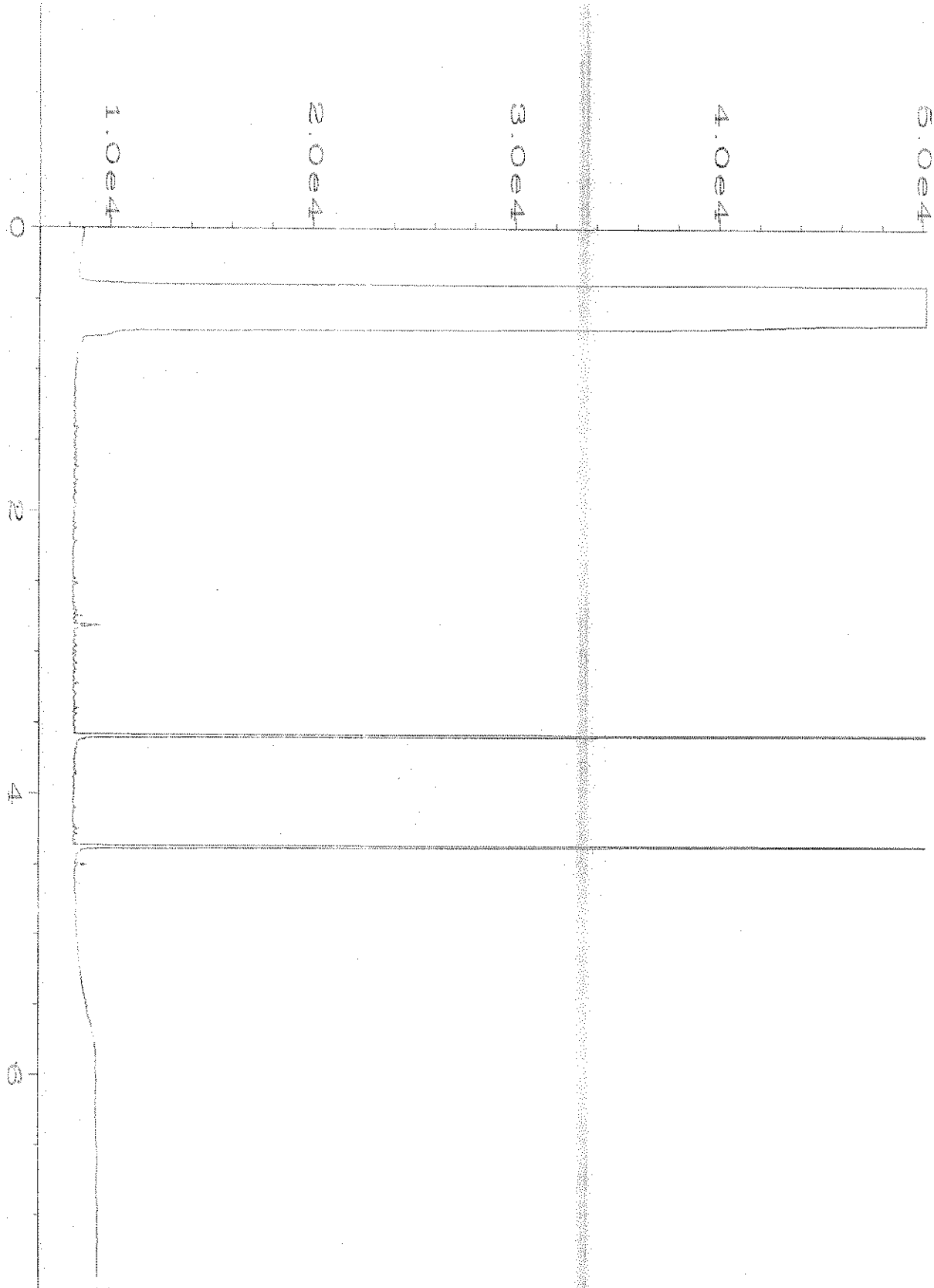
Data File Name : C:\HPCHEM\1\DATA\03-17-20\057F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-87
Run Time Bar Code:
Acquired on : 18 Mar 20 05:13 AM
Report Created on: 18 Mar 20 09:31 AM

Page Number : 1
Vial Number : 57
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH

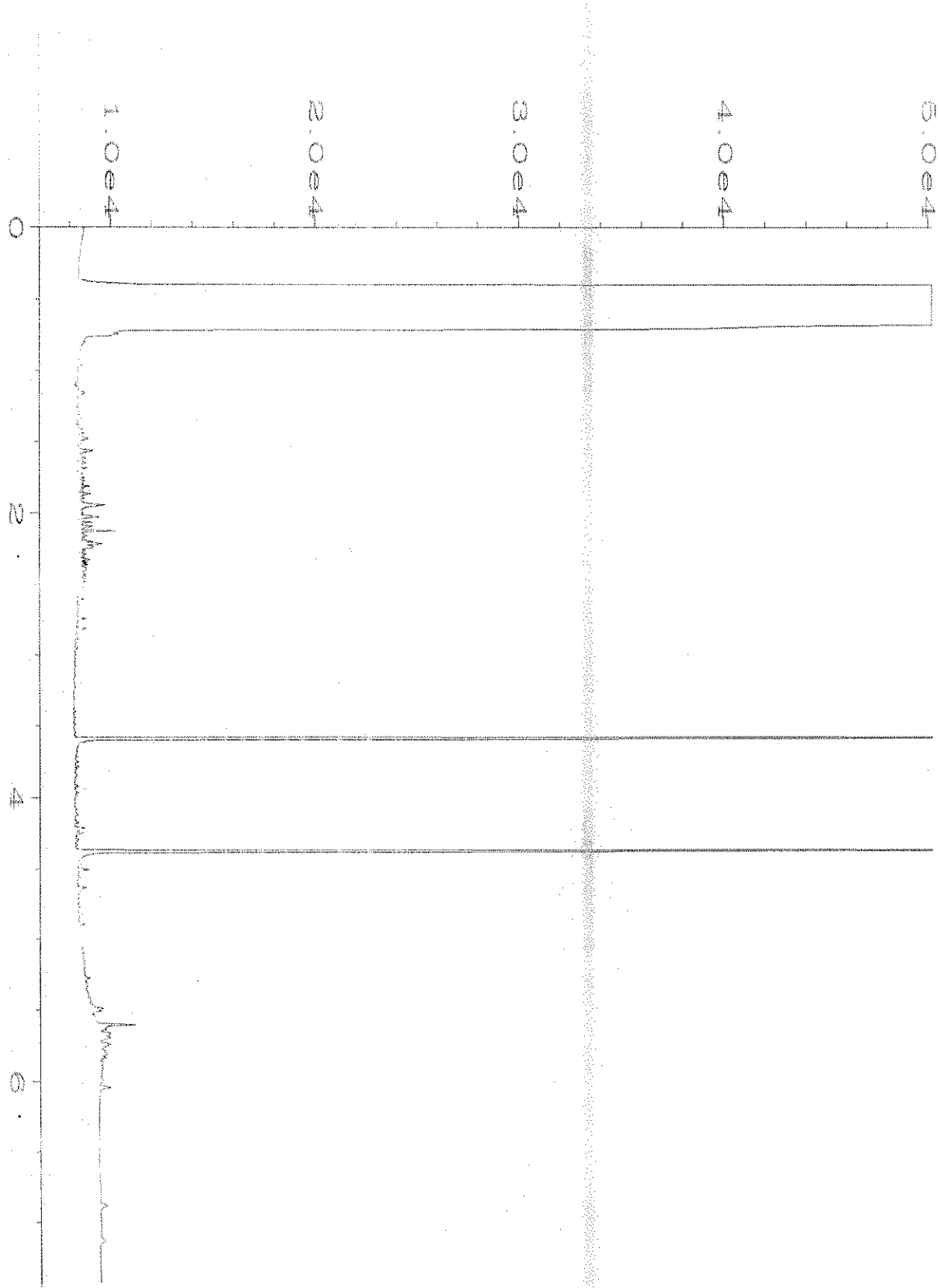


Data File Name : C:\HPCHEM\1\DATA\03-17-20\058F0801.D
Operator : TL
Instrument : GC1
Sample Name. : 003244-88
Run Time Bar Code:
Acquired on : 18 Mar 20 05:24 AM
Report Created on: 18 Mar 20 09:31 AM

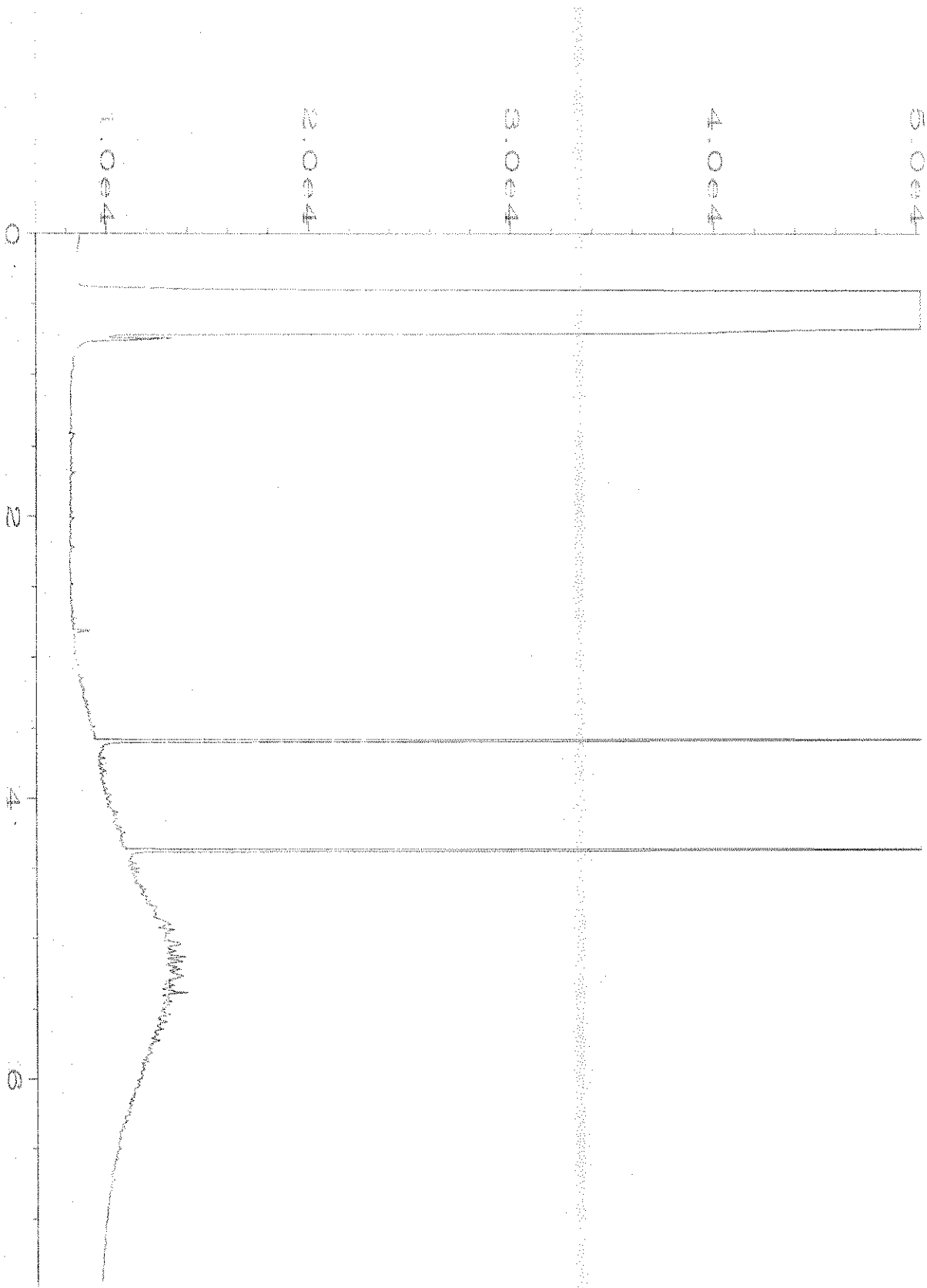
Page Number : 1
Vial Number : 58
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH



Data File Name	: C:\HPCHEM\1\DATA\03-17-20\059F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 59
Sample Name	: 003244-91	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 18 Mar 20 05:36 AM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:31 AM	Analysis Method	: DX.MTH

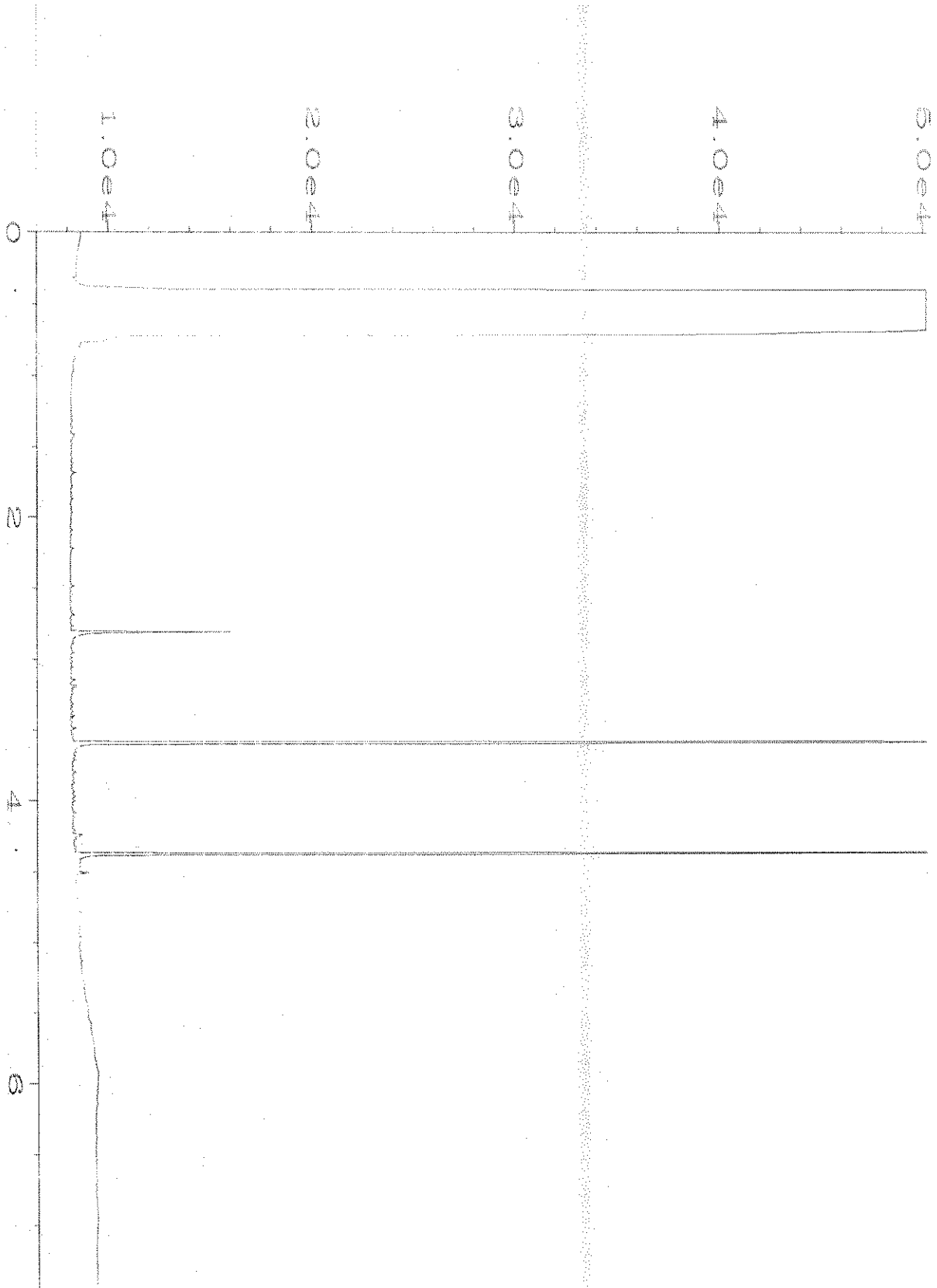


Data File Name	: C:\HPCHEM\1\DATA\03-17-20\060F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 60
Sample Name	: 003244-92	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 18 Mar 20 05:47 AM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:31 AM	Analysis Method	: DX.MTH



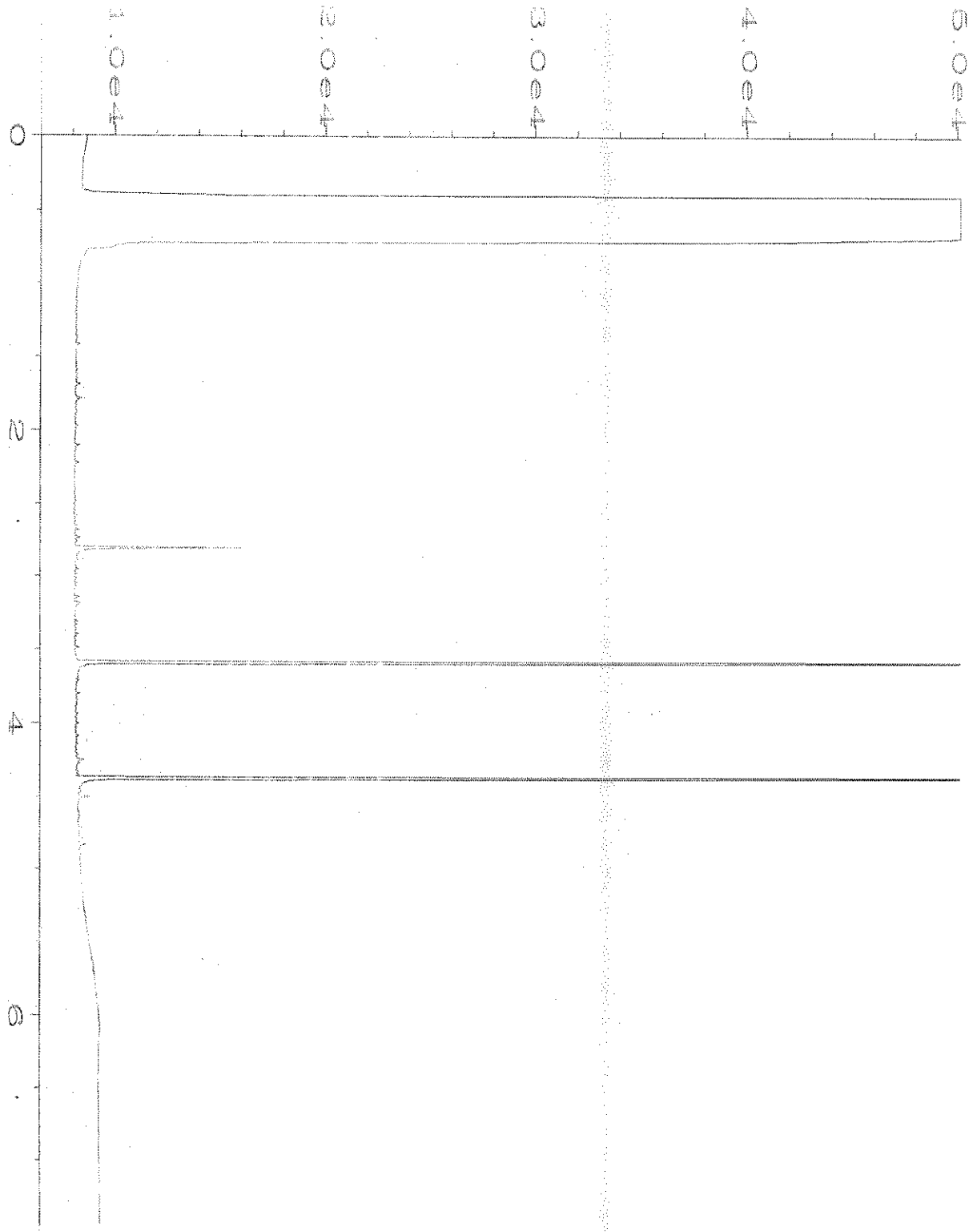
Data File Name : C:\HPCHEM\1\DATA\03-17-20\061F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-94
Run Time Bar Code:
Acquired on : 18 Mar 20 05:58 AM
Report Created on: 18 Mar 20 09:31 AM

Page Number : 1
Vial Number : 61
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH



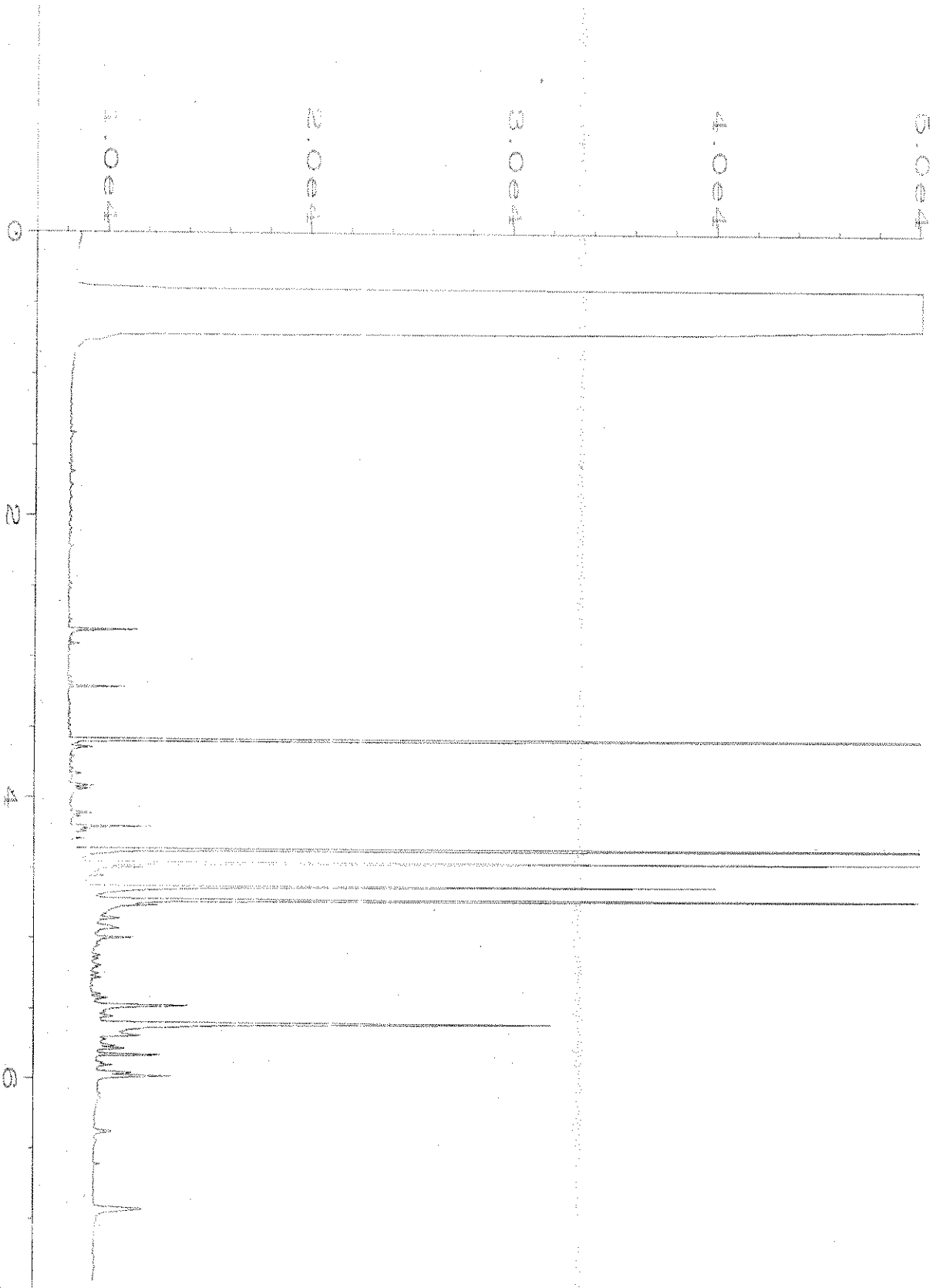
Data File Name : C:\HPCHEM\1\DATA\03-17-20\062F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-98
Run Time Bar Code:
Acquired on : 18 Mar 20 06:10 AM
Report Created on: 18 Mar 20 09:31 AM

Page Number : 1
Vial Number : 62
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH



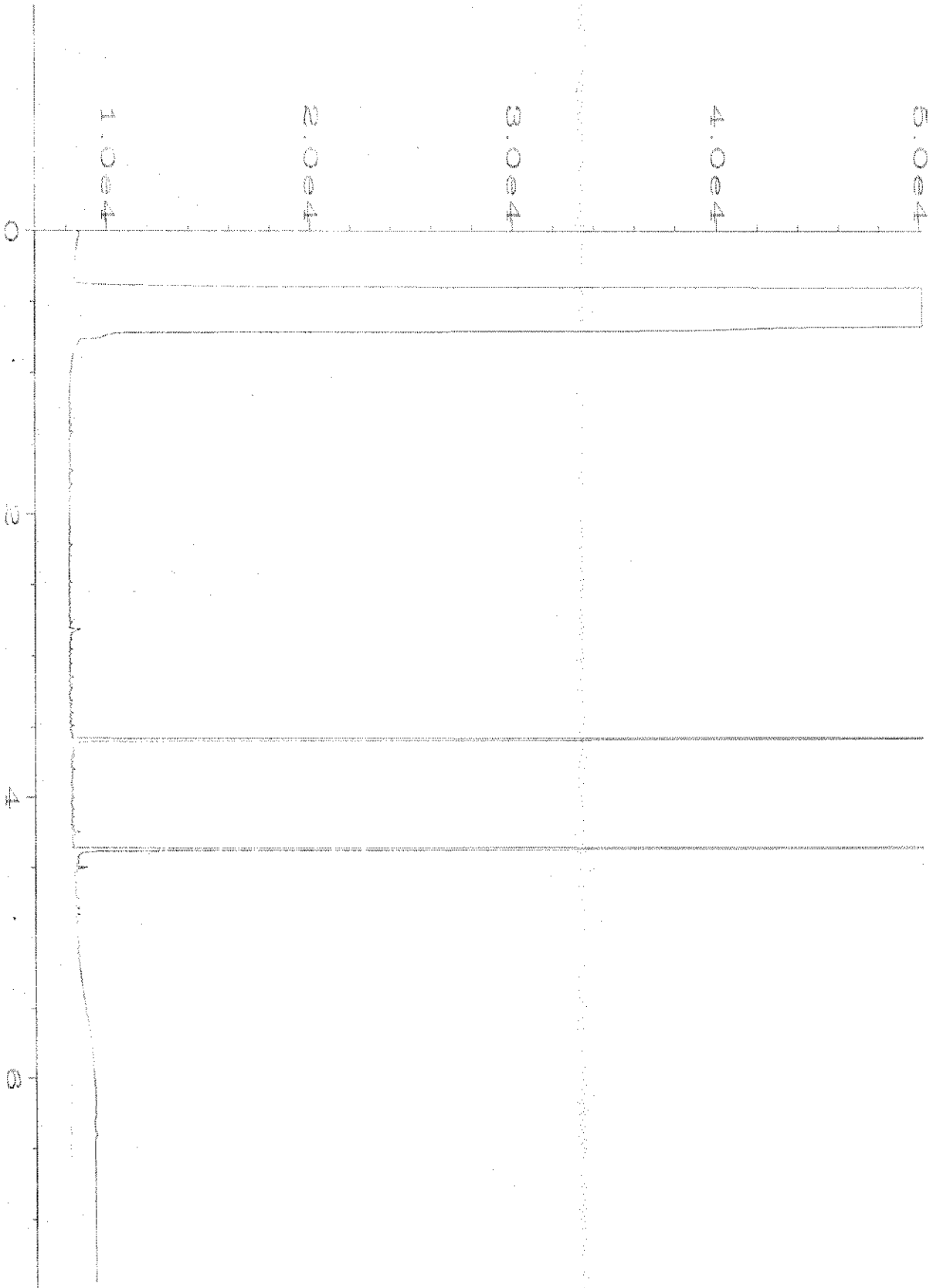
Data File Name : C:\HPCHEM\1\DATA\03-17-20\063F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-99
Run Time Bar Code:
Acquired on : 18 Mar 20 06:21 AM
Report Created on: 18 Mar 20 09:31 AM

Page Number : 1
Vial Number : 63
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH

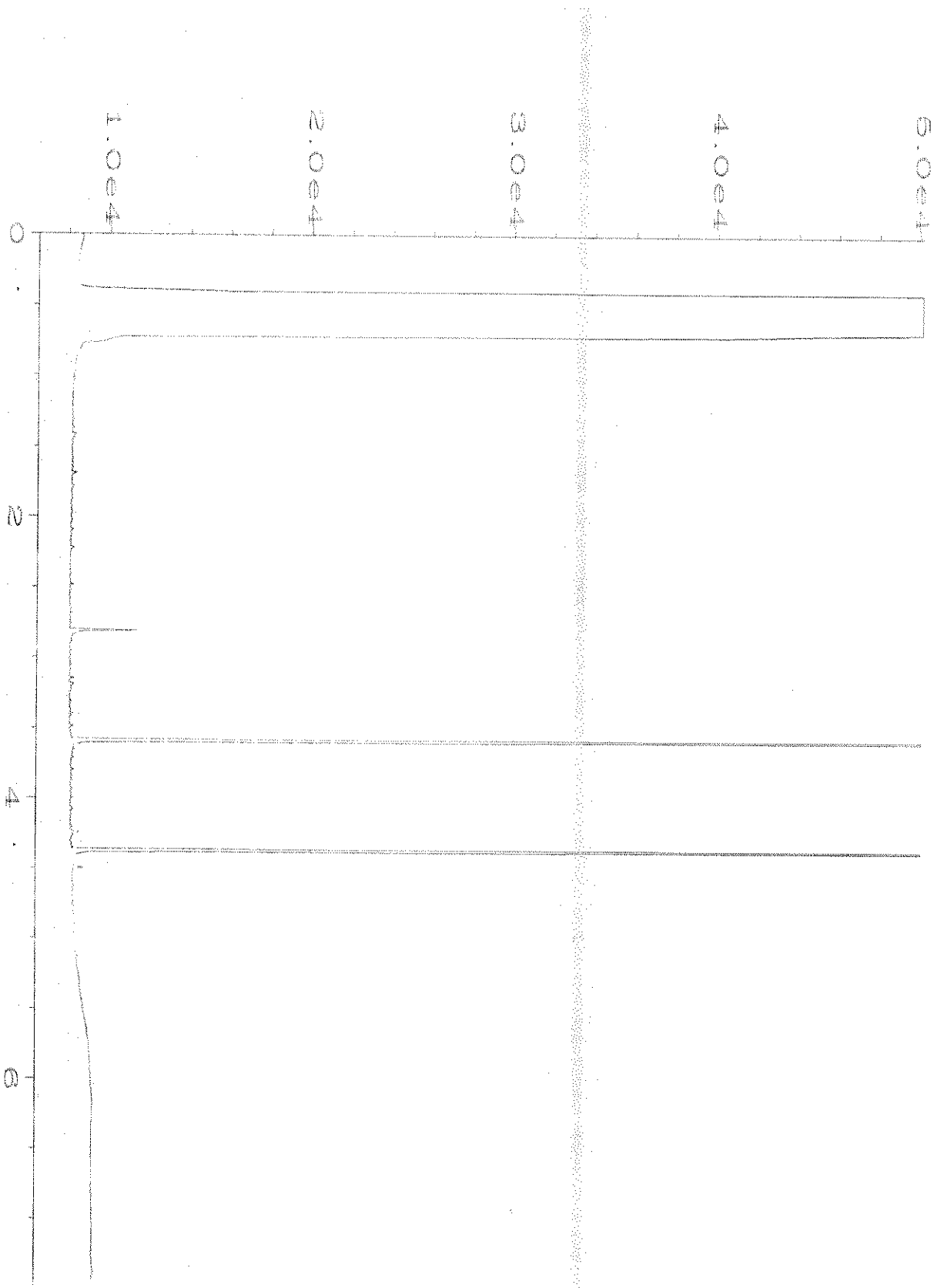


Data File Name : C:\HPCHEM\1\DATA\03-17-20\064F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-101
Run Time Bar Code:
Acquired on : 18 Mar 20 06:32 AM
Report Created on: 18 Mar 20 09:31 AM

Page Number : 1
Vial Number : 64
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH

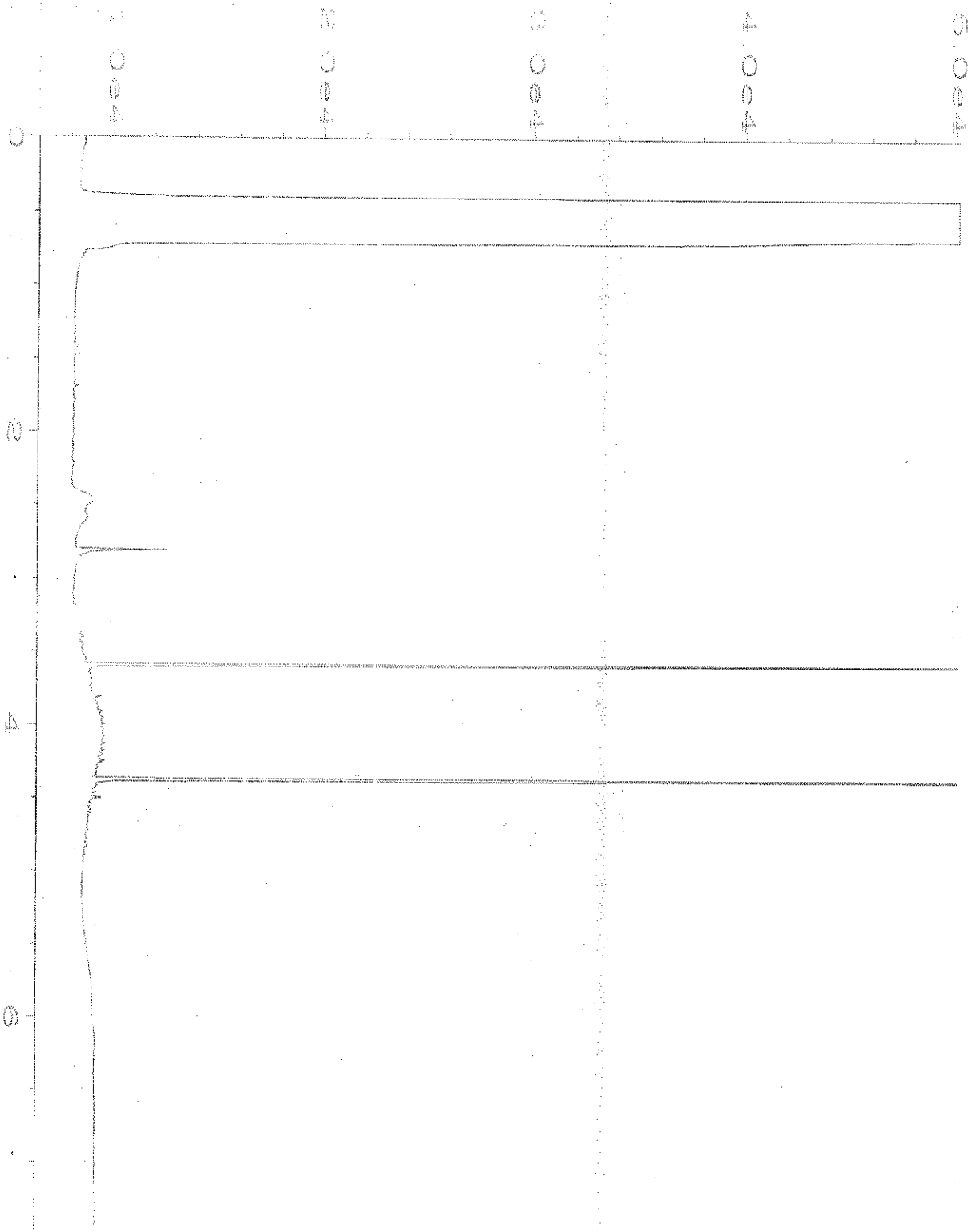


Data File Name	: C:\HPCHEM\1\DATA\03-17-20\065F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 65
Sample Name	: 003244-102	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 18 Mar 20 06:44 AM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:31 AM	Analysis Method	: DX.MTH



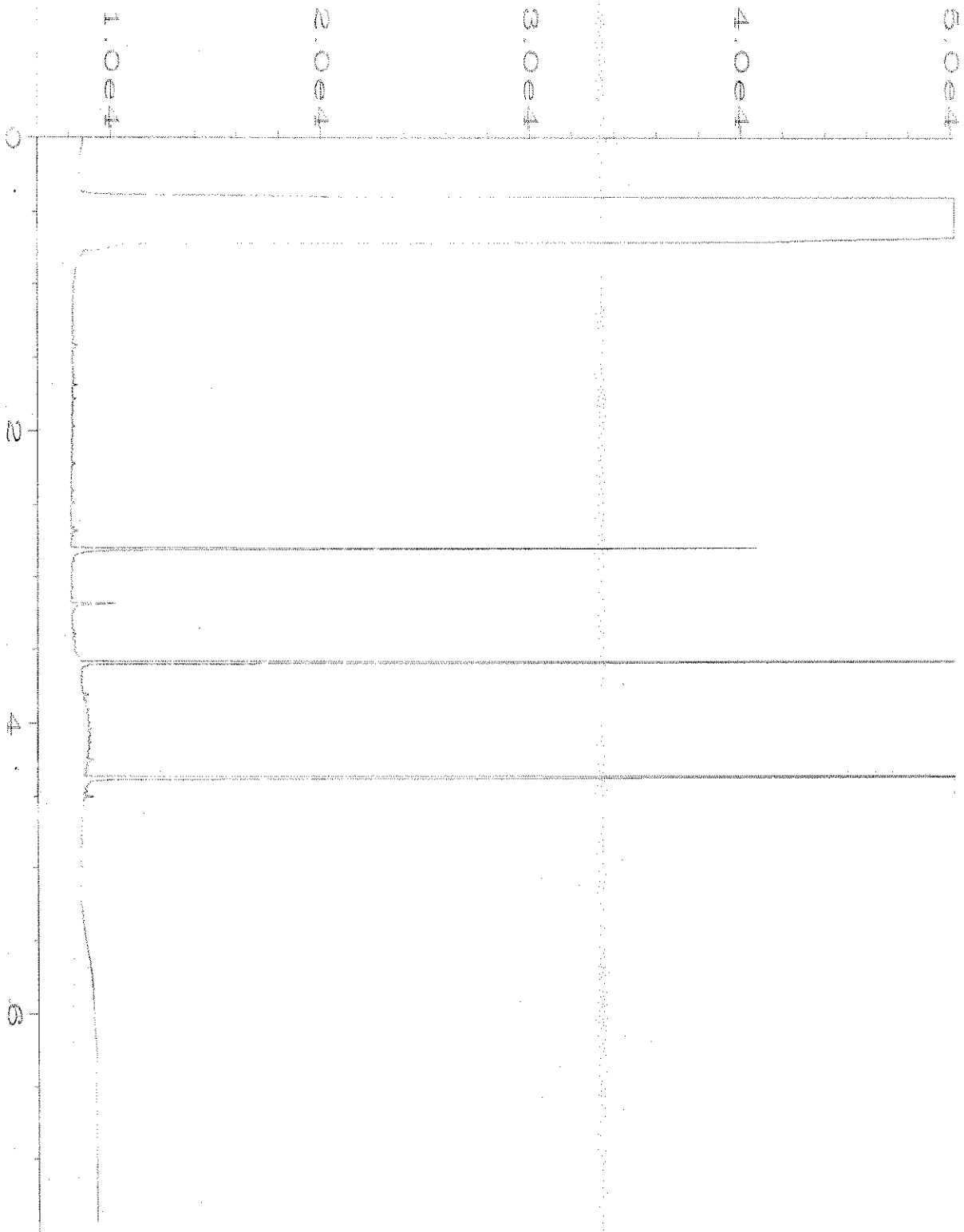
Data File Name : C:\HPCHEM\1\DATA\03-17-20\066F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-103
Run Time Bar Code:
Acquired on : 18 Mar 20 06:55 AM
Report Created on: 18 Mar 20 09:32 AM

Page Number : 1
Vial Number : 66
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH



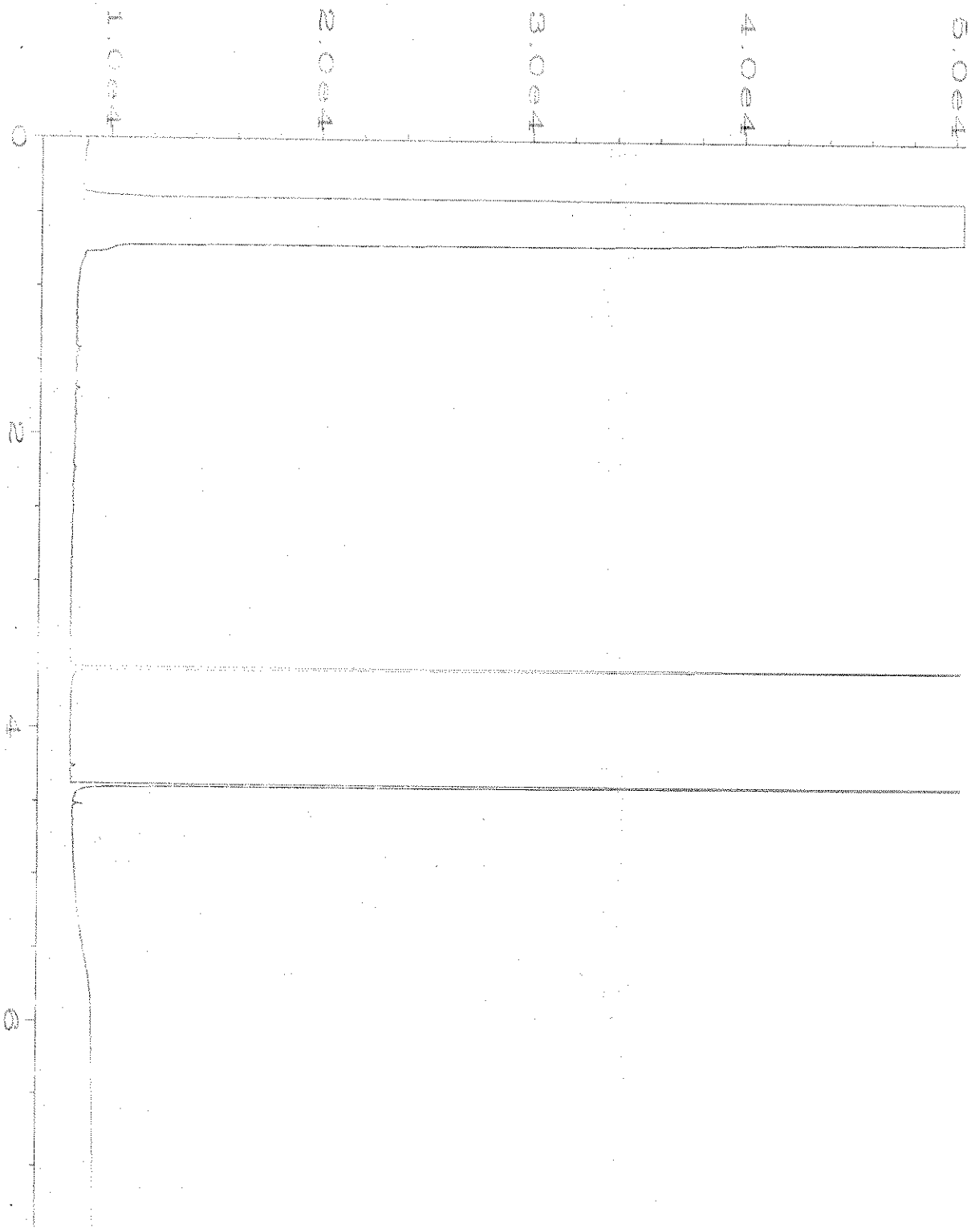
Data File Name : C:\HPCHEM\1\DATA\03-17-20\067F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-104
Run Time Bar Code:
Acquired on : 18 Mar 20 07:06 AM
Report Created on: 18 Mar 20 09:32 AM

Page Number : 1
Vial Number : 67
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH

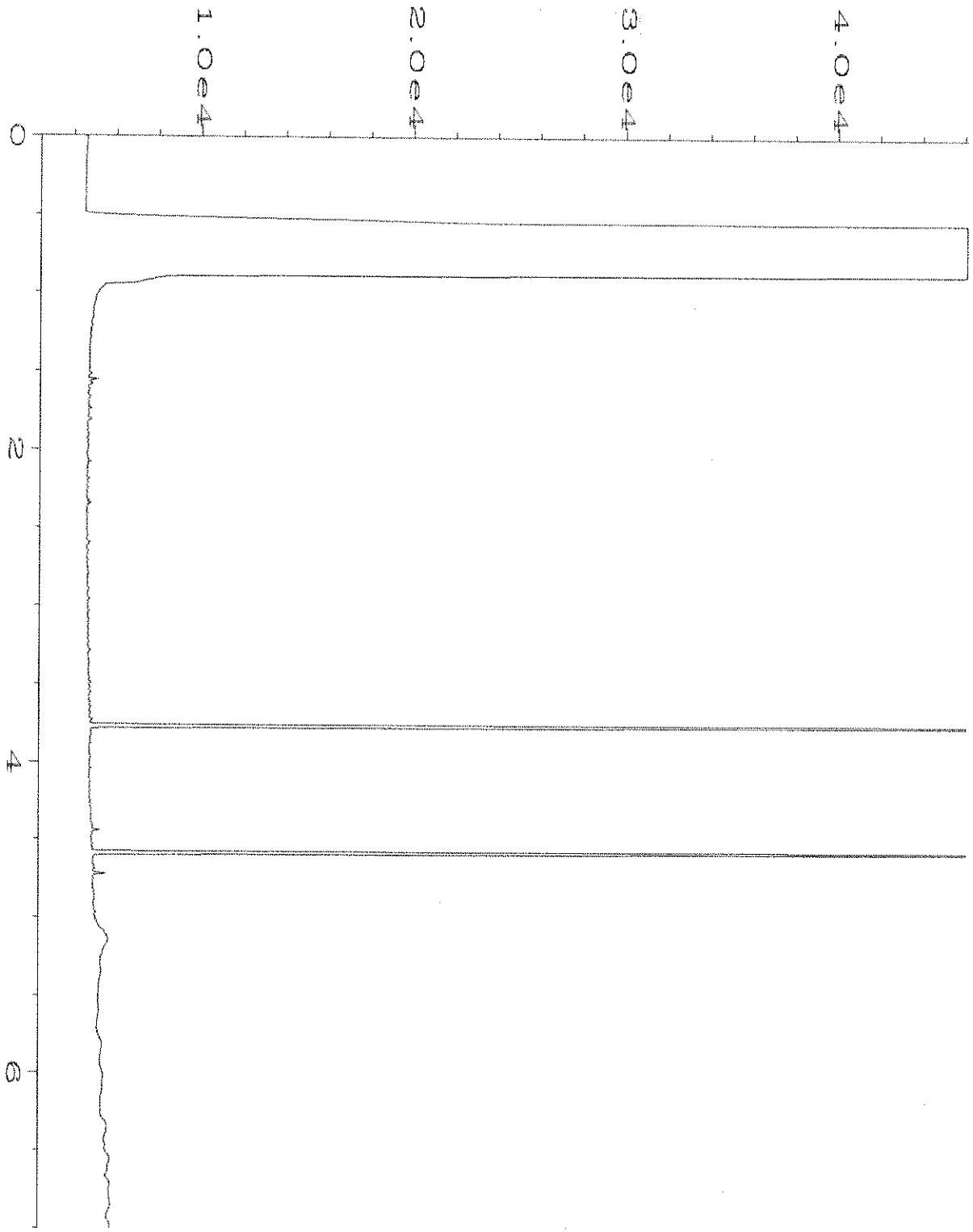


Data File Name : C:\HPCHEM\1\DATA\03-17-20\068F0801.D
Operator : TL
Instrument : GC1
Sample Name : 003244-107
Run Time Bar Code:
Acquired on : 18 Mar 20 07:18 AM
Report Created on: 18 Mar 20 09:32 AM

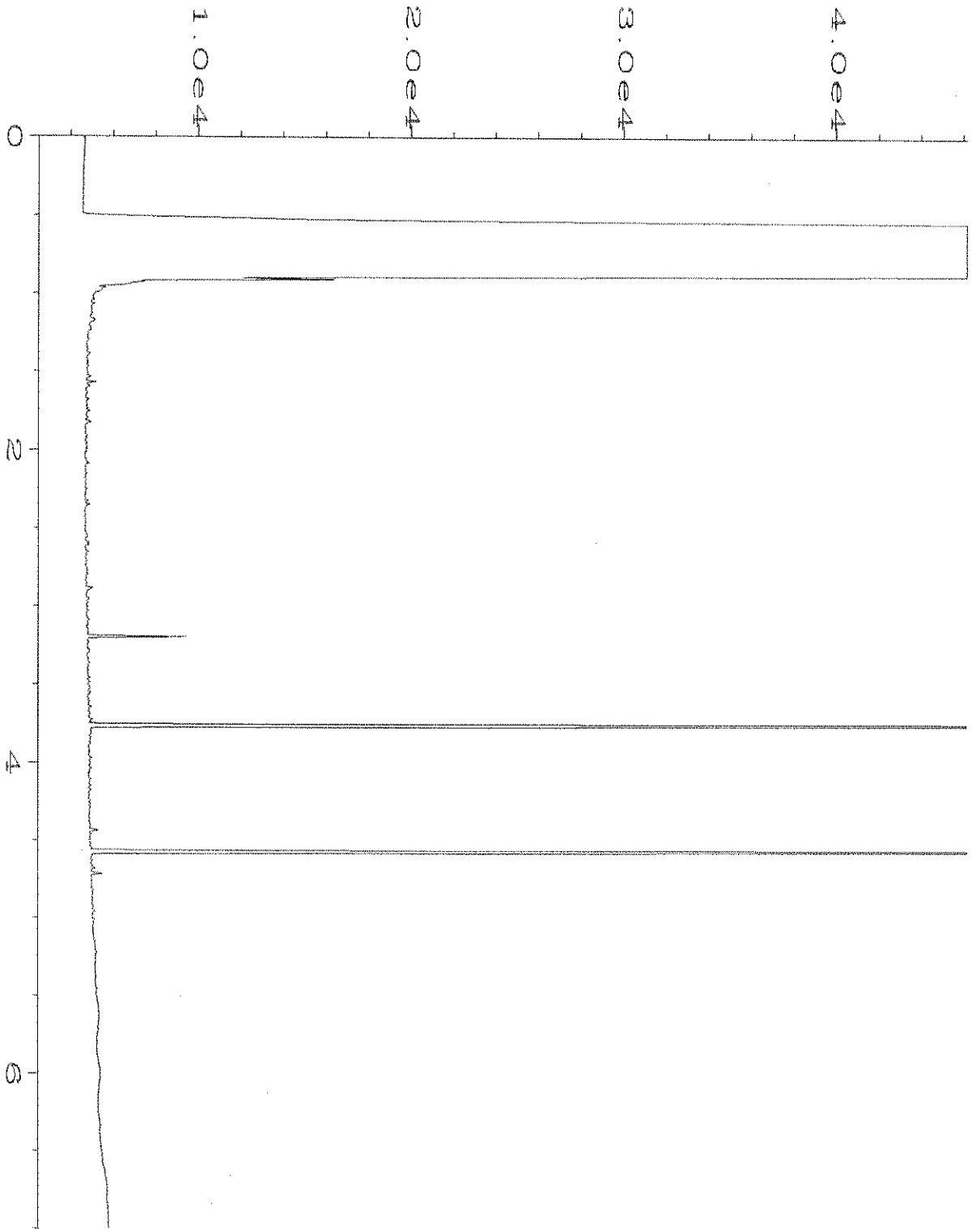
Page Number : 1
Vial Number : 68
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH



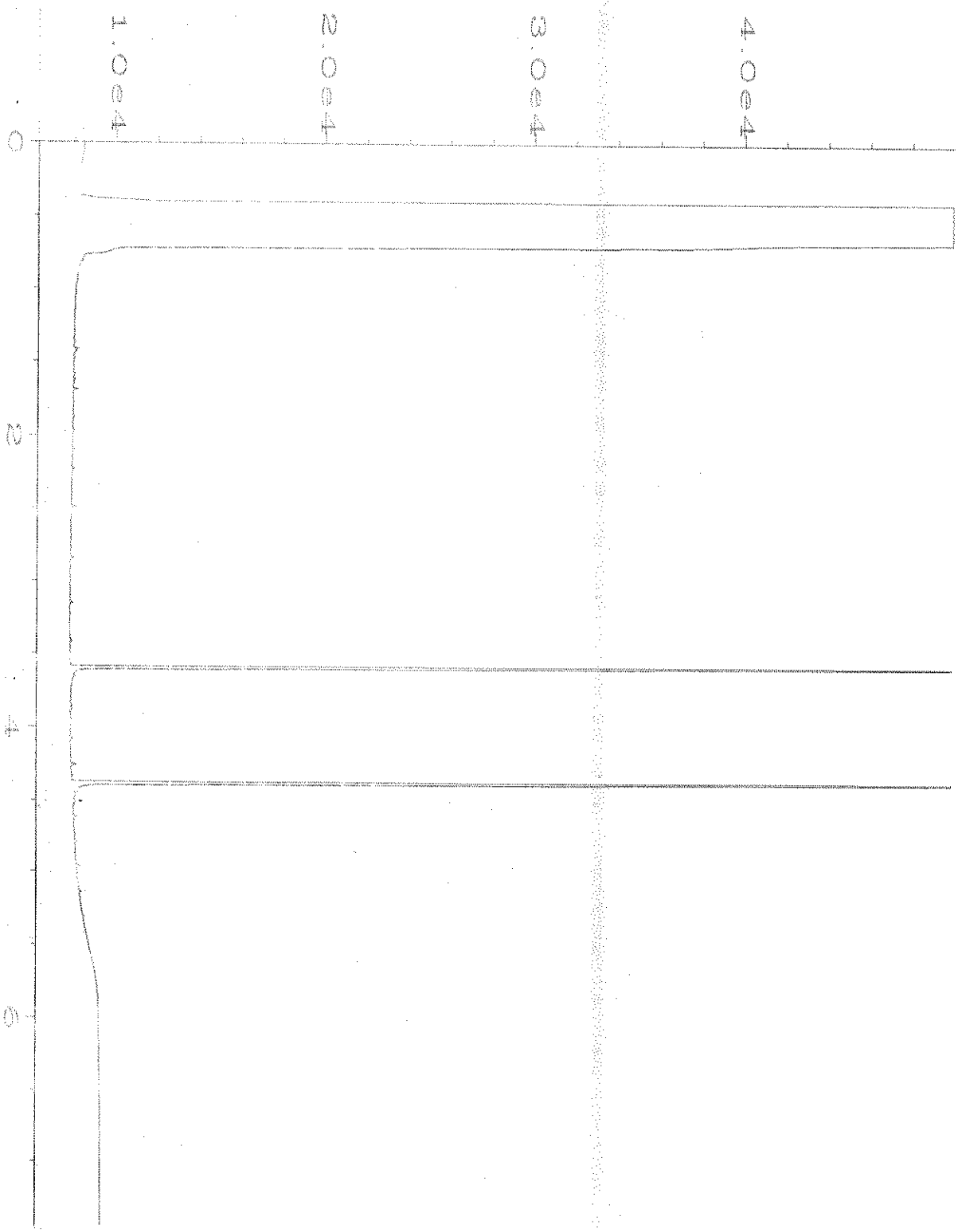
Data File Name	: C:\HPCHEM\1\DATA\03-17-20\012F0301.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 12
Sample Name	: 00-686 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 3
Acquired on	: 17 Mar 20 09:48 AM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 01:23 PM	Analysis Method	: DX.MTH



Data File Name	: C:\HPCHEM\6\DATA\03-17-20\031F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 31
Sample Name	: 00-687 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 05:17 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 10:58 AM	Analysis Method	: DEFAULT.MTH

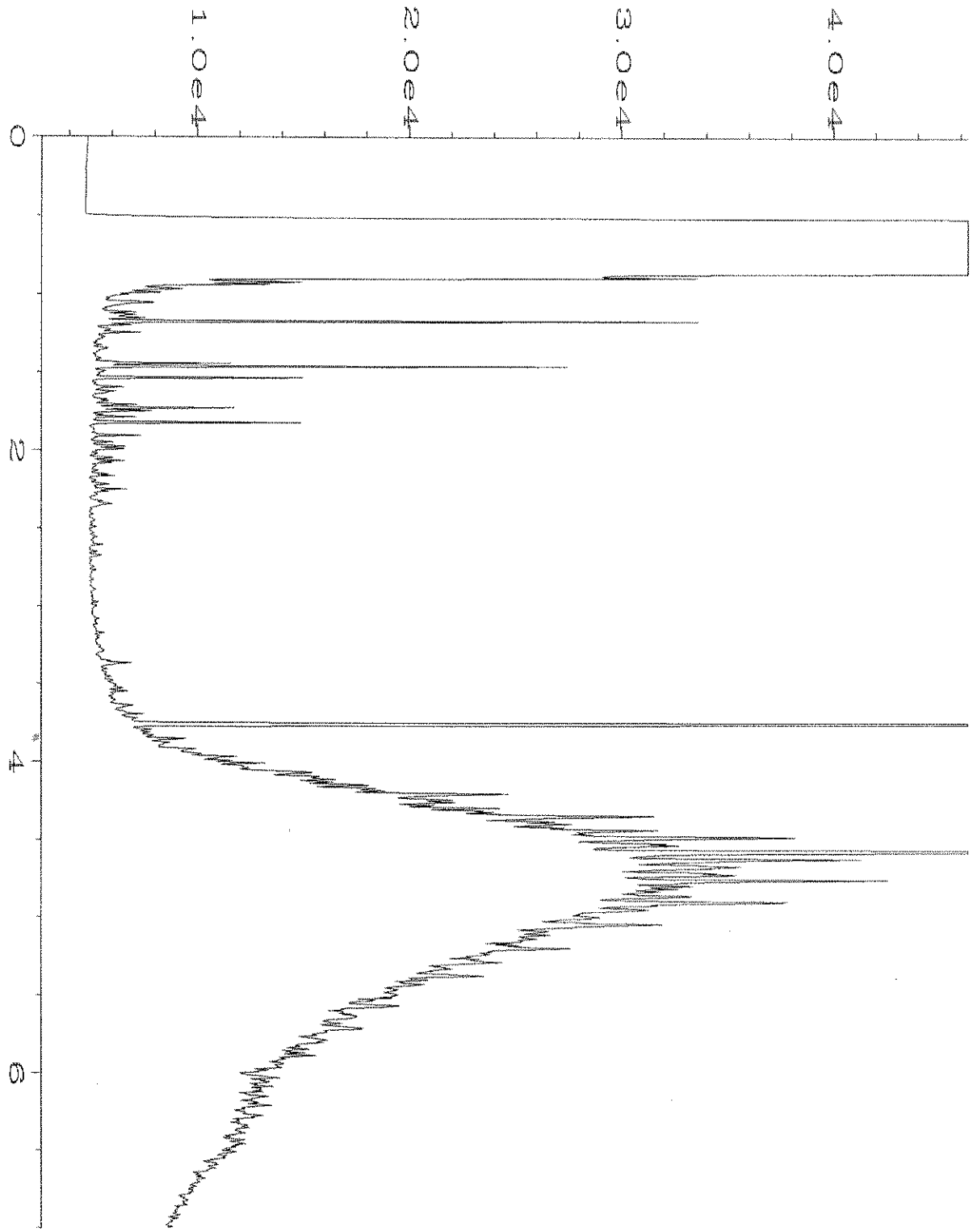


Data File Name	: C:\HPCHEM\6\DATA\03-17-20\054F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 54
Sample Name	: 00-688 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 17 Mar 20 09:26 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 11:08 AM	Analysis Method	: DEFAULT.MTH



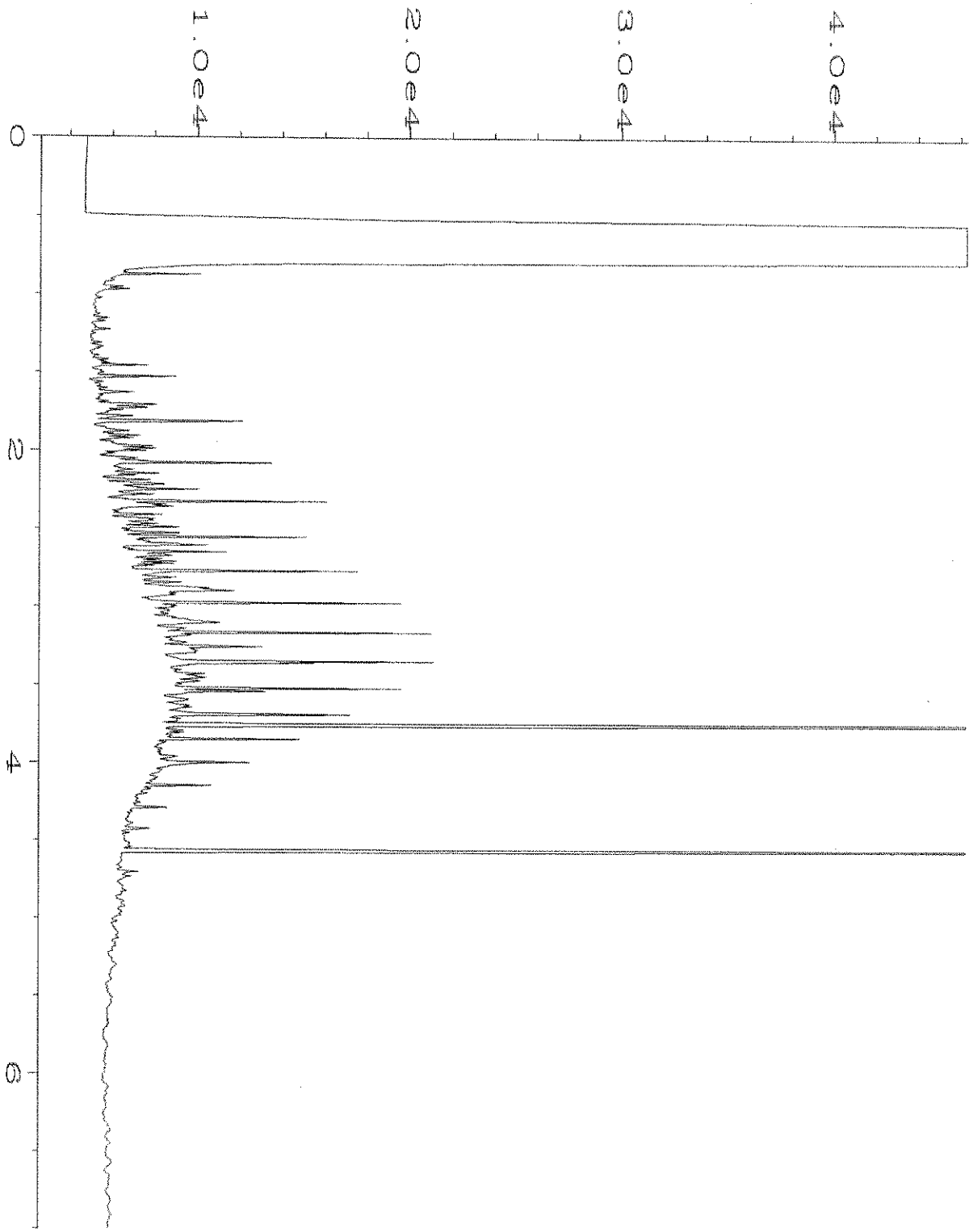
Data File Name : C:\HPCHEM\1\DATA\03-17-20\044F0801.D
Operator : TL
Instrument : GC1
Sample Name : 00-689 mb
Run Time Bar Code:
Acquired on : 17 Mar 20 05:39 PM
Report Created on: 18 Mar 20 09:29 AM

Page Number : 1
Vial Number : 44
Injection Number : 1
Sequence Line : 8
Instrument Method: DX.MTH
Analysis Method : DX.MTH

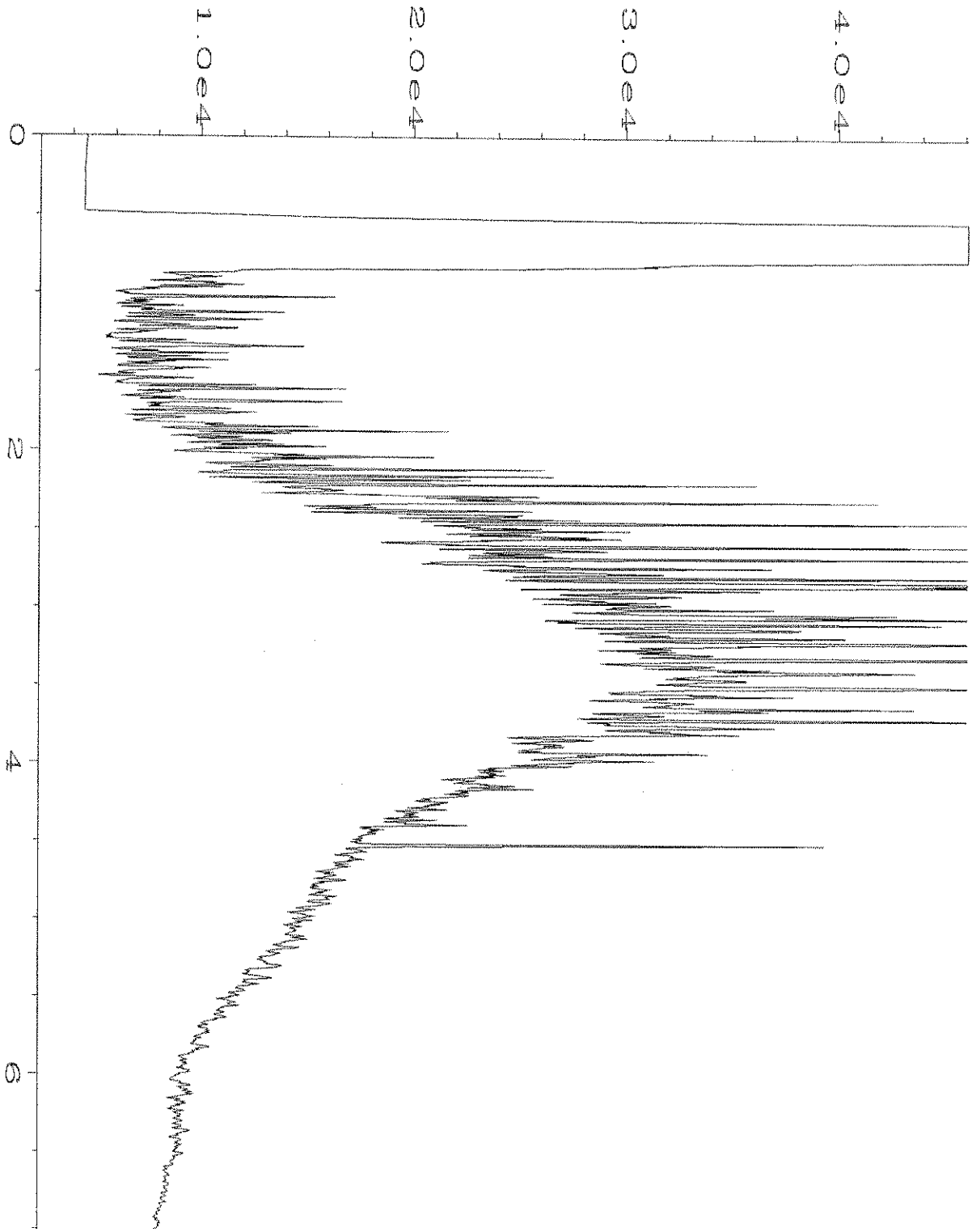


Data File Name : C:\HPCHEM\6\DATA\03-17-20\096F0501.D
Operator : TL
Instrument : GC6
Sample Name : HCIDs G/M 57-167
Run Time Bar Code:
Acquired on : 17 Mar 20 03:00 PM
Report Created on: 18 Mar 20 10:51 AM

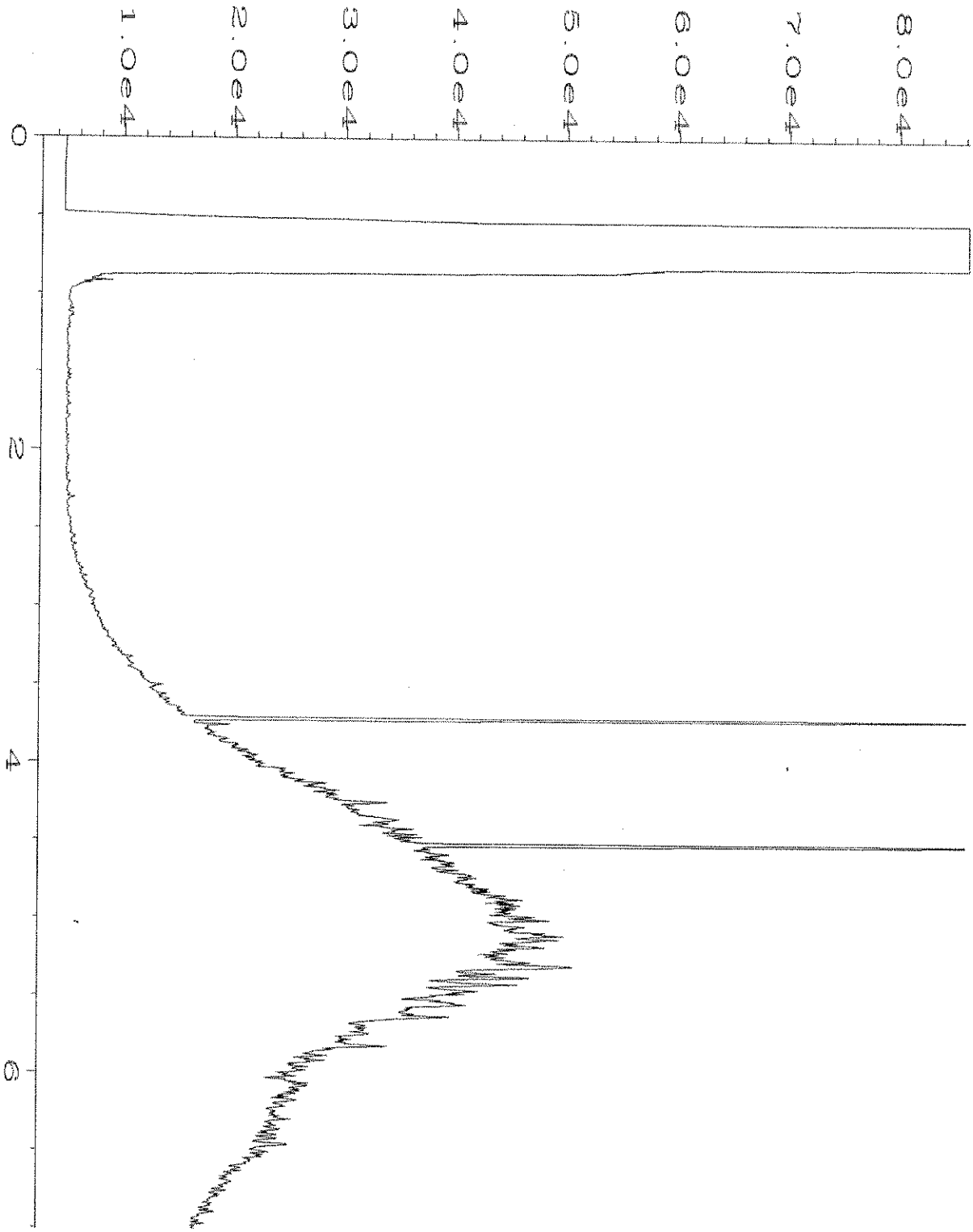
Page Number : 1
Vial Number : 96
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\6\DATA\03-17-20\097F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 97
Sample Name	: HCIDs Dx 57-78D	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 03:11 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 10:52 AM	Analysis Method	: DEFAULT.MTH

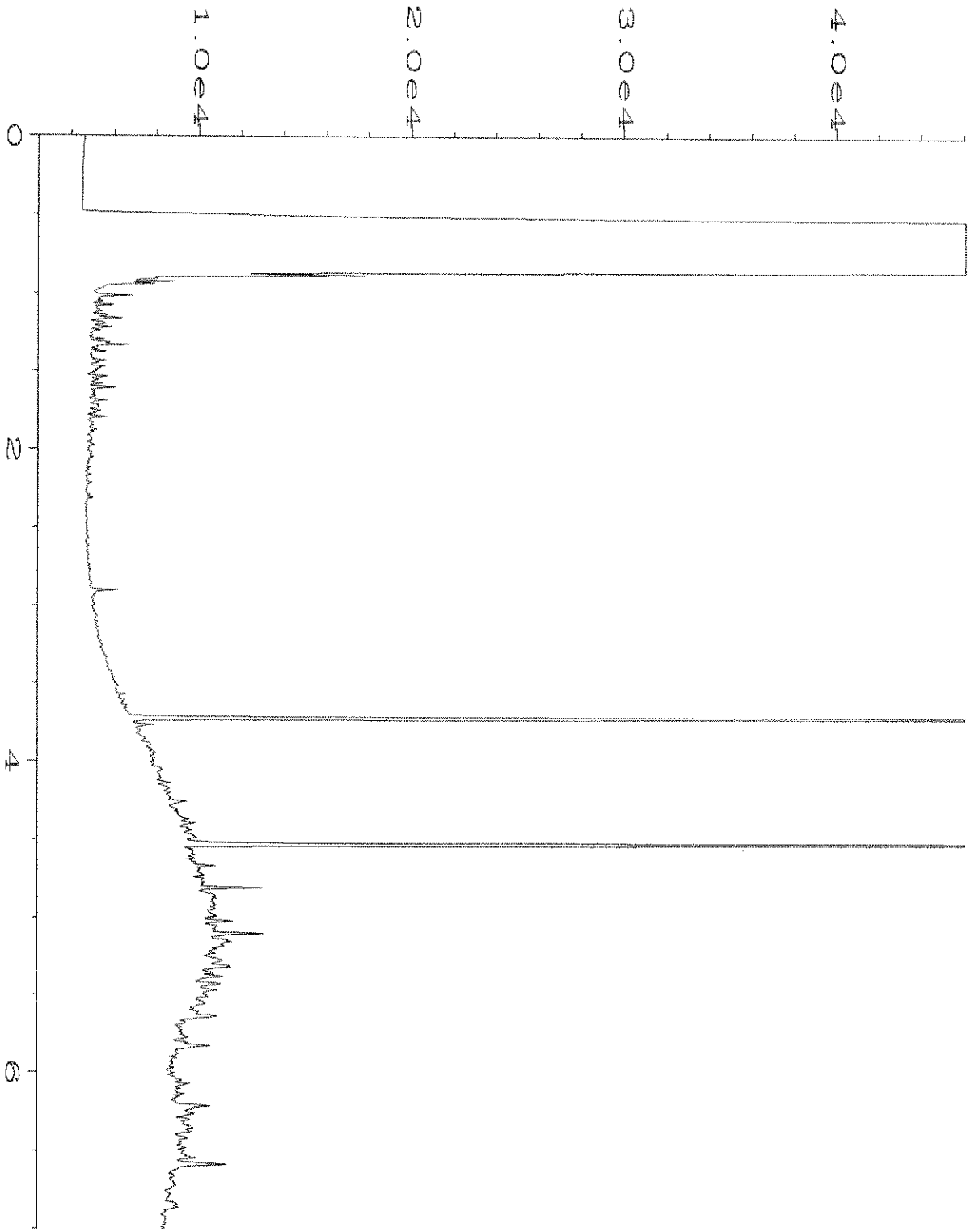


Data File Name	: C:\HPCHEM\6\DATA\03-19-20\029F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 29
Sample Name	: 003244-01 1/10	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 19 Mar 20 05:59 PM	Instrument Method	: DX.MTH
Report Created on	: 20 Mar 20 08:27 AM	Analysis Method	: DEFAULT.MTH

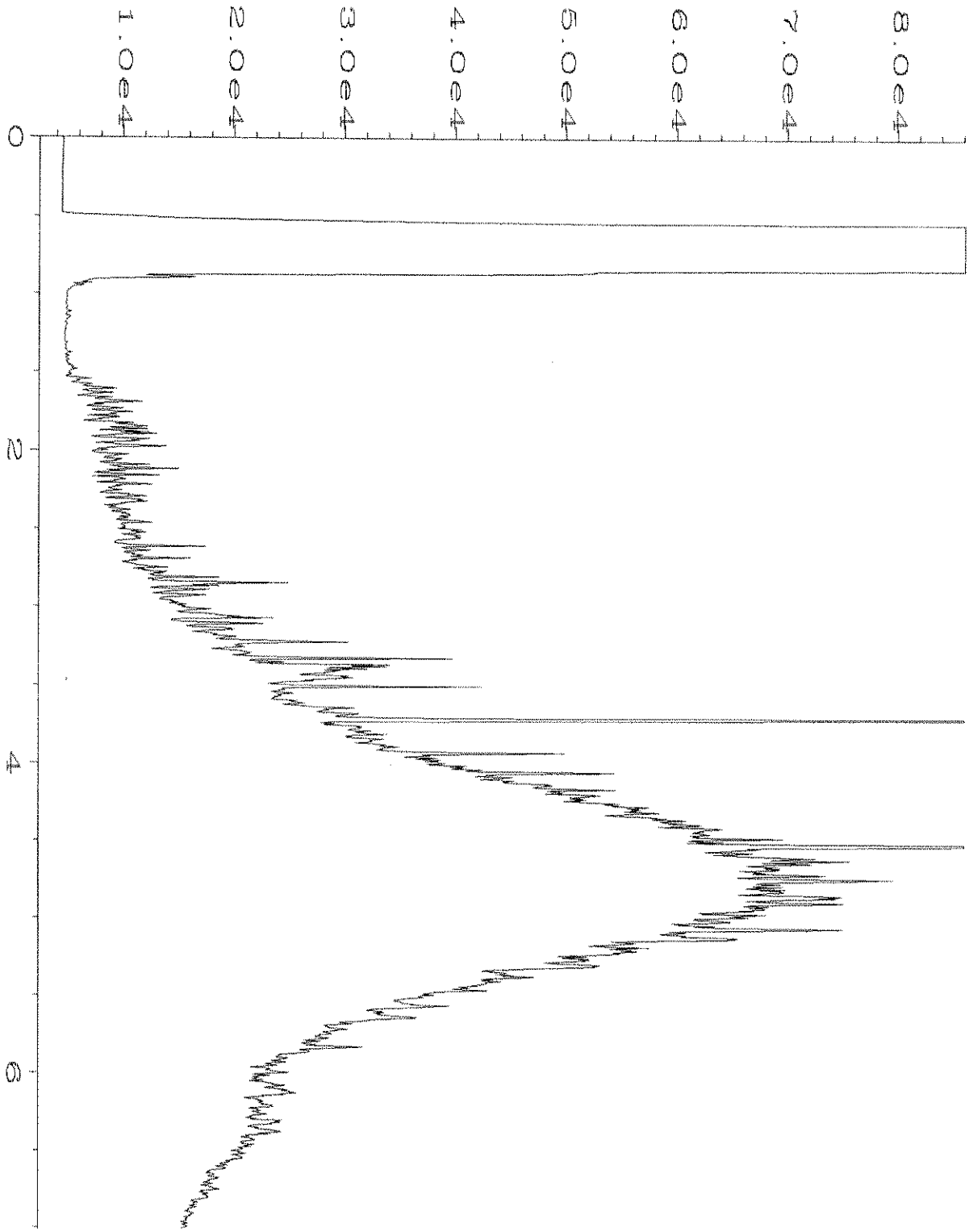


Data File Name : C:\HPCHEM\6\DATA\03-20-20\023F1101.D
Operator : TL
Instrument : GC6
Sample Name : 003244-05
Run Time Bar Code:
Acquired on : 20 Mar 20 03:35 PM
Report Created on: 23 Mar 20 08:38 AM

Page Number : 1
Vial Number : 23
Injection Number : 1
Sequence Line : 11
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

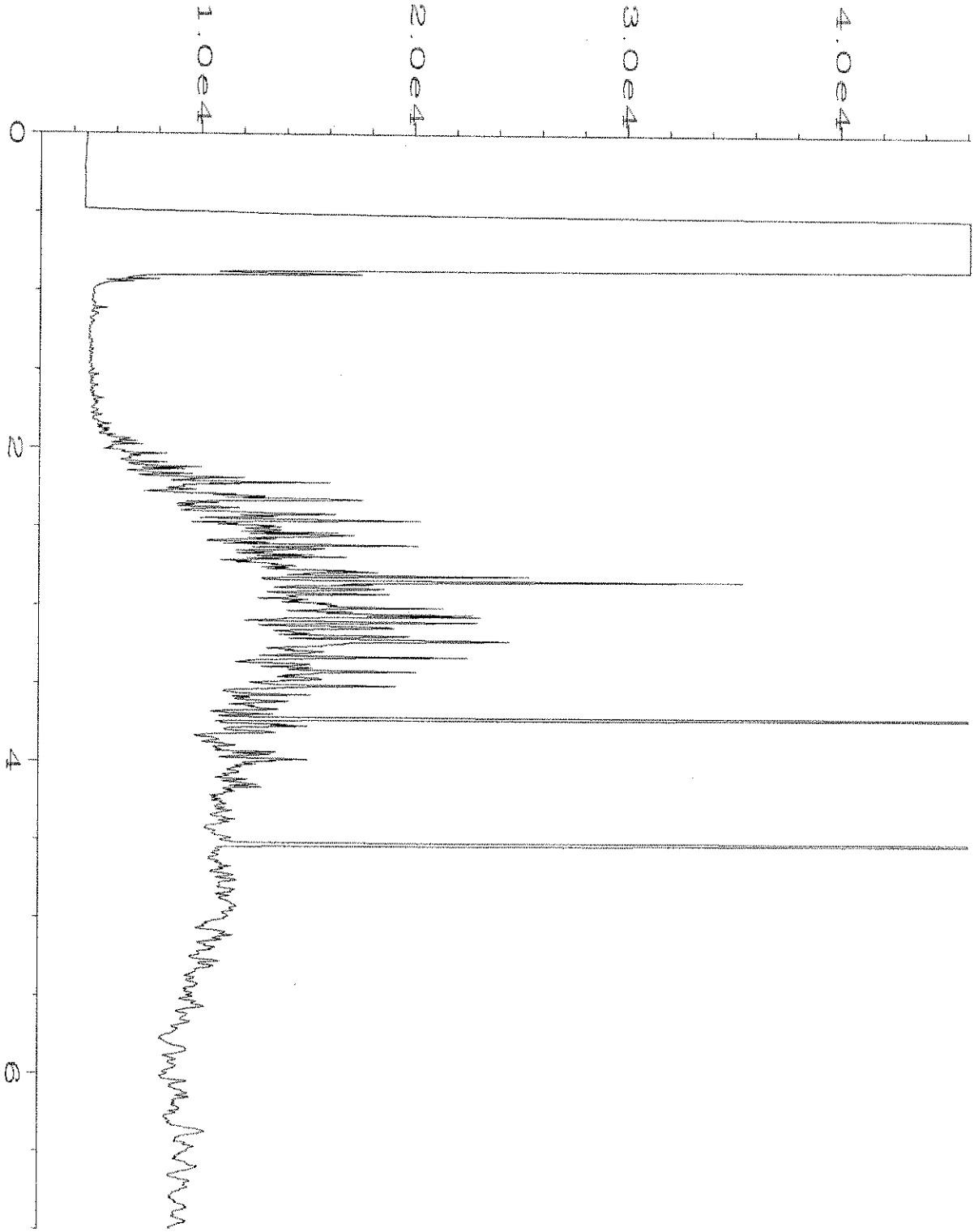


Data File Name	: C:\HPCHEM\6\DATA\03-19-20\031F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 31
Sample Name	: 003244-06	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 19 Mar 20 06:21 PM	Instrument Method	: DX.MTH
Report Created on:	20 Mar 20 08:27 AM	Analysis Method	: DEFAULT.MTH

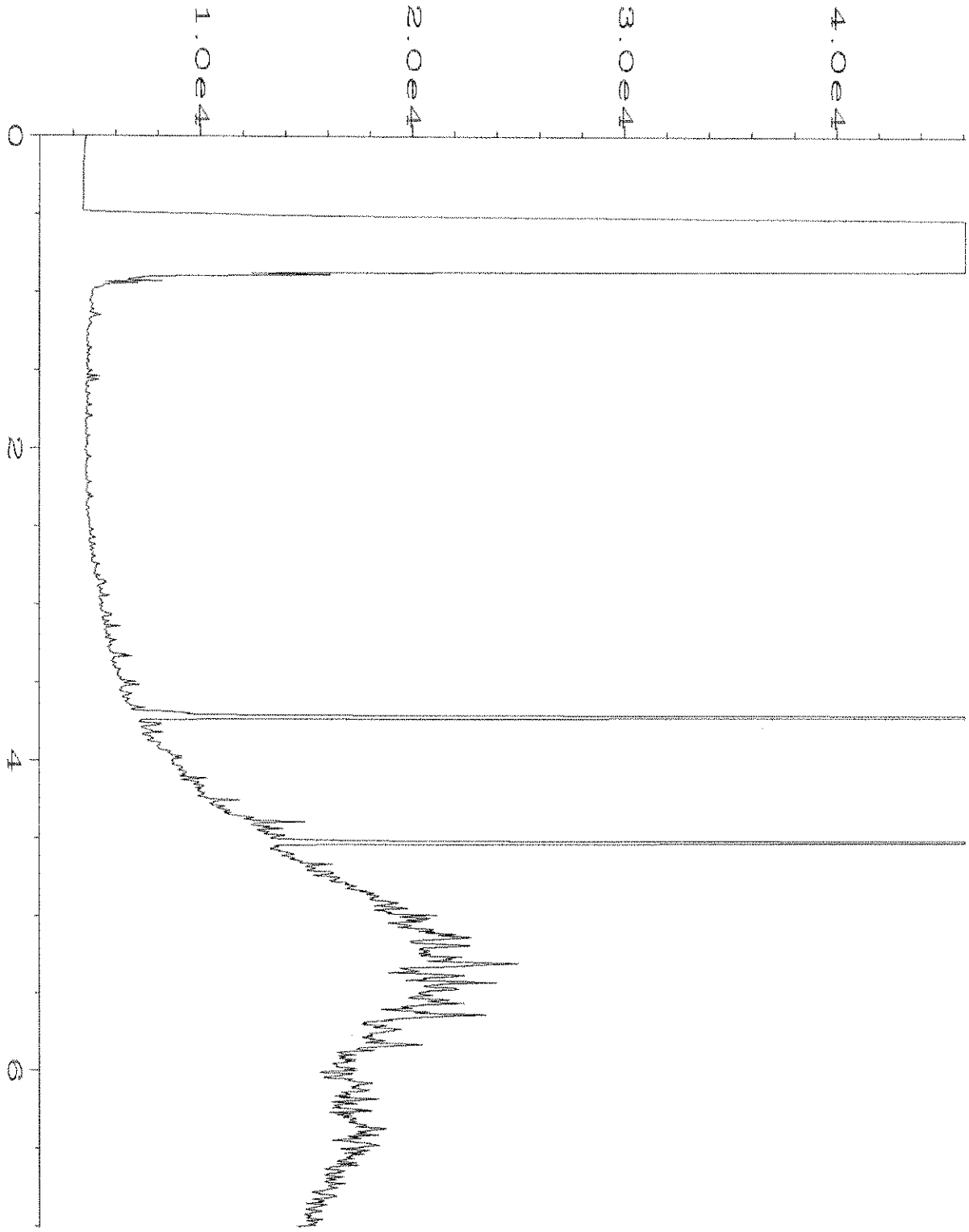


Data File Name : C:\HPCHEM\6\DATA\03-19-20\032F0701.D
Operator : TL
Instrument : GC6
Sample Name : 003244-15
Run Time Bar Code:
Acquired on : 19 Mar 20 06:31 PM
Report Created on: 20 Mar 20 08:28 AM

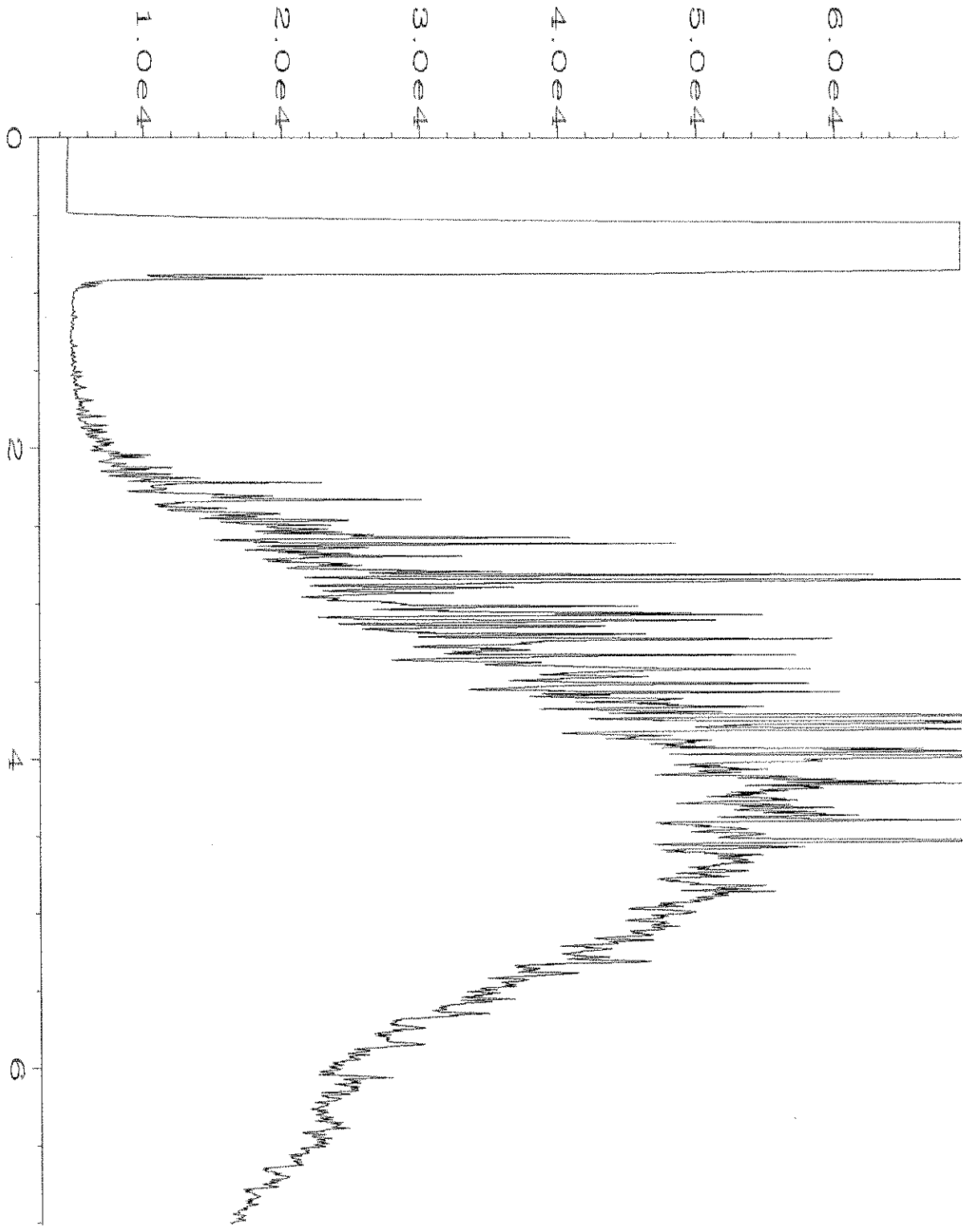
Page Number : 1
Vial Number : 32
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\6\DATA\03-19-20\033F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 33
Sample Name	: 003244-42	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 19 Mar 20 06:42 PM	Instrument Method	: DX.MTH
Report Created on:	20 Mar 20 08:28 AM	Analysis Method	: DEFAULT.MTH

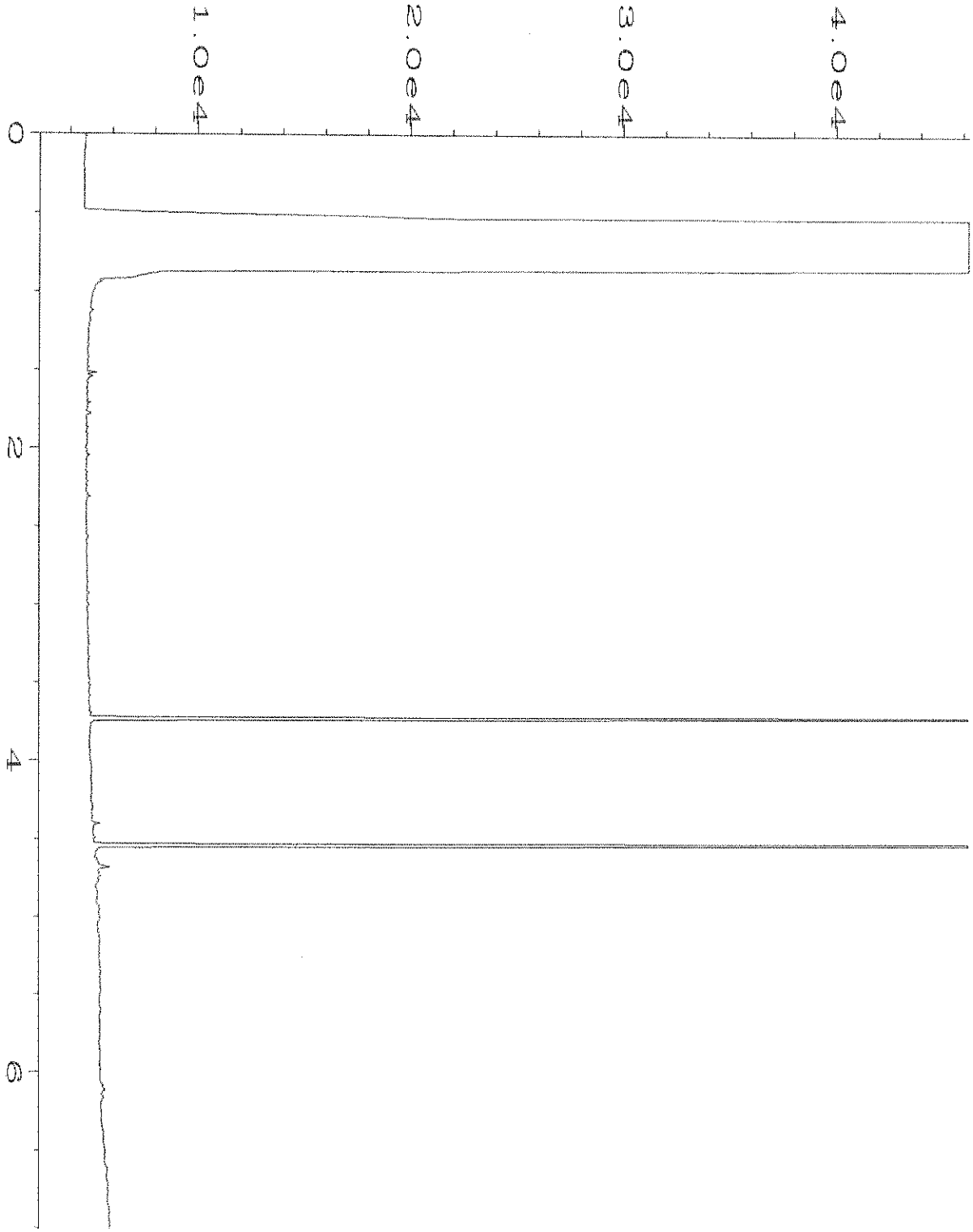


Data File Name	: C:\HPCHEM\6\DATA\03-19-20\034F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 34
Sample Name	: 003244-62	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 19 Mar 20 06:53 PM	Instrument Method	: DX.MTH
Report Created on	: 20 Mar 20 08:28 AM	Analysis Method	: DEFAULT.MTH

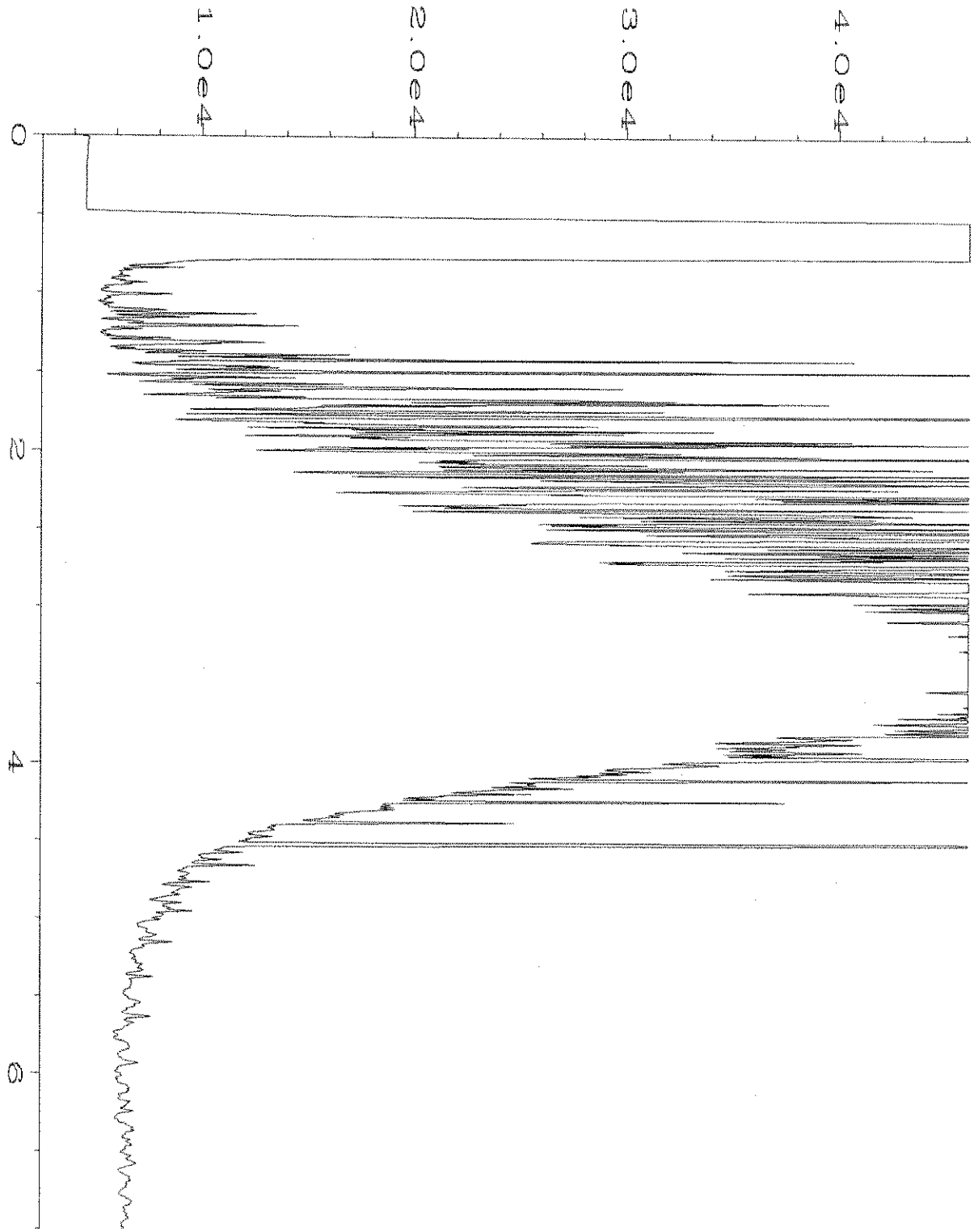


Data File Name : C:\HPCHEM\6\DATA\03-19-20\035F0701.D
Operator : TL
Instrument : GC6
Sample Name : 003244-68
Run Time Bar Code:
Acquired on : 19 Mar 20 07:04 PM
Report Created on: 20 Mar 20 08:29 AM

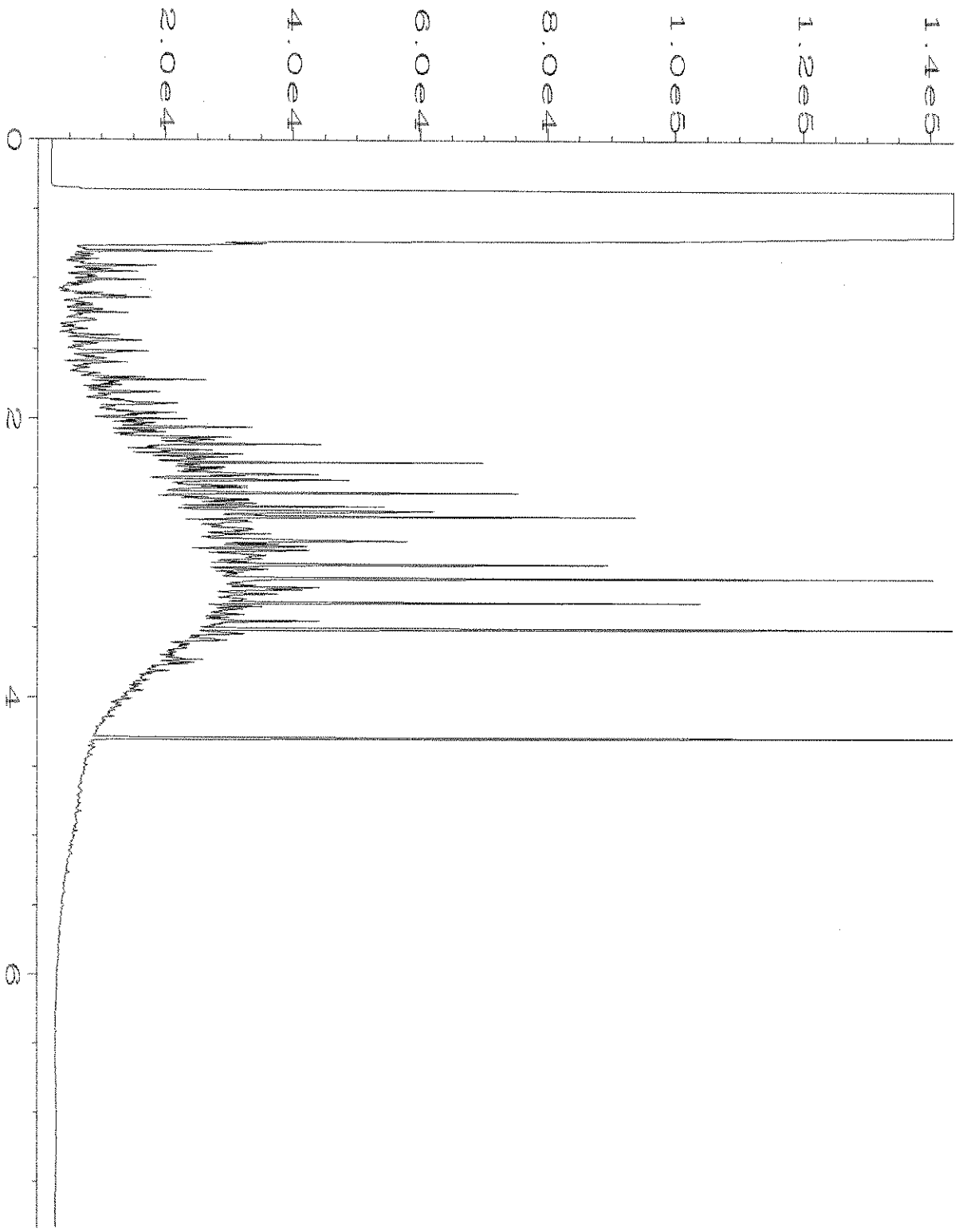
Page Number : 1
Vial Number : 35
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



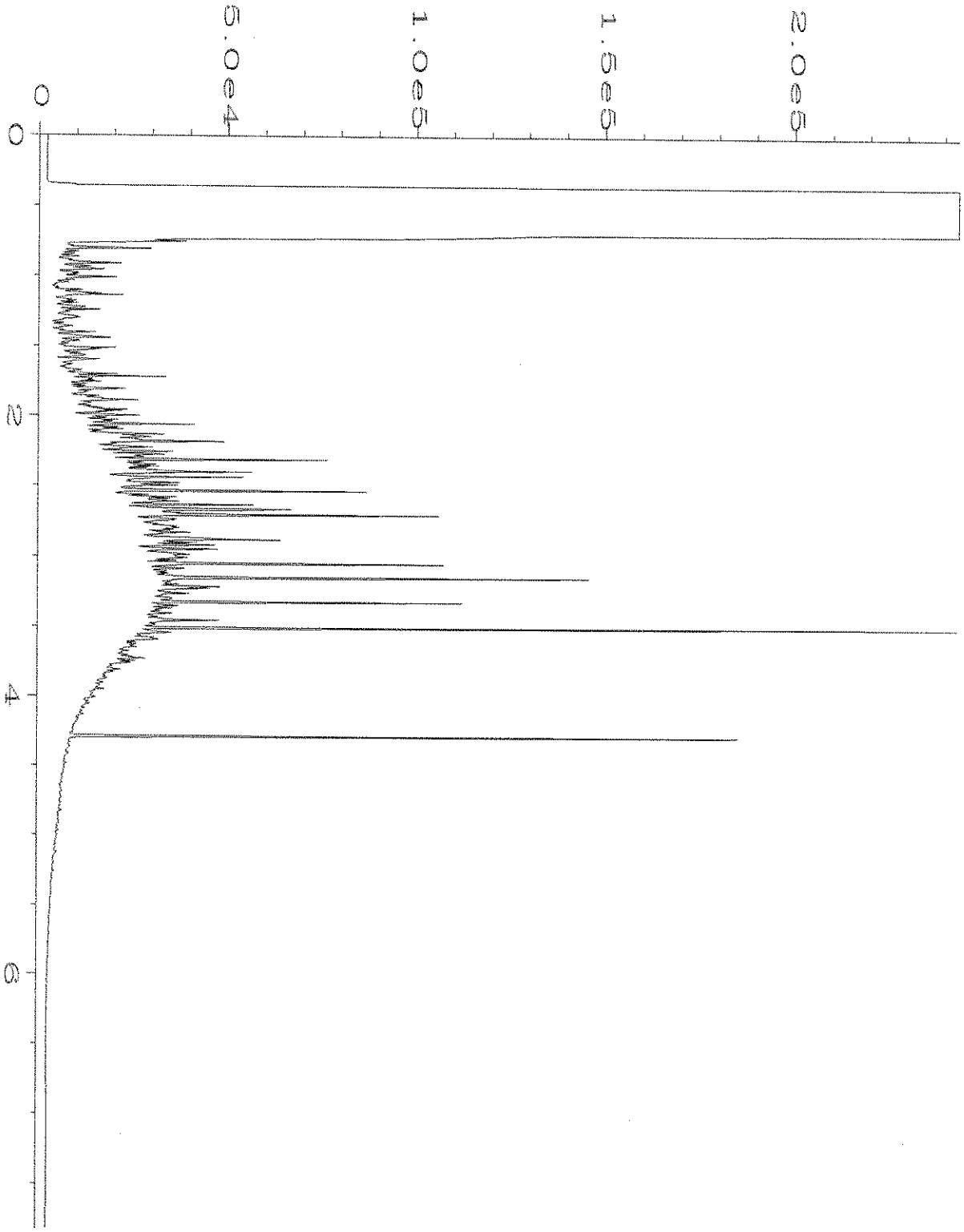
Data File Name	: C:\HPCHEM\6\DATA\03-19-20\018F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 18
Sample Name	: 00-724 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 19 Mar 20 03:40 PM	Instrument Method	: DX.MTH
Report Created on:	20 Mar 20 08:27 AM	Analysis Method	: DEFAULT.MTH



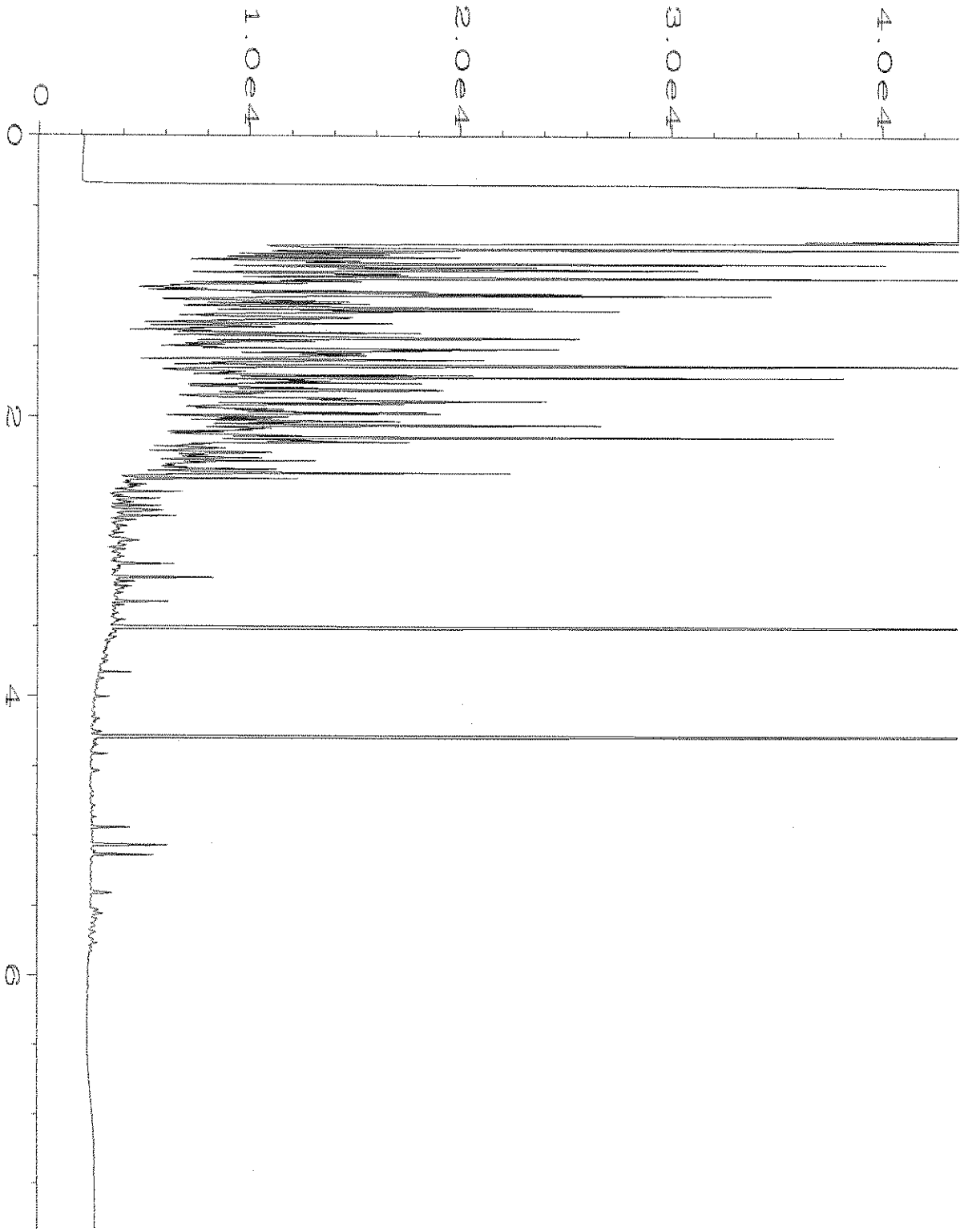
Data File Name	: C:\HPCHEM\6\DATA\03-19-20\003F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC6	Vial Number	: 3
Sample Name	: 500 Dx 58-146H	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 19 Mar 20 05:04 PM	Instrument Method	: DX.MTH
Report Created on:	20 Mar 20 08:27 AM	Analysis Method	: DEFAULT.MTH



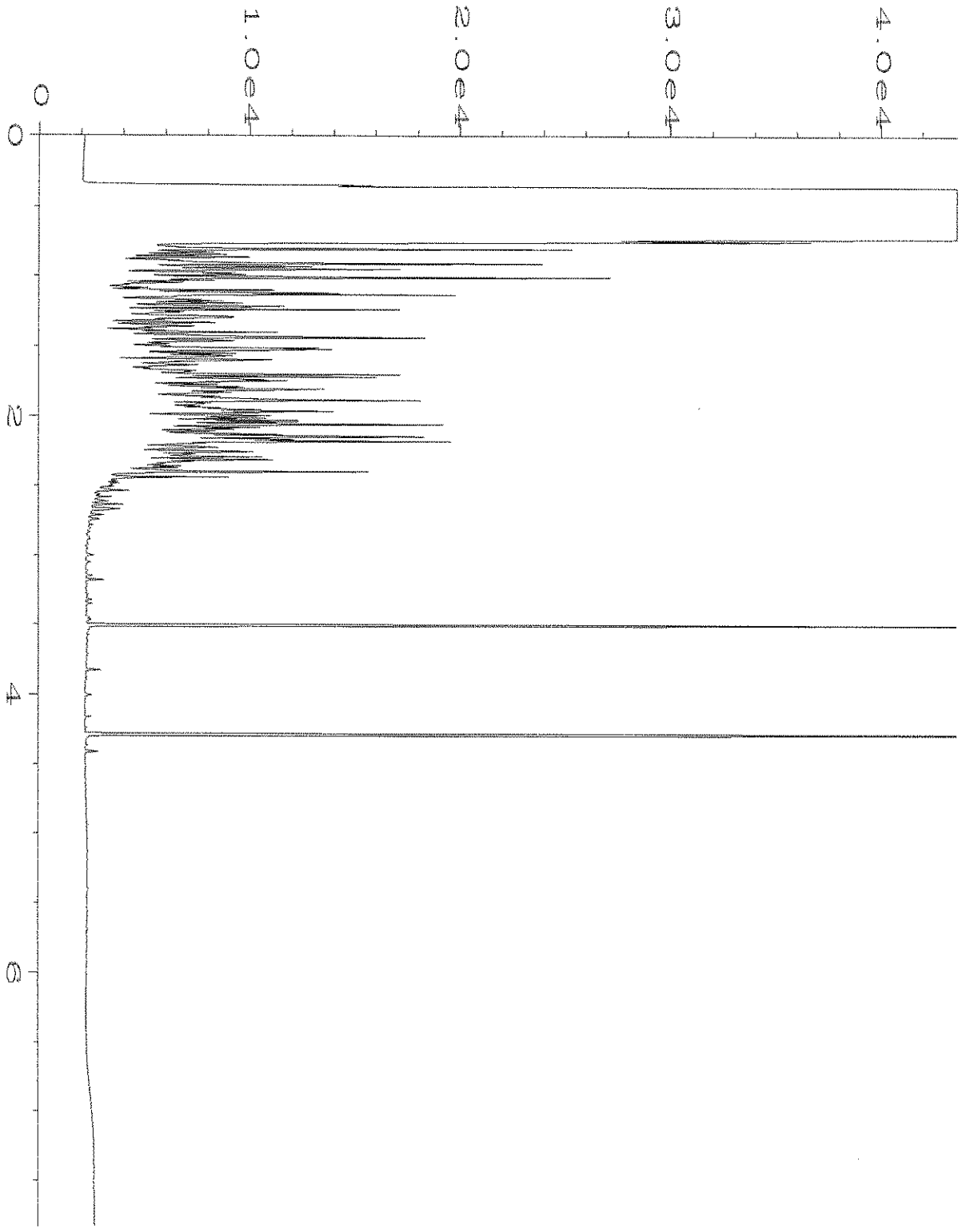
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\016F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 16
Sample Name	: 003244-02	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 12:37 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 08:52 AM	Analysis Method	: DEFAULT.MTH



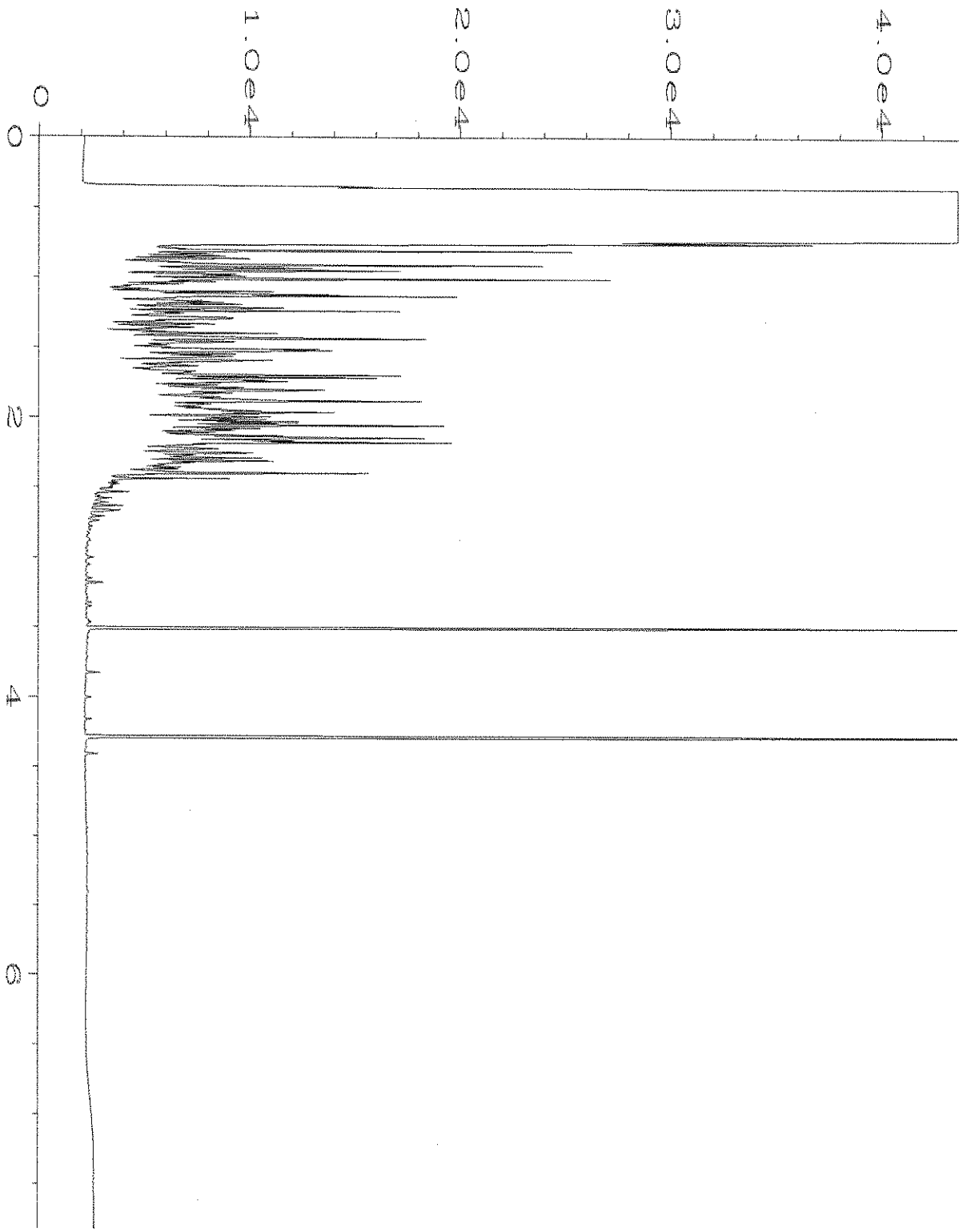
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\017F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 17
Sample Name	: 003244-03	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 12:49 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 08:53 AM	Analysis Method	: DEFAULT.MTH



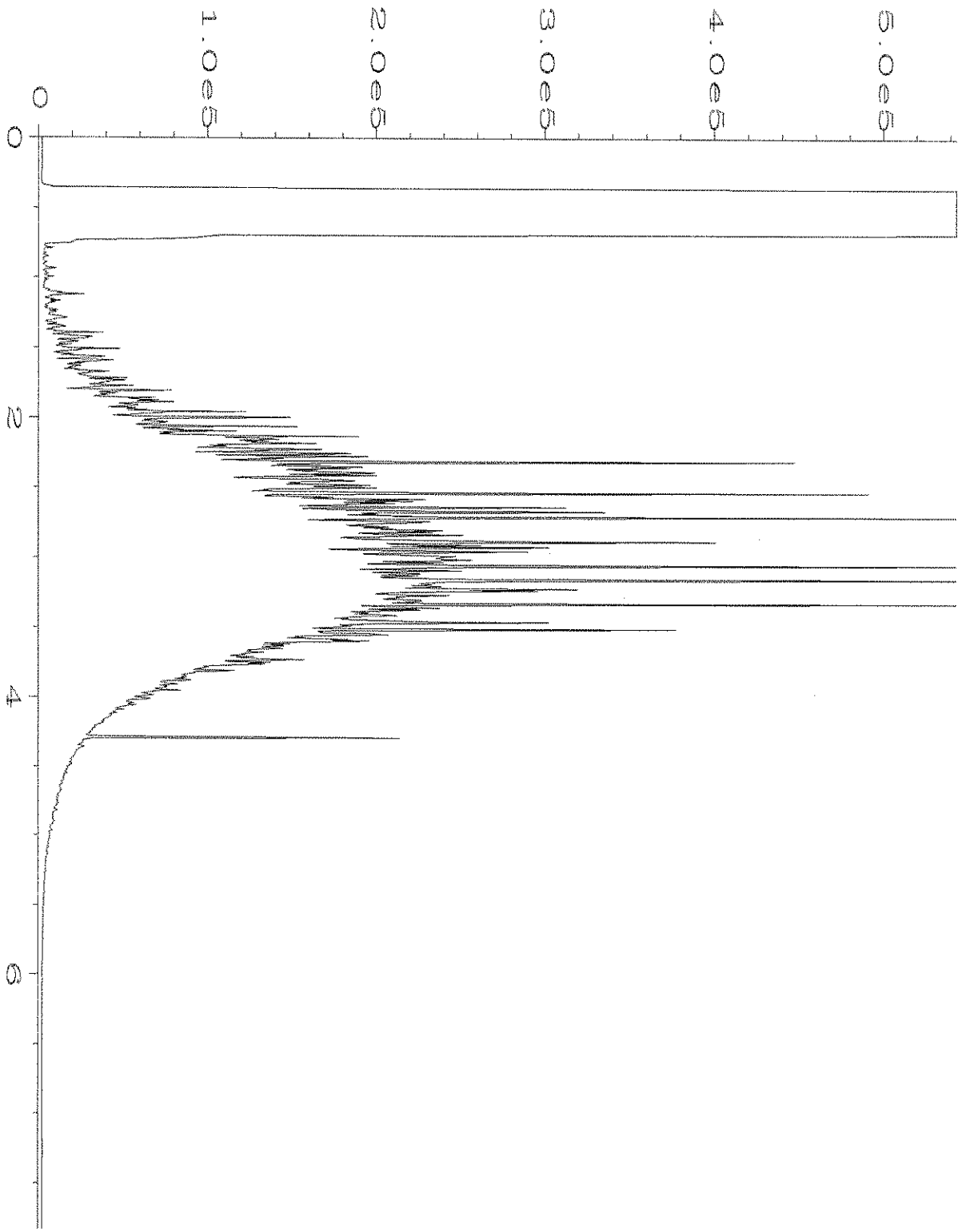
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\018F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 18
Sample Name	: 003244-10	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 01:01 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 08:53 AM	Analysis Method	: DEFAULT.MTH



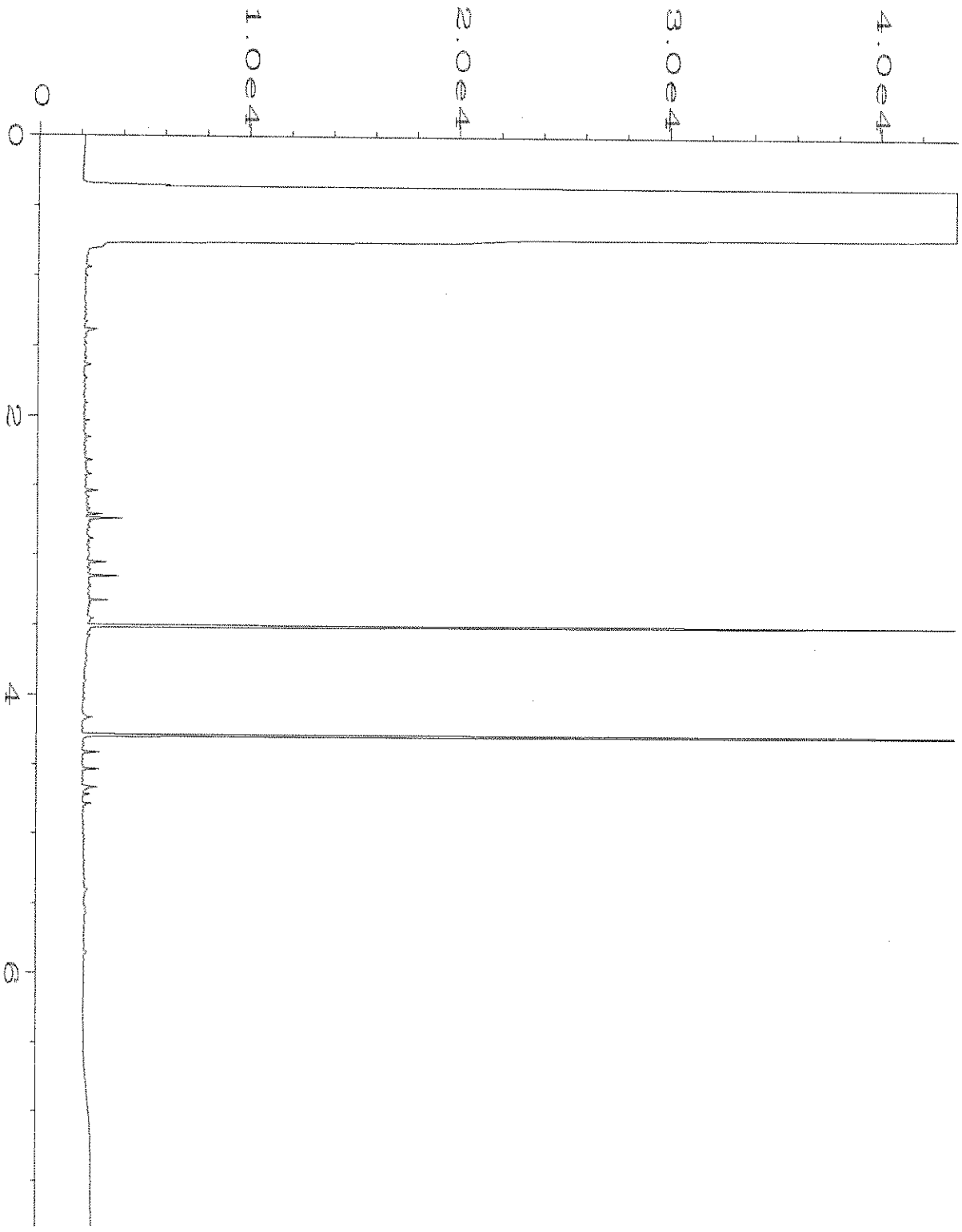
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\019F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 19
Sample Name	: 003244-11	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 01:13 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 08:53 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\03-17-20\019F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 19
Sample Name	: 003244-11	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 01:13 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 08:53 AM	Analysis Method	: DEFAULT.MTH

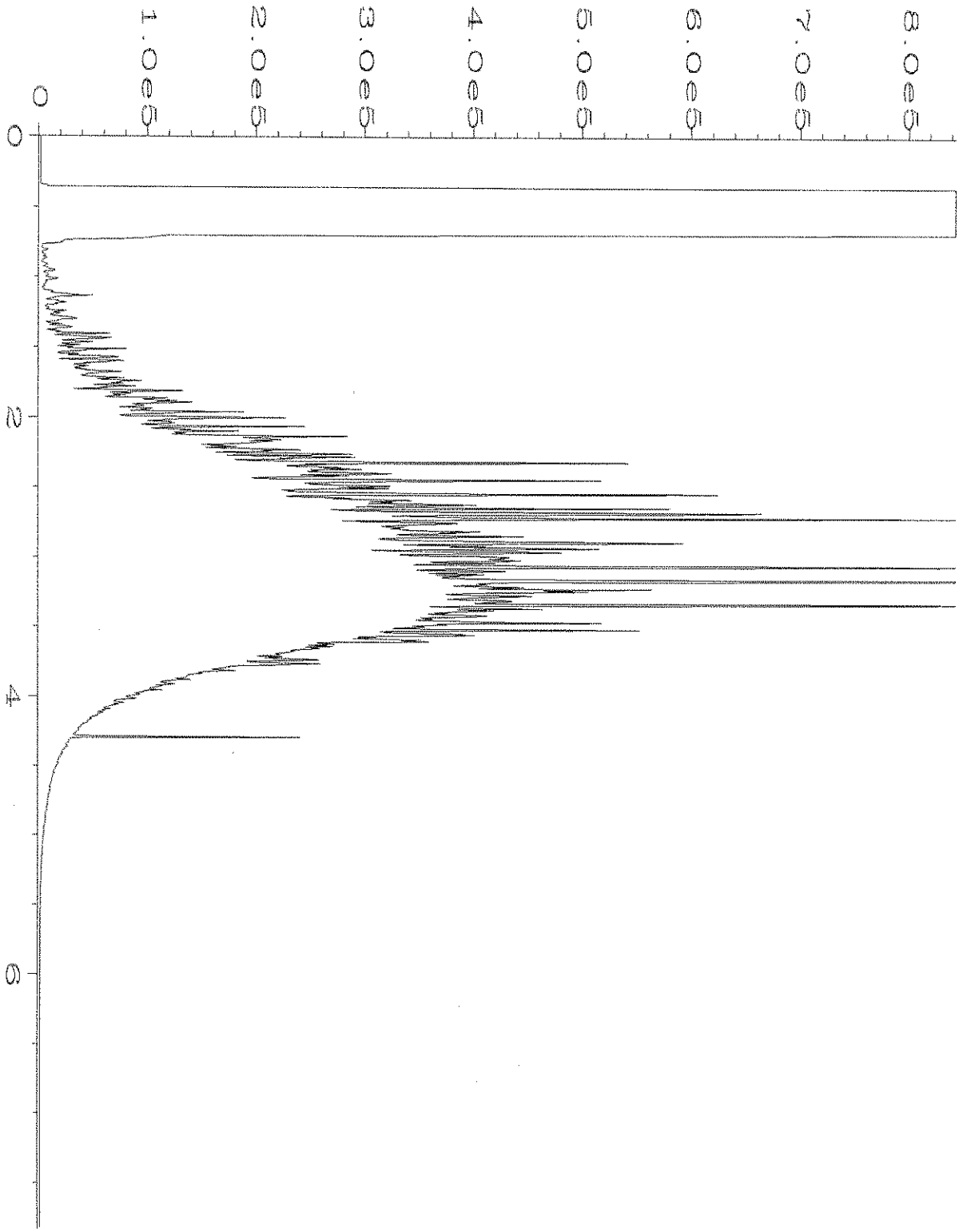


Data File Name	: C:\HPCHEM\4\DATA\03-17-20\020F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 20
Sample Name	: 003244-20	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 01:25 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 08:54 AM	Analysis Method	: DEFAULT.MTH

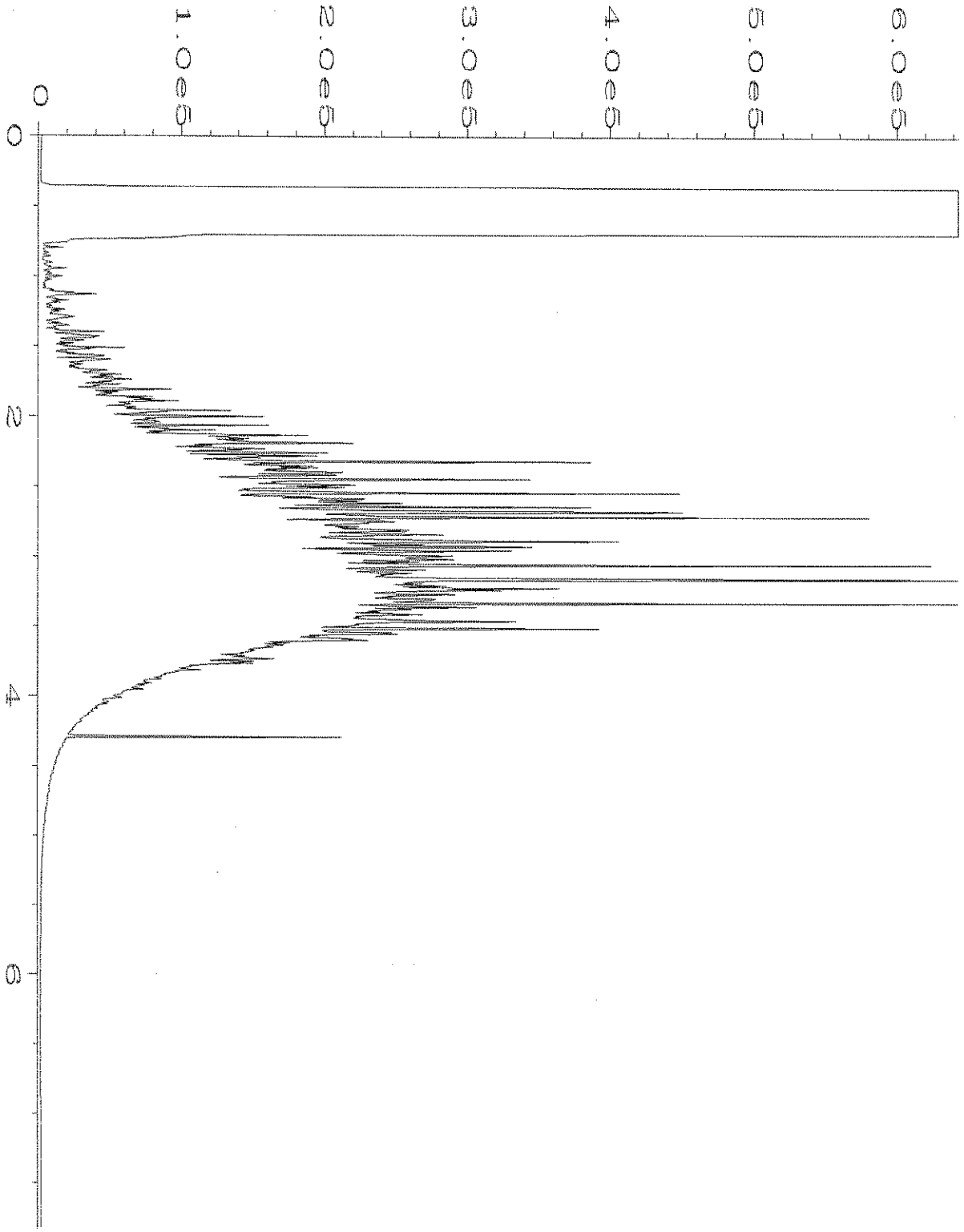


Data File Name : C:\HPCHEM\4\DATA\03-17-20\021F0501.D
Operator : TL
Instrument : GC#4
Sample Name : 003244-21
Run Time Bar Code:
Acquired on : 17 Mar 20 01:38 PM
Report Created on: 18 Mar 20 08:54 AM

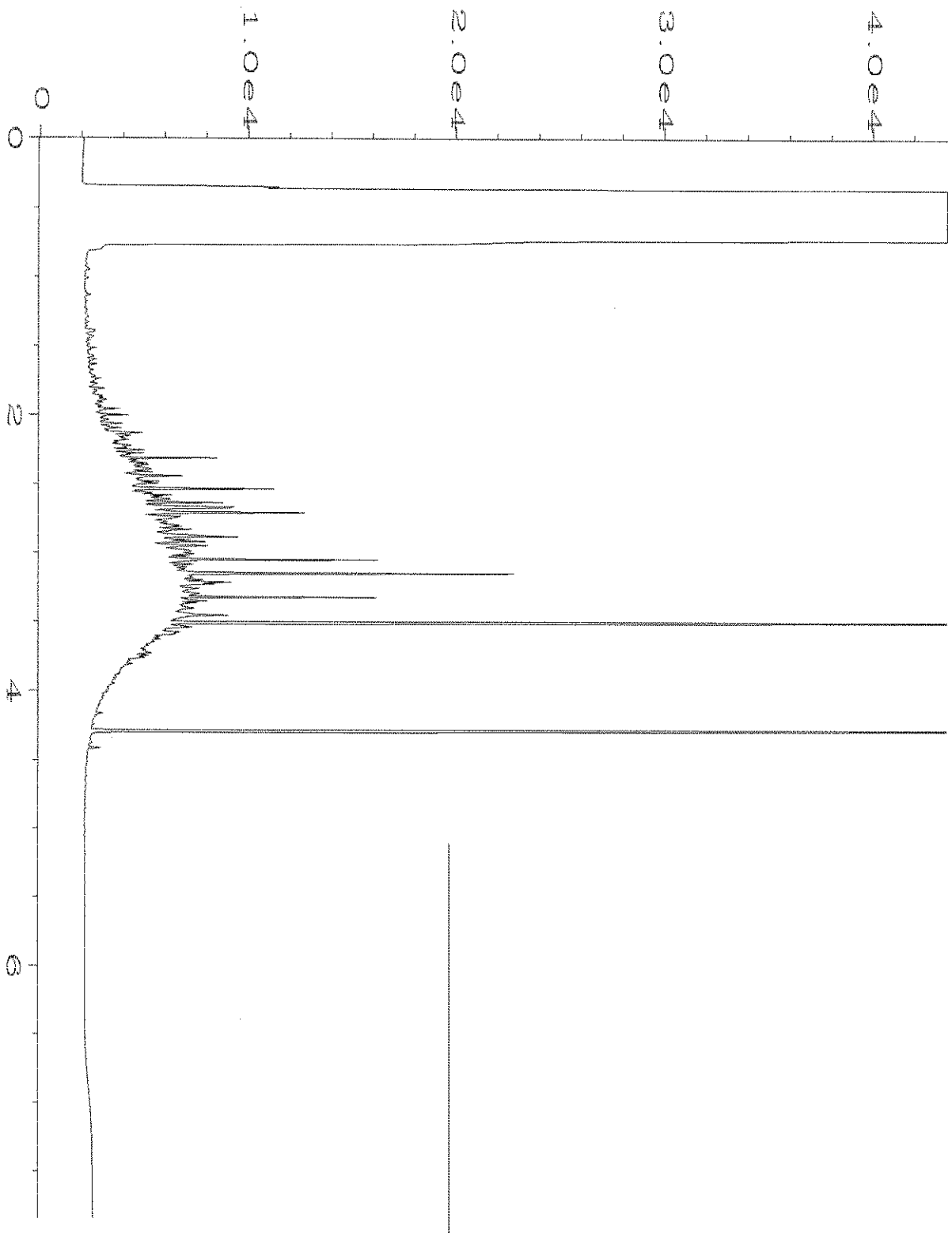
Page Number : 1
Vial Number : 21
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



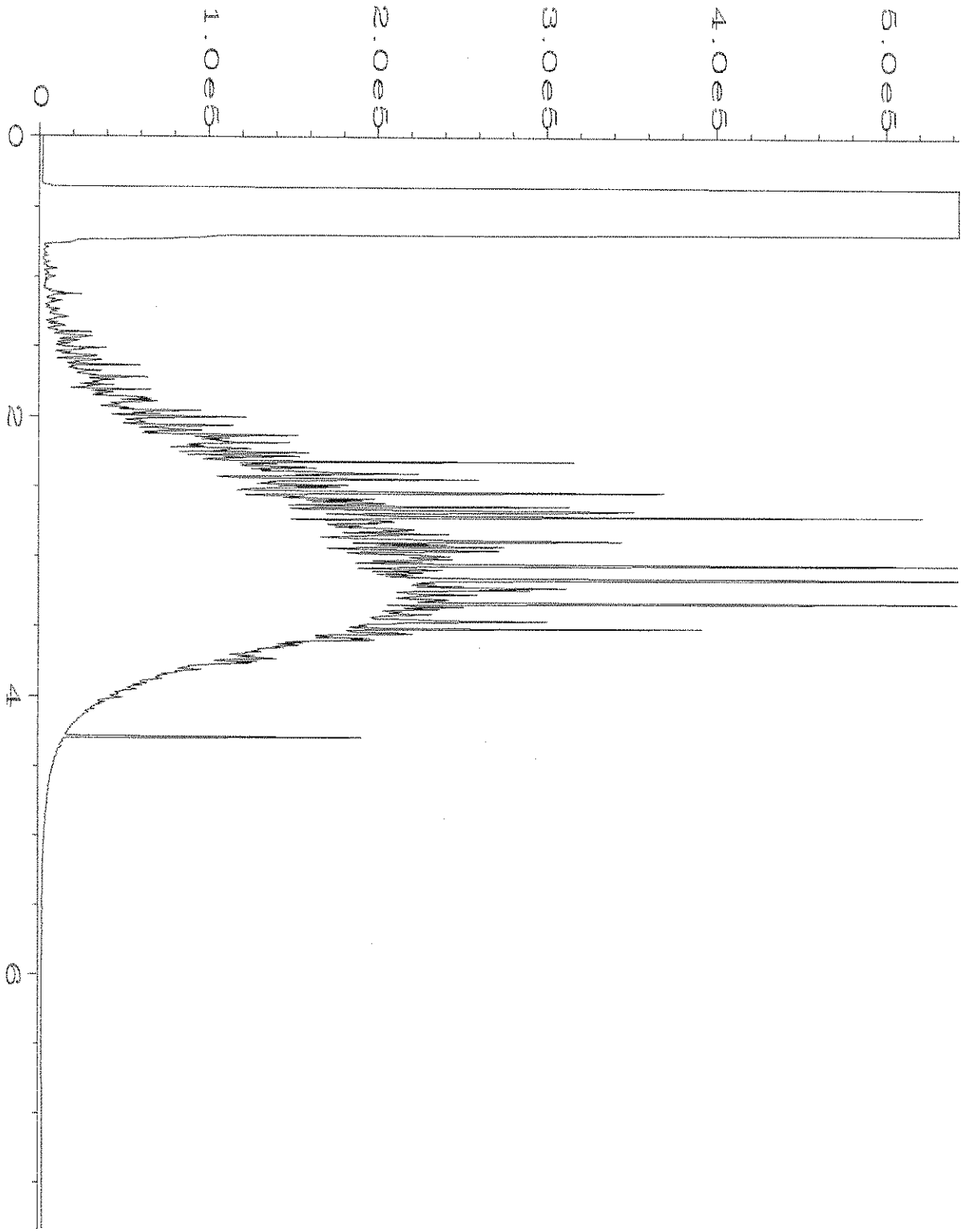
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\022F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 22
Sample Name	: 003244-24	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 01:50 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 08:55 AM	Analysis Method	: DEFAULT.MTH



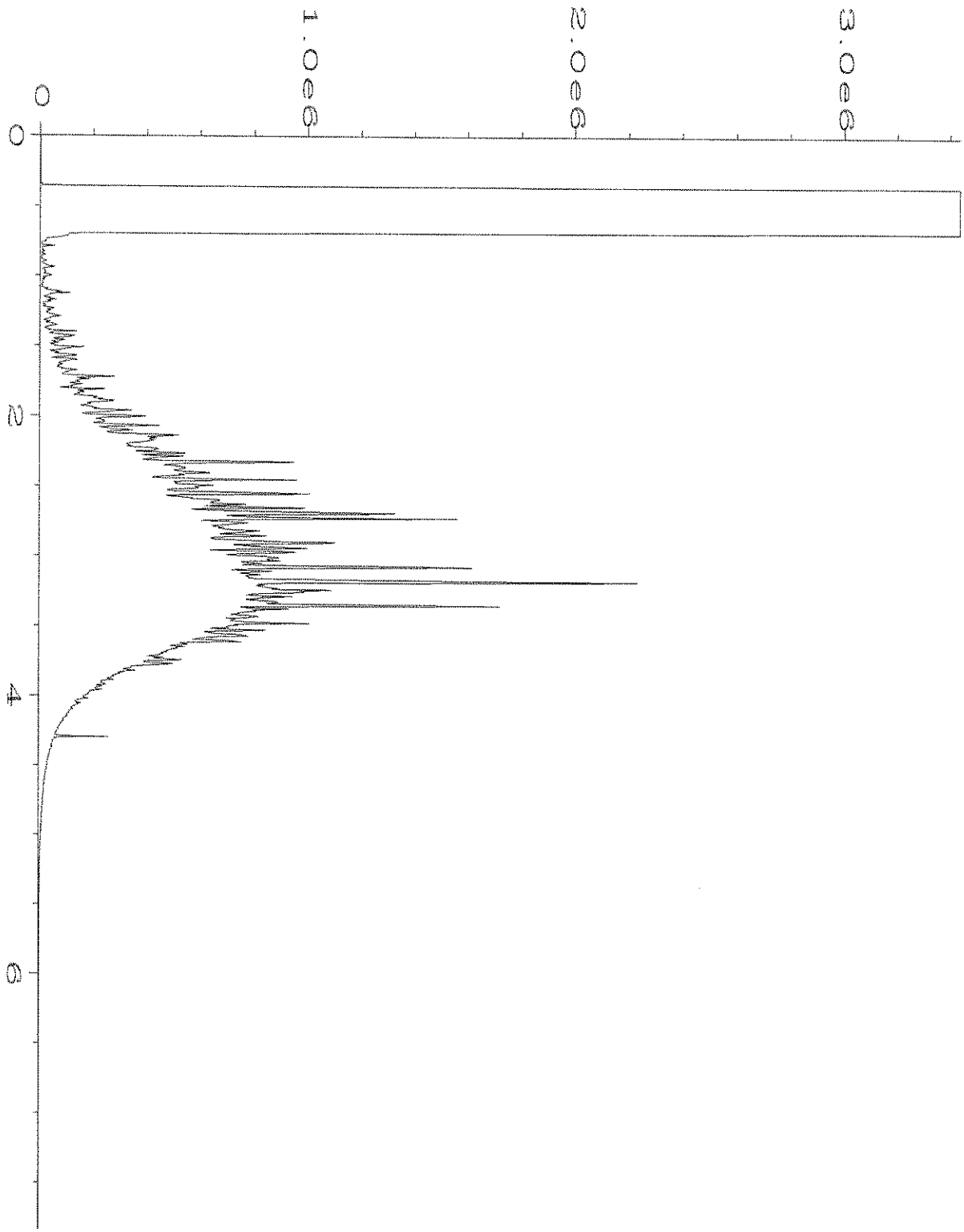
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\023F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 23
Sample Name	: 003244-25	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 02:02 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 08:57 AM	Analysis Method	: DEFAULT.MTH



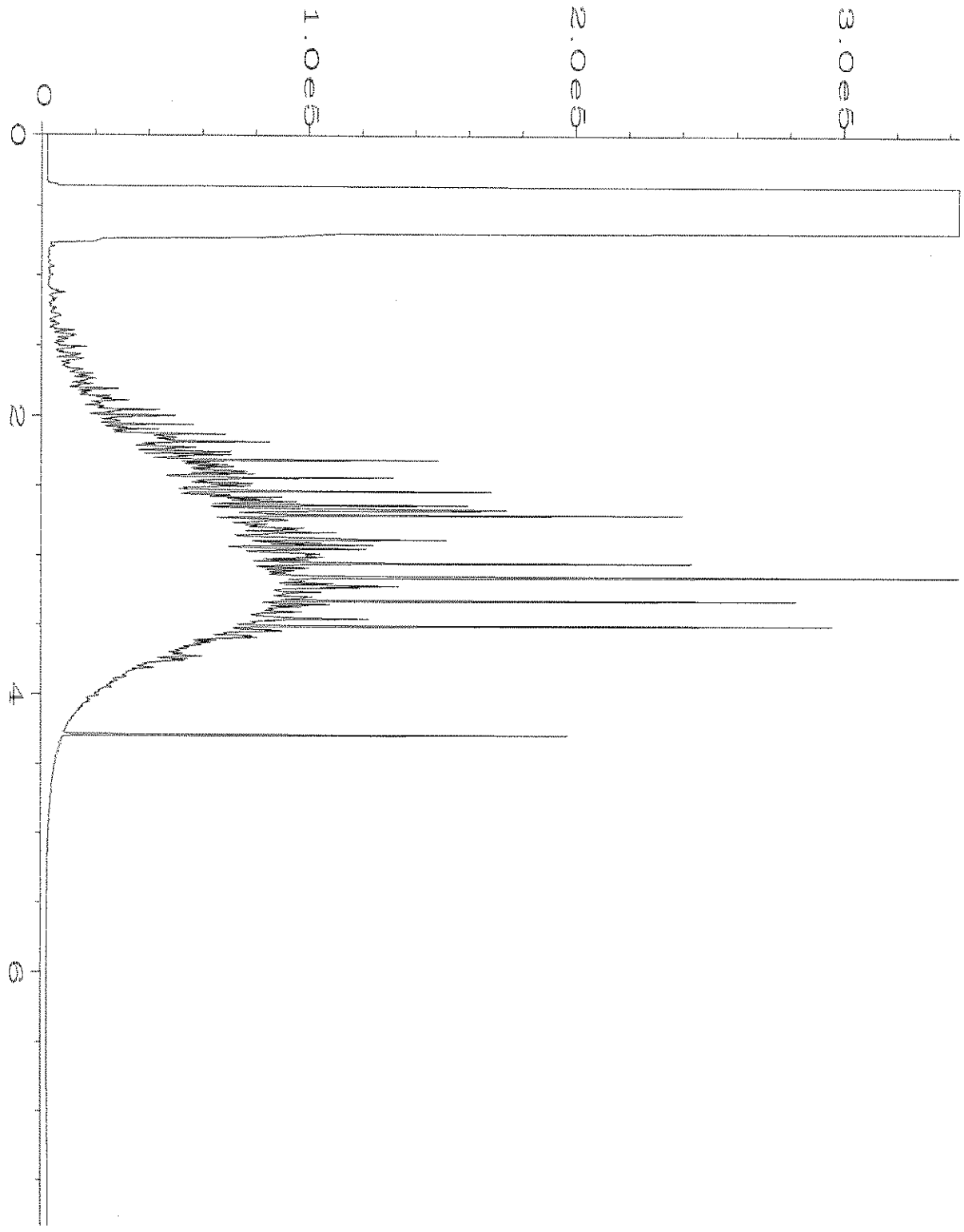
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\024F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 24
Sample Name	: 003244-26	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 02:14 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 08:57 AM	Analysis Method	: DEFAULT.MTH



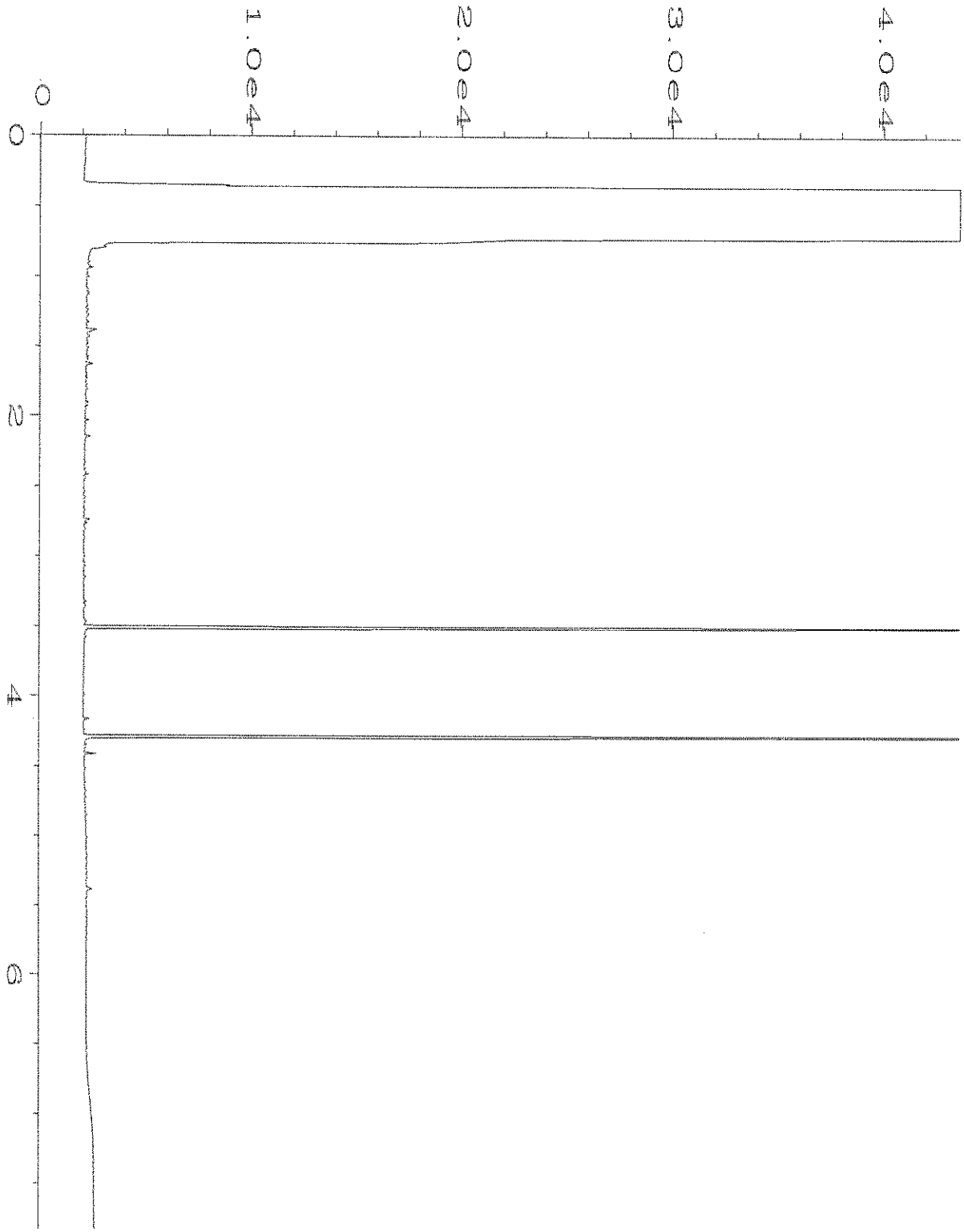
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\025F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 25
Sample Name	: 003244-28	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 02:26 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 08:57 AM	Analysis Method	: DEFAULT.MTH



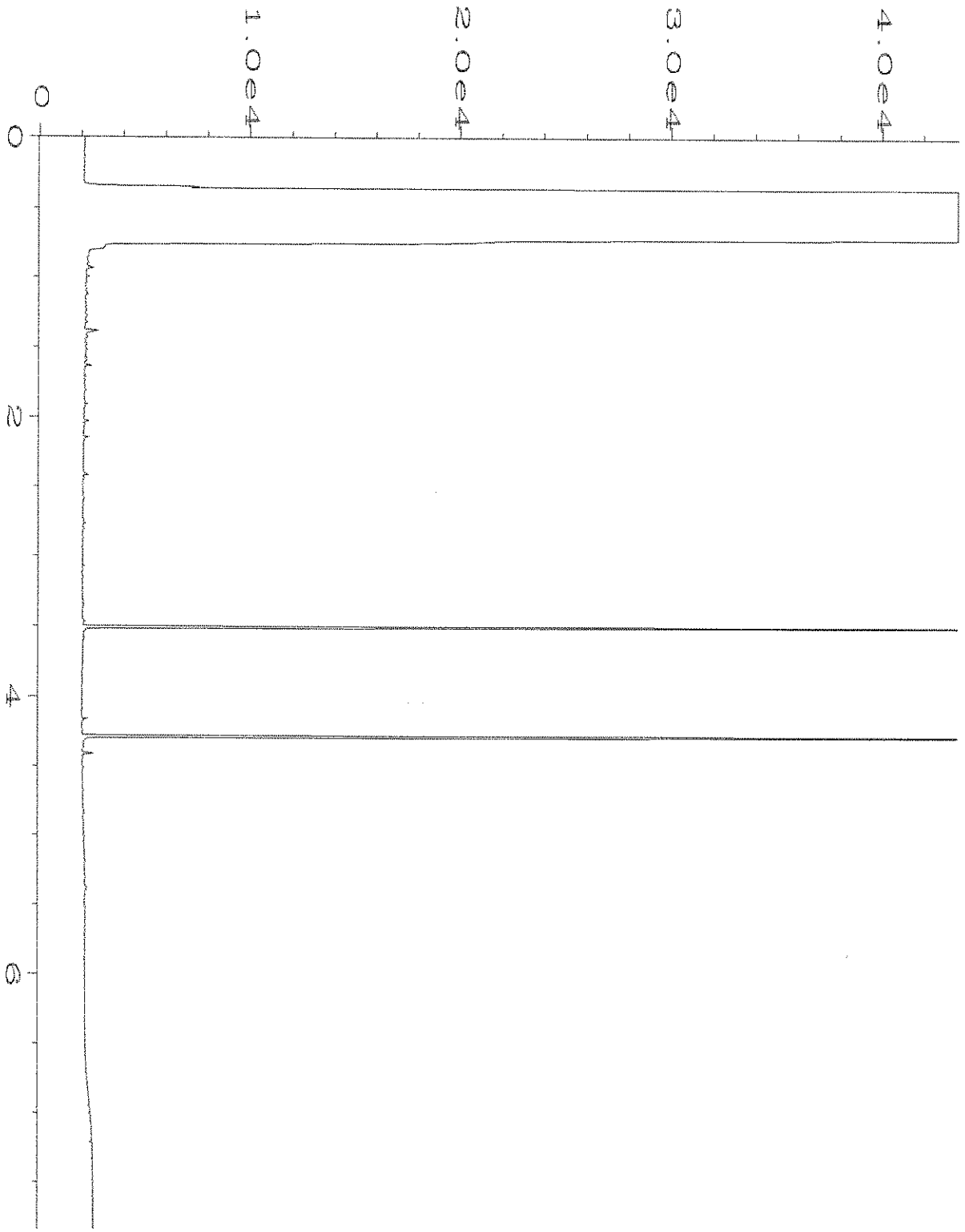
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\026F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 26
Sample Name	: 003244-29	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 03:05 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 08:59 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\03-17-20\027F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 27
Sample Name	: 003244-30	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 03:16 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 08:59 AM	Analysis Method	: DEFAULT.MTH

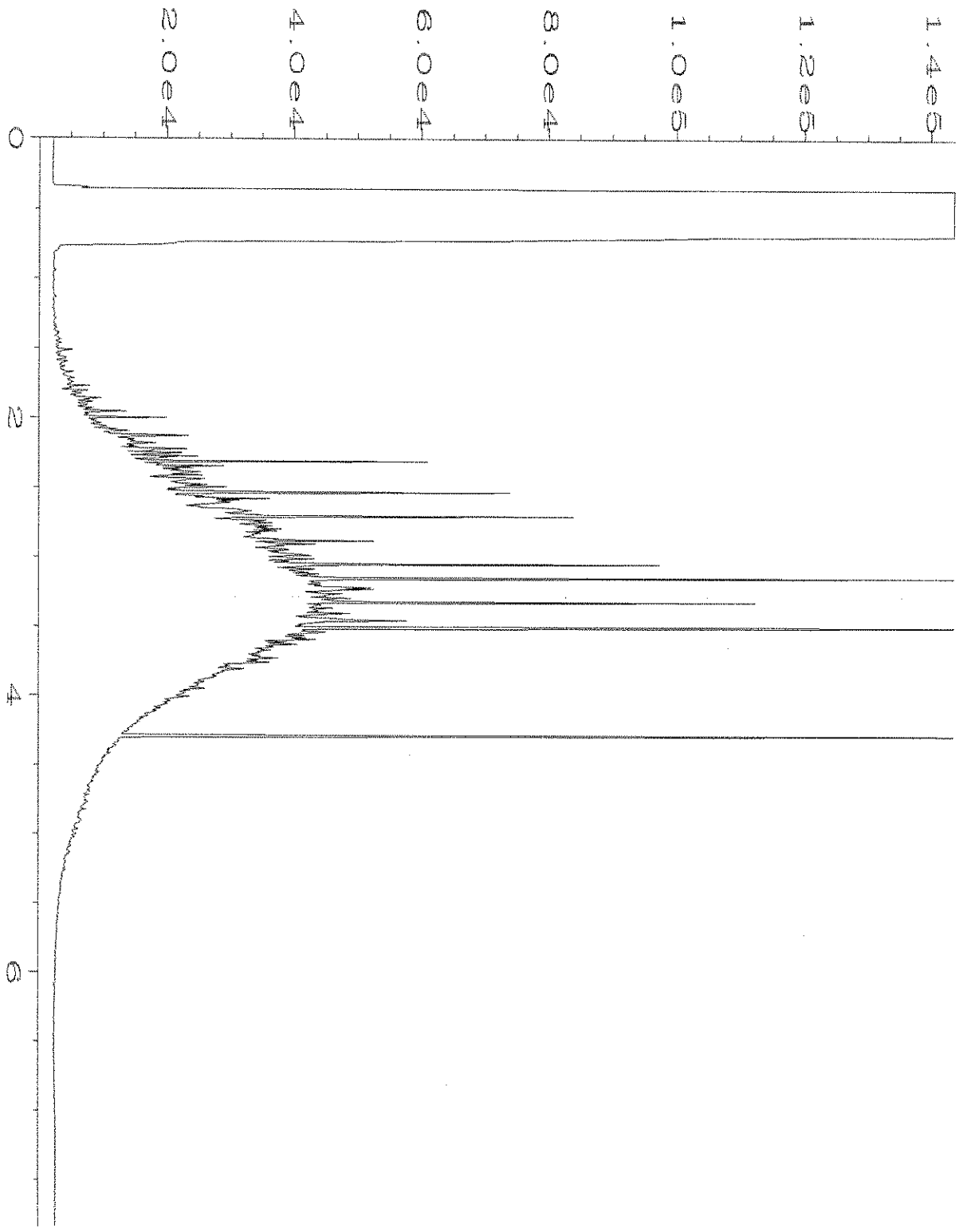


Data File Name	: C:\HPCHEM\4\DATA\03-17-20\028F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 28
Sample Name	: 003244-39	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 03:28 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 08:59 AM	Analysis Method	: DEFAULT.MTH



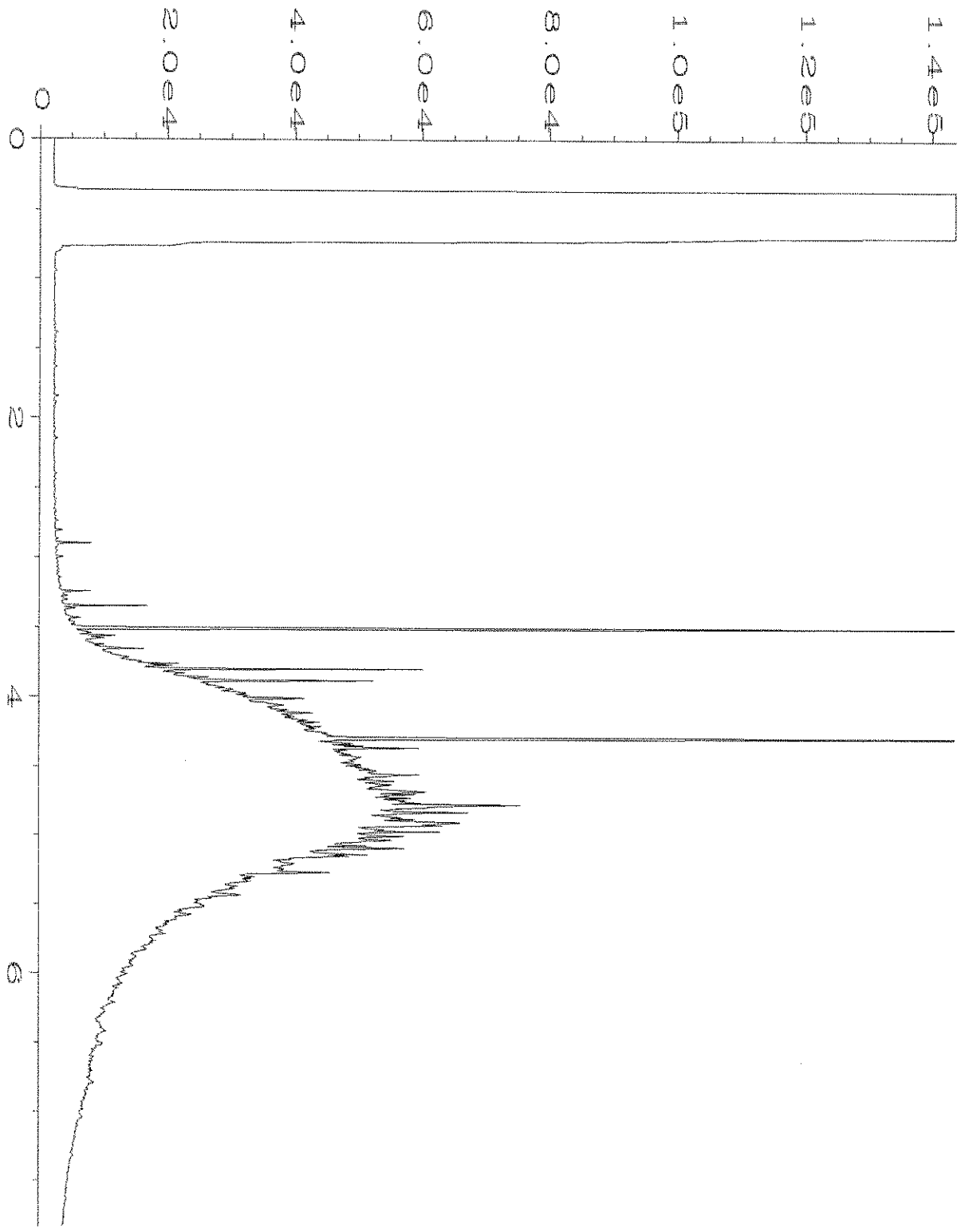
Data File Name : C:\HPCHEM\4\DATA\03-17-20\029F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 003244-40
Run Time Bar Code:
Acquired on : 17 Mar 20 03:40 PM
Report Created on: 18 Mar 20 09:00 AM

Page Number : 1
Vial Number : 29
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

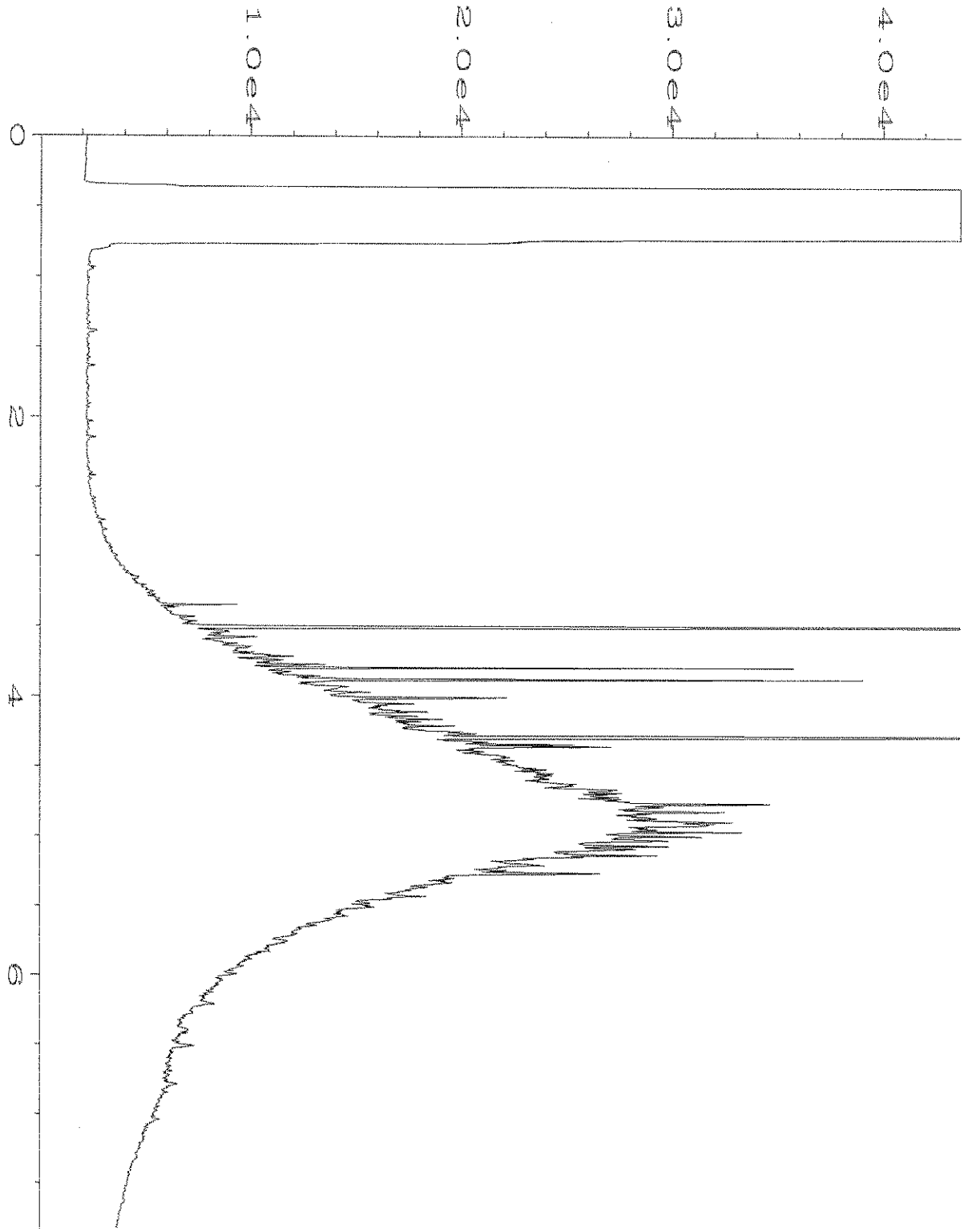


Data File Name : C:\HPCHEM\4\DATA\03-17-20\030F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 003244-69
Run Time Bar Code:
Acquired on : 17 Mar 20 03:52 PM
Report Created on: 18 Mar 20 09:00 AM

Page Number : 1
Vial Number : 30
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

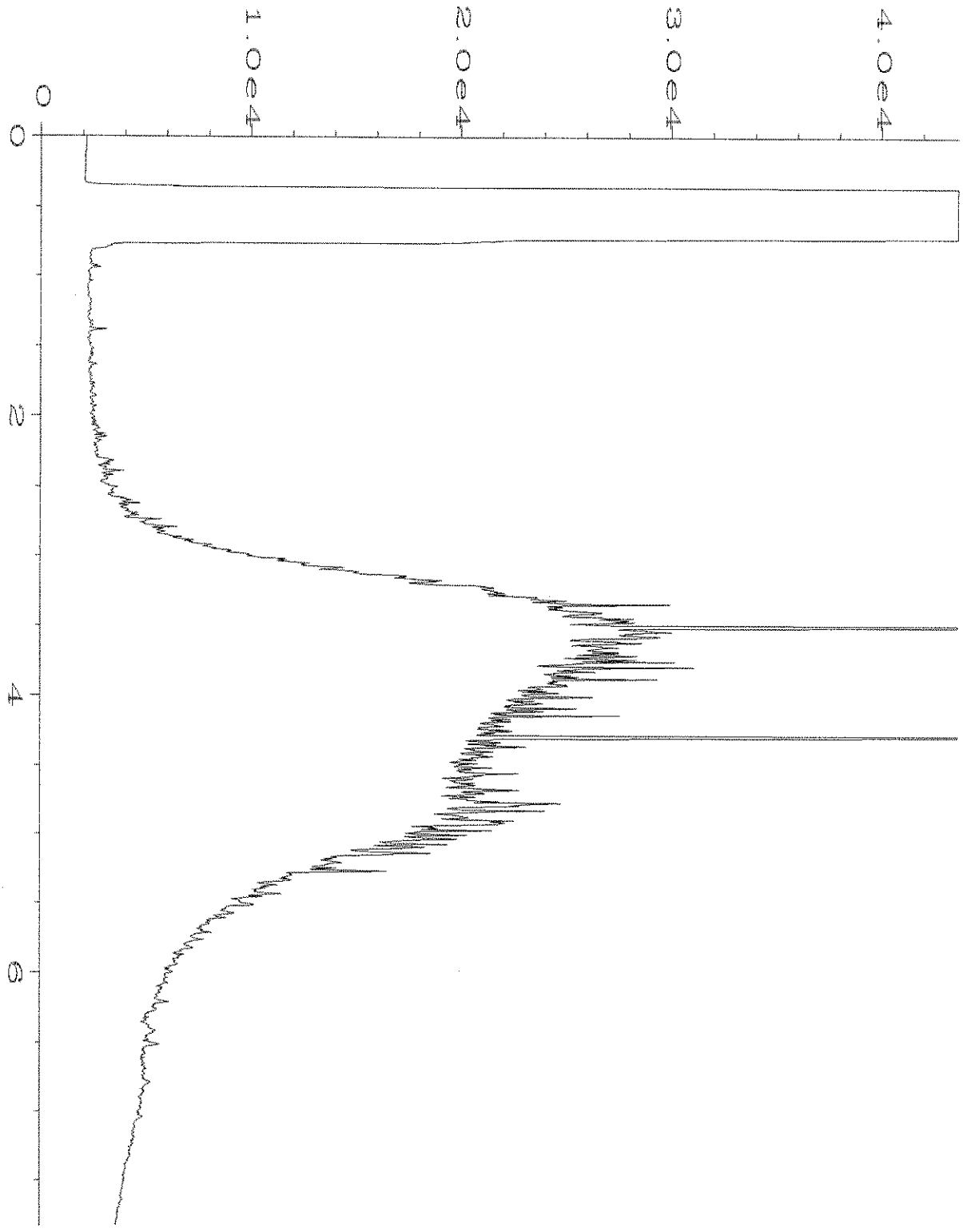


Data File Name	: C:\HPCHEM\4\DATA\03-17-20\031F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 31
Sample Name	: 003244-72	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 04:04 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:01 AM	Analysis Method	: DEFAULT.MTH

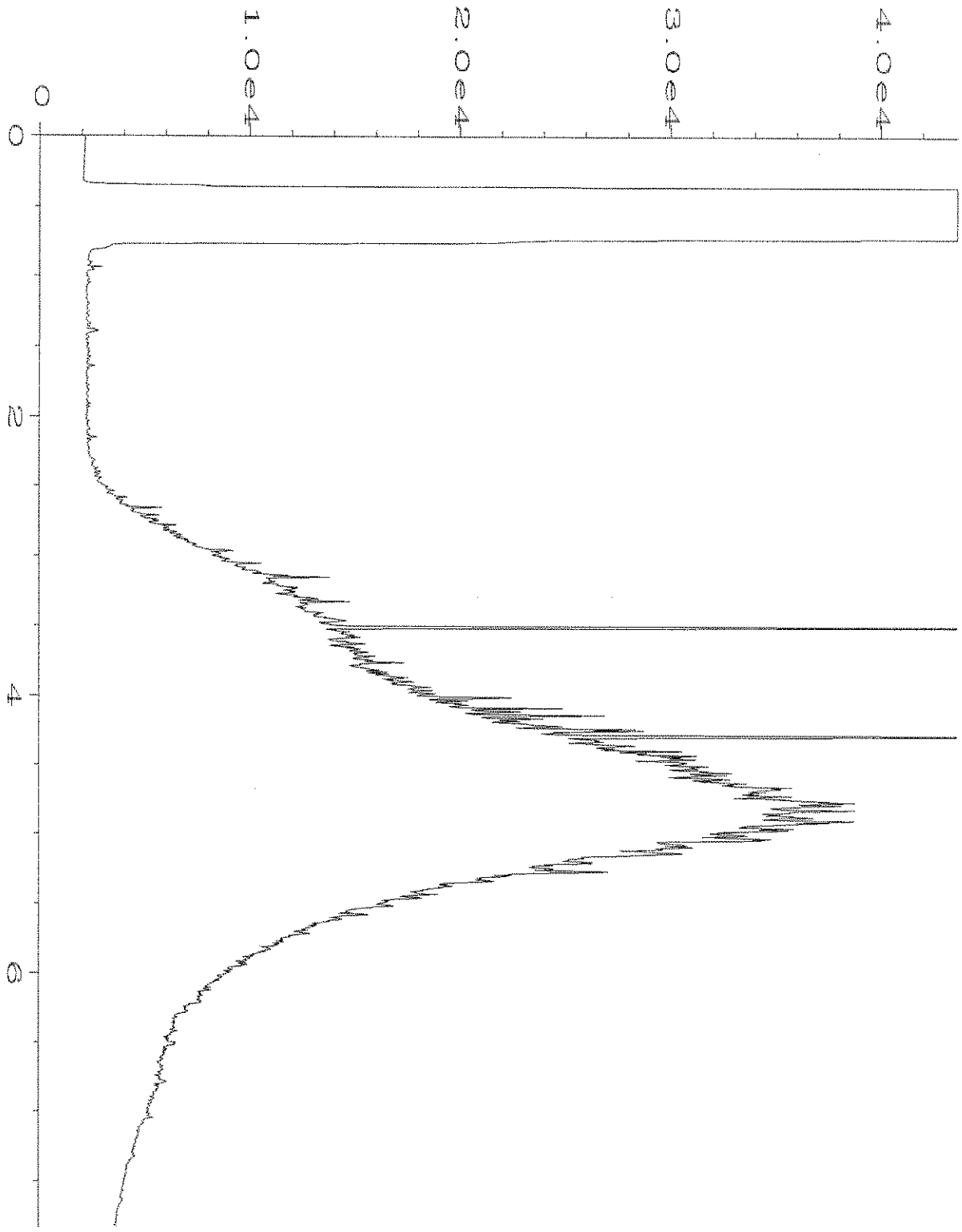


Data File Name : C:\HPCHEM\4\DATA\03-17-20\032F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 003244-73
Run Time Bar Code:
Acquired on : 17 Mar 20 04:16 PM
Report Created on: 18 Mar 20 09:01 AM

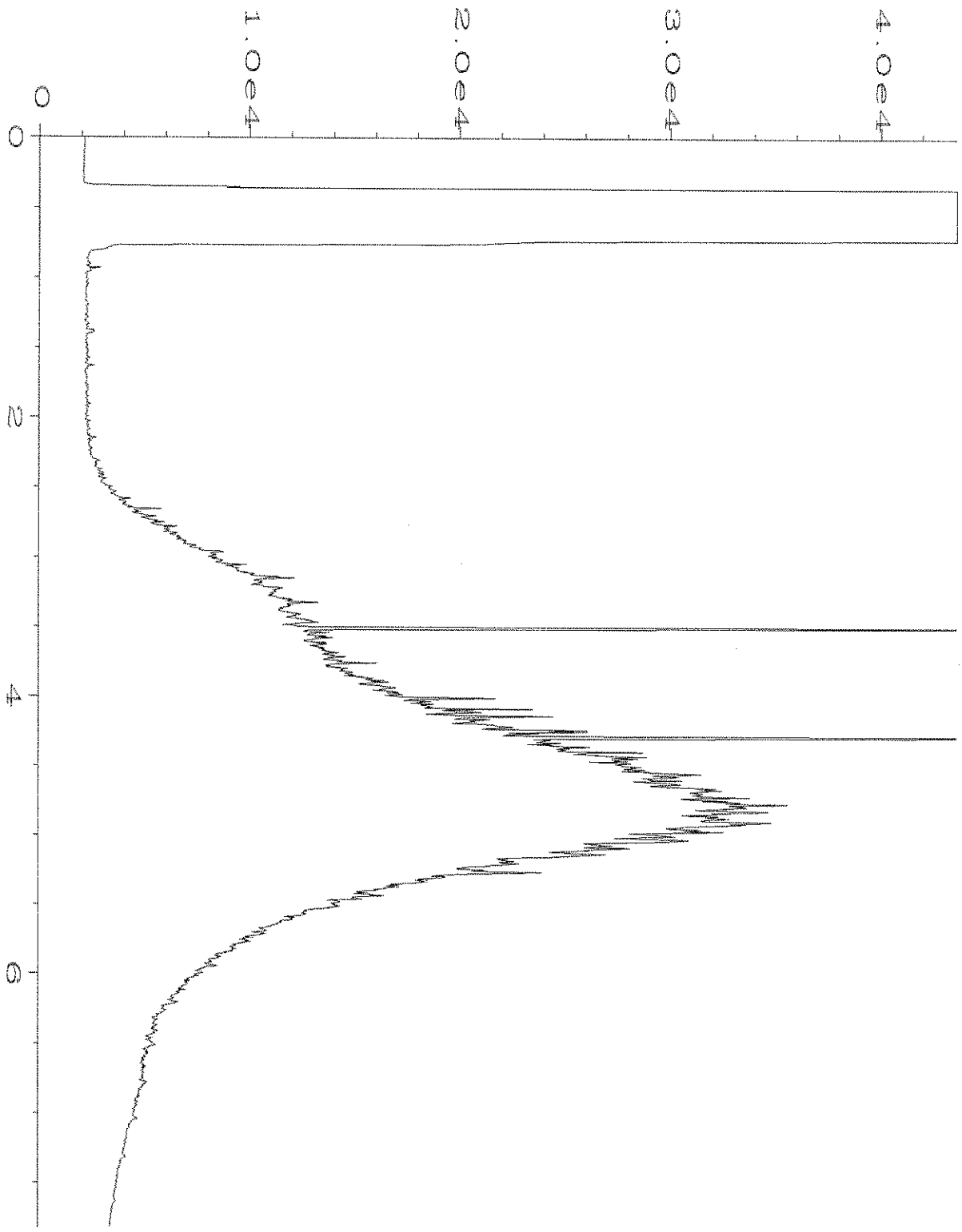
Page Number : 1
Vial Number : 32
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



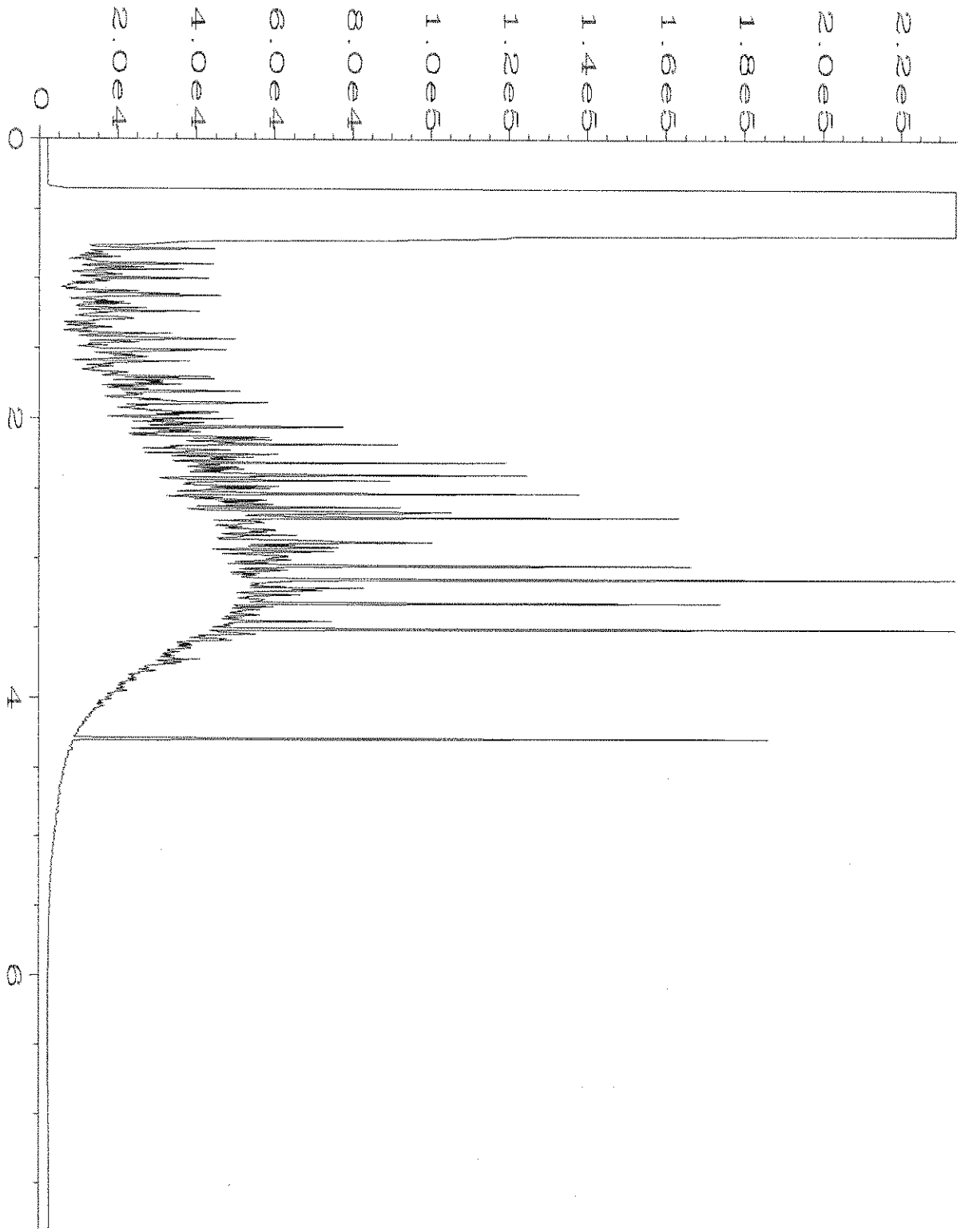
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\033F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 33
Sample Name	: 003244-74	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 04:28 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:02 AM	Analysis Method	: DEFAULT.MTH



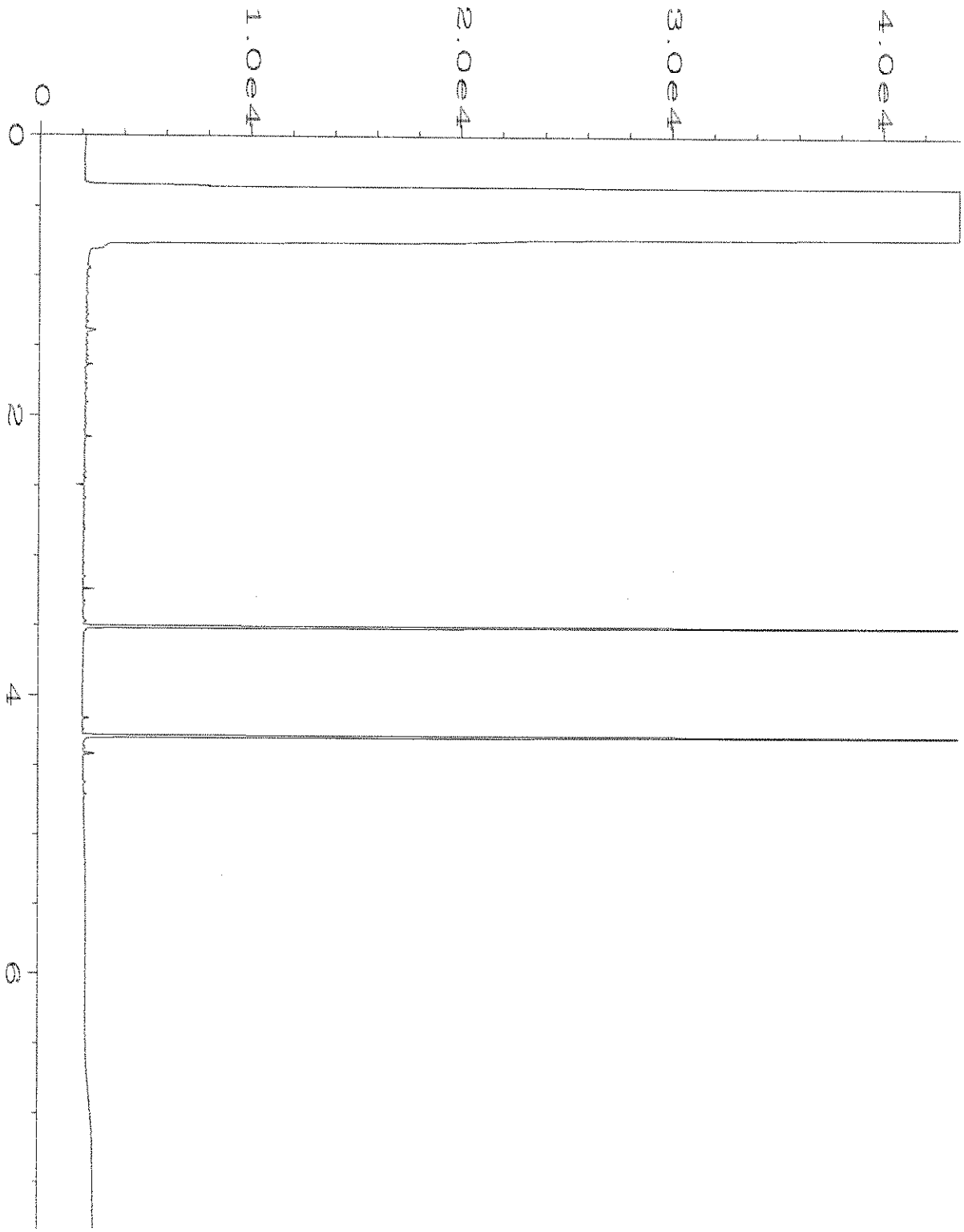
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\034F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 34
Sample Name	: 003244-75	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 04:40 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 09:02 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\03-17-20\035F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 35
Sample Name	: 003244-76	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 04:52 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 09:02 AM	Analysis Method	: DEFAULT.MTH

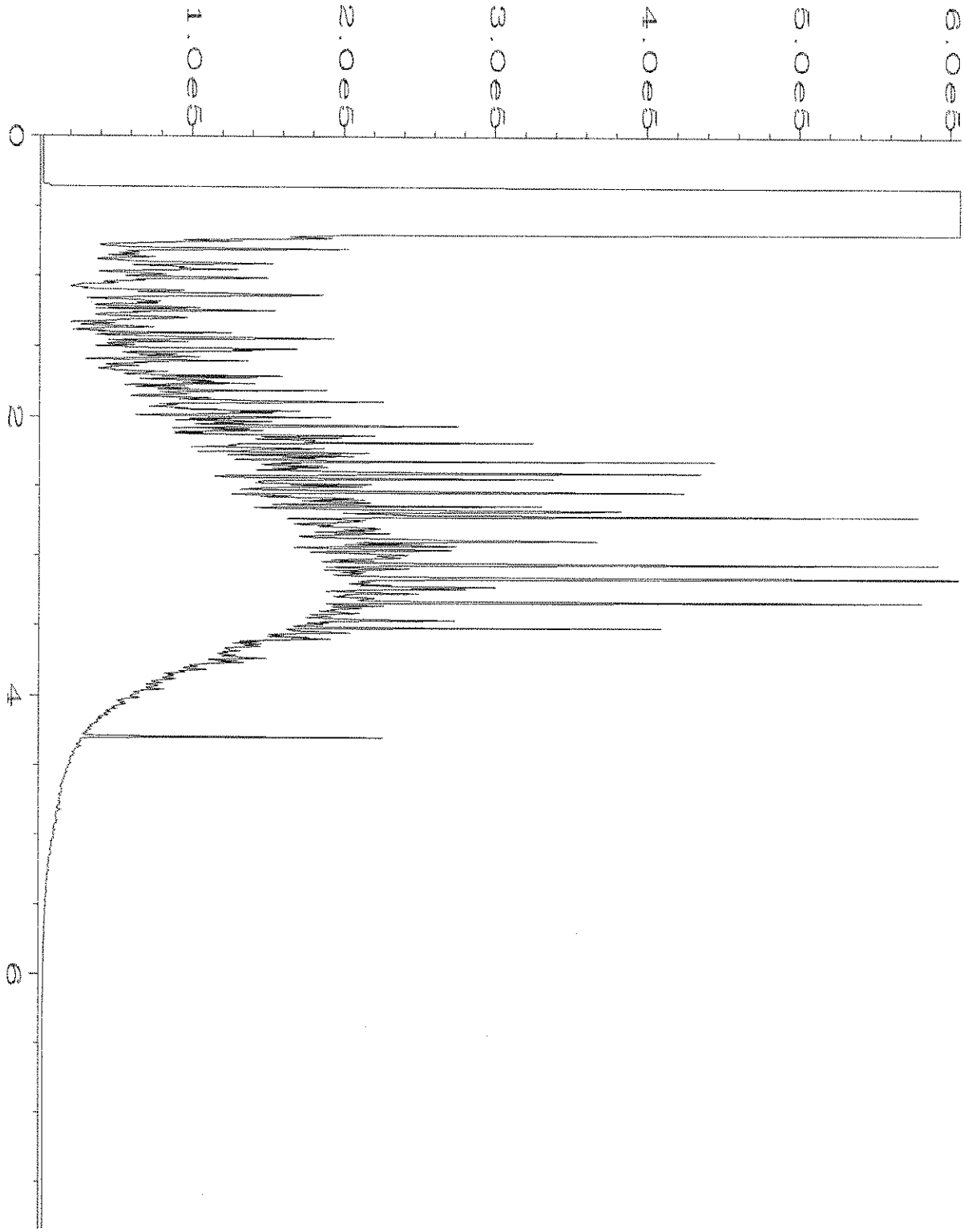


Data File Name	: C:\HPCHEM\4\DATA\03-17-20\042F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 42
Sample Name	: 003244-79	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 06:17 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:04 AM	Analysis Method	: DEFAULT.MTH

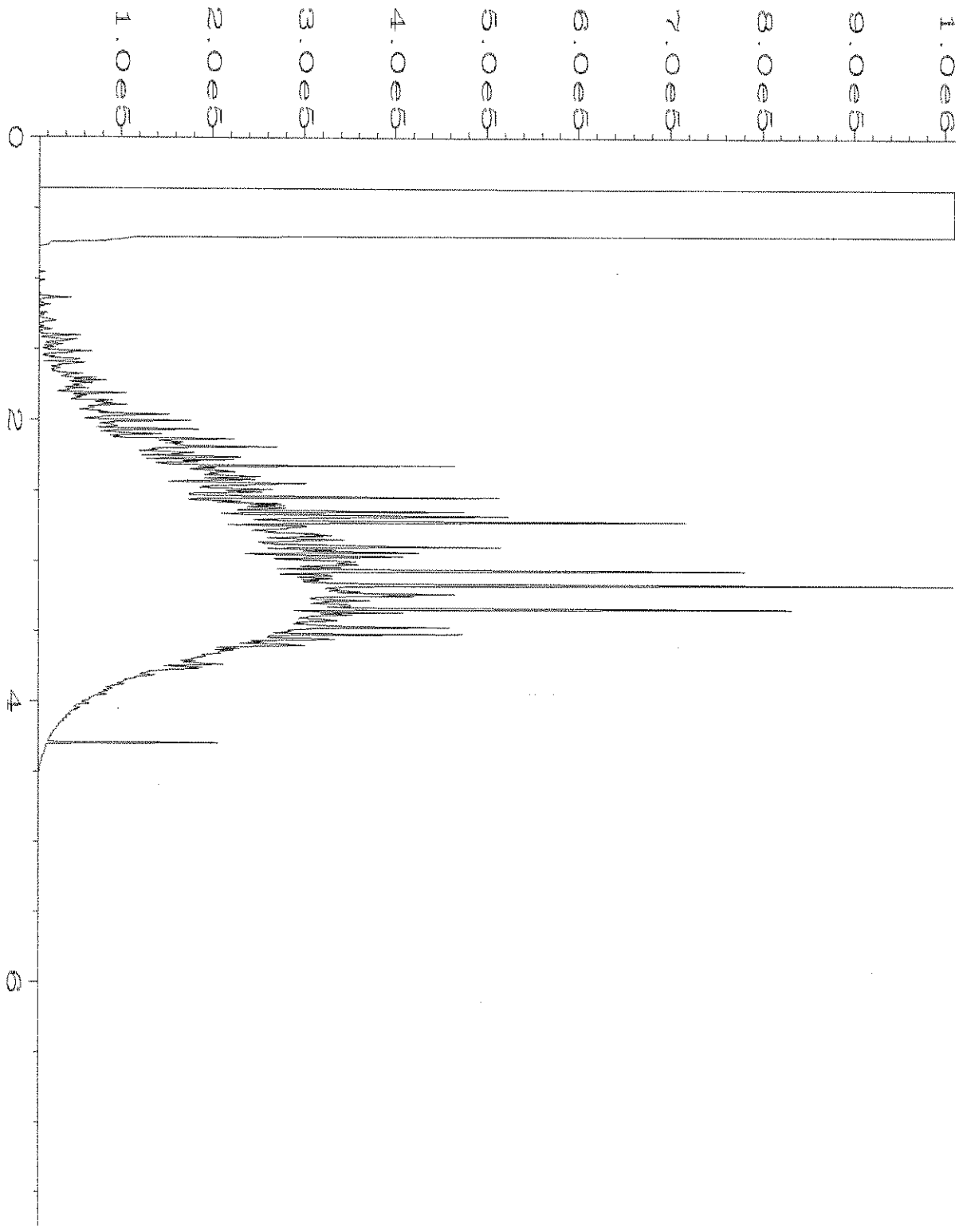


Data File Name : C:\HPCHEM\4\DATA\03-17-20\043F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 003244-80
Run Time Bar Code:
Acquired on : 17 Mar 20 06:29 PM
Report Created on: 18 Mar 20 09:04 AM

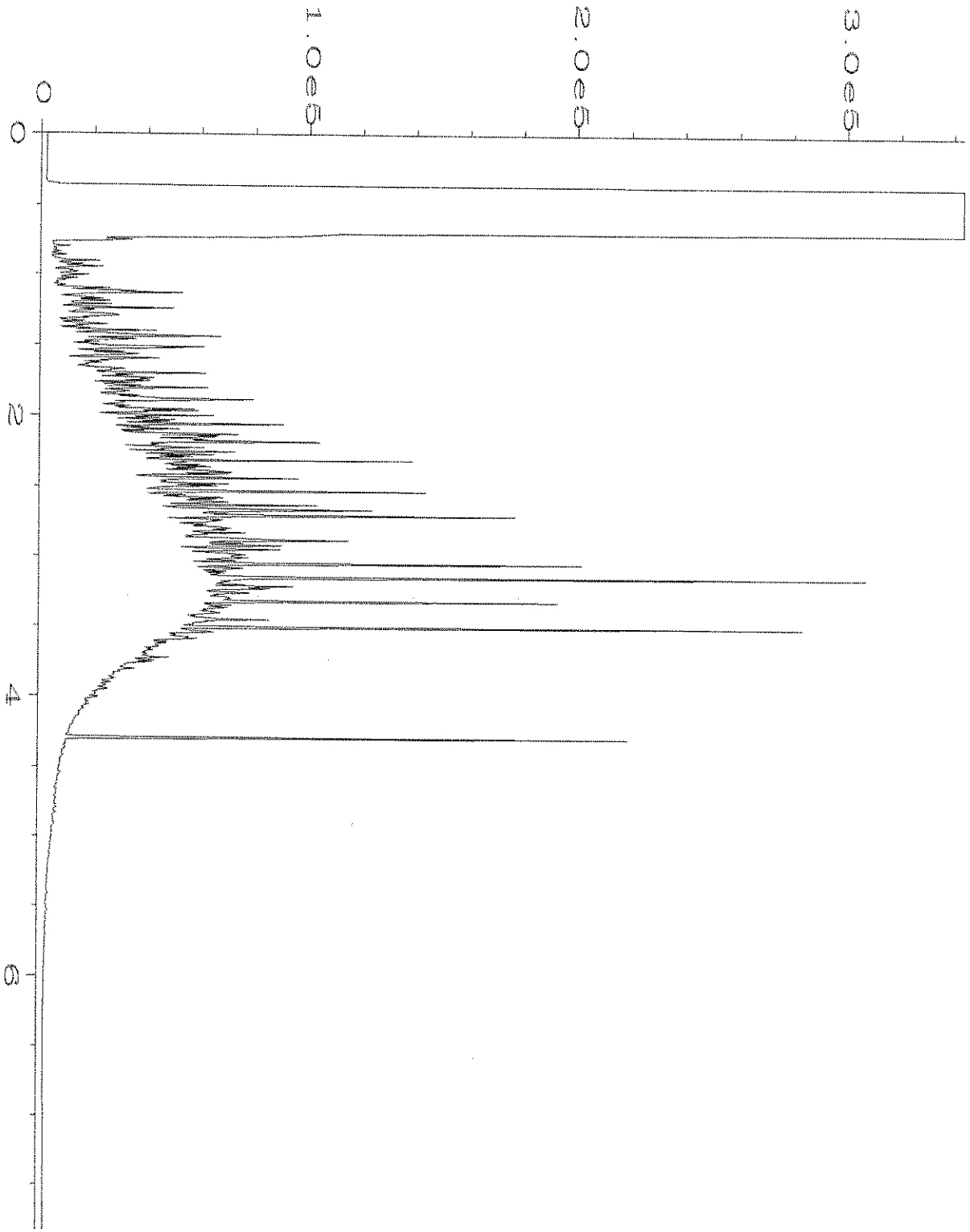
Page Number : 1
Vial Number : 43
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



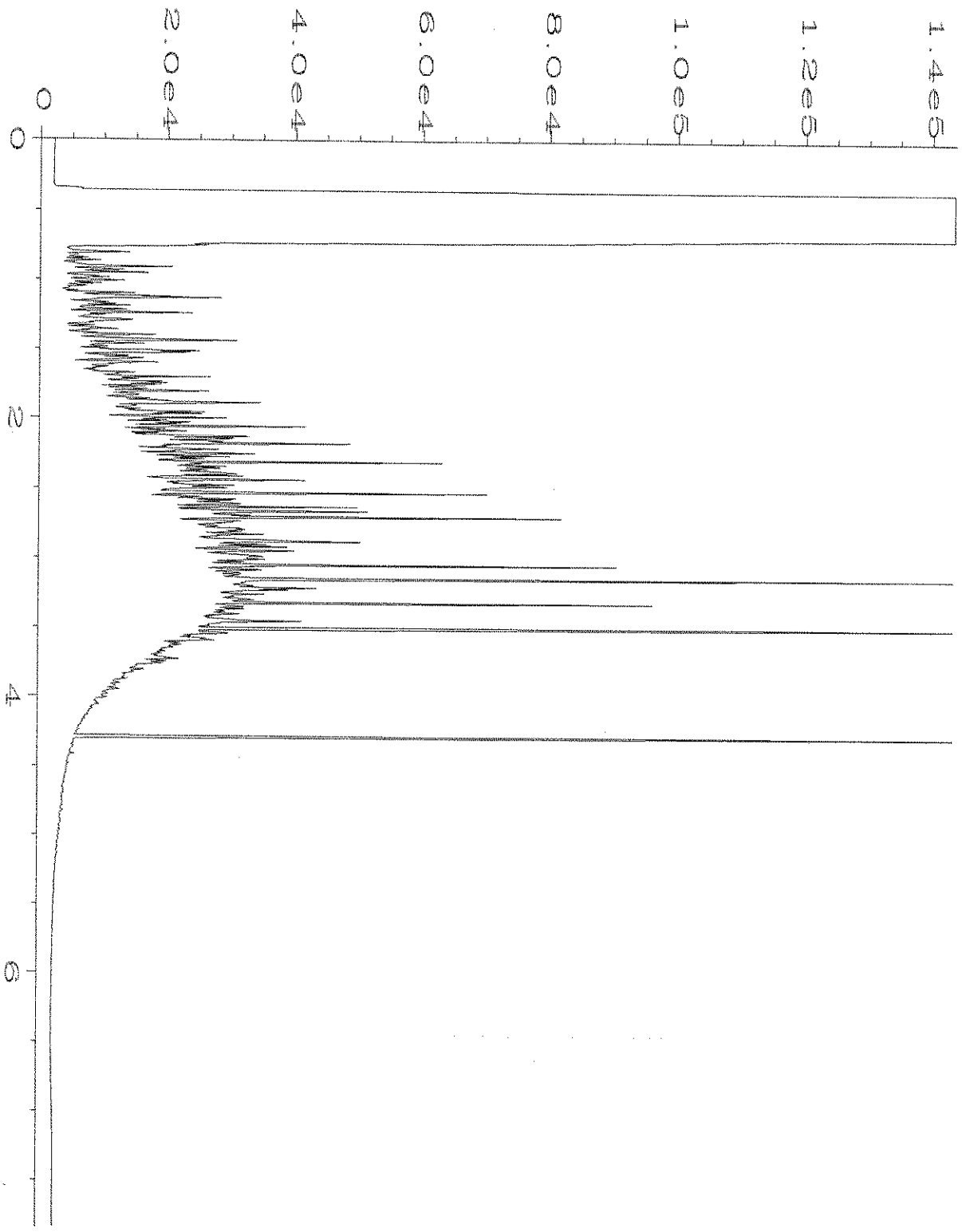
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\044F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 44
Sample Name	: 003244-83	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 06:41 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:05 AM	Analysis Method	: DEFAULT.MTH



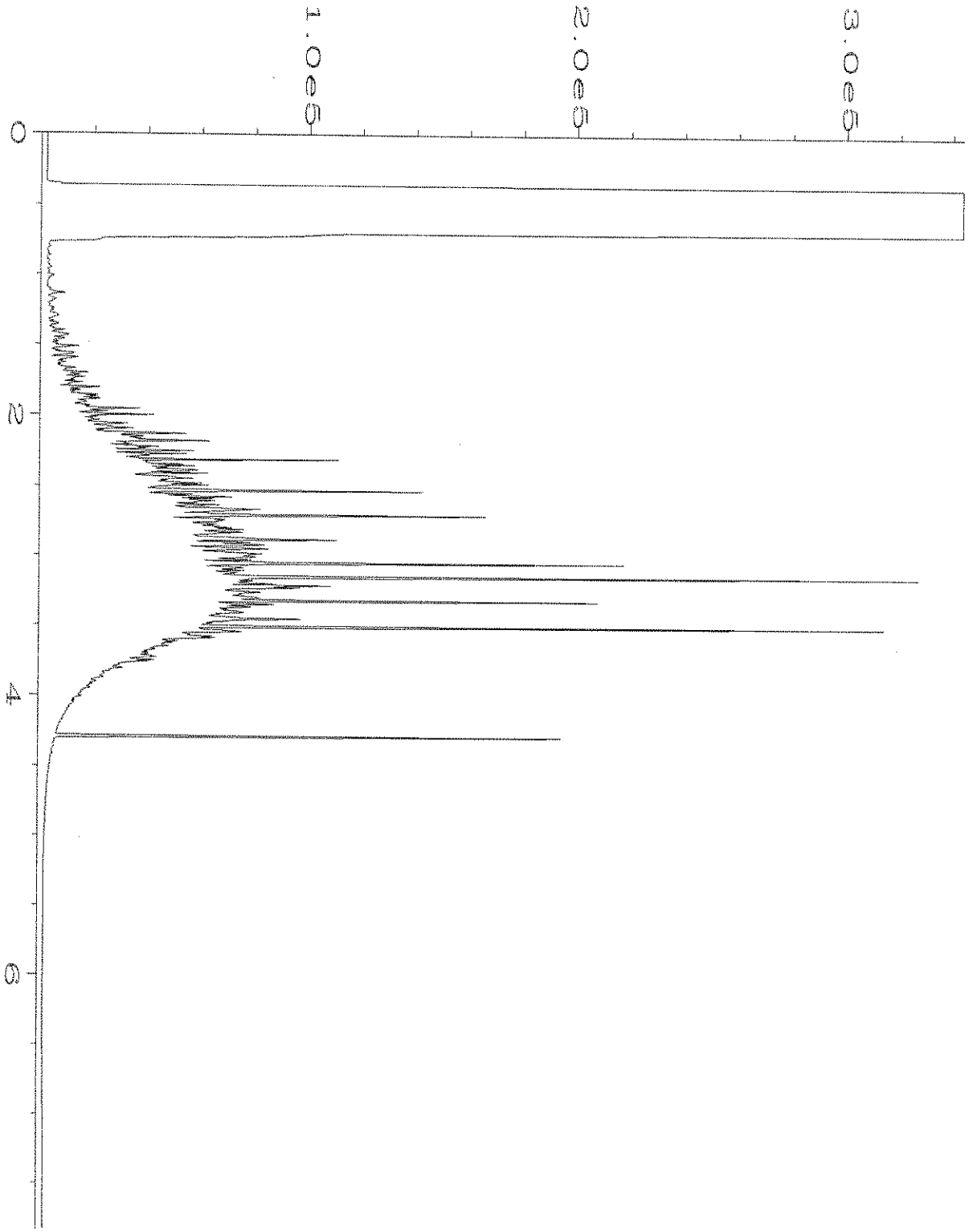
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\048F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 48
Sample Name	: 003244-96	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 07:29 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:08 AM	Analysis Method	: DEFAULT.MTH



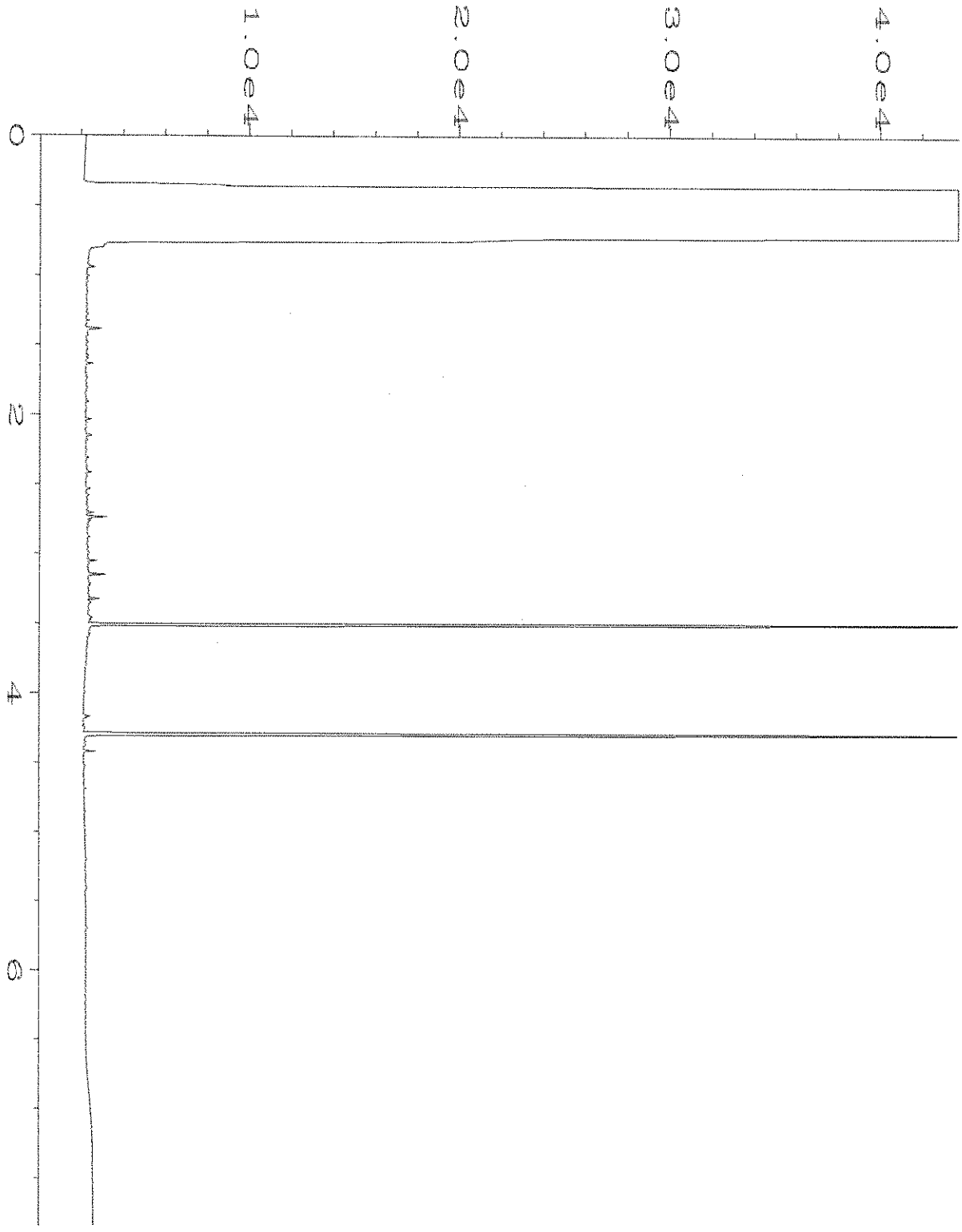
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\045F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 45
Sample Name	: 003244-89	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 06:53 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:07 AM	Analysis Method	: DEFAULT.MTH



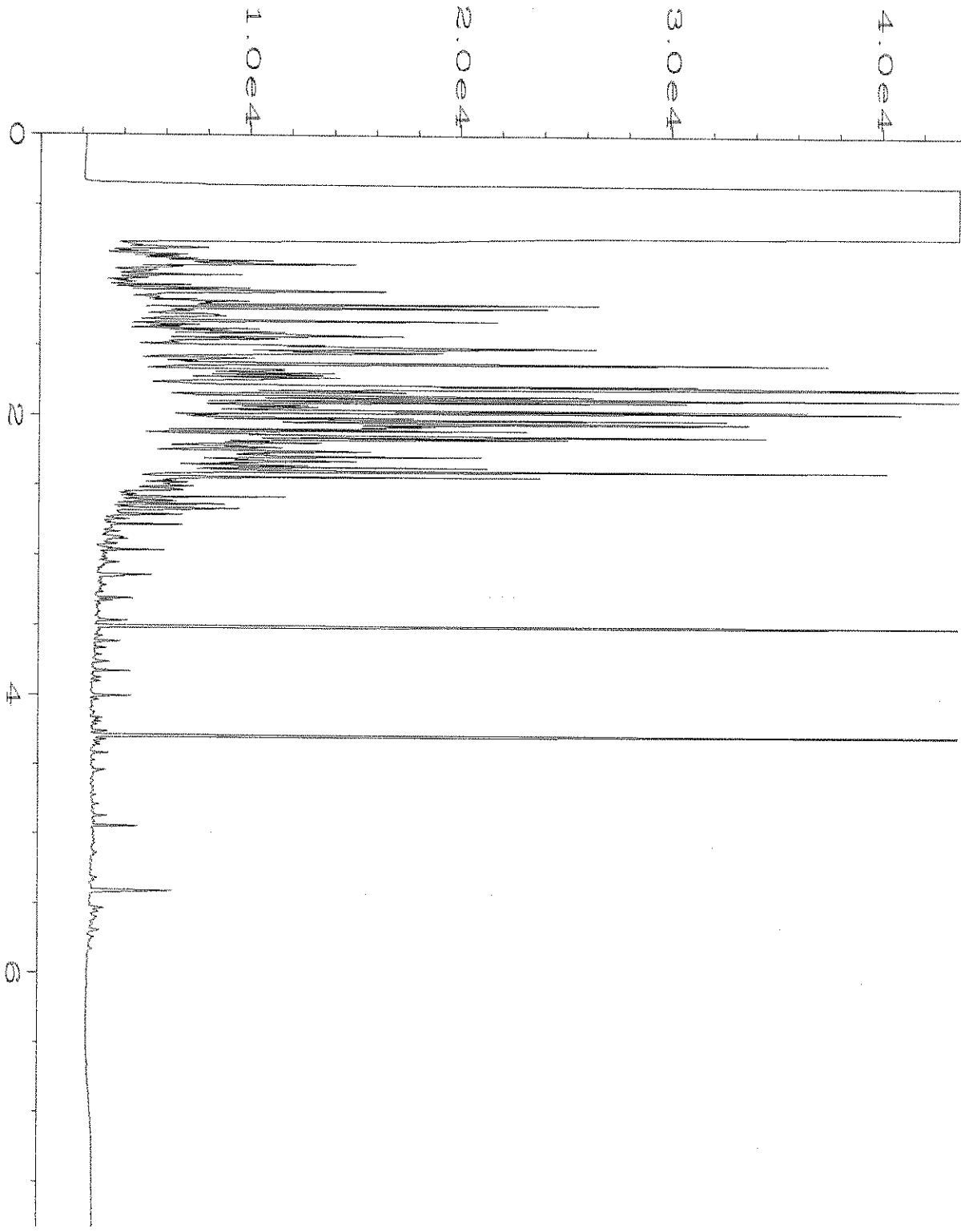
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\046F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 46
Sample Name	: 003244-93	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 07:05 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:07 AM	Analysis Method	: DEFAULT.MTH



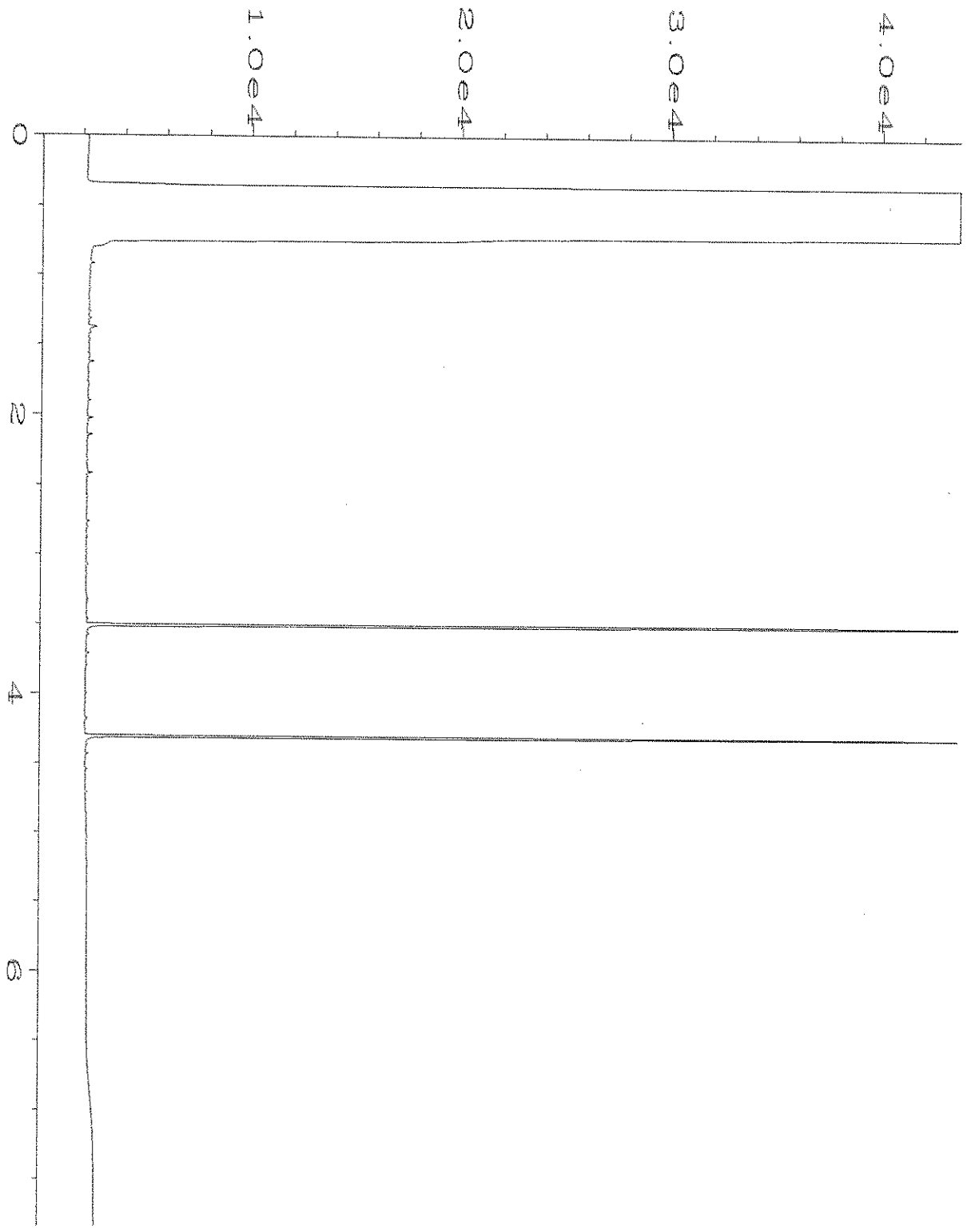
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\047F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 47
Sample Name	: 003244-95	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 07:17 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:08 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\03-17-20\049F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 49
Sample Name	: 003244-97	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 07:42 PM	Instrument Method	: DX.MTH
Report Created on:	18 Mar 20 09:09 AM	Analysis Method	: DEFAULT.MTH

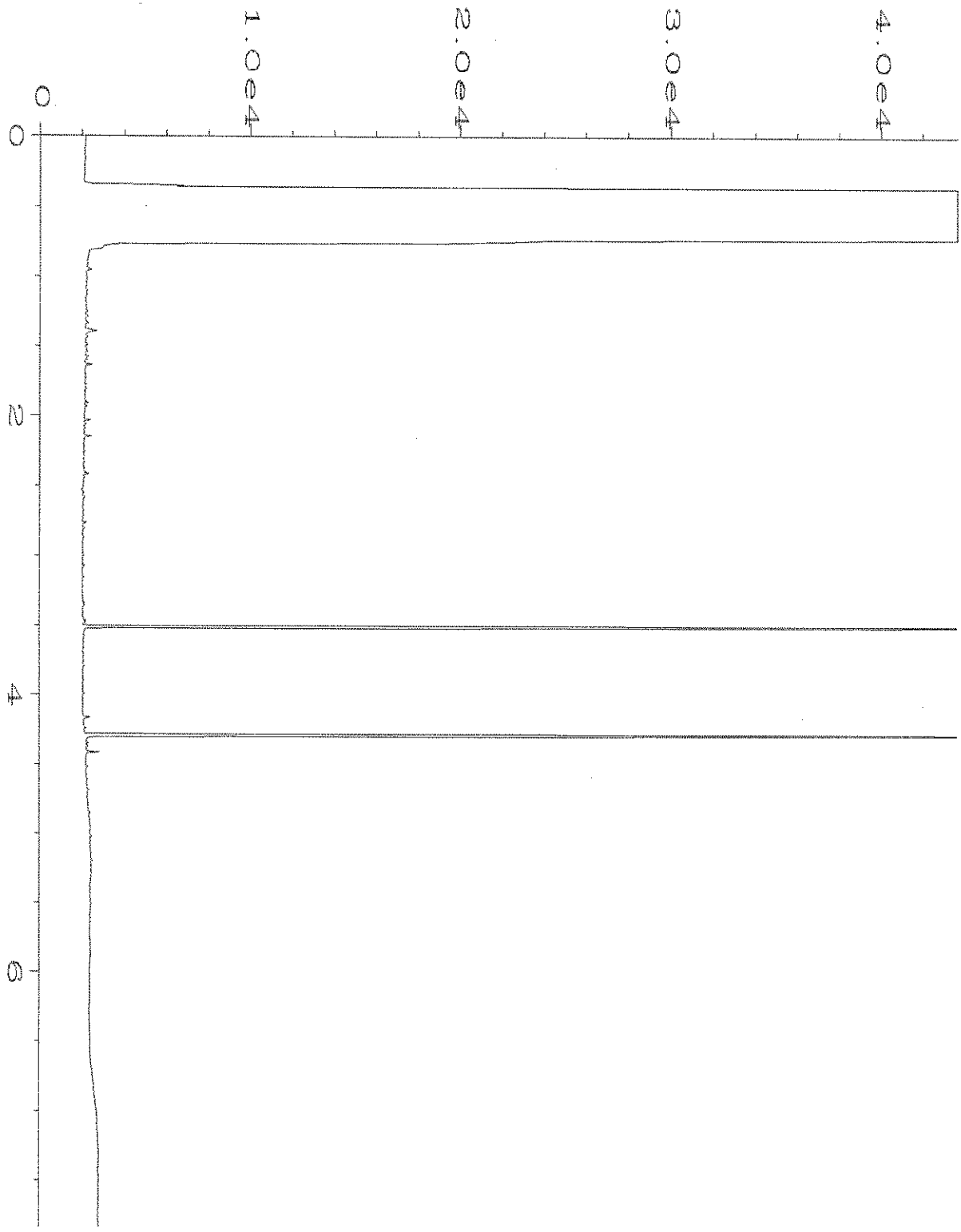


Data File Name	: C:\HPCHEM\4\DATA\03-17-20\050F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 50
Sample Name	: 003244-100	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 07:54 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:09 AM	Analysis Method	: DEFAULT.MTH

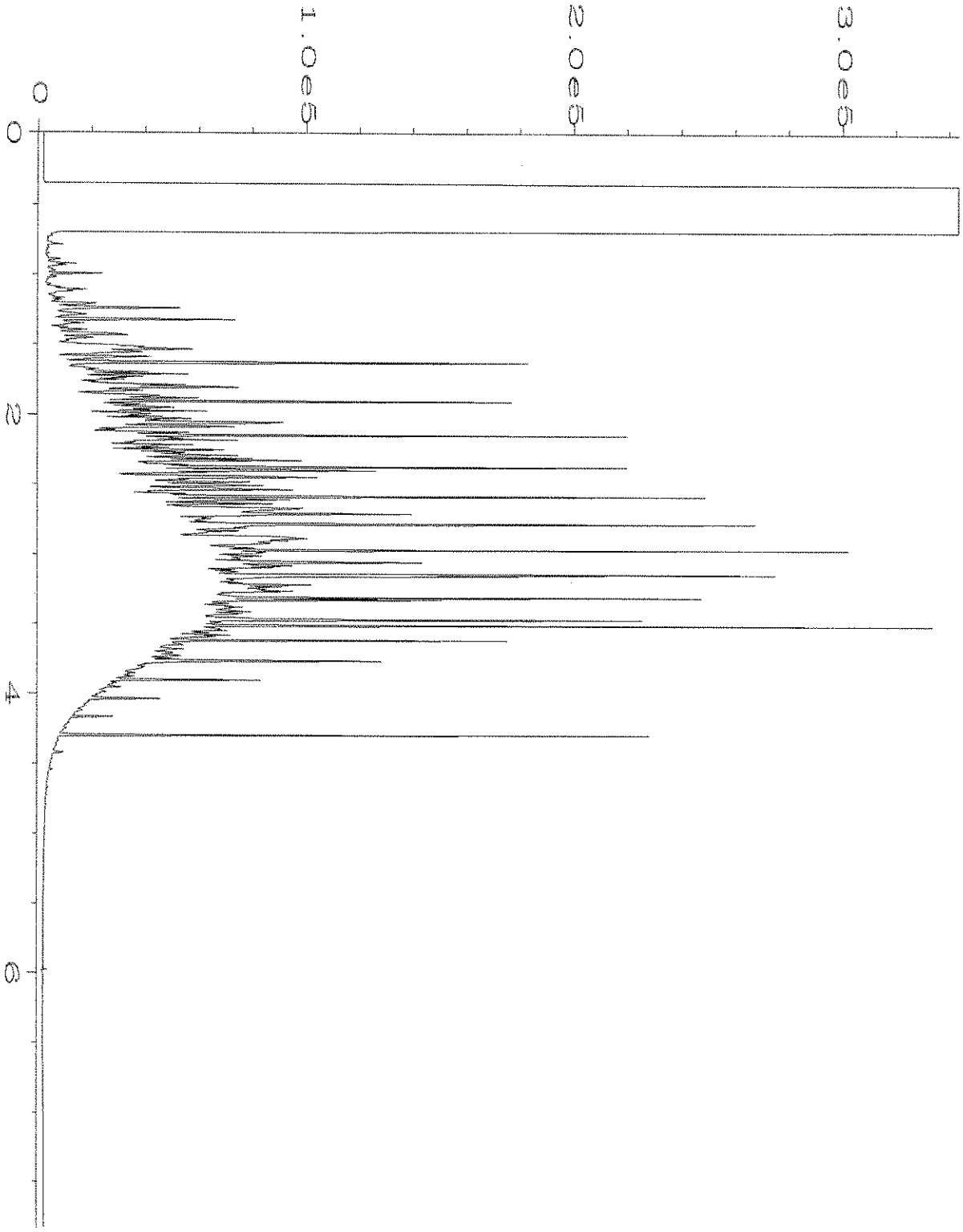


Data File Name : C:\HPCHEM\4\DATA\03-17-20\012F0301.D
Operator : TL
Instrument : GC#4
Sample Name : 00-683 mb
Run Time Bar Code:
Acquired on : 17 Mar 20 10:51 AM
Report Created on: 18 Mar 20 08:51 AM

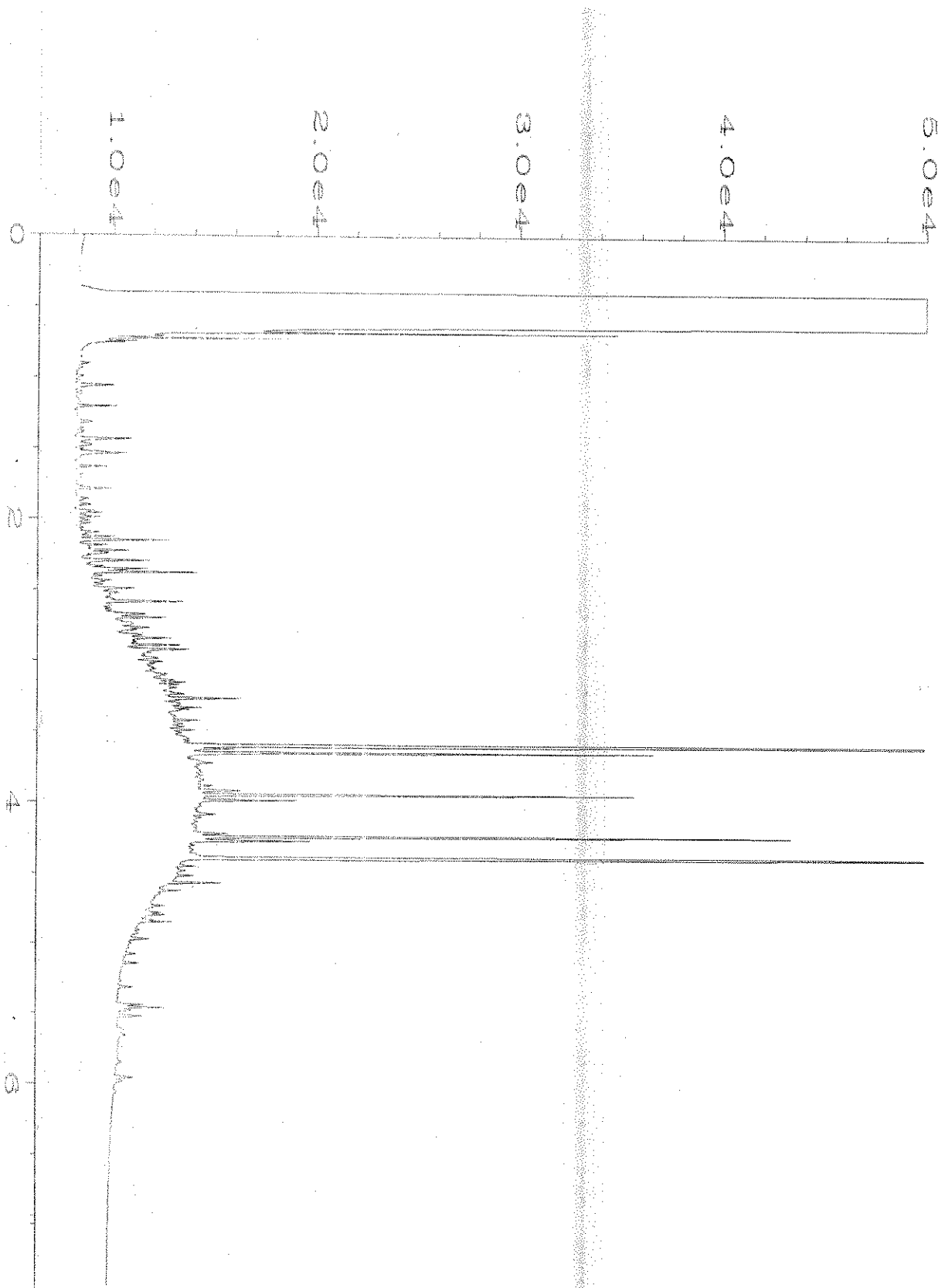
Page Number : 1
Vial Number : 12
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



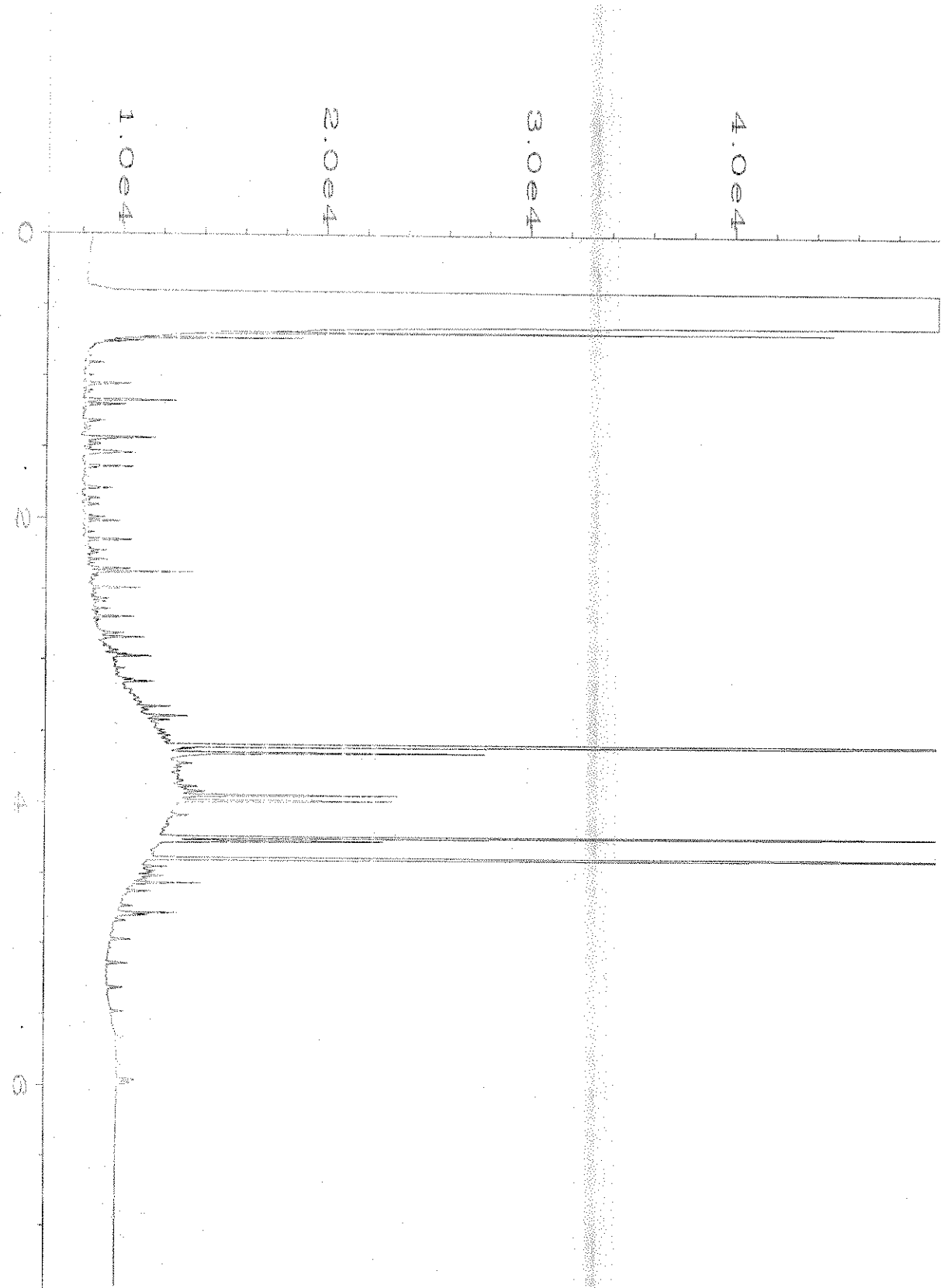
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\036F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 36
Sample Name	: 00-684 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 17 Mar 20 05:04 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 08:51 AM	Analysis Method	: DEFAULT.MTH



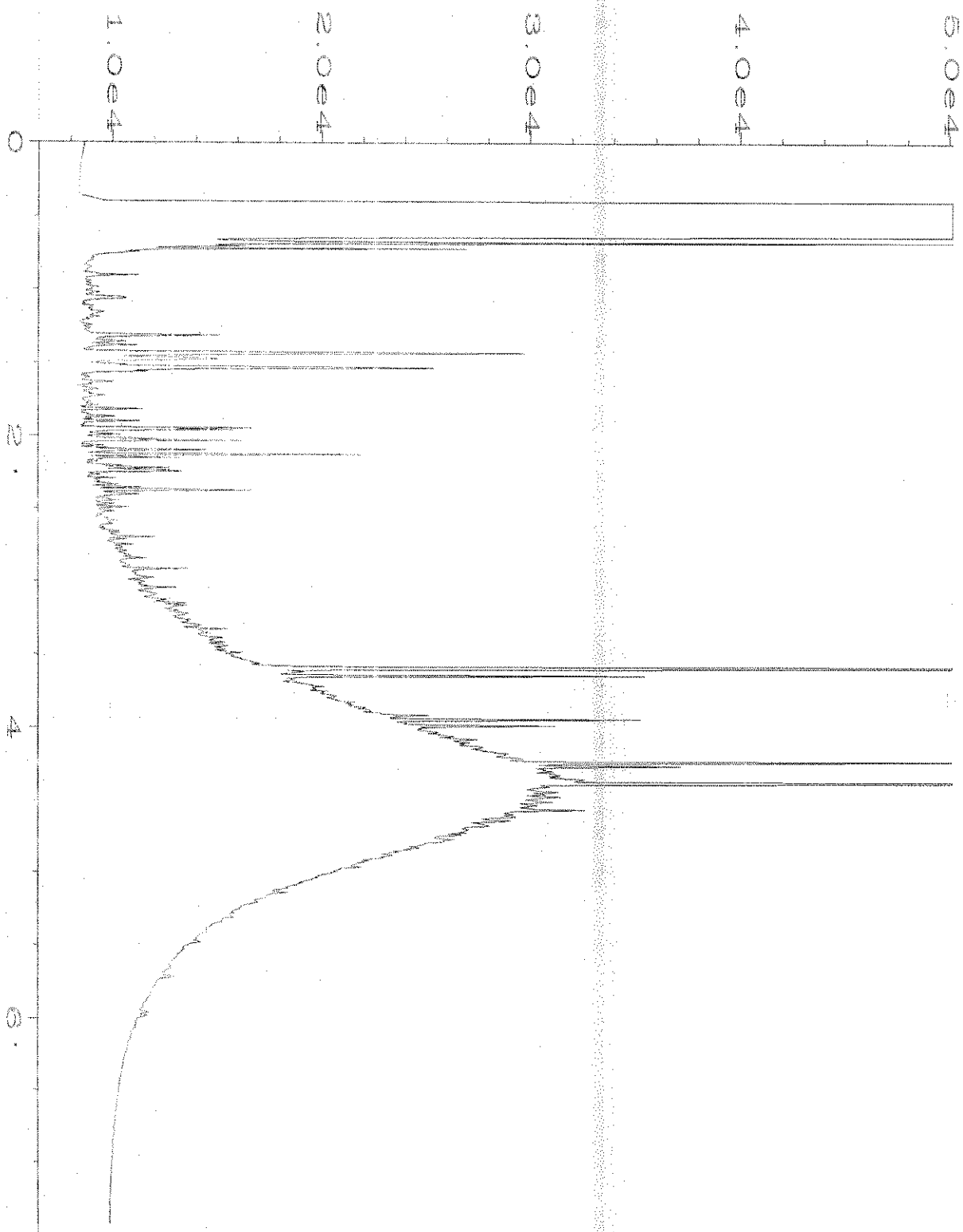
Data File Name	: C:\HPCHEM\4\DATA\03-17-20\005F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 17 Mar 20 02:50 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 08:51 AM	Analysis Method	: DEFAULT.MTH



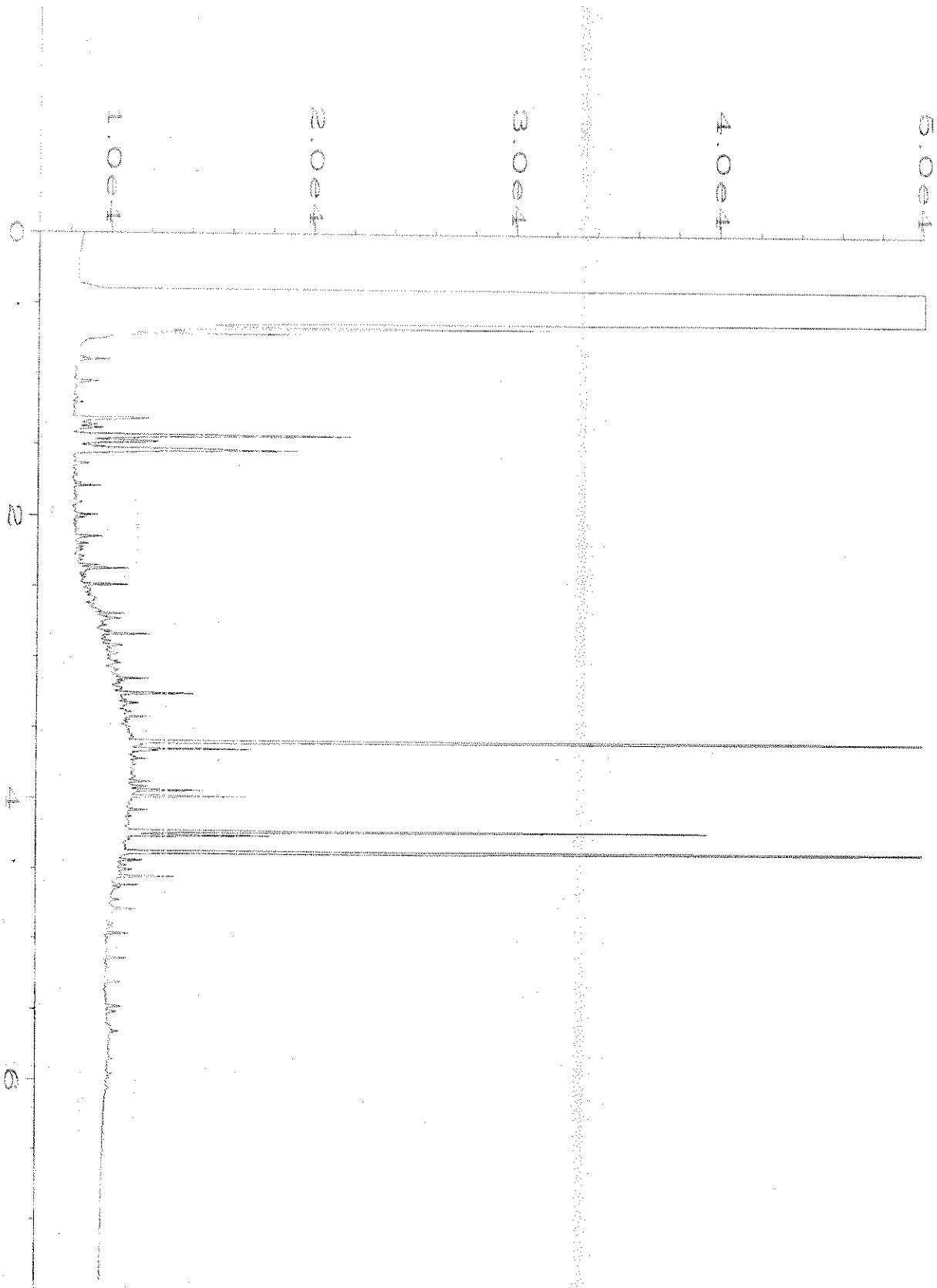
Data File Name	: C:\HPCHEM\1\DATA\03-17-20\042F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 42
Sample Name	: 003244-19	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 04:04 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:28 AM	Analysis Method	: DX.MTH



Data File Name	: C:\HPCHEM\1\DATA\03-17-20\043F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 43
Sample Name	: 003244-37	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 17 Mar 20 04:16 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:28 AM	Analysis Method	: DX.MTH

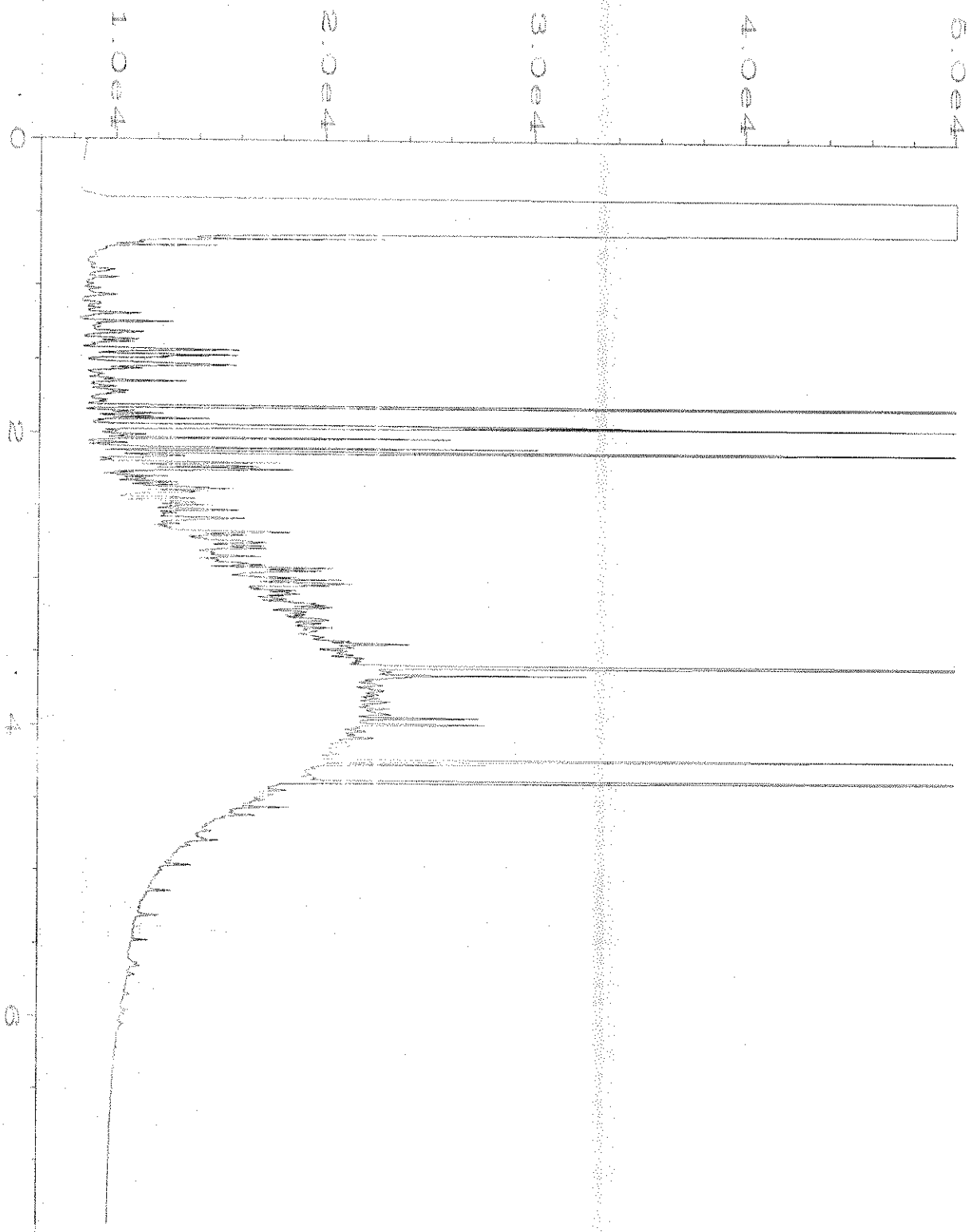


Data File Name	: C:\HPCHEM\1\DATA\03-17-20\023F0301.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 23
Sample Name	: 003244-46	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 3
Acquired on	: 17 Mar 20 11:53 AM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:26 AM	Analysis Method	: DX.MTH



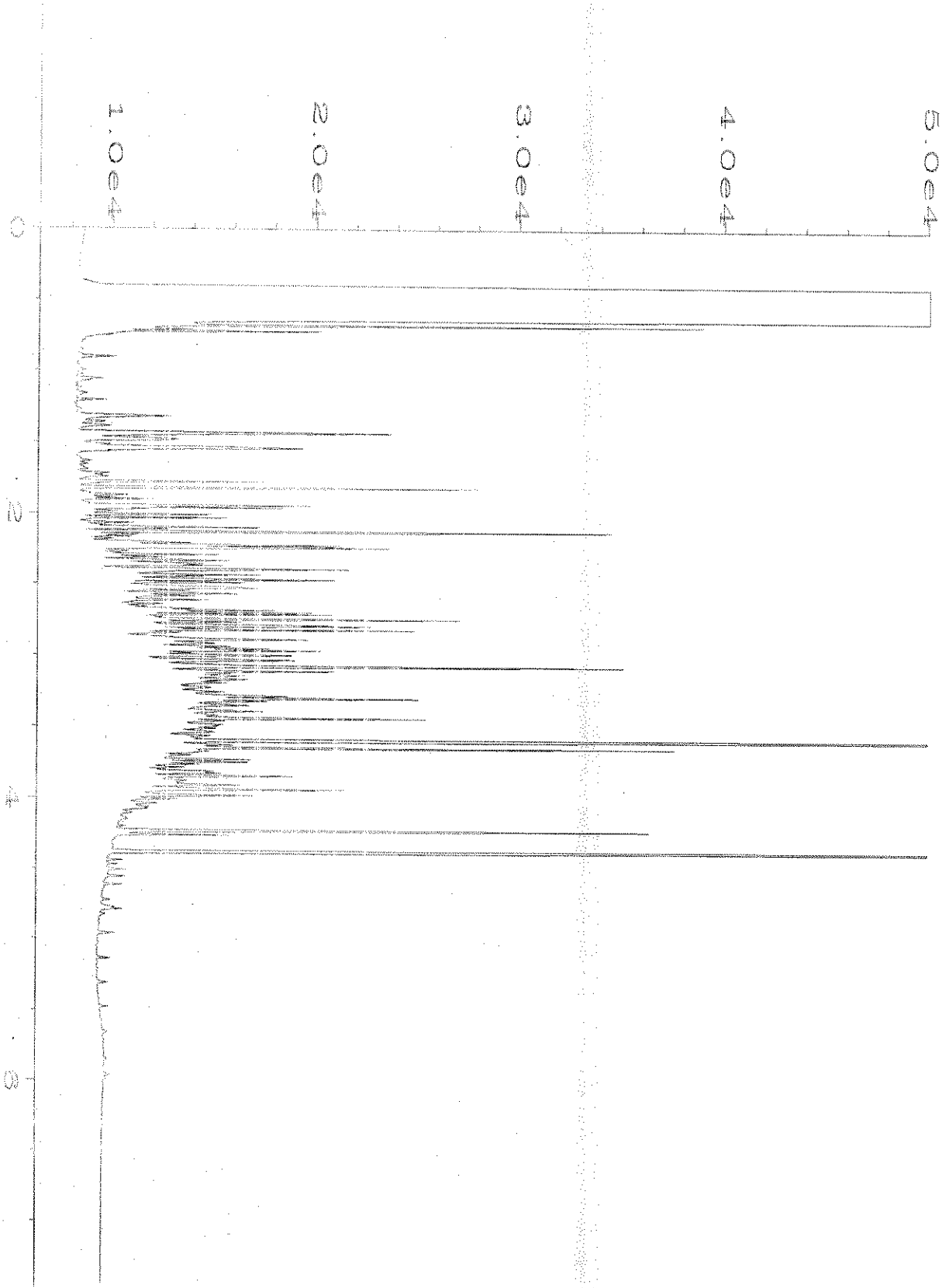
Data File Name : C:\HPCHEM\1\DATA\03-17-20\024F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003244-53
Run Time Bar Code:
Acquired on : 17 Mar 20 12:04 PM
Report Created on: 18 Mar 20 09:26 AM

Page Number : 1
Vial Number : 24
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DX.MTH



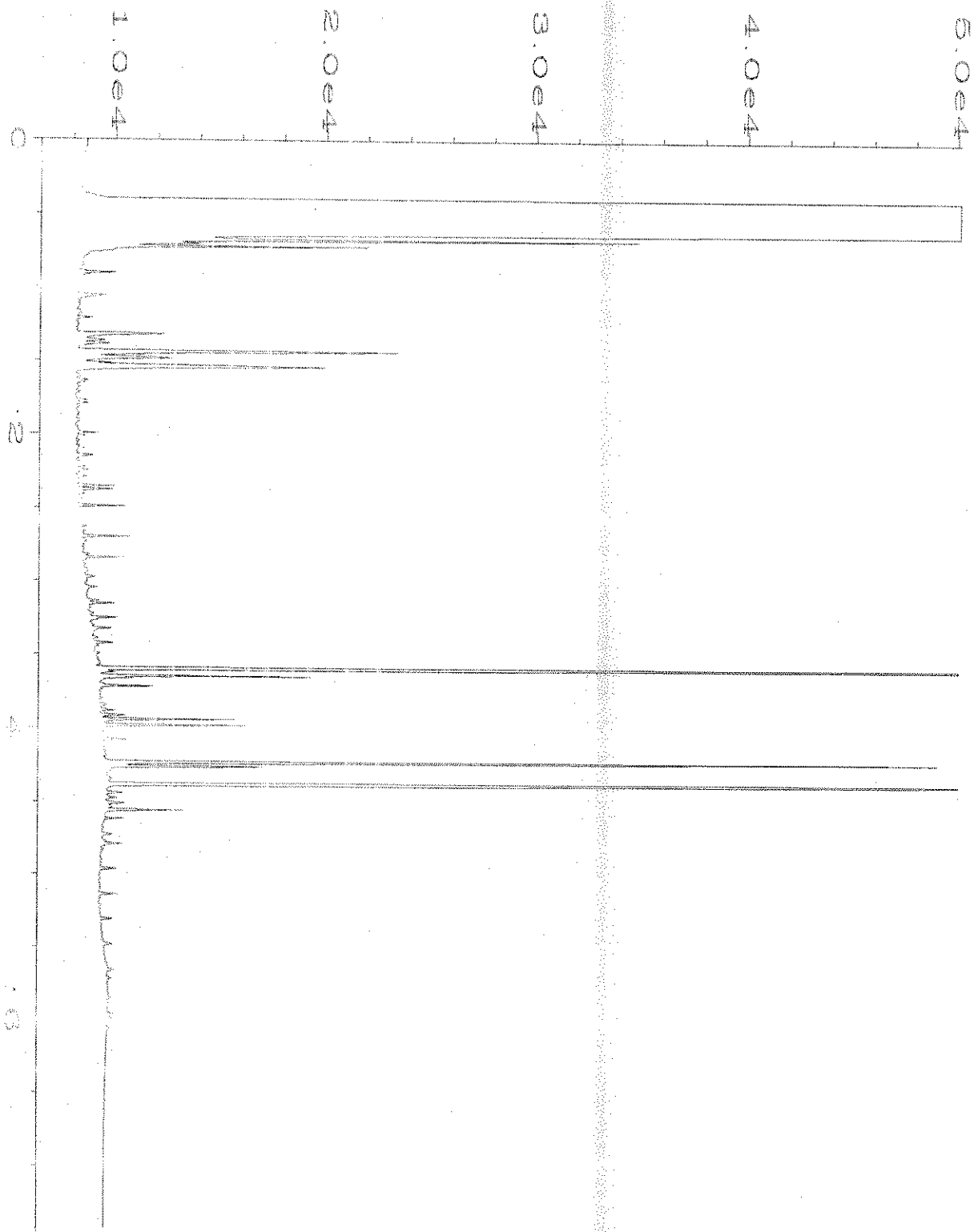
Data File Name : C:\HPCHEM\1\DATA\03-17-20\025F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003244-58
Run Time Bar Code:
Acquired on : 17 Mar 20 12:15 PM
Report Created on: 18 Mar 20 09:26 AM

Page Number : 1
Vial Number : 25
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DX.MTH



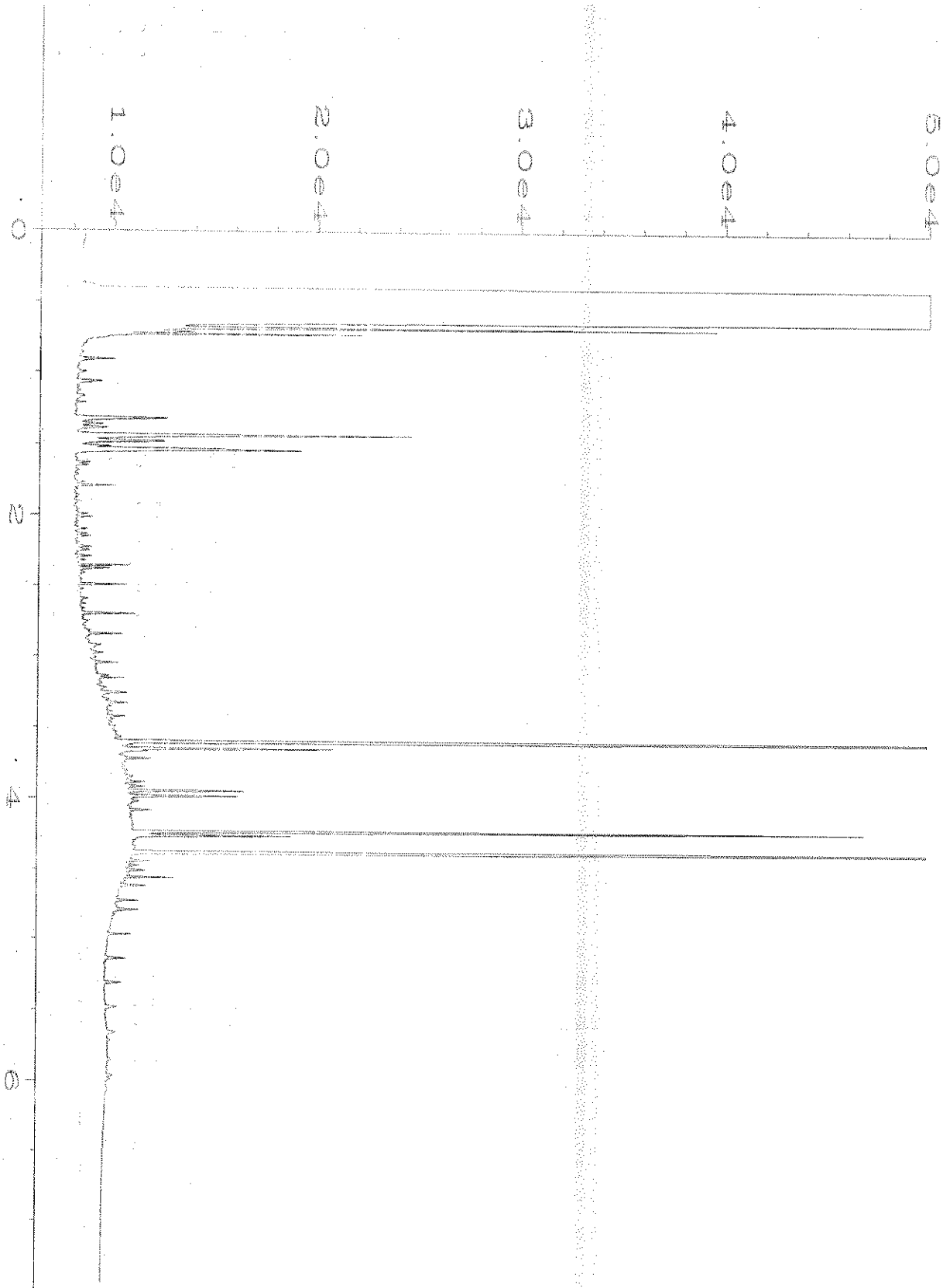
Data File Name : C:\HPCHEM\1\DATA\03-17-20\026F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003244-59
Run Time Bar Code:
Acquired on : 17 Mar 20 12:27 PM
Report Created on: 18 Mar 20 09:26 AM

Page Number : 1
Vial Number : 26
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DX.MTH



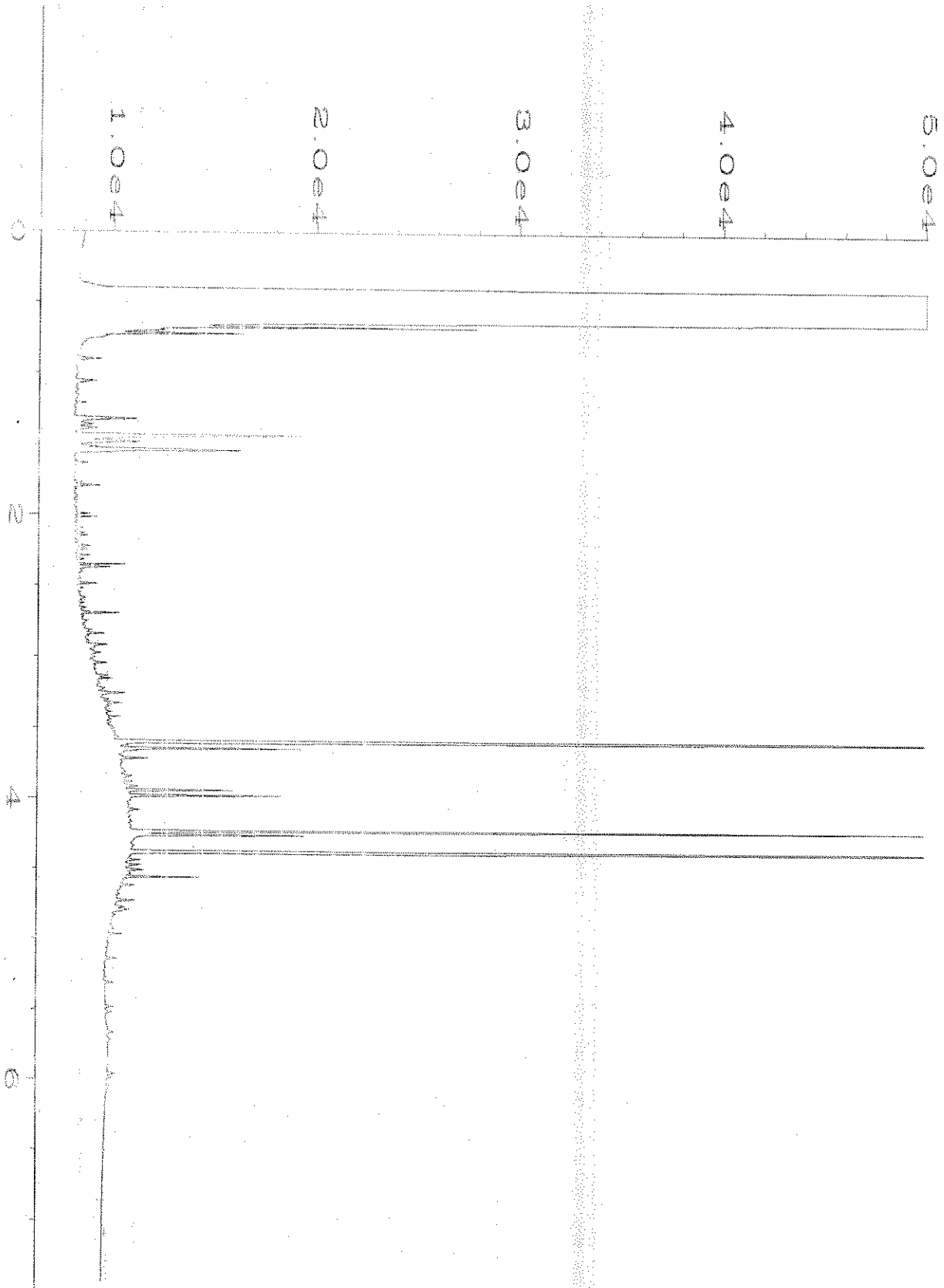
Data File Name : C:\HPCHEM\1\DATA\03-17-20\027F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003244-64
Run Time Bar Code:
Acquired on : 17 Mar 20 12:38 PM
Report Created on: 18 Mar 20 09:27 AM

Page Number : 1
Vial Number : 27
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DX.MTH



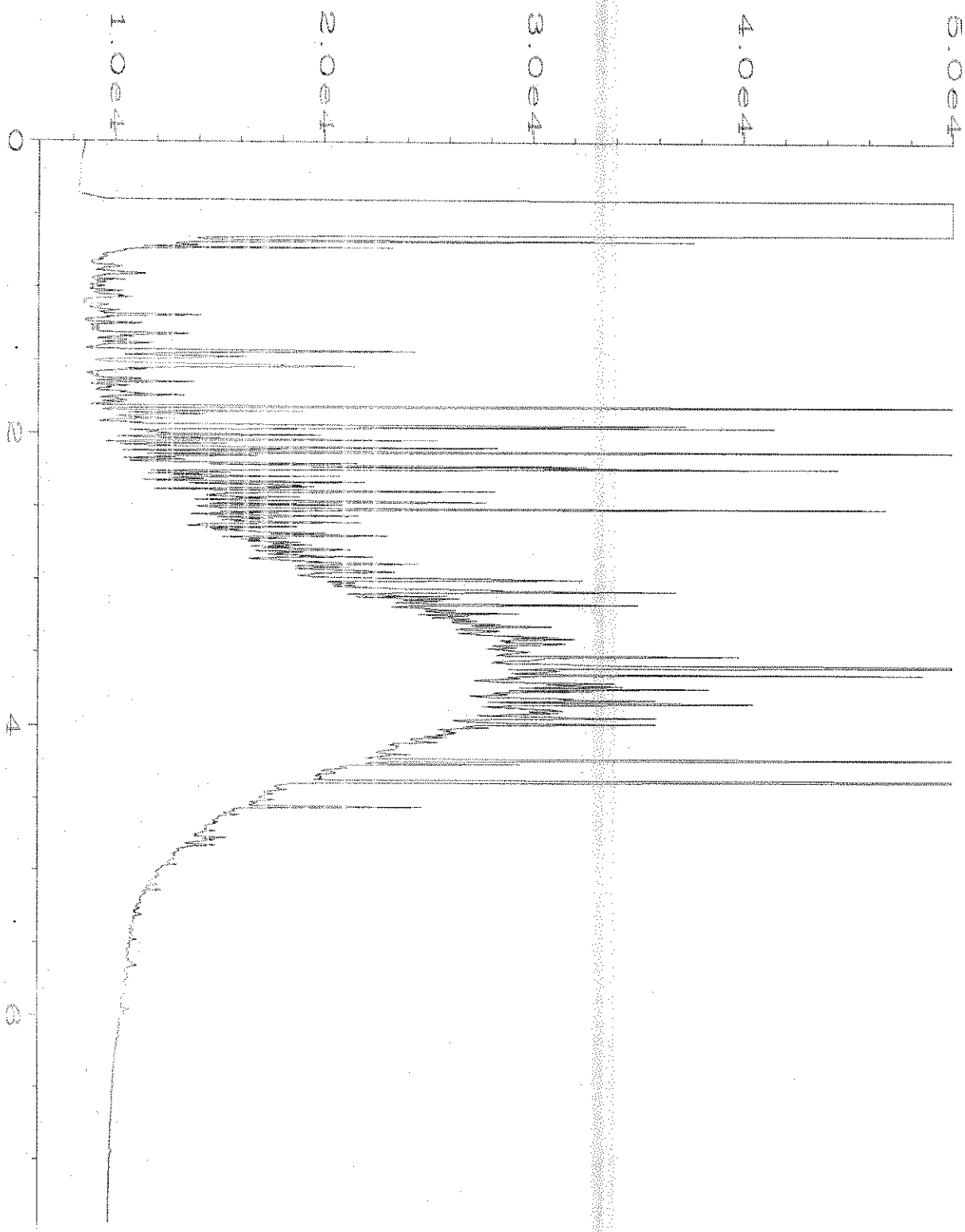
Data File Name : C:\HPCHEM\1\DATA\03-17-20\028F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003244-66
Run Time Bar Code:
Acquired on : 17 Mar 20 12:49 PM
Report Created on: 18 Mar 20 09:27 AM

Page Number : 1
Vial Number : 28
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DX.MTH



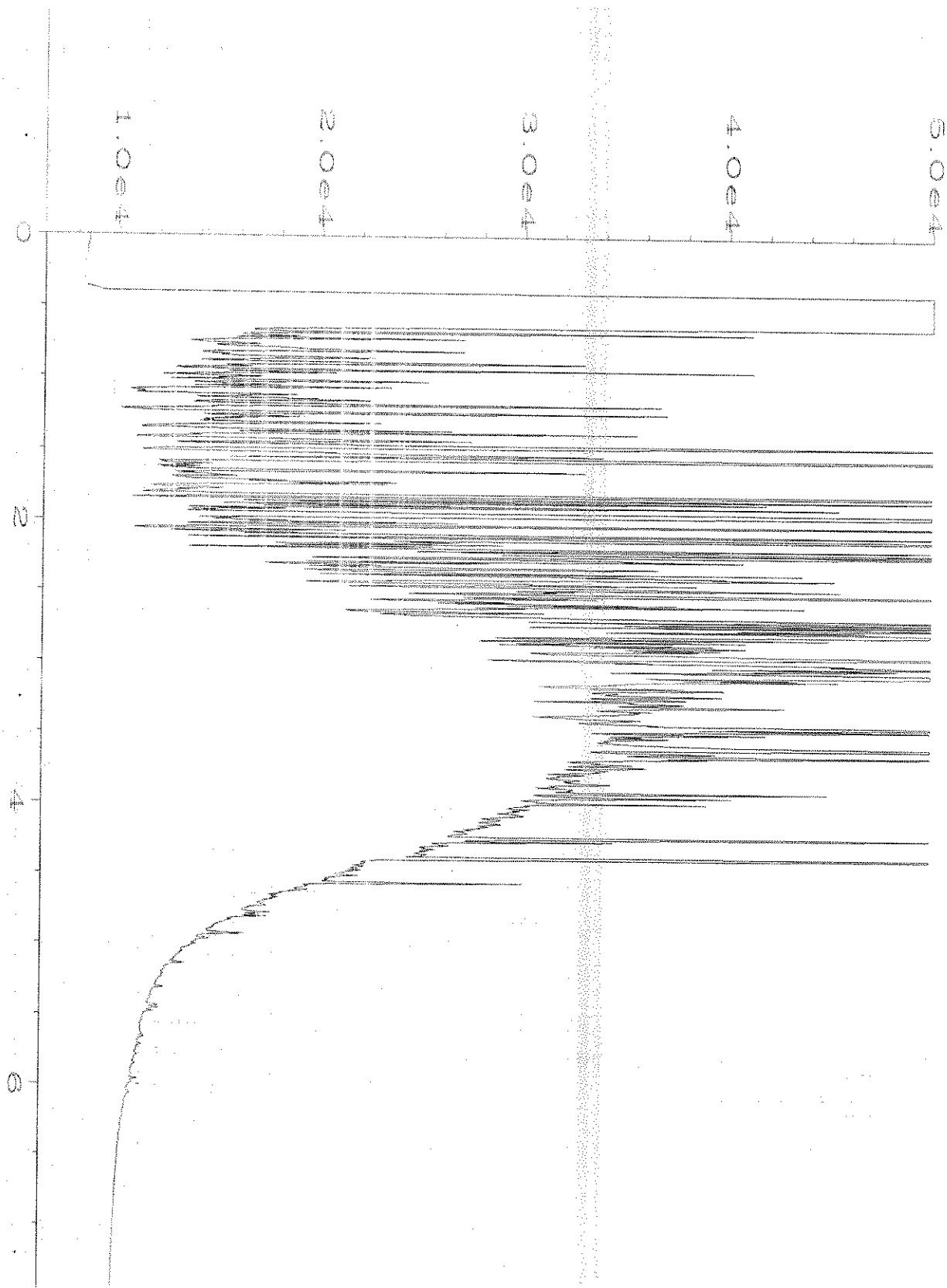
Data File Name : C:\HPCHEM\1\DATA\03-17-20\029F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003244-67
Run Time Bar Code:
Acquired on : 17 Mar 20 01:01 PM
Report Created on: 18 Mar 20 09:27 AM

Page Number : 1
Vial Number : 29
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DX.MTH



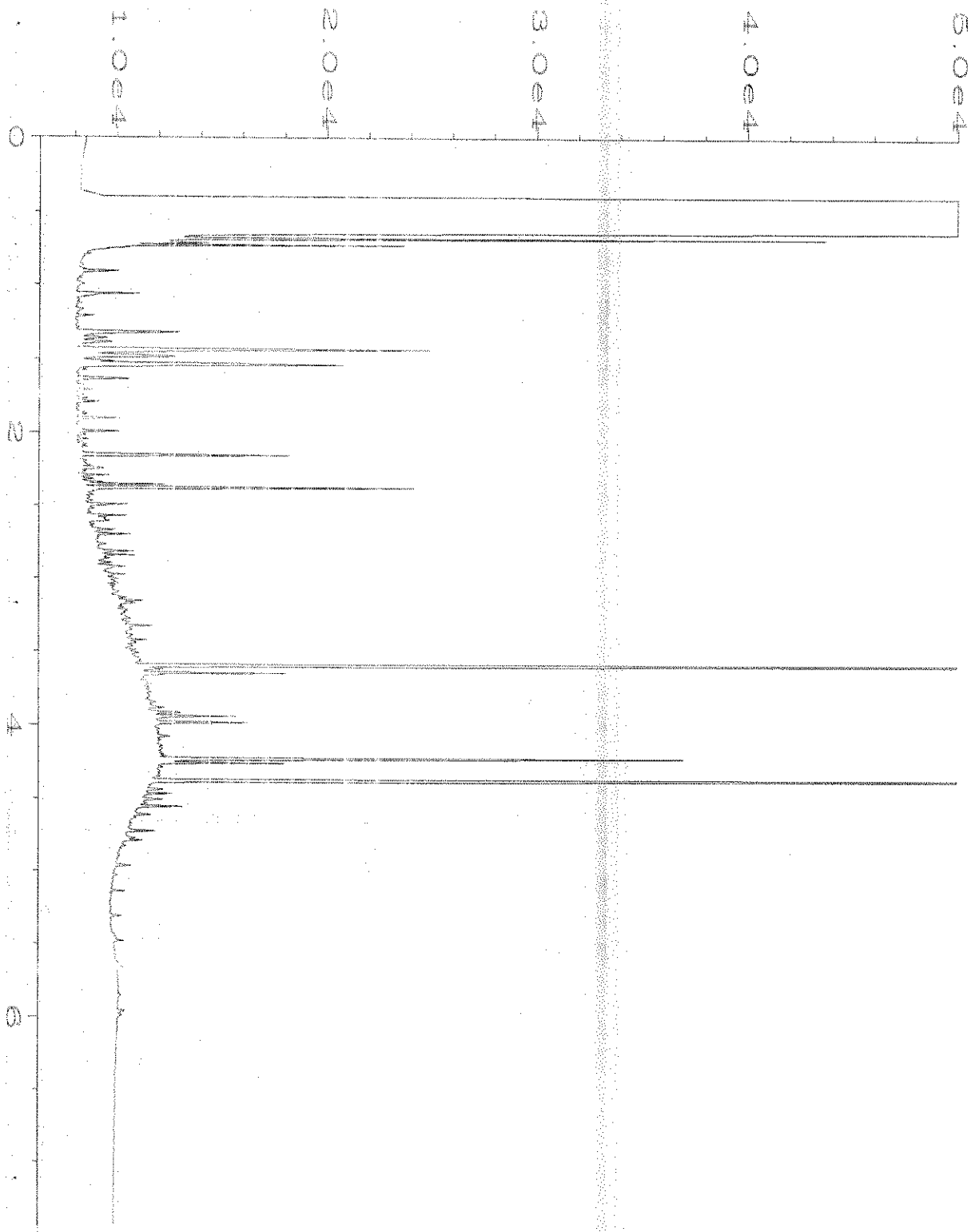
Data File Name : C:\HPCHEM\1\DATA\03-17-20\030F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003244-85
Run Time Bar Code:
Acquired on : 17 Mar 20 01:12 PM
Report Created on: 18 Mar 20 09:27 AM

Page Number : 1
Vial Number : 30
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DX.MTH

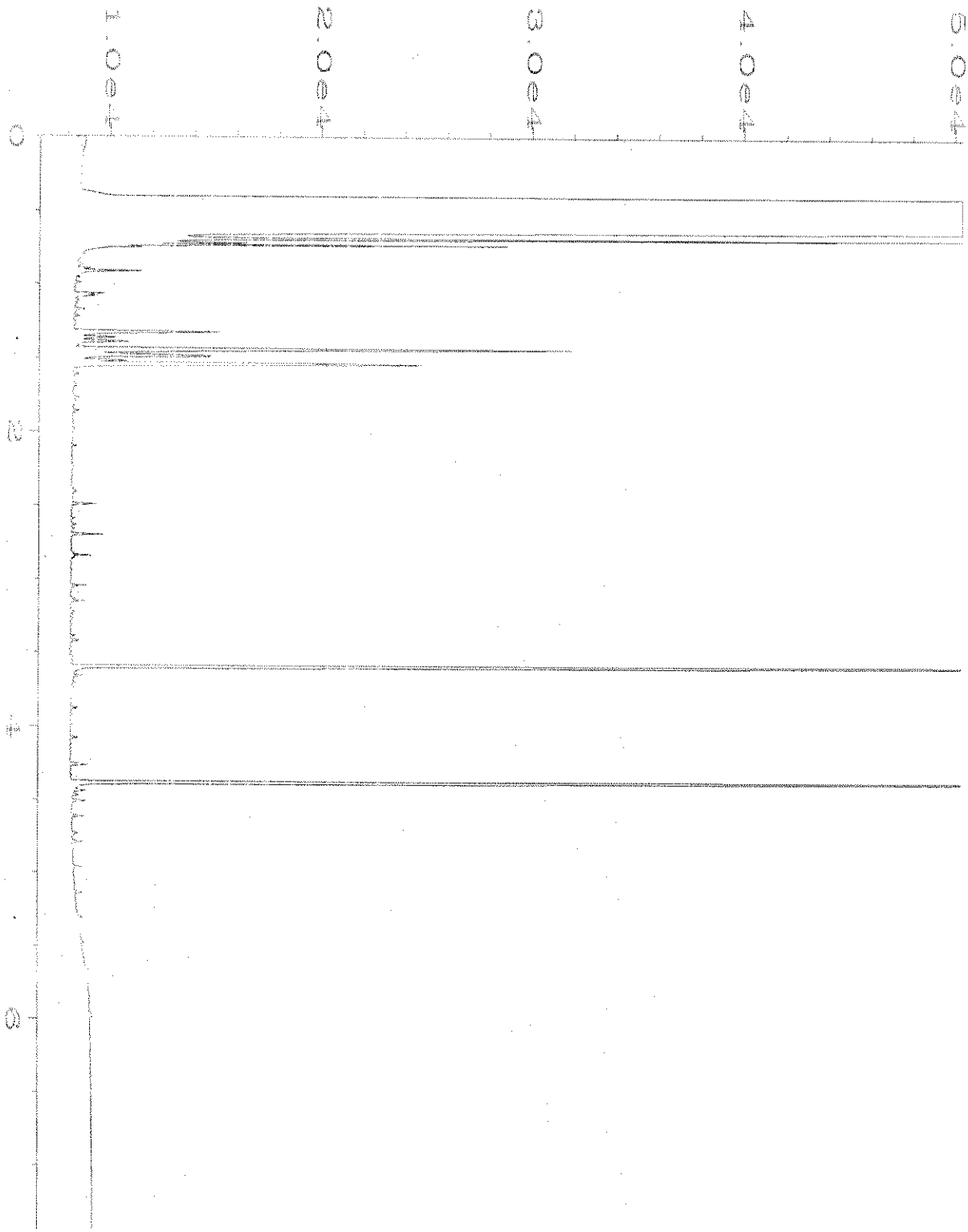


Data File Name : C:\HPCHEM\1\DATA\03-17-20\031F0301.D
Operator : TL
Instrument : GC1
Sample Name : 003244-90
Run Time Bar Code:
Acquired on : 17 Mar 20 01:24 PM
Report Created on: 18 Mar 20 09:27 AM

Page Number : 1
Vial Number : 31
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DX.MTH

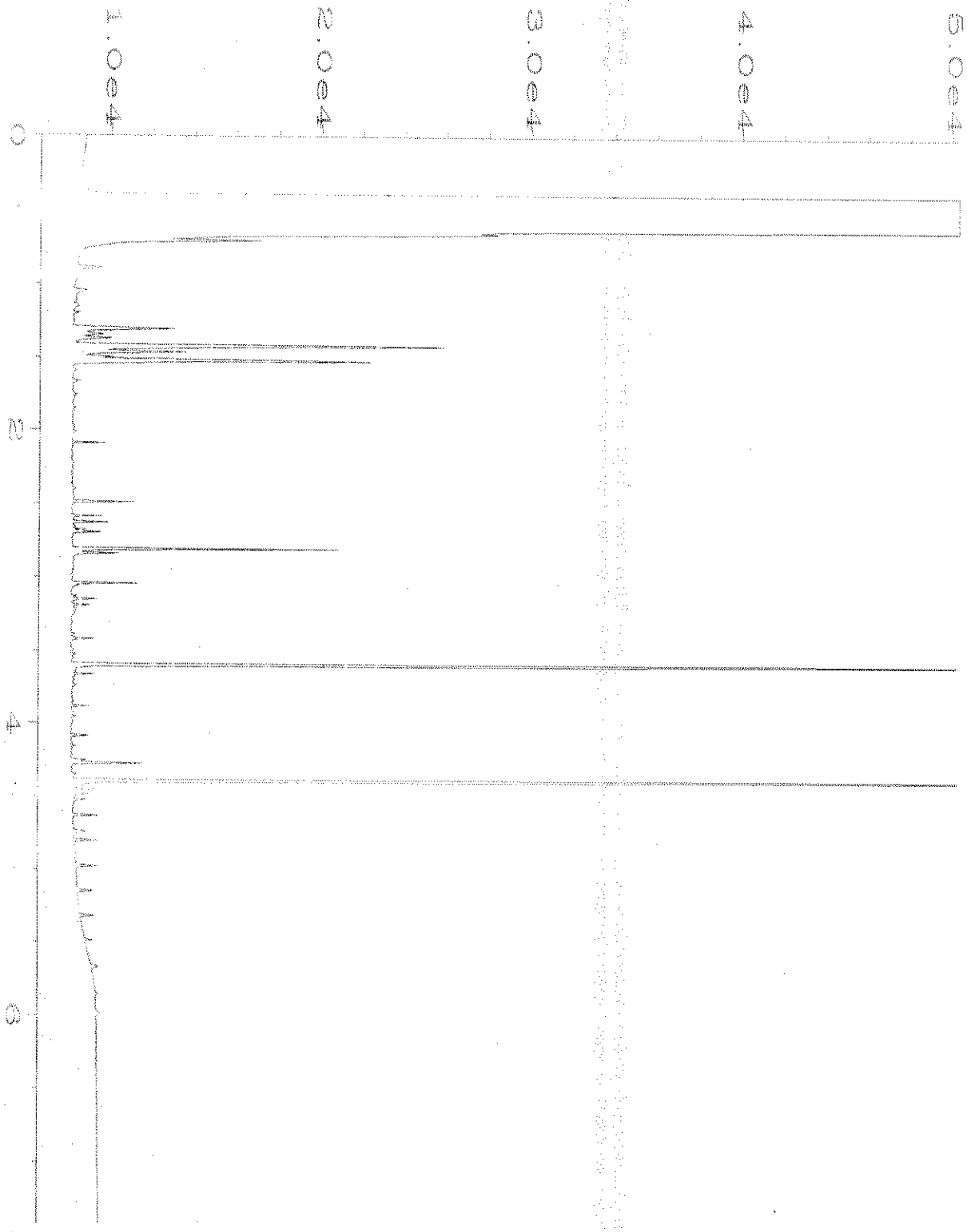


Data File Name	: C:\HPCHEM\1\DATA\03-17-20\034F0301.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 34
Sample Name	: 003244-106	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 3
Acquired on	: 17 Mar 20 01:58 PM	Instrument Method	: DX.MTH
Report Created on	: 18 Mar 20 09:27 AM	Analysis Method	: DX.MTH



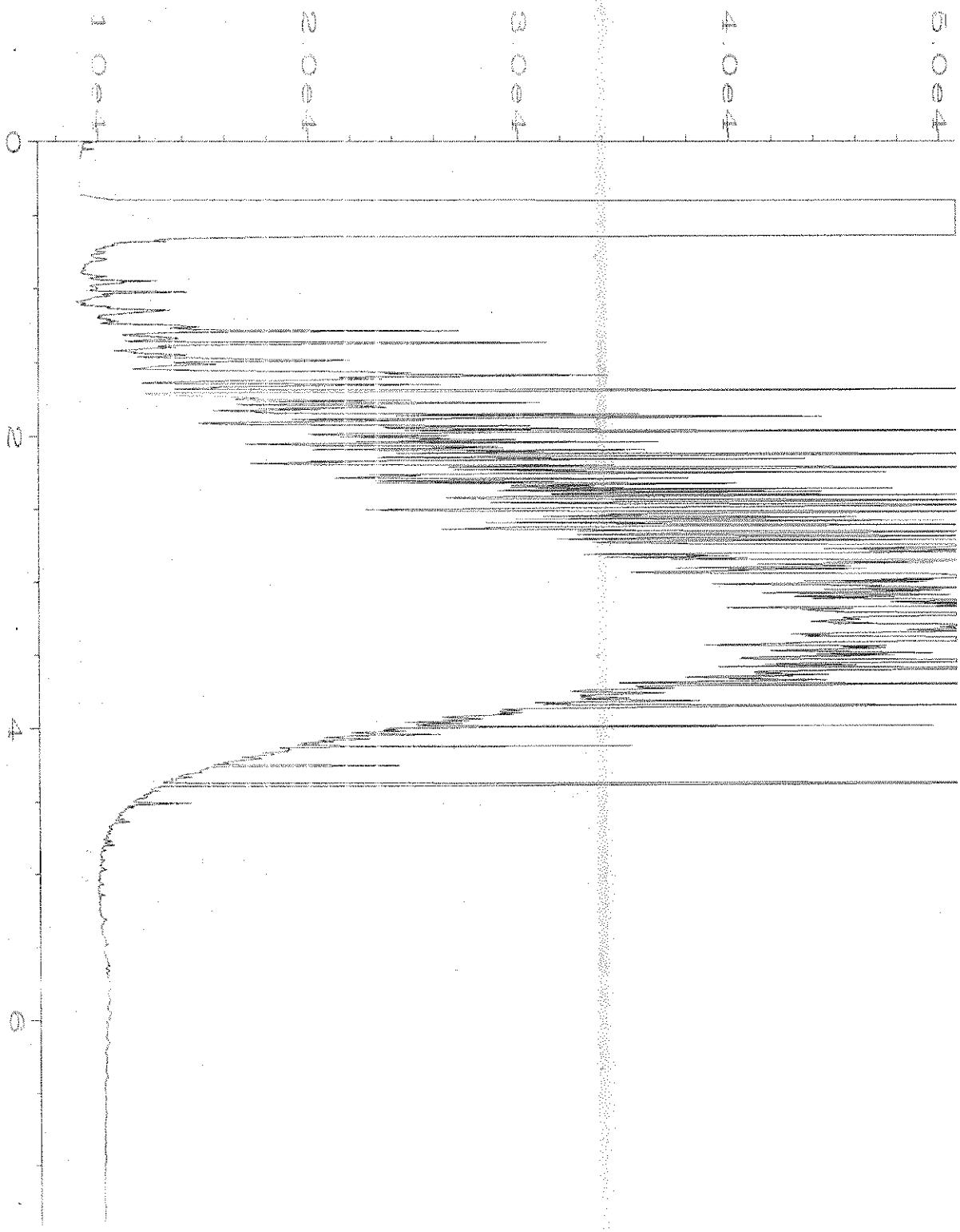
Data File Name : C:\HPCHEM\1\DATA\03-17-20\020F0301.D
Operator : TL
Instrument : GC1
Sample Name : 00-680 mb
Run Time Bar Code:
Acquired on : 17 Mar 20 11:19 AM
Report Created on: 18 Mar 20 01:23 PM

Page Number : 1
Vial Number : 20
Injection Number : 1
Sequence Line : 3
Instrument Method: DX.MTH
Analysis Method : DX.MTH



Data File Name : C:\HPCHEM\1\DATA\03-16-20\006F0701.D
Operator : TL
Instrument : GC1
Sample Name : 00-636 mb
Run Time Bar Code:
Acquired on : 16 Mar 20 01:25 PM
Report Created on: 18 Mar 20 01:24 PM

Page Number : 1
Vial Number : 6
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DX.MTH



Data File Name : C:\HPCHEM\1\DATA\03-17-20\003F0201.D
Operator : TL
Instrument : GC1
Sample Name : 500 Dx 58-146H
Run Time Bar Code:
Acquired on : 17 Mar 20 07:24 AM
Report Created on: 18 Mar 20 09:24 AM

Page Number : 1
Vial Number : 3
Injection Number : 1
Sequence Line : 2
Instrument Method: DX.MTH
Analysis Method : DX.MTH

003244

SAMPLE CHAIN OF CUSTODY

ME 03-13-20 CI3/VW5/AD5/VS5

Page # 1 of 1

Report To Gabe Cisneros
Company Floyd|Snider
Address 601 Union St Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206 292-2078 Email

SAMPLERS (*signature*)

PROJECT NAME: POL-TPH
PO #:

REMARKS: VOCs 8260 Include- MTBE, Hexane, EDB, EDC, NAPH, BTEX
Project specific RLs? Yes / No

INVOICE TO:

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021/8260c	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	VPH/EPH	Lead			Notes
						ANALYSES REQUESTED											V-per CC EP 3/20
MW-40-10.5-11'	01A-B	3/9/20	1145	Soil	5	✓	✓		X								*Run HCID Archive Rest
~~MW-40-11-13~~																	
~~MW-40-17D~~ MW-40-17D	02A-D		1245		4	X	X	X			X			X			Dup.
MW-40-17'	03		1235		4	X	X	X			X			X			
MW-40-24-24.5	04A-B		1330		5				X								*
MW-40-1.0-1.5	05		1530		5				X								* Run HCID Archive rest
OIP-49-10	06		14:05		5	✓	✓		X								Archive VOAs
OIP-49-17	07		14:15		5	✓	✓		X								" "
CIP-47-2-3	08		15:10		5				X								" "
UIP-47-25	09	↓	15:30	↓	5				X								" "

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd|Snider	3/13	1644
Received by:	Eric Power	F&B	3/13/20	1644
Relinquished by:				
Received by:			Samples received at	4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

O 03244

SAMPLE CHAIN OF CUSTODY

ME 03-13-20

CI3/VW5/AD5/VS5

Page # 1 of 11

Report To Gabe Cisneros

Company Floyd Snider

Address

City, State, ZIP see page1

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: POL-TPH

PO #

REMARKS: VOCs 8260: MTBE, EDB, Hexane, EDS, Naph, BTEX
Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [X] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	Lead	EDB/EDC	Naphthalene		Notes
OIP-47-17	10A-H	3/9/20	1535	soil	8	X	X			X	X		X	X			
OIP-47-11-12	11A-H		15:05		8	X	X			X	X		X	X			
OIP-31-17	12A-E		17:20		5				X								Archive VOAs
OIP-31-20	13		17:15		5				X								Archive VOAs
GP-33-28-29	14		16:50		5				X								" "
GP-33-14-14.5	15		16:30		5	✓	✓		X								" "
GP-33-19.5-20	16		16:35		5				X								" "
GP-33-24-25	17		16:45		5				X								" "
GP-34-14-15	18		18:10	↓	5				X								" "
GP-34-GW-14-19	19A-H	↓	18:05	GW	8	X	X	X			X				X		

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Snider/Floyd	3/13	1644
Received by:	Eric Yam	F&B	3/13/20	1644
Relinquished by:				
Received by:		Samples received at 4 °C		

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SAMPLE CHAIN OF CUSTODY

ME 03-13-20 CI3/VW5/AD5/VS5

[redacted]age # 3 of 11

Report To Gabe Cisneros
Company Floyd/Snider
Address 601 Union Street Ste 600
City, State, ZIP Seattle 98101
Phone ______ Email ______

SAMPLERS (signature)

PROJECT NAME	PO #
POL-TPH	
REMARKS VOC's include MTBE, Hexane, BTEX EDB, EDC & Naphth. Project specific RLs? - Yes / No	INVOICE TO

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH ______
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Archive samples
☐ Other ______
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	CPAHs EPA 8270	PCBs EPA 8082	Lead	VPH/EPH	BTEX 8260		Notes
MW-33-12-12.5	20 A-H	3/9	1720	Soil	8	X	X			X	X		X	X			See Remarks
MW-33-19.5-20	21	3/9	1740	Soil	8	X	X			X	X		X	X			for VOCs 8260
MW-33-22.5-23	22 A-E	3/9	1800	Soil	5				X								Run HCID Archive rest
MW-35-15.5-16	23	3/10	1245	Soil	5				X								"
MW-34-15-15.5	24		1800		5	X	X				X		X		X		
MW-34-20-20.5	25		1806		5	X	X				X		X		X		
MW-34-24-24.5	26		1812		5	X	X				X		X		X		
MW-34-28-28.5	27		1818		5				X								Run HCID Archive rest
OIP-23-14-15	28 A-H	3/10/20	0935		8	X	X			X	X			X			
OIP-23-19-20	29	3/10/20	0945		8	X	X			X	X			X			

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Gabe Cisneros	Floyd/Snider	3/13	1645
Received by: [signature]	Eric Chun	FEB	3/13/20	1645
Relinquished by:				
Received by:		Samples received at 4 °C		

003 244

SAMPLE CHAIN OF CUSTODY

ME 03-13-20

Page # 4 of 11

CI3/VU5/AU5 VS5

Report To Gabe Cisneros

Company Floyd Snider

Address

City, State, ZIP see page 1

Phone Email

SAMPLERS (signature)

PROJECT NAME: POL - TPH

PO #

REMARKS: See page 1 for VOCs list

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [X] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TOC	VPH/EPH	Naphthalene		Notes
OIP-23-23-24	30A-H	3/10/20	0955	Soil	8	X	X			X	X			X			
OIP-23-29.5-30	31A-E		10:20		5				X								Archive VOAs
OIP-46-8	32		0850		1								X				
OIP-46-10-11	33A-E		0845		5				X								Archive VOAs
OIP-46-14	34		0840		5				X								Archive VOAs
OIP-70-8	35		1130		5				X								Archive VOAs
OIP-70-12-14	36		1145		5				X								Archive VOAs
OIP-70-GW-10-15	37A-H		12:00	GW	8	X	X	X			X				X		
CIP-57-14	38A-E		12:50	Soil	5				X								Archive VOAs
OIP-39-15-15.5	39		1342	Soil	5	X	X	X	X		X						Archive VOAs PO

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd/Snider	3/13	1644
Received by:	Eric Young	FSB	3/13/20	1644
Relinquished by:				
Received by:		Samples received at 4 °C		

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SAMPLE CHAIN OF CUSTODY

ME 03-13-20 Q3/VWS/AUS

Page # 5 of 11 VSS

Report To Gabe Cisneros

Company Floyd Snider

Address

City, State, ZIP see page 1

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: PCL-TPH

PO #

REMARKS: see page 1 for VOCs list

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	SAHs EPA 8270	PCBs EPA 8082	NaphthaLene	Lead	VPH / ETH		Notes
OIP-39-16.5-17	40 A-H	3/10/20	1402	Soil	8	X	X			X	X			X	X		
OIP-39-21-22	41 A-E		1400		5				X								Archive VOAs
GP-35-7-8	42		14:42		5	✓			X								Archive VOAs
GP-35-16-17	43		14:47		5				X								Archive VOAs
OIP-04-4-5	44		16:50		5				X								Archive VOAs
OIP-04-15-16	45		17.08	↓	5				X								Archive VOAs
OIP-04-GW-15-20	46 A-H	↓	17:30	GW	8	X	X	X			X		X				
MW-36-25.5-26	47 A-E	3/11/20	1135	Soil	5				X								Archive VOAs
MW-38-23.5-24	48		1600	Soil	5				X								Archive VOAs
GP-31-14-15	49	↓	1220	Soil	5				X								Archive VOAs

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd|Snider	3/13	1644
Received by:	Eric Yoon	F|S	3/13/20	1644
Relinquished by:				
Received by:		Samples received at 4 °C		

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SAMPLE CHAIN OF CUSTODY ME 03-13-20 03/NW5/AD5/V35

Page # 6 of 11

Report To Gabe Cisneros
Company Floyd Snider
Address
City, State, ZIP see page 1
Phone Email

SAMPLERS (signature)

PROJECT NAME: POL-TPH
PO #

REMARKS: See page 1 for list of VOCs
Project specific RLs? - Yes / No
INVOICE TO

TURNAROUND TIME
X Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
X Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021B	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	TOC	Naphthalene			Notes
OIP-72-10-11	50 A-E	3/11/20	0950	Soil	5				X								Archive VOAs
OIP-72-16-17	51		1000		5				X								" "
GP-32-17.5-18.5	52		1320		5				X								" "
GP-32-GW-14-19	53 A-H		1330	GW	8	X	X	X			X						
OIP-68-13.5-14	54 A-E		1640	Soil	5				X								Archive VOAs
OIP-68-14-14.5	55		1638		1								X				
OIP-68-10-11	56 A-E		1645		5				X								Archive VOAs
OIP-68D-10-11	57		1700		5				X								" "
OIP-68-GW-13-18	58 A-H		1705	GW	8	X	X	X			X			X			
OIP-69-GW-12-17	59		1555	GW	8	X	X	X			X			X			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd/Snider	3/13	1644
Received by:	Eric Lam	F&B	3/13/20	1644
Relinquished by:				
Received by:		Samples received at 4 °C		

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3012 16th Avenue West
Seattle, WA 98119-2029
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003244

SAMPLE CHAIN OF CUSTODY

HE 03-13-20

CE3/VW5/AOS/US5

Page # 7 of 11

Report To Gabe Cisneros

Company Floyd Snider

Address

City, State, ZIP see page 1

Phone ______ Email ______

SAMPLERS (signature)	
PROJECT NAME POL-TPH	PO #
REMARKS See page 1 for list of VOCs Project specific RLs? - Yes / No	INVOICE TO

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:
SAMPLE DISPOSAL
☒ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TOCs	Naphthalene	Lead	VPH/EPH	Notes
OIP-69-14.5-15	60 A-F	3/11/20	1540	Soil	6				X				X				Archive VOAs
OIP-69-11-12	61 A-E	↓	1535	↓	5				X								" "
OIP-54-15-16	62 A-E		0845		5	✓			X								" "
OIP-54-18-19	63		0840		1								X				
GP-31-GW-13.5-18.5	64 A-H		1230	GW	8	X	X	X			X						
OIP-02-14-15	65 A-E		1055	Soil	5				X								Archive VOAs
OIP-02-GW-14.5-19.5	66 A-H		1115	GW	8	X	X	X			X			X			
OIP-02D-GW-14.5-19.5	67 A-H		1120	GW	8	X	X	X			X			X			
OIP-02-5-5.5	68 A-E	↓	1640	Soil	5	✓			X								Archive VOAs
OIP-15-15-16	69 A-H	3/12/20	1500	Soil	8	X	X			X	X				X	X	

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Gabe Cisneros	Floyd Snider	3/13	1644
Received by: [signature]	Eric Young	FeB	3/13/20	1649
Relinquished by:				
Received by:		Samples received at 4 °C		

003244
[redacted]

SAMPLE CHAIN OF CUSTODY ME 03-13-20 [redacted]

C3/VW5/A05/VS5

Page # 8 of 11

Report To Gabe Cisneros

Company Floyd|Snider

Address 601 Union St, Ste 600

City, State, ZIP Seattle, WA

Phone 206 2922078 Email

SAMPLERS (signature) [signature]	
PROJECT NAME POC	PO #
REMARKS See page 1 for list of VOCs. Project specific RLs? - Yes / No	INVOICE TO

TURNAROUND TIME
- X Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- X Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	Lead	VPH / EPH			Notes
MW-37-27.5-28	70 A-E	3/12/20	0930	S	5				X								Archive Vials
MW-37-27.5-28 D	71	↓	0935	S	5				X								Archive Vials
P3-0-0.5 ~~feet~~ P.O.	72	↓	1440	S	5	X	X	X			X						
P4-0-0.5 ~~feet~~ P.O.	73	↓	1450	S	5	X	X	X			X						
P5-0-0.5 ~~feet~~ P.O.	74 A-D	↓	1455	S	15	X	X	X			X						MS/MSD
P6-0.5-1.0 ~~feet~~ P.O.	75 A-E	↓	1315	S	5	X	X	X			X						
P6-0.5-1.0 D	76	↓	1320	S	5	X	X	X			X						
OIP-64-14-15	77	3/12	1545	S	5				X								Archive rest
GP-36-22-23	78	↓	1401	S	5				X								Archive VOAs
GP-36-13-14	79 A-H	↓	1347	S	8	X	X		~~X~~ P.O.	X	X		X	X			

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Gabe Cisneros	Floyd Snider	3/13	1644
Received by: [signature]	Eric [illegible]	FeB	3/13/20	1644
Relinquished by:				
Received by:		Samples received at 4 °C		

003244

SAMPLE CHAIN OF CUSTODY

ME 03/13/20 Page # 9 of 11 — VS5/C05/C03 — DWS

Report To Gabe Cisneros

Company Floyd Snider

Address see page 1

City, State, ZIP

Phone ______ Email ______

SAMPLERS (*signature*) [signature]

PROJECT NAME: POL-TPH

PO #

REMARKS: See page 1 for list of VOCs

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [X] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Lead	VPH/EPH	Naphthalene		Notes
01P-15-20-21	80 A-H	3/12/20	1520	Soil	8	X	X			X	X		X	X			
~~01P~~ GP-37-12-14	81 A-E	↓	1315	Soil	5				X								Archive VOAs
RD ~~01P~~ GP-37D-12-14	82 A-E		1320	Soil	5				X								Archive VOAs
GP-36-16-17	83 A-H		1402	Soil	8	X	X			X	X		X	X			
* 01P-64-14-15			1545	Soil	5				X								Archive VOAs
01P-15-23-24	84 A-E		1535	Soil	5				X								Archive VOAs
01P-15-GW-14-19	85 A-H		1515	~~Soil~~ GW	8	X	X	X			X				X		
01P-73-13-14	86 A-E		1045	Soil	5				X								Archive VOAs
01P-73D-13-14	87		1040	Soil	5				X								" "
01P-73-9-10	88	↓	1030	Soil	5				X								" "

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Seattle, WA 98119-2029
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	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Gabe Cisneros	Floyd Snider	3/13	1644
Received by:	[signature]	Eric Clowne	F&B	3/13/20	1644
Relinquished by:					
Received by:			Samples received at 4 °C		

003244

SAMPLE CHAIN OF CUSTODY

ME 03-13-20 VS5/CO5/CI3/UWS

Report To Gabe Cisneros

Company Floyd Snider

Address

City, State, ZIP see page 1

Phone ______ Email ______

SAMPLERS (*signature*) [signature]

PROJECT NAME: POL-TPH

PO #

REMARKS: See page 1 for list of VOCS

INVOICE TO

Project specific RLs? - Yes / No

Page # 10 of 11

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☒ Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	Targeted VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Lead	VPH/EPH	Naphthalene		Notes
01P-67-11-12	89 A-H	3/12/20	1225	Soil	8	X	X			X	X		X	X			
01P-67-GW-14-19	90 A-K	↓	1155	GW	24	X	X	X			X				X		MS/MSD
01P-67-18-19	91 A-E		1240	Soil	5				X								Archive VOAs
01P-67-7-8	92 A-E		1150	Soil	5				X								Archive VOAs
01P-67-14.5-15	93 A-H		1230	Soil	8	X	X			✓	X		X	✓			
MW-39-2-4	94 A-E		0900	Soil	5				X								Archive VOAs
MW-39-8-9	95 A-O		0905	Soil	15	X	X	X			X						MS/MSD
MW-39-13-14	96 A-H		0925	Soil	8	X	X			X	X			X			
MW-39-18.5-20	97 A-O	↓	0930	Soil	15	X	X	X			X						MS/MSD
GP-38-11-11.5	98 A-E	3/13/20	1210	S	5				X								Archive test

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Gabe Cisneros	Floyd Snider	3/13	1644
Received by: [signature]	Eric [illegible]	F&B	3/13/20	16 a 4
Relinquished by:				
Received by:		Samples received at 4 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

003244

SAMPLE CHAIN OF CUSTODY

ME 03-13-20 [redacted] CI3/UW5/A05/VS5

Page # 11 of 11

Report To: Gabe Cisneros
Company: Floyd|Snider
Address: 601 Union St Ste 600
City, State, ZIP: Seattle, WA
Phone: 206 292-2078 Email:

SAMPLERS (signature): [signature]

PROJECT NAME: POL-TPH

PO #:

REMARKS: VOCs include EDB, EDC, MTBE, BTEX Hexane, Naphthalen

Project specific RLs? - Yes / No

INVOICE TO:

TURNAROUND TIME
- X Standard turnaround
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- X Archive samples
- ☐ Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	EDB/EDC	Lead	VPH/EPH	Naphthalene	Notes
01P-18-19-19.5	99 A-E	3/13/20	0841	S	5				X								Archive rest
01P-20-11-11.5	100 A-H	↓	0909	Soil	8	X	X			X	X		X	X	X		EDB/EDC included in VOCs
01P-20-19-19.5	101 A-E		0919	↓	5				X								Archive rest
01P-19-19-20	102 A-O		0830		15				X								MS/MSD
01P-21-18-19	103 A-E		0917		5				X								
01P-06-27-28	104 A-E		10:30		5				X								Archive VOAs
01P-06-29-30	105 A-O		10:40		15												Archive/MS/MSD
01P-06-GW-25-30	106 A-H		10:50	GW	8	X	X	X			X					X	
01P-05-27-28	107 A-E		11:18	Soil	5				X								Archive VOAs
01P-05-29-30	108 A-E	↓	11:20	Soil	5												Archive
* Trip Blank	109 A-N			Water	14												

* NP 3/16/20

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Gabe Cisneros	Floyd/Snider	3/13	1644
Received by:	[signature]	Eric Young	FEB	3/13/20	1644
Relinquished by:					
Received by:			Samples received at 4 °C		

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 911363
Work Order Number: 1911358

December 12, 2019

Attention Michael Erdahl:

Fremont Analytical, Inc. received 5 sample(s) on 11/25/2019 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Total Organic Carbon by EPA 9060
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *12/12/2019*

CLIENT: Friedman & Bruya
Project: 911363
Work Order: 1911358

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
1911358-001	OIP30-20-21-111919	11/19/2019 2:15 PM	11/25/2019 11:52 AM
1911358-002	OIP42-17-17.5-112119	11/21/2019 6:15 PM	11/25/2019 11:52 AM
1911358-003	OIP53-21-21.5-112219	11/22/2019 9:00 AM	11/25/2019 11:52 AM
1911358-004	OIP08-19-20-112219	11/22/2019 11:09 AM	11/25/2019 11:52 AM
1911358-005	OIP66-12-12.5-112219	11/22/2019 11:45 AM	11/25/2019 11:52 AM

Case Narrative

WO#: **1911358**

Date: **12/12/2019**

CLIENT: Friedman & Bruya

Project: 911363

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **1911358**

Date Reported: **12/12/2019**

Client: Friedman & Bruya

Collection Date: 11/19/2019 2:15:00 PM

Project: 911363

Lab ID: 1911358-001

Matrix: Soil

Client Sample ID: **OIP30-20-21-111919**

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 26663 Analyst: DW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Aliphatic Hydrocarbon (C8-C10)	32.8	24.7	*	mg/Kg-dry	1	12/10/2019 7:41:00 PM
Aliphatic Hydrocarbon (C10-C12)	154	12.3		mg/Kg-dry	1	12/10/2019 7:41:00 PM
Aliphatic Hydrocarbon (C12-C16)	1,250	123	D	mg/Kg-dry	10	12/11/2019 9:55:00 PM
Aliphatic Hydrocarbon (C16-C21)	1,680	123	D	mg/Kg-dry	10	12/11/2019 9:55:00 PM
Aliphatic Hydrocarbon (C21-C34)	1,960	123	D	mg/Kg-dry	10	12/11/2019 9:55:00 PM
Aromatic Hydrocarbon (C8-C10)	15.5	12.3	*	mg/Kg-dry	1	12/11/2019 5:52:00 AM
Aromatic Hydrocarbon (C10-C12)	56.1	12.3		mg/Kg-dry	1	12/11/2019 5:52:00 AM
Aromatic Hydrocarbon (C12-C16)	555	12.3		mg/Kg-dry	1	12/11/2019 5:52:00 AM
Aromatic Hydrocarbon (C16-C21)	1,730	123	D	mg/Kg-dry	10	12/11/2019 4:48:00 PM
Aromatic Hydrocarbon (C21-C34)	2,320	123	D	mg/Kg-dry	10	12/11/2019 4:48:00 PM
Surr: 1-Chlorooctadecane	83.5	60 - 140		%Rec	1	12/10/2019 7:41:00 PM
Surr: o-Terphenyl	78.4	60 - 140		%Rec	1	12/11/2019 5:52:00 AM

NOTES:

* - Flagged value is not within established control limits.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26673 Analyst: CR

Aliphatic Hydrocarbon (C5-C6)	ND	1.56		mg/Kg-dry	1	12/2/2019 11:14:21 PM
Aliphatic Hydrocarbon (C6-C8)	6.23	2.22		mg/Kg-dry	1	12/2/2019 11:14:21 PM
Aliphatic Hydrocarbon (C8-C10)	9.51	1.25		mg/Kg-dry	1	12/2/2019 11:14:21 PM
Aliphatic Hydrocarbon (C10-C12)	39.3	1.33		mg/Kg-dry	1	12/2/2019 11:14:21 PM
Aromatic Hydrocarbon (C8-C10)	18.3	2.67		mg/Kg-dry	1	12/2/2019 11:14:21 PM
Aromatic Hydrocarbon (C10-C12)	43.6	5.34	D	mg/Kg-dry	10	12/2/2019 3:42:47 PM
Aromatic Hydrocarbon (C12-C13)	142	62.3	D	mg/Kg-dry	10	12/2/2019 3:42:47 PM
Benzene	ND	0.534		mg/Kg-dry	1	12/2/2019 11:14:21 PM
Toluene	ND	0.623		mg/Kg-dry	1	12/2/2019 11:14:21 PM
Ethylbenzene	ND	0.623		mg/Kg-dry	1	12/2/2019 11:14:21 PM
m,p-Xylene	ND	1.16		mg/Kg-dry	1	12/2/2019 11:14:21 PM
o-Xylene	0.703	0.534		mg/Kg-dry	1	12/2/2019 11:14:21 PM
Naphthalene	8.03	0.445		mg/Kg-dry	1	12/2/2019 11:14:21 PM
Methyl tert-butyl ether (MTBE)	ND	0.445	Q*	mg/Kg-dry	1	12/2/2019 11:14:21 PM
Surr: 1,4-Difluorobenzene	102	65 - 140		%Rec	1	12/2/2019 11:14:21 PM
Surr: Bromofluorobenzene	122	65 - 140		%Rec	1	12/2/2019 11:14:21 PM

NOTES:

Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

* - Flagged value is not within established control limits.

Volatile organic compound detections should be confirmed by GCMS.

Analytical Report

Work Order: **1911358**
Date Reported: **12/12/2019**

Client: Friedman & Bruya
Collection Date: 11/19/2019 2:15:00 PM
Project: 911363
Lab ID: 1911358-001
Matrix: Soil
Client Sample ID: **OIP30-20-21-111919**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R55596		Analyst: CG
Percent Moisture	20.7	0.500		wt%	1	11/26/2019 4:06:03 PM

Client: Friedman & Bruya
Collection Date: 11/21/2019 6:15:00 PM
Project: 911363
Lab ID: 1911358-002
Matrix: Soil
Client Sample ID: **OIP42-17-17.5-112119**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 26663		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	915	214	D*	mg/Kg-dry	10	12/11/2019 9:12:00 PM
Aliphatic Hydrocarbon (C10-C12)	1,330	107	D	mg/Kg-dry	10	12/11/2019 9:12:00 PM
Aliphatic Hydrocarbon (C12-C16)	4,090	107	D	mg/Kg-dry	10	12/11/2019 9:12:00 PM
Aliphatic Hydrocarbon (C16-C21)	3,540	107	D	mg/Kg-dry	10	12/11/2019 9:12:00 PM
Aliphatic Hydrocarbon (C21-C34)	992	10.7		mg/Kg-dry	1	12/10/2019 11:19:00 PM
Aromatic Hydrocarbon (C8-C10)	107	10.7	*	mg/Kg-dry	1	12/11/2019 9:30:00 AM
Aromatic Hydrocarbon (C10-C12)	397	10.7		mg/Kg-dry	1	12/11/2019 9:30:00 AM
Aromatic Hydrocarbon (C12-C16)	1,310	107	D	mg/Kg-dry	10	12/11/2019 4:05:00 PM
Aromatic Hydrocarbon (C16-C21)	2,620	107	D	mg/Kg-dry	10	12/11/2019 4:05:00 PM
Aromatic Hydrocarbon (C21-C34)	503	10.7		mg/Kg-dry	1	12/11/2019 9:30:00 AM
Surr: 1-Chlorooctadecane	103	60 - 140		%Rec	1	12/10/2019 11:19:00 PM
Surr: o-Terphenyl	91.0	60 - 140		%Rec	1	12/11/2019 9:30:00 AM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 26673		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	283	23.7	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Aliphatic Hydrocarbon (C6-C8)	597	33.8	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Aliphatic Hydrocarbon (C8-C10)	119	18.9	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Aliphatic Hydrocarbon (C10-C12)	215	20.3	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Aromatic Hydrocarbon (C8-C10)	199	40.6	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Aromatic Hydrocarbon (C10-C12)	536	8.12	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Aromatic Hydrocarbon (C12-C13)	562	94.7	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Benzene	ND	8.12	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Toluene	ND	9.47	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Ethylbenzene	42.7	9.47	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
m,p-Xylene	ND	17.6	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
o-Xylene	ND	8.12	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Naphthalene	23.2	6.77	D	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Methyl tert-butyl ether (MTBE)	ND	6.77	DQ*	mg/Kg-dry	20	12/2/2019 5:46:00 PM
Surr: 1,4-Difluorobenzene	113	65 - 140	D	%Rec	20	12/2/2019 5:46:00 PM
Surr: Bromofluorobenzene	114	65 - 140	D	%Rec	20	12/2/2019 5:46:00 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
* - Flagged value is not within established control limits.
Diluted due to matrix.
Volatile organic compound detections should be confirmed by GCMS.

Analytical Report

Work Order: **1911358**
Date Reported: **12/12/2019**

Client: Friedman & Bruya
Collection Date: 11/21/2019 6:15:00 PM
Project: 911363
Lab ID: 1911358-002
Matrix: Soil
Client Sample ID: **OIP42-17-17.5-112119**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R55596		Analyst: CG
Percent Moisture	16.2	0.500		wt%	1	11/26/2019 4:06:03 PM

Analytical Report

Work Order: **1911358**
Date Reported: **12/12/2019**

Client: Friedman & Bruya
Collection Date: 11/22/2019 9:00:00 AM
Project: 911363
Lab ID: 1911358-003
Matrix: Soil
Client Sample ID: **OIP53-21-21.5-112219**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R55596		Analyst: CG
Percent Moisture	28.4	0.500		wt%	1	11/26/2019 4:06:03 PM
Total Organic Carbon by EPA 9060				Batch ID: 26680		Analyst: SS
Total Organic Carbon	ND	0.0750		%-dry	1	12/3/2019 4:28:00 PM

Client: Friedman & Bruya
Collection Date: 11/22/2019 11:09:00 AM
Project: 911363
Lab ID: 1911358-004
Matrix: Soil
Client Sample ID: **OIP08-19-20-112219**

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 26663 Analyst: DW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Aliphatic Hydrocarbon (C8-C10)	820	19.8	*	mg/Kg-dry	1	12/11/2019 12:03:00 AM
Aliphatic Hydrocarbon (C10-C12)	1,070	98.9	D	mg/Kg-dry	10	12/11/2019 8:28:00 PM
Aliphatic Hydrocarbon (C12-C16)	3,280	98.9	D	mg/Kg-dry	10	12/11/2019 8:28:00 PM
Aliphatic Hydrocarbon (C16-C21)	2,820	98.9	D	mg/Kg-dry	10	12/11/2019 8:28:00 PM
Aliphatic Hydrocarbon (C21-C34)	870	9.89		mg/Kg-dry	1	12/11/2019 12:03:00 AM
Aromatic Hydrocarbon (C8-C10)	79.9	9.89	*	mg/Kg-dry	1	12/11/2019 10:14:00 AM
Aromatic Hydrocarbon (C10-C12)	290	9.89		mg/Kg-dry	1	12/11/2019 10:14:00 AM
Aromatic Hydrocarbon (C12-C16)	890	9.89		mg/Kg-dry	1	12/11/2019 10:14:00 AM
Aromatic Hydrocarbon (C16-C21)	1,990	98.9	D	mg/Kg-dry	10	12/11/2019 3:21:00 PM
Aromatic Hydrocarbon (C21-C34)	393	9.89		mg/Kg-dry	1	12/11/2019 10:14:00 AM
Surr: 1-Chlorooctadecane	96.8	60 - 140		%Rec	1	12/11/2019 12:03:00 AM
Surr: o-Terphenyl	85.9	60 - 140		%Rec	1	12/11/2019 10:14:00 AM

NOTES:
* - Flagged value is not within established control limits.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 26673 Analyst: CR

Aliphatic Hydrocarbon (C5-C6)	ND	15.6	D	mg/Kg-dry	10	12/2/2019 7:08:30 PM
Aliphatic Hydrocarbon (C6-C8)	269	22.3	D	mg/Kg-dry	10	12/2/2019 7:08:30 PM
Aliphatic Hydrocarbon (C8-C10)	285	12.5	D	mg/Kg-dry	10	12/2/2019 7:08:30 PM
Aliphatic Hydrocarbon (C10-C12)	616	66.9	D	mg/Kg-dry	50	12/3/2019 5:02:15 PM
Aromatic Hydrocarbon (C8-C10)	425	26.8	D	mg/Kg-dry	10	12/2/2019 7:08:30 PM
Aromatic Hydrocarbon (C10-C12)	1,360	26.8	D	mg/Kg-dry	50	12/3/2019 5:02:15 PM
Aromatic Hydrocarbon (C12-C13)	2,180	312	D	mg/Kg-dry	50	12/3/2019 5:02:15 PM
Benzene	ND	5.35	D	mg/Kg-dry	10	12/2/2019 7:08:30 PM
Toluene	7.07	6.24	D	mg/Kg-dry	10	12/2/2019 7:08:30 PM
Ethylbenzene	38.6	6.24	D	mg/Kg-dry	10	12/2/2019 7:08:30 PM
m,p-Xylene	ND	11.6	D	mg/Kg-dry	10	12/2/2019 7:08:30 PM
o-Xylene	12.9	5.35	D	mg/Kg-dry	10	12/2/2019 7:08:30 PM
Naphthalene	51.4	4.46	D	mg/Kg-dry	10	12/2/2019 7:08:30 PM
Methyl tert-butyl ether (MTBE)	ND	4.46	DQ*	mg/Kg-dry	10	12/2/2019 7:08:30 PM
Surr: 1,4-Difluorobenzene	89.3	65 - 140	D	%Rec	10	12/2/2019 7:08:30 PM
Surr: Bromofluorobenzene	100	65 - 140	D	%Rec	10	12/2/2019 7:08:30 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
* - Flagged value is not within established control limits.
Diluted due to matrix.
Volatile organic compound detections should be confirmed by GCMS.

Analytical Report

Work Order: **1911358**
Date Reported: **12/12/2019**

Client: Friedman & Bruya
Collection Date: 11/22/2019 11:09:00 AM
Project: 911363
Lab ID: 1911358-004
Matrix: Soil
Client Sample ID: **OIP08-19-20-112219**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R55630		Analyst: CG
Percent Moisture	12.2	0.500		wt%	1	12/2/2019 9:23:17 AM

Analytical Report

Work Order: **1911358**
Date Reported: **12/12/2019**

Client: Friedman & Bruya
Collection Date: 11/22/2019 11:45:00 AM
Project: 911363
Lab ID: 1911358-005
Matrix: Soil
Client Sample ID: **OIP66-12-12.5-112219**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 26663		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	243	25.0	*	mg/Kg-dry	1	12/11/2019 12:47:00 AM
Aliphatic Hydrocarbon (C10-C12)	198	12.5		mg/Kg-dry	1	12/11/2019 12:47:00 AM
Aliphatic Hydrocarbon (C12-C16)	266	12.5		mg/Kg-dry	1	12/11/2019 12:47:00 AM
Aliphatic Hydrocarbon (C16-C21)	199	12.5		mg/Kg-dry	1	12/11/2019 12:47:00 AM
Aliphatic Hydrocarbon (C21-C34)	44.5	12.5		mg/Kg-dry	1	12/11/2019 12:47:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	12.5	*	mg/Kg-dry	1	12/11/2019 10:57:00 AM
Aromatic Hydrocarbon (C10-C12)	69.2	12.5		mg/Kg-dry	1	12/11/2019 10:57:00 AM
Aromatic Hydrocarbon (C12-C16)	96.2	12.5		mg/Kg-dry	1	12/11/2019 10:57:00 AM
Aromatic Hydrocarbon (C16-C21)	176	12.5		mg/Kg-dry	1	12/11/2019 10:57:00 AM
Aromatic Hydrocarbon (C21-C34)	93.0	12.5		mg/Kg-dry	1	12/11/2019 10:57:00 AM
Surr: 1-Chlorooctadecane	70.2	60 - 140		%Rec	1	12/11/2019 12:47:00 AM
Surr: o-Terphenyl	85.1	60 - 140		%Rec	1	12/11/2019 10:57:00 AM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 26673		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	1.30		mg/Kg-dry	1	12/2/2019 10:33:17 PM
Aliphatic Hydrocarbon (C6-C8)	36.2	1.86		mg/Kg-dry	1	12/2/2019 10:33:17 PM
Aliphatic Hydrocarbon (C8-C10)	35.0	10.4	D	mg/Kg-dry	10	12/2/2019 5:04:51 PM
Aliphatic Hydrocarbon (C10-C12)	60.3	11.1	D	mg/Kg-dry	10	12/2/2019 5:04:51 PM
Aromatic Hydrocarbon (C8-C10)	57.1	2.23		mg/Kg-dry	1	12/2/2019 10:33:17 PM
Aromatic Hydrocarbon (C10-C12)	200	4.46	D	mg/Kg-dry	10	12/2/2019 5:04:51 PM
Aromatic Hydrocarbon (C12-C13)	172	52.0	D	mg/Kg-dry	10	12/2/2019 5:04:51 PM
Benzene	ND	0.446		mg/Kg-dry	1	12/2/2019 10:33:17 PM
Toluene	0.812	0.520		mg/Kg-dry	1	12/2/2019 10:33:17 PM
Ethylbenzene	0.700	0.520		mg/Kg-dry	1	12/2/2019 10:33:17 PM
m,p-Xylene	ND	0.966		mg/Kg-dry	1	12/2/2019 10:33:17 PM
o-Xylene	1.87	0.446		mg/Kg-dry	1	12/2/2019 10:33:17 PM
Naphthalene	9.97	0.371		mg/Kg-dry	1	12/2/2019 10:33:17 PM
Methyl tert-butyl ether (MTBE)	ND	0.371	Q*	mg/Kg-dry	1	12/2/2019 10:33:17 PM
Surr: 1,4-Difluorobenzene	105	65 - 140		%Rec	1	12/2/2019 10:33:17 PM
Surr: Bromofluorobenzene	105	65 - 140		%Rec	1	12/2/2019 10:33:17 PM

NOTES:
Volatile organic compound detections should be confirmed by GCMS.
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
* - Flagged value is not within established control limits.

Analytical Report

Work Order: **1911358**
Date Reported: **12/12/2019**

Client: Friedman & Bruya
Collection Date: 11/22/2019 11:45:00 AM
Project: 911363
Lab ID: 1911358-005
Matrix: Soil
Client Sample ID: **OIP66-12-12.5-112219**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R55630		Analyst: CG
Percent Moisture	24.4	0.500		wt%	1	12/2/2019 9:23:17 AM

Work Order: 1911358
CLIENT: Friedman & Bruya
Project: 911363

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-26680**	SampType: **MBLK**			Units: **%-dry**		Prep Date: **12/3/2019**			RunNo: **55700**	
Client ID: **MBLKS**	Batch ID: **26680**					Analysis Date: **12/3/2019**			SeqNo: **1108560**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.0750									

Sample ID: **LCS-26680**	SampType: **LCS**			Units: **%-dry**		Prep Date: **12/3/2019**			RunNo: **55700**	
Client ID: **LCSS**	Batch ID: **26680**					Analysis Date: **12/3/2019**			SeqNo: **1108561**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	0.745	0.0750	0.8580	0	86.8	70	131				

Sample ID: **1911291-007ADUP**	SampType: **DUP**			Units: **%-dry**		Prep Date: **12/3/2019**			RunNo: **55700**	
Client ID: **BATCH**	Batch ID: **26680**					Analysis Date: **12/3/2019**			SeqNo: **1108563**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.0750						0		30	H

Sample ID: **1911291-007AMS**	SampType: **MS**			Units: **%-dry**		Prep Date: **12/3/2019**			RunNo: **55700**	
Client ID: **BATCH**	Batch ID: **26680**					Analysis Date: **12/3/2019**			SeqNo: **1108564**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	0.912	0.0750	1.000	0	91.2	38.5	146				H

Sample ID: **1911291-007AMSD**	SampType: **MSD**			Units: **%-dry**		Prep Date: **12/3/2019**			RunNo: **55700**	
Client ID: **BATCH**	Batch ID: **26680**					Analysis Date: **12/3/2019**			SeqNo: **1108565**	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	0.892	0.0750	1.000	0	89.2	38.5	146	0.9120	2.22	20	H

Work Order: 1911358
CLIENT: Friedman & Bruya
Project: 911363

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-26663** SampType: **MBLK** Units: **mg/Kg** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **MBLKS** Batch ID: **26663** Analysis Date: **12/10/2019** SeqNo: **1113183**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									*
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	95.9		100.0		95.9	60	140				

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **LCS-26663** SampType: **LCS** Units: **mg/Kg** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **LCSS** Batch ID: **26663** Analysis Date: **12/10/2019** SeqNo: **1113182**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	170	20.0	250.0	0	68.1	70	130				S
Aliphatic Hydrocarbon (C10-C12)	120	10.0	125.0	0	96.3	70	130				
Aliphatic Hydrocarbon (C12-C16)	129	10.0	125.0	0	103	70	130				
Aliphatic Hydrocarbon (C16-C21)	125	10.0	125.0	0	99.6	70	130				
Aliphatic Hydrocarbon (C21-C34)	134	10.0	125.0	0	107	70	130				
Surr: 1-Chlorooctadecane	101		100.0		101	60	140				

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **1911358-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **OIP30-20-21-111919** Batch ID: **26663** Analysis Date: **12/10/2019** SeqNo: **1113181**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	30.3	24.7						32.77	7.66	25	*
Aliphatic Hydrocarbon (C10-C12)	137	12.4						154.1	11.6	25	
Aliphatic Hydrocarbon (C12-C16)	1,290	12.4						1,480	13.9	25	E
Aliphatic Hydrocarbon (C16-C21)	1,670	12.4						1,945	15.0	25	E
Aliphatic Hydrocarbon (C21-C34)	3,550	12.4						4,320	19.5	25	E
Surr: 1-Chlorooctadecane	111		123.7		89.6	60	140		0		

Work Order: 1911358
CLIENT: Friedman & Bruya
Project: 911363

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **1911358-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **OIP30-20-21-111919** Batch ID: **26663** Analysis Date: **12/10/2019** SeqNo: **1113181**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.
* - Flagged value is not within established control limits.

Sample ID: **1911358-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **OIP30-20-21-111919** Batch ID: **26663** Analysis Date: **12/10/2019** SeqNo: **1113184**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	199	23.3	291.8	32.77	57.1	70	130				S
Aliphatic Hydrocarbon (C10-C12)	300	11.7	145.9	154.1	99.8	70	130				
Aliphatic Hydrocarbon (C12-C16)	1,600	11.7	145.9	1,480	80.5	70	130				E
Aliphatic Hydrocarbon (C16-C21)	2,030	11.7	145.9	1,945	59.6	70	130				SE
Aliphatic Hydrocarbon (C21-C34)	4,040	11.7	145.9	4,320	-190	70	130				SE
Surr: 1-Chlorooctadecane	113		116.7		96.7	60	140				

NOTES:
S - Outlying spike recovery(ies) observed.
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **1911358-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **OIP30-20-21-111919** Batch ID: **26663** Analysis Date: **12/10/2019** SeqNo: **1113185**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	209	24.0	299.9	32.77	58.7	70	130	199.5	4.53	30	S
Aliphatic Hydrocarbon (C10-C12)	311	12.0	149.9	154.1	105	70	130	299.8	3.75	30	
Aliphatic Hydrocarbon (C12-C16)	1,670	12.0	149.9	1,480	129	70	130	1,597	4.63	30	E
Aliphatic Hydrocarbon (C16-C21)	2,170	12.0	149.9	1,945	152	70	130	2,032	6.69	30	SE
Aliphatic Hydrocarbon (C21-C34)	4,250	12.0	149.9	4,320	-46.7	70	130	4,044	4.98	30	SE
Surr: 1-Chlorooctadecane	108		120.0		90.2	60	140		0		

NOTES:
S - Outlying spike recovery(ies) observed.
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 1911358
CLIENT: Friedman & Bruya
Project: 911363

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-26663** SampType: **MBLK** Units: **mg/Kg** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **MBLKS** Batch ID: **26663** Analysis Date: **12/11/2019** SeqNo: **1113241**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	10.0									*
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	80.6		100.0		80.6	60	140				

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **LCS-26663** SampType: **LCS** Units: **mg/Kg** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **LCSS** Batch ID: **26663** Analysis Date: **12/11/2019** SeqNo: **1113240**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	139	10.0	250.0	0	55.7	70	130				S
Aromatic Hydrocarbon (C10-C12)	109	10.0	125.0	0	87.0	70	130				
Aromatic Hydrocarbon (C12-C16)	121	10.0	125.0	0	97.1	70	130				
Aromatic Hydrocarbon (C16-C21)	124	10.0	125.0	0	99.6	70	130				
Aromatic Hydrocarbon (C21-C34)	126	10.0	125.0	0	100	70	130				
Surr: o-Terphenyl	101		100.0		101	60	140				

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **1911358-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **OIP30-20-21-111919** Batch ID: **26663** Analysis Date: **12/11/2019** SeqNo: **1113239**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	12.4						15.49	67.1	25	*
Aromatic Hydrocarbon (C10-C12)	51.0	12.4						56.15	9.59	25	
Aromatic Hydrocarbon (C12-C16)	433	12.4						555.4	24.8	25	
Aromatic Hydrocarbon (C16-C21)	1,560	12.4						2,159	32.4	25	RE
Aromatic Hydrocarbon (C21-C34)	3,110	12.4						4,549	37.6	25	RE
Surr: o-Terphenyl	90.9		123.7		73.5	60	140		0		

Work Order: 1911358
CLIENT: Friedman & Bruya
Project: 911363

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **1911358-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **OIP30-20-21-111919** Batch ID: **26663** Analysis Date: **12/11/2019** SeqNo: **1113239**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
R - High RPD due to high analyte concentration. In this range, high RPD's may be expected.
E - Estimated value. The amount exceeds the linear working range of the instrument.
* - Flagged value is not within established control limits.

Sample ID: **1911358-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **OIP30-20-21-111919** Batch ID: **26663** Analysis Date: **12/11/2019** SeqNo: **1113242**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	151	11.7	291.8	15.49	46.3	70	130				S
Aromatic Hydrocarbon (C10-C12)	189	11.7	145.9	56.15	91.2	70	130				
Aromatic Hydrocarbon (C12-C16)	702	11.7	145.9	555.4	100	70	130				
Aromatic Hydrocarbon (C16-C21)	2,300	11.7	145.9	2,159	99.4	70	130				E
Aromatic Hydrocarbon (C21-C34)	4,490	11.7	145.9	4,549	-42.2	70	130				SE
Surr: o-Terphenyl	113		116.7		96.5	60	140				

NOTES:
S - Outlying spike recovery(ies) observed.
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **1911358-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55912**
Client ID: **OIP30-20-21-111919** Batch ID: **26663** Analysis Date: **12/11/2019** SeqNo: **1113243**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	154	12.0	299.9	15.49	46.2	70	130	150.7	2.13	30	S
Aromatic Hydrocarbon (C10-C12)	174	12.0	149.9	56.15	78.7	70	130	189.2	8.32	30	
Aromatic Hydrocarbon (C12-C16)	680	12.0	149.9	555.4	82.9	70	130	701.5	3.18	30	
Aromatic Hydrocarbon (C16-C21)	2,150	12.0	149.9	2,159	-8.62	70	130	2,304	7.10	30	SE
Aromatic Hydrocarbon (C21-C34)	3,930	12.0	149.9	4,549	-413	70	130	4,488	13.2	30	SE
Surr: o-Terphenyl	99.8		120.0		83.2	60	140		0		

NOTES:
S - Outlying spike recovery(ies) observed.
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 1911358
CLIENT: Friedman & Bruya
Project: 911363

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-26673** SampType: **LCS** Units: **mg/Kg** Prep Date: **12/2/2019** RunNo: **55711**
Client ID: **LCSS** Batch ID: **26673** Analysis Date: **12/2/2019** SeqNo: **1108879**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	33.4	1.75	30.00	0	111	70	130				
Aliphatic Hydrocarbon (C6-C8)	10.5	2.50	10.00	0	105	70	130				
Aliphatic Hydrocarbon (C8-C10)	10.7	1.40	10.00	0	107	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.2	1.50	10.00	0	102	70	130				
Aromatic Hydrocarbon (C8-C10)	41.6	3.00	40.00	0	104	70	130				
Aromatic Hydrocarbon (C10-C12)	9.49	0.600	10.00	0	94.9	70	130				
Aromatic Hydrocarbon (C12-C13)	10.9	7.00	10.00	0	109	70	130				
Benzene	10.2	0.600	10.00	0	102	70	130				
Toluene	10.3	0.700	10.00	0	103	70	130				
Ethylbenzene	10.4	0.700	10.00	0	104	70	130				
m,p-Xylene	21.1	1.30	20.00	0	105	70	130				
o-Xylene	10.5	0.600	10.00	0	105	70	130				
Naphthalene	9.00	0.500	10.00	0	90.0	70	130				
Methyl tert-butyl ether (MTBE)	ND	0.500	10.00	0	0	70	130				S
Surr: 1,4-Difluorobenzene	2.56		2.500		102	65	140				
Surr: Bromofluorobenzene	2.61		2.500		104	65	140				

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **MB-26673** SampType: **MBLK** Units: **mg/Kg** Prep Date: **12/2/2019** RunNo: **55711**
Client ID: **MBLKS** Batch ID: **26673** Analysis Date: **12/2/2019** SeqNo: **1108880**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.75		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	1.40		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	1.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	3.00		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	0.600		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	7.00		0	0						
Benzene	ND	0.600		0	0						

Work Order: 1911358
CLIENT: Friedman & Bruya
Project: 911363

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **MB-26673** SampType: **MBLK** Units: **mg/Kg** Prep Date: **12/2/2019** RunNo: **55711**
Client ID: **MBLKS** Batch ID: **26673** Analysis Date: **12/2/2019** SeqNo: **1108880**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	ND	0.700		0	0						
Ethylbenzene	ND	0.700		0	0						
m,p-Xylene	ND	1.30		0	0						
o-Xylene	ND	0.600		0	0						
Naphthalene	ND	0.500		0	0						
Methyl tert-butyl ether (MTBE)	ND	0.500		0	0						Q*
Surr: 1,4-Difluorobenzene	2.29		2.500		91.6	65	140				
Surr: Bromofluorobenzene	2.43		2.500		97.4	65	140				

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
* - Flagged value is not within established control limits.

Sample ID: **1911358-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55711**
Client ID: **OIP30-20-21-111919** Batch ID: **26673** Analysis Date: **12/2/2019** SeqNo: **1108866**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	15.6		0	0			0		25	D
Aliphatic Hydrocarbon (C6-C8)	ND	22.2		0	0			0		25	D
Aliphatic Hydrocarbon (C8-C10)	ND	12.5		0	0			0		25	D
Aliphatic Hydrocarbon (C10-C12)	ND	13.3		0	0			0		25	D
Aromatic Hydrocarbon (C8-C10)	ND	26.7		0	0			0		25	D
Aromatic Hydrocarbon (C10-C12)	67.9	5.34		0	0			43.63	43.5	25	DR
Aromatic Hydrocarbon (C12-C13)	178	62.3		0	0			141.7	22.7	25	D
Benzene	ND	5.34		0	0			0		25	D
Toluene	ND	6.23		0	0			0		25	D
Ethylbenzene	ND	6.23		0	0			0		25	D
m,p-Xylene	ND	11.6		0	0			0		25	D
o-Xylene	ND	5.34		0	0			0		25	D
Naphthalene	6.06	4.45		0	0			3.518	53.1	25	D
Methyl tert-butyl ether (MTBE)	ND	4.45		0	0			0		25	DQ*
Surr: 1,4-Difluorobenzene	19.9		22.24		89.6	65	140		0		D

Work Order: 1911358
CLIENT: Friedman & Bruya
Project: 911363

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **1911358-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55711**
Client ID: **OIP30-20-21-111919** Batch ID: **26673** Analysis Date: **12/2/2019** SeqNo: **1108866**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: Bromofluorobenzene	23.7		22.24		107	65	140		0		D

NOTES:
R - High RPD observed. The method is in control as indicated by the LCS.
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
* - Flagged value is not within established control limits.

Sample ID: **1911358-005BMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55711**
Client ID: **OIP66-12-12.5-112219** Batch ID: **26673** Analysis Date: **12/2/2019** SeqNo: **1108872**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	208	13.0	222.9	0	93.5	70	130				D
Aliphatic Hydrocarbon (C6-C8)	111	18.6	74.29	37.49	98.7	70	130				D
Aliphatic Hydrocarbon (C8-C10)	102	10.4	74.29	35.03	89.9	70	130				D
Aliphatic Hydrocarbon (C10-C12)	133	11.1	74.29	60.26	98.5	70	130				D
Aromatic Hydrocarbon (C8-C10)	347	22.3	297.2	0	117	70	130				D
Aromatic Hydrocarbon (C10-C12)	282	4.46	74.29	199.5	111	70	130				D
Aromatic Hydrocarbon (C12-C13)	250	52.0	74.29	172.4	104	70	130				D
Benzene	73.9	4.46	74.29	0	99.4	70	130				D
Toluene	74.4	5.20	74.29	0	100	70	130				D
Ethylbenzene	76.1	5.20	74.29	0	102	70	130				D
m,p-Xylene	152	9.66	148.6	0	103	70	130				D
o-Xylene	78.9	4.46	74.29	0	106	70	130				D
Naphthalene	69.1	3.71	74.29	9.389	80.3	70	130				D
Methyl tert-butyl ether (MTBE)	ND	3.71	74.29	0	0	70	130				DS
Surr: 1,4-Difluorobenzene	19.3		18.57		104	65	140				D
Surr: Bromofluorobenzene	21.6		18.57		116	65	140				D

NOTES:
S - Outlying spike recovery observed.

Work Order: 1911358
CLIENT: Friedman & Bruya
Project: 911363

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **1911358-005BMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **12/2/2019** RunNo: **55711**
Client ID: **OIP66-12-12.5-112219** Batch ID: **26673** Analysis Date: **12/2/2019** SeqNo: **1108873**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	213	13.0	222.9	0	95.6	70	130	208.4	2.26	30	D
Aliphatic Hydrocarbon (C6-C8)	111	18.6	74.29	37.49	98.5	70	130	110.8	0.154	30	D
Aliphatic Hydrocarbon (C8-C10)	103	10.4	74.29	35.03	91.9	70	130	101.8	1.48	30	D
Aliphatic Hydrocarbon (C10-C12)	137	11.1	74.29	60.26	103	70	130	133.5	2.52	30	D
Aromatic Hydrocarbon (C8-C10)	347	22.3	297.2	0	117	70	130	347.0	0.00535	30	D
Aromatic Hydrocarbon (C10-C12)	311	4.46	74.29	199.5	150	70	130	282.1	9.77	30	DS
Aromatic Hydrocarbon (C12-C13)	254	52.0	74.29	172.4	109	70	130	249.8	1.55	30	D
Benzene	75.3	4.46	74.29	0	101	70	130	73.87	1.93	30	D
Toluene	75.6	5.20	74.29	0	102	70	130	74.39	1.64	30	D
Ethylbenzene	77.0	5.20	74.29	0	104	70	130	76.14	1.17	30	D
m,p-Xylene	155	9.66	148.6	0	104	70	130	152.4	1.42	30	D
o-Xylene	79.9	4.46	74.29	0	108	70	130	78.95	1.19	30	D
Naphthalene	76.1	3.71	74.29	9.389	89.8	70	130	69.06	9.69	30	D
Methyl tert-butyl ether (MTBE)	ND	3.71	74.29	0	0	70	130	0		30	DS
Surr: 1,4-Difluorobenzene	19.9		18.57		107	65	140		0		D
Surr: Bromofluorobenzene	21.8		18.57		117	65	140		0		D

NOTES:
S - Outlying spike recovery observed.

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**1911358**
Logged by:	**Matt Langston**	Date Received:	**11/25/2019 11:52:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >0°C to 10.0°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☑	No ☐	NA ☐ MeOH
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☑	No ☐	NA ☐

Person Notified:	Michael Erdahl	Date:	11/25/2019
By Whom:	Brianna Barnes	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	Requesting signature on chain of custody.		
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp °C
Cooler	3.6
Sample	5.2

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

1911358

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO.	PO #
911363	A-486

REMARKS

Please Email Results F/S Deliverables.

TURNAROUND TIME

☐ Standard (2 Weeks)

☐ RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TOC							Notes
01P30-20-21-111919		11/19/19	1415	Soil			X	X								
01P42-17-17.5-112119		11/21/19	1015	Soil			X	X								
01P53-21-21.5-112219		11/22/19	0900	Soil					X							
01P08-19-20-112219		11/22/19	1109	Soil			X	X								
01P66-12-12.5-112219		11/22/19	1145	Soil			X	X								

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya		
Received by:		Sara Becker-Mayer	F+1	11/25/19	1152
Relinquished by:					
Received by:					

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

1911358

Page # 1 of 1

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 Fax # (206) 283-5044

SUBCONTRACTER Fremont

PROJECT NAME/NO.	PO #
911363	A-486

REMARKS

Please Email Results F/S Deliverables.

TURNAROUND TIME
- ☐ Standard (2 Weeks)
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TOC						Notes
01P30-20-21-111919		11/19/19	1415	Soil			x	x							
01P42-17-17.5-112119		11/21/19	1015	Soil			x	x							
01P53-21-21.5-112219		11/22/19	0900	Soil					x						
01P06-19-20-112219		11/22/19	1109	Soil			x	x							
01P66-12-12.5-112219		11/22/19	1145	Soil			x	x							

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Michael Erdahl	Friedman & Bruya	11/25/19	1000
Received by:		Sara Becker-Mayer	F+I	11/25/19	1152
Relinquished by:					
Received by:					

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 003244
Work Order Number: 2003268

March 31, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 19 sample(s) on 3/16/2020 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Total Organic Carbon by EPA 9060
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *03/31/2020*

CLIENT: Friedman & Bruya
Project: 003244
Work Order: 2003268

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2003268-001	OIP-47-17	03/09/2020 3:35 PM	03/16/2020 2:13 PM
2003268-002	OIP-47-11-12	03/09/2020 3:05 PM	03/16/2020 2:13 PM
2003268-003	MW-33-12-12.5	03/09/2020 5:20 PM	03/16/2020 2:13 PM
2003268-004	MW-33-19.5-20	03/09/2020 5:40 PM	03/16/2020 2:13 PM
2003268-005	OIP-23-14-15	03/10/2020 9:35 AM	03/16/2020 2:13 PM
2003268-006	OIP-23-19-20	03/10/2020 9:45 AM	03/16/2020 2:13 PM
2003268-007	OIP-23-23-24	03/10/2020 9:55 AM	03/16/2020 2:13 PM
2003268-008	OIP-46-8	03/10/2020 8:50 AM	03/16/2020 2:13 PM
2003268-009	OIP-39-16.5-17	03/10/2020 2:02 PM	03/16/2020 2:13 PM
2003268-010	OIP-68-14-14.5	03/11/2020 4:38 PM	03/16/2020 2:13 PM
2003268-011	OIP-69-14.5-15	03/11/2020 3:40 PM	03/16/2020 2:13 PM
2003268-012	OIP-54-18-19	03/11/2020 8:40 AM	03/16/2020 2:13 PM
2003268-013	OIP-15-15-16	03/12/2020 3:00 PM	03/16/2020 2:13 PM
2003268-014	GP-36-13-14	03/12/2020 1:47 PM	03/16/2020 2:13 PM
2003268-015	OIP-15-20-21	03/12/2020 3:20 PM	03/16/2020 2:13 PM
2003268-016	GP-36-16-17	03/12/2020 2:02 PM	03/16/2020 2:13 PM
2003268-017	OIP-67-11-12	03/12/2020 12:25 PM	03/16/2020 2:13 PM
2003268-018	MW-39-13-14	03/12/2020 9:25 AM	03/16/2020 2:13 PM
2003268-019	OIP-20-11-11.5	03/13/2020 9:09 AM	03/16/2020 2:13 PM

Case Narrative

WO#: **2003268**
Date: **3/31/2020**

CLIENT: Friedman & Bruya
Project: 003244

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/9/2020 3:35:00 PM
Project: 003244
Lab ID: 2003268-001
Matrix: Soil
Client Sample ID: **OIP-47-17**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	31.6	30.2	*	mg/Kg-dry	1	3/24/2020 10:06:00 PM
Aliphatic Hydrocarbon (C10-C12)	19.1	15.1		mg/Kg-dry	1	3/24/2020 10:06:00 PM
Aliphatic Hydrocarbon (C12-C16)	ND	15.1		mg/Kg-dry	1	3/24/2020 10:06:00 PM
Aliphatic Hydrocarbon (C16-C21)	ND	15.1		mg/Kg-dry	1	3/24/2020 10:06:00 PM
Aliphatic Hydrocarbon (C21-C34)	ND	15.1		mg/Kg-dry	1	3/24/2020 10:06:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	15.1	*	mg/Kg-dry	1	3/26/2020 12:21:00 AM
Aromatic Hydrocarbon (C10-C12)	27.5	15.1		mg/Kg-dry	1	3/26/2020 12:21:00 AM
Aromatic Hydrocarbon (C12-C16)	ND	15.1		mg/Kg-dry	1	3/26/2020 12:21:00 AM
Aromatic Hydrocarbon (C16-C21)	17.8	15.1		mg/Kg-dry	1	3/26/2020 12:21:00 AM
Aromatic Hydrocarbon (C21-C34)	27.0	15.1		mg/Kg-dry	1	3/26/2020 12:21:00 AM
Surr: 1-Chlorooctadecane	78.4	60 - 140		%Rec	1	3/24/2020 10:06:00 PM
Surr: o-Terphenyl	86.3	60 - 140		%Rec	1	3/26/2020 12:21:00 AM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27816		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	8.54	1.78		mg/Kg-dry	1	3/20/2020 3:11:10 PM
Aliphatic Hydrocarbon (C6-C8)	106	2.54		mg/Kg-dry	1	3/20/2020 3:11:10 PM
Aliphatic Hydrocarbon (C8-C10)	100	1.42		mg/Kg-dry	1	3/20/2020 3:11:10 PM
Aliphatic Hydrocarbon (C10-C12)	111	30.5	D	mg/Kg-dry	20	3/19/2020 2:39:38 PM
Aromatic Hydrocarbon (C8-C10)	130	3.05	Q	mg/Kg-dry	1	3/20/2020 3:11:10 PM
Aromatic Hydrocarbon (C10-C12)	361	12.2	D	mg/Kg-dry	20	3/19/2020 2:39:38 PM
Aromatic Hydrocarbon (C12-C13)	422	142	D	mg/Kg-dry	20	3/19/2020 2:39:38 PM
Benzene	ND	0.609		mg/Kg-dry	1	3/20/2020 3:11:10 PM
Toluene	0.734	0.711		mg/Kg-dry	1	3/20/2020 3:11:10 PM
Ethylbenzene	12.0	0.711		mg/Kg-dry	1	3/20/2020 3:11:10 PM
m,p-Xylene	1.40	1.32		mg/Kg-dry	1	3/20/2020 3:11:10 PM
o-Xylene	2.16	0.609		mg/Kg-dry	1	3/20/2020 3:11:10 PM
Naphthalene	18.5	0.508	Q	mg/Kg-dry	1	3/20/2020 3:11:10 PM
Methyl tert-butyl ether (MTBE)	ND	0.508		mg/Kg-dry	1	3/20/2020 3:11:10 PM
Surr: 1,4-Difluorobenzene	112	65 - 140	D	%Rec	20	3/19/2020 2:39:38 PM
Surr: Bromofluorobenzene	109	65 - 140	D	%Rec	20	3/19/2020 2:39:38 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
Analyte detections should be confirmed by GCMS.

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/9/2020 3:35:00 PM
Project: 003244
Lab ID: 2003268-001
Matrix: Soil
Client Sample ID: **OIP-47-17**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58189		Analyst: EH
Percent Moisture	34.4	0.500		wt%	1	3/23/2020 10:43:28 AM

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/9/2020 3:05:00 PM
Project: 003244
Lab ID: 2003268-002
Matrix: Soil
Client Sample ID: **OIP-47-11-12**

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 27833 Analyst: DW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Aliphatic Hydrocarbon (C8-C10)	ND	26.6	*	mg/Kg-dry	1	3/24/2020 11:32:00 PM
Aliphatic Hydrocarbon (C10-C12)	16.5	13.3		mg/Kg-dry	1	3/24/2020 11:32:00 PM
Aliphatic Hydrocarbon (C12-C16)	ND	13.3		mg/Kg-dry	1	3/24/2020 11:32:00 PM
Aliphatic Hydrocarbon (C16-C21)	ND	13.3		mg/Kg-dry	1	3/24/2020 11:32:00 PM
Aliphatic Hydrocarbon (C21-C34)	ND	13.3		mg/Kg-dry	1	3/24/2020 11:32:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	13.3	*	mg/Kg-dry	1	3/26/2020 1:48:00 AM
Aromatic Hydrocarbon (C10-C12)	15.6	13.3		mg/Kg-dry	1	3/26/2020 1:48:00 AM
Aromatic Hydrocarbon (C12-C16)	16.2	13.3		mg/Kg-dry	1	3/26/2020 1:48:00 AM
Aromatic Hydrocarbon (C16-C21)	ND	13.3		mg/Kg-dry	1	3/26/2020 1:48:00 AM
Aromatic Hydrocarbon (C21-C34)	ND	13.3		mg/Kg-dry	1	3/26/2020 1:48:00 AM
Surr: 1-Chlorooctadecane	72.8	60 - 140		%Rec	1	3/24/2020 11:32:00 PM
Surr: o-Terphenyl	84.8	60 - 140		%Rec	1	3/26/2020 1:48:00 AM

NOTES:
* - Flagged value is not within established control limits.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 27816 Analyst: CR

Aliphatic Hydrocarbon (C5-C6)	267	43.8	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Aliphatic Hydrocarbon (C6-C8)	827	62.5	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Aliphatic Hydrocarbon (C8-C10)	332	35.0	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Aliphatic Hydrocarbon (C10-C12)	465	37.5	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Aromatic Hydrocarbon (C8-C10)	327	75.1	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Aromatic Hydrocarbon (C10-C12)	1,050	15.0	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Aromatic Hydrocarbon (C12-C13)	1,230	175	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Benzene	ND	15.0	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Toluene	ND	17.5	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Ethylbenzene	ND	17.5	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
m,p-Xylene	ND	32.5	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
o-Xylene	ND	15.0	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Naphthalene	41.0	12.5	DQ	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Methyl tert-butyl ether (MTBE)	15.8	12.5	D	mg/Kg-dry	20	3/19/2020 3:22:15 PM
Surr: 1,4-Difluorobenzene	123	65 - 140	D	%Rec	20	3/19/2020 3:22:15 PM
Surr: Bromofluorobenzene	105	65 - 140	D	%Rec	20	3/19/2020 3:22:15 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
Diluted due to matrix.
Analyte detections should be confirmed by GCMS.

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Project: 003244
Lab ID: 2003268-002
Client Sample ID: **OIP-47-11-12**

Collection Date: 3/9/2020 3:05:00 PM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58189		Analyst: EH
Percent Moisture	26.7	0.500		wt%	1	3/23/2020 10:43:28 AM

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/9/2020 5:20:00 PM
Project: 003244
Lab ID: 2003268-003
Matrix: Soil
Client Sample ID: **MW-33-12-12.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	109	26.4	*	mg/Kg-dry	1	3/25/2020 3:09:00 AM
Aliphatic Hydrocarbon (C10-C12)	686	13.2		mg/Kg-dry	1	3/25/2020 3:09:00 AM
Aliphatic Hydrocarbon (C12-C16)	3,280	132	D	mg/Kg-dry	10	3/25/2020 3:37:00 PM
Aliphatic Hydrocarbon (C16-C21)	2,970	132	D	mg/Kg-dry	10	3/25/2020 3:37:00 PM
Aliphatic Hydrocarbon (C21-C34)	721	13.2	*	mg/Kg-dry	1	3/25/2020 3:09:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	13.2	*	mg/Kg-dry	1	3/26/2020 5:25:00 AM
Aromatic Hydrocarbon (C10-C12)	110	13.2		mg/Kg-dry	1	3/26/2020 5:25:00 AM
Aromatic Hydrocarbon (C12-C16)	846	13.2		mg/Kg-dry	1	3/26/2020 5:25:00 AM
Aromatic Hydrocarbon (C16-C21)	2,380	132	D	mg/Kg-dry	10	3/27/2020 3:53:00 AM
Aromatic Hydrocarbon (C21-C34)	486	13.2		mg/Kg-dry	1	3/26/2020 5:25:00 AM
Surr: 1-Chlorooctadecane	84.9	60 - 140		%Rec	1	3/25/2020 3:09:00 AM
Surr: o-Terphenyl	85.8	60 - 140		%Rec	1	3/26/2020 5:25:00 AM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27816		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	7.70	2.33		mg/Kg-dry	1	3/20/2020 3:53:12 PM
Aliphatic Hydrocarbon (C6-C8)	12.4	3.33		mg/Kg-dry	1	3/20/2020 3:53:12 PM
Aliphatic Hydrocarbon (C8-C10)	39.6	1.86		mg/Kg-dry	1	3/20/2020 3:53:12 PM
Aliphatic Hydrocarbon (C10-C12)	208	39.9	D	mg/Kg-dry	20	3/19/2020 4:04:34 PM
Aromatic Hydrocarbon (C8-C10)	52.6	3.99	Q	mg/Kg-dry	1	3/20/2020 3:53:12 PM
Aromatic Hydrocarbon (C10-C12)	758	16.0	D	mg/Kg-dry	20	3/19/2020 4:04:34 PM
Aromatic Hydrocarbon (C12-C13)	2,160	186	DE	mg/Kg-dry	20	3/19/2020 4:04:34 PM
Benzene	ND	0.799		mg/Kg-dry	1	3/20/2020 3:53:12 PM
Toluene	ND	0.932		mg/Kg-dry	1	3/20/2020 3:53:12 PM
Ethylbenzene	ND	0.932		mg/Kg-dry	1	3/20/2020 3:53:12 PM
m,p-Xylene	ND	1.73		mg/Kg-dry	1	3/20/2020 3:53:12 PM
o-Xylene	ND	0.799		mg/Kg-dry	1	3/20/2020 3:53:12 PM
Naphthalene	64.5	0.665	Q	mg/Kg-dry	1	3/20/2020 3:53:12 PM
Methyl tert-butyl ether (MTBE)	ND	0.665		mg/Kg-dry	1	3/20/2020 3:53:12 PM
Surr: 1,4-Difluorobenzene	112	65 - 140		%Rec	1	3/20/2020 3:53:12 PM
Surr: Bromofluorobenzene	121	65 - 140		%Rec	1	3/20/2020 3:53:12 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
E - Estimated value. The amount exceeds the linear working range of the instrument.
Analyte detections should be confirmed by GCMS.

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/9/2020 5:20:00 PM
Project: 003244
Lab ID: 2003268-003
Matrix: Soil
Client Sample ID: **MW-33-12-12.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58189		Analyst: EH
Percent Moisture	24.9	0.500		wt%	1	3/23/2020 10:43:28 AM

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/9/2020 5:40:00 PM
Project: 003244
Lab ID: 2003268-004
Matrix: Soil
Client Sample ID: **MW-33-19.5-20**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	ND	29.6	*	mg/Kg-dry	1	3/25/2020 3:53:00 AM
Aliphatic Hydrocarbon (C10-C12)	ND	14.8		mg/Kg-dry	1	3/25/2020 3:53:00 AM
Aliphatic Hydrocarbon (C12-C16)	20.4	14.8		mg/Kg-dry	1	3/25/2020 3:53:00 AM
Aliphatic Hydrocarbon (C16-C21)	ND	14.8		mg/Kg-dry	1	3/25/2020 3:53:00 AM
Aliphatic Hydrocarbon (C21-C34)	ND	14.8		mg/Kg-dry	1	3/25/2020 3:53:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	14.8	*	mg/Kg-dry	1	3/26/2020 6:08:00 AM
Aromatic Hydrocarbon (C10-C12)	ND	14.8		mg/Kg-dry	1	3/26/2020 6:08:00 AM
Aromatic Hydrocarbon (C12-C16)	ND	14.8		mg/Kg-dry	1	3/26/2020 6:08:00 AM
Aromatic Hydrocarbon (C16-C21)	ND	14.8		mg/Kg-dry	1	3/26/2020 6:08:00 AM
Aromatic Hydrocarbon (C21-C34)	ND	14.8		mg/Kg-dry	1	3/26/2020 6:08:00 AM
Surr: 1-Chlorooctadecane	72.3	60 - 140		%Rec	1	3/25/2020 3:53:00 AM
Surr: o-Terphenyl	88.4	60 - 140		%Rec	1	3/26/2020 6:08:00 AM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27816		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	1.47		mg/Kg-dry	1	3/20/2020 4:35:38 PM
Aliphatic Hydrocarbon (C6-C8)	ND	2.11		mg/Kg-dry	1	3/20/2020 4:35:38 PM
Aliphatic Hydrocarbon (C8-C10)	ND	1.18		mg/Kg-dry	1	3/20/2020 4:35:38 PM
Aliphatic Hydrocarbon (C10-C12)	ND	1.26		mg/Kg-dry	1	3/20/2020 4:35:38 PM
Aromatic Hydrocarbon (C8-C10)	ND	2.53		mg/Kg-dry	1	3/20/2020 4:35:38 PM
Aromatic Hydrocarbon (C10-C12)	13.5	0.506		mg/Kg-dry	1	3/20/2020 4:35:38 PM
Aromatic Hydrocarbon (C12-C13)	20.0	5.90	H	mg/Kg-dry	1	3/27/2020 4:10:20 PM
Benzene	ND	0.506		mg/Kg-dry	1	3/20/2020 4:35:38 PM
Toluene	ND	0.590		mg/Kg-dry	1	3/20/2020 4:35:38 PM
Ethylbenzene	ND	0.590		mg/Kg-dry	1	3/20/2020 4:35:38 PM
m,p-Xylene	ND	1.10		mg/Kg-dry	1	3/20/2020 4:35:38 PM
o-Xylene	ND	0.506		mg/Kg-dry	1	3/20/2020 4:35:38 PM
Naphthalene	ND	0.421	H	mg/Kg-dry	1	3/27/2020 4:10:20 PM
Methyl tert-butyl ether (MTBE)	ND	0.421		mg/Kg-dry	1	3/20/2020 4:35:38 PM
Surr: 1,4-Difluorobenzene	115	65 - 140		%Rec	1	3/20/2020 4:35:38 PM
Surr: Bromofluorobenzene	107	65 - 140		%Rec	1	3/20/2020 4:35:38 PM

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58189		Analyst: EH
Percent Moisture	35.6	0.500		wt%	1	3/23/2020 10:43:28 AM

Client: Friedman & Bruya
Collection Date: 3/10/2020 9:35:00 AM
Project: 003244
Lab ID: 2003268-005
Matrix: Soil
Client Sample ID: **OIP-23-14-15**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	137	25.0	*	mg/Kg-dry	1	3/25/2020 4:36:00 AM
Aliphatic Hydrocarbon (C10-C12)	629	12.5		mg/Kg-dry	1	3/25/2020 4:36:00 AM
Aliphatic Hydrocarbon (C12-C16)	2,910	125	D	mg/Kg-dry	10	3/25/2020 4:21:00 PM
Aliphatic Hydrocarbon (C16-C21)	3,110	125	D	mg/Kg-dry	10	3/25/2020 4:21:00 PM
Aliphatic Hydrocarbon (C21-C34)	467	12.5	*	mg/Kg-dry	1	3/25/2020 4:36:00 AM
Aromatic Hydrocarbon (C8-C10)	ND	12.5	*	mg/Kg-dry	1	3/26/2020 6:51:00 AM
Aromatic Hydrocarbon (C10-C12)	97.5	12.5		mg/Kg-dry	1	3/26/2020 6:51:00 AM
Aromatic Hydrocarbon (C12-C16)	909	12.5		mg/Kg-dry	1	3/26/2020 6:51:00 AM
Aromatic Hydrocarbon (C16-C21)	2,660	125	D	mg/Kg-dry	10	3/27/2020 4:37:00 AM
Aromatic Hydrocarbon (C21-C34)	321	12.5		mg/Kg-dry	1	3/26/2020 6:51:00 AM
Surr: 1-Chlorooctadecane	88.3	60 - 140		%Rec	1	3/25/2020 4:36:00 AM
Surr: o-Terphenyl	106	60 - 140		%Rec	1	3/26/2020 6:51:00 AM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27816		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	16.9	D	mg/Kg-dry	10	3/20/2020 5:18:05 PM
Aliphatic Hydrocarbon (C6-C8)	ND	24.1	D	mg/Kg-dry	10	3/20/2020 5:18:05 PM
Aliphatic Hydrocarbon (C8-C10)	34.7	13.5	D	mg/Kg-dry	10	3/20/2020 5:18:05 PM
Aliphatic Hydrocarbon (C10-C12)	109	14.5	D	mg/Kg-dry	10	3/20/2020 5:18:05 PM
Aromatic Hydrocarbon (C8-C10)	34.4	28.9	DQ	mg/Kg-dry	10	3/20/2020 5:18:05 PM
Aromatic Hydrocarbon (C10-C12)	473	11.6	D	mg/Kg-dry	20	3/19/2020 6:11:30 PM
Aromatic Hydrocarbon (C12-C13)	1,060	135	DE	mg/Kg-dry	20	3/19/2020 6:11:30 PM
Aromatic Hydrocarbon (C12-C13)	898	135	DH	mg/Kg-dry	20	3/27/2020 3:27:41 PM
Benzene	ND	5.79	D	mg/Kg-dry	10	3/20/2020 5:18:05 PM
Toluene	ND	6.75	D	mg/Kg-dry	10	3/20/2020 5:18:05 PM
Ethylbenzene	ND	6.75	D	mg/Kg-dry	10	3/20/2020 5:18:05 PM
m,p-Xylene	ND	12.5	D	mg/Kg-dry	10	3/20/2020 5:18:05 PM
o-Xylene	ND	5.79	D	mg/Kg-dry	10	3/20/2020 5:18:05 PM
Naphthalene	16.3	4.82	DQ	mg/Kg-dry	10	3/20/2020 5:18:05 PM
Naphthalene	36.9	9.65	DH	mg/Kg-dry	20	3/27/2020 3:27:41 PM
Methyl tert-butyl ether (MTBE)	ND	4.82	D	mg/Kg-dry	10	3/20/2020 5:18:05 PM
Surr: 1,4-Difluorobenzene	112	65 - 140	D	%Rec	10	3/20/2020 5:18:05 PM
Surr: Bromofluorobenzene	112	65 - 140	D	%Rec	10	3/20/2020 5:18:05 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
E - Estimated value. The amount exceeds the linear working range of the instrument.
Analyte detections should be confirmed by GCMS.

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/10/2020 9:35:00 AM
Project: 003244
Lab ID: 2003268-005
Matrix: Soil
Client Sample ID: **OIP-23-14-15**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58189		Analyst: EH
Percent Moisture	24.2	0.500		wt%	1	3/23/2020 10:43:28 AM

Client: Friedman & Bruya
Collection Date: 3/10/2020 9:45:00 AM
Project: 003244
Lab ID: 2003268-006
Matrix: Soil
Client Sample ID: **OIP-23-19-20**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	623	21.9	*	mg/Kg-dry	1	3/25/2020 5:19:00 AM
Aliphatic Hydrocarbon (C10-C12)	2,820	109	D	mg/Kg-dry	10	3/25/2020 2:53:00 PM
Aliphatic Hydrocarbon (C12-C16)	12,100	547	D	mg/Kg-dry	50	3/26/2020 2:07:00 PM
Aliphatic Hydrocarbon (C16-C21)	11,300	547	D	mg/Kg-dry	50	3/26/2020 2:07:00 PM
Aliphatic Hydrocarbon (C21-C34)	1,560	109	D*	mg/Kg-dry	10	3/25/2020 2:53:00 PM
Aromatic Hydrocarbon (C8-C10)	44.4	10.9	*	mg/Kg-dry	1	3/26/2020 7:35:00 AM
Aromatic Hydrocarbon (C10-C12)	481	10.9		mg/Kg-dry	1	3/26/2020 7:35:00 AM
Aromatic Hydrocarbon (C12-C16)	3,620	219	D	mg/Kg-dry	20	3/27/2020 6:03:00 AM
Aromatic Hydrocarbon (C16-C21)	9,510	219	D	mg/Kg-dry	20	3/27/2020 6:03:00 AM
Aromatic Hydrocarbon (C21-C34)	913	219	D	mg/Kg-dry	20	3/27/2020 6:03:00 AM
Surr: 1-Chlorooctadecane	110	60 - 140		%Rec	1	3/25/2020 5:19:00 AM
Surr: o-Terphenyl	127	60 - 140		%Rec	1	3/26/2020 7:35:00 AM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27816		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	15.8	D	mg/Kg-dry	10	3/20/2020 6:00:56 PM
Aliphatic Hydrocarbon (C6-C8)	39.4	22.6	D	mg/Kg-dry	10	3/20/2020 6:00:56 PM
Aliphatic Hydrocarbon (C8-C10)	65.4	12.7	D	mg/Kg-dry	10	3/20/2020 6:00:56 PM
Aliphatic Hydrocarbon (C10-C12)	305	13.6	D	mg/Kg-dry	10	3/20/2020 6:00:56 PM
Aromatic Hydrocarbon (C8-C10)	110	27.2	DQ	mg/Kg-dry	10	3/20/2020 6:00:56 PM
Aromatic Hydrocarbon (C10-C12)	1,020	54.3	D	mg/Kg-dry	100	3/20/2020 2:28:45 PM
Aromatic Hydrocarbon (C12-C13)	3,970	634	D	mg/Kg-dry	100	3/20/2020 2:28:45 PM
Benzene	ND	5.43	D	mg/Kg-dry	10	3/20/2020 6:00:56 PM
Toluene	ND	6.34	D	mg/Kg-dry	10	3/20/2020 6:00:56 PM
Ethylbenzene	ND	6.34	D	mg/Kg-dry	10	3/20/2020 6:00:56 PM
m,p-Xylene	ND	11.8	D	mg/Kg-dry	10	3/20/2020 6:00:56 PM
o-Xylene	ND	5.43	D	mg/Kg-dry	10	3/20/2020 6:00:56 PM
Naphthalene	48.7	4.53	DQ	mg/Kg-dry	10	3/20/2020 6:00:56 PM
Methyl tert-butyl ether (MTBE)	ND	4.53	D	mg/Kg-dry	10	3/20/2020 6:00:56 PM
Surr: 1,4-Difluorobenzene	113	65 - 140	D	%Rec	10	3/20/2020 6:00:56 PM
Surr: Bromofluorobenzene	103	65 - 140	D	%Rec	10	3/20/2020 6:00:56 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
Analyte detections should be confirmed by GCMS.

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/10/2020 9:45:00 AM
Project: 003244
Lab ID: 2003268-006
Matrix: Soil
Client Sample ID: **OIP-23-19-20**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58189		Analyst: EH
Percent Moisture	17.5	0.500		wt%	1	3/23/2020 10:43:28 AM

Client: Friedman & Bruya
Collection Date: 3/10/2020 9:55:00 AM
Project: 003244
Lab ID: 2003268-007
Matrix: Soil
Client Sample ID: **OIP-23-23-24**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	69.6	24.5	*	mg/Kg-dry	1	3/26/2020 2:51:00 PM
Aliphatic Hydrocarbon (C10-C12)	300	12.3		mg/Kg-dry	1	3/26/2020 2:51:00 PM
Aliphatic Hydrocarbon (C12-C16)	1,600	123	D	mg/Kg-dry	10	3/28/2020 4:11:00 AM
Aliphatic Hydrocarbon (C16-C21)	1,770	123	D	mg/Kg-dry	10	3/28/2020 4:11:00 AM
Aliphatic Hydrocarbon (C21-C34)	261	12.3	*	mg/Kg-dry	1	3/26/2020 2:51:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	12.3	*	mg/Kg-dry	1	3/27/2020 7:30:00 AM
Aromatic Hydrocarbon (C10-C12)	48.7	12.3		mg/Kg-dry	1	3/27/2020 7:30:00 AM
Aromatic Hydrocarbon (C12-C16)	494	12.3		mg/Kg-dry	1	3/27/2020 7:30:00 AM
Aromatic Hydrocarbon (C16-C21)	1,520	123	D	mg/Kg-dry	10	3/27/2020 9:38:00 PM
Aromatic Hydrocarbon (C21-C34)	163	12.3		mg/Kg-dry	1	3/27/2020 7:30:00 AM
Surr: 1-Chlorooctadecane	87.0	60 - 140		%Rec	1	3/26/2020 2:51:00 PM
Surr: o-Terphenyl	87.6	60 - 140		%Rec	1	3/27/2020 7:30:00 AM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27816		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	26.8	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Aliphatic Hydrocarbon (C6-C8)	ND	38.3	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Aliphatic Hydrocarbon (C8-C10)	ND	21.5	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Aliphatic Hydrocarbon (C10-C12)	83.9	23.0	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Aromatic Hydrocarbon (C8-C10)	ND	46.0	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Aromatic Hydrocarbon (C10-C12)	323	9.20	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Aromatic Hydrocarbon (C12-C13)	1,680	537	DH	mg/Kg-dry	100	3/27/2020 11:54:53 AM
Aromatic Hydrocarbon (C12-C13)	1,340	107	DE	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Benzene	ND	9.20	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Toluene	ND	10.7	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Ethylbenzene	ND	10.7	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
m,p-Xylene	ND	19.9	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
o-Xylene	ND	9.20	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Naphthalene	13.8	7.67	DQ	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Methyl tert-butyl ether (MTBE)	ND	7.67	D	mg/Kg-dry	20	3/19/2020 7:36:26 PM
Surr: 1,4-Difluorobenzene	113	65 - 140	D	%Rec	20	3/19/2020 7:36:26 PM
Surr: Bromofluorobenzene	106	65 - 140	D	%Rec	20	3/19/2020 7:36:26 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
E - Estimated value. The amount exceeds the linear working range of the instrument.
Diluted due to matrix.
Analyte detections should be confirmed by GCMS.

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/10/2020 9:55:00 AM
Project: 003244
Lab ID: 2003268-007
Matrix: Soil
Client Sample ID: **OIP-23-23-24**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58189		Analyst: EH
Percent Moisture	21.8	0.500		wt%	1	3/23/2020 10:43:28 AM

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Project: 003244
Lab ID: 2003268-008
Client Sample ID: **OIP-46-8**

Collection Date: 3/10/2020 8:50:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58189		Analyst: EH
Percent Moisture	22.7	0.500		wt%	1	3/23/2020 10:43:28 AM
Total Organic Carbon by EPA 9060				Batch ID: 27879		Analyst: SS
Total Organic Carbon	ND	0.0750		%-dry	1	3/25/2020 10:48:00 AM

Client: Friedman & Bruya
Collection Date: 3/10/2020 2:02:00 PM
Project: 003244
Lab ID: 2003268-009
Matrix: Soil
Client Sample ID: **OIP-39-16.5-17**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	37.2	23.2	*	mg/Kg-dry	1	3/26/2020 3:34:00 PM
Aliphatic Hydrocarbon (C10-C12)	ND	11.6		mg/Kg-dry	1	3/26/2020 3:34:00 PM
Aliphatic Hydrocarbon (C12-C16)	ND	11.6		mg/Kg-dry	1	3/26/2020 3:34:00 PM
Aliphatic Hydrocarbon (C16-C21)	ND	11.6		mg/Kg-dry	1	3/26/2020 3:34:00 PM
Aliphatic Hydrocarbon (C21-C34)	ND	11.6		mg/Kg-dry	1	3/26/2020 3:34:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	11.6	*	mg/Kg-dry	1	3/27/2020 8:13:00 AM
Aromatic Hydrocarbon (C10-C12)	ND	11.6		mg/Kg-dry	1	3/27/2020 8:13:00 AM
Aromatic Hydrocarbon (C12-C16)	ND	11.6		mg/Kg-dry	1	3/27/2020 8:13:00 AM
Aromatic Hydrocarbon (C16-C21)	ND	11.6		mg/Kg-dry	1	3/27/2020 8:13:00 AM
Aromatic Hydrocarbon (C21-C34)	ND	11.6		mg/Kg-dry	1	3/27/2020 8:13:00 AM
Surr: 1-Chlorooctadecane	75.2	60 - 140		%Rec	1	3/26/2020 3:34:00 PM
Surr: o-Terphenyl	82.2	60 - 140		%Rec	1	3/27/2020 8:13:00 AM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27816		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	1.30		mg/Kg-dry	1	3/19/2020 8:18:54 PM
Aliphatic Hydrocarbon (C6-C8)	2.12	1.86		mg/Kg-dry	1	3/19/2020 8:18:54 PM
Aliphatic Hydrocarbon (C8-C10)	ND	1.04		mg/Kg-dry	1	3/19/2020 8:18:54 PM
Aliphatic Hydrocarbon (C10-C12)	ND	1.12		mg/Kg-dry	1	3/19/2020 8:18:54 PM
Aromatic Hydrocarbon (C8-C10)	ND	2.23		mg/Kg-dry	1	3/19/2020 8:18:54 PM
Aromatic Hydrocarbon (C10-C12)	0.845	0.446		mg/Kg-dry	1	3/19/2020 8:18:54 PM
Aromatic Hydrocarbon (C12-C13)	ND	5.20		mg/Kg-dry	1	3/19/2020 8:18:54 PM
Benzene	ND	0.446		mg/Kg-dry	1	3/19/2020 8:18:54 PM
Toluene	ND	0.520		mg/Kg-dry	1	3/19/2020 8:18:54 PM
Ethylbenzene	ND	0.520		mg/Kg-dry	1	3/19/2020 8:18:54 PM
m,p-Xylene	ND	0.967		mg/Kg-dry	1	3/19/2020 8:18:54 PM
o-Xylene	ND	0.446		mg/Kg-dry	1	3/19/2020 8:18:54 PM
Naphthalene	ND	0.372	Q	mg/Kg-dry	1	3/19/2020 8:18:54 PM
Methyl tert-butyl ether (MTBE)	ND	0.372		mg/Kg-dry	1	3/19/2020 8:18:54 PM
Surr: 1,4-Difluorobenzene	114	65 - 140		%Rec	1	3/19/2020 8:18:54 PM
Surr: Bromofluorobenzene	104	65 - 140		%Rec	1	3/19/2020 8:18:54 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58217		Analyst: EH
Percent Moisture	23.4	0.500		wt%	1	3/24/2020 8:31:55 AM

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/11/2020 4:38:00 PM
Project: 003244
Lab ID: 2003268-010
Matrix: Soil
Client Sample ID: **OIP-68-14-14.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58217		Analyst: EH
Percent Moisture	25.6	0.500		wt%	1	3/24/2020 8:31:55 AM
Total Organic Carbon by EPA 9060				Batch ID: 27933		Analyst: SS
Total Organic Carbon	0.161	0.0750		%-dry	1	3/30/2020 3:54:00 PM

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/11/2020 3:40:00 PM
Project: 003244
Lab ID: 2003268-011
Matrix: Soil
Client Sample ID: **OIP-69-14.5-15**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58217		Analyst: EH
Percent Moisture	19.5	0.500		wt%	1	3/24/2020 8:31:55 AM
Total Organic Carbon by EPA 9060				Batch ID: 27879		Analyst: SS
Total Organic Carbon	ND	0.0750		%-dry	1	3/25/2020 12:25:00 PM

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Project: 003244
Lab ID: 2003268-012
Client Sample ID: **OIP-54-18-19**

Collection Date: 3/11/2020 8:40:00 AM
Matrix: Soil

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58217		Analyst: EH
Percent Moisture	17.8	0.500		wt%	1	3/24/2020 8:31:55 AM
Total Organic Carbon by EPA 9060				Batch ID: 27879		Analyst: SS
Total Organic Carbon	ND	0.0750		%-dry	1	3/25/2020 12:44:00 PM

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/12/2020 3:00:00 PM
Project: 003244
Lab ID: 2003268-013
Matrix: Soil
Client Sample ID: **OIP-15-15-16**

Extractable Petroleum Hydrocarbons by NWEPH

Batch ID: 27833 Analyst: DW

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Aliphatic Hydrocarbon (C8-C10)	ND	22.6	*	mg/Kg-dry	1	3/26/2020 4:18:00 PM
Aliphatic Hydrocarbon (C10-C12)	154	11.3		mg/Kg-dry	1	3/26/2020 4:18:00 PM
Aliphatic Hydrocarbon (C12-C16)	1,060	11.3		mg/Kg-dry	1	3/26/2020 4:18:00 PM
Aliphatic Hydrocarbon (C16-C21)	1,090	11.3		mg/Kg-dry	1	3/26/2020 4:18:00 PM
Aliphatic Hydrocarbon (C21-C34)	313	11.3	*	mg/Kg-dry	1	3/26/2020 4:18:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	11.3	*	mg/Kg-dry	1	3/27/2020 8:57:00 AM
Aromatic Hydrocarbon (C10-C12)	ND	11.3		mg/Kg-dry	1	3/27/2020 8:57:00 AM
Aromatic Hydrocarbon (C12-C16)	122	11.3		mg/Kg-dry	1	3/27/2020 8:57:00 AM
Aromatic Hydrocarbon (C16-C21)	736	11.3		mg/Kg-dry	1	3/27/2020 8:57:00 AM
Aromatic Hydrocarbon (C21-C34)	267	11.3		mg/Kg-dry	1	3/27/2020 8:57:00 AM
Surr: 1-Chlorooctadecane	84.8	60 - 140		%Rec	1	3/26/2020 4:18:00 PM
Surr: o-Terphenyl	98.3	60 - 140		%Rec	1	3/27/2020 8:57:00 AM

NOTES:
* - Flagged value is not within established control limits.

Volatile Petroleum Hydrocarbons by NWVPH

Batch ID: 27868 Analyst: CR

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Aliphatic Hydrocarbon (C5-C6)	ND	1.10		mg/Kg-dry	1	3/25/2020 7:52:55 AM
Aliphatic Hydrocarbon (C6-C8)	ND	1.57		mg/Kg-dry	1	3/25/2020 7:52:55 AM
Aliphatic Hydrocarbon (C8-C10)	ND	0.877		mg/Kg-dry	1	3/25/2020 7:52:55 AM
Aliphatic Hydrocarbon (C10-C12)	13.2	0.940		mg/Kg-dry	1	3/25/2020 7:52:55 AM
Aromatic Hydrocarbon (C8-C10)	ND	1.88		mg/Kg-dry	1	3/25/2020 7:52:55 AM
Aromatic Hydrocarbon (C10-C12)	30.7	0.376		mg/Kg-dry	1	3/25/2020 7:52:55 AM
Aromatic Hydrocarbon (C12-C13)	203	87.7	D	mg/Kg-dry	20	3/25/2020 12:05:48 AM
Benzene	ND	0.376		mg/Kg-dry	1	3/25/2020 7:52:55 AM
Toluene	ND	0.438		mg/Kg-dry	1	3/25/2020 7:52:55 AM
Ethylbenzene	ND	0.438		mg/Kg-dry	1	3/25/2020 7:52:55 AM
m,p-Xylene	ND	0.814		mg/Kg-dry	1	3/25/2020 7:52:55 AM
o-Xylene	ND	0.376		mg/Kg-dry	1	3/25/2020 7:52:55 AM
Naphthalene	5.94	0.313		mg/Kg-dry	1	3/25/2020 7:52:55 AM
Methyl tert-butyl ether (MTBE)	ND	0.313		mg/Kg-dry	1	3/25/2020 7:52:55 AM
Surr: 1,4-Difluorobenzene	98.8	65 - 140		%Rec	1	3/25/2020 7:52:55 AM
Surr: Bromofluorobenzene	105	65 - 140		%Rec	1	3/25/2020 7:52:55 AM

NOTES:
Analyte detections should be confirmed by GCMS.

Sample Moisture (Percent Moisture)

Batch ID: R58217 Analyst: EH

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Percent Moisture	17.5	0.500		wt%	1	3/24/2020 8:31:55 AM

Client: Friedman & Bruya
Collection Date: 3/12/2020 1:47:00 PM
Project: 003244
Lab ID: 2003268-014
Matrix: Soil
Client Sample ID: **GP-36-13-14**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	167	25.5	*	mg/Kg-dry	1	3/26/2020 5:02:00 PM
Aliphatic Hydrocarbon (C10-C12)	352	12.8		mg/Kg-dry	1	3/26/2020 5:02:00 PM
Aliphatic Hydrocarbon (C12-C16)	1,240	12.8		mg/Kg-dry	1	3/26/2020 5:02:00 PM
Aliphatic Hydrocarbon (C16-C21)	1,180	12.8		mg/Kg-dry	1	3/26/2020 5:02:00 PM
Aliphatic Hydrocarbon (C21-C34)	246	12.8	*	mg/Kg-dry	1	3/26/2020 5:02:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	12.8	*	mg/Kg-dry	1	3/27/2020 9:40:00 AM
Aromatic Hydrocarbon (C10-C12)	117	12.8		mg/Kg-dry	1	3/27/2020 9:40:00 AM
Aromatic Hydrocarbon (C12-C16)	451	12.8		mg/Kg-dry	1	3/27/2020 9:40:00 AM
Aromatic Hydrocarbon (C16-C21)	969	12.8		mg/Kg-dry	1	3/27/2020 9:40:00 AM
Aromatic Hydrocarbon (C21-C34)	170	12.8		mg/Kg-dry	1	3/27/2020 9:40:00 AM
Surr: 1-Chlorooctadecane	79.2	60 - 140		%Rec	1	3/26/2020 5:02:00 PM
Surr: o-Terphenyl	87.1	60 - 140		%Rec	1	3/27/2020 9:40:00 AM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27868		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	62.3	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Aliphatic Hydrocarbon (C6-C8)	ND	88.9	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Aliphatic Hydrocarbon (C8-C10)	ND	49.8	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Aliphatic Hydrocarbon (C10-C12)	ND	53.4	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Aromatic Hydrocarbon (C8-C10)	ND	107	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Aromatic Hydrocarbon (C10-C12)	79.2	21.3	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Aromatic Hydrocarbon (C12-C13)	608	249	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Benzene	ND	21.3	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Toluene	ND	24.9	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Ethylbenzene	ND	24.9	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
m,p-Xylene	ND	46.2	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
o-Xylene	ND	21.3	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Naphthalene	ND	17.8	D	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Methyl tert-butyl ether (MTBE)	ND	17.8	DQ	mg/Kg-dry	20	3/25/2020 12:48:14 AM
Surr: 1,4-Difluorobenzene	97.2	65 - 140	D	%Rec	20	3/25/2020 12:48:14 AM
Surr: Bromofluorobenzene	99.8	65 - 140	D	%Rec	20	3/25/2020 12:48:14 AM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
Diluted due to matrix.

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/12/2020 1:47:00 PM
Project: 003244
Lab ID: 2003268-014
Matrix: Soil
Client Sample ID: **GP-36-13-14**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58217		Analyst: EH
Percent Moisture	25.5	0.500		wt%	1	3/24/2020 8:31:55 AM

Client: Friedman & Bruya
Collection Date: 3/12/2020 3:20:00 PM
Project: 003244
Lab ID: 2003268-015
Matrix: Soil
Client Sample ID: **OIP-15-20-21**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	ND	26.2	*	mg/Kg-dry	1	3/26/2020 5:45:00 PM
Aliphatic Hydrocarbon (C10-C12)	ND	13.1		mg/Kg-dry	1	3/26/2020 5:45:00 PM
Aliphatic Hydrocarbon (C12-C16)	ND	13.1		mg/Kg-dry	1	3/26/2020 5:45:00 PM
Aliphatic Hydrocarbon (C16-C21)	ND	13.1		mg/Kg-dry	1	3/26/2020 5:45:00 PM
Aliphatic Hydrocarbon (C21-C34)	ND	13.1		mg/Kg-dry	1	3/26/2020 5:45:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	13.1	*	mg/Kg-dry	1	3/27/2020 10:24:00 AM
Aromatic Hydrocarbon (C10-C12)	ND	13.1		mg/Kg-dry	1	3/27/2020 10:24:00 AM
Aromatic Hydrocarbon (C12-C16)	ND	13.1		mg/Kg-dry	1	3/27/2020 10:24:00 AM
Aromatic Hydrocarbon (C16-C21)	ND	13.1		mg/Kg-dry	1	3/27/2020 10:24:00 AM
Aromatic Hydrocarbon (C21-C34)	ND	13.1		mg/Kg-dry	1	3/27/2020 10:24:00 AM
Surr: 1-Chlorooctadecane	74.5	60 - 140		%Rec	1	3/26/2020 5:45:00 PM
Surr: o-Terphenyl	87.5	60 - 140		%Rec	1	3/27/2020 10:24:00 AM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27868		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	1.78		mg/Kg-dry	1	3/24/2020 8:33:27 PM
Aliphatic Hydrocarbon (C6-C8)	ND	2.54		mg/Kg-dry	1	3/24/2020 8:33:27 PM
Aliphatic Hydrocarbon (C8-C10)	ND	1.42		mg/Kg-dry	1	3/24/2020 8:33:27 PM
Aliphatic Hydrocarbon (C10-C12)	ND	1.52		mg/Kg-dry	1	3/24/2020 8:33:27 PM
Aromatic Hydrocarbon (C8-C10)	ND	3.05		mg/Kg-dry	1	3/24/2020 8:33:27 PM
Aromatic Hydrocarbon (C10-C12)	ND	0.609		mg/Kg-dry	1	3/24/2020 8:33:27 PM
Aromatic Hydrocarbon (C12-C13)	ND	7.11		mg/Kg-dry	1	3/24/2020 8:33:27 PM
Benzene	ND	0.609		mg/Kg-dry	1	3/24/2020 8:33:27 PM
Toluene	ND	0.711		mg/Kg-dry	1	3/24/2020 8:33:27 PM
Ethylbenzene	ND	0.711		mg/Kg-dry	1	3/24/2020 8:33:27 PM
m,p-Xylene	ND	1.32		mg/Kg-dry	1	3/24/2020 8:33:27 PM
o-Xylene	ND	0.609		mg/Kg-dry	1	3/24/2020 8:33:27 PM
Naphthalene	ND	0.508		mg/Kg-dry	1	3/24/2020 8:33:27 PM
Methyl tert-butyl ether (MTBE)	ND	0.508	Q	mg/Kg-dry	1	3/24/2020 8:33:27 PM
Surr: 1,4-Difluorobenzene	95.6	65 - 140		%Rec	1	3/24/2020 8:33:27 PM
Surr: Bromofluorobenzene	98.7	65 - 140		%Rec	1	3/24/2020 8:33:27 PM

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58217		Analyst: EH
Percent Moisture	26.3	0.500		wt%	1	3/24/2020 8:31:55 AM

Client: Friedman & Bruya
Collection Date: 3/12/2020 2:02:00 PM
Project: 003244
Lab ID: 2003268-016
Matrix: Soil
Client Sample ID: **GP-36-16-17**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	443	23.3	*	mg/Kg-dry	1	3/26/2020 6:29:00 PM
Aliphatic Hydrocarbon (C10-C12)	824	11.7		mg/Kg-dry	1	3/26/2020 6:29:00 PM
Aliphatic Hydrocarbon (C12-C16)	2,360	117	D	mg/Kg-dry	10	3/28/2020 4:54:00 AM
Aliphatic Hydrocarbon (C16-C21)	2,340	117	D	mg/Kg-dry	10	3/28/2020 4:54:00 AM
Aliphatic Hydrocarbon (C21-C34)	518	11.7	*	mg/Kg-dry	1	3/26/2020 6:29:00 PM
Aromatic Hydrocarbon (C8-C10)	22.3	11.7	*	mg/Kg-dry	1	3/27/2020 12:35:00 PM
Aromatic Hydrocarbon (C10-C12)	239	11.7		mg/Kg-dry	1	3/27/2020 12:35:00 PM
Aromatic Hydrocarbon (C12-C16)	884	11.7		mg/Kg-dry	1	3/27/2020 12:35:00 PM
Aromatic Hydrocarbon (C16-C21)	1,780	117	D	mg/Kg-dry	10	3/27/2020 10:22:00 PM
Aromatic Hydrocarbon (C21-C34)	400	11.7		mg/Kg-dry	1	3/27/2020 12:35:00 PM
Surr: 1-Chlorooctadecane	97.6	60 - 140		%Rec	1	3/26/2020 6:29:00 PM
Surr: o-Terphenyl	108	60 - 140		%Rec	1	3/27/2020 12:35:00 PM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27868		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	62.6	1.64		mg/Kg-dry	1	3/25/2020 11:25:52 AM
Aliphatic Hydrocarbon (C6-C8)	403	46.8	D	mg/Kg-dry	20	3/25/2020 1:30:38 AM
Aliphatic Hydrocarbon (C8-C10)	167	26.2	D	mg/Kg-dry	20	3/25/2020 1:30:38 AM
Aliphatic Hydrocarbon (C10-C12)	240	28.1	D	mg/Kg-dry	20	3/25/2020 1:30:38 AM
Aromatic Hydrocarbon (C8-C10)	189	56.1	D	mg/Kg-dry	20	3/25/2020 1:30:38 AM
Aromatic Hydrocarbon (C10-C12)	562	11.2	D	mg/Kg-dry	20	3/25/2020 1:30:38 AM
Aromatic Hydrocarbon (C12-C13)	817	131	D	mg/Kg-dry	20	3/25/2020 1:30:38 AM
Benzene	0.797	0.561		mg/Kg-dry	1	3/25/2020 11:25:52 AM
Toluene	1.91	0.655		mg/Kg-dry	1	3/25/2020 11:25:52 AM
Ethylbenzene	11.7	0.655		mg/Kg-dry	1	3/25/2020 11:25:52 AM
m,p-Xylene	3.68	1.22		mg/Kg-dry	1	3/25/2020 11:25:52 AM
o-Xylene	3.13	0.561		mg/Kg-dry	1	3/25/2020 11:25:52 AM
Naphthalene	20.8	0.468		mg/Kg-dry	1	3/25/2020 11:25:52 AM
Methyl tert-butyl ether (MTBE)	2.44	0.468		mg/Kg-dry	1	3/25/2020 11:25:52 AM
Surr: 1,4-Difluorobenzene	104	65 - 140	D	%Rec	20	3/25/2020 1:30:38 AM
Surr: Bromofluorobenzene	123	65 - 140		%Rec	1	3/25/2020 11:25:52 AM

NOTES:
Analyte detections should be confirmed by GCMS.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58217		Analyst: EH
Percent Moisture	21.4	0.500		wt%	1	3/24/2020 8:31:55 AM

Client: Friedman & Bruya
Collection Date: 3/12/2020 12:25:00 PM
Project: 003244
Lab ID: 2003268-017
Matrix: Soil
Client Sample ID: **OIP-67-11-12**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	319	24.2	*	mg/Kg-dry	1	3/26/2020 7:12:00 PM
Aliphatic Hydrocarbon (C10-C12)	577	12.1		mg/Kg-dry	1	3/26/2020 7:12:00 PM
Aliphatic Hydrocarbon (C12-C16)	1,480	121	D	mg/Kg-dry	10	3/28/2020 5:38:00 AM
Aliphatic Hydrocarbon (C16-C21)	1,500	121	D	mg/Kg-dry	10	3/28/2020 5:38:00 AM
Aliphatic Hydrocarbon (C21-C34)	330	12.1	*	mg/Kg-dry	1	3/26/2020 7:12:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	12.1	*	mg/Kg-dry	1	3/27/2020 1:19:00 PM
Aromatic Hydrocarbon (C10-C12)	183	12.1		mg/Kg-dry	1	3/27/2020 1:19:00 PM
Aromatic Hydrocarbon (C12-C16)	606	12.1		mg/Kg-dry	1	3/27/2020 1:19:00 PM
Aromatic Hydrocarbon (C16-C21)	1,230	121	D	mg/Kg-dry	10	3/27/2020 11:06:00 PM
Aromatic Hydrocarbon (C21-C34)	253	12.1		mg/Kg-dry	1	3/27/2020 1:19:00 PM
Surr: 1-Chlorooctadecane	82.2	60 - 140		%Rec	1	3/26/2020 7:12:00 PM
Surr: o-Terphenyl	113	60 - 140		%Rec	1	3/27/2020 1:19:00 PM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27868		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	34.5	D	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Aliphatic Hydrocarbon (C6-C8)	248	49.3	D	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Aliphatic Hydrocarbon (C8-C10)	544	27.6	D	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Aliphatic Hydrocarbon (C10-C12)	796	29.6	D	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Aromatic Hydrocarbon (C8-C10)	505	59.1	D	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Aromatic Hydrocarbon (C10-C12)	1,670	11.8	DE	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Aromatic Hydrocarbon (C10-C12)	1,870	59.1	DH	mg/Kg-dry	100	3/27/2020 12:37:26 PM
Aromatic Hydrocarbon (C12-C13)	4,290	690	DH	mg/Kg-dry	100	3/27/2020 12:37:26 PM
Aromatic Hydrocarbon (C12-C13)	2,360	138	DE	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Benzene	ND	11.8	D	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Toluene	ND	13.8	D	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Ethylbenzene	ND	13.8	D	mg/Kg-dry	20	3/25/2020 2:13:10 AM
m,p-Xylene	ND	25.6	D	mg/Kg-dry	20	3/25/2020 2:13:10 AM
o-Xylene	ND	11.8	D	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Naphthalene	48.9	9.86	D	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Methyl tert-butyl ether (MTBE)	ND	9.86	DQ	mg/Kg-dry	20	3/25/2020 2:13:10 AM
Surr: 1,4-Difluorobenzene	101	65 - 140	D	%Rec	20	3/25/2020 2:13:10 AM
Surr: Bromofluorobenzene	106	65 - 140	D	%Rec	20	3/25/2020 2:13:10 AM

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/12/2020 12:25:00 PM
Project: 003244
Lab ID: 2003268-017
Matrix: Soil
Client Sample ID: **OIP-67-11-12**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27868		Analyst: CR

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria
E - Estimated value. The amount exceeds the linear working range of the instrument.
Diluted due to matrix.
Analyte detections should be confirmed by GCMS.

Sample Moisture (Percent Moisture)				Batch ID: R58217		Analyst: EH
Percent Moisture	23.4	0.500		wt%	1	3/24/2020 8:31:55 AM

Client: Friedman & Bruya
Collection Date: 3/12/2020 9:25:00 AM
Project: 003244
Lab ID: 2003268-018
Matrix: Soil
Client Sample ID: **MW-39-13-14**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	199	19.9	*	mg/Kg-dry	1	3/26/2020 9:23:00 PM
Aliphatic Hydrocarbon (C10-C12)	888	9.96		mg/Kg-dry	1	3/26/2020 9:23:00 PM
Aliphatic Hydrocarbon (C12-C16)	4,300	99.6	D	mg/Kg-dry	10	3/28/2020 6:21:00 AM
Aliphatic Hydrocarbon (C16-C21)	4,570	99.6	D	mg/Kg-dry	10	3/28/2020 6:21:00 AM
Aliphatic Hydrocarbon (C21-C34)	629	9.96	*	mg/Kg-dry	1	3/26/2020 9:23:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	9.96	*	mg/Kg-dry	1	3/27/2020 2:03:00 PM
Aromatic Hydrocarbon (C10-C12)	131	9.96		mg/Kg-dry	1	3/27/2020 2:03:00 PM
Aromatic Hydrocarbon (C12-C16)	1,040	99.6	D	mg/Kg-dry	10	3/27/2020 11:49:00 PM
Aromatic Hydrocarbon (C16-C21)	3,290	99.6	D	mg/Kg-dry	10	3/27/2020 11:49:00 PM
Aromatic Hydrocarbon (C21-C34)	409	9.96		mg/Kg-dry	1	3/27/2020 2:03:00 PM
Surr: 1-Chlorooctadecane	94.8	60 - 140		%Rec	1	3/26/2020 9:23:00 PM
Surr: o-Terphenyl	96.6	60 - 140		%Rec	1	3/27/2020 2:03:00 PM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27868		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	15.4	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Aliphatic Hydrocarbon (C6-C8)	33.1	22.0	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Aliphatic Hydrocarbon (C8-C10)	57.3	12.3	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Aliphatic Hydrocarbon (C10-C12)	260	13.2	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Aromatic Hydrocarbon (C8-C10)	62.9	26.4	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Aromatic Hydrocarbon (C10-C12)	522	5.27	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Aromatic Hydrocarbon (C12-C13)	2,680	615	DH	mg/Kg-dry	100	3/27/2020 1:19:59 PM
Aromatic Hydrocarbon (C12-C13)	1,210	61.5	DE	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Benzene	ND	5.27	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Toluene	ND	6.15	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Ethylbenzene	ND	6.15	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
m,p-Xylene	ND	11.4	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
o-Xylene	ND	5.27	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Naphthalene	21.5	4.39	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Methyl tert-butyl ether (MTBE)	ND	4.39	D	mg/Kg-dry	10	3/25/2020 5:45:38 AM
Surr: 1,4-Difluorobenzene	97.5	65 - 140	D	%Rec	10	3/25/2020 5:45:38 AM
Surr: Bromofluorobenzene	101	65 - 140	D	%Rec	10	3/25/2020 5:45:38 AM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.
Analyte detections should be confirmed by GCMS.

Analytical Report

Work Order: **2003268**
Date Reported: **3/31/2020**

Client: Friedman & Bruya
Collection Date: 3/12/2020 9:25:00 AM
Project: 003244
Lab ID: 2003268-018
Matrix: Soil
Client Sample ID: **MW-39-13-14**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58217		Analyst: EH
Percent Moisture	13.9	0.500		wt%	1	3/24/2020 8:31:55 AM

Client: Friedman & Bruya
Collection Date: 3/13/2020 9:09:00 AM
Project: 003244
Lab ID: 2003268-019
Matrix: Soil
Client Sample ID: **OIP-20-11-11.5**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27833		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	71.3	28.2	*	mg/Kg-dry	1	3/26/2020 10:06:00 PM
Aliphatic Hydrocarbon (C10-C12)	64.3	14.1		mg/Kg-dry	1	3/26/2020 10:06:00 PM
Aliphatic Hydrocarbon (C12-C16)	31.8	14.1		mg/Kg-dry	1	3/26/2020 10:06:00 PM
Aliphatic Hydrocarbon (C16-C21)	ND	14.1		mg/Kg-dry	1	3/26/2020 10:06:00 PM
Aliphatic Hydrocarbon (C21-C34)	ND	14.1		mg/Kg-dry	1	3/26/2020 10:06:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	14.1	*	mg/Kg-dry	1	3/27/2020 4:32:00 PM
Aromatic Hydrocarbon (C10-C12)	131	14.1		mg/Kg-dry	1	3/27/2020 4:32:00 PM
Aromatic Hydrocarbon (C12-C16)	108	14.1		mg/Kg-dry	1	3/27/2020 4:32:00 PM
Aromatic Hydrocarbon (C16-C21)	20.1	14.1		mg/Kg-dry	1	3/27/2020 4:32:00 PM
Aromatic Hydrocarbon (C21-C34)	20.1	14.1		mg/Kg-dry	1	3/27/2020 4:32:00 PM
Surr: 1-Chlorooctadecane	67.7	60 - 140		%Rec	1	3/26/2020 10:06:00 PM
Surr: o-Terphenyl	98.2	60 - 140		%Rec	1	3/27/2020 4:32:00 PM

NOTES:
* - Flagged value is not within established control limits.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27868		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	ND	1.69		mg/Kg-dry	1	3/25/2020 10:00:35 AM
Aliphatic Hydrocarbon (C6-C8)	25.8	2.41		mg/Kg-dry	1	3/25/2020 10:00:35 AM
Aliphatic Hydrocarbon (C8-C10)	55.6	1.35		mg/Kg-dry	1	3/25/2020 10:00:35 AM
Aliphatic Hydrocarbon (C10-C12)	119	14.5	D	mg/Kg-dry	10	3/25/2020 6:28:01 AM
Aromatic Hydrocarbon (C8-C10)	50.8	2.90		mg/Kg-dry	1	3/25/2020 10:00:35 AM
Aromatic Hydrocarbon (C10-C12)	274	5.80	D	mg/Kg-dry	10	3/25/2020 6:28:01 AM
Aromatic Hydrocarbon (C12-C13)	279	67.6	D	mg/Kg-dry	10	3/25/2020 6:28:01 AM
Benzene	ND	0.580		mg/Kg-dry	1	3/25/2020 10:00:35 AM
Toluene	0.730	0.676		mg/Kg-dry	1	3/25/2020 10:00:35 AM
Ethylbenzene	ND	0.676		mg/Kg-dry	1	3/25/2020 10:00:35 AM
m,p-Xylene	ND	1.26		mg/Kg-dry	1	3/25/2020 10:00:35 AM
o-Xylene	0.876	0.580		mg/Kg-dry	1	3/25/2020 10:00:35 AM
Naphthalene	10.5	0.483		mg/Kg-dry	1	3/25/2020 10:00:35 AM
Methyl tert-butyl ether (MTBE)	ND	0.483		mg/Kg-dry	1	3/25/2020 10:00:35 AM
Surr: 1,4-Difluorobenzene	104	65 - 140		%Rec	1	3/25/2020 10:00:35 AM
Surr: Bromofluorobenzene	129	65 - 140		%Rec	1	3/25/2020 10:00:35 AM

NOTES:
Analyte detections should be confirmed by GCMS.

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58217		Analyst: EH
Percent Moisture	34.2	0.500		wt%	1	3/24/2020 8:31:55 AM

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-27833** SampType: **MBLK** Units: **mg/Kg** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **MBLKS** Batch ID: **27833** Analysis Date: **3/24/2020** SeqNo: **1164091**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									*
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	75.5		100.0		75.5	60	140				

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **LCS-27833** SampType: **LCS** Units: **mg/Kg** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **LCSS** Batch ID: **27833** Analysis Date: **3/24/2020** SeqNo: **1164090**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	118	20.0	250.0	0	47.3	70	130				S
Aliphatic Hydrocarbon (C10-C12)	95.9	10.0	125.0	0	76.8	70	130				
Aliphatic Hydrocarbon (C12-C16)	110	10.0	125.0	0	88.4	70	130				
Aliphatic Hydrocarbon (C16-C21)	110	10.0	125.0	0	87.9	70	130				
Aliphatic Hydrocarbon (C21-C34)	222	10.0	125.0	0	178	70	130				S
Surr: 1-Chlorooctadecane	84.0		100.0		84.0	60	140				

NOTES:
S - Outlying spike recovery observed (high bias). Detections will be qualified with a *.
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **2003268-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **OIP-47-17** Batch ID: **27833** Analysis Date: **3/24/2020** SeqNo: **1164085**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	42.1	26.9						31.62	28.5	25	*
Aliphatic Hydrocarbon (C10-C12)	19.9	13.4						19.07	4.08	25	
Aliphatic Hydrocarbon (C12-C16)	ND	13.4						0		25	
Aliphatic Hydrocarbon (C16-C21)	ND	13.4						0		25	
Aliphatic Hydrocarbon (C21-C34)	ND	13.4						0		25	

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2003268-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **OIP-47-17** Batch ID: **27833** Analysis Date: **3/24/2020** SeqNo: **1164085**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Surr: 1-Chlorooctadecane	90.0		134.4		67.0	60	140		0		

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **2003268-002AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **OIP-47-11-12** Batch ID: **27833** Analysis Date: **3/25/2020** SeqNo: **1164092**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	210	24.1	300.8	21.69	62.5	70	130				S
Aliphatic Hydrocarbon (C10-C12)	140	12.0	150.4	16.47	82.0	70	130				
Aliphatic Hydrocarbon (C12-C16)	143	12.0	150.4	4.580	92.2	70	130				
Aliphatic Hydrocarbon (C16-C21)	130	12.0	150.4	3.707	84.0	70	130				
Aliphatic Hydrocarbon (C21-C34)	224	12.0	150.4	0	149	70	130				S
Surr: 1-Chlorooctadecane	93.1		120.3		77.4	60	140				

NOTES:
S - Outlying spike recovery(ies) observed.

Sample ID: **2003268-002AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **OIP-47-11-12** Batch ID: **27833** Analysis Date: **3/25/2020** SeqNo: **1164093**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	245	26.8	335.4	21.69	66.5	70	130	209.6	15.5	30	S
Aliphatic Hydrocarbon (C10-C12)	176	13.4	167.7	16.47	95.4	70	130	139.8	23.1	30	
Aliphatic Hydrocarbon (C12-C16)	188	13.4	167.7	4.580	109	70	130	143.3	27.0	30	
Aliphatic Hydrocarbon (C16-C21)	164	13.4	167.7	3.707	95.8	70	130	130.0	23.4	30	
Aliphatic Hydrocarbon (C21-C34)	175	13.4	167.7	0	104	70	130	224.5	24.7	30	
Surr: 1-Chlorooctadecane	101		134.2		75.4	60	140		0		

NOTES:
S - Outlying spike recovery(ies) observed.

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-27833** SampType: **MBLK** Units: **mg/Kg** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **MBLKS** Batch ID: **27833** Analysis Date: **3/25/2020** SeqNo: **1164643**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	10.0									*
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	93.9		100.0		93.9	60	140				

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **LCS-27833** SampType: **LCS** Units: **mg/Kg** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **LCSS** Batch ID: **27833** Analysis Date: **3/25/2020** SeqNo: **1164642**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	154	10.0	250.0	0	61.6	70	130				S
Aromatic Hydrocarbon (C10-C12)	122	10.0	125.0	0	97.7	70	130				
Aromatic Hydrocarbon (C12-C16)	151	10.0	125.0	0	121	70	130				
Aromatic Hydrocarbon (C16-C21)	151	10.0	125.0	0	121	70	130				
Aromatic Hydrocarbon (C21-C34)	116	10.0	125.0	0	93.1	70	130				
Surr: o-Terphenyl	119		100.0		119	60	140				

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **2003268-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **OIP-47-17** Batch ID: **27833** Analysis Date: **3/26/2020** SeqNo: **1164636**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	13.4						0		25	*
Aromatic Hydrocarbon (C10-C12)	21.0	13.4						27.47	26.8	25	
Aromatic Hydrocarbon (C12-C16)	17.4	13.4						14.19	20.1	25	
Aromatic Hydrocarbon (C16-C21)	ND	13.4						17.84	65.7	25	
Aromatic Hydrocarbon (C21-C34)	ND	13.4						26.96	69.1	25	R
Surr: o-Terphenyl	116		134.4		86.1	60	140		0		

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2003268-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **OIP-47-17** Batch ID: **27833** Analysis Date: **3/26/2020** SeqNo: **1164636**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
R - High RPD due to low analyte concentration. In this range, high RPD's may be expected.
* - Flagged value is not within established control limits.

Sample ID: **2003268-002AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **OIP-47-11-12** Batch ID: **27833** Analysis Date: **3/26/2020** SeqNo: **1164644**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	167	12.0	300.8	0	55.5	70	130				S
Aromatic Hydrocarbon (C10-C12)	155	12.0	150.4	15.63	92.5	70	130				
Aromatic Hydrocarbon (C12-C16)	168	12.0	150.4	16.23	101	70	130				
Aromatic Hydrocarbon (C16-C21)	164	12.0	150.4	9.897	102	70	130				
Aromatic Hydrocarbon (C21-C34)	155	12.0	150.4	0	103	70	130				
Surr: o-Terphenyl	115		120.3		95.6	60	140				

NOTES:
S - Outlying spike recovery(ies) observed.

Sample ID: **2003268-002AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **OIP-47-11-12** Batch ID: **27833** Analysis Date: **3/26/2020** SeqNo: **1164645**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	145	13.4	335.4	0	43.1	70	130	166.9	14.3	30	S
Aromatic Hydrocarbon (C10-C12)	145	13.4	167.7	15.63	77.3	70	130	154.8	6.38	30	
Aromatic Hydrocarbon (C12-C16)	172	13.4	167.7	16.23	93.0	70	130	168.4	2.31	30	
Aromatic Hydrocarbon (C16-C21)	173	13.4	167.7	9.897	97.4	70	130	163.7	5.64	30	
Aromatic Hydrocarbon (C21-C34)	173	13.4	167.7	0	103	70	130	155.5	10.9	30	
Surr: o-Terphenyl	132		134.2		98.3	60	140		0		

NOTES:
S - Outlying spike recovery(ies) observed.

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2003276-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **BATCH** Batch ID: **27833** Analysis Date: **3/26/2020** SeqNo: **1165064**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	59.8	20.0						28.54	70.8	25	R*
Aliphatic Hydrocarbon (C10-C12)	187	10.0						155.9	18.3	25	
Aliphatic Hydrocarbon (C12-C16)	1,060	10.0						959.3	9.55	25	E
Aliphatic Hydrocarbon (C16-C21)	775	10.0						708.6	8.96	25	
Aliphatic Hydrocarbon (C21-C34)	123	10.0						125.3	2.17	25	*
Surr: 1-Chlorooctadecane	87.5		100.0		87.4	60	140		0		

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.
* - Flagged value is not within established control limits.
R - High RPD due to suspected sample inhomogeneity.

Sample ID: **2003276-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/19/2020** RunNo: **58266**
Client ID: **BATCH** Batch ID: **27833** Analysis Date: **3/27/2020** SeqNo: **1165601**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	10.0						0		25	*
Aromatic Hydrocarbon (C10-C12)	31.6	10.0						27.76	13.1	25	
Aromatic Hydrocarbon (C12-C16)	387	10.0						384.0	0.663	25	
Aromatic Hydrocarbon (C16-C21)	621	10.0						610.9	1.71	25	
Aromatic Hydrocarbon (C21-C34)	48.0	10.0						52.30	8.58	25	
Surr: o-Terphenyl	84.3		100.0		84.3	60	140		0		

NOTES:
* - Flagged value is not within established control limits.

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-27933** SampType: **MBLK** Units: **%-dry** Prep Date: **3/30/2020** RunNo: **58354**
Client ID: **MBLKS** Batch ID: **27933** Analysis Date: **3/30/2020** SeqNo: **1165871**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.0750									

Sample ID: **LCS-27933** SampType: **LCS** Units: **%-dry** Prep Date: **3/30/2020** RunNo: **58354**
Client ID: **LCSS** Batch ID: **27933** Analysis Date: **3/30/2020** SeqNo: **1165872**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.04	0.0750	1.000	0	104	80	120				

Sample ID: **2003359-001ADUP** SampType: **DUP** Units: **%-dry** Prep Date: **3/30/2020** RunNo: **58354**
Client ID: **BATCH** Batch ID: **27933** Analysis Date: **3/30/2020** SeqNo: **1165874**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.56	0.0750						1.987	24.2	20	R

NOTES:
R - High RPD due to suspected sample inhomogeneity. The method is in control as indicated by the Laboratory Control Sample (LCS).

Sample ID: **2003359-002AMS** SampType: **MS** Units: **%-dry** Prep Date: **3/30/2020** RunNo: **58354**
Client ID: **BATCH** Batch ID: **27933** Analysis Date: **3/30/2020** SeqNo: **1165876**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.20	0.0750	1.000	0.7080	48.7	75	125				S

NOTES:
S - Outlying spike recovery(ies) observed. A duplicate analysis was performed and recovered within range.

Sample ID: **2003359-002AMSD** SampType: **MSD** Units: **%-dry** Prep Date: **3/30/2020** RunNo: **58354**
Client ID: **BATCH** Batch ID: **27933** Analysis Date: **3/30/2020** SeqNo: **1165877**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.63	0.0750	1.000	0.7080	92.5	75	125	1.195	31.0	20	R

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **2003359-002AMSD**	SampType: **MSD**			Units: **%-dry**		Prep Date: **3/30/2020**			RunNo: **58354**		
Client ID: **BATCH**	Batch ID: **27933**					Analysis Date: **3/30/2020**			SeqNo: **1165877**		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
R - High RPD observed. The method is in control as indicated by the LCS.

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Total Organic Carbon by EPA 9060

Sample ID: **MB-27879**	SampType: **MBLK**	Units: **%-dry**	Prep Date: **3/24/2020**	RunNo: **58267**
Client ID: **MBLKS**	Batch ID: **27879**		Analysis Date: **3/25/2020**	SeqNo: **1164107**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	0.377	0.0750									

Sample ID: **LCS-27879**	SampType: **LCS**	Units: **%-dry**	Prep Date: **3/24/2020**	RunNo: **58267**
Client ID: **LCSS**	Batch ID: **27879**		Analysis Date: **3/25/2020**	SeqNo: **1164108**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.28	0.0750	1.000	0	128	80	120				BS

Sample ID: **2003268-008ADUP**	SampType: **DUP**	Units: **%-dry**	Prep Date: **3/24/2020**	RunNo: **58267**
Client ID: **OIP-46-8**	Batch ID: **27879**		Analysis Date: **3/25/2020**	SeqNo: **1164110**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.0750						0		20	

Sample ID: **2003268-010AMS**	SampType: **MS**	Units: **%-dry**	Prep Date: **3/24/2020**	RunNo: **58267**
Client ID: **OIP-68-14-14.5**	Batch ID: **27879**		Analysis Date: **3/25/2020**	SeqNo: **1164112**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.35	0.0750	1.000	0.1720	118	75	125				B

Sample ID: **2003268-010AMSD**	SampType: **MSD**	Units: **%-dry**	Prep Date: **3/24/2020**	RunNo: **58267**
Client ID: **OIP-68-14-14.5**	Batch ID: **27879**		Analysis Date: **3/25/2020**	SeqNo: **1164113**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1.42	0.0750	1.000	0.1720	125	75	125	1.349	5.13	20	B

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-27868** SampType: **LCS** Units: **mg/Kg** Prep Date: **3/23/2020** RunNo: **58335**
Client ID: **LCSS** Batch ID: **27868** Analysis Date: **3/24/2020** SeqNo: **1165784**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	31.6	1.75	30.00	0	105	70	130				
Aliphatic Hydrocarbon (C6-C8)	9.86	2.50	10.00	0	98.6	70	130				
Aliphatic Hydrocarbon (C8-C10)	10.4	1.40	10.00	0	104	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.2	1.50	10.00	0	102	70	130				
Aromatic Hydrocarbon (C8-C10)	40.6	3.00	40.00	0	102	70	130				
Aromatic Hydrocarbon (C10-C12)	10.6	0.600	10.00	0	106	70	130				
Aromatic Hydrocarbon (C12-C13)	10.1	7.00	10.00	0	101	70	130				
Benzene	10.2	0.600	10.00	0	102	70	130				
Toluene	10.2	0.700	10.00	0	102	70	130				
Ethylbenzene	10.3	0.700	10.00	0	103	70	130				
m,p-Xylene	20.7	1.30	20.00	0	104	70	130				
o-Xylene	10.3	0.600	10.00	0	103	70	130				
Naphthalene	9.08	0.500	10.00	0	90.8	70	130				
Methyl tert-butyl ether (MTBE)	9.49	0.500	10.00	0	94.9	70	130				
Surr: 1,4-Difluorobenzene	2.45		2.500		98.0	65	140				
Surr: Bromofluorobenzene	2.42		2.500		96.8	65	140				

Sample ID: **LCSD-27868** SampType: **LCSD** Units: **mg/Kg** Prep Date: **3/23/2020** RunNo: **58335**
Client ID: **LCSS02** Batch ID: **27868** Analysis Date: **3/24/2020** SeqNo: **1165785**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	30.4	1.75	30.00	0	101	70	130	31.58	3.84	20	
Aliphatic Hydrocarbon (C6-C8)	9.78	2.50	10.00	0	97.8	70	130	9.856	0.810	20	
Aliphatic Hydrocarbon (C8-C10)	10.6	1.40	10.00	0	106	70	130	10.43	1.23	20	
Aliphatic Hydrocarbon (C10-C12)	10.3	1.50	10.00	0	103	70	130	10.21	0.429	20	
Aromatic Hydrocarbon (C8-C10)	39.1	3.00	40.00	0	97.8	70	130	40.63	3.78	20	
Aromatic Hydrocarbon (C10-C12)	9.43	0.600	10.00	0	94.3	70	130	10.63	11.9	20	
Aromatic Hydrocarbon (C12-C13)	10.6	7.00	10.00	0	106	70	130	10.10	5.02	20	
Benzene	9.73	0.600	10.00	0	97.3	70	130	10.24	5.04	20	
Toluene	9.76	0.700	10.00	0	97.6	70	130	10.22	4.65	20	

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCSD-27868** SampType: **LCSD** Units: **mg/Kg** Prep Date: **3/23/2020** RunNo: **58335**
Client ID: **LCSS02** Batch ID: **27868** Analysis Date: **3/24/2020** SeqNo: **1165785**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	9.78	0.700	10.00	0	97.8	70	130	10.30	5.21	20	
m,p-Xylene	19.7	1.30	20.00	0	98.7	70	130	20.72	4.85	20	
o-Xylene	9.87	0.600	10.00	0	98.7	70	130	10.31	4.30	20	
Naphthalene	8.68	0.500	10.00	0	86.8	70	130	9.083	4.57	20	
Methyl tert-butyl ether (MTBE)	8.59	0.500	10.00	0	85.9	70	130	9.489	10.0	20	
Surr: 1,4-Difluorobenzene	2.44		2.500		97.6	65	140		0		
Surr: Bromofluorobenzene	2.40		2.500		96.1	65	140		0		

Sample ID: **MB-27868** SampType: **MBLK** Units: **mg/Kg** Prep Date: **3/23/2020** RunNo: **58335**
Client ID: **MBLKS** Batch ID: **27868** Analysis Date: **3/24/2020** SeqNo: **1165786**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.75		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	1.40		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	1.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	3.00		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	0.600		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	7.00		0	0						
Benzene	ND	0.600		0	0						
Toluene	ND	0.700		0	0						
Ethylbenzene	ND	0.700		0	0						
m,p-Xylene	ND	1.30		0	0						
o-Xylene	ND	0.600		0	0						
Naphthalene	ND	0.500		0	0						
Methyl tert-butyl ether (MTBE)	ND	0.500		0	0						Q
Surr: 1,4-Difluorobenzene	2.36		2.500		94.4	65	140				
Surr: Bromofluorobenzene	2.45		2.500		98.0	65	140				

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2003268-015BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/23/2020** RunNo: **58335**
Client ID: **OIP-15-20-21** Batch ID: **27868** Analysis Date: **3/24/2020** SeqNo: **1165767**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.78		0	0			0		25	
Aliphatic Hydrocarbon (C6-C8)	ND	2.54		0	0			0		25	
Aliphatic Hydrocarbon (C8-C10)	ND	1.42		0	0			0		25	
Aliphatic Hydrocarbon (C10-C12)	ND	1.52		0	0			0		25	
Aromatic Hydrocarbon (C8-C10)	ND	3.05		0	0			0		25	
Aromatic Hydrocarbon (C10-C12)	ND	0.609		0	0			0		25	
Aromatic Hydrocarbon (C12-C13)	ND	7.11		0	0			0		25	
Benzene	ND	0.609		0	0			0		25	
Toluene	ND	0.711		0	0			0		25	
Ethylbenzene	ND	0.711		0	0			0		25	
m,p-Xylene	ND	1.32		0	0			0		25	
o-Xylene	ND	0.609		0	0			0		25	
Naphthalene	ND	0.508		0	0			0		25	
Methyl tert-butyl ether (MTBE)	ND	0.508		0	0			0		25	Q
Surr: 1,4-Difluorobenzene	2.48		2.539		97.7	65	140		0		
Surr: Bromofluorobenzene	2.57		2.539		101	65	140		0		

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Sample ID: **2003360-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/23/2020** RunNo: **58335**
Client ID: **BATCH** Batch ID: **27868** Analysis Date: **3/24/2020** SeqNo: **1165780**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.43		0	0			0		25	
Aliphatic Hydrocarbon (C6-C8)	ND	2.04		0	0			0		25	
Aliphatic Hydrocarbon (C8-C10)	6.77	1.14		0	0			4.503	40.2	25	R
Aliphatic Hydrocarbon (C10-C12)	33.4	1.22		0	0			18.61	57.0	25	R
Aromatic Hydrocarbon (C8-C10)	3.80	2.45		0	0			4.605	19.2	25	
Aromatic Hydrocarbon (C10-C12)	27.7	0.489		0	0			32.32	15.3	25	
Aromatic Hydrocarbon (C12-C13)	7.25	5.71		0	0			7.398	2.03	25	
Benzene	ND	0.489		0	0			0		25	

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2003360-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/23/2020** RunNo: **58335**
Client ID: **BATCH** Batch ID: **27868** Analysis Date: **3/24/2020** SeqNo: **1165780**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Toluene	ND	0.571		0	0			0		25	
Ethylbenzene	ND	0.571		0	0			0		25	
m,p-Xylene	ND	1.06		0	0			0		25	
o-Xylene	ND	0.489		0	0			0		25	
Naphthalene	0.738	0.408		0	0			1.602	73.9	25	R
Methyl tert-butyl ether (MTBE)	ND	0.408		0	0			0		25	Q
Surr: 1,4-Difluorobenzene	1.99		2.038		97.8	65	140		0		
Surr: Bromofluorobenzene	2.15		2.038		105	65	140		0		

NOTES:
R - High RPD observed. The method is in control as indicated by the LCS.
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-27816** SampType: **LCS** Units: **mg/Kg** Prep Date: **3/18/2020** RunNo: **58327**
Client ID: **LCSS** Batch ID: **27816** Analysis Date: **3/19/2020** SeqNo: **1165365**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	34.2	1.75	30.00	0	114	70	130				
Aliphatic Hydrocarbon (C6-C8)	9.69	2.50	10.00	0	96.9	70	130				
Aliphatic Hydrocarbon (C8-C10)	10.2	1.40	10.00	0	102	70	130				
Aliphatic Hydrocarbon (C10-C12)	10.8	1.50	10.00	0	108	70	130				
Aromatic Hydrocarbon (C8-C10)	46.0	3.00	40.00	0	115	70	130				
Aromatic Hydrocarbon (C10-C12)	10.0	0.600	10.00	0	100	70	130				
Aromatic Hydrocarbon (C12-C13)	10.8	7.00	10.00	0	108	70	130				
Benzene	11.7	0.600	10.00	0	117	70	130				
Toluene	11.8	0.700	10.00	0	118	70	130				
Ethylbenzene	11.7	0.700	10.00	0	117	70	130				
m,p-Xylene	23.5	1.30	20.00	0	117	70	130				
o-Xylene	11.4	0.600	10.00	0	114	70	130				
Naphthalene	7.20	0.500	10.00	0	72.0	70	130				
Methyl tert-butyl ether (MTBE)	11.5	0.500	10.00	0	115	70	130				
Surr: 1,4-Difluorobenzene	2.86		2.500		114	65	140				
Surr: Bromofluorobenzene	2.65		2.500		106	65	140				

Sample ID: **LCSD-27816** SampType: **LCSD** Units: **mg/Kg** Prep Date: **3/18/2020** RunNo: **58327**
Client ID: **LCSS02** Batch ID: **27816** Analysis Date: **3/19/2020** SeqNo: **1165366**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	35.7	1.75	30.00	0	119	70	130	34.18	4.48	20	
Aliphatic Hydrocarbon (C6-C8)	10.3	2.50	10.00	0	103	70	130	9.691	5.97	20	
Aliphatic Hydrocarbon (C8-C10)	10.0	1.40	10.00	0	100	70	130	10.25	2.17	20	
Aliphatic Hydrocarbon (C10-C12)	10.0	1.50	10.00	0	100	70	130	10.79	7.58	20	
Aromatic Hydrocarbon (C8-C10)	46.5	3.00	40.00	0	116	70	130	46.02	1.02	20	
Aromatic Hydrocarbon (C10-C12)	9.87	0.600	10.00	0	98.7	70	130	10.04	1.68	20	
Aromatic Hydrocarbon (C12-C13)	10.8	7.00	10.00	0	108	70	130	10.77	0.0385	20	
Benzene	11.7	0.600	10.00	0	117	70	130	11.66	0.462	20	
Toluene	11.8	0.700	10.00	0	118	70	130	11.77	0.271	20	

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCSD-27816** SampType: **LCSD** Units: **mg/Kg** Prep Date: **3/18/2020** RunNo: **58327**
Client ID: **LCSS02** Batch ID: **27816** Analysis Date: **3/19/2020** SeqNo: **1165366**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	11.7	0.700	10.00	0	117	70	130	11.70	0.392	20	
m,p-Xylene	23.6	1.30	20.00	0	118	70	130	23.46	0.549	20	
o-Xylene	11.6	0.600	10.00	0	116	70	130	11.40	1.40	20	
Naphthalene	7.45	0.500	10.00	0	74.5	70	130	7.197	3.43	20	
Methyl tert-butyl ether (MTBE)	11.3	0.500	10.00	0	113	70	130	11.48	1.54	20	
Surr: 1,4-Difluorobenzene	2.85		2.500		114	65	140		0		
Surr: Bromofluorobenzene	2.67		2.500		107	65	140		0		

Sample ID: **MB-27816** SampType: **MBLK** Units: **mg/Kg** Prep Date: **3/18/2020** RunNo: **58327**
Client ID: **MBLKS** Batch ID: **27816** Analysis Date: **3/19/2020** SeqNo: **1165367**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.75		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	1.40		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	1.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	3.00		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	0.600		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	7.00		0	0						
Benzene	ND	0.600		0	0						
Toluene	ND	0.700		0	0						
Ethylbenzene	ND	0.700		0	0						
m,p-Xylene	ND	1.30		0	0						
o-Xylene	ND	0.600		0	0						
Naphthalene	ND	0.500		0	0						Q
Methyl tert-butyl ether (MTBE)	ND	0.500		0	0						
Surr: 1,4-Difluorobenzene	2.71		2.500		108	65	140				
Surr: Bromofluorobenzene	2.62		2.500		105	65	140				

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Work Order: 2003268
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2003268-009BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/18/2020** RunNo: **58327**
Client ID: **OIP-39-16.5-17** Batch ID: **27816** Analysis Date: **3/19/2020** SeqNo: **1165360**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.30		0	0			0		25	
Aliphatic Hydrocarbon (C6-C8)	1.94	1.86		0	0			2.117	8.47	25	
Aliphatic Hydrocarbon (C8-C10)	ND	1.04		0	0			0		25	
Aliphatic Hydrocarbon (C10-C12)	ND	1.12		0	0			0		25	
Aromatic Hydrocarbon (C8-C10)	ND	2.23		0	0			0		25	
Aromatic Hydrocarbon (C10-C12)	0.819	0.446		0	0			0.8446	3.07	25	
Aromatic Hydrocarbon (C12-C13)	ND	5.20		0	0			0		25	
Benzene	ND	0.446		0	0			0		25	
Toluene	ND	0.520		0	0			0		25	
Ethylbenzene	ND	0.520		0	0			0		25	
m,p-Xylene	ND	0.967		0	0			0		25	
o-Xylene	ND	0.446		0	0			0		25	
Naphthalene	ND	0.372		0	0			0		25	Q
Methyl tert-butyl ether (MTBE)	ND	0.372		0	0			0		25	
Surr: 1,4-Difluorobenzene	2.11		1.859		114	65	140		0		
Surr: Bromofluorobenzene	1.96		1.859		106	65	140		0		

NOTES:
Q - Indicates an analyte with a continuing calibration that does not meet established acceptance criteria

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2003268**
Logged by:	**Matt Langston**	Date Received:	**3/16/2020 2:13:00 PM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐	
2.	How was the sample delivered?	FedEx			

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐	
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐		
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐	
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐	
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐	
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐		
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐		
10.	Are samples properly preserved?	Yes ☑	No ☐		
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐	
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑	
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐		
14.	Does paperwork match bottle labels?	Yes ☑	No ☐		
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐		
16.	Is it clear what analyses were requested?	Yes ☑	No ☐		
17.	Were all holding times able to be met?	Yes ☑	No ☐		

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑	

Person Notified: _____ Date: _____

By Whom: _____ Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: _____

Client Instructions: _____

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler	2.3
Sample	2.9

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2003268

Page # _____ of 2

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont

PROJECT NAME/NO.	PO #
003244	B-143

REMARKS

F/S Deliverables

TURNAROUND TIME

☒ Standard TAT

☐ RUSH _____

Rush charges authorized by: _____

SAMPLE DISPOSAL

☐ Dispose after 30 days

☐ Return samples

☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TOC							Notes
01P-47-17		3/9/20	1535	soil	2		x	x								
01P-47-11-12		3/9/20	1505				x	x								
MW-33-12-12.5		3/9/20	1726				x	x								
MW-33-19.5-20		3/9/20	1740				x	x								
01P-23-14-15		3/10/20	0935				x	x								
01P-23-19-20		3/10/20	0945				x	x								
01P-23-23-24		3/10/20	0955		↓		x	x								
01P-46-8		3/10/20	0850		1				x							
01P-39-16.5-17		3/10/20	1402		2		x	x								
01P-68-14-14.5		3/11/20	1638		1				x							
01P-69-14.5-15		3/11/20	1540		1				x							
01P-54-18-19		3/11/20	0840		1				x							
01P-15-15-16		3/12/20	1500		2		x	x								

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman & Bruya	3/16/20	1316
Received by:	Carter Johnson	FAI	3/16/20	1413
Relinquished by:				
Received by:				

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2003268

Page # 2 of 2

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER Fremont

PROJECT NAME/NO.	PO #
003244	B-143

REMARKS

FIS Deliverables

TURNAROUND TIME

- [x] Standard TAT
- [ ] RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

- [ ] Dispose after 30 days
- [ ] Return samples
- [ ] Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	ANALYSES REQUESTED: Dioxins/Furans	EPH	VPH	TOC							Notes
GP-36-13-14		3/12/20	1347	Soil	2		X	X								
OIP-15-20-21		3/12/20	1520	Soil			X	X								
GP-36-16-17		3/12/20	1402	Soil			X	X								
OIP-67-11-12		3/12/20	1225	Soil			X	X								
MW-39-13-14		3/12/20	0925	Soil			X	X								
OIP-20-11-11.5		3/13/20	0909	Soil			X	X								

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Michael Erdahl	Friedman & Bruya	3/16/20	1316
Received by:	Carter Johnson	FAI	3/16/20	1413
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

April 16, 2020

Gabriel Cisneros, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Cisneros:

Included are the additional results from the testing of material submitted on March 13, 2020 from the POL-TPH, F&BI 003244 project. There are 3 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0416R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on March 13, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider POL-TPH, F&BI 003244 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
003244 -01	MW-40-10.5'-11'
003244 -02	MW-40-17D
003244 -03	MW-40-17'
003244 -04	MW-40-24-24.5
003244 -05	MW-40-1.0-1.5
003244 -06	OIP-49-10
003244 -07	OIP-49-17
003244 -08	OIP-47-2-3
003244 -09	OIP-47-25
003244 -10	OIP-47-17
003244 -11	OIP-47-11-12
003244 -12	OIP-31-17
003244 -13	OIP-31-20
003244 -14	GP-33-28-29
003244 -15	GP-33-14-14.5
003244 -16	GP-33-19.5-20
003244 -17	GP-33-24-25
003244 -18	GP-34-14-15
003244 -19	GP-34-GW-14-19
003244 -20	MW-33-12-12.5
003244 -21	MW-33-19.5-20
003244 -22	MW-33-22.5-23
003244 -23	MW-35-15.5-16
003244 -24	MW-34-15-15.5
003244 -25	MW-34-20-20.5
003244 -26	MW-34-24-24.5
003244 -27	MW-34-28-28.5
003244 -28	OIP-23-14-15
003244 -29	OIP-23-19-20
003244 -30	OIP-23-23-24
003244 -31	OIP-23-29.5-30
003244 -32	OIP-46-8
003244 -33	OIP-46-10-11
003244 -34	OIP-46-14
003244 -35	OIP-70-8
003244 -36	OIP-70-12-14
003244 -37	OIP-70-GW-10-15

CASE NARRATIVE (continued)

Laboratory ID	Floyd-Snider
003244 -38	OIP-57-14
003244 -39	OIP-39-15-15.5
003244 -40	OIP-39-16.5-17
003244 -41	OIP-39-21-22
003244 -42	GP-35-7-8
003244 -43	GP-35-16-17
003244 -44	OIP-04-4-5
003244 -45	OIP-04-15-16
003244 -46	OIP-04-GW-15-20
003244 -47	MW-36-25.5-26
003244 -48	MW-38-23.5-24
003244 -49	GP-31-14-15
003244 -50	OIP-72-10-11
003244 -51	OIP-72-16-17
003244 -52	GP-32-17.5-18.5
003244 -53	GP-32-GW-14-19
003244 -54	OIP-68-13.5-14
003244 -55	OIP-68-14-14.5
003244 -56	OIP-68-10-11
003244 -57	OIP-68D-10-11
003244 -58	OIP-68-GW-13-18
003244 -59	OIP-69-GW-12-17
003244 -60	OIP-69-14.5-15
003244 -61	OIP-69-11-12
003244 -62	OIP-54-15-16
003244 -63	OIP-54-18-19
003244 -64	GP-31-GW-13.5-18.5
003244 -65	OIP-02-14-15
003244 -66	OIP-02-GW-14.5-19.5
003244 -67	OIP-02D-GW-14.5-19.5
003244 -68	OIP-02-5-5.5
003244 -69	OIP-15-15-16
003244 -70	MW-37-27.5-28
003244 -71	MW-37-27.5-28 D
003244 -72	P3-0-0.5
003244 -73	P4-0-0.5
003244 -74	P5-0-0.5
003244 -75	P6-0.5-1.0
003244 -76	P6-0.5-1.0
003244 -77	OIP-64-14-15

CASE NARRATIVE (continued)

Laboratory ID	Floyd-Snider
003244 -78	GP-36-22-23
003244 -79	GP-36-13-14
003244 -80	OIP-15-20-21
003244 -81	GP-37-12-14
003244 -82	GP-37D-12-14
003244 -83	GP-36-16-17
003244 -84	OIP-15-23-24
003244 -85	OIP-15-GW-14-19
003244 -86	OIP-73-13-14
003244 -87	OIP-73D-13-14
003244 -88	OIP-73-9-10
003244 -89	OIP-67-11-12
003244 -90	OIP-67-GW-14-19
003244 -91	OIP-67-18-19
003244 -92	OIP-67-7-8
003244 -93	OIP-67-14.5-15
003244 -94	MW-39-2-4
003244 -95	MW-39-8-9
003244 -96	MW-39-13-14
003244 -97	MW-39-18.5-20
003244 -98	GP-38-11-11.5
003244 -99	OIP-18-19-19.5
003244 -100	OIP-20-11-11.5
003244 -101	OIP-20-19-19.5
003244 -102	OIP-19-19-20
003244 -103	OIP-21-18-19
003244 -104	OIP-06-27-28
003244 -105	OIP-06-29-30
003244 -106	OIP-06-GW-25-30
003244 -107	OIP-05-27-28
003244 -108	OIP-05-29-30
003244 -109	Trip BlanK

Sample OIP-67-14.5-15 was sent to Fremont Analytical for EPH and VPH analyses. The report is enclosed.

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya
Michael Erdahl
3012 16th Ave. W.
Seattle, WA 98119

RE: 003244
Work Order Number: 2003439

April 13, 2020

Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 3/30/2020 for the analyses presented in the following report.

Extractable Petroleum Hydrocarbons by NWEPH
Sample Moisture (Percent Moisture)
Volatile Petroleum Hydrocarbons by NWVPH

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *04/13/2020*

CLIENT: Friedman & Bruya
Project: 003244
Work Order: 2003439

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2003439-001	01P-67-14.5-15	03/12/2020 12:30 PM	03/30/2020 10:26 AM

Case Narrative

WO#: **2003439**
Date: **4/13/2020**

CLIENT: Friedman & Bruya
Project: 003244

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2003439**
Date Reported: **4/13/2020**

Client: Friedman & Bruya
Collection Date: 3/12/2020 12:30:00 PM
Project: 003244
Lab ID: 2003439-001
Matrix: Soil
Client Sample ID: **01P-67-14.5-15**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Extractable Petroleum Hydrocarbons by NWEPH				Batch ID: 27953		Analyst: DW
Aliphatic Hydrocarbon (C8-C10)	41.7	22.9	*H	mg/Kg-dry	1	4/9/2020 5:25:00 PM
Aliphatic Hydrocarbon (C10-C12)	62.4	11.5	H	mg/Kg-dry	1	4/9/2020 5:25:00 PM
Aliphatic Hydrocarbon (C12-C16)	205	11.5	H	mg/Kg-dry	1	4/9/2020 5:25:00 PM
Aliphatic Hydrocarbon (C16-C21)	231	11.5	H	mg/Kg-dry	1	4/9/2020 5:25:00 PM
Aliphatic Hydrocarbon (C21-C34)	21.8	11.5	H	mg/Kg-dry	1	4/9/2020 5:25:00 PM
Aromatic Hydrocarbon (C8-C10)	ND	11.5	*H	mg/Kg-dry	1	4/10/2020 12:53:00 AM
Aromatic Hydrocarbon (C10-C12)	13.9	11.5	H	mg/Kg-dry	1	4/10/2020 12:53:00 AM
Aromatic Hydrocarbon (C12-C16)	56.6	11.5	H	mg/Kg-dry	1	4/10/2020 12:53:00 AM
Aromatic Hydrocarbon (C16-C21)	185	11.5	H	mg/Kg-dry	1	4/10/2020 12:53:00 AM
Aromatic Hydrocarbon (C21-C34)	19.3	11.5	H	mg/Kg-dry	1	4/10/2020 12:53:00 AM
Surr: 1-Chlorooctadecane	66.1	60 - 140	H	%Rec	1	4/9/2020 5:25:00 PM
Surr: o-Terphenyl	76.0	60 - 140	H	%Rec	1	4/10/2020 12:53:00 AM

NOTES:
* - Flagged value is not within established control limits.

Volatile Petroleum Hydrocarbons by NWVPH				Batch ID: 27971		Analyst: CR
Aliphatic Hydrocarbon (C5-C6)	5.42	1.95	H	mg/Kg-dry	1	4/3/2020 3:03:31 AM
Aliphatic Hydrocarbon (C6-C8)	119	2.78	H	mg/Kg-dry	1	4/3/2020 3:03:31 AM
Aliphatic Hydrocarbon (C8-C10)	145	15.6	DH	mg/Kg-dry	10	4/3/2020 1:38:38 AM
Aliphatic Hydrocarbon (C10-C12)	234	16.7	DH	mg/Kg-dry	10	4/3/2020 1:38:38 AM
Aromatic Hydrocarbon (C8-C10)	118	33.4	DH	mg/Kg-dry	10	4/3/2020 1:38:38 AM
Aromatic Hydrocarbon (C10-C12)	438	6.68	DH	mg/Kg-dry	10	4/3/2020 1:38:38 AM
Aromatic Hydrocarbon (C12-C13)	776	77.9	DEH	mg/Kg-dry	10	4/3/2020 1:38:38 AM
Benzene	ND	0.668	H	mg/Kg-dry	1	4/3/2020 3:03:31 AM
Toluene	ND	0.779	H	mg/Kg-dry	1	4/3/2020 3:03:31 AM
Ethylbenzene	1.88	0.779	H	mg/Kg-dry	1	4/3/2020 3:03:31 AM
m,p-Xylene	ND	1.45	H	mg/Kg-dry	1	4/3/2020 3:03:31 AM
o-Xylene	2.60	0.668	H	mg/Kg-dry	1	4/3/2020 3:03:31 AM
Naphthalene	11.8	0.557	H	mg/Kg-dry	1	4/3/2020 3:03:31 AM
Methyl tert-butyl ether (MTBE)	ND	0.557	H	mg/Kg-dry	1	4/3/2020 3:03:31 AM
Surr: 1,4-Difluorobenzene	112	65 - 140	H	%Rec	1	4/3/2020 3:03:31 AM
Surr: Bromofluorobenzene	127	65 - 140	H	%Rec	1	4/3/2020 3:03:31 AM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.
Analyte detections should be confirmed by GCMS.

Analytical Report

Work Order: **2003439**
Date Reported: **4/13/2020**

Client: Friedman & Bruya
Collection Date: 3/12/2020 12:30:00 PM
Project: 003244
Lab ID: 2003439-001
Matrix: Soil
Client Sample ID: **01P-67-14.5-15**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Moisture)				Batch ID: R58366		Analyst: CJ
Percent Moisture	23.2	0.500		wt%	1	3/31/2020 12:32:09 PM

Work Order: 2003439
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-27953** SampType: **MBLK** Units: **mg/Kg** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **MBLKS** Batch ID: **27953** Analysis Date: **4/9/2020** SeqNo: **1169816**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	ND	20.0									*
Aliphatic Hydrocarbon (C10-C12)	ND	10.0									
Aliphatic Hydrocarbon (C12-C16)	ND	10.0									
Aliphatic Hydrocarbon (C16-C21)	ND	10.0									
Aliphatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: 1-Chlorooctadecane	76.3		100.0		76.3	60	140				

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **LCS-27953** SampType: **LCS** Units: **mg/Kg** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **LCSS** Batch ID: **27953** Analysis Date: **4/9/2020** SeqNo: **1169815**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	143	20.0	250.0	0	57.1	70	130				S
Aliphatic Hydrocarbon (C10-C12)	101	10.0	125.0	0	80.9	70	130				
Aliphatic Hydrocarbon (C12-C16)	109	10.0	125.0	0	87.1	70	130				
Aliphatic Hydrocarbon (C16-C21)	107	10.0	125.0	0	85.5	70	130				
Aliphatic Hydrocarbon (C21-C34)	102	10.0	125.0	0	81.5	70	130				
Surr: 1-Chlorooctadecane	86.9		100.0		86.9	60	140				

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **2003360-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **BATCH** Batch ID: **27953** Analysis Date: **4/9/2020** SeqNo: **1169814**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	39.4	24.0						19.53	67.5	25	*
Aliphatic Hydrocarbon (C10-C12)	15.0	12.0						5.153	97.9	25	
Aliphatic Hydrocarbon (C12-C16)	ND	12.0						0		25	
Aliphatic Hydrocarbon (C16-C21)	ND	12.0						0		25	
Aliphatic Hydrocarbon (C21-C34)	ND	12.0						0		25	
Surr: 1-Chlorooctadecane	76.4		120.0		63.7	60	140		0		

Work Order: 2003439
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2003360-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **BATCH** Batch ID: **27953** Analysis Date: **4/9/2020** SeqNo: **1169814**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **2003360-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **BATCH** Batch ID: **27953** Analysis Date: **4/9/2020** SeqNo: **1169817**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	160	23.3	291.1	19.53	48.3	70	130				S
Aliphatic Hydrocarbon (C10-C12)	95.4	11.6	145.5	5.153	62.0	70	130				S
Aliphatic Hydrocarbon (C12-C16)	112	11.6	145.5	0	77.1	70	130				
Aliphatic Hydrocarbon (C16-C21)	114	11.6	145.5	0	78.3	70	130				
Aliphatic Hydrocarbon (C21-C34)	125	11.6	145.5	0	86.2	70	130				
Surr: 1-Chlorooctadecane	83.7		116.4		71.9	60	140				

NOTES:
S - Outlying spike recovery observed (low bias).

Sample ID: **2003360-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **BATCH** Batch ID: **27953** Analysis Date: **4/9/2020** SeqNo: **1169818**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C8-C10)	147	22.3	279.3	19.53	45.7	70	130	160.0	8.42	30	S
Aliphatic Hydrocarbon (C10-C12)	102	11.2	139.6	5.153	69.7	70	130	95.40	7.13	30	S
Aliphatic Hydrocarbon (C12-C16)	120	11.2	139.6	0	86.2	70	130	112.3	6.96	30	
Aliphatic Hydrocarbon (C16-C21)	123	11.2	139.6	0	88.4	70	130	113.9	8.01	30	
Aliphatic Hydrocarbon (C21-C34)	132	11.2	139.6	0	94.2	70	130	125.5	4.71	30	
Surr: 1-Chlorooctadecane	89.3		111.7		80.0	60	140		0		

NOTES:
S - Outlying spike recovery observed (low bias).

Work Order: 2003439
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **MB-27953** SampType: **MBLK** Units: **mg/Kg** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **MBLKS** Batch ID: **27953** Analysis Date: **4/9/2020** SeqNo: **1169825**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	10.0									*
Aromatic Hydrocarbon (C10-C12)	ND	10.0									
Aromatic Hydrocarbon (C12-C16)	ND	10.0									
Aromatic Hydrocarbon (C16-C21)	ND	10.0									
Aromatic Hydrocarbon (C21-C34)	ND	10.0									
Surr: o-Terphenyl	101		100.0		101	60	140				

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **LCS-27953** SampType: **LCS** Units: **mg/Kg** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **LCSS** Batch ID: **27953** Analysis Date: **4/9/2020** SeqNo: **1169824**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	139	10.0	250.0	0	55.6	70	130				S
Aromatic Hydrocarbon (C10-C12)	115	10.0	125.0	0	91.9	70	130				
Aromatic Hydrocarbon (C12-C16)	130	10.0	125.0	0	104	70	130				
Aromatic Hydrocarbon (C16-C21)	136	10.0	125.0	0	109	70	130				
Aromatic Hydrocarbon (C21-C34)	93.9	10.0	125.0	0	75.1	70	130				
Surr: o-Terphenyl	106		100.0		106	60	140				

NOTES:
S - Outlying spike recovery observed (low bias). Samples will be qualified with a *.

Sample ID: **2003360-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **BATCH** Batch ID: **27953** Analysis Date: **4/9/2020** SeqNo: **1169823**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	ND	12.0						0		25	*
Aromatic Hydrocarbon (C10-C12)	ND	12.0						0		25	
Aromatic Hydrocarbon (C12-C16)	ND	12.0						0		25	
Aromatic Hydrocarbon (C16-C21)	ND	12.0						0		25	
Aromatic Hydrocarbon (C21-C34)	ND	12.0						0		25	
Surr: o-Terphenyl	91.5		120.0		76.2	60	140		0		

Work Order: 2003439
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Extractable Petroleum Hydrocarbons by NWEPH

Sample ID: **2003360-001ADUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **BATCH** Batch ID: **27953** Analysis Date: **4/9/2020** SeqNo: **1169823**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual

NOTES:
* - Flagged value is not within established control limits.

Sample ID: **2003360-001AMS** SampType: **MS** Units: **mg/Kg-dry** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **BATCH** Batch ID: **27953** Analysis Date: **4/9/2020** SeqNo: **1169826**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	139	11.6	291.1	0	47.8	70	130				S
Aromatic Hydrocarbon (C10-C12)	116	11.6	145.5	0	79.9	70	130				
Aromatic Hydrocarbon (C12-C16)	136	11.6	145.5	0	93.5	70	130				
Aromatic Hydrocarbon (C16-C21)	150	11.6	145.5	0	103	70	130				
Aromatic Hydrocarbon (C21-C34)	123	11.6	145.5	0	84.5	70	130				
Surr: o-Terphenyl	106		116.4		90.9	60	140				

NOTES:
S - Outlying spike recovery observed (low bias).

Sample ID: **2003360-001AMSD** SampType: **MSD** Units: **mg/Kg-dry** Prep Date: **3/31/2020** RunNo: **58545**
Client ID: **BATCH** Batch ID: **27953** Analysis Date: **4/10/2020** SeqNo: **1169827**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aromatic Hydrocarbon (C8-C10)	126	11.2	279.3	0	45.1	70	130	139.0	9.86	30	S
Aromatic Hydrocarbon (C10-C12)	104	11.2	139.6	0	74.3	70	130	116.3	11.4	30	
Aromatic Hydrocarbon (C12-C16)	127	11.2	139.6	0	90.8	70	130	136.0	6.99	30	
Aromatic Hydrocarbon (C16-C21)	138	11.2	139.6	0	98.9	70	130	149.9	8.19	30	
Aromatic Hydrocarbon (C21-C34)	119	11.2	139.6	0	84.9	70	130	122.9	3.64	30	
Surr: o-Terphenyl	99.3		111.7		88.8	60	140		0		

NOTES:
S - Outlying spike recovery observed (low bias).

Work Order: 2003439
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCS-27971** SampType: **LCS** Units: **mg/Kg** Prep Date: **4/2/2020** RunNo: **58459**
Client ID: **LCSS** Batch ID: **27971** Analysis Date: **4/2/2020** SeqNo: **1168168**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	34.2	1.75	30.00	0	114	70	130				
Aliphatic Hydrocarbon (C6-C8)	12.6	2.50	10.00	0	126	70	130				
Aliphatic Hydrocarbon (C8-C10)	11.4	1.40	10.00	0	114	70	130				
Aliphatic Hydrocarbon (C10-C12)	9.94	1.50	10.00	0	99.4	70	130				
Aromatic Hydrocarbon (C8-C10)	45.8	3.00	40.00	0	114	70	130				
Aromatic Hydrocarbon (C10-C12)	9.44	0.600	10.00	0	94.4	70	130				
Aromatic Hydrocarbon (C12-C13)	10.4	7.00	10.00	0	104	70	130				
Benzene	11.5	0.600	10.00	0	115	70	130				
Toluene	11.6	0.700	10.00	0	116	70	130				
Ethylbenzene	11.7	0.700	10.00	0	117	70	130				
m,p-Xylene	23.5	1.30	20.00	0	117	70	130				
o-Xylene	11.6	0.600	10.00	0	116	70	130				
Naphthalene	8.25	0.500	10.00	0	82.5	70	130				
Methyl tert-butyl ether (MTBE)	11.2	0.500	10.00	0	112	70	130				
Surr: 1,4-Difluorobenzene	2.45		2.500		98.1	65	140				
Surr: Bromofluorobenzene	2.42		2.500		96.6	65	140				

Sample ID: **LCSD-27971** SampType: **LCSD** Units: **mg/Kg** Prep Date: **4/2/2020** RunNo: **58459**
Client ID: **LCSS02** Batch ID: **27971** Analysis Date: **4/2/2020** SeqNo: **1168169**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	35.8	1.75	30.00	0	119	70	130	34.21	4.51	20	
Aliphatic Hydrocarbon (C6-C8)	10.6	2.50	10.00	0	106	70	130	12.60	16.9	20	
Aliphatic Hydrocarbon (C8-C10)	11.2	1.40	10.00	0	112	70	130	11.43	1.68	20	
Aliphatic Hydrocarbon (C10-C12)	10.9	1.50	10.00	0	109	70	130	9.939	9.05	20	
Aromatic Hydrocarbon (C8-C10)	45.3	3.00	40.00	0	113	70	130	45.79	0.988	20	
Aromatic Hydrocarbon (C10-C12)	10.4	0.600	10.00	0	104	70	130	9.443	9.57	20	
Aromatic Hydrocarbon (C12-C13)	10.5	7.00	10.00	0	105	70	130	10.39	1.12	20	
Benzene	11.4	0.600	10.00	0	114	70	130	11.51	1.35	20	
Toluene	11.5	0.700	10.00	0	115	70	130	11.64	1.41	20	

Work Order: 2003439
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **LCSD-27971** SampType: **LCSD** Units: **mg/Kg** Prep Date: **4/2/2020** RunNo: **58459**
Client ID: **LCSS02** Batch ID: **27971** Analysis Date: **4/2/2020** SeqNo: **1168169**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Ethylbenzene	11.5	0.700	10.00	0	115	70	130	11.69	1.55	20	
m,p-Xylene	23.1	1.30	20.00	0	116	70	130	23.47	1.55	20	
o-Xylene	11.5	0.600	10.00	0	115	70	130	11.55	0.649	20	
Naphthalene	8.20	0.500	10.00	0	82.0	70	130	8.252	0.688	20	
Methyl tert-butyl ether (MTBE)	10.8	0.500	10.00	0	108	70	130	11.16	3.04	20	
Surr: 1,4-Difluorobenzene	2.53		2.500		101	65	140		0		
Surr: Bromofluorobenzene	2.46		2.500		98.5	65	140		0		

Sample ID: **MB-27971** SampType: **MBLK** Units: **mg/Kg** Prep Date: **4/2/2020** RunNo: **58459**
Client ID: **MBLKS** Batch ID: **27971** Analysis Date: **4/2/2020** SeqNo: **1168170**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	1.75		0	0						
Aliphatic Hydrocarbon (C6-C8)	ND	2.50		0	0						
Aliphatic Hydrocarbon (C8-C10)	ND	1.40		0	0						
Aliphatic Hydrocarbon (C10-C12)	ND	1.50		0	0						
Aromatic Hydrocarbon (C8-C10)	ND	3.00		0	0						
Aromatic Hydrocarbon (C10-C12)	ND	0.600		0	0						
Aromatic Hydrocarbon (C12-C13)	ND	7.00		0	0						
Benzene	ND	0.600		0	0						
Toluene	ND	0.700		0	0						
Ethylbenzene	ND	0.700		0	0						
m,p-Xylene	ND	1.30		0	0						
o-Xylene	ND	0.600		0	0						
Naphthalene	ND	0.500		0	0						
Methyl tert-butyl ether (MTBE)	ND	0.500		0	0						
Surr: 1,4-Difluorobenzene	2.56		2.500		102	65	140				
Surr: Bromofluorobenzene	2.57		2.500		103	65	140				

Work Order: 2003439
CLIENT: Friedman & Bruya
Project: 003244

QC SUMMARY REPORT

Volatile Petroleum Hydrocarbons by NWVPH

Sample ID: **2003439-001BDUP** SampType: **DUP** Units: **mg/Kg-dry** Prep Date: **4/2/2020** RunNo: **58459**
Client ID: **01P-67-14.5-15** Batch ID: **27971** Analysis Date: **4/3/2020** SeqNo: **1168164**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aliphatic Hydrocarbon (C5-C6)	ND	19.5		0	0			0		25	DH
Aliphatic Hydrocarbon (C6-C8)	105	27.8		0	0			103.4	1.96	25	DH
Aliphatic Hydrocarbon (C8-C10)	148	15.6		0	0			145.2	1.82	25	DH
Aliphatic Hydrocarbon (C10-C12)	265	16.7		0	0			233.7	12.6	25	DH
Aromatic Hydrocarbon (C8-C10)	121	33.4		0	0			117.8	2.32	25	DH
Aromatic Hydrocarbon (C10-C12)	443	6.68		0	0			438.1	1.13	25	DH
Aromatic Hydrocarbon (C12-C13)	786	77.9		0	0			775.8	1.35	25	DH
Benzene	ND	6.68		0	0			0		25	DH
Toluene	ND	7.79		0	0			0		25	DH
Ethylbenzene	ND	7.79		0	0			0		25	DH
m,p-Xylene	ND	14.5		0	0			0		25	DH
o-Xylene	ND	6.68		0	0			0		25	DH
Naphthalene	31.1	5.57		0	0			28.37	9.13	25	DH
Methyl tert-butyl ether (MTBE)	ND	5.57		0	0			0		25	DH
Surr: 1,4-Difluorobenzene	29.5		27.83		106	65	140		0		DH
Surr: Bromofluorobenzene	29.6		27.83		106	65	140		0		DH

Sample Log-In Check List

Client Name:	**FB**	Work Order Number:	**2003439**
Logged by:	**Carissa True**	Date Received:	**3/30/2020 10:26:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	FedEx		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☐	No ☑	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☐	No ☑	

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☑ No ☐ NA ☐

Person Notified:	Michael Erdahl	Date:	4/2/2020
By Whom:	Carissa True	Via:	☑ eMail ☑ Phone ☐ Fax ☐ In Person
Regarding:	Out of hold		
Client Instructions:	Proceed		

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	0.5
Sample 1	0.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

SUBCONTRACT SAMPLE CHAIN OF CUSTODY

2003439

Send Report To Michael Erdahl

Company Friedman and Bruya, Inc.

Address 3012 16th Ave W

City, State, ZIP Seattle, WA 98119

Phone # (206) 285-8282 merdahl@friedmanandbruya.com

SUBCONTRACTER: FREMONT

PROJECT NAME/NO.: 003244

PO #: B-162

REMARKS

Page # ____ of ____

TURNAROUND TIME
- ☑ Standard TAT
- ☐ RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☑ Dispose after 30 days
- ☐ Return samples
- ☐ Will call with instructions

Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	VPH								Notes
OIP-67-14.5-15		3/12/20	~~09:00~~ 12:30 sp 3/30	S	3		✓	✓								

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	~~Michael Erdahl~~ Eric Young	Friedman & Bruya	3/30/20	10am
Received by: [signature]	Carter Johnson	FAI	3/30/20	1026
Relinquished by:				
Received by:				

003244

SAMPLE CHAIN OF CUSTODY

ME 03-13-20 CI3/VW5/AD5/VS5

Page # 1 of 1

Report To Gabe Cisneros
Company Floyd|Snider
Address 601 Union St Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206 292-2078 Email

SAMPLERS (*signature*)

PROJECT NAME: POL-TPH
PO #:

REMARKS: VOCs 8260 Include- MTBE, Hexane, EDB, EDC, NAPH, BTEX
Project specific RLs? Yes / No

INVOICE TO:

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021/8260c	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	VPH/EPH	Lead			Notes
						ANALYSES REQUESTED											V-per CC EP 3/20
MW-40-10.5-11'	01A-B	3/9/20	1145	Soil	5	✓	✓		X								*Run HCID Archive Rest
~~MW-40-11-13~~																	
~~MW-40-17D~~ MW-40-17D	02A-D		1245		4	X	X	X			X			X			Dup.
MW-40-17'	03		1235		4	X	X	X			X			X			
MW-40-24-24.5	04A-B		1330		5				X								*
MW-40-1.0-1.5	05		1530		5				X								* Run HCID Archive rest
OIP-49-10	06		14:05		5	✓	✓		X								Archive VOAs
OIP-49-17	07		14:15		5	✓	✓		X								" "
CIP-47-2-3	08		15:10		5				X								" "
UIP-47-25	09	↓	15:30	↓	5				X								" "

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd|Snider	3/13	1644
Received by:	Eric Power	F&B	3/13/20	1644
Relinquished by:				
Received by:			Samples received at	4 °C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

O 03244

SAMPLE CHAIN OF CUSTODY

ME 03-13-20

CI3/VW5/AD5/VS5

Page # 1 of 11

Report To Gabe Cisneros

Company Floyd Snider

Address

City, State, ZIP see page1

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: POL-TPH

PO #

REMARKS: VOCs 8260: MTBE, EDB, Hexane, EDS, Naph, BTEX
Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [X] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	Lead	EDB/EDC	Naphthalene		Notes
OIP-47-17	10A-H	3/9/20	1535	soil	8	X	X			X	X		X	X			
OIP-47-11-12	11A-H		15:05		8	X	X			X	X		X	X			
OIP-31-17	12A-E		17:20		5				X								Archive VOAs
OIP-31-20	13		17:15		5				X								Archive VOAs
GP-33-28-29	14		16:50		5				X								" "
GP-33-14-14.5	15		16:30		5	✓	✓		X								" "
GP-33-19.5-20	16		16:35		5				X								" "
GP-33-24-25	17		16:45		5				X								" "
GP-34-14-15	18		18:10	↓	5				X								" "
GP-34-GW-14-19	19A-H	↓	18:05	GW	8	X	X	X			X				X		

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Snider/Floyd	3/13	1644
Received by:	Eric Yam	F&B	3/13/20	1644
Relinquished by:				
Received by:		Samples received at 4 °C		

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Seattle, WA 98119-2029
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003244

SAMPLE CHAIN OF COUSTODY

ME 03-13-20

CI3/VW5/AD5/VS5

[redacted]age # 3 of 11

Report To Gabe Cisneros

Company Floyd/Snider

Address 601 Union Street Ste 600

City, State, ZIP Seattle 98101

Phone ______ Email ______

SAMPLERS (signature)	
PROJECT NAME: POL-TPH	PO #
REMARKS VOC's include MTBE, Hexane, BTEX EDB, EDC & Naphth. Project specific RLs? - Yes / No	INVOICE TO

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH ______
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Archive samples
☐ Other ______
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	CPAHs EPA 8270	PCBs EPA 8082	Lead	VPH/EPH	BTEX 8260		Notes
MW-33-12-12.5	20 A-H	3/9	1720	Soil	8	X	X			X	X		X	X			See Remarks for VOCs 8260
MW-33-19.5-20	21	3/9	1740	Soil	8	X	X			X	X		X	X			
MW-33-22.5-23	22 A-E	3/9	1800	Soil	5				X								Run HCID Archive rest
MW-35-15.5-16	23	3/10	1245	Soil	5				X								"
MW-34-15-15.5	24		1800		5	X	X				X		X		X		
MW-34-20-20.5	25		1806		5	X	X				X		X		X		
MW-34-24-24.5	26		1812		5	X	X				X		X		X		
MW-34-28-28.5	27		1818		5				X								Run HCID Archive rest
OIP-23-14-15	28 A-H	3/10/20	0935		8	X	X			X	X			X			
OIP-23-19-20	29	3/10/20	0945		8	X	X			X	X			X			

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Gabe Cisneros	Floyd/Snider	3/13	1645
Received by:	[signature]	Eric Young	FeB	3/13/20	1645
Relinquished by:					
Received by:			Samples received at 4 °C		

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003 244

SAMPLE CHAIN OF CUSTODY

ME 03-13-20

Page # 4 of 11

CI3/VU5/AU5 VS5

Report To Gabe Cisneros

Company Floyd Snider

Address

City, State, ZIP see page 1

Phone Email

SAMPLERS (signature)

PROJECT NAME: POL - TPH

PO #

REMARKS: See page 1 for VOCs list

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [X] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TOC	VPH/EPH	Naphthalene		Notes
OIP-23-23-24	30A-H	3/10/20	0955	Soil	8	X	X			X	X			X			
OIP-23-29.5-30	31A-E		10:20		5				X								Archive VOAs
OIP-46-8	32		0850		1								X				
OIP-46-10-11	33A-E		0845		5				X								Archive VOAs
OIP-46-14	34		0840		5				X								Archive VOAs
OIP-70-8	35		1130		5				X								Archive VOAs
OIP-70-12-14	36		1145		5				X								Archive VOAs
OIP-70-GW-10-15	37A-H		12:00	GW	8	X	X	X			X				X		
CIP-57-14	38A-E		12:50	Soil	5				X								Archive VOAs
OIP-39-15-15.5	39		1342	Soil	5	X	X	X	X		X						Archive VOAs PO

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd/Snider	3/13	1644
Received by:	Eric Young	FSB	3/13/20	1644
Relinquished by:				
Received by:		Samples received at 4 °C		

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Seattle, WA 98119-2029
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SAMPLE CHAIN OF CUSTODY

ME 03-13-20 Q3/VWS/AUS

Page # 5 of 11 VSS

Report To Gabe Cisneros

Company Floyd Snider

Address

City, State, ZIP see page 1

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: PCL-TPH

PO #

REMARKS: see page 1 for VOCs list

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	SAHs EPA 8270	PCBs EPA 8082	NaphthaLene	Lead	VPH / ETH		Notes
OIP-39-16.5-17	40 A-H	3/10/20	1402	Soil	8	X	X			X	X			X	X		
OIP-39-21-22	41 A-E		1400		5				X								Archive VOAs
GP-35-7-8	42		14:42		5	✓			X								Archive VOAs
GP-35-16-17	43		14:47		5				X								Archive VOAs
OIP-04-4-5	44		16:50		5				X								Archive VOAs
OIP-04-15-16	45		17.08	↓	5				X								Archive VOAs
OIP-04-GW-15-20	46 A-H	↓	17:30	GW	8	X	X	X			X		X				
MW-36-25.5-26	47 A-E	3/11/20	1135	Soil	5				X								Archive VOAs
MW-38-23.5-24	48		1600	Soil	5				X								Archive VOAs
GP-31-14-15	49	↓	1220	Soil	5				X								Archive VOAs

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd|Snider	3/13	1644
Received by:	Eric Yoon	F|S	3/13/20	1644
Relinquished by:				
Received by:		Samples received at 4 °C		

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SAMPLE CHAIN OF CUSTODY ME 03-13-20 03/NW5/AD5/V35

Page # 6 of 11

Report To Gabe Cisneros
Company Floyd Snider
Address
City, State, ZIP see page 1
Phone Email

SAMPLERS (signature)

PROJECT NAME: POL-TPH
PO #

REMARKS: See page 1 for list of VOCs
Project specific RLs? - Yes / No
INVOICE TO

TURNAROUND TIME
X Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
X Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021B	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	TOC	Naphthalene			Notes
OIP-72-10-11	50 A-E	3/11/20	0950	Soil	5				X								Archive VOAs
OIP-72-16-17	51		1000		5				X								" "
GP-32-17.5-18.5	52		1320		5				X								" "
GP-32-GW-14-19	53 A-H		1330	GW	8	X	X	X			X						
OIP-68-13.5-14	54 A-E		1640	Soil	5				X								Archive VOAs
OIP-68-14-14.5	55		1638		1								X				
OIP-68-10-11	56 A-E		1645		5				X								Archive VOAs
OIP-68D-10-11	57		1700		5				X								" "
OIP-68-GW-13-18	58 A-H		1705	GW	8	X	X	X			X			X			
OIP-69-GW-12-17	59		1555	GW	8	X	X	X			X			X			

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd/Snider	3/13	1644
Received by:	Eric Lam	F&B	3/13/20	1644
Relinquished by:				
Received by:		Samples received at 4 °C		

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SAMPLE CHAIN OF CUSTODY

HE 03-13-20

C23/VW5/A05/U55

Page # 7 of 11

Report To Gabe Cisneros

Company Floyd Snider

Address

City, State, ZIP see page 1

Phone ______ Email ______

SAMPLERS (signature)	
PROJECT NAME: POL-TPH	PO #
REMARKS: See page 1 for list of VOCs Project specific RLs? - Yes / No	INVOICE TO

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- [x] Archive samples
- [ ] Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TOCs	Naphthalene	Lead	VPH/EPH	Notes
OIP-69-14.5-15	60 A-F	3/11/20	1540	Soil	6				X				X				Archive VOAs
OIP-69-11-12	61 A-E	↓	1535	↓	5				X								" "
OIP-54-15-16	62 A-E	↓	0845	↓	5	✓			X								" "
OIP-54-18-19	63	↓	0840	↓	1								X				
GP-31-GW-13.5-18.5	64 A-H	↓	1230	GW	8	X	X	X			X						
OIP-02-14-15	65 A-E	↓	1055	Soil	5				X								Archive VOAs
OIP-02-GW-14.5-19.5	66 A-H	↓	1115	GW	8	X	X	X			X			X			
OIP-02D-GW-14.5-19.5	67 A-H	↓	1120	GW	8	X	X	X			X			X			
OIP-02-5-5.5	68 A-E	↓	1640	Soil	5	✓			X								Archive VOAs
OIP-15-15-16	69 A-H	3/12/20	1500	Soil	8	X	X			X	X				X	X	

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SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Gabe Cisneros	Floyd Snider	3/13	1644
Received by:	Eric Young	FEB	3/13/20	1644
Relinquished by:				
Received by:		Samples received at 4 °C		

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SAMPLE CHAIN OF COUSTODY ME 03-13-20

C3/UWS/A05/VS5

Page # 8 of 11

Report To Gabe Cisneros
Company Floyd|Snider
Address 601 Union St, Ste 600
City, State, ZIP Seattle, WA
Phone 206 2922078 Email

SAMPLERS (signature) [signature]

PROJECT NAME	PO #
POC	
REMARKS	INVOICE TO
See page 1 for list of VOCs Project specific RLs? - Yes / No	

TURNAROUND TIME
X Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
X Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	Lead	VPH / EPH			Notes
MW-37-27.5-28	70 A-E	3/12/20	0930	S	5				X								Archive Vials
MW-37-27.5-28 D	71	↓	0935	S	5				X								Archive Vials
P3-0-0.5 ~~feet~~ P.O.	72	↓	1440	S	5	X	X	X			X						
P4-0-0.5 ~~feet~~ P.O.	73 ↓	↓	1450	S	5	X	X	X			X						
P5-0-0.5 ~~feet~~ P.O.	74 A-D	↓	1455	S	15	X	X	X			X						MS/MSD
P6-0.5-1.0 ~~feet~~ P.O.	75 A-E	↓	1315	S	5	X	X	X			X						
P6-0.5-1.0 D	76	↓	1320	S	5	X	X	X			X						
OIP-64-14-15	77	3/12	1545	S	5				X								Archive rest
GP-36-22-23	78 ↓	↓	1401	S	5				X								Archive VOAs
GP-36-13-14	79 A-H	↓	1347	S	8	X	X		~~X~~ P.O.	X	X		X	X			

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Gabe Cisneros	Floyd Snider	3/13	1644
Received by:	[signature]	Eric [illegible]	F&B	3/13/20	1644
Relinquished by:					
Received by:			Samples received at 4 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

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SAMPLE CHAIN OF CUSTODY

ME 03/13/20 | USS/C05/ OB3 / DWS

Page # 9 of 11

Report To Gabe Cisneros

Company Floyd Snider

Address

City, State, ZIP — see page 1

Phone ________ Email ________

SAMPLERS (*signature*) [signature]

PROJECT NAME: POL-TPH

PO #

REMARKS: see page 1 for list of VOCs

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [X] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Lead	VPH/EPH	Naphthalene		Notes
01P-15-20-21	80 A-H	3/12/20	1520	Soil	8	X	X			X	X		X	X			
~~01P~~ GP-37-12-14	81 A-E	↓	1315	Soil	5				X								Archive VOAs
~~01P~~ GP-37D-12-14	82 A-E		1320	Soil	5				X								Archive VOAs
GP-36-16-17	83 A-H		1402	Soil	8	X	X			X	X		X	X			
* 01P-64-14-15			1545	Soil	5				X								Archive VOAs
01P-15-23-24	84 A-E		1535	Soil	5				X								Archive VOAs
01P-15-GW-14-19	85 A-H		1515	~~Soil~~ GW	8	X	X	X			X				X		
01P-73-13-14	86 A-E		1045	Soil	5				X								Archive VOAs
01P-73D-13-14	87		1040	Soil	5				X								" "
01P-73-9-10	88	↓	1030	Soil	5				X								" "

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Gabe Cisneros	Floyd Snider	3/13	1644
Received by:	[signature]	Eric Cloune	F&B	3/13/20	1644
Relinquished by:					
Received by:			Samples received at 4 °C		

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SAMPLE CHAIN OF CUSTODY

ME 03-13-20 VS5/CO5/CI3/UWS

Page # 10 of 11

Report To: Gabe Cisneros
Company: Floyd Snider
Address: see page 1
City, State, ZIP
Phone ______ Email ______

SAMPLERS (signature): [signature]

PROJECT NAME: POL-TPH

PO #

REMARKS: See page 1 for list of VOCs

INVOICE TO

Project specific RLs? - Yes / No

TURNAROUND TIME
- [X] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	Targeted VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	Lead	VPH/EPH	Naphthalene		Notes
01P-67-11-12	89 A-H	3/12/20	1225	Soil	8	X	X			X	X		X	X			
01P-67-GW-14-19	90 A-K	↓	1155	GW	24	X	X	X			X				X		MS/MSD
01P-67-18-19	91 A-E	↓	1240	Soil	5				X								Archive VOAs
01P-67-7-8	92 A-E	↓	1150	Soil	5				X								Archive VOAs
01P-67-14.5-15	93 A-H	↓	1230	Soil	8	X	X			✓	X		X	✓			
MW-39-2-4	94 A-E	↓	0900	Soil	5				X								Archive VOAs
MW-39-8-9	95 A-O	↓	0905	Soil	15	X	X	X			X						MS/MSD
MW-39-13-14	96 A-H	↓	0925	Soil	8	X	X			X	X			X			
MW-39-18.5-20	97 A-O	↓	0930	Soil	15	X	X	X			X						MS/MSD
GP-38-11-11.5	98 A-E	3/13/20	1210	S	5				X								Archive the rest

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Gabe Cisneros	Floyd Snider	3/13	1644
Received by: [signature]	Eric [illegible]	F&B	3/13/2	16 44
Relinquished by:				
Received by:		Samples received at 4 °C		

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SAMPLE CHAIN OF CUSTODY

ME 03-13-20 [redacted] CI3/UW5/ A05/ VS5

Page # 11 of 11

Report To Gabe Cisneros

Company Floyd | Snider

Address 601 Union St Ste 600

City, State, ZIP Seattle, WA

Phone 206 292-2078 Email

SAMPLERS (signature) [signature]

PROJECT NAME POL-TPH

PO #

REMARKS VOCs include EDB, EDC, MTBE, BTEX Hexane, Naphthalene

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [X] Standard turnaround
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- [X] Archive samples
- [ ] Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	EDB/EDC	Lead	VPH/EPH	Naphthalene	Notes
01P-18-19-19.5	99 A-E	3/13/20	0841	S	5				X								Archive rest
01P-20-11-11.5	100 A-H	↓	0909	Soil	8	X	X			X	X		X	X	X		EDB/EDC included in VOCs
01P-20-19-19.5	101 A-E	↓	0919	↓	5				X								Archive rest
01P-19-19-20	102 A-O	↓	0830	↓	15				X								MS/MSD
01P-21-18-19	103 A-E	↓	0917	↓	5				X								
01P-06-27-28	104 A-E	↓	10:30	↓	5				X								Archive VOAs
01P-06-29-30	105 A-O	↓	10:40	↓	15												Archive/MS/MSD
01P-06-GW-25-30	106 A-H	↓	10:50	GW	8	X	X	X			X					X	
01P-05-27-28	107 A-E	↓	11:18	Soil	5				X								Archive VOAs
01P-05-29-30	108 A-E	↓	11:20	Soil	5												Archive
* Trip Blank	109 A-N	—	—	Water	14												

NP 3/16/20

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3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Gabe Cisneros	Floyd/Snider	3/13	1644
Received by:	[signature]	Eric Young	FeB	3/13/20	1644
Relinquished by:					
Received by:			Samples received at 4 °C		

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

May 19, 2020

Gabriel Cisneros, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Cisneros:

Included are the results from the testing of material submitted on May 8, 2020 from the POL-TPH 10 E Port Way, Longview, WA, F&BI 005111 project. There are 14 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0519R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 8, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider POL-TPH 10 E Port Way, Longview, WA, F&BI 005111 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
005111 -01	SVP-01-050820
005111 -02	SVP-101-050820
005111 -03	SVP-02-050820

All quality control requirements were acceptable.

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SVP-01-050820	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH 10 E Port Way, Longview, WA
Date Collected:	05/08/20	Lab ID:	005111-01 1/3.0
Date Analyzed:	05/14/20	Data File:	051325.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	113	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<90
APH EC9-12 aliphatics	180
APH EC9-10 aromatics	<75

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SVP-101-050820	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH 10 E Port Way, Longview, WA
Date Collected:	05/08/20	Lab ID:	005111-02 1/3.2
Date Analyzed:	05/14/20	Data File:	051326.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	96	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<96
APH EC9-12 aliphatics	160
APH EC9-10 aromatics	<80

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	SVP-02-050820	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH 10 E Port Way, Longview, WA
Date Collected:	05/08/20	Lab ID:	005111-03 1/3.1
Date Analyzed:	05/14/20	Data File:	051327.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	102	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	100
APH EC9-12 aliphatics	350
APH EC9-10 aromatics	<77

Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH 10 E Port Way, Longview, WA
Date Collected:	Not Applicable	Lab ID:	00-1054 mb
Date Analyzed:	05/13/20	Data File:	051310.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	104	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	<30
APH EC9-12 aliphatics	<35
APH EC9-10 aromatics	<25

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SVP-01-050820	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH 10 E Port Way, Longview, WA
Date Collected:	05/08/20	Lab ID:	005111-01 1/3.0
Date Analyzed:	05/14/20	Data File:	051325.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	114	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<0.96	<0.3
Toluene	<57	<15
Ethylbenzene	<1.3	<0.3
m,p-Xylene	<2.6	<0.6
o-Xylene	<1.3	<0.3
Naphthalene	<0.79	<0.15

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SVP-101-050820	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH 10 E Port Way, Longview, WA
Date Collected:	05/08/20	Lab ID:	005111-02 1/3.2
Date Analyzed:	05/14/20	Data File:	051326.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	97	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<1	<0.32
Toluene	<60	<16
Ethylbenzene	<1.4	<0.32
m,p-Xylene	<2.8	<0.64
o-Xylene	<1.4	<0.32
Naphthalene	<0.84	<0.16

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	SVP-02-050820	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH 10 E Port Way, Longview, WA
Date Collected:	05/08/20	Lab ID:	005111-03 1/3.1
Date Analyzed:	05/14/20	Data File:	051327.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	103	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<0.99	<0.31
Toluene	<58	<15
Ethylbenzene	<1.3	<0.31
m,p-Xylene	3.9	0.89
o-Xylene	1.7	0.39
Naphthalene	<0.81	<0.15

Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH 10 E Port Way, Longview, WA
Date Collected:	Not Applicable	Lab ID:	00-1054 mb
Date Analyzed:	05/13/20	Data File:	051310.D
Matrix:	Air	Instrument:	GCMS7
Units:	ug/m3	Operator:	bat

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
4-Bromofluorobenzene	105	70	130

Compounds:	Concentration ug/m3	ppbv
Benzene	<0.32	<0.1
Toluene	<19	<5
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	<0.26	<0.05

Date of Report: 05/19/20
Date Received: 05/08/20
Project: POL-TPH 10 E Port Way, Longview, WA, F&BI 005111
Date Extracted: 05/18/20
Date Analyzed: 05/18/20

RESULTS FROM THE ANALYSIS OF AIR SAMPLES FOR HELIUM USING METHOD ASTM D1946

Results Reported as % Helium

Sample ID Laboratory ID	Helium
SVP-01-050820 005111-01	<0.6
SVP-101-050820 005111-02	<0.6
SVP-02-050820 005111-03	<0.6
Method Blank	<0.6

Date of Report: 05/19/20
Date Received: 05/08/20
Project: POL-TPH 10 E Port Way, Longview, WA, F&BI 005111

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD MA-APH

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	91	70-130
APH EC9-12 aliphatics	ug/m3	67	117	70-130
APH EC9-10 aromatics	ug/m3	67	112	70-130

Date of Report: 05/19/20
Date Received: 05/08/20
Project: POL-TPH 10 E Port Way, Longview, WA, F&BI 005111

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benzene	ug/m3	43	95	70-130
Toluene	ug/m3	51	95	70-130
Ethylbenzene	ug/m3	59	89	70-130
m,p-Xylene	ug/m3	120	94	70-130
o-Xylene	ug/m3	59	91	70-130
Naphthalene	ug/m3	71	107	70-130

Date of Report: 05/19/20
Date Received: 05/08/20
Project: POL-TPH 10 E Port Way, Longview, WA, F&BI 005111

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR HELIUM USING METHOD ASTM D1946

Laboratory Code: 005050-01 (Duplicate)

Analyte	Sample Result (%)	Duplicate Result (%)	Relative Percent Difference	Acceptance Criteria
Helium	<0.6	<0.6	nm	0-20

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

SAMPLE CHAIN OF CUSTODY

005111 ME 05-08-20 Page 1 of 1

Report To Gabe Cisneros
Company Floyd Snider
Address 601 Union St, Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206-292-2078 Email gabe.cisneros@floydsnider.com

SAMPLERS (*signature*) [signature]

PROJECT NAME & ADDRESS: POL-TPH, 10 E Port Way, Longview, WA

PO #

INVOICE TO

NOTES: Run standard analysis in accordance w/ Item #18

TURNAROUND TIME
☒ Standard
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☒ Default: Clean after 3 days
☐ Archive (Fee may apply)

SAMPLE INFORMATION										ANALYSIS REQUESTED						
Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium		Notes
SVP-01-050820	01	3257	240	IA / (SG)	5/8/20	30	0809	4.5	0810		X		X	X		
SVP-101-050820	02	2297	222	IA / (SG)	5/8/20	30	0809	4.5	0810		X		X	X		
~~SVP~~				IA / SG												
SVP-02-050820	03	3255	224	IA / (SG)	5/8/20	30	0851	4.5	0857		X		X	X		
				IA / SG												
				IA / SG												
				IA / SG												
				IA / SG												

Samples received at 2°C

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Gabe Cisneros	Floyd|Snider	5/7/20	1530
Received by:	[signature]	[illegible]	FBI	5/7/20	1530
Relinquished by:					
Received by:					

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282
Fax (206) 283-5044

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 31, 2020

Megan King, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Ms King:

Included is the amended report from the testing of material submitted on May 8, 2020 from the POL-TPH, F&BI 005097 project. Per your request, several samples were expanded to the full suite of volatiles, and the PAHs were shortened to the cPAH list.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
c: Gabe Cisneros
FDS0520R.DOC

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

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Yelena Aravkina, M.S.
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Eric Young, B.S.

3012 16th Avenue West
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May 20, 2020

Gabriel Cisneros, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Cisneros:

Included are the results from the testing of material submitted on May 8, 2020 from the POL-TPH, F&BI 005097 project. There are 115 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0520R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on May 8, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider POL-TPH, F&BI 005097 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
005097 -01	MW-01-050620
005097 -02	MW-02-050620
005097 -03	MW-07-050620
005097 -04	MW-10-050620
005097 -05	MW-8-050620
005097 -06	MW-35-050620
005097 -07	MW-133-050620
005097 -08	MW-33-050620
005097 -09	MW-23-050620
005097 -10	MW-6-050620
005097 -11	MW-40-050620
005097 -12	MW-34-050620
005097 -13	MW-31-050620
005097 -14	MW-03-050620
005097 -15	UST-4-050620
005097 -16	MW-36-050620
005097 -17	MW-24-050720
005097 -18	MW-25-050720
005097 -19	MW-20-050720
005097 -20	MW-14-050720
005097 -21	MW-18-050720
005097 -22	MW-17-050720
005097 -23	MW-37-050720
005097 -24	MW-39-050720
005097 -25	MW-11-050720
005097 -26	MW-13-050720
005097 -27	MW-27-050720
005097 -28	MW-22-050720
005097 -29	MW-127-050720
005097 -30	MW-38-050720
005097 -31	MW-19-050720
005097 -32	MW-32-050720
005097 -33	MW-16-050720
005097 -34	MW-26-050720
005097 -35	MW-15-050720

CASE NARRATIVE (Continued)
This case narrative encompasses samples received on May 8, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider POL-TPH, F&BI 005097 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
005097 -36	MW-12-050720
005097 -37	MW-29-050620

The dissolved metals samples were filtered at Friedman and Bruya on May 8, 2020 at 12:26. The data were flagged accordingly.

The 8260D matrix spike, matrix spike duplicate, laboratory control sample, and laboratory control sample duplicate exceeded the acceptance criteria for several analytes. The compounds were not detected, therefore the data were acceptable.

Several analytes in the 8270E matrix spike, matrix spike duplicate, and the associated relative percent difference did not meet the acceptance criteria. The laboratory control sample passed the acceptance criteria for these analytes, therefore the results were due to matrix effect.

All other quality control requirements were acceptable.

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097
Date Extracted: 05/11/20
Date Analyzed: 05/11/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-01-050620 005097-01	<100	90
MW-02-050620 005097-02	<100	88
MW-07-050620 005097-03	560	106
MW-10-050620 005097-04	450	103
MW-8-050620 005097-05	2,300	89
MW-35-050620 005097-06	<100	93
MW-133-050620 005097-07	130	89
MW-33-050620 005097-08	160	91
MW-23-050620 005097-09	<100	88
MW-6-050620 005097-10	<100	89

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097
Date Extracted: 05/11/20
Date Analyzed: 05/11/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-40-050620 005097-11	1,100	92
MW-34-050620 005097-12	<100	96
MW-31-050620 005097-13	<100	88
MW-03-050620 005097-14	260	87
UST-4-050620 005097-15	<100	90
MW-36-050620 005097-16	<100	93
MW-24-050720 005097-17	<100	89
MW-25-050720 005097-18	<100	92
MW-20-050720 005097-19	2,800	91
MW-14-050720 005097-20	<100	91

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097
Date Extracted: 05/11/20
Date Analyzed: 05/11/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-18-050720 005097-21	<100	88
MW-17-050720 005097-22	<100	92
MW-37-050720 005097-23	<100	89
MW-39-050720 005097-24	380	91
MW-11-050720 005097-25	<100	91
MW-13-050720 005097-26	<100	92
MW-27-050720 005097-27	<100	92
MW-22-050720 005097-28	<100	93
MW-127-050720 005097-29	<100	89
MW-38-050720 005097-30	<100	93

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097
Date Extracted: 05/11/20
Date Analyzed: 05/11/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-19-050720 005097-31	<100	91
MW-32-050720 005097-32	<100	89
MW-16-050720 005097-33	<100	89
MW-26-050720 005097-34	<100	89
MW-15-050720 005097-35	140	92
MW-12-050720 005097-36	470	95
MW-29-050620 005097-37	<100	92
Method Blank 00-878 MB	<100	92
Method Blank 00-879 MB	<100	89

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097
Date Extracted: 05/08/20
Date Analyzed: 05/08/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
MW-01-050620 005097-01	<50	<250	67
MW-02-050620 005097-02	310 x	<250	97
MW-07-050620 005097-03	820	<250	91
MW-10-050620 005097-04	340 x	<250	84
MW-8-050620 005097-05	2,100 x	280 x	92
MW-35-050620 005097-06	630 x	<250	97
MW-133-050620 005097-07	850	<250	91
MW-33-050620 005097-08	1,100	<250	116
MW-23-050620 005097-09	<50	<250	89
MW-6-050620 005097-10	780 x	<250	92

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097
Date Extracted: 05/08/20
Date Analyzed: 05/08/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
MW-40-050620 005097-11	2,900 x	320 x	83
MW-34-050620 005097-12	1,300 x	<250	94
MW-31-050620 005097-13	<50	<250	68
MW-03-050620 005097-14	1,500 x	590 x	97
UST-4-050620 005097-15	230 x	320 x	100
MW-36-050620 005097-16	<50	<250	92
MW-24-050720 005097-17	<50	<250	102
MW-25-050720 005097-18	<50	<250	102
MW-20-050720 005097-19	1,000 x	290 x	93
MW-14-050720 005097-20	120 x	<250	85

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097
Date Extracted: 05/08/20
Date Analyzed: 05/08/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
MW-18-050720 005097-21	<50	<250	99
MW-17-050720 005097-22	67 x	<250	95
MW-37-050720 005097-23	210 x	<250	81
MW-39-050720 005097-24	5,700	950 x	72
MW-11-050720 005097-25	66 x	<250	97
MW-13-050720 005097-26	<50	<250	82
MW-27-050720 005097-27	150 x	<250	92
MW-22-050720 005097-28	<50	<250	92
MW-127-050720 005097-29	190 x	<250	109
MW-38-050720 005097-30	74 x	<250	106

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097
Date Extracted: 05/08/20
Date Analyzed: 05/08/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 47-140)
MW-19-050720 005097-31	<50	<250	91
MW-32-050720 005097-32	<50	<250	99
MW-16-050720 005097-33	84 x	<250	101
MW-26-050720 005097-34	670 x	<250	101
MW-15-050720 005097-35	510 x	<250	123
MW-12-050720 005097-36	130 x	<250	105
MW-29-050620 005097-37	54 x	<250	96
Method Blank 00-1038 MB	<50	<250	96
Method Blank 00-1032 MB	<50	<250	111

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-07-050620 f	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/14/20 12:29	Lab ID:	005097-03
Date Analyzed:	05/14/20	Data File:	005097-03.082
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-10-050620 f	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/14/20 12:29	Lab ID:	005097-04
Date Analyzed:	05/14/20	Data File:	005097-04.083
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	MW-03-050620 f	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/14/20 12:29	Lab ID:	005097-14
Date Analyzed:	05/14/20	Data File:	005097-14.084
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	UST-4-050620 f	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/14/20 12:29	Lab ID:	005097-15
Date Analyzed:	05/14/20	Data File:	005097-15.085
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Floyd-Snider
Date Received:	NA	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/14/20 12:29	Lab ID:	I0-282 mb
Date Analyzed:	05/14/20	Data File:	I0-282 mb.080
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-07-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/08/20 12:13	Lab ID:	005097-03
Date Analyzed:	05/08/20	Data File:	005097-03.119
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-10-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/08/20 12:13	Lab ID:	005097-04
Date Analyzed:	05/08/20	Data File:	005097-04.120
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-03-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/08/20 12:13	Lab ID:	005097-14
Date Analyzed:	05/08/20	Data File:	005097-14.123
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	UST-4-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/08/20 12:13	Lab ID:	005097-15
Date Analyzed:	05/08/20	Data File:	005097-15.124
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/08/20 11:53	Lab ID:	I0-266 mb
Date Analyzed:	05/08/20	Data File:	I0-266 mb.053
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-01-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-01 1/2
Date Analyzed:	05/11/20	Data File:	051105.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	66	31	160
Benzo(a)anthracene-d12	83	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-02-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-02 1/2
Date Analyzed:	05/11/20	Data File:	051106.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	67	31	160
Benzo(a)anthracene-d12	81	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-07-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-03 1/2
Date Analyzed:	05/11/20	Data File:	051107.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	160
Benzo(a)anthracene-d12	96	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-10-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-04 1/2
Date Analyzed:	05/11/20	Data File:	051108.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	75	31	160
Benzo(a)anthracene-d12	94	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-8-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-05 1/2
Date Analyzed:	05/11/20	Data File:	051109.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	71	31	160
Benzo(a)anthracene-d12	93	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-35-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-06 1/2
Date Analyzed:	05/11/20	Data File:	051110.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	81	31	160
Benzo(a)anthracene-d12	105	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-133-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-07 1/2
Date Analyzed:	05/11/20	Data File:	051111.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	68	31	160
Benzo(a)anthracene-d12	80	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-33-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-08 1/2
Date Analyzed:	05/11/20	Data File:	051112.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	63	31	160
Benzo(a)anthracene-d12	74	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-23-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-09 1/2
Date Analyzed:	05/11/20	Data File:	051113.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	72	31	160
Benzo(a)anthracene-d12	92	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-6-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-10 1/2
Date Analyzed:	05/11/20	Data File:	051114.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	66	31	160
Benzo(a)anthracene-d12	85	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-40-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-11 1/2
Date Analyzed:	05/11/20	Data File:	051115.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	76	31	160
Benzo(a)anthracene-d12	94	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-34-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-12 1/2
Date Analyzed:	05/11/20	Data File:	051116.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	87	31	160
Benzo(a)anthracene-d12	101	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-31-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-13 1/2
Date Analyzed:	05/11/20	Data File:	051117.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	82	31	160
Benzo(a)anthracene-d12	93	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-03-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-14 1/2
Date Analyzed:	05/11/20	Data File:	051118.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	80	31	160
Benzo(a)anthracene-d12	95	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	UST-4-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-15 1/2
Date Analyzed:	05/11/20	Data File:	051119.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	85	31	160
Benzo(a)anthracene-d12	89	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-36-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-16 1/2
Date Analyzed:	05/11/20	Data File:	051120.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84	31	160
Benzo(a)anthracene-d12	87	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-24-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-17 1/2
Date Analyzed:	05/11/20	Data File:	051121.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84	31	160
Benzo(a)anthracene-d12	88	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-25-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-18 1/2
Date Analyzed:	05/11/20	Data File:	051122.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84	31	160
Benzo(a)anthracene-d12	92	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-20-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-19 1/2
Date Analyzed:	05/12/20	Data File:	051208.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	83	31	160
Benzo(a)anthracene-d12	103	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-14-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-20 1/2
Date Analyzed:	05/12/20	Data File:	051216.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	74	31	160
Benzo(a)anthracene-d12	84	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-18-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-21 1/2
Date Analyzed:	05/12/20	Data File:	051217.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	160
Benzo(a)anthracene-d12	96	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-17-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-22 1/2
Date Analyzed:	05/12/20	Data File:	051218.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	82	31	160
Benzo(a)anthracene-d12	101	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-37-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-23 1/2
Date Analyzed:	05/12/20	Data File:	051219.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	40	31	160
Benzo(a)anthracene-d12	49	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	0.045
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-39-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-24 1/2
Date Analyzed:	05/12/20	Data File:	051220.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	81	31	160
Benzo(a)anthracene-d12	96	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-11-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-25 1/2
Date Analyzed:	05/12/20	Data File:	051221.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	76	31	160
Benzo(a)anthracene-d12	94	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-13-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-26 1/2
Date Analyzed:	05/12/20	Data File:	051222.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	77	31	160
Benzo(a)anthracene-d12	98	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-27-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-27 1/2
Date Analyzed:	05/12/20	Data File:	051223.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	79	31	160
Benzo(a)anthracene-d12	94	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-22-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-28 1/2
Date Analyzed:	05/12/20	Data File:	051224.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	78	31	160
Benzo(a)anthracene-d12	103	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-127-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-29 1/2
Date Analyzed:	05/12/20	Data File:	051225.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	83	31	160
Benzo(a)anthracene-d12	97	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-38-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-30 1/2
Date Analyzed:	05/12/20	Data File:	051226.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	80	31	160
Benzo(a)anthracene-d12	99	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-19-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-31 1/2
Date Analyzed:	05/12/20	Data File:	051227.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86	31	160
Benzo(a)anthracene-d12	101	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-32-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-32 1/2
Date Analyzed:	05/12/20	Data File:	051228.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	83	31	160
Benzo(a)anthracene-d12	102	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-16-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-33 1/2
Date Analyzed:	05/13/20	Data File:	051229.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	85	31	160
Benzo(a)anthracene-d12	99	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-26-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-34 1/2
Date Analyzed:	05/12/20	Data File:	051209.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	80	31	160
Benzo(a)anthracene-d12	103	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-15-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-35 1/2
Date Analyzed:	05/13/20	Data File:	051230.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	84	31	160
Benzo(a)anthracene-d12	90	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-12-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-36 1/2
Date Analyzed:	05/13/20	Data File:	051232.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	83	31	160
Benzo(a)anthracene-d12	99	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	MW-29-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-37 1/2
Date Analyzed:	05/13/20	Data File:	051231.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	81	31	160
Benzo(a)anthracene-d12	104	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	00-1040 mb
Date Analyzed:	05/11/20	Data File:	051104.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	82	31	160
Benzo(a)anthracene-d12	96	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E SIM

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	00-1041 mb
Date Analyzed:	05/12/20	Data File:	051215.D
Matrix:	Water	Instrument:	GCMS6
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
Anthracene-d10	86	31	160
Benzo(a)anthracene-d12	106	25	165

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-01-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-01
Date Analyzed:	05/11/20	Data File:	051128.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-02-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-02
Date Analyzed:	05/11/20	Data File:	051134.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-07-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-03
Date Analyzed:	05/11/20	Data File:	051135.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	0.45
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-10-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-04
Date Analyzed:	05/11/20	Data File:	051136.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	7.6
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	2.6
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	5.4
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	9.1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	41	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	5.2	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-8-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-05
Date Analyzed:	05/11/20	Data File:	051137.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	103	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	1.1
Toluene	2.0
Ethylbenzene	<1
m,p-Xylene	2.7
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-35-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-06
Date Analyzed:	05/11/20	Data File:	051138.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-133-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-07
Date Analyzed:	05/11/20	Data File:	051139.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-33-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-08
Date Analyzed:	05/11/20	Data File:	051140.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-23-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-09
Date Analyzed:	05/11/20	Data File:	051141.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-6-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-10
Date Analyzed:	05/11/20	Data File:	051142.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-40-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-11
Date Analyzed:	05/11/20	Data File:	051143.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	7.4
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	4.5
Hexane	28	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	13
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	19
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	430 ve	sec-Butylbenzene	2.9
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	12	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-40-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/13/20	Lab ID:	005097-11 1/10
Date Analyzed:	05/13/20	Data File:	051322.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	103	50	150
4-Bromofluorobenzene	103	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	430

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-34-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-12
Date Analyzed:	05/11/20	Data File:	051144.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	1.3
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-31-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-13
Date Analyzed:	05/11/20	Data File:	051145.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-03-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-14
Date Analyzed:	05/11/20	Data File:	051146.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	1.1
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	UST-4-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-15
Date Analyzed:	05/11/20	Data File:	051147.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-36-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-16
Date Analyzed:	05/12/20	Data File:	051148.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-24-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-17
Date Analyzed:	05/12/20	Data File:	051149.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-25-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-18
Date Analyzed:	05/12/20	Data File:	051150.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-20-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-19
Date Analyzed:	05/12/20	Data File:	051151.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	1.6
Toluene	3.7
Ethylbenzene	5.5
m,p-Xylene	4.3
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-14-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-20
Date Analyzed:	05/12/20	Data File:	051152.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-18-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-21
Date Analyzed:	05/12/20	Data File:	051153.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-17-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-22
Date Analyzed:	05/12/20	Data File:	051154.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-37-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-23
Date Analyzed:	05/12/20	Data File:	051155.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-39-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-24
Date Analyzed:	05/12/20	Data File:	051156.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)
Hexane	<1
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-11-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-25
Date Analyzed:	05/12/20	Data File:	051157.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-13-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-26
Date Analyzed:	05/12/20	Data File:	051158.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	104	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-27-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-27
Date Analyzed:	05/12/20	Data File:	051159.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-22-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-28
Date Analyzed:	05/12/20	Data File:	051160.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-127-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-29
Date Analyzed:	05/12/20	Data File:	051161.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	96	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-38-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-30
Date Analyzed:	05/12/20	Data File:	051162.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	97	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-19-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-31
Date Analyzed:	05/12/20	Data File:	051163.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-32-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-32
Date Analyzed:	05/12/20	Data File:	051164.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	98	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-16-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-33
Date Analyzed:	05/12/20	Data File:	051165.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-26-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-34
Date Analyzed:	05/11/20	Data File:	051118.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-15-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-35
Date Analyzed:	05/12/20	Data File:	051222.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	57	121
Toluene-d8	105	63	127
4-Bromofluorobenzene	99	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-12-050720	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-36
Date Analyzed:	05/11/20	Data File:	051119.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	1.9
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	3.5
Hexane	11	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	1.6
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	3.7
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	63	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	2.5	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-29-050620	Client:	Floyd-Snider
Date Received:	05/08/20	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	005097-37
Date Analyzed:	05/12/20	Data File:	051223.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	57	121
Toluene-d8	106	63	127
4-Bromofluorobenzene	101	60	133

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	00-1007 mb
Date Analyzed:	05/11/20	Data File:	051113.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	57	121
Toluene-d8	102	63	127
4-Bromofluorobenzene	100	60	133

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/11/20	Lab ID:	00-1008 mb
Date Analyzed:	05/11/20	Data File:	051114.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	57	121
Toluene-d8	103	63	127
4-Bromofluorobenzene	102	60	133

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 005097
Date Extracted:	05/13/20	Lab ID:	00-1050 mb
Date Analyzed:	05/13/20	Data File:	051307.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	MS

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097
Date Extracted: 05/12/20
Date Analyzed: 05/12/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE (EDB) BY EPA METHOD 8011 MODIFIED
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	EDB
MW-07-050620 005097-03	<0.01
MW-10-050620 005097-04	<0.01
MW-35-050620 005097-06	<0.01
MW-23-050620 005097-09	<0.01
MW-40-050620 005097-11	<0.01
MW-34-050620 005097-12	<0.01
MW-03-050620 005097-14	<0.01
UST-4-050620 005097-15	<0.01
MW-39-050720 005097-24	<0.01
MW-19-050720 005097-31	<0.01
MW-12-050720 005097-36	<0.01
Method Blank	<0.01

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 005097-34 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,000	<100	84	88	53-117	5

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	98	69-134

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 005097-36 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,000	470	65	69	53-117	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	97	69-134

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 005097-34 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	800	87	99	50-150	13

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	112	116	63-142	4

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 005097-36 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	<50	120	115	64-141	4

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	ug/L (ppb)	2,500	102	61-133

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Code: 005097-15 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	90	91	75-125	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	94	80-120

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 005091-09 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<10	96	99	75-125	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	82	80-120

Date of Report: 05/20/20
Date Received: 05/08/20
Project: POL-TPH, F&BI 005097

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR PAHS BY EPA METHOD 8270E SIM

Laboratory Code: 005097-34 1/2 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	2	<0.04	89	91	60-93	2
Chrysene	ug/L (ppb)	2	<0.04	86	88	60-102	2
Benzo(b)fluoranthene	ug/L (ppb)	2	<0.04	70	71	62-91	1
Benzo(k)fluoranthene	ug/L (ppb)	2	<0.04	72	73	51-98	1
Benzo(a)pyrene	ug/L (ppb)	2	<0.04	69	71	60-86	3
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	2	<0.04	59	60	10-98	2
Dibenz(a,h)anthracene	ug/L (ppb)	2	<0.04	59	60	10-97	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	ug/L (ppb)	1	84	60-118
Chrysene	ug/L (ppb)	1	86	66-125
Benzo(b)fluoranthene	ug/L (ppb)	1	69	55-135
Benzo(k)fluoranthene	ug/L (ppb)	1	74	62-125
Benzo(a)pyrene	ug/L (ppb)	1	69	58-127
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	74	36-142
Dibenz(a,h)anthracene	ug/L (ppb)	1	75	37-133

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR PAHS BY EPA METHOD 8270E SIM

Laboratory Code: 005097-36 1/2 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result (Wet wt)	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	2	<0.04	86	87	60-93	1
Chrysene	ug/L (ppb)	2	<0.04	83	85	60-102	2
Benzo(b)fluoranthene	ug/L (ppb)	2	<0.04	55 vo	55 vo	62-91	0
Benzo(k)fluoranthene	ug/L (ppb)	2	<0.04	57	58	51-98	2
Benzo(a)pyrene	ug/L (ppb)	2	<0.04	54 vo	54 vo	60-86	0
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	2	<0.04	25	19	10-98	27 vo
Dibenz(a,h)anthracene	ug/L (ppb)	2	<0.04	25	19	10-97	27 vo

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	ug/L (ppb)	1	92	60-118
Chrysene	ug/L (ppb)	1	95	66-125
Benzo(b)fluoranthene	ug/L (ppb)	1	81	55-135
Benzo(k)fluoranthene	ug/L (ppb)	1	80	62-125
Benzo(a)pyrene	ug/L (ppb)	1	78	58-127
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	1	88	36-142
Dibenz(a,h)anthracene	ug/L (ppb)	1	93	37-133

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Project: POL-TPH, F&BI 005097

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 005097-36 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	<1	113	113	10-172	0
Chloromethane	ug/L (ppb)	50	<10	99	96	25-166	3
Vinyl chloride	ug/L (ppb)	50	<0.2	101	101	36-166	0
Bromomethane	ug/L (ppb)	50	<1	108	107	47-169	1
Chloroethane	ug/L (ppb)	50	<1	96	97	46-160	1
Trichlorofluoromethane	ug/L (ppb)	50	<1	105	105	44-165	0
Acetone	ug/L (ppb)	250	<50	82	79	10-182	4
1,1-Dichloroethene	ug/L (ppb)	50	<1	101	102	60-136	1
Hexane	ug/L (ppb)	50	11	126 b	128 b	52-150	2 b
Methylene chloride	ug/L (ppb)	50	<5	103	99	67-132	4
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	101	102	74-127	1
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	104	103	72-129	1
1,1-Dichloroethane	ug/L (ppb)	50	<1	100	100	70-128	0
2,2-Dichloropropane	ug/L (ppb)	50	<1	155 vo	153	36-154	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	100	99	71-127	1
Chloroform	ug/L (ppb)	50	<1	102	101	65-132	1
2-Butanone (MEK)	ug/L (ppb)	250	<10	96	95	10-129	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	98	98	48-149	0
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	104	104	60-146	0
1,1-Dichloropropene	ug/L (ppb)	50	<1	106	105	69-133	1
Carbon tetrachloride	ug/L (ppb)	50	<1	107	109	56-152	2
Benzene	ug/L (ppb)	50	63	62 b	70 b	76-125	12 b
Trichloroethene	ug/L (ppb)	50	<1	87	87	66-135	0
1,2-Dichloropropane	ug/L (ppb)	50	<1	102	101	78-125	1
Bromodichloromethane	ug/L (ppb)	50	<1	107	106	61-150	1
Dibromomethane	ug/L (ppb)	50	<1	106	105	66-141	1
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	108	107	10-185	1
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	121	118	72-132	3
Toluene	ug/L (ppb)	50	2.5	99	98	76-122	1
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	120	118	76-130	2
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	102	101	68-131	1
2-Hexanone	ug/L (ppb)	250	<10	104	103	10-185	1
1,3-Dichloropropane	ug/L (ppb)	50	<1	102	101	71-128	1
Tetrachloroethene	ug/L (ppb)	50	<1	101	100	10-226	1
Dibromochloromethane	ug/L (ppb)	50	<1	110	108	70-139	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	105	104	69-134	1
Chlorobenzene	ug/L (ppb)	50	<1	102	100	77-122	2
Ethylbenzene	ug/L (ppb)	50	1.9	102	102	69-135	0
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	<1	104	103	73-137	1
m,p-Xylene	ug/L (ppb)	100	3.5	103	102	69-135	1
o-Xylene	ug/L (ppb)	50	<1	102	99	60-140	3
Styrene	ug/L (ppb)	50	<1	106	104	71-133	2
Isopropylbenzene	ug/L (ppb)	50	1.6	102	100	65-142	2
Bromoform	ug/L (ppb)	50	<1	112	109	65-142	3
n-Propylbenzene	ug/L (ppb)	50	3.7	107	105	58-144	2
Bromobenzene	ug/L (ppb)	50	<1	103	100	75-124	3
1,3,5-Trimethylbenzene	ug/L (ppb)	50	<1	108	105	66-137	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	132	131	51-154	1
1,2,3-Trichloropropane	ug/L (ppb)	50	<1	104	101	53-150	3
2-Chlorotoluene	ug/L (ppb)	50	<1	105	102	66-127	3
4-Chlorotoluene	ug/L (ppb)	50	<1	107	105	65-130	2
tert-Butylbenzene	ug/L (ppb)	50	<1	105	103	65-137	2
1,2,4-Trimethylbenzene	ug/L (ppb)	50	<1	107	104	59-146	3
sec-Butylbenzene	ug/L (ppb)	50	<1	107	105	64-140	2
p-Isopropyltoluene	ug/L (ppb)	50	<1	109	106	65-141	3
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	105	103	72-123	2
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	105	103	69-126	2
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	103	100	69-128	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	111	105	32-164	6
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	111	107	66-136	4
Hexachlorobutadiene	ug/L (ppb)	50	<1	110	107	60-143	3
Naphthalene	ug/L (ppb)	50	<1	108	105	44-164	3
1,2,3-Trichlorobenzene	ug/L (ppb)	50	<1	109	104	69-148	5

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	50	124	125	25-158	1
Chloromethane	ug/L (ppb)	50	104	110	45-156	6
Vinyl chloride	ug/L (ppb)	50	109	112	50-154	3
Bromomethane	ug/L (ppb)	50	114	120	55-143	5
Chloroethane	ug/L (ppb)	50	106	107	58-146	1
Trichlorofluoromethane	ug/L (ppb)	250	112	112	50-150	0
Acetone	ug/L (ppb)	250	81	83	22-155	2
1,1-Dichloroethene	ug/L (ppb)	50	110	109	67-136	1
Hexane	ug/L (ppb)	50	132	140 vo	57-137	6
Methylene chloride	ug/L (ppb)	50	105	105	39-148	0
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	103	108	64-147	5
trans-1,2-Dichloroethene	ug/L (ppb)	50	108	111	68-128	3
1,1-Dichloroethane	ug/L (ppb)	50	105	107	74-135	2
2,2-Dichloropropane	ug/L (ppb)	50	172 vo	177 vo	55-143	3
cis-1,2-Dichloroethene	ug/L (ppb)	50	103	105	74-136	2
Chloroform	ug/L (ppb)	50	105	107	74-134	2
2-Butanone (MEK)	ug/L (ppb)	250	92	99	37-150	7
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	96	100	66-129	4
1,1,1-Trichloroethane	ug/L (ppb)	50	109	113	74-142	4
1,1-Dichloropropene	ug/L (ppb)	50	108	110	77-129	2
Carbon tetrachloride	ug/L (ppb)	50	114	117	75-158	3
Benzene	ug/L (ppb)	50	100	105	69-134	5
Trichloroethene	ug/L (ppb)	50	88	92	67-133	4
1,2-Dichloropropane	ug/L (ppb)	50	100	105	71-134	5
Bromodichloromethane	ug/L (ppb)	50	107	112	76-132	5
Dibromomethane	ug/L (ppb)	50	104	108	68-132	4
4-Methyl-2-pentanone	ug/L (ppb)	250	100	108	65-138	8
cis-1,3-Dichloropropene	ug/L (ppb)	50	115	122	74-140	6
Toluene	ug/L (ppb)	50	102	106	72-122	4
trans-1,3-Dichloropropene	ug/L (ppb)	50	118	124	80-136	5
1,1,2-Trichloroethane	ug/L (ppb)	50	96	102	75-124	6
2-Hexanone	ug/L (ppb)	250	94	106	60-136	12
1,3-Dichloropropane	ug/L (ppb)	50	97	102	76-126	5
Tetrachloroethene	ug/L (ppb)	50	103	106	76-121	3
Dibromochloromethane	ug/L (ppb)	50	110	115	84-133	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	98	107	82-115	9
Chlorobenzene	ug/L (ppb)	50	101	106	83-114	5
Ethylbenzene	ug/L (ppb)	50	105	108	77-124	3
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	113	114	84-127	1
m,p-Xylene	ug/L (ppb)	100	105	109	81-112	4
o-Xylene	ug/L (ppb)	50	105	108	81-121	3
Styrene	ug/L (ppb)	50	104	110	84-119	6
Isopropylbenzene	ug/L (ppb)	50	109	110	80-117	1
Bromoform	ug/L (ppb)	50	114	120	74-136	5
n-Propylbenzene	ug/L (ppb)	50	111	111	74-126	0
Bromobenzene	ug/L (ppb)	50	99	104	80-121	5
1,3,5-Trimethylbenzene	ug/L (ppb)	50	112	111	78-123	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	130 vo	136 vo	66-126	5
1,2,3-Trichloropropane	ug/L (ppb)	50	100	106	67-124	6
2-Chlorotoluene	ug/L (ppb)	50	108	107	77-127	1
4-Chlorotoluene	ug/L (ppb)	50	106	109	78-128	3
tert-Butylbenzene	ug/L (ppb)	50	112	109	80-123	3
1,2,4-Trimethylbenzene	ug/L (ppb)	50	111	111	79-122	0
sec-Butylbenzene	ug/L (ppb)	50	113	111	80-116	2
p-Isopropyltoluene	ug/L (ppb)	50	114	113	81-123	1
1,3-Dichlorobenzene	ug/L (ppb)	50	105	108	83-113	3
1,4-Dichlorobenzene	ug/L (ppb)	50	103	108	81-112	5
1,2-Dichlorobenzene	ug/L (ppb)	50	104	107	84-112	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	120	116	57-141	3
1,2,4-Trichlorobenzene	ug/L (ppb)	50	116	115	72-130	1
Hexachlorobutadiene	ug/L (ppb)	50	120	117	53-141	3
Naphthalene	ug/L (ppb)	50	113	112	64-133	1
1,2,3-Trichlorobenzene	ug/L (ppb)	50	112	111	65-136	1

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QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 005097-34 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	113	104	74-127	8
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	95	97	48-149	2
Benzene	ug/L (ppb)	50	<0.35	104	103	76-125	1
Toluene	ug/L (ppb)	50	<1	104	104	76-122	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	<1	95	108	69-134	13
Ethylbenzene	ug/L (ppb)	50	<1	107	106	69-135	1
m,p-Xylene	ug/L (ppb)	100	<2	107	107	69-135	0
o-Xylene	ug/L (ppb)	50	<1	111	104	60-140	7
Naphthalene	ug/L (ppb)	50	<1	126	111	44-164	13

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	108	107	64-147	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	100	101	66-129	1
Benzene	ug/L (ppb)	50	105	105	69-134	0
Toluene	ug/L (ppb)	50	105	104	72-122	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	109	109	82-115	0
Ethylbenzene	ug/L (ppb)	50	108	108	77-124	0
m,p-Xylene	ug/L (ppb)	100	109	108	81-112	1
o-Xylene	ug/L (ppb)	50	107	106	81-121	1
Naphthalene	ug/L (ppb)	50	114	108	64-133	5

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Project: POL-TPH, F&BI 005097

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	109	112	70-122	3
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	100	101	75-116	1
Benzene	ug/L (ppb)	50	109	109	75-116	0
Toluene	ug/L (ppb)	50	97	100	79-115	3
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	102	101	82-118	1
Ethylbenzene	ug/L (ppb)	50	103	106	83-111	3
m,p-Xylene	ug/L (ppb)	100	103	105	81-112	2
o-Xylene	ug/L (ppb)	50	103	107	81-117	4
Naphthalene	ug/L (ppb)	50	104	110	72-131	6

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Project: POL-TPH, F&BI 005097

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR 1,2-DIBROMOETHANE (EDB) BY EPA METHOD 8011 MODIFIED

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	114	104	70-130	9

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

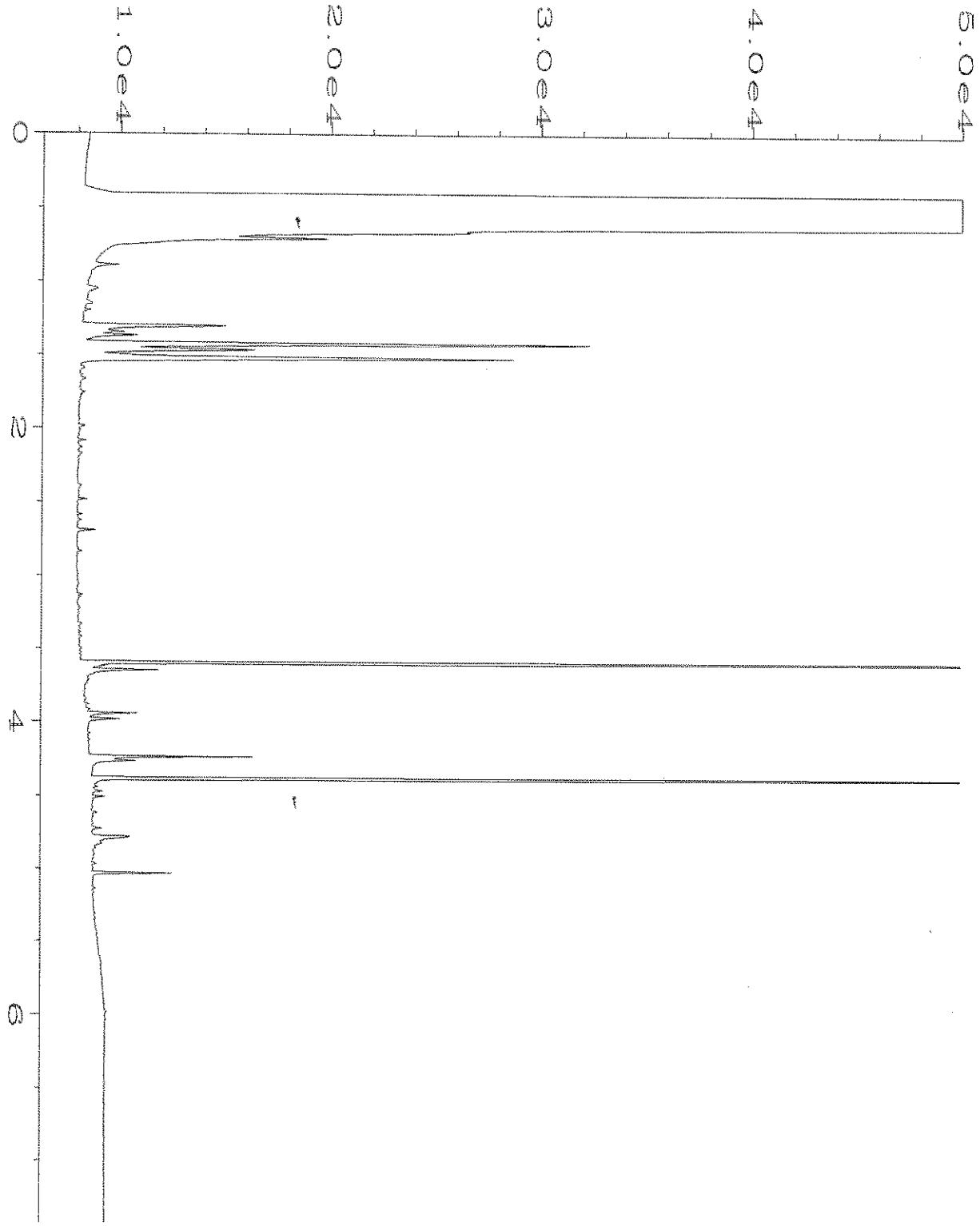
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



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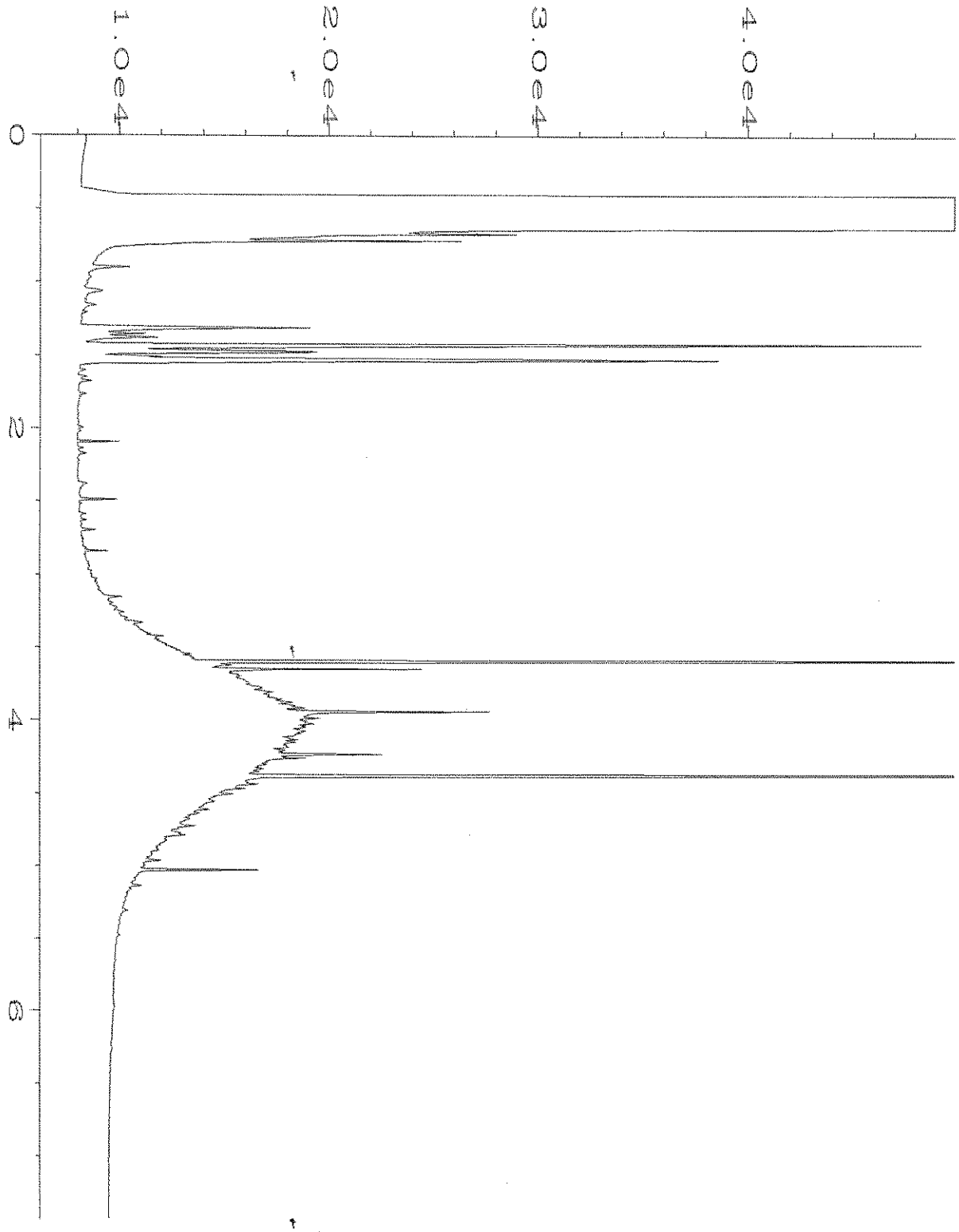
Instrument	: GC1	Vial Number	: 12
Sample Name	: 005097-01	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 03:33 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 09:37 AM	Analysis Method	: DEFAULT.MTH



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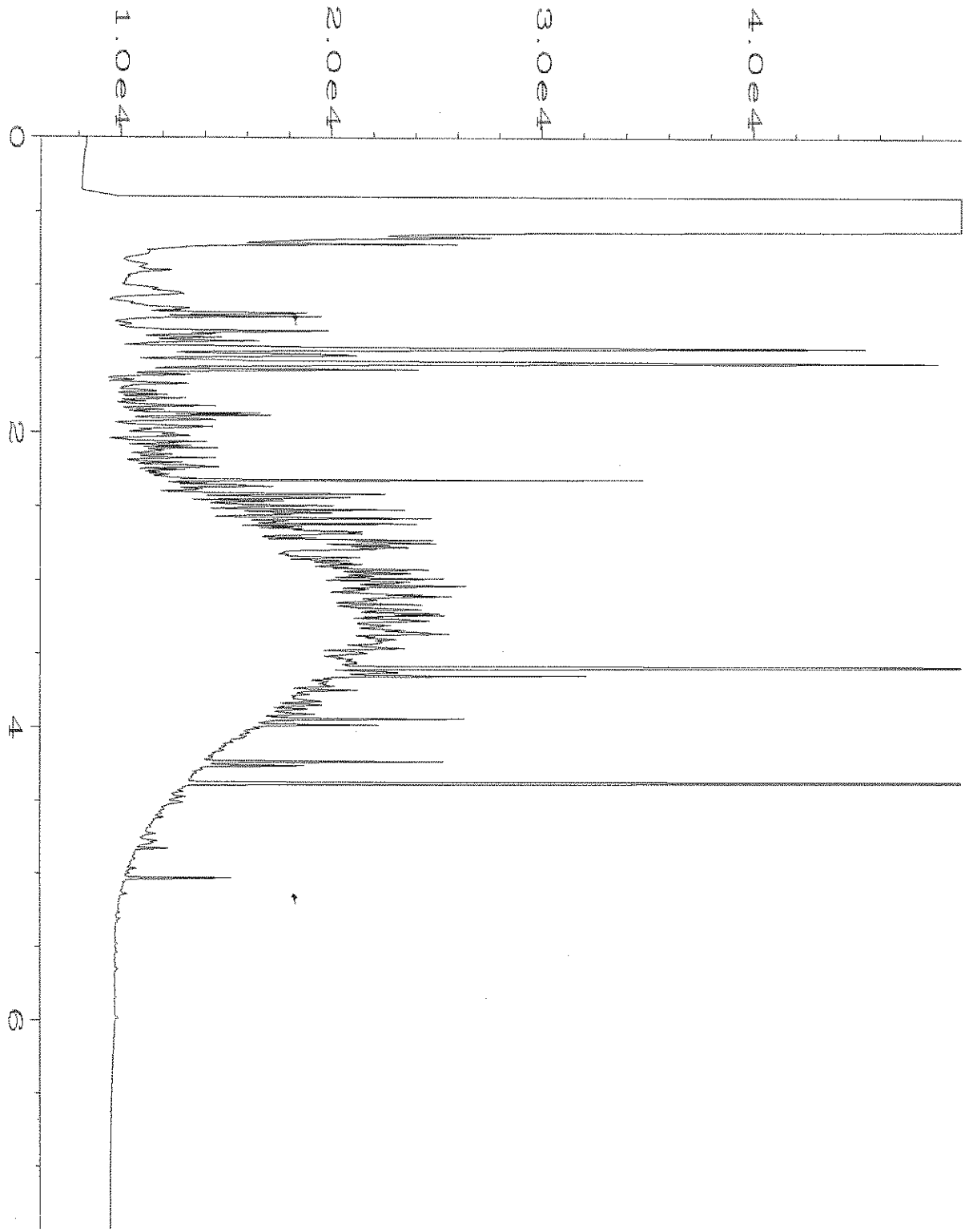
Instrument	: GC1	Vial Number	: 13
Sample Name	: 005097-02	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 03:43 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 09:37 AM	Analysis Method	: DEFAULT.MTH



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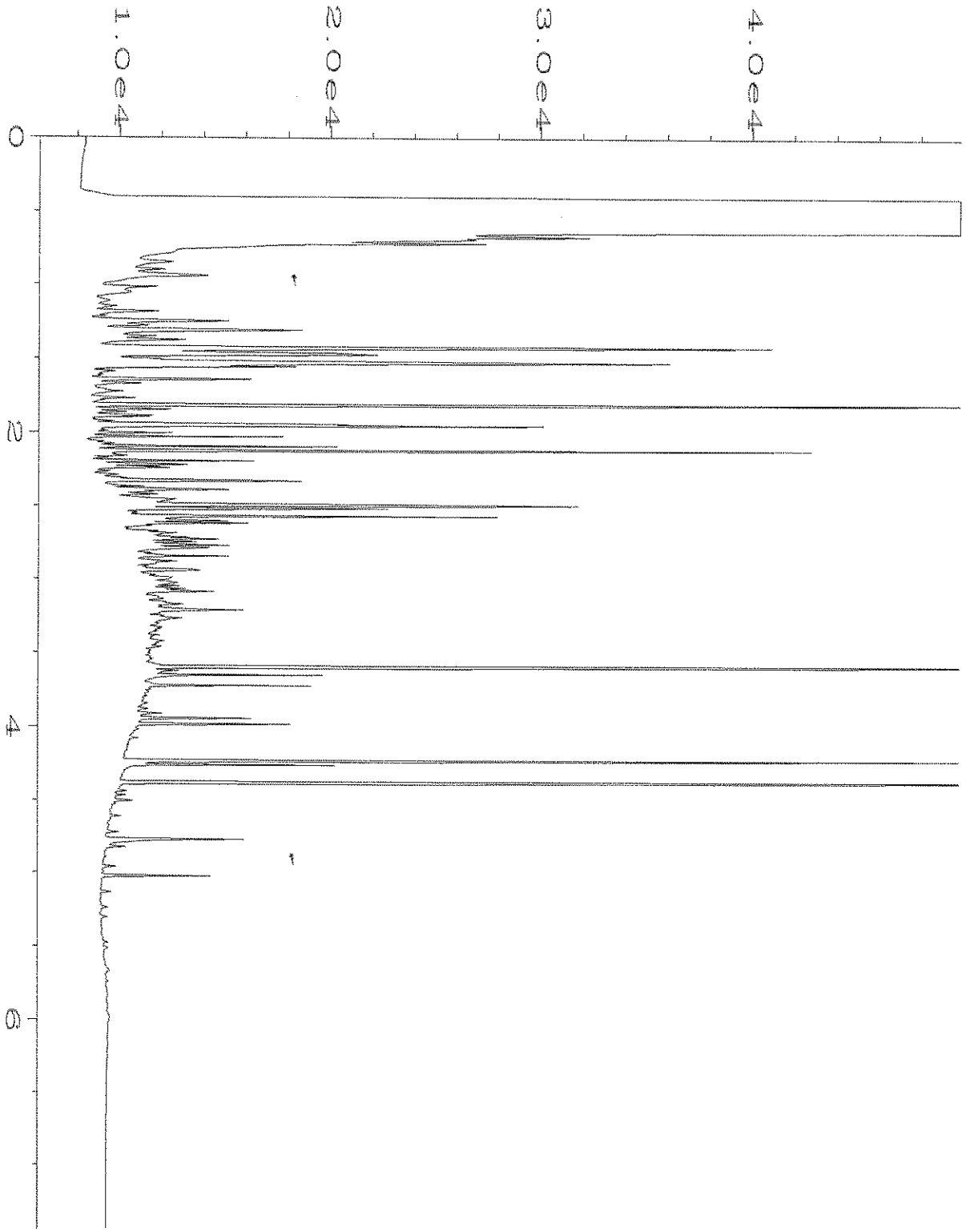
Instrument	: GC1	Vial Number	: 14
Sample Name	: 005097-03	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 03:54 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 09:37 AM	Analysis Method	: DEFAULT.MTH



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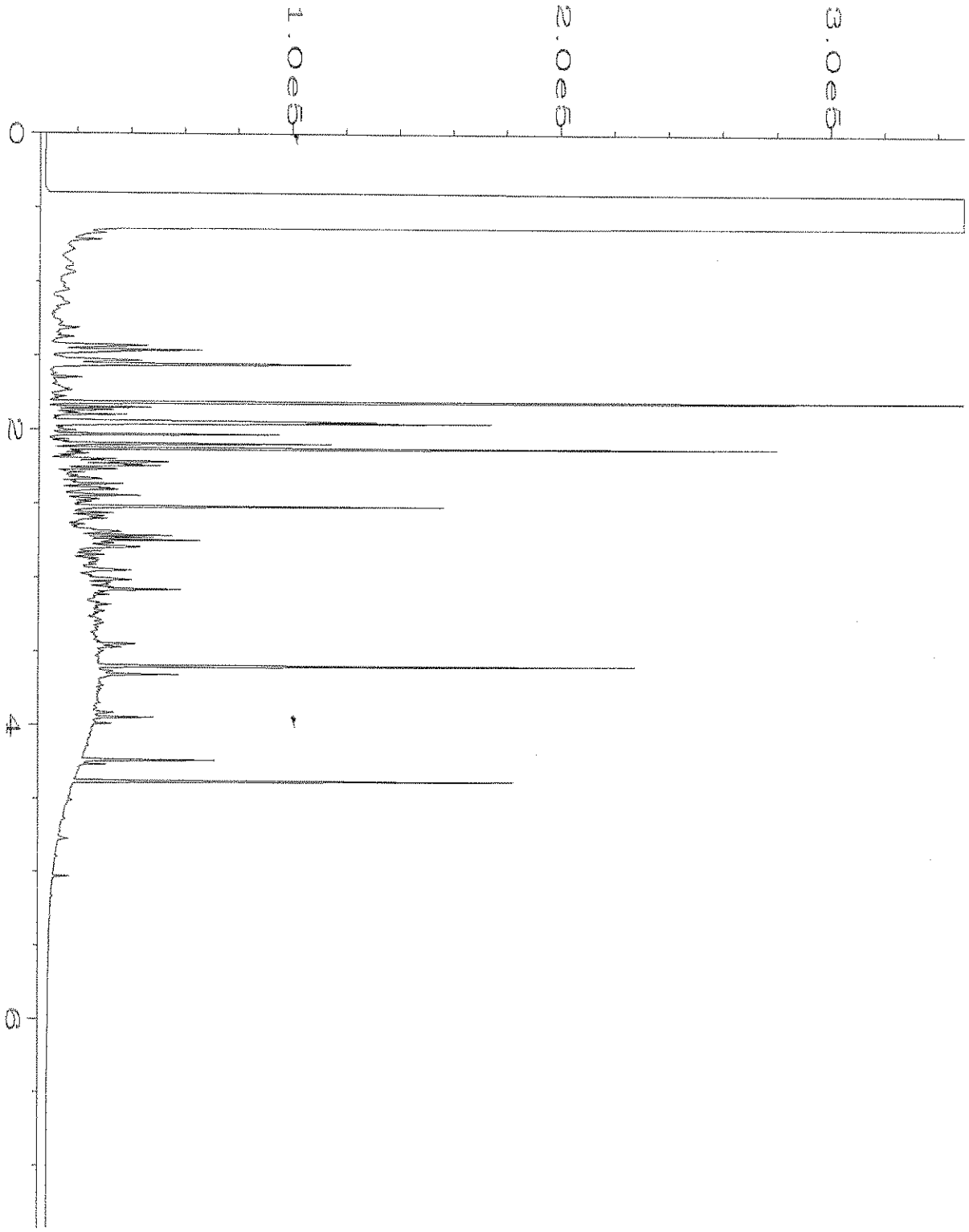
Instrument	: GC1	Vial Number	: 15
Sample Name	: 005097-04	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 04:05 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 09:37 AM	Analysis Method	: DEFAULT.MTH



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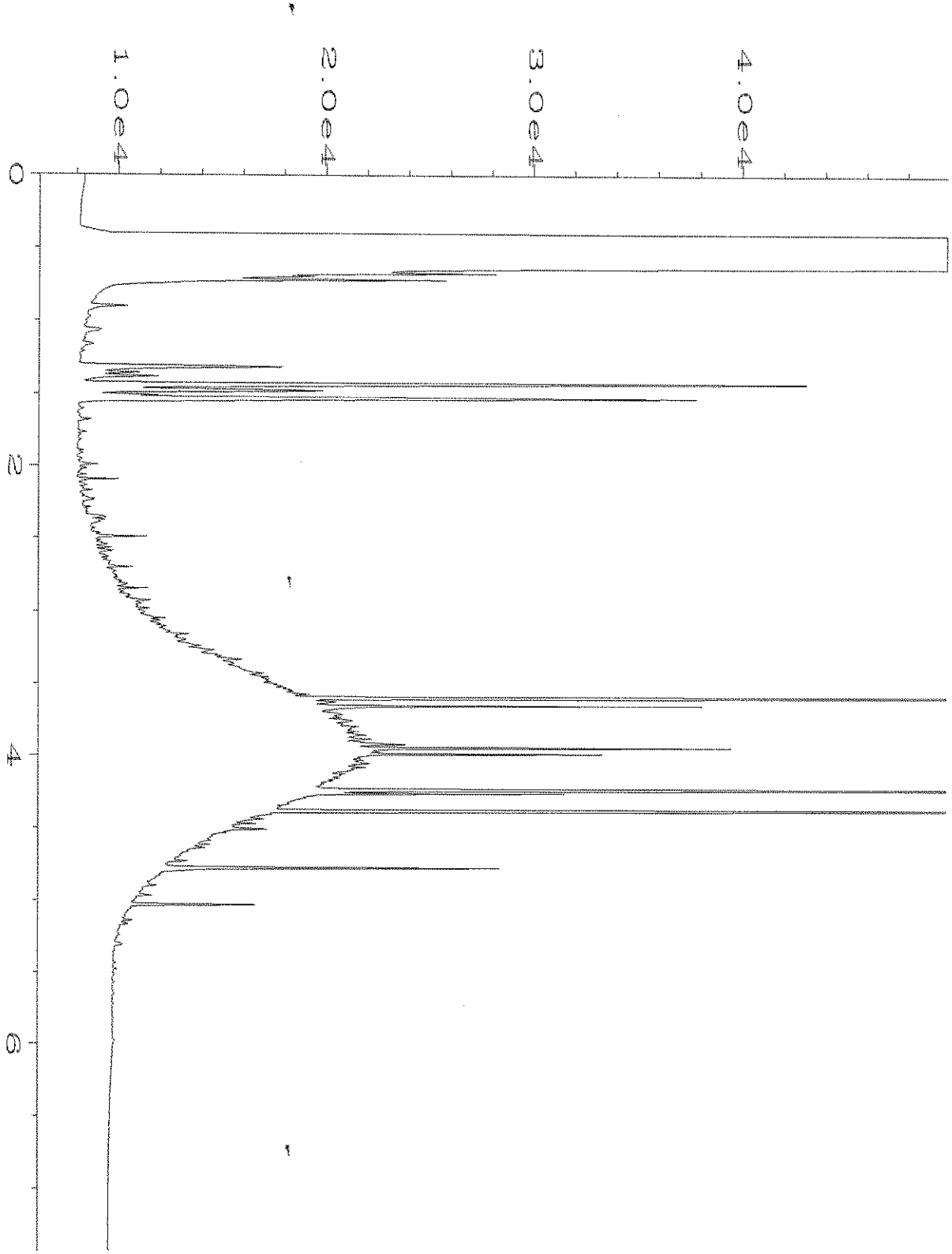
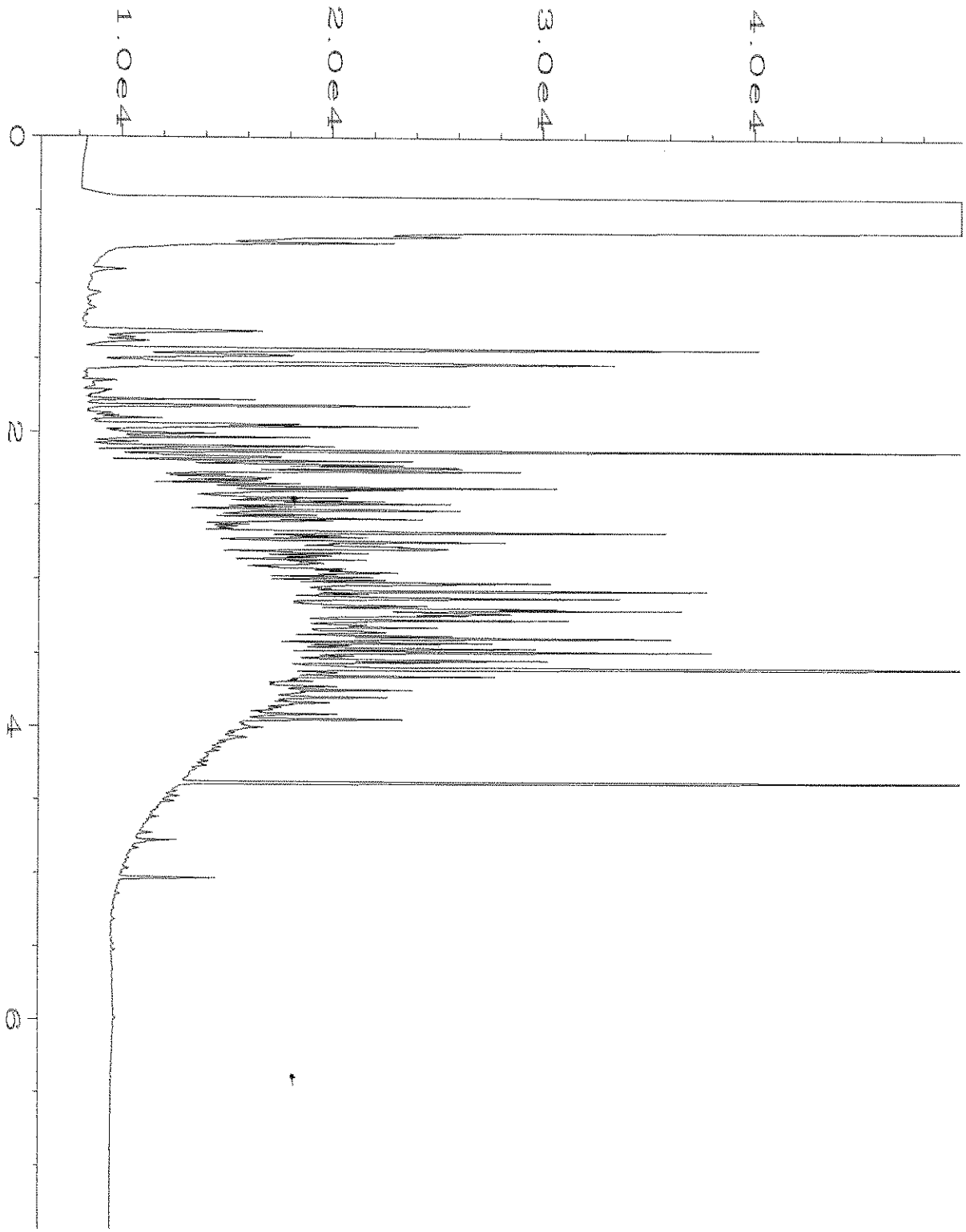
Instrument	: GC1	Vial Number	: 16
Sample Name	: 005097-05	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 04:17 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 09:37 AM	Analysis Method	: DEFAULT.MTH

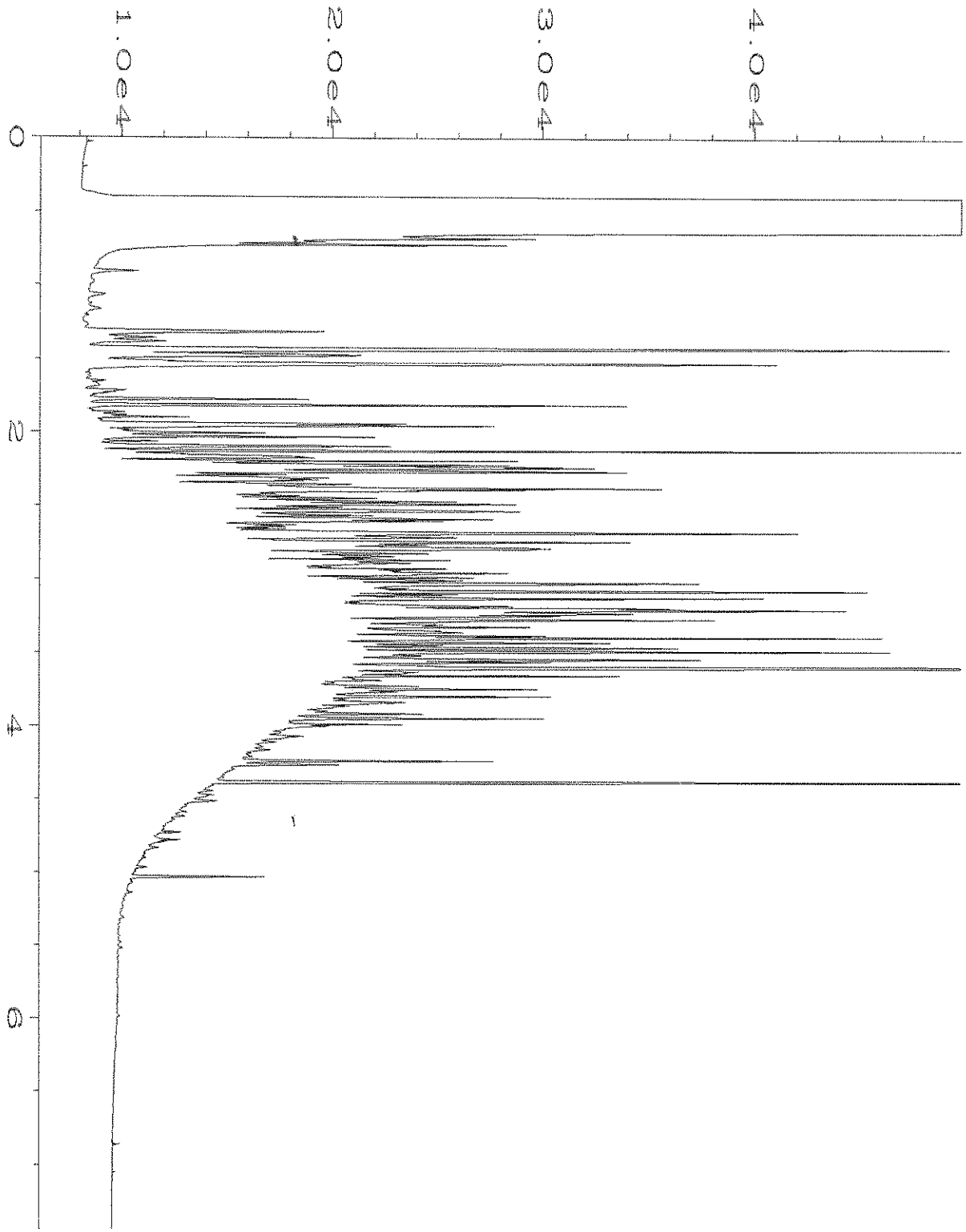


Data File Name	: C:\HPCHEM\1\DATA\05-08-20\017F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 17
Sample Name	: 005097-06	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 04:28 PM	Instrument Method	: DX.MTH
Report Created on:	11 May 20 09:37 AM	Analysis Method	: DEFAULT.MTH

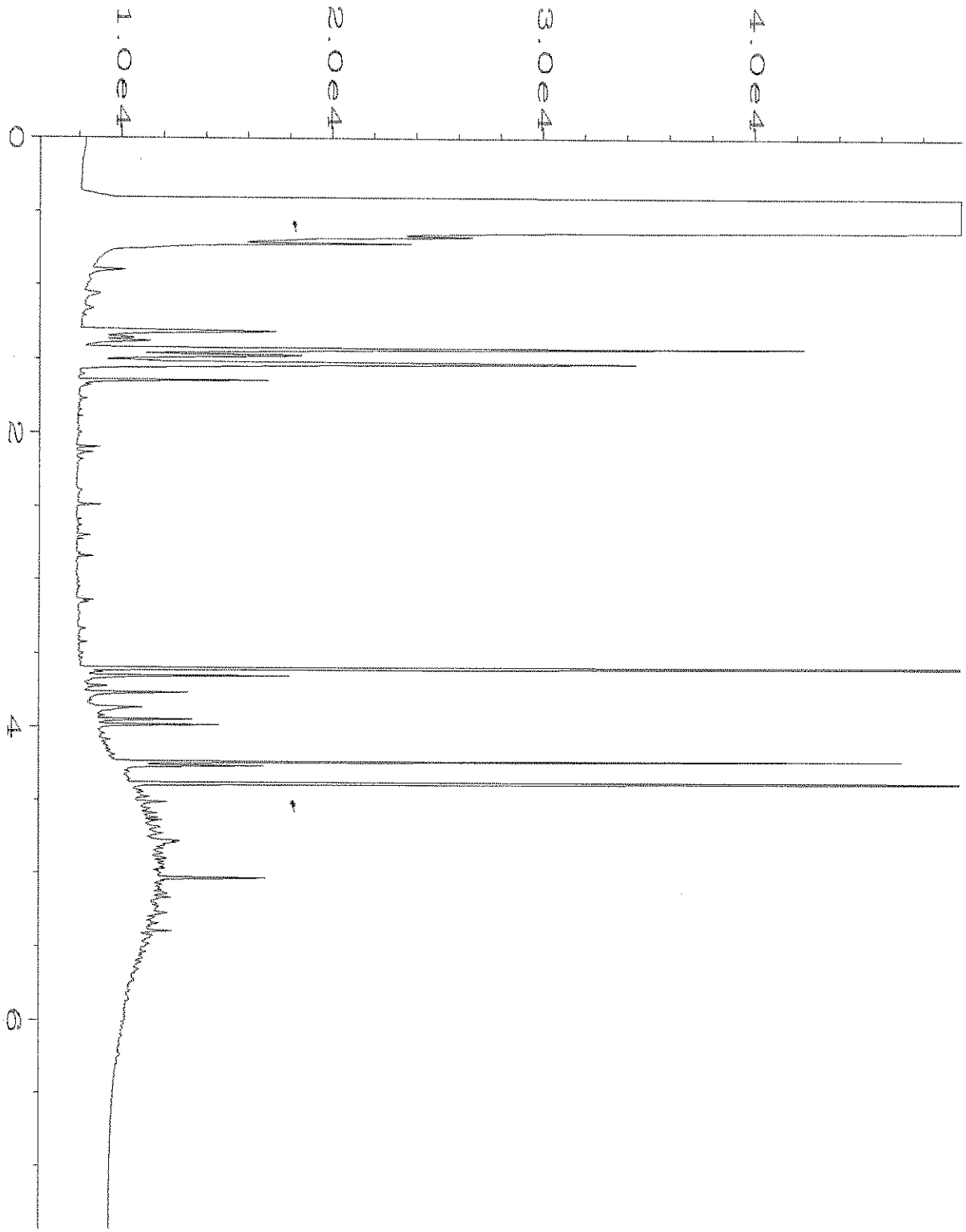


Data File Name : C:\HPCHEM\1\DATA\05-08-20\018F0501.D
Operator : TL
Instrument : GC1
Sample Name : 005097-07
Run Time Bar Code:
Acquired on : 08 May 20 04:40 PM
Report Created on: 11 May 20 09:38 AM

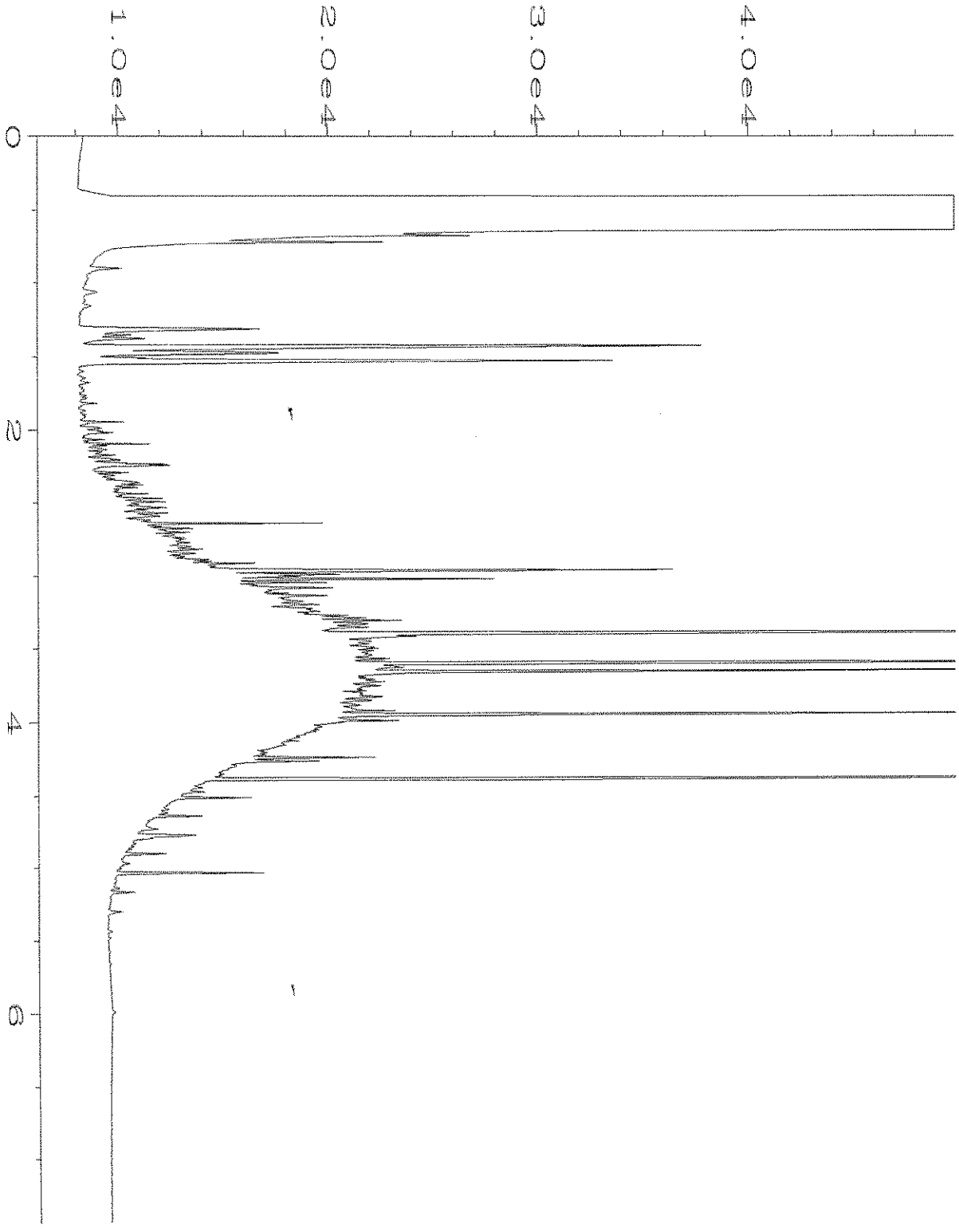
Page Number : 1
Vial Number : 18
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\05-08-20\019F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 19
Sample Name	: 005097-08	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 04:51 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 09:38 AM	Analysis Method	: DEFAULT.MTH

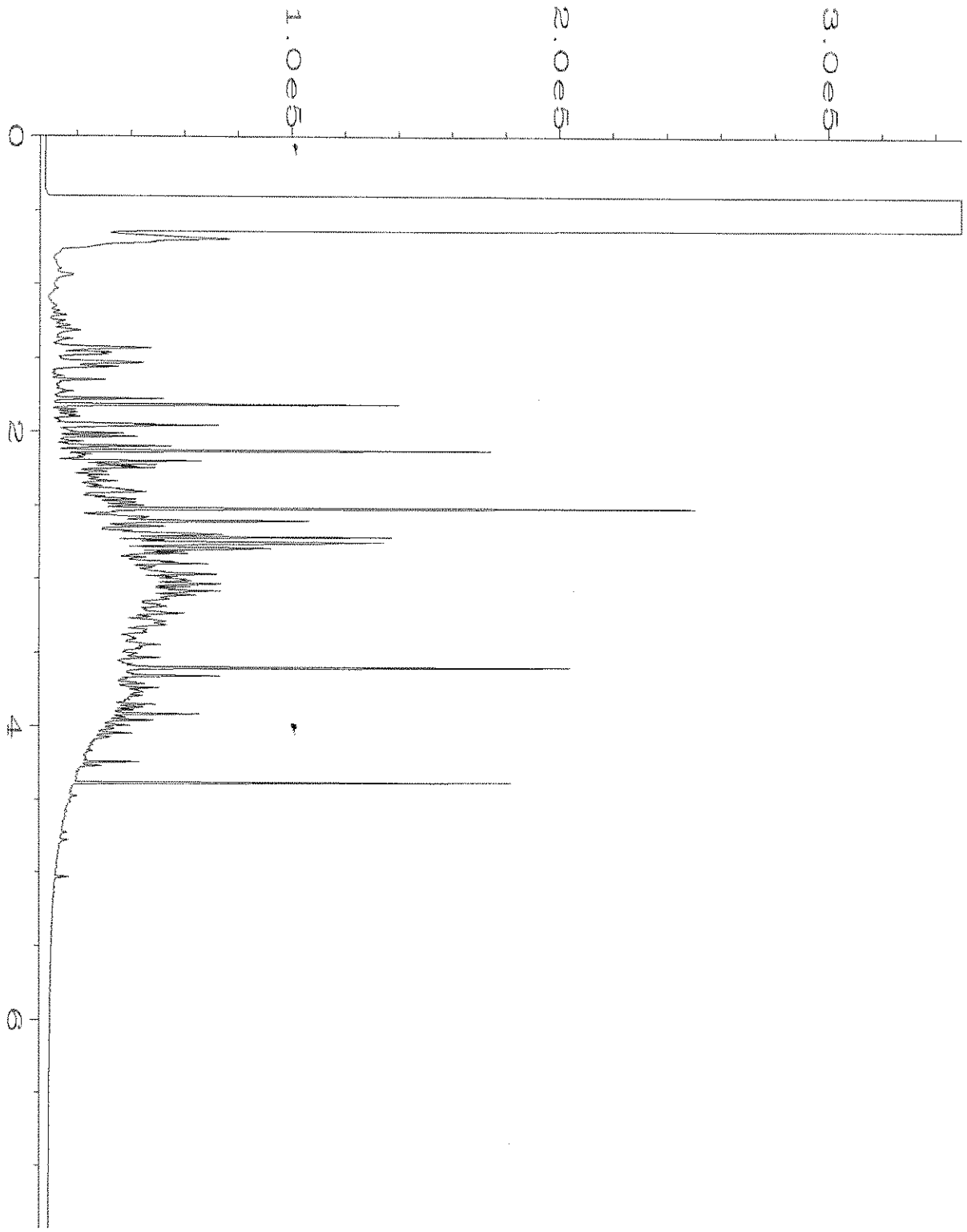


Data File Name	: C:\HPCHEM\1\DATA\05-08-20\020F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 20
Sample Name	: 005097-09	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 05:03 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 09:38 AM	Analysis Method	: DEFAULT.MTH

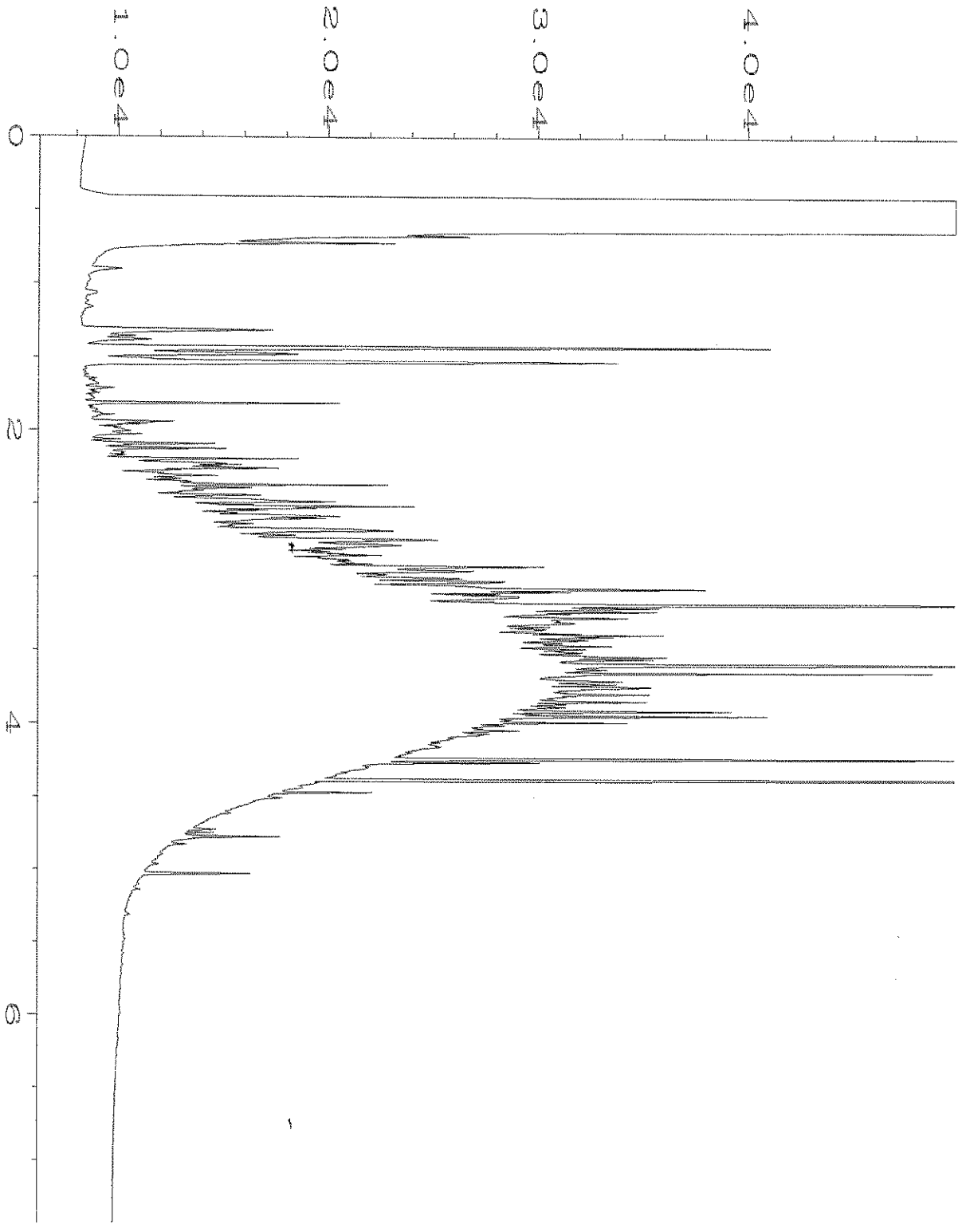


Data File Name : C:\HPCHEM\1\DATA\05-08-20\021F0501.D
Operator : TL
Instrument : GC1
Sample Name : 005097-10
Run Time Bar Code:
Acquired on : 08 May 20 05:14 PM
Report Created on: 11 May 20 09:38 AM

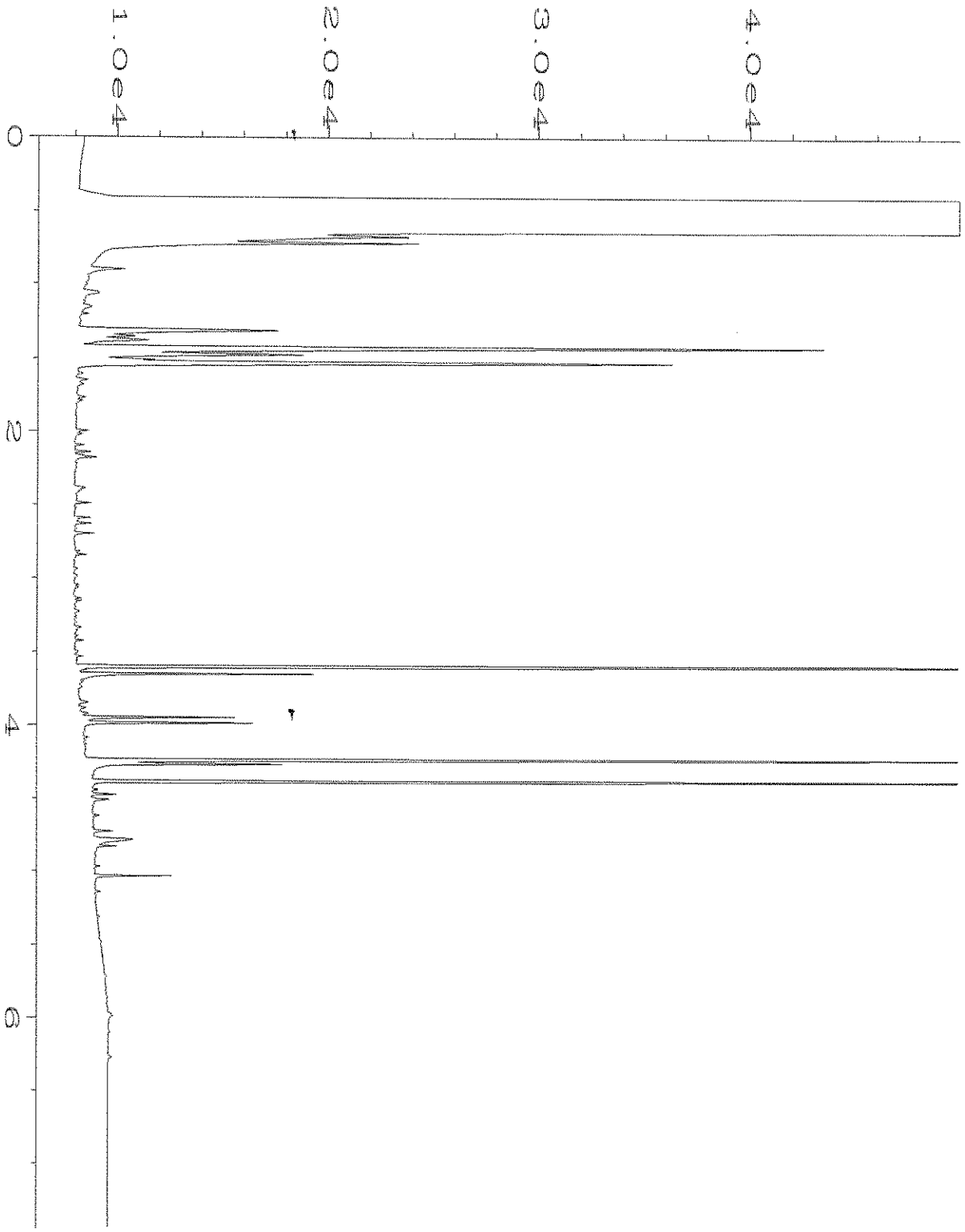
Page Number : 1
Vial Number : 21
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



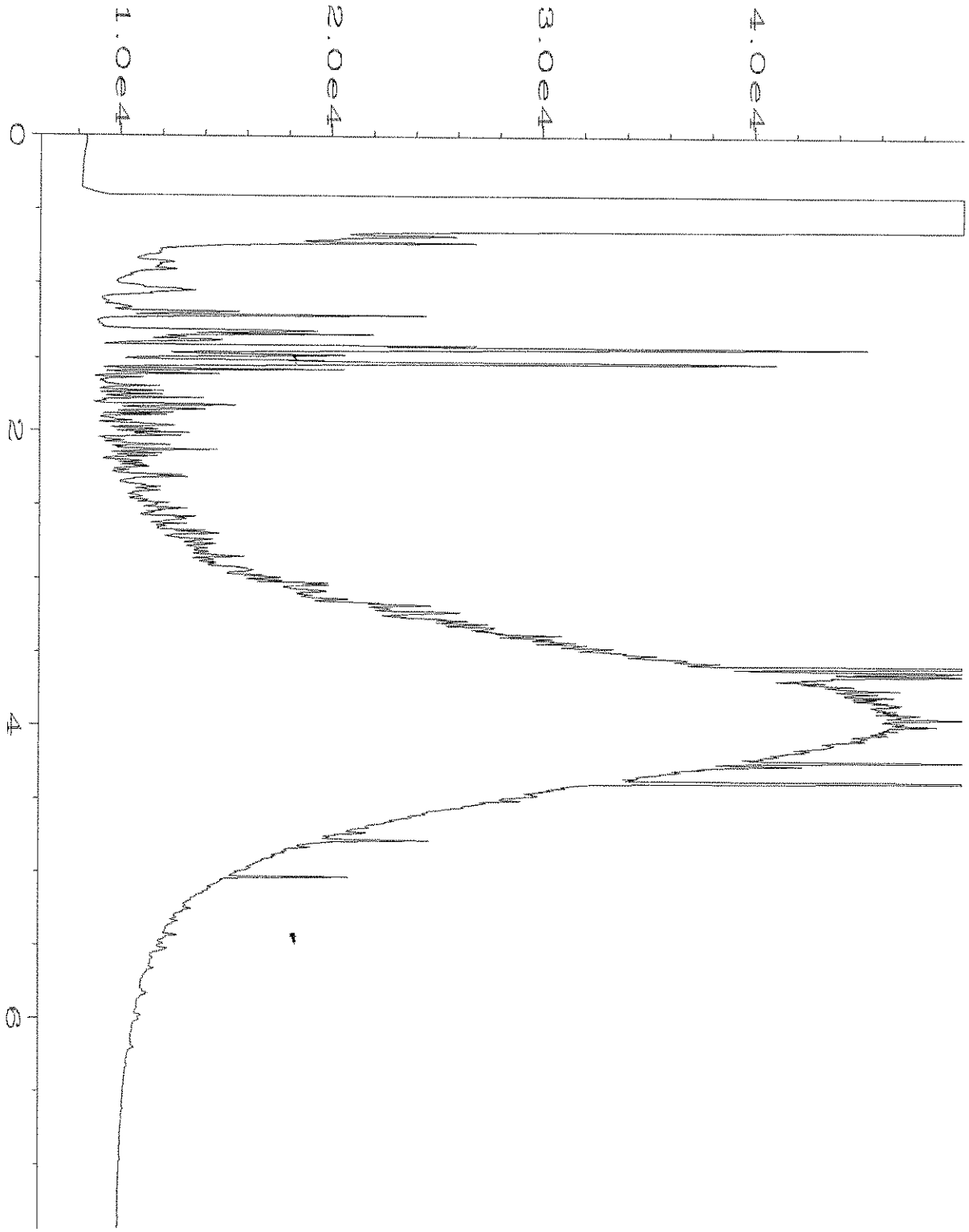
Data File Name	: C:\HPCHEM\1\DATA\05-08-20\022F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 22
Sample Name	: 005097-11	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 05:26 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 09:39 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\05-08-20\023F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 23
Sample Name	: 005097-12	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 05:37 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 09:39 AM	Analysis Method	: DEFAULT.MTH

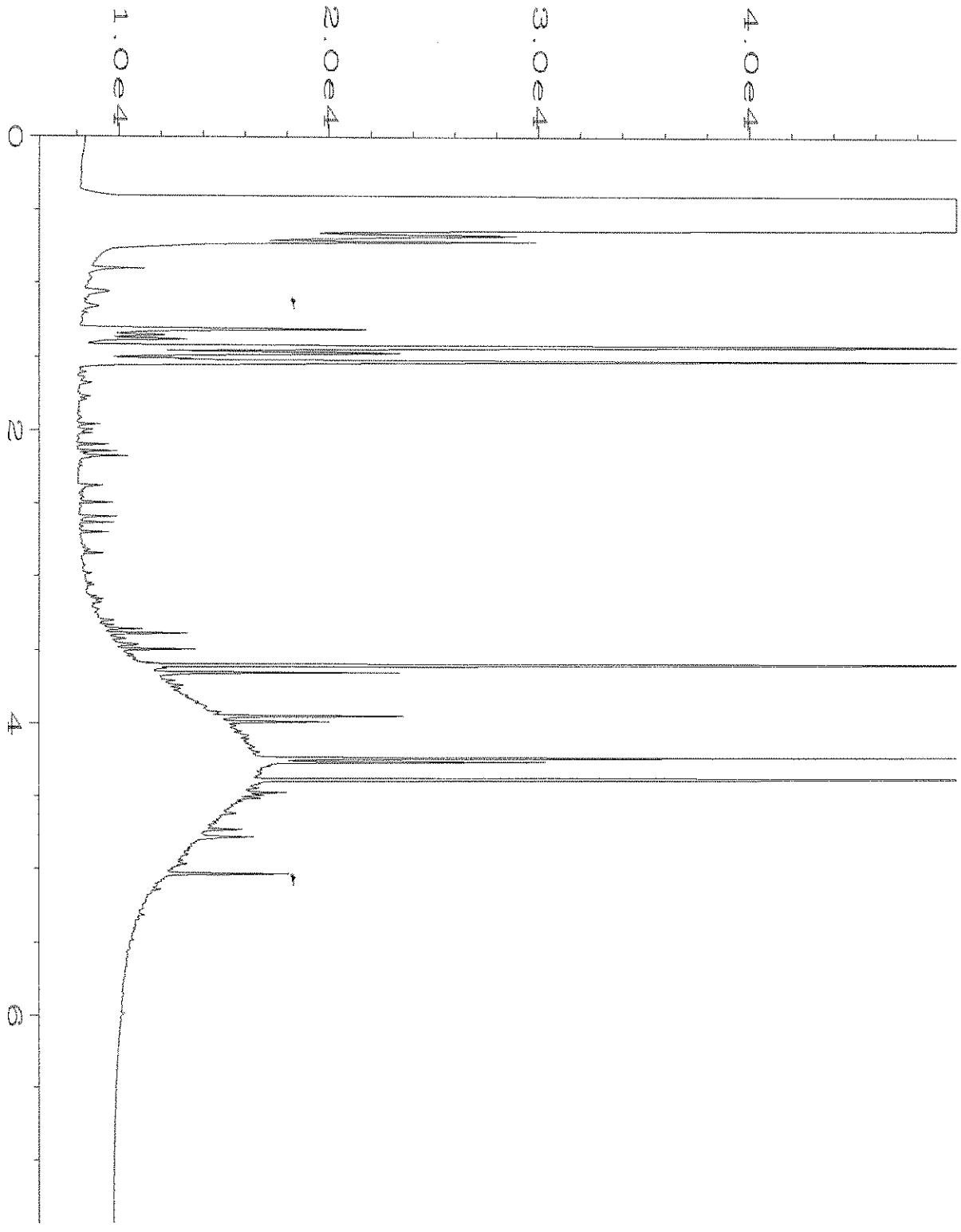


Data File Name	: C:\HPCHEM\1\DATA\05-08-20\024F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 24
Sample Name	: 005097-13	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 05:49 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 09:39 AM	Analysis Method	: DEFAULT.MTH

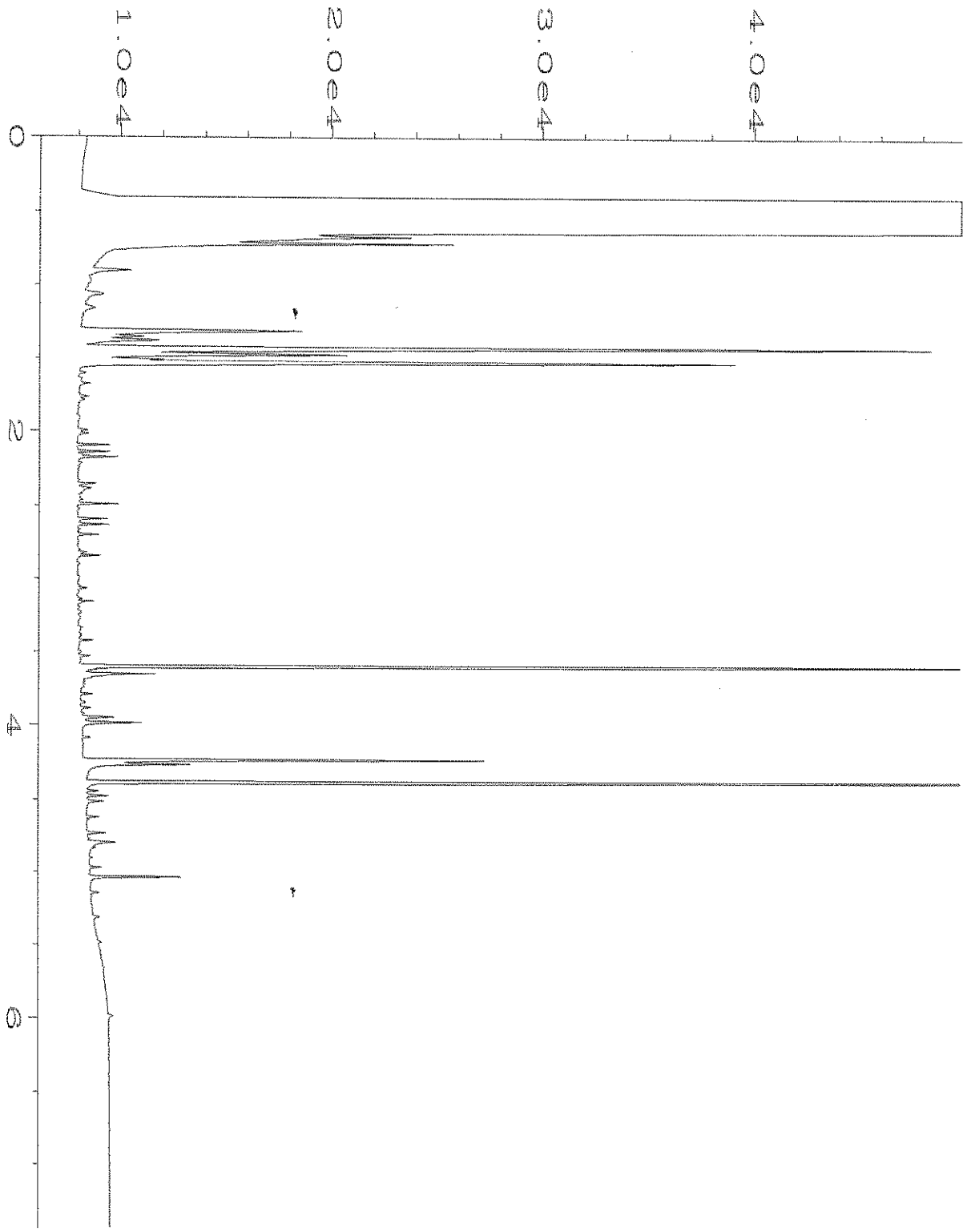


Data File Name : C:\HPCHEM\1\DATA\05-08-20\025F0501.D
Operator : TL
Instrument : GC1
Sample Name : 005097-14
Run Time Bar Code:
Acquired on : 08 May 20 06:00 PM
Report Created on: 11 May 20 09:39 AM

Page Number : 1
Vial Number : 25
Injection Number : 1
Sequence Line : 5
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

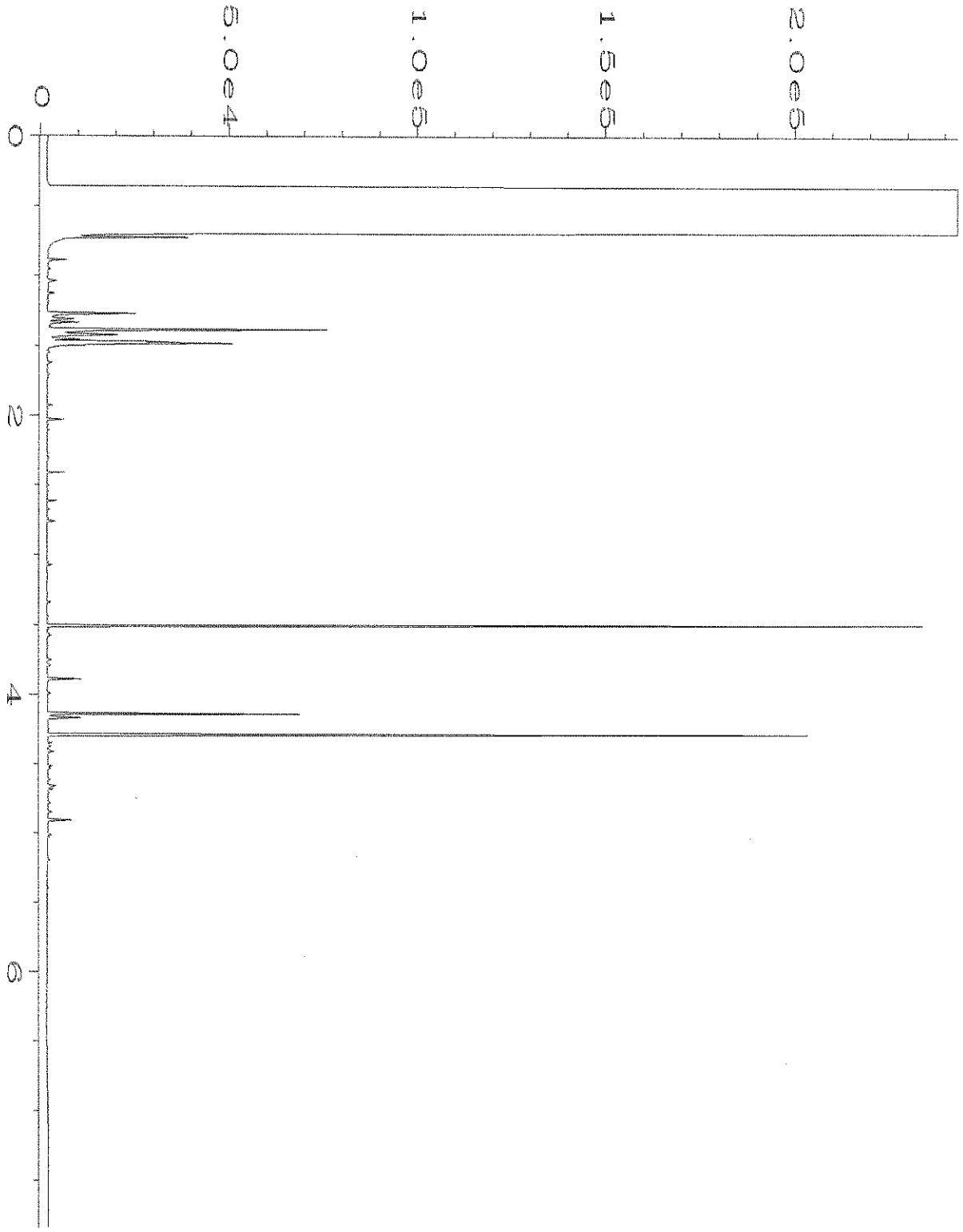


Data File Name	: C:\HPCHEM\1\DATA\05-08-20\026F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 26
Sample Name	: 005097-15	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 06:34 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 09:40 AM	Analysis Method	: DEFAULT.MTH



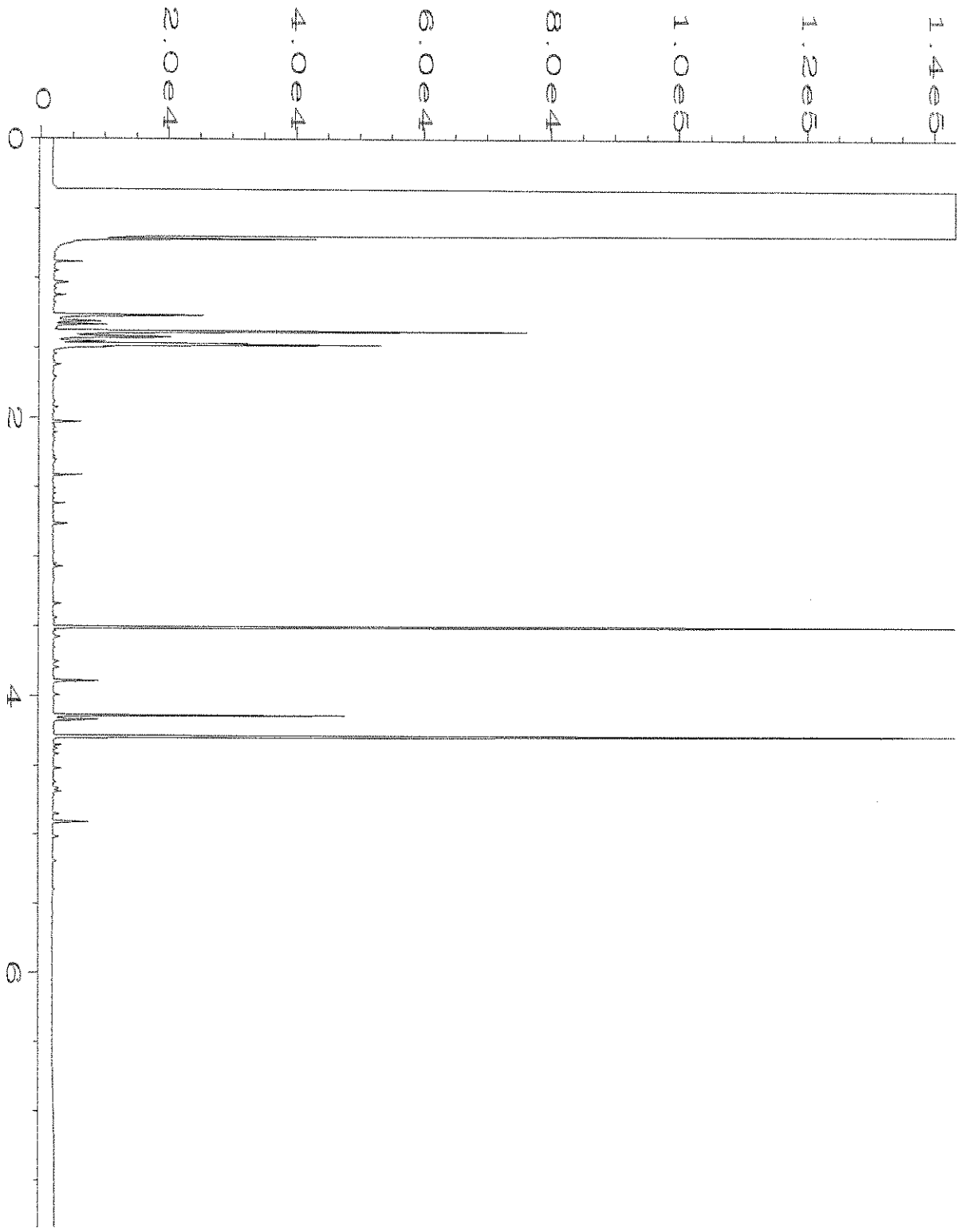
Data File Name : C:\HPCHEM\1\DATA\05-08-20\027F0701.D
Operator : TL
Instrument : GC1
Sample Name : 005097-16
Run Time Bar Code:
Acquired on : 08 May 20 06:46 PM
Report Created on: 11 May 20 09:40 AM

Page Number : 1
Vial Number : 27
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

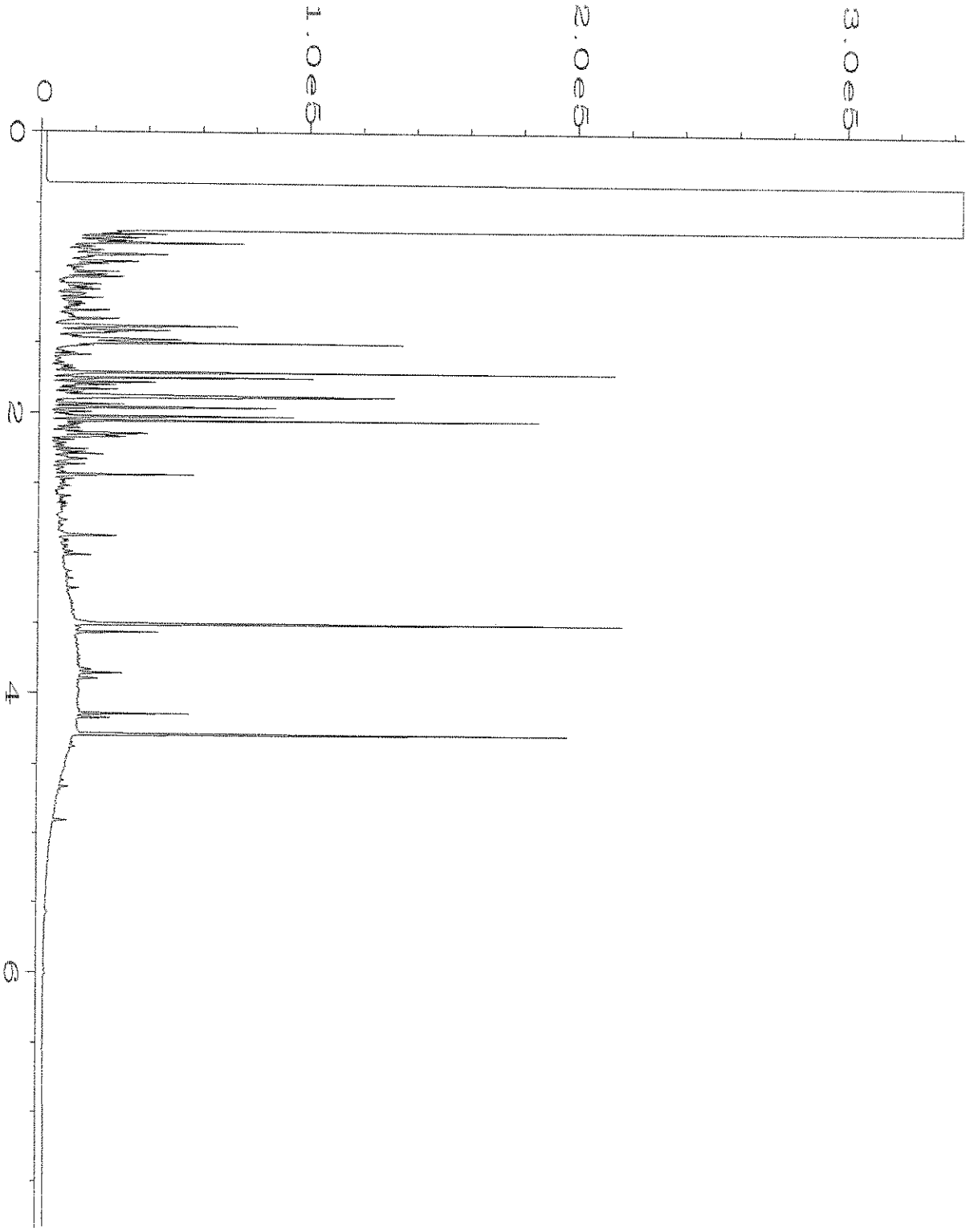


Data File Name : C:\HPCHEM\4\DATA\05-08-20\021F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 005097-17
Run Time Bar Code:
Acquired on : 08 May 20 04:30 PM
Report Created on: 11 May 20 08:18 AM

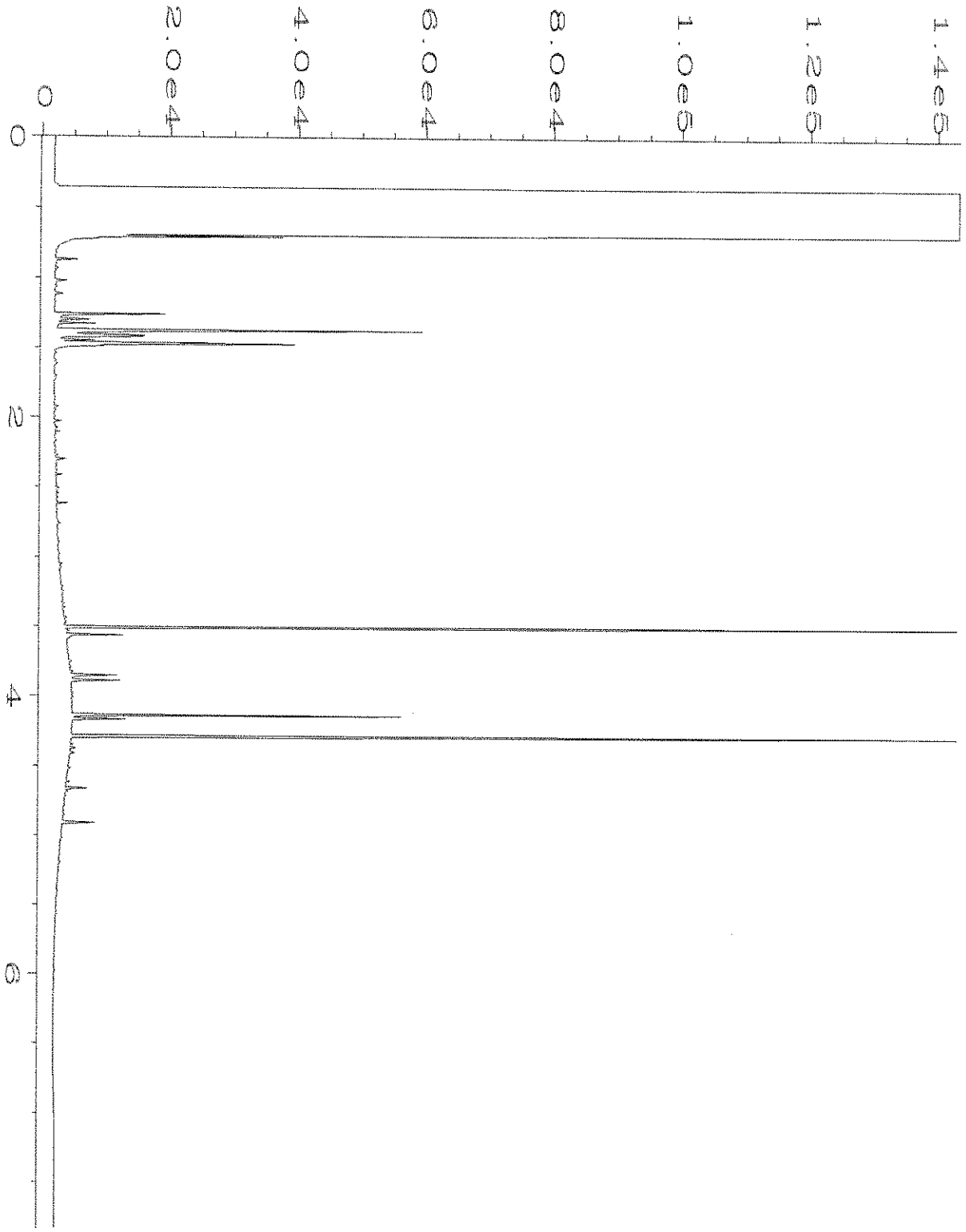
Page Number : 1
Vial Number : 21
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\05-08-20\022F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 22
Sample Name	: 005097-18	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 04:42 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:19 AM	Analysis Method	: DEFAULT.MTH

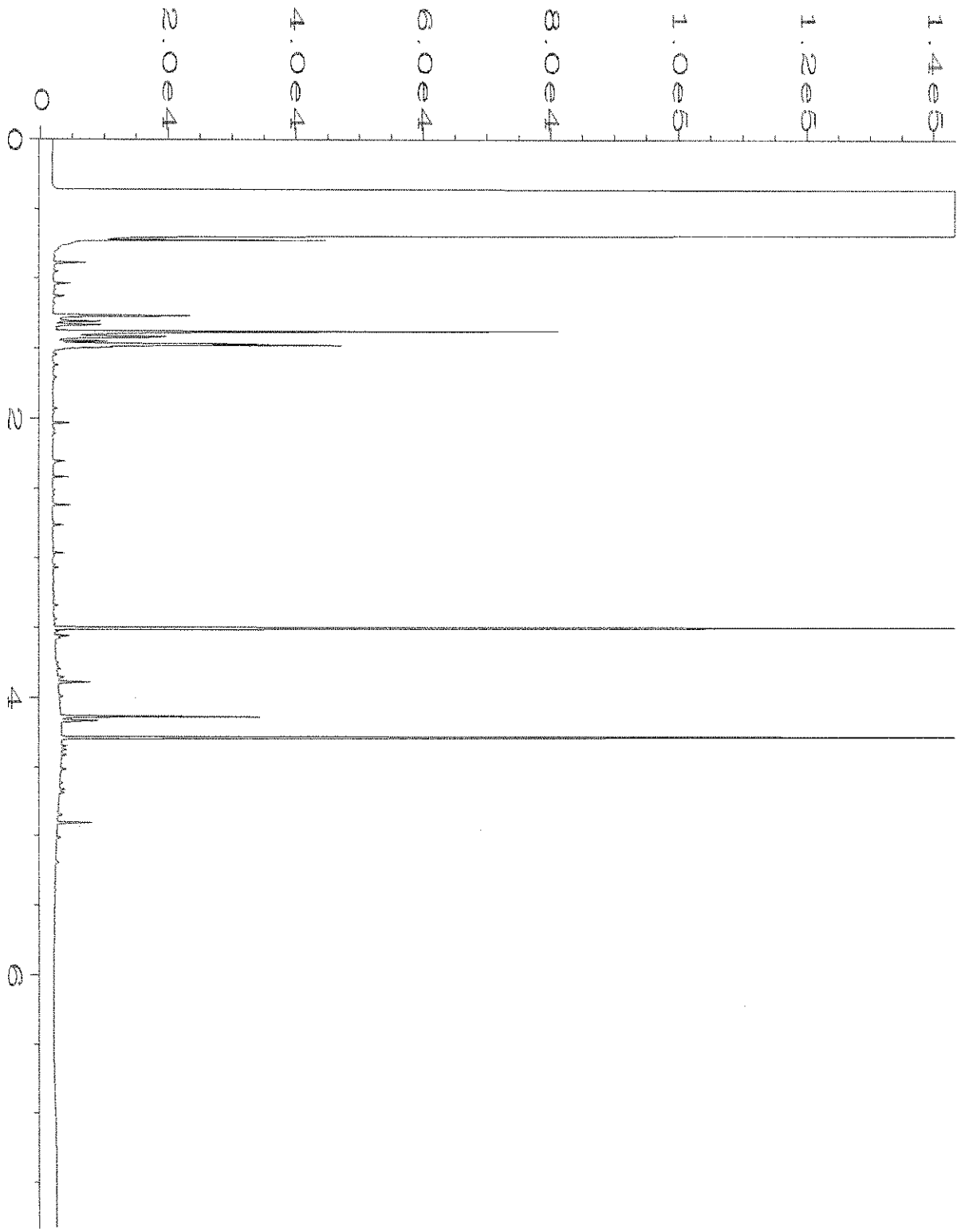


Data File Name	: C:\HPCHEM\4\DATA\05-08-20\023F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 23
Sample Name	: 005097-19	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 04:54 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:20 AM	Analysis Method	: DEFAULT.MTH



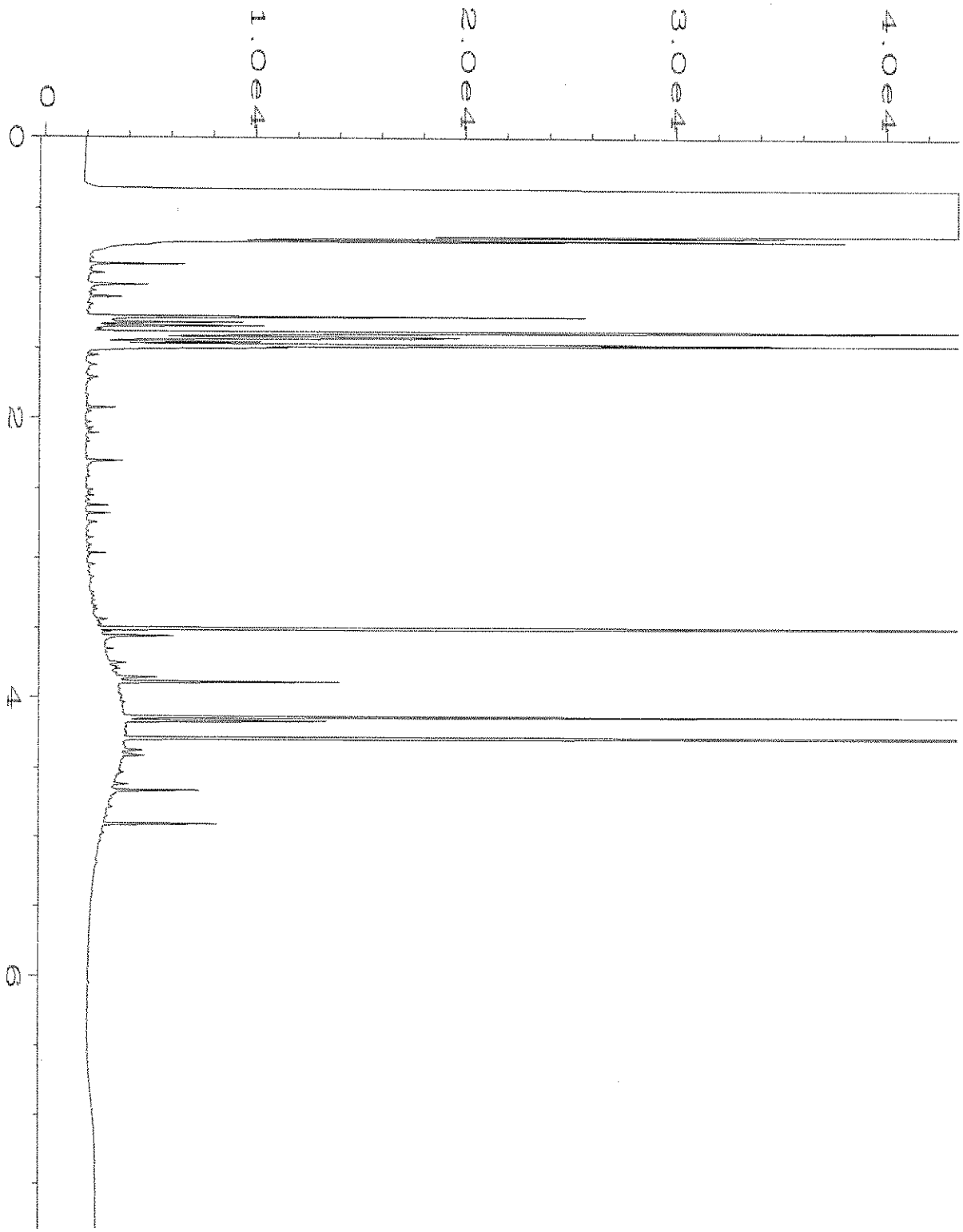
Data File Name : C:\HPCHEM\4\DATA\05-08-20\024F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 005097-20
Run Time Bar Code:
Acquired on : 08 May 20 05:06 PM
Report Created on: 11 May 20 08:20 AM

Page Number : 1
Vial Number : 24
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

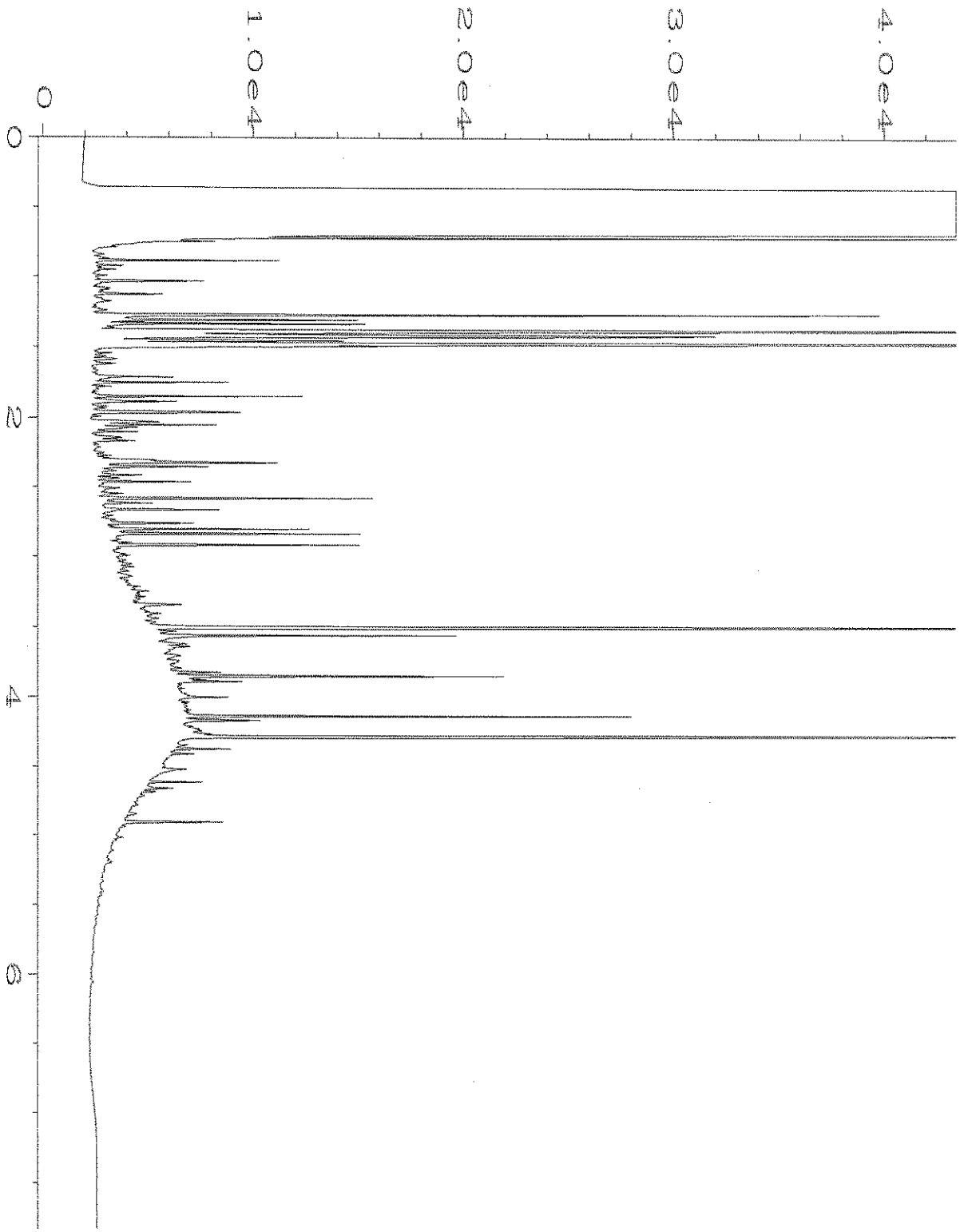


Data File Name : C:\HPCHEM\4\DATA\05-08-20\025F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 005097-21
Run Time Bar Code:
Acquired on : 08 May 20 05:18 PM
Report Created on: 11 May 20 08:21 AM

Page Number : 1
Vial Number : 25
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

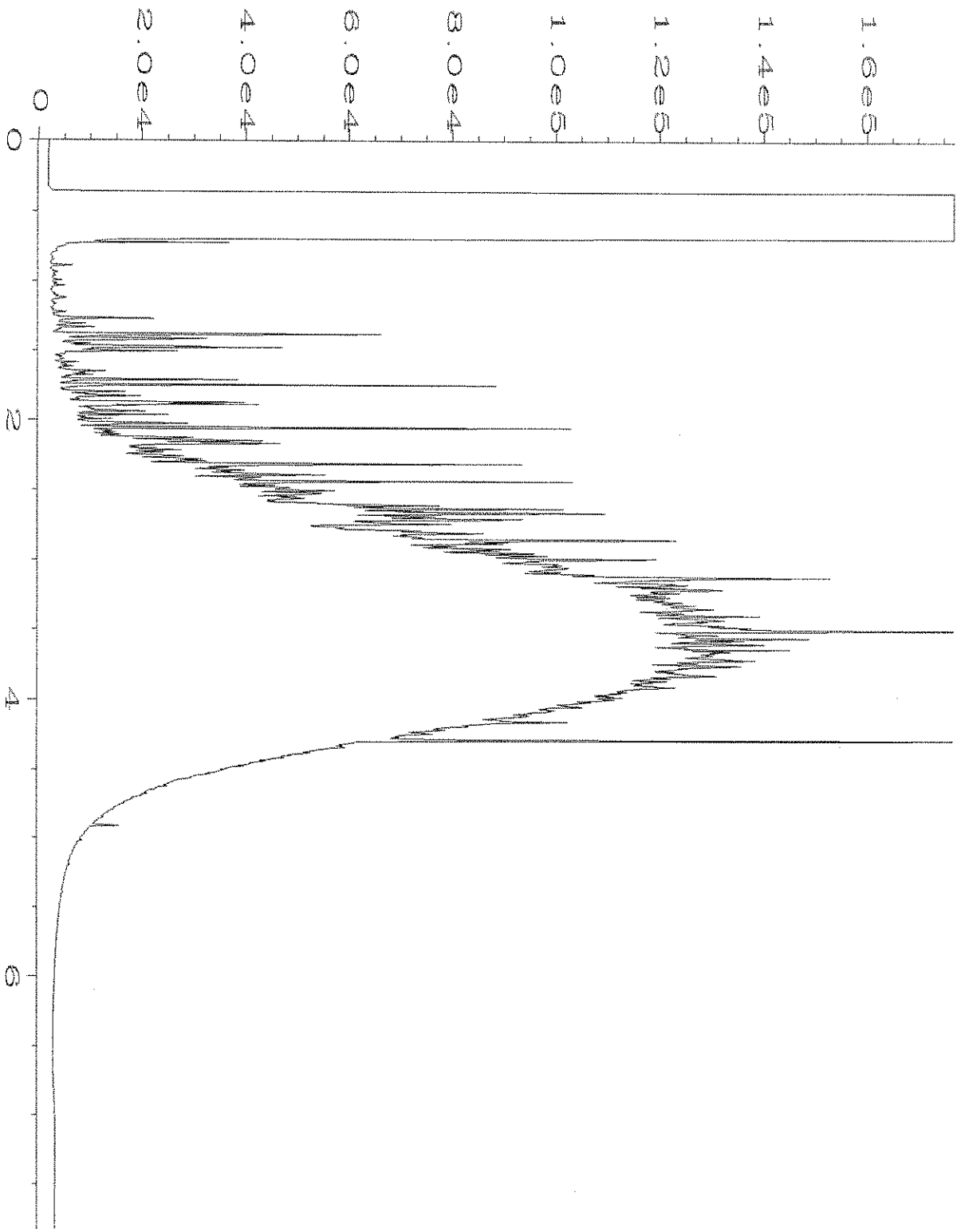


Data File Name	: C:\HPCHEM\4\DATA\05-08-20\026F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 26
Sample Name	: 005097-22	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 05:30 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:21 AM	Analysis Method	: DEFAULT.MTH

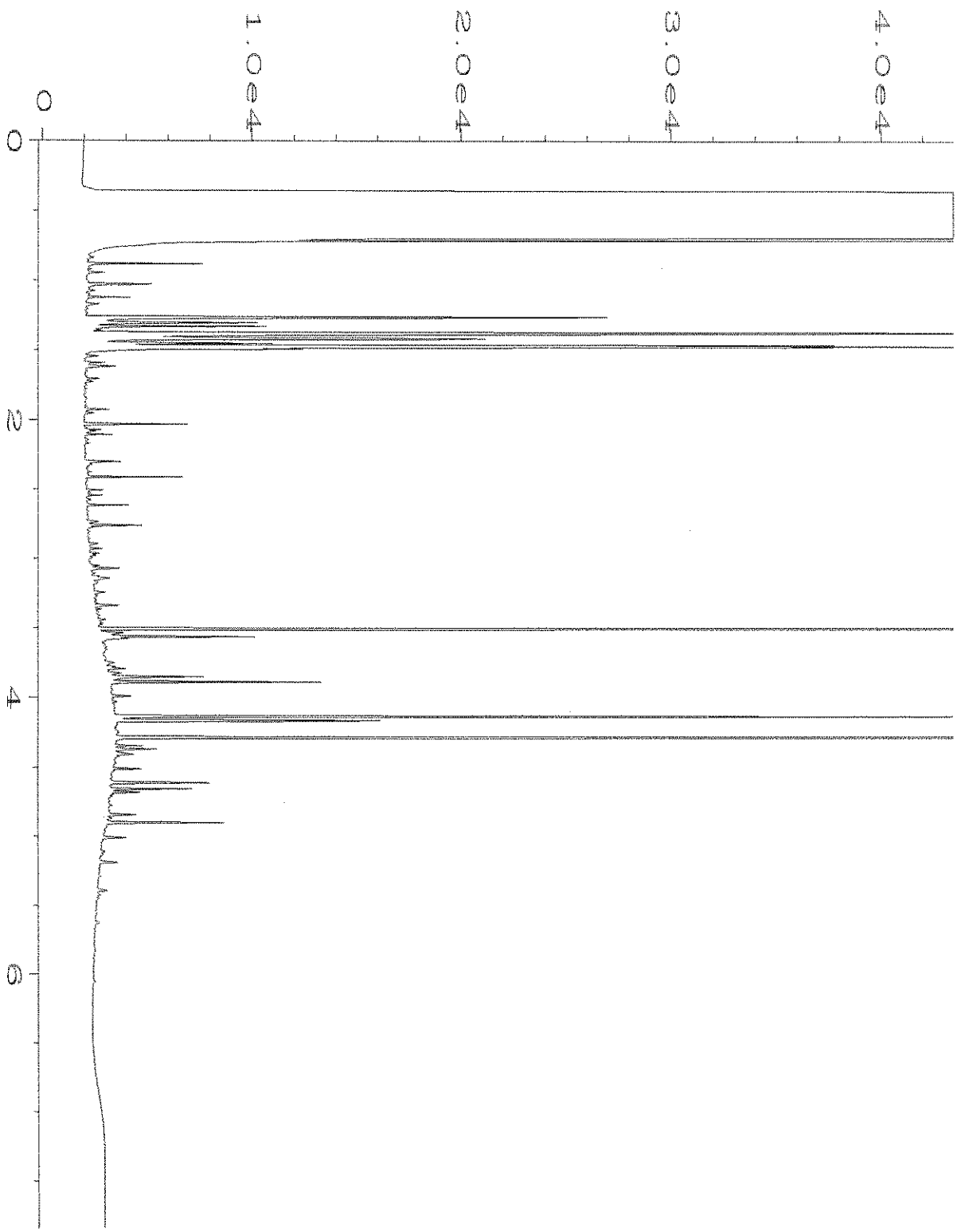


Data File Name : C:\HPCHEM\4\DATA\05-08-20\027F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 005097-23
Run Time Bar Code:
Acquired on : 08 May 20 05:42 PM
Report Created on: 11 May 20 08:21 AM

Page Number : 1
Vial Number : 27
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

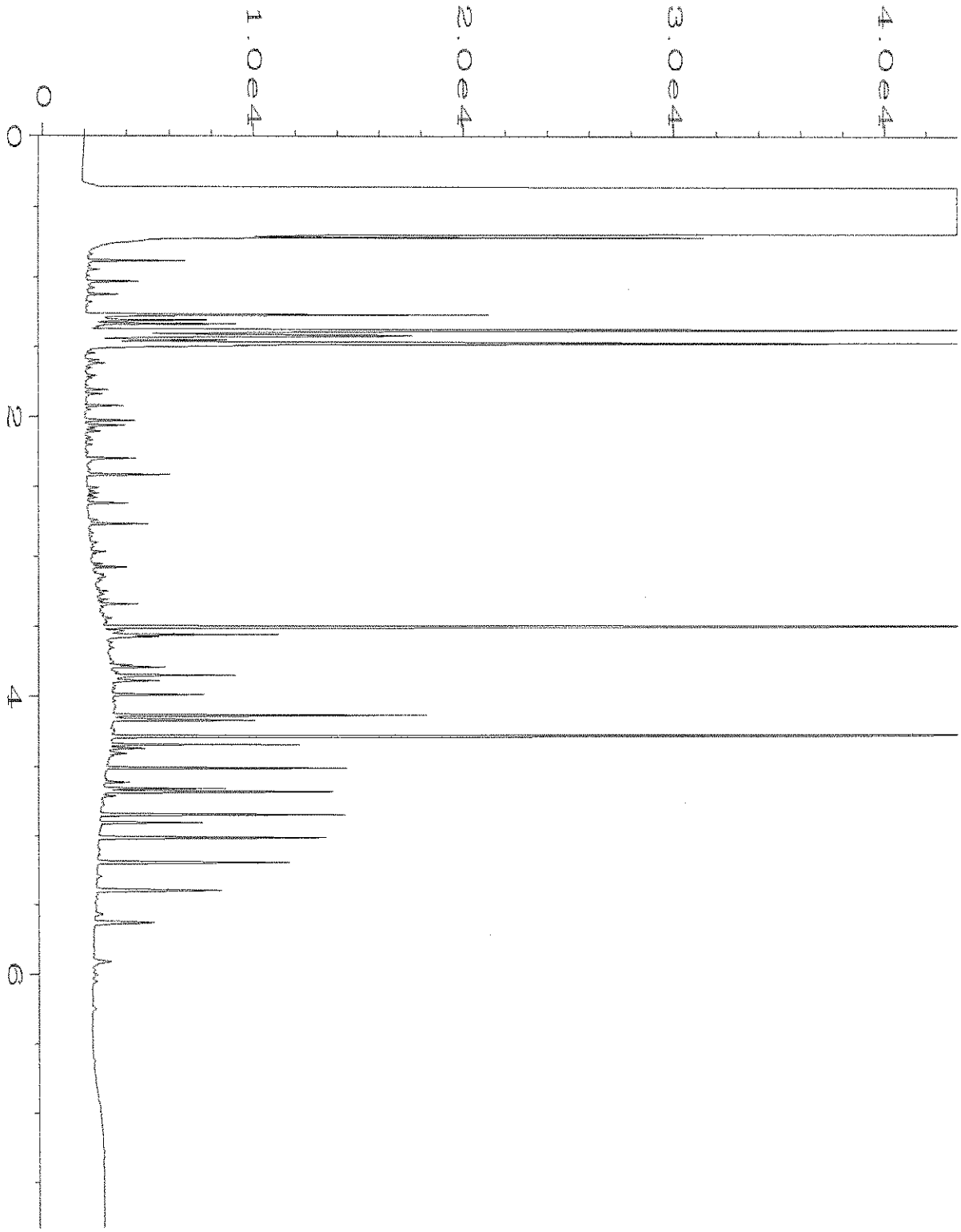


Data File Name	: C:\HPCHEM\4\DATA\05-08-20\028F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 28
Sample Name	: 005097-24	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 05:54 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:22 AM	Analysis Method	: DEFAULT.MTH

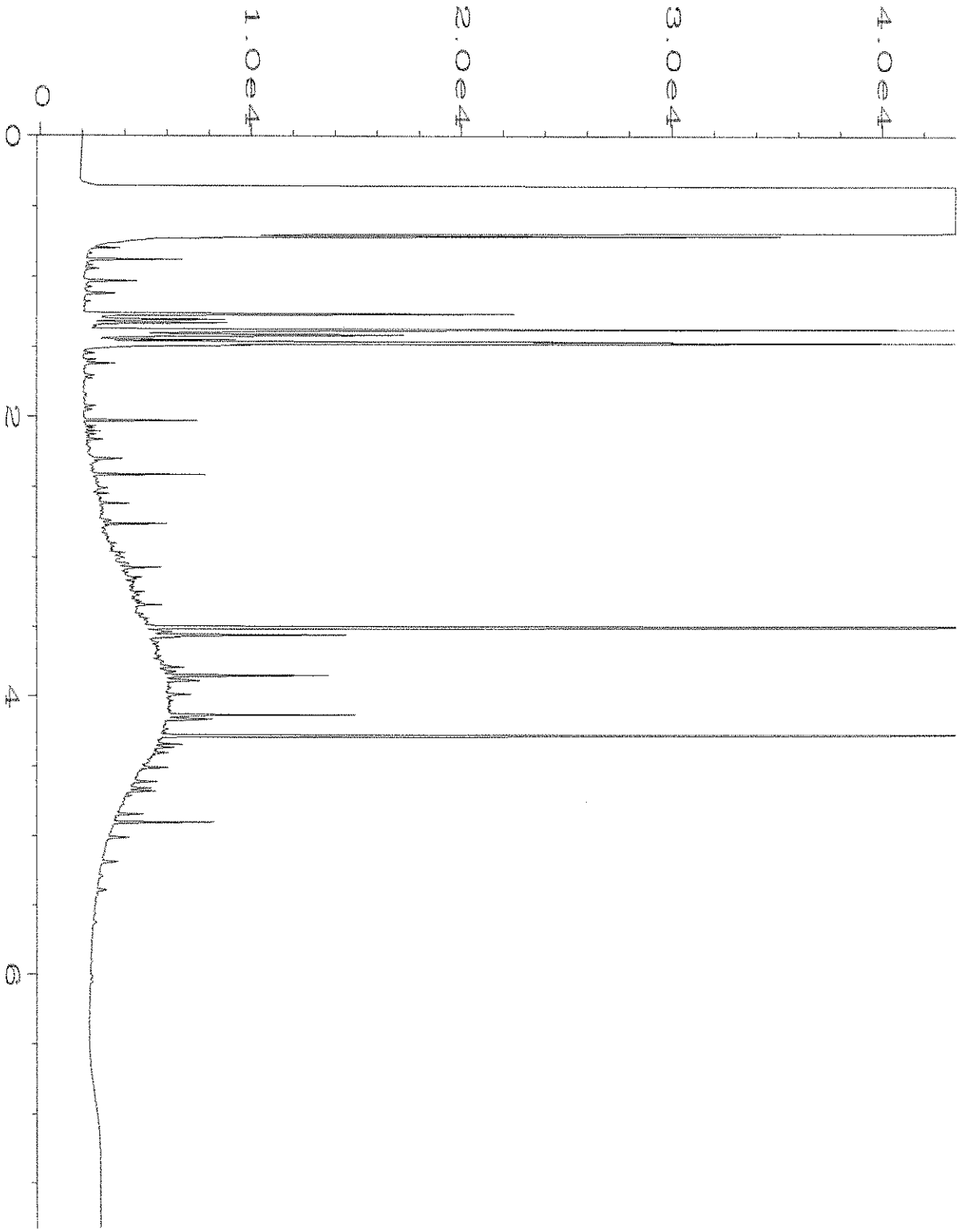


Data File Name : C:\HPCHEM\4\DATA\05-08-20\029F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 005097-25
Run Time Bar Code:
Acquired on : 08 May 20 06:06 PM
Report Created on: 11 May 20 08:22 AM

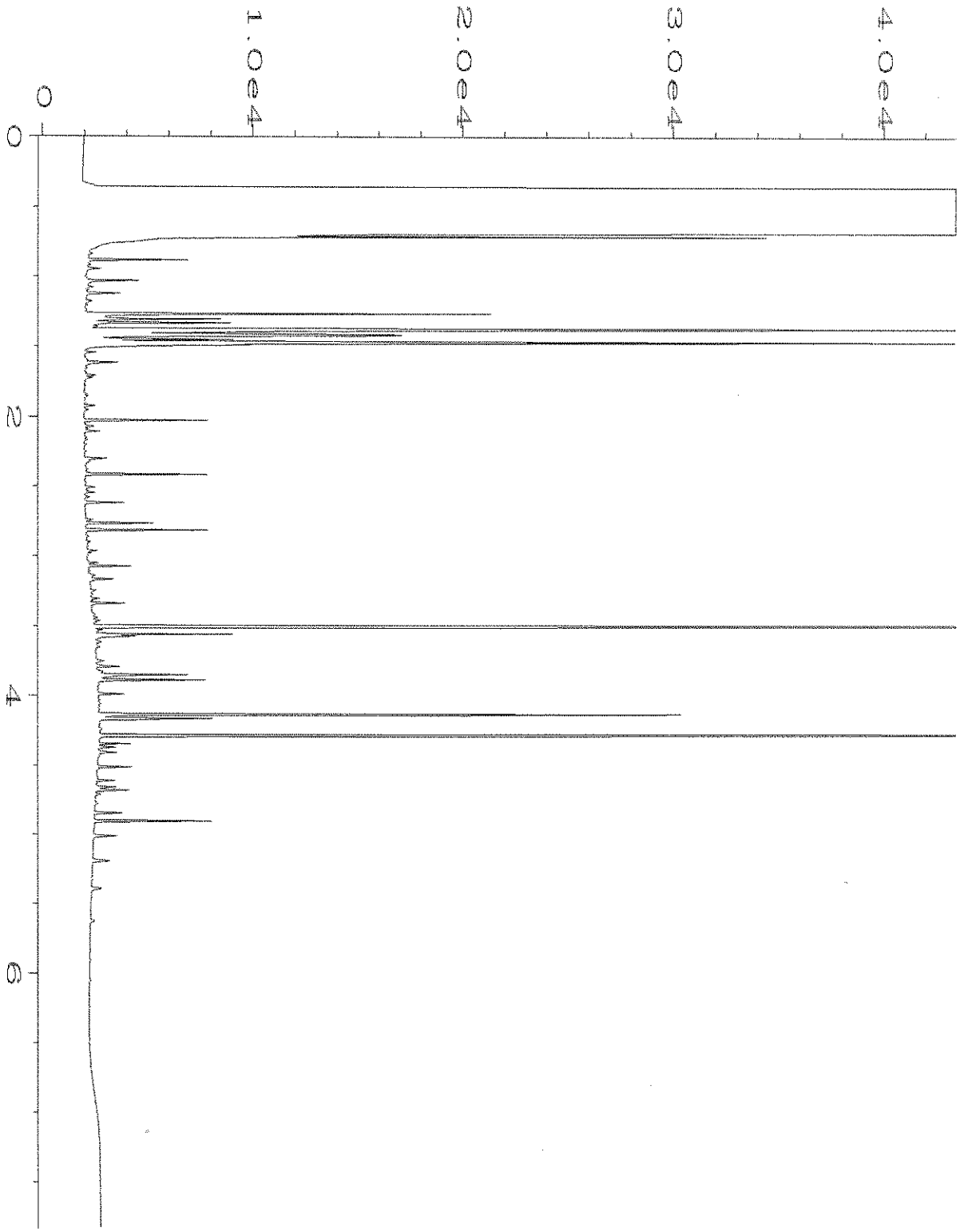
Page Number : 1
Vial Number : 29
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\05-08-20\030F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 30
Sample Name	: 005097-26	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 06:18 PM	Instrument Method:	DX.MTH
Report Created on:	11 May 20 08:23 AM	Analysis Method	: DEFAULT.MTH

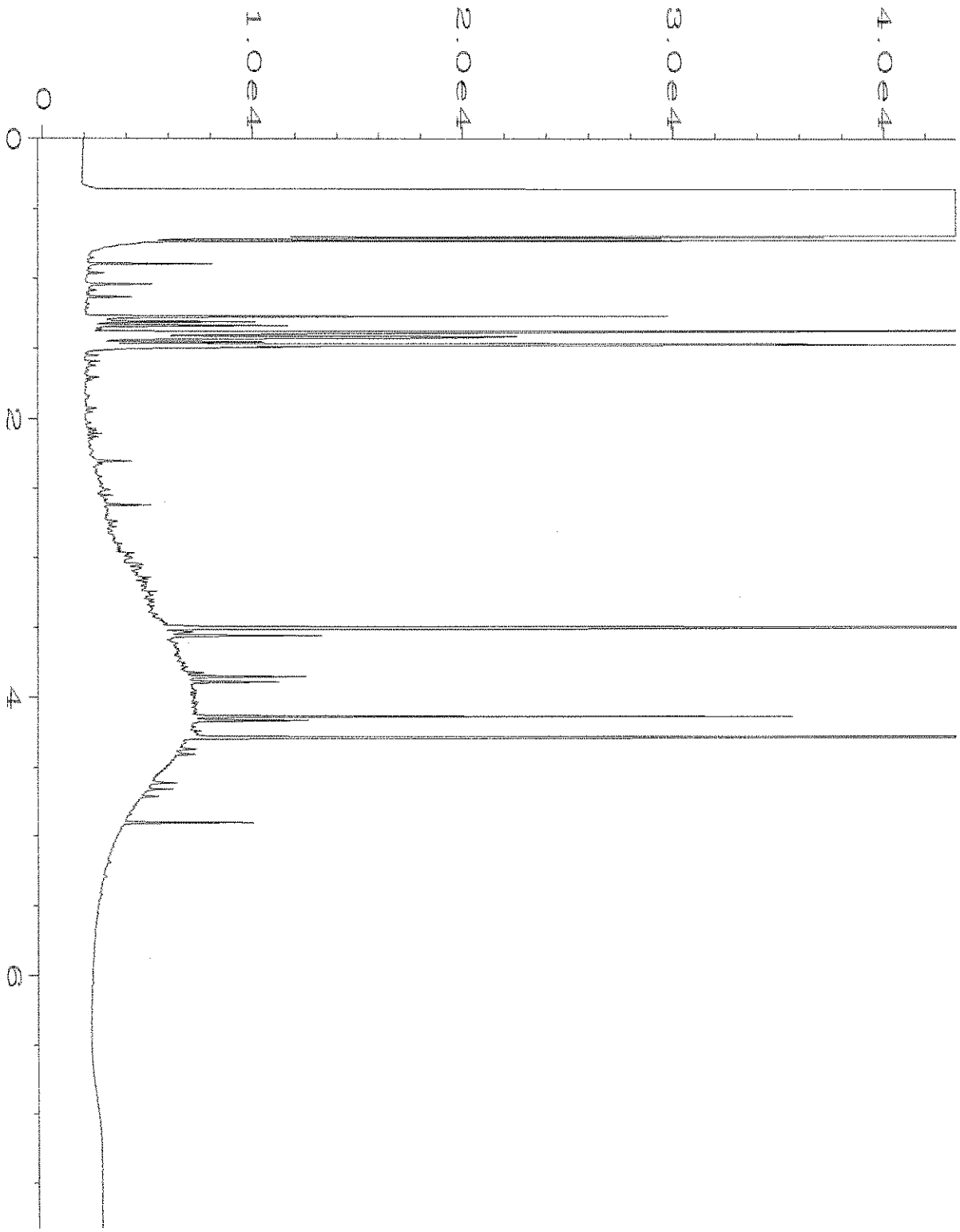


Data File Name	: C:\HPCHEM\4\DATA\05-08-20\031F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 31
Sample Name	: 005097-27	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 06:30 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:23 AM	Analysis Method	: DEFAULT.MTH

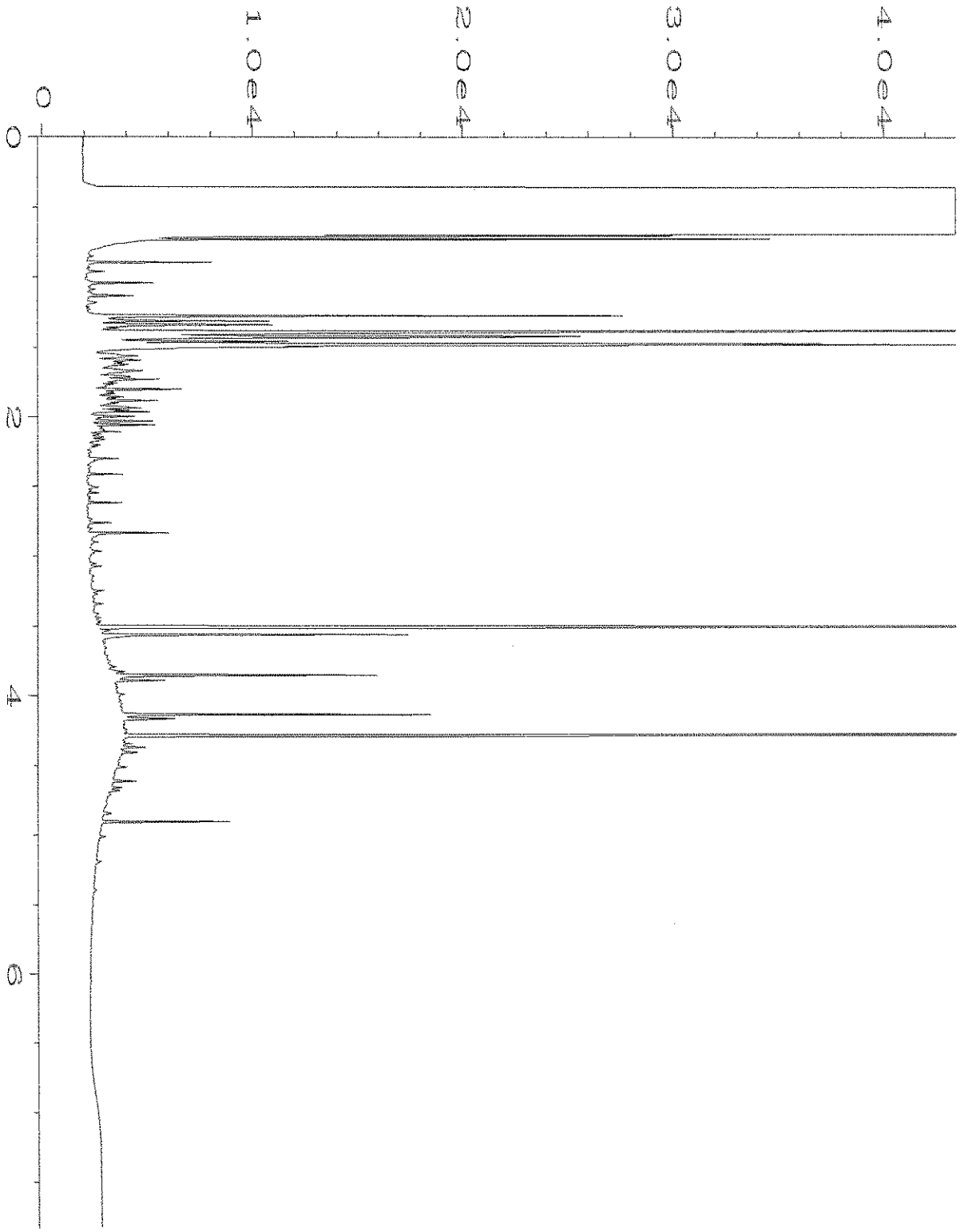


Data File Name : C:\HPCHEM\4\DATA\05-08-20\032F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 005097-28
Run Time Bar Code:
Acquired on : 08 May 20 06:42 PM
Report Created on: 11 May 20 08:23 AM

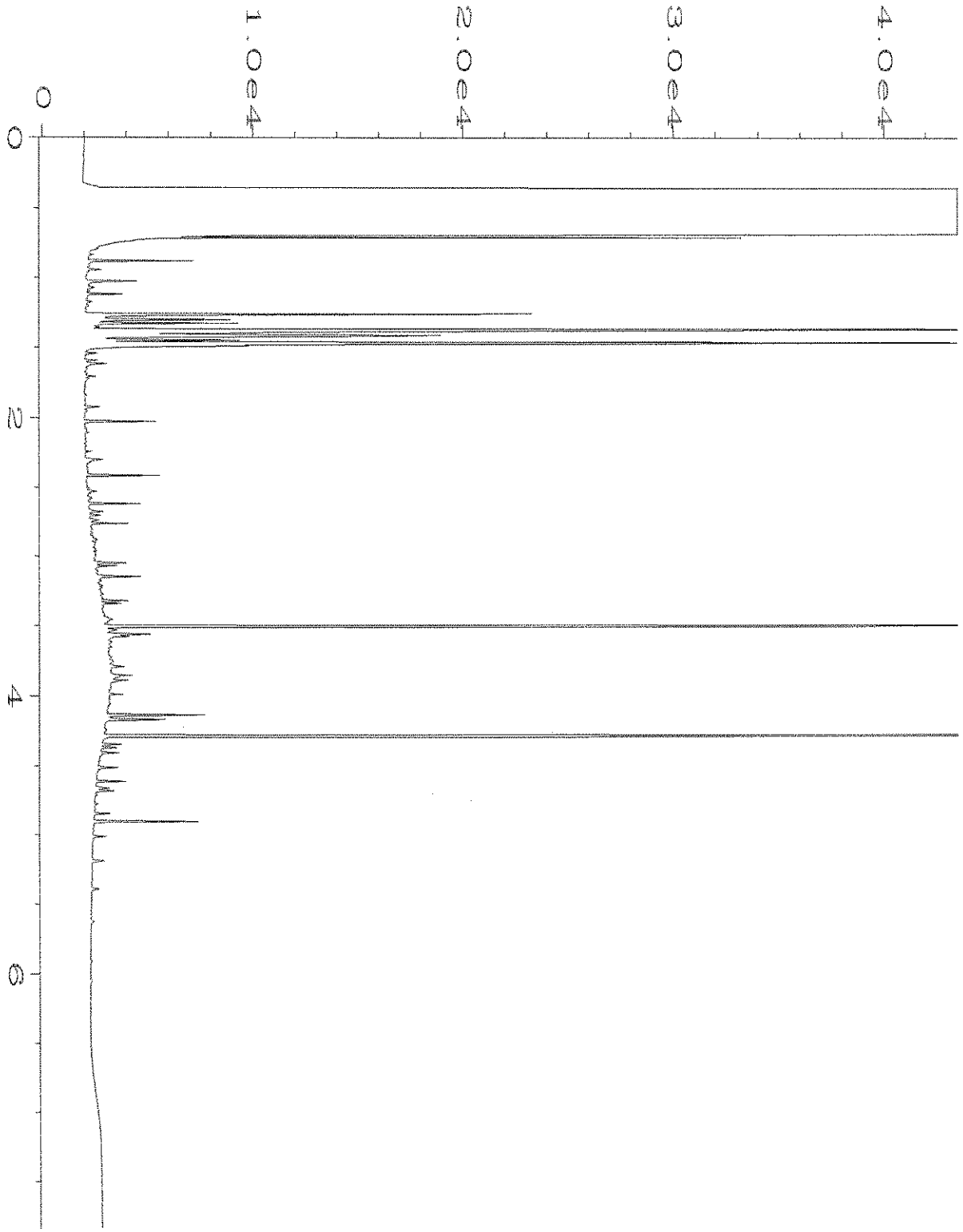
Page Number : 1
Vial Number : 32
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



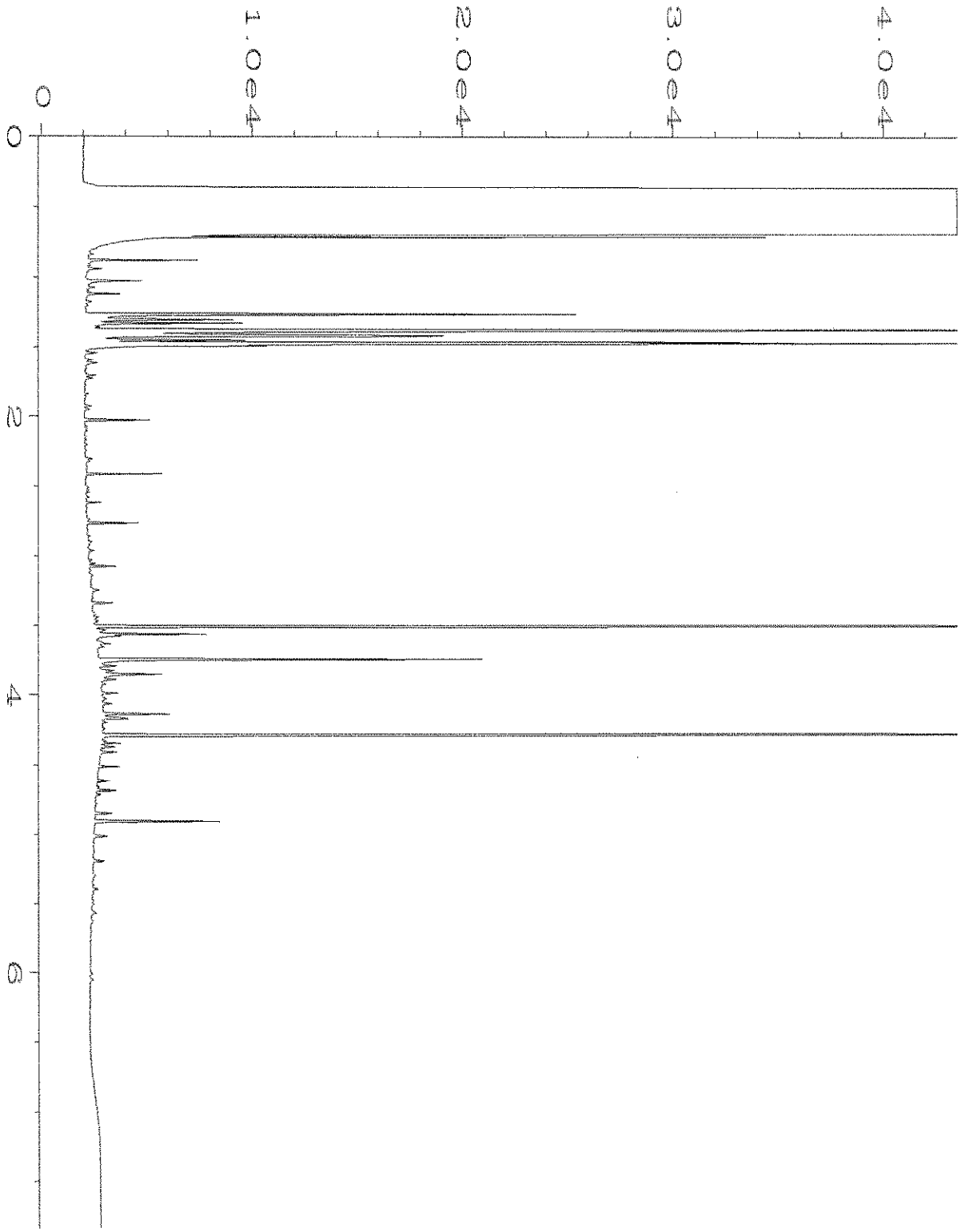
Data File Name	: C:\HPCHEM\4\DATA\05-08-20\033F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 33
Sample Name	: 005097-29	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 06:54 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:23 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\05-08-20\034F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 34
Sample Name	: 005097-30	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 07:07 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:24 AM	Analysis Method	: DEFAULT.MTH

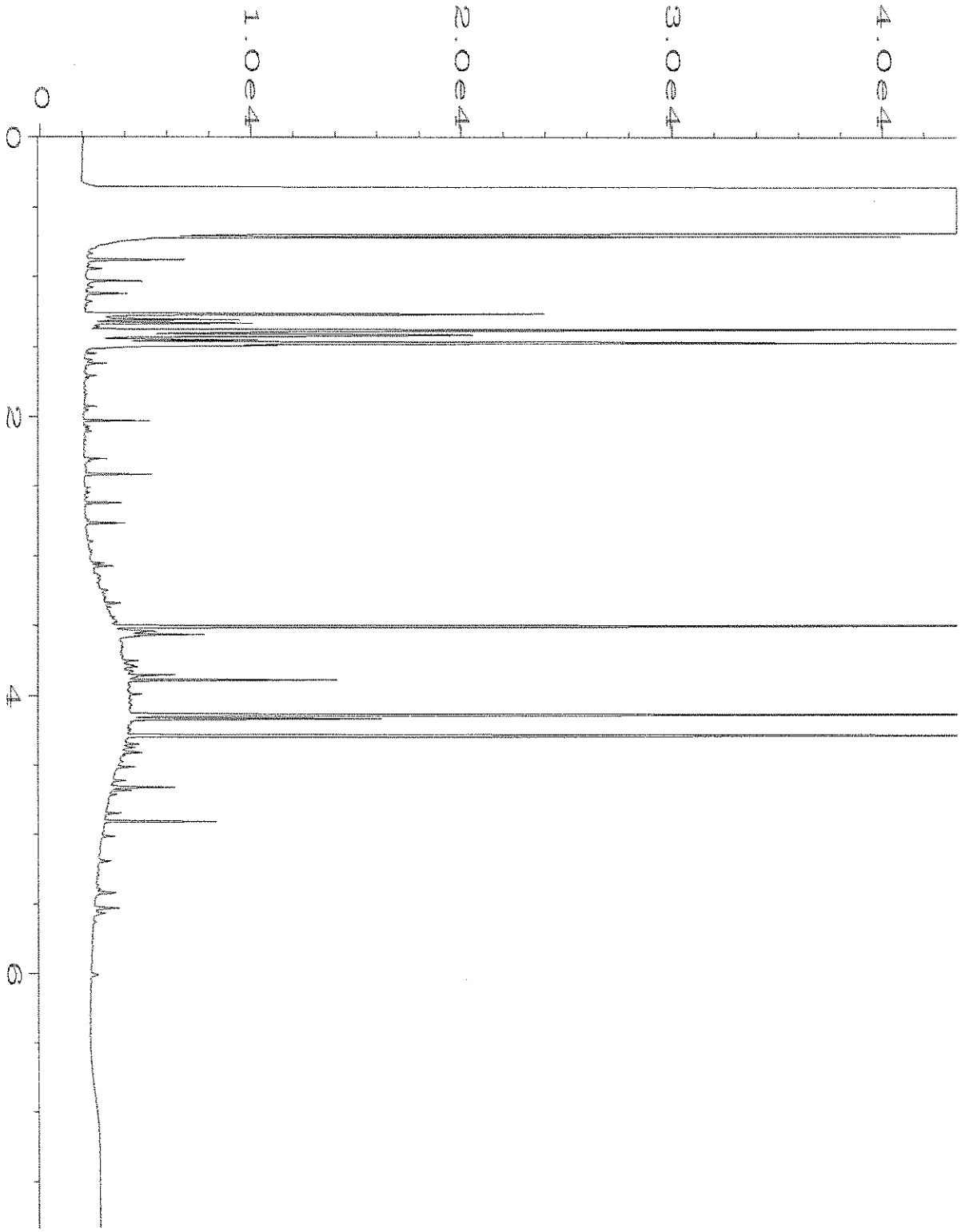


Data File Name	: C:\HPCHEM\4\DATA\05-08-20\035F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 35
Sample Name	: 005097-31	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 07:19 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:24 AM	Analysis Method	: DEFAULT.MTH

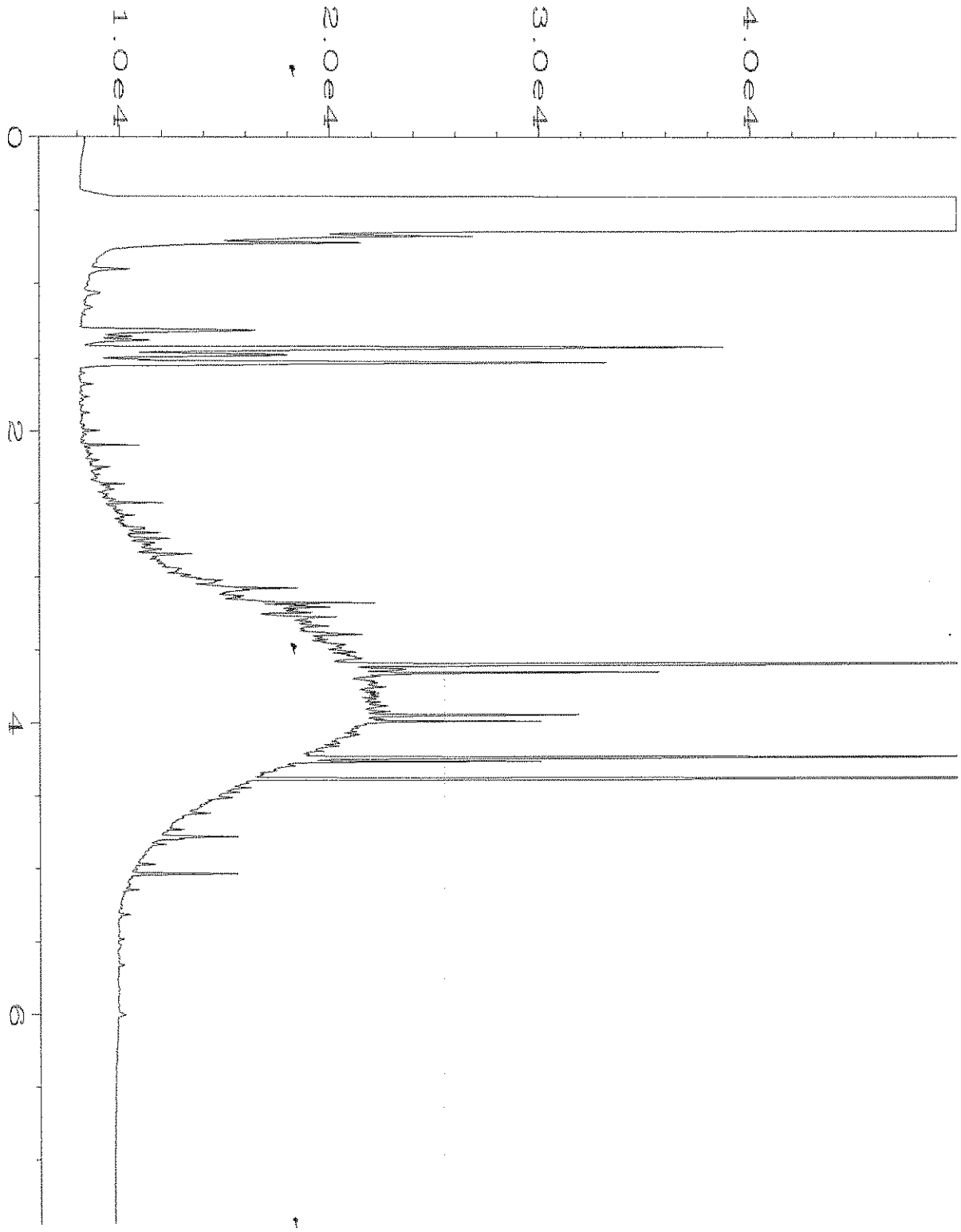


Data File Name : C:\HPCHEM\4\DATA\05-08-20\036F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 005097-32
Run Time Bar Code:
Acquired on : 08 May 20 07:31 PM
Report Created on: 11 May 20 08:24 AM

Page Number : 1
Vial Number : 36
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

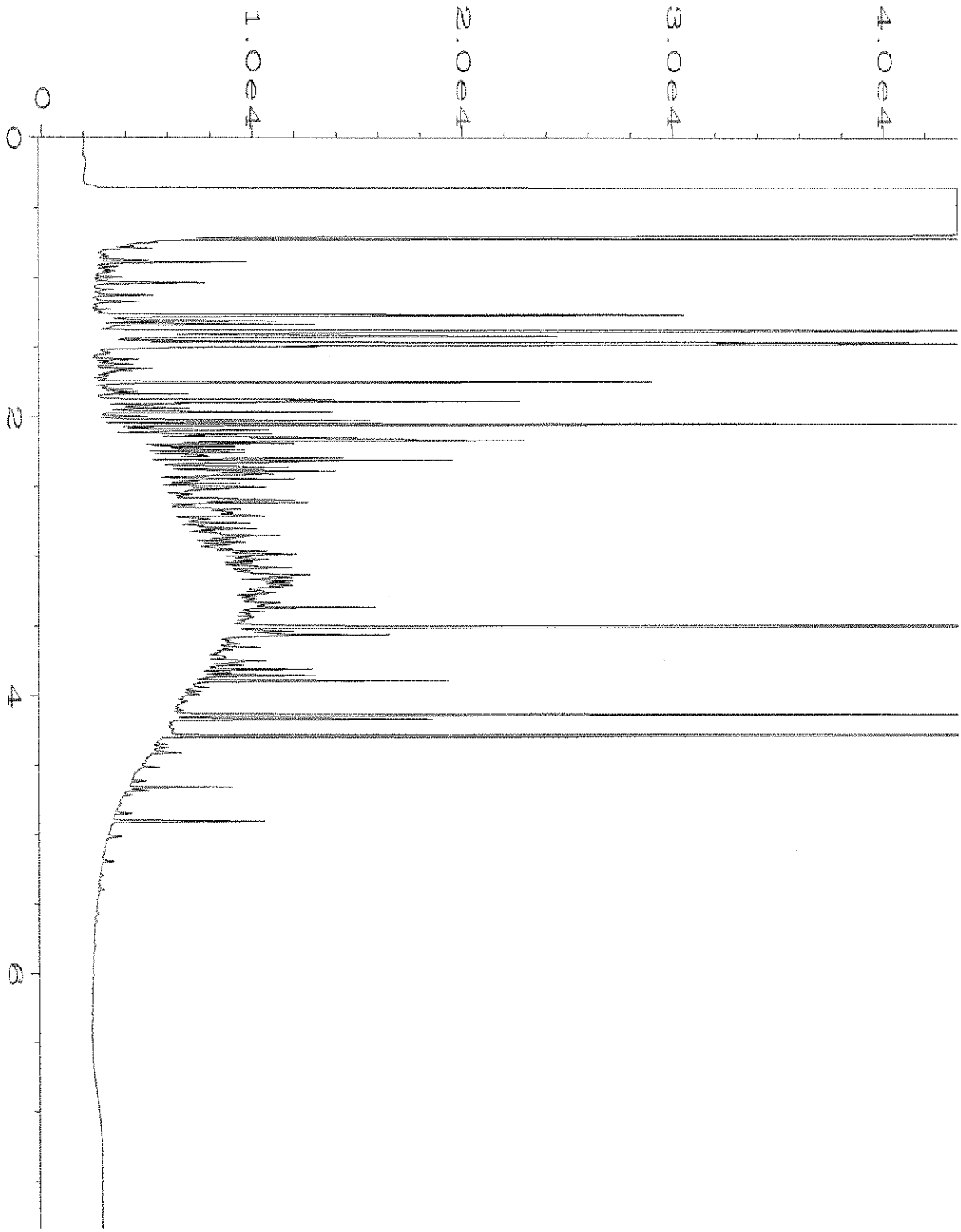


Data File Name	: C:\HPCHEM\4\DATA\05-08-20\037F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 37
Sample Name	: 005097-33	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 07:43 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:25 AM	Analysis Method	: DEFAULT.MTH

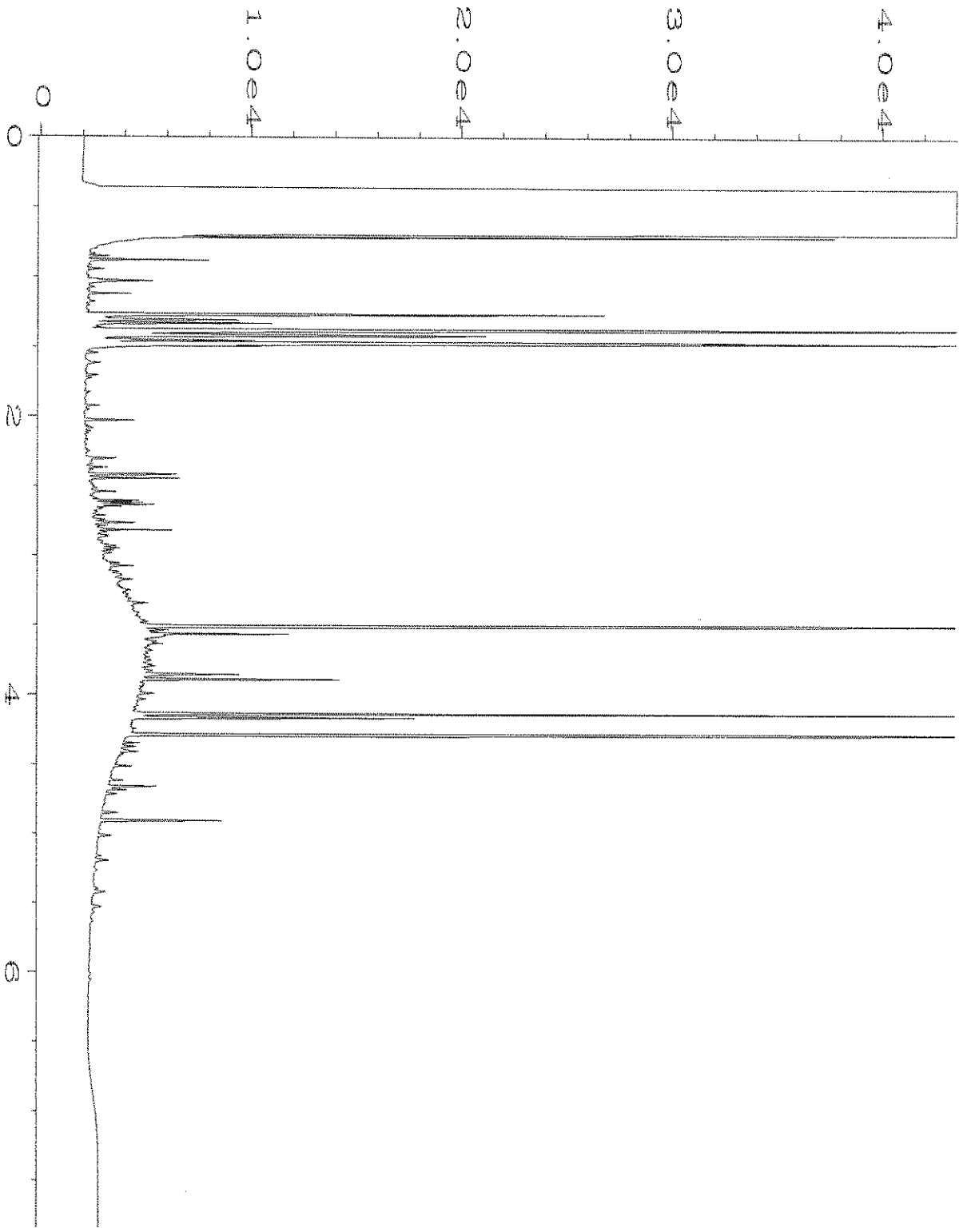


Data File Name : C:\HPCHEM\1\DATA\05-08-20\028F0701.D
Operator : TL
Instrument : GC1
Sample Name : 005097-34
Run Time Bar Code:
Acquired on : 08 May 20 06:57 PM
Report Created on: 11 May 20 09:41 AM

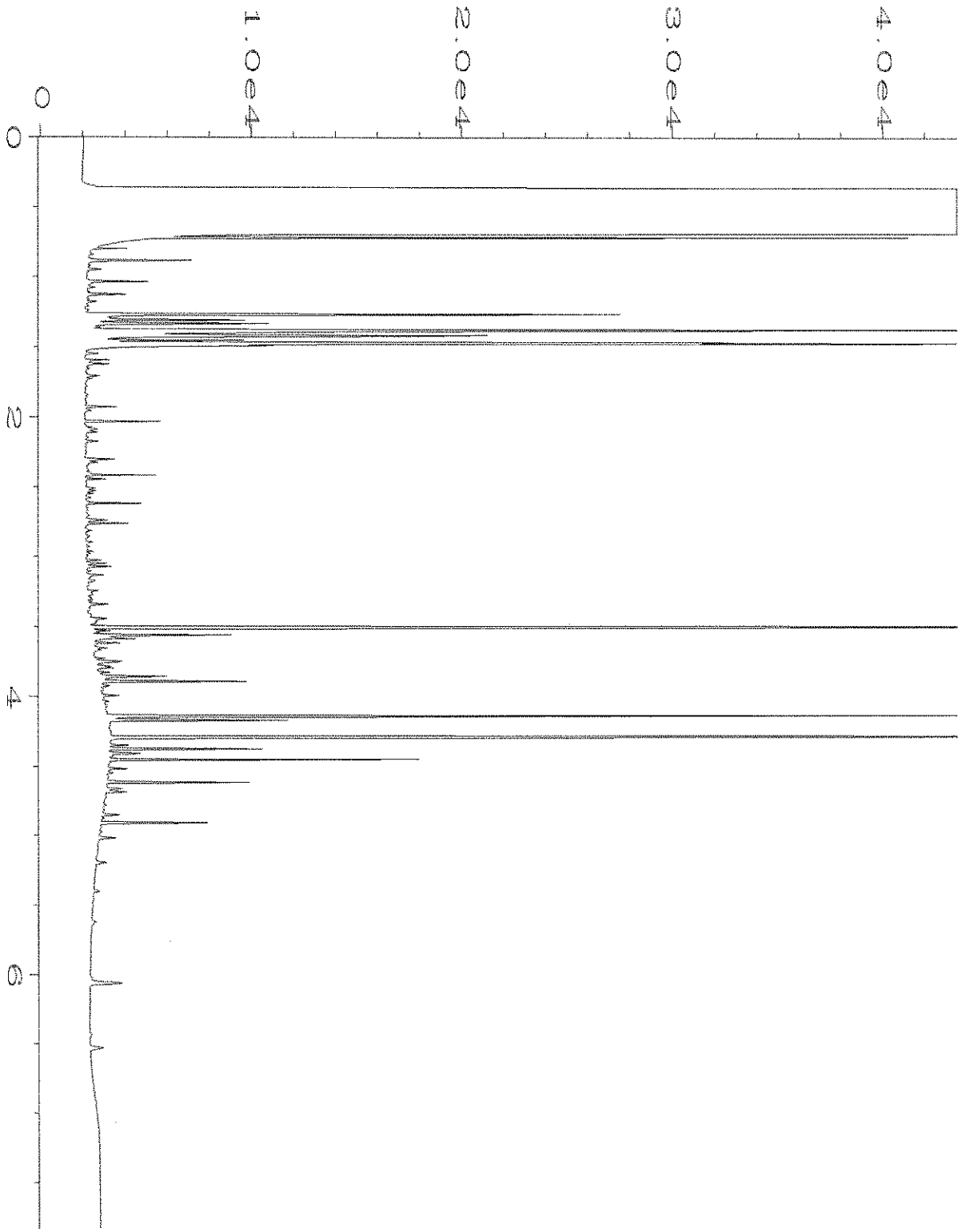
Page Number : 1
Vial Number : 28
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\05-08-20\038F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 38
Sample Name	: 005097-35	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 07:55 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:25 AM	Analysis Method	: DEFAULT.MTH

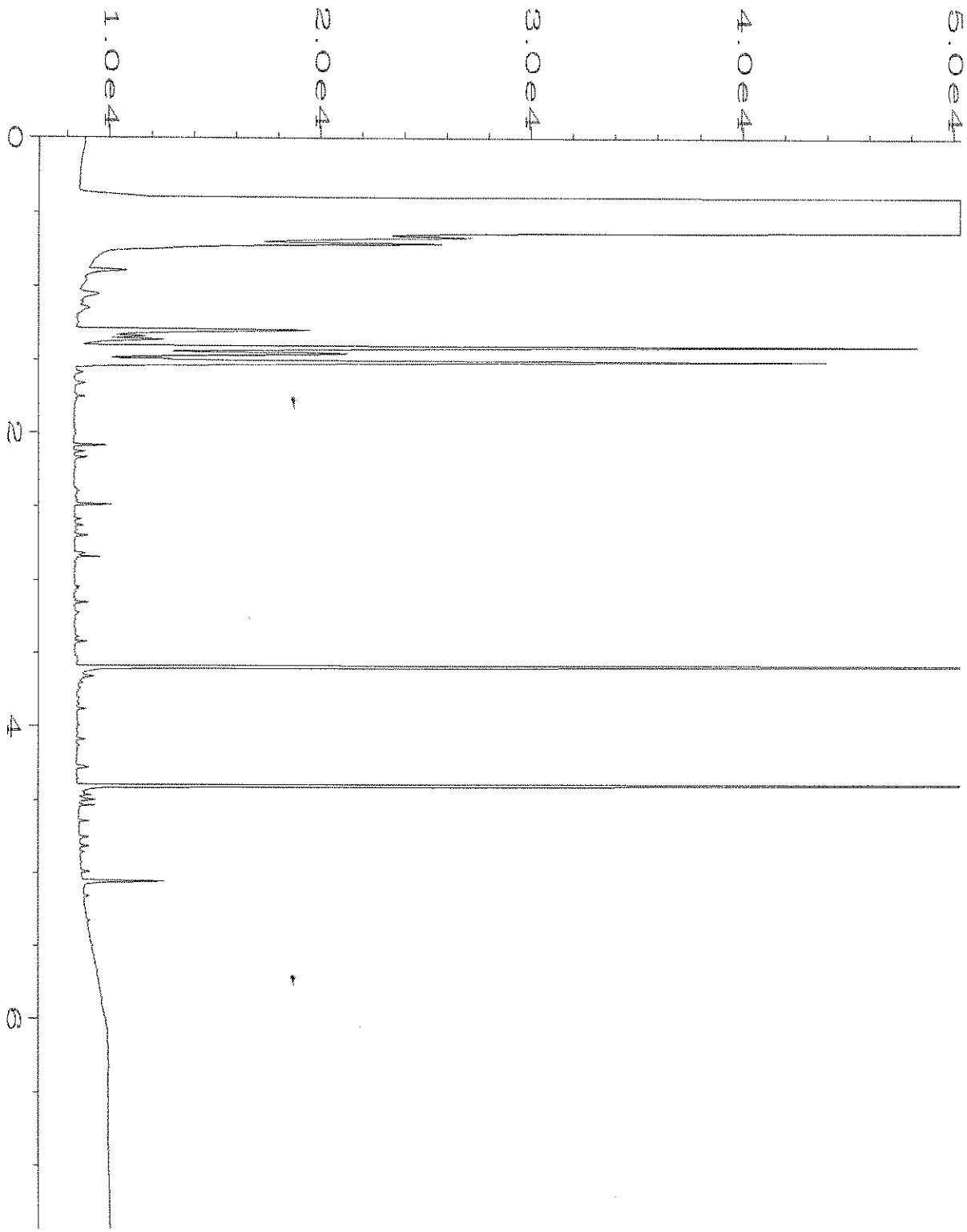


Data File Name	: C:\HPCHEM\4\DATA\05-08-20\039F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 39
Sample Name	: 005097-36	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 08 May 20 08:07 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:25 AM	Analysis Method	: DEFAULT.MTH

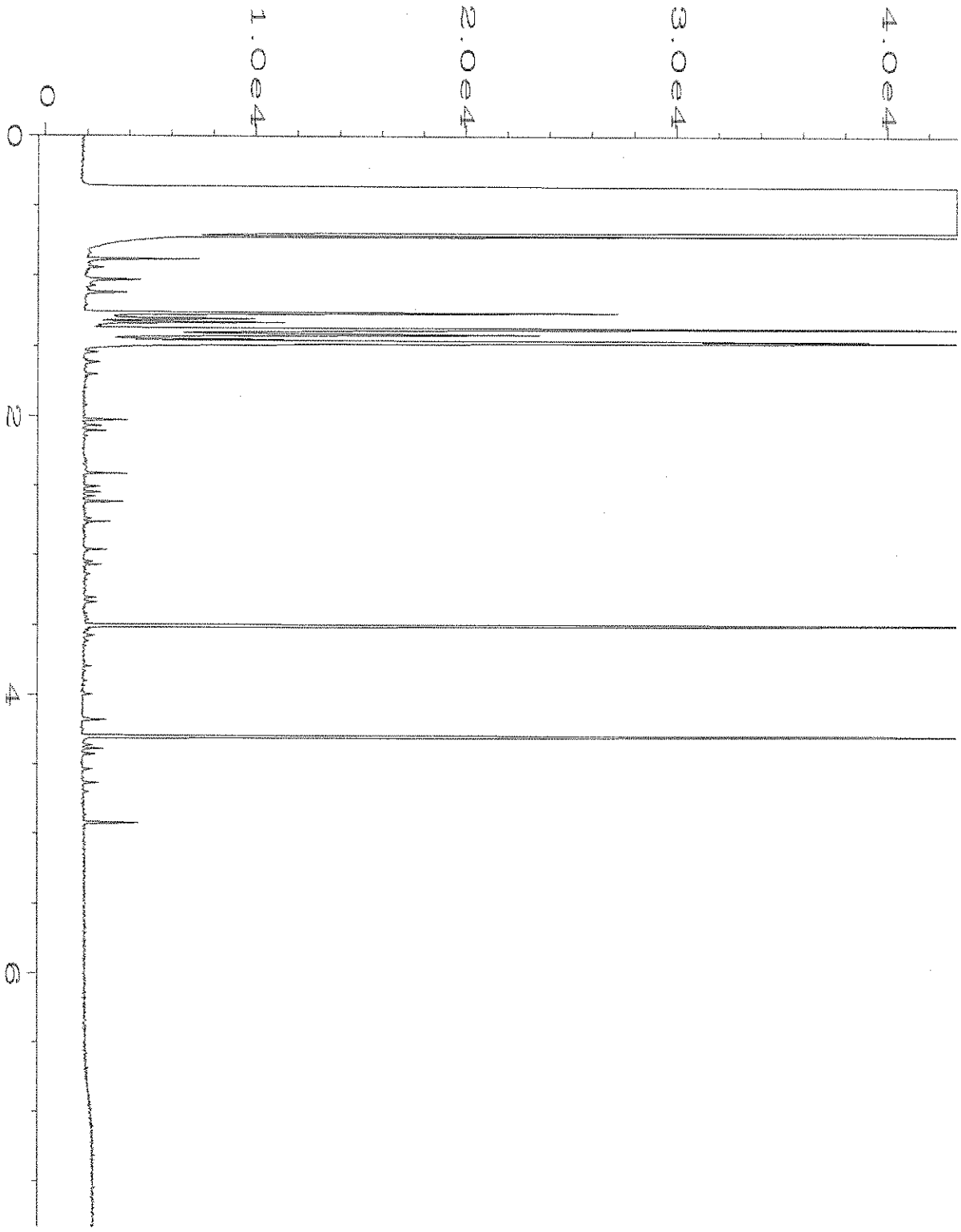


Data File Name : C:\HPCHEM\4\DATA\05-08-20\040F0701.D
Operator : TL
Instrument : GC#4
Sample Name : 005097-37
Run Time Bar Code:
Acquired on : 08 May 20 08:19 PM
Report Created on: 11 May 20 08:26 AM

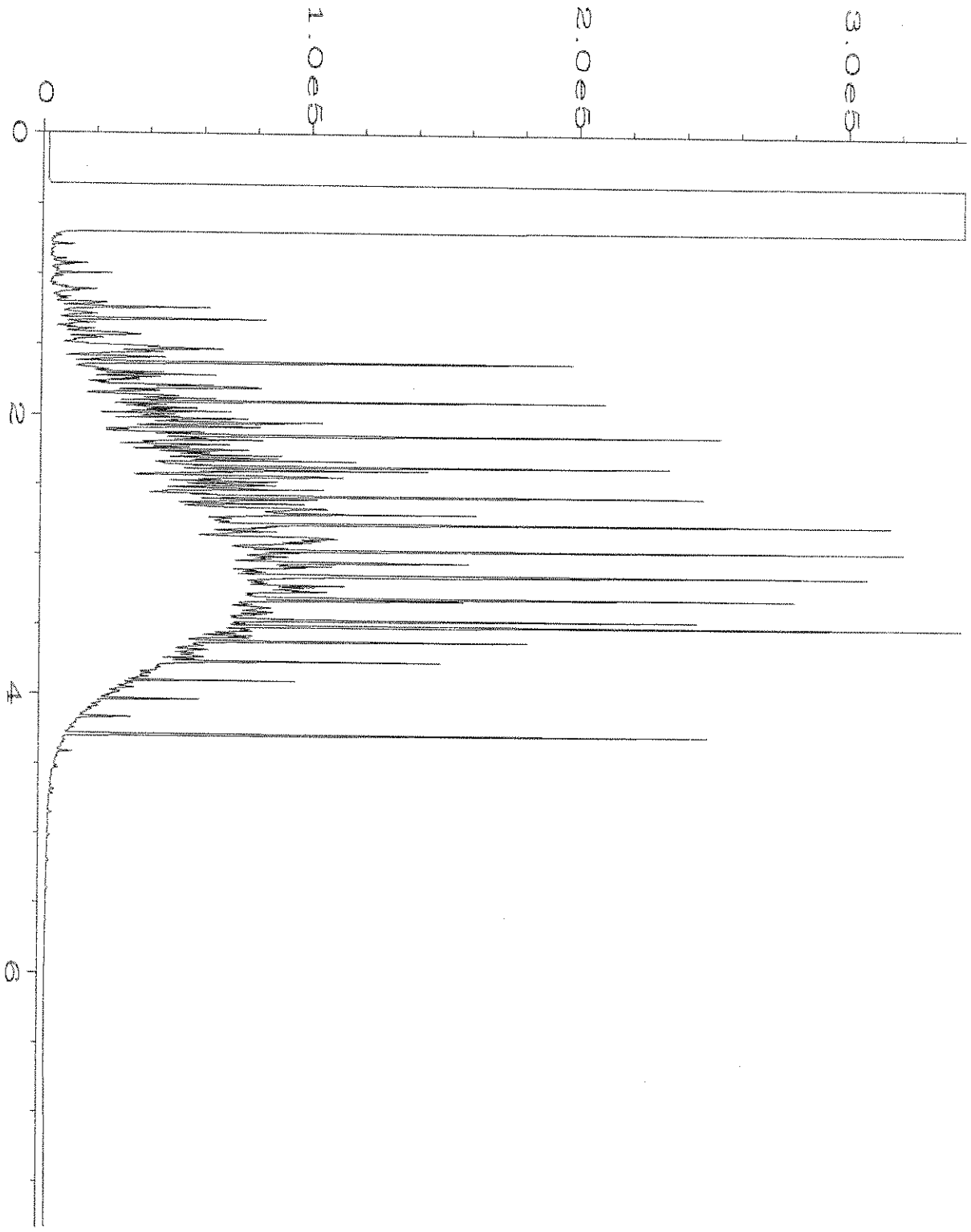
Page Number : 1
Vial Number : 40
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\05-08-20\006F0301.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 6
Sample Name	: 00-1032 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 3
Acquired on	: 08 May 20 01:56 PM	Instrument Method:	DX.MTH
Report Created on:	11 May 20 09:53 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\05-08-20\015F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 15
Sample Name	: 00-1038 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 08 May 20 02:55 PM	Instrument Method	: DX.MTH
Report Created on	: 11 May 20 08:40 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\4\DATA\05-08-20\005F0801.D		
Operator	: TL	Page Number	: 1
Instrument	: GC#4	Vial Number	: 5
Sample Name	: 1000 Dx 59-162B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 8
Acquired on	: 08 May 20 08:43 PM	Instrument Method	: DX.MTH
Report Created on:	11 May 20 08:40 AM	Analysis Method	: DEFAULT.MTH

005097

SAMPLE CHAIN OF CUSTODY

ME 05/08/20 VWS/ADH/AUS

Page # 1 of 4

Report To Gabe Cisneros
Company Floyd|Snider
Address 601 Union St, Suite 600
City, State, ZIP Seattle, WA 98101
Phone 206 292-2078 Email gabe.cisneros@floydsnider.com

SAMPLERS (*signature*)

PROJECT NAME: POL - TPH

PO #

REMARKS: * select VOCs: include: EDB, EDC, MTBE, and Naphthalene
Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021/8260	NWTPH-HCID	VOCs EPA 8260 * Full	cPAHs EPA 8270	PCBs EPA 8082	Lead, total	Lead, diss.	Select VOCs *	EDB by 8011	Notes
MW-01-050620	01 A-H	5/6/20	1321	GW	8	X	X	X			X						All PAHs per GC 5/15/20 MS
MW-02-050620	02 A-J		1208		8	X	X	X			X						
MW-07-050620	03 A-J		1422		10	X	X	X		X	X		X	X	X	⊗	Not Field Filtered
MW-10-050620	04 A-J		1221		10	X	X	X		X	X		X	X	X	⊗	
MW-8-050620	05 A-H		1155		8	X	X	X			X						Full list
MW-35-050620	06		1035		8	X	X	X		X	X					⊗	
MW-133-050620	07		1601		8	X	X	X			X						
MW-33-050620	08		1547		8	X	X	X			X						
MW-23-050620	09		1555		8	X	X	X		X	X					⊗	
MW-6-050620	10		1454		8	X	X	X			X						

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:		Adia Jumper	Floyd|Snider	5/8/20	1005
Received by:		Nhan Phan	FEBT	5/8/20	1005
Relinquished by:					
Received by:			Samples received at 3 °C		

005097

[redacted]

SAMPLE CHAIN OF CUSTODY

ME 05/08/20 VW5/AD4/A05

[redacted] Page # 2 of 4

Report To: Gabe Cisneros

Company: Floyd Snider

Address:

City, State, ZIP: see page 1

Phone: ______ Email: ______

SAMPLERS (*signature*): [signature]

PROJECT NAME	PO #
POL-TPH	

REMARKS	INVOICE TO
Select VOCs = EDB, EDC, MTBE, Naphthalene Project specific RLs? - Yes / No	

TURNAROUND TIME
- ☒ Standard turnaround
- ☐ RUSH ______
- Rush charges authorized by:

SAMPLE DISPOSAL
- ☐ Archive samples
- ☐ Other ______
- (Default) Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA ~~8021~~ 8260	NWTPH-HCID	VOCs EPA 8260 * full	~~PAHs~~ cPAHs EPA 8270	PCBs EPA 8082	total Lead	diss Lead *	Select VOCS	EDB by 8011	Notes
MW-40-050620	11 A-H	5/6/20	1440	GW	8	X	X	X		X	X					(x)	
MW-34-050620	12	↓	1051	↓	8	X	X	X		X	X					(x)	
MW-31-050620	13	↓	1305	↓	8	X	X	X			X						
MW-03-050620	14 A-J	↓	1254	↓	10	X	X	X			X		X	X	X	(x)	*Not Filtered
UST-4-050620	15 A-J	↓	1504	↓	10	X	X	X			X		X	X	X	(x)	*Not Filtered
MW-36-050620	16 A-H	↓	1708	↓	8	X	X	X			X						
MW-24-050720	17	5/7/20	0947	↓	8	X	X	X			X						
MW-25-050720	18	↓	1107	↓	8	X	X	X			X						
MW-20-050720	19	↓	12:27	↓	8	X	X	X			X						
MW-14-050720	20	↓	14:14	↓	8	X	X	X			X						

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Adia Jumper	Floyd Snider	5/8/20	1005
Received by: [signature]	Nhan Phan	FeBI	5/8/20	1005
Relinquished by:				
Received by:		Samples received at 3 °C		

005097

SAMPLE CHAIN OF CUSTODY

ME 05/08/20 VWS/ADH/AOS

Page # 3 of 4

Report To Gabe Cisneros

Company Floyd Snider

Address

City, State, ZIP see page 1

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: POL - TPH

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	ANALYSES REQUESTED: NWTPH-Dx	NWTPH-Gx	BTEX EPA 8260	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	EDB by 8011				Notes
MW-18-050720	21 A-H	5/7/20	1308	GW	8	X	X	X			X						
MW-17-050720	22		1103		8	X	X	X			X						
MW-37-050720	23		0845		8	X	X	X			X						
MW-39-050720	24		1344		8	X	X	X		X	X		(X)				
MW-11-050720	25		1237		8	X	X	X			X						
MW-13-050720	26		1138		8	X	X	X			X						
MW-27-050720	27		1027		8	X	X	X			X						
MW-22-050720	28		0927		8	X	X	X			X						
MW-127-050720	29		1041		8	X	X	X			X						
MW-38-050720	30		0836		8	X	X	X			X						

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Adia Jumpco	Floyd|Snider	5/8/20	1005
Received by:	Nhan Pham	FCBI	5/8/20	1005
Relinquished by:				
Received by:		Samples received at 3 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

005097

SAMPLE CHAIN OF CUSTODY

ME 05/08/20 VWS/ADJ/ADJ

Page # 4 of 4

Report To Gabe Cisneros
Company Floyd Snider
Address
City, State, ZIP see page 1
Phone Email

SAMPLERS (*signature*)

PROJECT NAME: POL-TPH
PO #:

REMARKS
Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	cPAHs EPA 8270	PCBs EPA 8082	EDB by 8011				Notes
MW-19-050720	31 A-H	5/7/20	1429	GW	8	X	X	X		X	X		X				V per GC
MW-32-050720	32		0841		8	X	X	X			X						5/8/20 ME
MW-16-050720	33		1151		8	X	X	X			X						
MW-26-050720	34 A-X		1011		24	X	X	X			X						MS/MSD
MW-15-050720	35 A-H		1321		8	X	X	X			X						
MW-12-050720	36 A-X		1441		24	X	X	X		X	X		X				MS/MSD
MW-29-050620	37 A-H	5/6/20	1541	GW	8	✓	✓	✓			✓						Added at lab. (NP) 5/8/20

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Adia Jumper	Floyd|Snider	5/8/20	1005
Received by:	Nhan Pham	FEBI	5/8/20	1005
Relinquished by:				
Received by:		Samples received at 3 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Floyd | Snider
Gabe Cisneros
601 Union St., Suite 600
Seattle, WA 98101

RE: POL - TPH
Work Order Number: 2005072

May 15, 2020

Attention Gabe Cisneros:

Fremont Analytical, Inc. received 15 sample(s) on 5/8/2020 for the analyses presented in the following report.

Biochemical Oxygen Demand by SM 5210B
Chemical Oxygen Demand by SM 5220D
Dissolved Gases by RSK-175
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Total Alkalinity by SM 2320B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *05/15/2020*

CLIENT: Floyd | Snider
Project: POL - TPH
Work Order: 2005072

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2005072-001	MW-31-050620	05/06/2020 1:05 PM	05/08/2020 10:21 AM
2005072-002	MW-10-050620	05/06/2020 12:21 PM	05/08/2020 10:21 AM
2005072-003	MW-40-050620	05/06/2020 2:40 PM	05/08/2020 10:21 AM
2005072-004	MW-29-050620	05/06/2020 3:41 PM	05/08/2020 10:21 AM
2005072-005	MW-23-050620	05/06/2020 3:55 PM	05/08/2020 10:21 AM
2005072-006	MW-14-050720	05/07/2020 2:14 PM	05/08/2020 10:21 AM
2005072-007	MW-20-050720	05/07/2020 12:27 PM	05/08/2020 10:21 AM
2005072-008	MW-25-050720	05/07/2020 11:07 AM	05/08/2020 10:21 AM
2005072-009	MW-24-050720	05/07/2020 9:47 AM	05/08/2020 10:21 AM
2005072-010	MW-18-050720	05/07/2020 1:08 PM	05/08/2020 10:21 AM
2005072-011	MW-17-050720	05/07/2020 11:03 AM	05/08/2020 10:21 AM
2005072-012	MW-19-050720	05/07/2020 2:29 PM	05/08/2020 10:21 AM
2005072-013	MW-22-050720	05/07/2020 9:27 AM	05/08/2020 10:21 AM
2005072-014	MW-12-050720	05/07/2020 2:41 PM	05/08/2020 10:21 AM
2005072-015	Trip Blank	04/27/2020 1:03 PM	05/08/2020 10:21 AM

Case Narrative

WO#: **2005072**
Date: **5/15/2020**

CLIENT: Floyd | Snider
Project: POL - TPH

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-001
Client Sample ID: **MW-31-050620**

Collection Date: 5/6/2020 1:05:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	ND	0.00863		mg/L	1	5/12/2020 11:43:00 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	5.60	0.500	DH	mg/L	5	5/11/2020 11:39:00 AM
Sulfate	17.0	1.50	D	mg/L	5	5/11/2020 11:39:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	ND	2.00		µg/L	1	5/13/2020 5:17:12 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	229	2.50		mg/L	1	5/15/2020 9:20:51 AM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-002
Client Sample ID: **MW-10-050620**

Collection Date: 5/6/2020 12:21:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	1.64	0.0345	D	mg/L	4	5/12/2020 1:49:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	ND	0.100	H	mg/L	1	5/8/2020 10:13:00 PM
Sulfate	0.780	0.300		mg/L	1	5/8/2020 10:13:00 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	663	2.00		µg/L	1	5/13/2020 5:21:46 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	42.9	2.50		mg/L	1	5/15/2020 9:20:51 AM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-003
Client Sample ID: **MW-40-050620**

Collection Date: 5/6/2020 2:40:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Biochemical Oxygen Demand by SM 5210B				Batch ID: R59167		Analyst: SS
Biochemical Oxygen Demand	11.1	2.00	H	mg/L	1	5/8/2020 6:45:00 PM
Chemical Oxygen Demand by SM 5220D				Batch ID: R59170		Analyst: WF
Chemical Oxygen Demand	46.1	10.0		mg/L	1	5/13/2020 6:03:13 PM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-004
Client Sample ID: **MW-29-050620**

Collection Date: 5/6/2020 3:41:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	0.00971	0.00863		mg/L	1	5/12/2020 11:52:00 AM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	2.37	0.100	H	mg/L	1	5/8/2020 10:36:00 PM
Sulfate	9.87	0.300		mg/L	1	5/8/2020 10:36:00 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	ND	2.00		µg/L	1	5/13/2020 5:26:20 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	46.8	2.50		mg/L	1	5/15/2020 9:20:51 AM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-005
Client Sample ID: **MW-23-050620**

Collection Date: 5/6/2020 3:55:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	0.770	0.0345	D	mg/L	4	5/12/2020 1:22:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	ND	0.200	DH	mg/L	2	5/8/2020 10:59:00 PM
Sulfate	3.30	0.600	D	mg/L	2	5/8/2020 10:59:00 PM
NOTES: Diluted due to matrix.						
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	2,050	2.00		µg/L	1	5/13/2020 5:30:54 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	102	2.50		mg/L	1	5/15/2020 9:20:51 AM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-006
Client Sample ID: **MW-14-050720**

Collection Date: 5/7/2020 2:14:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	ND	0.00863		mg/L	1	5/12/2020 12:28:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	3.13	0.100	E	mg/L	1	5/8/2020 11:22:00 PM
Nitrate (as N)	3.02	0.200	DH	mg/L	2	5/11/2020 12:02:00 PM
Sulfate	7.26	0.300		mg/L	1	5/8/2020 11:22:00 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	5.97	2.00		µg/L	1	5/13/2020 5:35:28 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	205	2.50		mg/L	1	5/15/2020 9:20:51 AM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-007
Client Sample ID: **MW-20-050720**

Collection Date: 5/7/2020 12:27:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Biochemical Oxygen Demand by SM 5210B				Batch ID: R59167		Analyst: SS
Biochemical Oxygen Demand	44.8	2.00		mg/L	1	5/8/2020 6:45:00 PM
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	5.89	0.173	DE	mg/L	20	5/12/2020 1:52:00 PM
NOTES: E - Estimated value. The amount exceeds the linear working range of the instrument.						
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	ND	0.200	D	mg/L	2	5/8/2020 11:46:00 PM
Sulfate	0.686	0.600	D	mg/L	2	5/8/2020 11:46:00 PM
NOTES: Diluted due to matrix.						
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	2,970	20.0	D	µg/L	10	5/15/2020 9:17:50 AM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	429	2.50		mg/L	1	5/15/2020 9:20:51 AM
Chemical Oxygen Demand by SM 5220D				Batch ID: R59170		Analyst: WF
Chemical Oxygen Demand	69.0	10.0		mg/L	1	5/13/2020 6:03:13 PM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-008
Client Sample ID: **MW-25-050720**

Collection Date: 5/7/2020 11:07:00 AM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	2.05	0.0863	D	mg/L	10	5/12/2020 1:57:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	ND	0.100		mg/L	1	5/9/2020 12:09:00 AM
Sulfate	4.12	0.300		mg/L	1	5/9/2020 12:09:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	723	2.00		µg/L	1	5/13/2020 5:53:47 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	78.0	2.50		mg/L	1	5/15/2020 9:20:51 AM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-009
Client Sample ID: **MW-24-050720**

Collection Date: 5/7/2020 9:47:00 AM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	0.0157	0.00863		mg/L	1	5/12/2020 12:38:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	0.884	0.100		mg/L	1	5/9/2020 1:18:00 AM
Sulfate	5.23	0.300		mg/L	1	5/9/2020 1:18:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	9.06	2.00		µg/L	1	5/13/2020 5:58:21 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	107	2.50		mg/L	1	5/15/2020 9:20:51 AM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-010
Client Sample ID: **MW-18-050720**

Collection Date: 5/7/2020 1:08:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	ND	0.00863		mg/L	1	5/12/2020 12:40:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	0.956	0.100		mg/L	1	5/9/2020 1:41:00 AM
Sulfate	4.02	0.300		mg/L	1	5/9/2020 1:41:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	3.53	2.00		µg/L	1	5/13/2020 6:02:55 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	87.8	2.50		mg/L	1	5/15/2020 9:20:51 AM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-011
Client Sample ID: **MW-17-050720**

Collection Date: 5/7/2020 11:03:00 AM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	ND	0.00863		mg/L	1	5/12/2020 12:42:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	0.878	0.100		mg/L	1	5/9/2020 2:04:00 AM
Sulfate	3.31	0.300		mg/L	1	5/9/2020 2:04:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	2.48	2.00		µg/L	1	5/13/2020 6:07:29 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	205	2.50		mg/L	1	5/15/2020 9:20:51 AM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-012
Client Sample ID: **MW-19-050720**

Collection Date: 5/7/2020 2:29:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	ND	0.00863		mg/L	1	5/12/2020 12:47:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	5.72	0.100	E	mg/L	1	5/9/2020 2:27:00 AM
Nitrate (as N)	5.25	0.500	DH	mg/L	5	5/11/2020 12:25:00 PM
Sulfate	10.1	0.300		mg/L	1	5/9/2020 2:27:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	ND	2.00		µg/L	1	5/13/2020 6:12:03 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	107	2.50		mg/L	1	5/15/2020 9:20:51 AM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-013
Client Sample ID: **MW-22-050720**

Collection Date: 5/7/2020 9:27:00 AM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	0.975	0.0345	D	mg/L	4	5/12/2020 1:46:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	0.113	0.100		mg/L	1	5/9/2020 3:37:00 AM
Sulfate	ND	0.300		mg/L	1	5/9/2020 3:37:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	788	2.00		µg/L	1	5/13/2020 6:16:37 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	151	2.50		mg/L	1	5/15/2020 9:20:51 AM

Analytical Report

Work Order: **2005072**
Date Reported: **5/15/2020**

Client: Floyd | Snider
Project: POL - TPH
Lab ID: 2005072-014
Client Sample ID: **MW-12-050720**

Collection Date: 5/7/2020 2:41:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R59181		Analyst: AD
Methane	0.0611	0.00863		mg/L	1	5/12/2020 12:59:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 28280		Analyst: SS
Nitrate (as N)	0.924	0.100		mg/L	1	5/9/2020 4:00:00 AM
Sulfate	0.496	0.300		mg/L	1	5/9/2020 4:00:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 28310		Analyst: CO
Manganese	23.2	2.00		µg/L	1	5/13/2020 6:21:10 PM
Total Alkalinity by SM 2320B				Batch ID: R59195		Analyst: WF
Alkalinity, Total (As CaCO3)	53.6	2.50		mg/L	1	5/15/2020 9:20:51 AM

Work Order: 2005072
CLIENT: Floyd | Snider
Project: POL - TPH

QC SUMMARY REPORT

Biochemical Oxygen Demand by SM 5210B

Sample ID: **MB-59167**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/8/2020**	RunNo: **59167**
Client ID: **MBLKW**	Batch ID: **R59167**		Analysis Date: **5/8/2020**	SeqNo: **1182209**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.00									

Sample ID: **LCS-59167**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/8/2020**	RunNo: **59167**
Client ID: **LCSW**	Batch ID: **R59167**		Analysis Date: **5/8/2020**	SeqNo: **1182210**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	173	2.00	198.0	0	87.2	84.6	115.4				

Sample ID: **2005072-003ADUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/8/2020**	RunNo: **59167**
Client ID: **MW-40-050620**	Batch ID: **R59167**		Analysis Date: **5/8/2020**	SeqNo: **1182212**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Biochemical Oxygen Demand	ND	2.00						11.13	200	20	RH

NOTES:
R - High RPD due to low analyte concentration. In this range, high RPD's may be expected.

Work Order: 2005072
CLIENT: Floyd | Snider
Project: POL - TPH

QC SUMMARY REPORT

Chemical Oxygen Demand by SM 5220D

Sample ID: **MB-R59170** SampType: **MBLK** Units: **mg/L** Prep Date: **5/13/2020** RunNo: **59170**
Client ID: **MBLKW** Batch ID: **R59170** Analysis Date: **5/13/2020** SeqNo: **1182259**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	ND	10.0									

Sample ID: **LCS-R59170** SampType: **LCS** Units: **mg/L** Prep Date: **5/13/2020** RunNo: **59170**
Client ID: **LCSW** Batch ID: **R59170** Analysis Date: **5/13/2020** SeqNo: **1182260**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	75.9	10.0	75.00	0	101	83.8	113				

Sample ID: **2005072-003BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **5/13/2020** RunNo: **59170**
Client ID: **MW-40-050620** Batch ID: **R59170** Analysis Date: **5/13/2020** SeqNo: **1182262**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	50.2	10.0						46.06	8.66	30	

Sample ID: **2005072-003BMS** SampType: **MS** Units: **mg/L** Prep Date: **5/13/2020** RunNo: **59170**
Client ID: **MW-40-050620** Batch ID: **R59170** Analysis Date: **5/13/2020** SeqNo: **1182263**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	122	10.0	75.00	46.06	101	56.9	126				

Sample ID: **2005072-003BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **5/13/2020** RunNo: **59170**
Client ID: **MW-40-050620** Batch ID: **R59170** Analysis Date: **5/13/2020** SeqNo: **1182264**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	122	10.0	75.00	46.06	101	56.9	126	122.1	0.285	30	

Work Order: 2005072
CLIENT: Floyd | Snider
Project: POL - TPH

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **MB-R59181A**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/12/2020**	RunNo: **59181**
Client ID: **MBLKW**	Batch ID: **R59181**		Analysis Date: **5/12/2020**	SeqNo: **1182562**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00863									

Sample ID: **LCS-R59181**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/12/2020**	RunNo: **59181**
Client ID: **LCSW**	Batch ID: **R59181**		Analysis Date: **5/12/2020**	SeqNo: **1182561**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	854	0.00863	1,000	0	85.4	70	130				

Sample ID: **2005072-001BREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **5/12/2020**	RunNo: **59181**
Client ID: **MW-31-050620**	Batch ID: **R59181**		Analysis Date: **5/12/2020**	SeqNo: **1182536**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00863						0		30	

Work Order: 2005072
CLIENT: Floyd | Snider
Project: POL - TPH

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-28310**	SampType: **MBLK**	Units: **µg/L**	Prep Date: **5/12/2020**	RunNo: **59185**
Client ID: **MBLKW**	Batch ID: **28310**		Analysis Date: **5/13/2020**	SeqNo: **1182734**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	2.00									

Sample ID: **LCS-28310**	SampType: **LCS**	Units: **µg/L**	Prep Date: **5/12/2020**	RunNo: **59185**
Client ID: **LCSW**	Batch ID: **28310**		Analysis Date: **5/13/2020**	SeqNo: **1182735**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	103	2.00	100.0	0	103	85	115				

Sample ID: **MB-28291FB**	SampType: **MBLK**	Units: **µg/L**	Prep Date: **5/12/2020**	RunNo: **59185**
Client ID: **MBLKW**	Batch ID: **28310**		Analysis Date: **5/13/2020**	SeqNo: **1182736**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	2.00									

NOTES:
Filter Blank

Sample ID: **2004342-001BDUP**	SampType: **DUP**	Units: **µg/L**	Prep Date: **5/12/2020**	RunNo: **59185**
Client ID: **BATCH**	Batch ID: **28310**		Analysis Date: **5/13/2020**	SeqNo: **1182740**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	514	2.00						535.5	4.16	30	

Sample ID: **2004342-001BMS**	SampType: **MS**	Units: **µg/L**	Prep Date: **5/12/2020**	RunNo: **59185**
Client ID: **BATCH**	Batch ID: **28310**		Analysis Date: **5/13/2020**	SeqNo: **1182741**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	1,020	2.00	500.0	535.5	96.2	70	130				

Work Order: 2005072
CLIENT: Floyd | Snider
Project: POL - TPH

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2004342-001BMSD** SampType: **MSD** Units: **µg/L** Prep Date: **5/12/2020** RunNo: **59185**
Client ID: **BATCH** Batch ID: **28310** Analysis Date: **5/13/2020** SeqNo: **1182742**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	1,020	2.00	500.0	535.5	96.0	70	130	1,016	0.0843	30	

Work Order: 2005072
CLIENT: Floyd | Snider
Project: POL - TPH

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **LCS-28280**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/8/2020**	RunNo: **59105**
Client ID: **LCSW**	Batch ID: **28280**		Analysis Date: **5/8/2020**	SeqNo: **1180823**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.714	0.100	0.7500	0	95.2	90	110				
Sulfate	3.60	0.300	3.750	0	96.0	90	110				

Sample ID: **MB-28280**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/8/2020**	RunNo: **59105**
Client ID: **MBLKW**	Batch ID: **28280**		Analysis Date: **5/8/2020**	SeqNo: **1180825**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.300									

Sample ID: **2005025-001BDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/8/2020**	RunNo: **59105**
Client ID: **BATCH**	Batch ID: **28280**		Analysis Date: **5/8/2020**	SeqNo: **1180827**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	0.100						0		20	H
Sulfate	1.76	0.300						1.776	0.905	20	

Sample ID: **2005025-001BMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/8/2020**	RunNo: **59105**
Client ID: **BATCH**	Batch ID: **28280**		Analysis Date: **5/8/2020**	SeqNo: **1180828**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.722	0.100	0.7500	0.05500	88.9	80	120				H
Sulfate	5.42	0.300	3.750	1.776	97.2	80	120				

Work Order: 2005072
CLIENT: Floyd | Snider
Project: POL - TPH

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2005025-001BMSD**	SampType: **MSD**	Units: **mg/L**	Prep Date: **5/8/2020**	RunNo: **59105**
Client ID: **BATCH**	Batch ID: **28280**		Analysis Date: **5/8/2020**	SeqNo: **1180829**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.717	0.100	0.7500	0.05500	88.3	80	120	0.7220	0.695	20	H
Sulfate	5.40	0.300	3.750	1.776	96.7	80	120	5.420	0.351	20	

Sample ID: **2005072-012CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/8/2020**	RunNo: **59105**
Client ID: **MW-19-050720**	Batch ID: **28280**		Analysis Date: **5/9/2020**	SeqNo: **1180851**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	5.72	0.100						5.722	0.0175	20	E
Sulfate	10.1	0.300						10.12	0.178	20	

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2005072-012CMS**	SampType: **MS**	Units: **mg/L**	Prep Date: **5/8/2020**	RunNo: **59105**
Client ID: **MW-19-050720**	Batch ID: **28280**		Analysis Date: **5/9/2020**	SeqNo: **1180852**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	6.52	0.100	0.7500	5.722	106	80	120				E
Sulfate	14.0	0.300	3.750	10.12	103	80	120				

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 2005072
CLIENT: Floyd | Snider
Project: POL - TPH

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R59195**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **5/15/2020**	RunNo: **59195**
Client ID: **MBLKW**	Batch ID: **R59195**		Analysis Date: **5/15/2020**	SeqNo: **1182938**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R59195**	SampType: **LCS**	Units: **mg/L**	Prep Date: **5/15/2020**	RunNo: **59195**
Client ID: **LCSW**	Batch ID: **R59195**		Analysis Date: **5/15/2020**	SeqNo: **1182939**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	106	2.50	100.0	0	106	94.3	116				

Sample ID: **2005072-001CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/15/2020**	RunNo: **59195**
Client ID: **MW-31-050620**	Batch ID: **R59195**		Analysis Date: **5/15/2020**	SeqNo: **1182941**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	239	2.50						229.1	4.17	20	

Sample ID: **2005072-014CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **5/15/2020**	RunNo: **59195**
Client ID: **MW-12-050720**	Batch ID: **R59195**		Analysis Date: **5/15/2020**	SeqNo: **1182954**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	48.8	2.50						53.62	9.52	20	

Sample Log-In Check List

Client Name:	**FS**	Work Order Number:	**2005072**
Logged by:	**Clare Griggs**	Date Received:	**5/8/2020 10:21:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes	☑	No	☐	Not Present ☐
2.	How was the sample delivered?	Client				

Log In

3.	Coolers are present?	Yes	☑	No	☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes	☑	No	☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes	☑	No	☐	Not Required ☐
6.	Was an attempt made to cool the samples?	Yes	☑	No	☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes	☑	No	☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes	☑	No	☐	
9.	Sufficient sample volume for indicated test(s)?	Yes	☑	No	☐	
10.	Are samples properly preserved?	Yes	☑	No	☐	
11.	Was preservative added to bottles?	Yes	☐	No	☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes	☐	No	☐	NA ☑
13.	Did all samples containers arrive in good condition(unbroken)?	Yes	☑	No	☐	
14.	Does paperwork match bottle labels?	Yes	☑	No	☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes	☑	No	☐	
16.	Is it clear what analyses were requested?	Yes	☑	No	☐	
17.	Were all holding times able to be met?	Yes	☐	No	☑	

Special Handling (if applicable)

18. Was client notified of all discrepancies with this order? Yes ☑ No ☐ NA ☐

Person Notified:	Gabe Cisneros	Date:	5/11/2020
By Whom:	Clare Griggs	Via:	☑ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:	Hold times, confirming metals analysis.		
Client Instructions:	Proceed despite hold time. Analyze for Dissolved Mn, not Total Mn.		

19. Additional remarks:

Item Information

Item #	Temp ºC
Cooler 1	2.5
Cooler 2	5.0
Sample 1	0.9
Sample 2	0.8

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 5/6/20 Page: 1 of: 2

Laboratory Project No (internal): 2005072

Project Name: POL - TPH

Special Remarks:

Project No:

Client: Floyd/Snider

Collected by: P.O., G.C., A.J., T.S.

Address: 601 Union St

Location: Longview

City, State, Zip: Seattle, WA

Report To (PM): Gabe Cisneros

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Telephone: 206-292-2078

PM Email: gabe.cisneros@floydsnider.com

Fax: —

	Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX Methane	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Mn	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	BOD | COD	DUP | MS | MSD	# of Bottles	Comments
✓	1 MW-31-050620	5/6/20	1305	GW			X							X				X		4	
✓	2 MW-10-050620	5/6/20	1221	GW			X							X				X		4	
✓	3 MW-40-050620	5/6/20	1440	GW													✓			2	
✓	4 MW-29-050620	5/6/20	1541	GW			X							X				X		4	
✓	5 MW-23-050620	5/6/20	1555	GW			X							X				X		4	
✓	6 MW-14-050720	5/7/20	1414	GW			X							X				X		4	
✓	7 MW-20-050720	5/7	1227	GW			X							X			X	X		6	
✓	8 MW-25-050720	5/7	1107	GW			X							X				X		4	
✓	9 MW-24-050720	5/7	0947	GW			X							X				X		4	
✓	10 MW-18-050720	5/7	1308	GW			X							X				X		4	

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL Individual: Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:
- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day ____ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	5/8/20 944	x [signature]	5/8/20 @ 1024
Relinquished x	Date/Time	Received x	Date/Time

Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 5/7/20 Page: 2 of: 2

Laboratory Project No (internal): 2005072

Project Name: POL-TPH

Special Remarks:

Client: Floyd Snider

Project No:

Address:

Collected by: P.D., T.S., A.J., and G.C.

City, State, Zip: see page 1

Location: Longview

Telephone:

Report To (PM): Gabe Clemens

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email:

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) / Dissolved (D)	Anions (IC)***	EDB (8011)	Methane, Ethane, Ethene	Alkalinity	Nitrate, Sulfate	# of Bottles	Comments
1 MW-17-050720	5/7/20	1103	GW									X			X	X	X		4	
2 MW-19-050720		1429										X			X	X	X		4	
3 MW-22-050720		0927										X			X	X	X		4	
4 MW-12-050720		1441										X			X	X	X		4	
5 Trip Blank																				
6																				
7																				
8																				
9																				
10																				

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): Nitrate Nitrite Chloride Sulfate Bromide O-Phosphate Fluoride Nitrate+Nitrite

Turn-around Time:

☒ Standard
☐ 3 Day
☐ 2 Day
☐ Next Day
Same Day ____ (specify)

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x	5/8/20 944	x	~~5/8/11~~ 5/8/20 @ 1024
Relinquished	Date/Time	Received	Date/Time
x		x	

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.
Yelena Aravkina, M.S.
Michael Erdahl, B.S.
Arina Podnozova, B.S.
Eric Young, B.S.

3012 16th Avenue West
Seattle, WA 98119-2029
(206) 285-8282
fbi@isomedia.com
www.friedmanandbruya.com

August 25, 2020

Gabriel Cisneros, Project Manager
Floyd-Snider
Two Union Square, Suite 600
601 Union St
Seattle, WA 98101

Dear Mr Cisneros:

Included are the results from the testing of material submitted on August 11, 2020 from the POL-TPH, F&BI 008152 project. There are 111 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

We appreciate this opportunity to be of service to you and hope you will call if you should have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl
Project Manager

Enclosures
FDS0825R.DOC

CASE NARRATIVE

This case narrative encompasses samples received on August 11, 2020 by Friedman & Bruya, Inc. from the Floyd-Snider POL-TPH, F&BI 008152 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Floyd-Snider
008152 -01	MW-37-081020
008152 -02	MW-38-081020
008152 -03	MW-36-081020
008152 -04	MW-136-081020
008152 -05	UST-4-081020
008152 -06	MW-34-081020
008152 -07	MW-35-081020
008152 -08	MW-31-081020
008152 -09	MW-27-081020
008152 -10	MW-26-081020
008152 -11	MW-19-081020
008152 -12	MW-6-081020
008152 -13	MW-01-081020
008152 -14	MW-39-081020
008152 -15	MW-13-081020
008152 -16	MW-2-081020
008152 -17	MW-15-081020
008152 -18	MW-10-081020
008152 -19	MW-3-081020
008152 -20	MW-8-081020
008152 -21	MW-22-081120
008152 -22	MW-30-081120
008152 -23	MW-32-081120
008152 -24	T-2-081120
008152 -25	MW-25-081120
008152 -26	MW-17-081120
008152 -27	MW-40-081120
008152 -28	MW-33-081120
008152 -29	MW-23-081120
008152 -30	MW-29-081120
008152 -31	MW-18-081120
008152 -32	MW-24-081120
008152 -33	MW-7-081120
008152 -34	MW-107-081120
008152 -35	MW-12-081120
008152 -36	MW-28-081120

CASE NARRATIVE (continued)

Laboratory ID	Floyd-Snider
008152 -37	MW-14-081120

The 8260D laboratory control sample exceeded the acceptance criteria for chloroethane and bromomethane. In addition, the 8260D matrix spike for 1,2-dibromo-3-chloropropane exceeded the acceptance criteria. The compounds were not detected, therefore the data were acceptable.

The 8260D matrix spike and matrix spike duplicate failed the relative percent difference for methylene chloride. The analytes were not detected therefore the data were acceptable.

Several 8270E surrogates exceeded the acceptance criteria. cPAHs were not associated with the surrogates, therefore the data were acceptable.

All other quality control requirements were acceptable.

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152
Date Extracted: 08/12/20 and 08/13/20
Date Analyzed: 08/12/20 and 08/13/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-37-081020 008152-01	120	94
MW-38-081020 008152-02	<100	97
MW-36-081020 008152-03	<100	93
MW-136-081020 008152-04	<100	91
UST-4-081020 008152-05	<100	93
MW-34-081020 008152-06	130	93
MW-35-081020 008152-07	<100	95
MW-31-081020 008152-08	<100	92
MW-27-081020 008152-09	<100	93
MW-26-081020 008152-10	<100	94

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152
Date Extracted: 08/12/20 and 08/13/20
Date Analyzed: 08/12/20 and 08/13/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-19-081020 008152-11	<100	96
MW-6-081020 008152-12	<100	95
MW-01-081020 008152-13	<100	94
MW-39-081020 008152-14	510	104
MW-13-081020 008152-15	<100	95
MW-2-081020 008152-16	<100	93
MW-15-081020 008152-17	120	91
MW-10-081020 008152-18	4,100	84
MW-3-081020 008152-19	570	95
MW-8-081020 008152-20	3,000	86

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152
Date Extracted: 08/12/20 and 08/13/20
Date Analyzed: 08/12/20 and 08/13/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-22-081120 008152-21	<100	93
MW-30-081120 008152-22	<100	93
MW-32-081120 008152-23	<100	93
T-2-081120 008152-24	<100	94
MW-25-081120 008152-25	<100	96
MW-17-081120 008152-26	<100	94
MW-40-081120 008152-27	2,000	110
MW-33-081120 008152-28	150	93
MW-23-081120 008152-29	<100	94
MW-29-081120 008152-30	<100	94

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152
Date Extracted: 08/12/20 and 08/13/20
Date Analyzed: 08/12/20 and 08/13/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 51-134)
MW-18-081120 008152-31	<100	94
MW-24-081120 008152-32	<100	93
MW-7-081120 008152-33	1,200	112
MW-107-081120 008152-34	1,300	117
MW-12-081120 008152-35	7,100	87
MW-28-081120 008152-36	<100	92
MW-14-081120 008152-37	<100	93
Method Blank 00-1785 MB	<100	93
Method Blank 00-1788 MB	<100	94

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152
Date Extracted: 08/12/20 and 08/13/20
Date Analyzed: 08/12/20 and 08/13/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-37-081020 008152-01	<50	<250	ip
MW-38-081020 008152-02	57 x	<250	93
MW-36-081020 008152-03	<50	<250	92
MW-136-081020 008152-04	<50	<250	85
UST-4-081020 008152-05	57 x	<250	98
MW-34-081020 008152-06	1,500 x	290 x	86
MW-35-081020 008152-07	670 x	260 x	98
MW-31-081020 008152-08	<50	<250	98
MW-27-081020 008152-09	110 x	<250	88
MW-26-081020 008152-10	610 x	<250	97

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152
Date Extracted: 08/12/20 and 08/13/20
Date Analyzed: 08/12/20 and 08/13/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-19-081020 008152-11	76 x	<250	95
MW-6-081020 008152-12	1,900 x	360 x	98
MW-01-081020 008152-13	<50	<250	95
MW-39-081020 008152-14	6,500 x	790 x	103
MW-13-081020 008152-15	60 x	<250	98
MW-2-081020 008152-16	640 x	330 x	80
MW-15-081020 008152-17	300 x	<250	100
MW-10-081020 008152-18	1,400 x	<250	96
MW-3-081020 008152-19	1,100 x	410 x	97
MW-8-081020 008152-20	2,400 x	370 x	95

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152
Date Extracted: 08/12/20 and 08/13/20
Date Analyzed: 08/12/20 and 08/13/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-22-081120 008152-21	<50	<250	93
MW-30-081120 008152-22	1,100 x	480 x	87
MW-32-081120 008152-23	<50	<250	91
T-2-081120 008152-24	<50	<250	80
MW-25-081120 008152-25	<50	<250	94
MW-17-081120 008152-26	62 x	<250	94
MW-40-081120 008152-27	3,400	330 x	97
MW-33-081120 008152-28	930	<250	97
MW-23-081120 008152-29	<50	<250	86
MW-29-081120 008152-30	<50	<250	87

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152
Date Extracted: 08/12/20 and 08/13/20
Date Analyzed: 08/12/20 and 08/13/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C_{10}-C_{25})	Motor Oil Range (C_{25}-C_{36})	Surrogate (% Recovery) (Limit 41-152)
MW-18-081120 008152-31	<50	<250	87
MW-24-081120 008152-32	<50	<250	98
MW-7-081120 008152-33	1,200	<250	95
MW-107-081120 008152-34	1,200	<250	87
MW-12-081120 008152-35	2,100	<250	94
MW-28-081120 008152-36	5,200 x	890 x	93
MW-14-081120 008152-37	230 x	<250	89
Method Blank 00-1840 MB	<50	<250	91
Method Blank 00-1841 MB	<50	<250	86

Analysis For Total Metals By EPA Method 6020B

Client ID:	UST-4-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-05
Date Analyzed:	08/12/20	Data File:	008152-05.114
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-10-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-18
Date Analyzed:	08/12/20	Data File:	008152-18.115
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-3-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-19
Date Analyzed:	08/12/20	Data File:	008152-19.116
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-7-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-33
Date Analyzed:	08/12/20	Data File:	008152-33.117
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	MW-107-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-34
Date Analyzed:	08/12/20	Data File:	008152-34.118
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Floyd-Snider
Date Received:	NA	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	I0-464 mb2
Date Analyzed:	08/12/20	Data File:	I0-464 mb2.045
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP

Analyte:	Concentration ug/L (ppb)
Lead	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-37-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-01
Date Analyzed:	08/12/20	Data File:	081219.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	2.5
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-38-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-02
Date Analyzed:	08/12/20	Data File:	081220.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	101	50	150
4-Bromofluorobenzene	101	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-36-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-03
Date Analyzed:	08/12/20	Data File:	081221.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-136-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-04
Date Analyzed:	08/12/20	Data File:	081222.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	UST-4-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-05
Date Analyzed:	08/12/20	Data File:	081223.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-34-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-06
Date Analyzed:	08/12/20	Data File:	081224.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	94	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	1.4
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	1.2
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-35-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-07
Date Analyzed:	08/12/20	Data File:	081225.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	93	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-31-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-08
Date Analyzed:	08/12/20	Data File:	081226.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-27-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-09
Date Analyzed:	08/12/20	Data File:	081227.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	94	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-26-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-10
Date Analyzed:	08/12/20	Data File:	081228.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-19-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-11
Date Analyzed:	08/12/20	Data File:	081229.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-6-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-12
Date Analyzed:	08/12/20	Data File:	081230.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-01-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-13
Date Analyzed:	08/12/20	Data File:	081231.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-39-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-14
Date Analyzed:	08/12/20	Data File:	081232.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	8.5
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	9.4
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	2.3
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		
Naphthalene	<1		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-13-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-15
Date Analyzed:	08/12/20	Data File:	081233.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	72	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-2-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-16
Date Analyzed:	08/12/20	Data File:	081234.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	98	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-15-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-17
Date Analyzed:	08/12/20	Data File:	081235.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-10-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-18
Date Analyzed:	08/12/20	Data File:	081236.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	109	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	60
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	20
Hexane	49	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	30
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	64
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	120	sec-Butylbenzene	3.2
Trichloroethene	<1	p-Isopropyltoluene	1.1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	19	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-3-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-19
Date Analyzed:	08/12/20	Data File:	081237.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	50	150
Toluene-d8	100	50	150
4-Bromofluorobenzene	94	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	1.2
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-8-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-20
Date Analyzed:	08/12/20	Data File:	081238.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	91	50	150
Toluene-d8	106	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	1.0
Toluene	1.8
Ethylbenzene	<1
m,p-Xylene	3.2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-22-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-21
Date Analyzed:	08/13/20	Data File:	081311.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-30-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-22
Date Analyzed:	08/13/20	Data File:	081312.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-32-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-23
Date Analyzed:	08/13/20	Data File:	081313.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	T-2-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-24
Date Analyzed:	08/13/20	Data File:	081314.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	100	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-25-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-25
Date Analyzed:	08/13/20	Data File:	081315.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	106	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-17-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-26
Date Analyzed:	08/13/20	Data File:	081316.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	93	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-40-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-27
Date Analyzed:	08/13/20	Data File:	081317.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	93	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	1.1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	2.0
Hexane	10	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	3.9
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	5.0
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	240 ve	sec-Butylbenzene	1.2
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	6.3	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-40-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-27 1/10
Date Analyzed:	08/13/20	Data File:	081308.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	<10
Vinyl chloride	<2	Dibromochloromethane	<10
Bromomethane	<50	1,2-Dibromoethane (EDB)	<10
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	<10
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	<20
Hexane	<50	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	<10
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	<10
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	<10
Chloroform	<10	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<200	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	<10
Benzene	310	sec-Butylbenzene	<10
Trichloroethene	<10	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<10	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<10	1,2,4-Trichlorobenzene	<10
Toluene	<10	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	<10
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-33-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-28
Date Analyzed:	08/13/20	Data File:	081318.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	81	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-23-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-29
Date Analyzed:	08/13/20	Data File:	081319.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	104	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-29-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-30
Date Analyzed:	08/13/20	Data File:	081320.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	85	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-18-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-31
Date Analyzed:	08/13/20	Data File:	081321.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	96	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-24-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-32
Date Analyzed:	08/13/20	Data File:	081322.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	95	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-7-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-33
Date Analyzed:	08/13/20	Data File:	081323.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	95	50	150
Toluene-d8	99	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	0.56
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-107-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-34
Date Analyzed:	08/13/20	Data File:	081324.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	105	50	150
4-Bromofluorobenzene	96	50	150

Compounds:	Concentration ug/L (ppb)
Methyl t-butyl ether (MTBE)	<1
1,2-Dichloroethane (EDC)	<1
Benzene	0.58
Toluene	<1
1,2-Dibromoethane (EDB)	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1
Naphthalene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-12-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-35
Date Analyzed:	08/13/20	Data File:	081325.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	97	50	150
Toluene-d8	113	50	150
4-Bromofluorobenzene	99	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	42
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	54
Hexane	150	o-Xylene	1.3
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	33
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	72
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	3.3
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	1.0
Benzene	560 ve	sec-Butylbenzene	3.5
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	38	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-12-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-35 1/10
Date Analyzed:	08/13/20	Data File:	081309.D
Matrix:	Water	Instrument:	GCMS11
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	105	50	150
Toluene-d8	102	50	150
4-Bromofluorobenzene	102	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<10	1,3-Dichloropropane	<10
Chloromethane	<100	Tetrachloroethene	<10
Vinyl chloride	<2	Dibromochloromethane	<10
Bromomethane	<50	1,2-Dibromoethane (EDB)	<10
Chloroethane	<10	Chlorobenzene	<10
Trichlorofluoromethane	<10	Ethylbenzene	46
Acetone	<500	1,1,1,2-Tetrachloroethane	<10
1,1-Dichloroethene	<10	m,p-Xylene	57
Hexane	190	o-Xylene	<10
Methylene chloride	<50	Styrene	<10
Methyl t-butyl ether (MTBE)	<10	Isopropylbenzene	34
trans-1,2-Dichloroethene	<10	Bromoform	<50
1,1-Dichloroethane	<10	n-Propylbenzene	82
2,2-Dichloropropane	<10	Bromobenzene	<10
cis-1,2-Dichloroethene	<10	1,3,5-Trimethylbenzene	<10
Chloroform	<10	1,1,2,2-Tetrachloroethane	<10
2-Butanone (MEK)	<200	1,2,3-Trichloropropane	<10
1,2-Dichloroethane (EDC)	<10	2-Chlorotoluene	<10
1,1,1-Trichloroethane	<10	4-Chlorotoluene	<10
1,1-Dichloropropene	<10	tert-Butylbenzene	<10
Carbon tetrachloride	<10	1,2,4-Trimethylbenzene	<10
Benzene	910	sec-Butylbenzene	<10
Trichloroethene	<10	p-Isopropyltoluene	<10
1,2-Dichloropropane	<10	1,3-Dichlorobenzene	<10
Bromodichloromethane	<10	1,4-Dichlorobenzene	<10
Dibromomethane	<10	1,2-Dichlorobenzene	<10
4-Methyl-2-pentanone	<100	1,2-Dibromo-3-chloropropane	<100
cis-1,3-Dichloropropene	<10	1,2,4-Trichlorobenzene	<10
Toluene	42	Hexachlorobutadiene	<10
trans-1,3-Dichloropropene	<10	Naphthalene	<10
1,1,2-Trichloroethane	<10	1,2,3-Trichlorobenzene	<10
2-Hexanone	<100		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-28-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-36
Date Analyzed:	08/13/20	Data File:	081332.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	99	50	150
Toluene-d8	97	50	150
4-Bromofluorobenzene	97	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	MW-14-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-37
Date Analyzed:	08/13/20	Data File:	081327.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	101	50	150
Toluene-d8	98	50	150
4-Bromofluorobenzene	100	50	150

Compounds:	Concentration ug/L (ppb)
Benzene	<0.35
Toluene	<1
Ethylbenzene	<1
m,p-Xylene	<2
o-Xylene	<1

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	00-1743 mb
Date Analyzed:	08/12/20	Data File:	081218.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	102	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	98	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	00-1746 mb
Date Analyzed:	08/13/20	Data File:	081309.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	AEN

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	107	50	150
Toluene-d8	96	50	150
4-Bromofluorobenzene	95	50	150

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	<0.2	Dibromochloromethane	<1
Bromomethane	<5	1,2-Dibromoethane (EDB)	<1
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	<1
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	<1	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	<1	1,2,4-Trimethylbenzene	<1
Benzene	<0.35	sec-Butylbenzene	<1
Trichloroethene	<1	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	<1	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	<1	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	<1
trans-1,3-Dichloropropene	<1	Naphthalene	<1
1,1,2-Trichloroethane	<1	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-37-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-01 1/2
Date Analyzed:	08/13/20	Data File:	081307.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	36	15	33
Phenol-d6	28	10	20
Nitrobenzene-d5	71	17	143
2-Fluorobiphenyl	65	50	150
2,4,6-Tribromophenol	76	50	150
Terphenyl-d14	78	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-38-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-02 1/2
Date Analyzed:	08/13/20	Data File:	081308.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	10	15	33
Phenol-d6	14	10	20
Nitrobenzene-d5	83	17	143
2-Fluorobiphenyl	81	50	150
2,4,6-Tribromophenol	31	50	150
Terphenyl-d14	99	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-36-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-03 1/2
Date Analyzed:	08/13/20	Data File:	081309.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	32	15	33
Phenol-d6	24	10	20
Nitrobenzene-d5	74	17	143
2-Fluorobiphenyl	77	50	150
2,4,6-Tribromophenol	79	50	150
Terphenyl-d14	95	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-136-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-04 1/2
Date Analyzed:	08/13/20	Data File:	081310.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	40	15	33
Phenol-d6	29	10	20
Nitrobenzene-d5	88	17	143
2-Fluorobiphenyl	85	50	150
2,4,6-Tribromophenol	83	50	150
Terphenyl-d14	92	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	UST-4-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-05 1/2
Date Analyzed:	08/13/20	Data File:	081311.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	36	15	33
Phenol-d6	26	10	20
Nitrobenzene-d5	75	17	143
2-Fluorobiphenyl	68	50	150
2,4,6-Tribromophenol	88	50	150
Terphenyl-d14	95	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-34-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-06 1/2
Date Analyzed:	08/13/20	Data File:	081312.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	40	15	33
Phenol-d6	28	10	20
Nitrobenzene-d5	87	17	143
2-Fluorobiphenyl	77	50	150
2,4,6-Tribromophenol	100	50	150
Terphenyl-d14	91	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-35-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-07 1/2
Date Analyzed:	08/14/20	Data File:	081405.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	39	15	99
Phenol-d6	27	11	65
Nitrobenzene-d5	84	10	145
2-Fluorobiphenyl	77	16	138
2,4,6-Tribromophenol	90	12	132
Terphenyl-d14	96	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-31-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-08 1/2
Date Analyzed:	08/13/20	Data File:	081314.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	43	15	33
Phenol-d6	31	10	20
Nitrobenzene-d5	89	17	143
2-Fluorobiphenyl	89	50	150
2,4,6-Tribromophenol	98	50	150
Terphenyl-d14	101	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-27-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-09 1/2
Date Analyzed:	08/13/20	Data File:	081315.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	39	15	33
Phenol-d6	30	10	20
Nitrobenzene-d5	89	17	143
2-Fluorobiphenyl	81	50	150
2,4,6-Tribromophenol	91	50	150
Terphenyl-d14	94	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-26-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-10 1/2
Date Analyzed:	08/13/20	Data File:	081316.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	37	15	33
Phenol-d6	27	10	20
Nitrobenzene-d5	78	17	143
2-Fluorobiphenyl	79	50	150
2,4,6-Tribromophenol	104	50	150
Terphenyl-d14	97	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-19-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-11 1/2
Date Analyzed:	08/13/20	Data File:	081308.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	25	15	99
Phenol-d6	23	11	65
Nitrobenzene-d5	71	10	145
2-Fluorobiphenyl	72	16	138
2,4,6-Tribromophenol	64	12	132
Terphenyl-d14	99	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-6-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-12 1/2
Date Analyzed:	08/13/20	Data File:	081309.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	20	15	99
Phenol-d6	21	11	65
Nitrobenzene-d5	72	10	145
2-Fluorobiphenyl	72	16	138
2,4,6-Tribromophenol	68	12	132
Terphenyl-d14	101	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-01-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-13 1/2
Date Analyzed:	08/13/20	Data File:	081310.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	22	15	99
Phenol-d6	25	11	65
Nitrobenzene-d5	85	10	145
2-Fluorobiphenyl	78	16	138
2,4,6-Tribromophenol	56	12	132
Terphenyl-d14	103	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-39-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-14 1/2
Date Analyzed:	08/13/20	Data File:	081311.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	30	15	99
Phenol-d6	27	11	65
Nitrobenzene-d5	77	10	145
2-Fluorobiphenyl	78	16	138
2,4,6-Tribromophenol	89	12	132
Terphenyl-d14	101	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-13-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-15 1/2
Date Analyzed:	08/13/20	Data File:	081312.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	41	15	99
Phenol-d6	29	11	65
Nitrobenzene-d5	80	10	145
2-Fluorobiphenyl	76	16	138
2,4,6-Tribromophenol	83	12	132
Terphenyl-d14	95	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-2-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-16 1/2
Date Analyzed:	08/13/20	Data File:	081313.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	29	15	99
Phenol-d6	26	11	65
Nitrobenzene-d5	78	10	145
2-Fluorobiphenyl	78	16	138
2,4,6-Tribromophenol	84	12	132
Terphenyl-d14	104	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-15-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-17 1/2
Date Analyzed:	08/13/20	Data File:	081314.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	40	15	99
Phenol-d6	30	11	65
Nitrobenzene-d5	89	10	145
2-Fluorobiphenyl	88	16	138
2,4,6-Tribromophenol	90	12	132
Terphenyl-d14	102	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-10-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-18 1/2
Date Analyzed:	08/13/20	Data File:	081315.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	32	15	99
Phenol-d6	26	11	65
Nitrobenzene-d5	72	10	145
2-Fluorobiphenyl	76	16	138
2,4,6-Tribromophenol	97	12	132
Terphenyl-d14	97	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-3-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-19 1/2
Date Analyzed:	08/13/20	Data File:	081316.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	37	15	99
Phenol-d6	29	11	65
Nitrobenzene-d5	87	10	145
2-Fluorobiphenyl	80	16	138
2,4,6-Tribromophenol	96	12	132
Terphenyl-d14	101	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-8-081020	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-20 1/2.5
Date Analyzed:	08/14/20	Data File:	081406.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	47	15	99
Phenol-d6	43	11	65
Nitrobenzene-d5	73	10	145
2-Fluorobiphenyl	75	16	138
2,4,6-Tribromophenol	90	12	132
Terphenyl-d14	90	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.05
Chrysene	<0.05
Benzo(a)pyrene	<0.05
Benzo(b)fluoranthene	<0.05
Benzo(k)fluoranthene	<0.05
Indeno(1,2,3-cd)pyrene	<0.05
Dibenz(a,h)anthracene	<0.05

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-22-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-21 1/2
Date Analyzed:	08/12/20	Data File:	081205.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	37 vo	15	33
Phenol-d6	26 vo	10	20
Nitrobenzene-d5	83	17	143
2-Fluorobiphenyl	81	50	150
2,4,6-Tribromophenol	68	50	150
Terphenyl-d14	96	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-30-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-22 1/2
Date Analyzed:	08/12/20	Data File:	081206.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	38 vo	15	33
Phenol-d6	27 vo	10	20
Nitrobenzene-d5	81	17	143
2-Fluorobiphenyl	84	50	150
2,4,6-Tribromophenol	94	50	150
Terphenyl-d14	104	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-32-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-23 1/2
Date Analyzed:	08/12/20	Data File:	081207.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	24	15	33
Phenol-d6	21 vo	10	20
Nitrobenzene-d5	81	17	143
2-Fluorobiphenyl	82	50	150
2,4,6-Tribromophenol	58	50	150
Terphenyl-d14	93	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	T-2-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-24 1/2
Date Analyzed:	08/12/20	Data File:	081208.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	41 vo	15	33
Phenol-d6	28 vo	10	20
Nitrobenzene-d5	86	17	143
2-Fluorobiphenyl	84	50	150
2,4,6-Tribromophenol	87	50	150
Terphenyl-d14	99	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-25-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-25 1/2
Date Analyzed:	08/12/20	Data File:	081209.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	36 vo	15	33
Phenol-d6	25 vo	10	20
Nitrobenzene-d5	80	17	143
2-Fluorobiphenyl	75	50	150
2,4,6-Tribromophenol	78	50	150
Terphenyl-d14	94	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-17-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-26 1/2
Date Analyzed:	08/12/20	Data File:	081210.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	38 vo	15	33
Phenol-d6	26 vo	10	20
Nitrobenzene-d5	81	17	143
2-Fluorobiphenyl	78	50	150
2,4,6-Tribromophenol	87	50	150
Terphenyl-d14	101	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-40-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-27 1/2
Date Analyzed:	08/12/20	Data File:	081211.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	40 vo	15	33
Phenol-d6	28 vo	10	20
Nitrobenzene-d5	82	17	143
2-Fluorobiphenyl	81	50	150
2,4,6-Tribromophenol	88	50	150
Terphenyl-d14	96	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-33-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-28 1/2
Date Analyzed:	08/12/20	Data File:	081212.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	38 vo	15	33
Phenol-d6	27 vo	10	20
Nitrobenzene-d5	86	17	143
2-Fluorobiphenyl	87	50	150
2,4,6-Tribromophenol	96	50	150
Terphenyl-d14	99	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-23-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-29 1/2
Date Analyzed:	08/13/20	Data File:	081213.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	37 vo	15	33
Phenol-d6	25 vo	10	20
Nitrobenzene-d5	76	17	143
2-Fluorobiphenyl	73	50	150
2,4,6-Tribromophenol	76	50	150
Terphenyl-d14	86	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-29-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-30 1/2
Date Analyzed:	08/13/20	Data File:	081214.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	45 vo	15	33
Phenol-d6	32 vo	10	20
Nitrobenzene-d5	88	17	143
2-Fluorobiphenyl	82	50	150
2,4,6-Tribromophenol	79	50	150
Terphenyl-d14	96	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-18-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-31 1/2
Date Analyzed:	08/13/20	Data File:	081215.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	38 vo	15	33
Phenol-d6	27 vo	10	20
Nitrobenzene-d5	85	17	143
2-Fluorobiphenyl	80	50	150
2,4,6-Tribromophenol	73	50	150
Terphenyl-d14	95	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-24-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-32 1/2
Date Analyzed:	08/13/20	Data File:	081216.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	28	15	33
Phenol-d6	24 vo	10	20
Nitrobenzene-d5	79	17	143
2-Fluorobiphenyl	75	50	150
2,4,6-Tribromophenol	62	50	150
Terphenyl-d14	94	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-7-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-33 1/2
Date Analyzed:	08/13/20	Data File:	081217.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	32	15	33
Phenol-d6	25 vo	10	20
Nitrobenzene-d5	81	17	143
2-Fluorobiphenyl	74	50	150
2,4,6-Tribromophenol	72	50	150
Terphenyl-d14	89	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-107-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-34 1/2
Date Analyzed:	08/13/20	Data File:	081218.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	38 vo	15	33
Phenol-d6	28 vo	10	20
Nitrobenzene-d5	82	17	143
2-Fluorobiphenyl	78	50	150
2,4,6-Tribromophenol	82	50	150
Terphenyl-d14	97	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-12-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	008152-35 1/2
Date Analyzed:	08/13/20	Data File:	081219.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	38 vo	15	33
Phenol-d6	28 vo	10	20
Nitrobenzene-d5	79	17	143
2-Fluorobiphenyl	76	50	150
2,4,6-Tribromophenol	89	50	150
Terphenyl-d14	91	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-28-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-36 1/2
Date Analyzed:	08/13/20	Data File:	081317.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	13	15	99
Phenol-d6	19	11	65
Nitrobenzene-d5	74	10	145
2-Fluorobiphenyl	70	16	138
2,4,6-Tribromophenol	47	12	132
Terphenyl-d14	84	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	MW-14-081120	Client:	Floyd-Snider
Date Received:	08/11/20	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	008152-37 1/2
Date Analyzed:	08/13/20	Data File:	081318.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	31	15	99
Phenol-d6	27	11	65
Nitrobenzene-d5	82	10	145
2-Fluorobiphenyl	72	16	138
2,4,6-Tribromophenol	74	12	132
Terphenyl-d14	94	35	138

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.04
Chrysene	<0.04
Benzo(a)pyrene	<0.04
Benzo(b)fluoranthene	<0.04
Benzo(k)fluoranthene	<0.04
Indeno(1,2,3-cd)pyrene	<0.04
Dibenz(a,h)anthracene	<0.04

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/12/20	Lab ID:	00-1831 mb2
Date Analyzed:	08/12/20	Data File:	081204.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	22	15	33
Phenol-d6	14	10	20
Nitrobenzene-d5	84	17	143
2-Fluorobiphenyl	85	50	150
2,4,6-Tribromophenol	66	50	150
Terphenyl-d14	98	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Floyd-Snider
Date Received:	Not Applicable	Project:	POL-TPH, F&BI 008152
Date Extracted:	08/13/20	Lab ID:	00-1842 mb
Date Analyzed:	08/13/20	Data File:	081306.D
Matrix:	Water	Instrument:	GCMS9
Units:	ug/L (ppb)	Operator:	VM

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
2-Fluorophenol	22	15	33
Phenol-d6	15	10	20
Nitrobenzene-d5	93	17	143
2-Fluorobiphenyl	94	50	150
2,4,6-Tribromophenol	73	50	150
Terphenyl-d14	100	50	150

Compounds:	Concentration ug/L (ppb)
Benz(a)anthracene	<0.02
Chrysene	<0.02
Benzo(a)pyrene	<0.02
Benzo(b)fluoranthene	<0.02
Benzo(k)fluoranthene	<0.02
Indeno(1,2,3-cd)pyrene	<0.02
Dibenz(a,h)anthracene	<0.02

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152
Date Extracted: 08/17/20
Date Analyzed: 08/17/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE (EDB) BY EPA METHOD 8011 MODIFIED
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	EDB
UST-4-081020 008152-05	<0.01
MW-34-081020 008152-06	<0.01
MW-35-081020 008152-07	<0.01
MW-19-081020 008152-11	<0.01
MW-39-081020 008152-14	<0.01
MW-10-081020 008152-18	<0.01
MW-3-081020 008152-19	<0.01
T-2-081120 008152-24	<0.01
MW-40-081120 008152-27	<0.01
MW-23-081120 008152-29	<0.01

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152
Date Extracted: 08/17/20
Date Analyzed: 08/17/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES
FOR 1,2-DIBROMOETHANE (EDB) BY EPA METHOD 8011 MODIFIED
Results Reported as µg/L (ppb)

Sample ID Laboratory ID	EDB
MW-7-081120 008152-33	<0.01
MW-107-081120 008152-34	<0.01
MW-12-081120 008152-35	<0.01
MW-28-081120 008152-36	<0.01
Method Blank	<0.01

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 008152-20 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,000	3,000	105	102	53-117	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	106	69-134

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 008152-30 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Gasoline	ug/L (ppb)	1,000	<100	91	94	53-117	3

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Gasoline	ug/L (ppb)	1,000	108	69-134

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 008152-20 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	2,500	109	107	50-150	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	ug/L (ppb)	2,500	80	63-142

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code: 008152-30 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Diesel Extended	ug/L (ppb)	2,500	<50	102	108	50-150	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Diesel Extended	ug/L (ppb)	2,500	108	63-142

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 008141-01 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Lead	ug/L (ppb)	10	<1	87	89	75-125	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Lead	ug/L (ppb)	10	88	80-120

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 008152-20 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	<1	107	115	50-150	7
Chloromethane	ug/L (ppb)	10	<10	103	106	50-150	3
Vinyl chloride	ug/L (ppb)	10	<0.2	110	117	50-150	6
Bromomethane	ug/L (ppb)	10	<5	134	140	50-150	4
Chloroethane	ug/L (ppb)	10	<1	128	139	50-150	8
Trichlorofluoromethane	ug/L (ppb)	10	<1	109	120	50-150	10
Acetone	ug/L (ppb)	50	<50	103	110	50-150	7
1,1-Dichloroethene	ug/L (ppb)	10	<1	110	126	50-150	14
Hexane	ug/L (ppb)	10	17	96 b	104 b	50-150	8 b
Methylene chloride	ug/L (ppb)	10	<5	97	112	50-150	14
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	101	108	50-150	7
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	102	110	50-150	8
1,1-Dichloroethane	ug/L (ppb)	10	<1	102	110	50-150	8
2,2-Dichloropropane	ug/L (ppb)	10	<1	93	97	50-150	4
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	102	110	50-150	8
Chloroform	ug/L (ppb)	10	<1	106	117	50-150	10
2-Butanone (MEK)	ug/L (ppb)	50	<20	95	86	50-150	10
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	100	100	50-150	0
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	101	108	50-150	7
1,1-Dichloropropene	ug/L (ppb)	10	<1	98	99	50-150	1
Carbon tetrachloride	ug/L (ppb)	10	<1	92	105	50-150	13
Benzene	ug/L (ppb)	10	1.0	99	100	50-150	1
Trichloroethene	ug/L (ppb)	10	<1	95	96	50-150	1
1,2-Dichloropropane	ug/L (ppb)	10	<1	113	112	50-150	1
Bromodichloromethane	ug/L (ppb)	10	<1	112	112	50-150	0
Dibromomethane	ug/L (ppb)	10	<1	100	100	50-150	0
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	105	100	50-150	5
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	91	82	50-150	10
Toluene	ug/L (ppb)	10	1.8	99	98	50-150	1
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	89	83	50-150	7
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	139	141	50-150	1
2-Hexanone	ug/L (ppb)	50	<10	102	95	50-150	7
1,3-Dichloropropane	ug/L (ppb)	10	<1	93	85	50-150	9
Tetrachloroethene	ug/L (ppb)	10	<1	98	97	50-150	1
Dibromochloromethane	ug/L (ppb)	10	<1	92	93	50-150	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	99	94	50-150	5
Chlorobenzene	ug/L (ppb)	10	<1	98	94	50-150	4
Ethylbenzene	ug/L (ppb)	10	<1	101	103	50-150	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	99	101	50-150	2
m,p-Xylene	ug/L (ppb)	20	3.2	95	97	50-150	2
o-Xylene	ug/L (ppb)	10	<1	98	102	50-150	4
Styrene	ug/L (ppb)	10	<1	98	97	50-150	1
Isopropylbenzene	ug/L (ppb)	10	42	105 b	128 b	50-150	20 b
Bromoform	ug/L (ppb)	10	<5	91	89	50-150	2
n-Propylbenzene	ug/L (ppb)	10	99	0 b	0 b	50-150	0
Bromobenzene	ug/L (ppb)	10	<1	87	79	50-150	10
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	88	81	50-150	8
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	100	92	50-150	8
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	85	76	50-150	11
2-Chlorotoluene	ug/L (ppb)	10	<1	88	81	50-150	8
4-Chlorotoluene	ug/L (ppb)	10	<1	84	75	50-150	11
tert-Butylbenzene	ug/L (ppb)	10	<1	89	80	50-150	11
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	87	80	50-150	8
sec-Butylbenzene	ug/L (ppb)	10	6.0	84 b	71 b	50-150	17 b
p-Isopropyltoluene	ug/L (ppb)	10	<1	91	84	50-150	8
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	85	76	50-150	11
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	86	76	50-150	12
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	87	82	50-150	6
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	156 vo	150	50-150	4
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	87	84	50-150	4
Hexachlorobutadiene	ug/L (ppb)	10	<1	89	82	50-150	8
Naphthalene	ug/L (ppb)	10	<1	94	90	50-150	4
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	89	86	50-150	3

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	113	106	70-130	6
Chloromethane	ug/L (ppb)	10	109	109	70-130	0
Vinyl chloride	ug/L (ppb)	10	112	110	70-130	2
Bromomethane	ug/L (ppb)	10	129	129	70-130	0
Chloroethane	ug/L (ppb)	10	131 vo	126	70-130	4
Trichlorofluoromethane	ug/L (ppb)	10	114	109	70-130	4
Acetone	ug/L (ppb)	50	108	115	64-131	6
1,1-Dichloroethene	ug/L (ppb)	10	117	113	70-130	3
Hexane	ug/L (ppb)	10	105	106	70-130	1
Methylene chloride	ug/L (ppb)	10	121	145	29-192	18
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	98	99	70-130	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	101	100	70-130	1
1,1-Dichloroethane	ug/L (ppb)	10	100	99	70-130	1
2,2-Dichloropropane	ug/L (ppb)	10	122	111	70-130	9
cis-1,2-Dichloroethene	ug/L (ppb)	10	100	99	70-130	1
Chloroform	ug/L (ppb)	10	98	99	70-130	1
2-Butanone (MEK)	ug/L (ppb)	50	92	96	70-130	4
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	95	98	70-130	3
1,1,1-Trichloroethane	ug/L (ppb)	10	100	99	70-130	1
1,1-Dichloropropene	ug/L (ppb)	10	93	97	70-130	4
Carbon tetrachloride	ug/L (ppb)	10	103	100	70-130	3
Benzene	ug/L (ppb)	10	98	99	70-130	1
Trichloroethene	ug/L (ppb)	10	88	90	70-130	2
1,2-Dichloropropane	ug/L (ppb)	10	95	97	70-130	2
Bromodichloromethane	ug/L (ppb)	10	99	101	70-130	2
Dibromomethane	ug/L (ppb)	10	96	104	70-130	8
4-Methyl-2-pentanone	ug/L (ppb)	50	101	102	70-130	1
cis-1,3-Dichloropropene	ug/L (ppb)	10	97	103	70-130	6
Toluene	ug/L (ppb)	10	96	100	70-130	4
trans-1,3-Dichloropropene	ug/L (ppb)	10	97	102	70-130	5
1,1,2-Trichloroethane	ug/L (ppb)	10	96	100	70-130	4
2-Hexanone	ug/L (ppb)	50	95	101	70-130	6
1,3-Dichloropropane	ug/L (ppb)	10	91	93	70-130	2
Tetrachloroethene	ug/L (ppb)	10	99	102	70-130	3
Dibromochloromethane	ug/L (ppb)	10	96	101	70-130	5
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	93	101	70-130	8
Chlorobenzene	ug/L (ppb)	10	94	100	70-130	6
Ethylbenzene	ug/L (ppb)	10	98	101	70-130	3
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	99	100	70-130	1
m,p-Xylene	ug/L (ppb)	20	94	97	70-130	3
o-Xylene	ug/L (ppb)	10	96	98	70-130	2
Styrene	ug/L (ppb)	10	94	98	70-130	4
Isopropylbenzene	ug/L (ppb)	10	100	101	70-130	1
Bromoform	ug/L (ppb)	10	99	104	63-206	5
n-Propylbenzene	ug/L (ppb)	10	100	103	70-130	3
Bromobenzene	ug/L (ppb)	10	98	102	70-130	4
1,3,5-Trimethylbenzene	ug/L (ppb)	10	101	102	70-130	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	107	112	70-130	5
1,2,3-Trichloropropane	ug/L (ppb)	10	94	101	70-130	7
2-Chlorotoluene	ug/L (ppb)	10	97	99	70-130	2
4-Chlorotoluene	ug/L (ppb)	10	97	101	70-130	4
tert-Butylbenzene	ug/L (ppb)	10	101	103	70-130	2
1,2,4-Trimethylbenzene	ug/L (ppb)	10	100	101	70-130	1
sec-Butylbenzene	ug/L (ppb)	10	102	104	70-130	2
p-Isopropyltoluene	ug/L (ppb)	10	102	105	70-130	3
1,3-Dichlorobenzene	ug/L (ppb)	10	95	101	70-130	6
1,4-Dichlorobenzene	ug/L (ppb)	10	97	102	70-130	5
1,2-Dichlorobenzene	ug/L (ppb)	10	100	103	70-130	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	109	106	70-130	3
1,2,4-Trichlorobenzene	ug/L (ppb)	10	100	103	70-130	3
Hexachlorobutadiene	ug/L (ppb)	10	102	102	70-130	0
Naphthalene	ug/L (ppb)	10	101	102	70-130	1
1,2,3-Trichlorobenzene	ug/L (ppb)	10	98	100	70-130	2

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 008152-30 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	<1	108	110	50-150	2
Chloromethane	ug/L (ppb)	10	<10	105	105	50-150	0
Vinyl chloride	ug/L (ppb)	10	<0.2	108	109	50-150	1
Bromomethane	ug/L (ppb)	10	<5	130	126	50-150	3
Chloroethane	ug/L (ppb)	10	<1	125	125	50-150	0
Trichlorofluoromethane	ug/L (ppb)	10	<1	106	108	50-150	2
Acetone	ug/L (ppb)	50	<50	108	93	50-150	15
1,1-Dichloroethene	ug/L (ppb)	10	<1	107	112	50-150	5
Hexane	ug/L (ppb)	10	<5	106	105	50-150	1
Methylene chloride	ug/L (ppb)	10	<5	96	123	50-150	25 vo
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	98	100	50-150	2
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	100	102	50-150	2
1,1-Dichloroethane	ug/L (ppb)	10	<1	98	100	50-150	2
2,2-Dichloropropane	ug/L (ppb)	10	<1	105	98	50-150	7
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	99	101	50-150	2
Chloroform	ug/L (ppb)	10	<1	98	97	50-150	1
2-Butanone (MEK)	ug/L (ppb)	50	<20	92	91	50-150	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	97	97	50-150	0
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	96	97	50-150	1
1,1-Dichloropropene	ug/L (ppb)	10	<1	96	97	50-150	1
Carbon tetrachloride	ug/L (ppb)	10	<1	94	95	50-150	1
Benzene	ug/L (ppb)	10	<0.35	100	99	50-150	1
Trichloroethene	ug/L (ppb)	10	<1	90	89	50-150	1
1,2-Dichloropropane	ug/L (ppb)	10	<1	94	94	50-150	0
Bromodichloromethane	ug/L (ppb)	10	<1	93	94	50-150	1
Dibromomethane	ug/L (ppb)	10	<1	97	101	50-150	4
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	100	100	50-150	0
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	90	90	50-150	0
Toluene	ug/L (ppb)	10	<1	99	97	50-150	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	90	86	50-150	5
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	98	96	50-150	2
2-Hexanone	ug/L (ppb)	50	<10	99	98	50-150	1
1,3-Dichloropropane	ug/L (ppb)	10	<1	92	93	50-150	1
Tetrachloroethene	ug/L (ppb)	10	<1	101	97	50-150	4
Dibromochloromethane	ug/L (ppb)	10	<1	88	87	50-150	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	98	97	50-150	1
Chlorobenzene	ug/L (ppb)	10	<1	99	96	50-150	3
Ethylbenzene	ug/L (ppb)	10	<1	100	99	50-150	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	93	94	50-150	1
m,p-Xylene	ug/L (ppb)	20	<2	96	95	50-150	1
o-Xylene	ug/L (ppb)	10	<1	98	96	50-150	2
Styrene	ug/L (ppb)	10	<1	98	97	50-150	1
Isopropylbenzene	ug/L (ppb)	10	<1	101	100	50-150	1
Bromoform	ug/L (ppb)	10	<5	85	84	50-150	1
n-Propylbenzene	ug/L (ppb)	10	<1	99	95	50-150	4
Bromobenzene	ug/L (ppb)	10	<1	99	98	50-150	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	97	94	50-150	3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	106	103	50-150	3
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	95	93	50-150	2
2-Chlorotoluene	ug/L (ppb)	10	<1	95	93	50-150	2
4-Chlorotoluene	ug/L (ppb)	10	<1	96	93	50-150	3
tert-Butylbenzene	ug/L (ppb)	10	<1	97	94	50-150	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	97	95	50-150	2
sec-Butylbenzene	ug/L (ppb)	10	<1	99	96	50-150	3
p-Isopropyltoluene	ug/L (ppb)	10	<1	100	97	50-150	3
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	98	95	50-150	3
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	97	96	50-150	1
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	100	96	50-150	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	91	93	50-150	2
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	99	97	50-150	2
Hexachlorobutadiene	ug/L (ppb)	10	<1	98	97	50-150	1
Naphthalene	ug/L (ppb)	10	<1	100	97	50-150	3
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	98	95	50-150	3

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Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	109	106	70-130	3
Chloromethane	ug/L (ppb)	10	110	108	70-130	2
Vinyl chloride	ug/L (ppb)	10	111	112	70-130	1
Bromomethane	ug/L (ppb)	10	140 vo	130	70-130	7
Chloroethane	ug/L (ppb)	10	127	130	70-130	2
Trichlorofluoromethane	ug/L (ppb)	10	108	111	70-130	3
Acetone	ug/L (ppb)	50	105	103	64-131	2
1,1-Dichloroethene	ug/L (ppb)	10	113	116	70-130	3
Hexane	ug/L (ppb)	10	96	98	70-130	2
Methylene chloride	ug/L (ppb)	10	98	109	29-192	11
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	98	99	70-130	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	101	102	70-130	1
1,1-Dichloroethane	ug/L (ppb)	10	99	100	70-130	1
2,2-Dichloropropane	ug/L (ppb)	10	110	111	70-130	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	100	102	70-130	2
Chloroform	ug/L (ppb)	10	98	100	70-130	2
2-Butanone (MEK)	ug/L (ppb)	50	89	88	70-130	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	96	96	70-130	0
1,1,1-Trichloroethane	ug/L (ppb)	10	98	99	70-130	1
1,1-Dichloropropene	ug/L (ppb)	10	94	92	70-130	2
Carbon tetrachloride	ug/L (ppb)	10	95	97	70-130	2
Benzene	ug/L (ppb)	10	97	98	70-130	1
Trichloroethene	ug/L (ppb)	10	87	88	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	93	93	70-130	0
Bromodichloromethane	ug/L (ppb)	10	95	95	70-130	0
Dibromomethane	ug/L (ppb)	10	96	96	70-130	0
4-Methyl-2-pentanone	ug/L (ppb)	50	96	97	70-130	1
cis-1,3-Dichloropropene	ug/L (ppb)	10	93	94	70-130	1
Toluene	ug/L (ppb)	10	96	98	70-130	2
trans-1,3-Dichloropropene	ug/L (ppb)	10	93	94	70-130	1
1,1,2-Trichloroethane	ug/L (ppb)	10	94	97	70-130	3
2-Hexanone	ug/L (ppb)	50	93	94	70-130	1
1,3-Dichloropropane	ug/L (ppb)	10	89	90	70-130	1
Tetrachloroethene	ug/L (ppb)	10	96	99	70-130	3
Dibromochloromethane	ug/L (ppb)	10	94	96	70-130	2
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	93	96	70-130	3
Chlorobenzene	ug/L (ppb)	10	94	96	70-130	2
Ethylbenzene	ug/L (ppb)	10	97	99	70-130	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	96	100	70-130	4
m,p-Xylene	ug/L (ppb)	20	93	95	70-130	2
o-Xylene	ug/L (ppb)	10	95	98	70-130	3
Styrene	ug/L (ppb)	10	94	97	70-130	3
Isopropylbenzene	ug/L (ppb)	10	99	101	70-130	2
Bromoform	ug/L (ppb)	10	94	92	63-206	2
n-Propylbenzene	ug/L (ppb)	10	96	99	70-130	3
Bromobenzene	ug/L (ppb)	10	98	100	70-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	96	98	70-130	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	104	109	70-130	5
1,2,3-Trichloropropane	ug/L (ppb)	10	94	97	70-130	3
2-Chlorotoluene	ug/L (ppb)	10	94	97	70-130	3
4-Chlorotoluene	ug/L (ppb)	10	94	97	70-130	3
tert-Butylbenzene	ug/L (ppb)	10	95	98	70-130	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	95	99	70-130	4
sec-Butylbenzene	ug/L (ppb)	10	98	101	70-130	3
p-Isopropyltoluene	ug/L (ppb)	10	98	100	70-130	2
1,3-Dichlorobenzene	ug/L (ppb)	10	94	97	70-130	3
1,4-Dichlorobenzene	ug/L (ppb)	10	97	98	70-130	1
1,2-Dichlorobenzene	ug/L (ppb)	10	98	101	70-130	3
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	99	104	70-130	5
1,2,4-Trichlorobenzene	ug/L (ppb)	10	97	100	70-130	3
Hexachlorobutadiene	ug/L (ppb)	10	96	97	70-130	1
Naphthalene	ug/L (ppb)	10	99	101	70-130	2
1,2,3-Trichlorobenzene	ug/L (ppb)	10	98	100	70-130	2

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Date Received: 08/11/20
Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 008152-30 1/2 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	10	<0.04	100	98	50-150	2
Chrysene	ug/L (ppb)	10	<0.04	98	97	50-150	1
Benzo(a)pyrene	ug/L (ppb)	10	<0.04	90	90	50-150	0
Benzo(b)fluoranthene	ug/L (ppb)	10	<0.04	111	91	50-150	20
Benzo(k)fluoranthene	ug/L (ppb)	10	<0.04	92	94	50-150	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	<0.04	94	89	50-150	5
Dibenz(a,h)anthracene	ug/L (ppb)	10	<0.04	95	93	50-150	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	5	96	94	70-130	2
Chrysene	ug/L (ppb)	5	99	96	70-130	3
Benzo(a)pyrene	ug/L (ppb)	5	87	86	70-130	1
Benzo(b)fluoranthene	ug/L (ppb)	5	89	101	70-130	13
Benzo(k)fluoranthene	ug/L (ppb)	5	87	85	70-130	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	89	89	70-130	0
Dibenz(a,h)anthracene	ug/L (ppb)	5	92	91	70-130	1

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 008152-20 1/2 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	10	<0.05	86	88	50-150	2
Chrysene	ug/L (ppb)	10	<0.05	84	85	50-150	1
Benzo(a)pyrene	ug/L (ppb)	10	<0.05	87	88	50-150	1
Benzo(b)fluoranthene	ug/L (ppb)	10	<0.05	86	87	50-150	1
Benzo(k)fluoranthene	ug/L (ppb)	10	<0.05	83	85	50-150	2
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	10	<0.05	82	84	50-150	2
Dibenz(a,h)anthracene	ug/L (ppb)	10	<0.05	81	83	50-150	2

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	5	98	102	70-130	4
Chrysene	ug/L (ppb)	5	97	102	70-130	5
Benzo(a)pyrene	ug/L (ppb)	5	87	92	70-130	6
Benzo(b)fluoranthene	ug/L (ppb)	5	105	114	70-130	8
Benzo(k)fluoranthene	ug/L (ppb)	5	88	92	70-130	4
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	92	95	57-141	3
Dibenz(a,h)anthracene	ug/L (ppb)	5	95	98	57-137	3

Date of Report: 08/25/20
Date Received: 08/11/20
Project: POL-TPH, F&BI 008152

QUALITY ASSURANCE RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR 1,2-DIBROMOETHANE (EDB) BY EPA METHOD 8011 MODIFIED

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 10)
1,2-Dibromoethane	ug/L (ppb)	0.10	93	95	70-130	2

Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht – The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

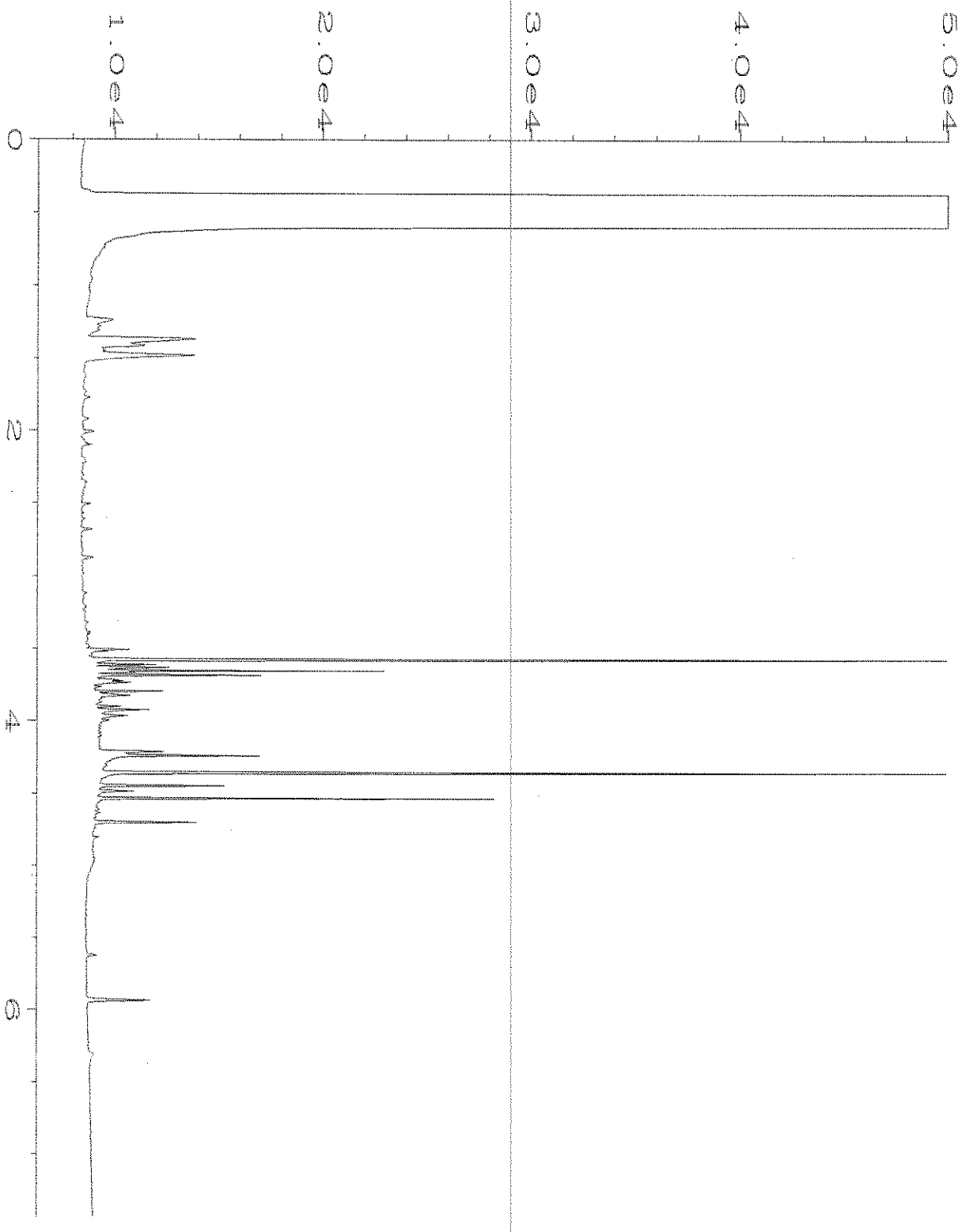
nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

x - The sample chromatographic pattern does not resemble the fuel standard used for quantitation.



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Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 23
Sample Name	: 008152-01	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 9
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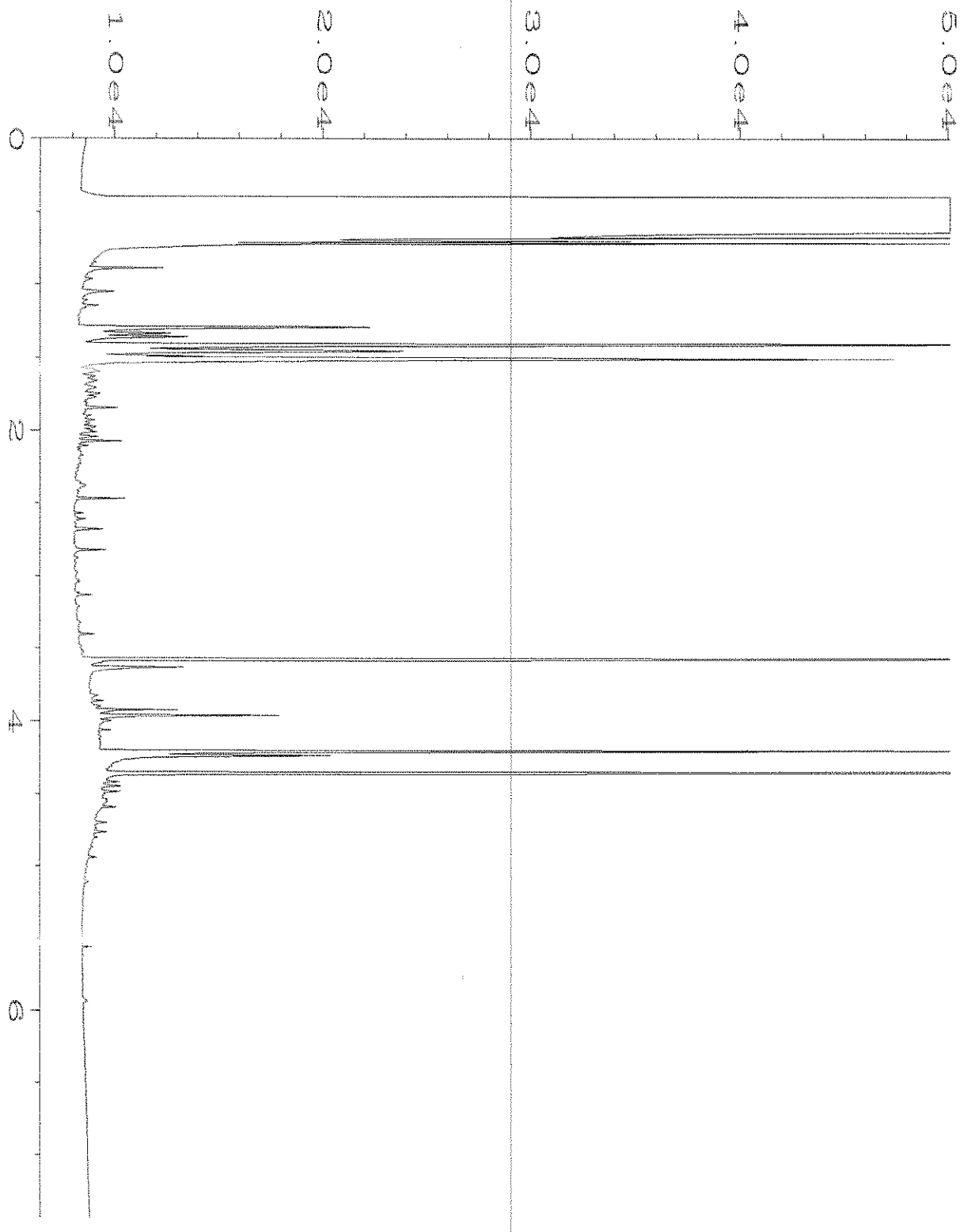
Report Created on	: 14 Aug 20 08:46 AM	Analysis Method	: DEFAULT.MTH



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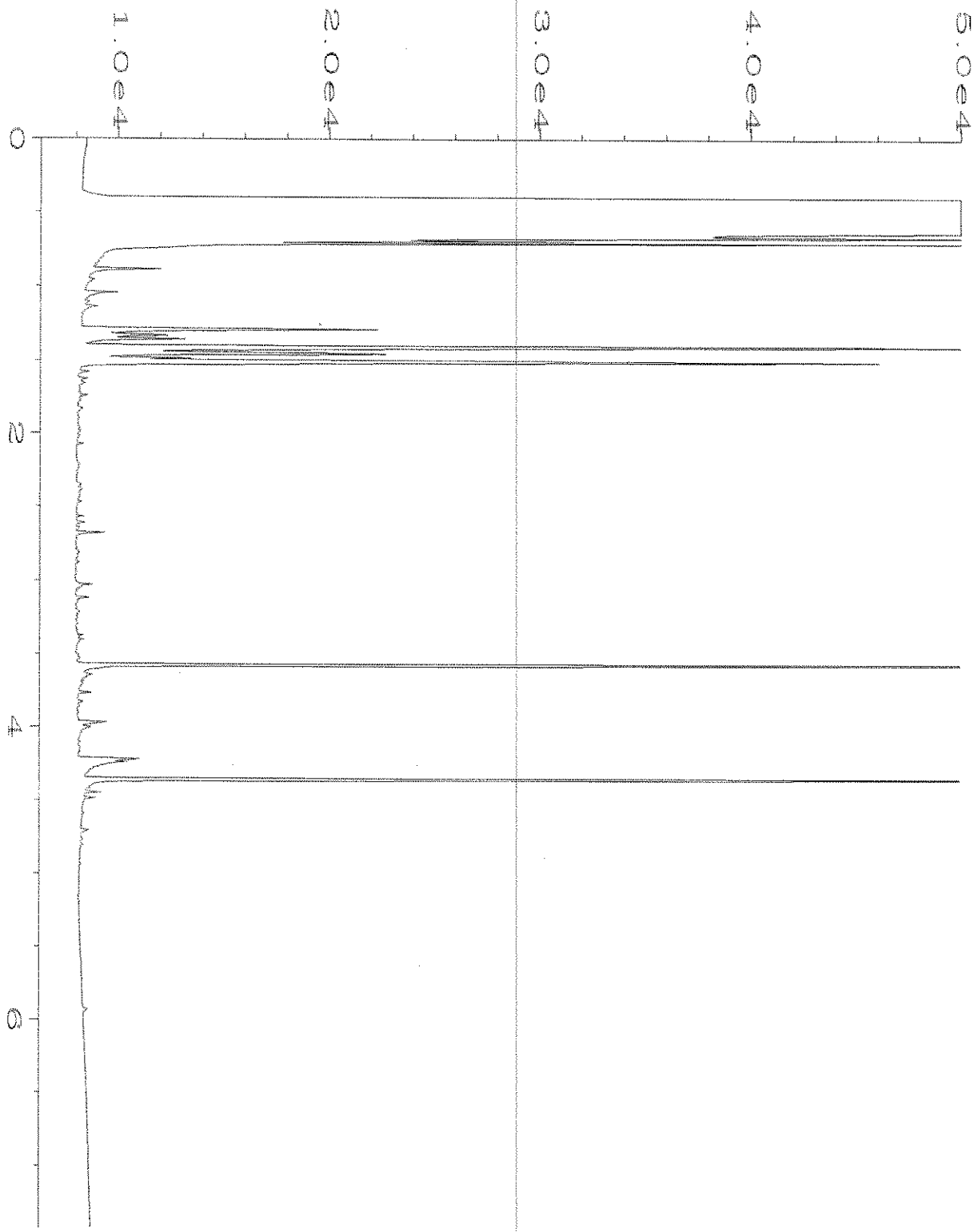
Operator : TL
Instrument : GC1
Sample Name : 008152-02
Run Time Bar Code:
Acquired on : 13 Aug 20 06:21 PM
Report Created on: 14 Aug 20 08:47 AM

Page Number : 1
Vial Number : 24
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



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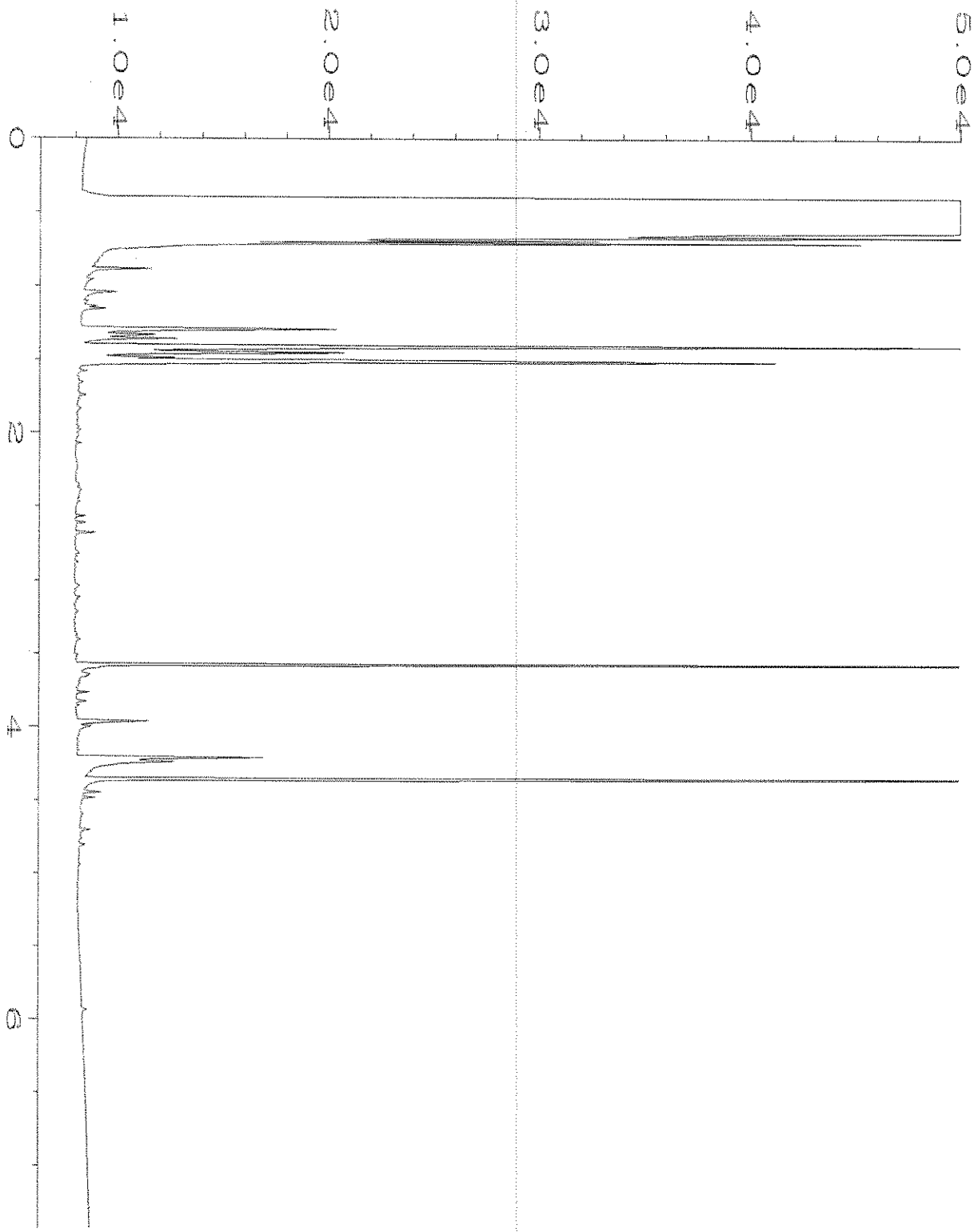
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 25
Sample Name	: 008152-03	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 9
Acquired on	: 13 Aug 20 06:33 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:47 AM	Analysis Method	: DEFAULT.MTH



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Instrument	: GC1	Vial Number	: 26
Sample Name	: 008152-04	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 9
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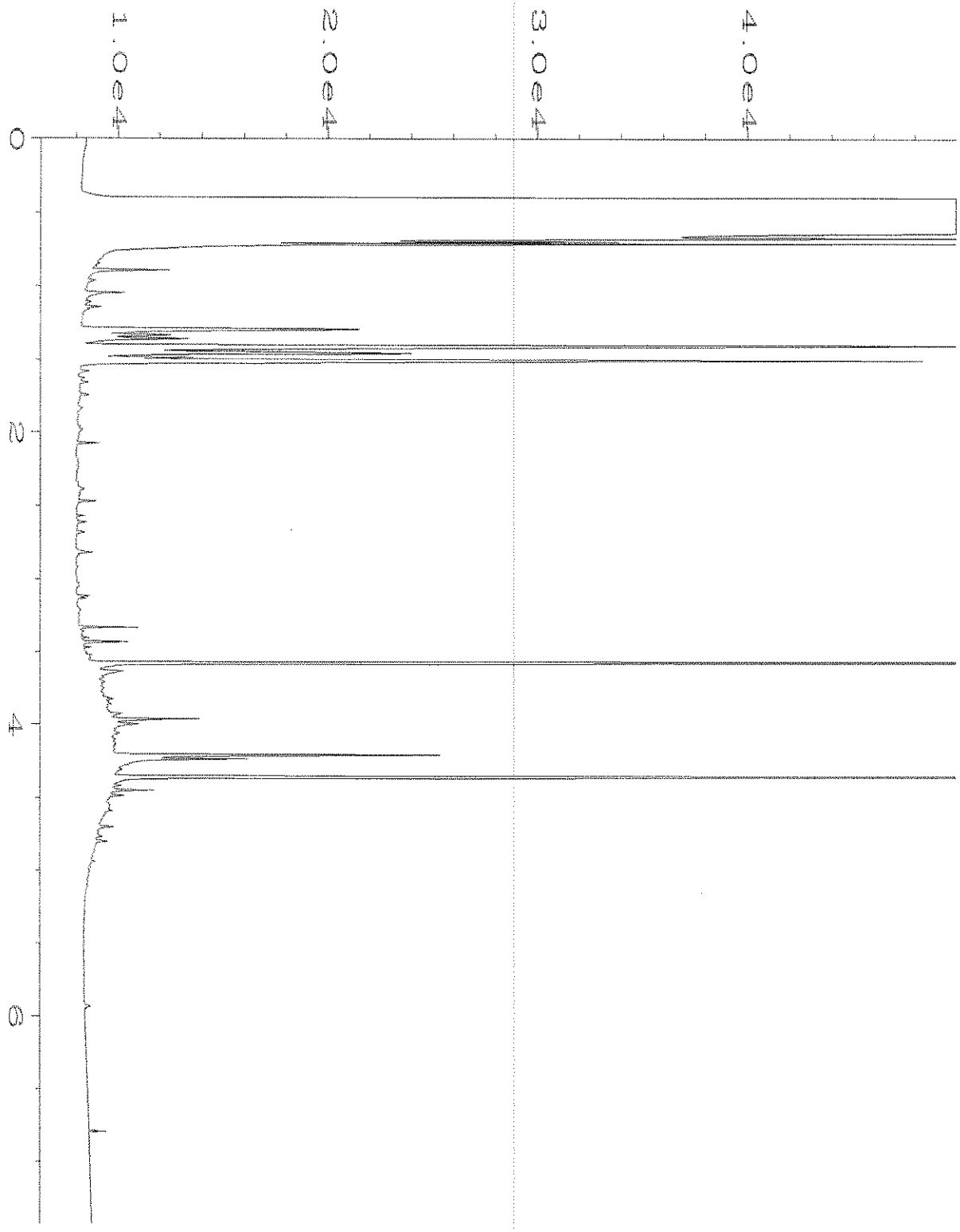
Report Created on	: 14 Aug 20 08:47 AM	Analysis Method	: DEFAULT.MTH



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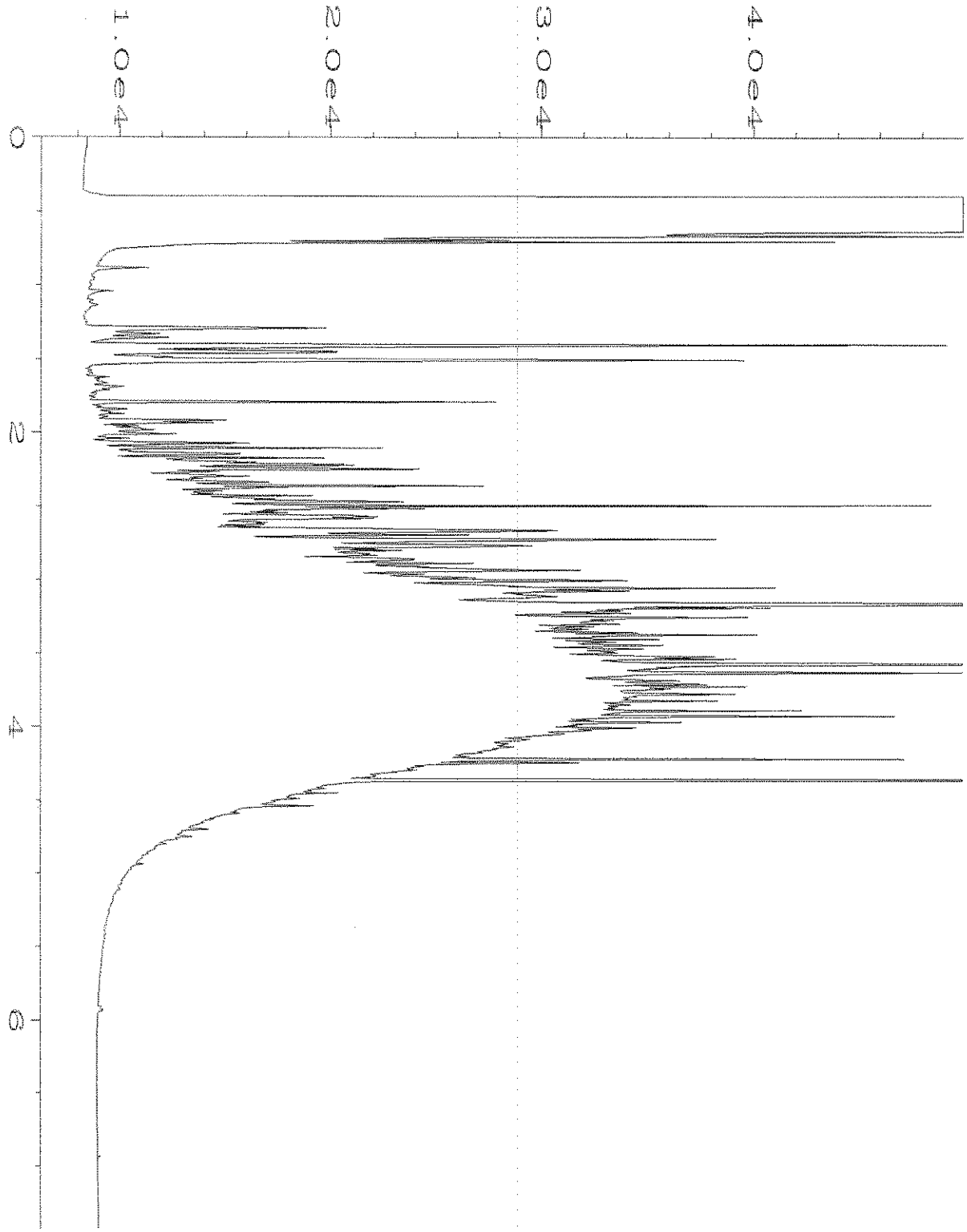
Instrument : GC1
Sample Name : 008152-05
Run Time Bar Code:
Acquired on : 13 Aug 20 06:56 PM
Report Created on: 14 Aug 20 08:47 AM

Page Number : 1
Vial Number : 27
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



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Instrument	: GC1	Vial Number	: 28
Sample Name	: 008152-06	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 9
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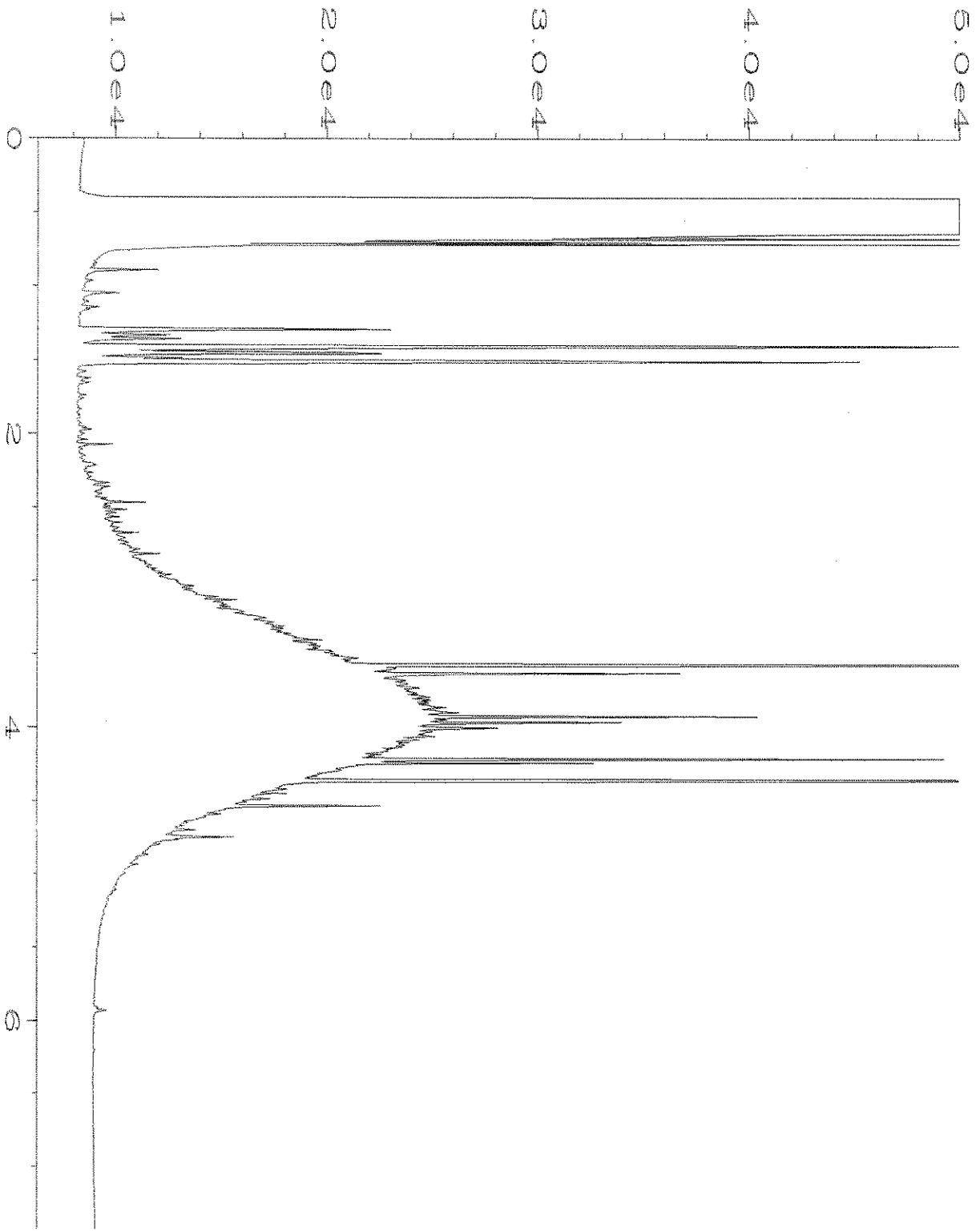
Report Created on	: 14 Aug 20 08:48 AM	Analysis Method	: DEFAULT.MTH



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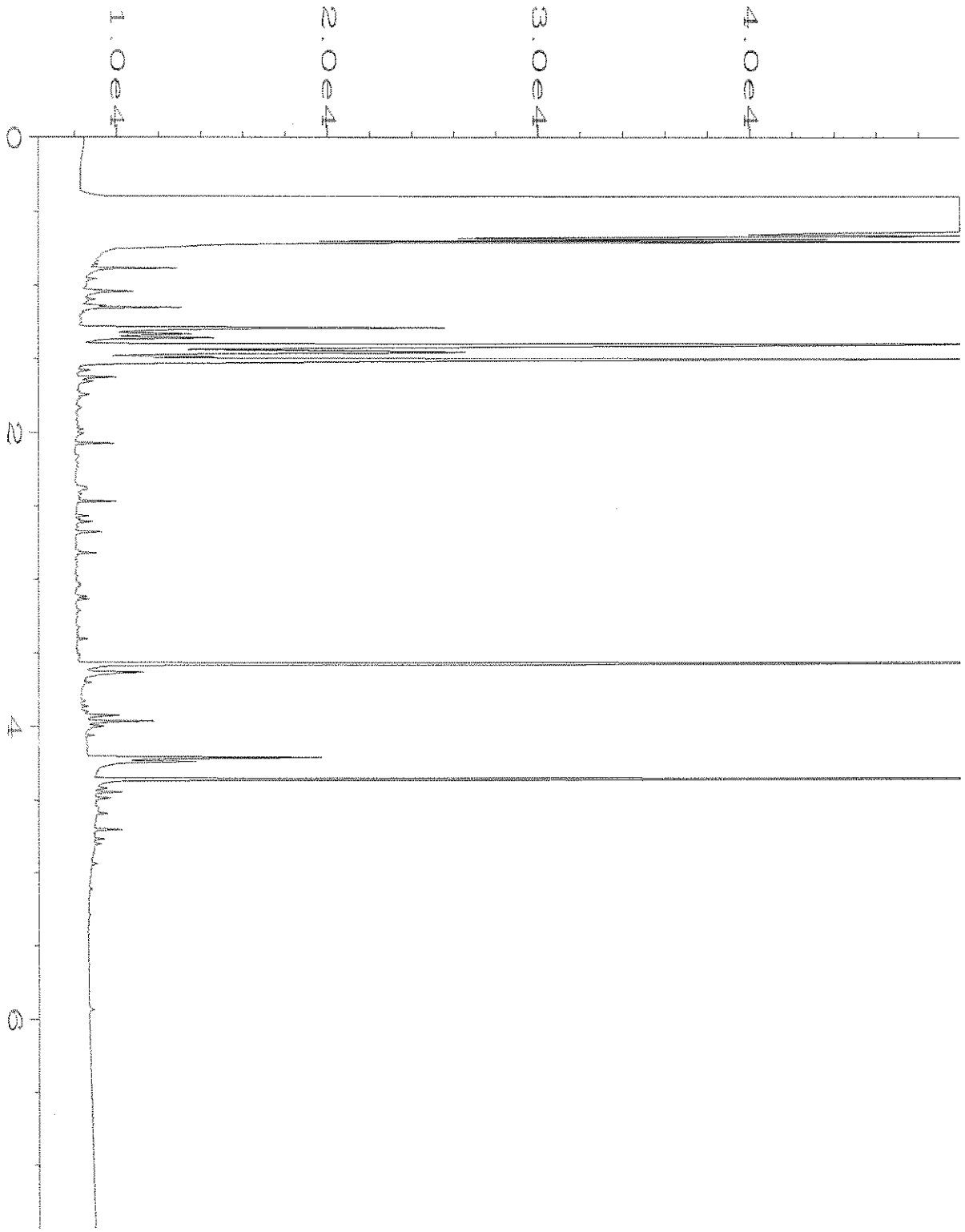
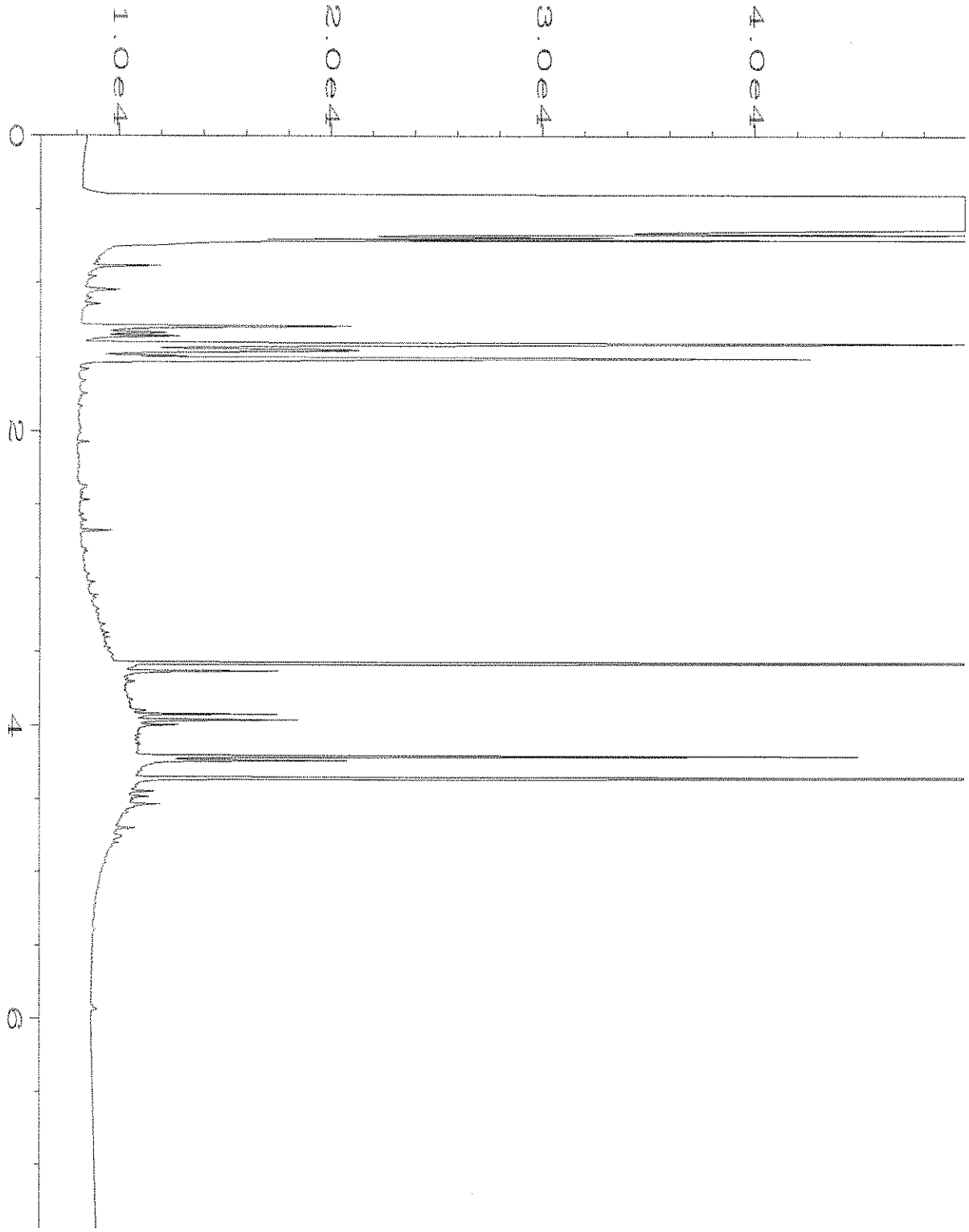
Instrument	: GC1	Vial Number	: 29
Sample Name	: 008152-07	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 9
Acquired on	: 13 Aug 20 07:20 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:48 AM	Analysis Method	: DEFAULT.MTH

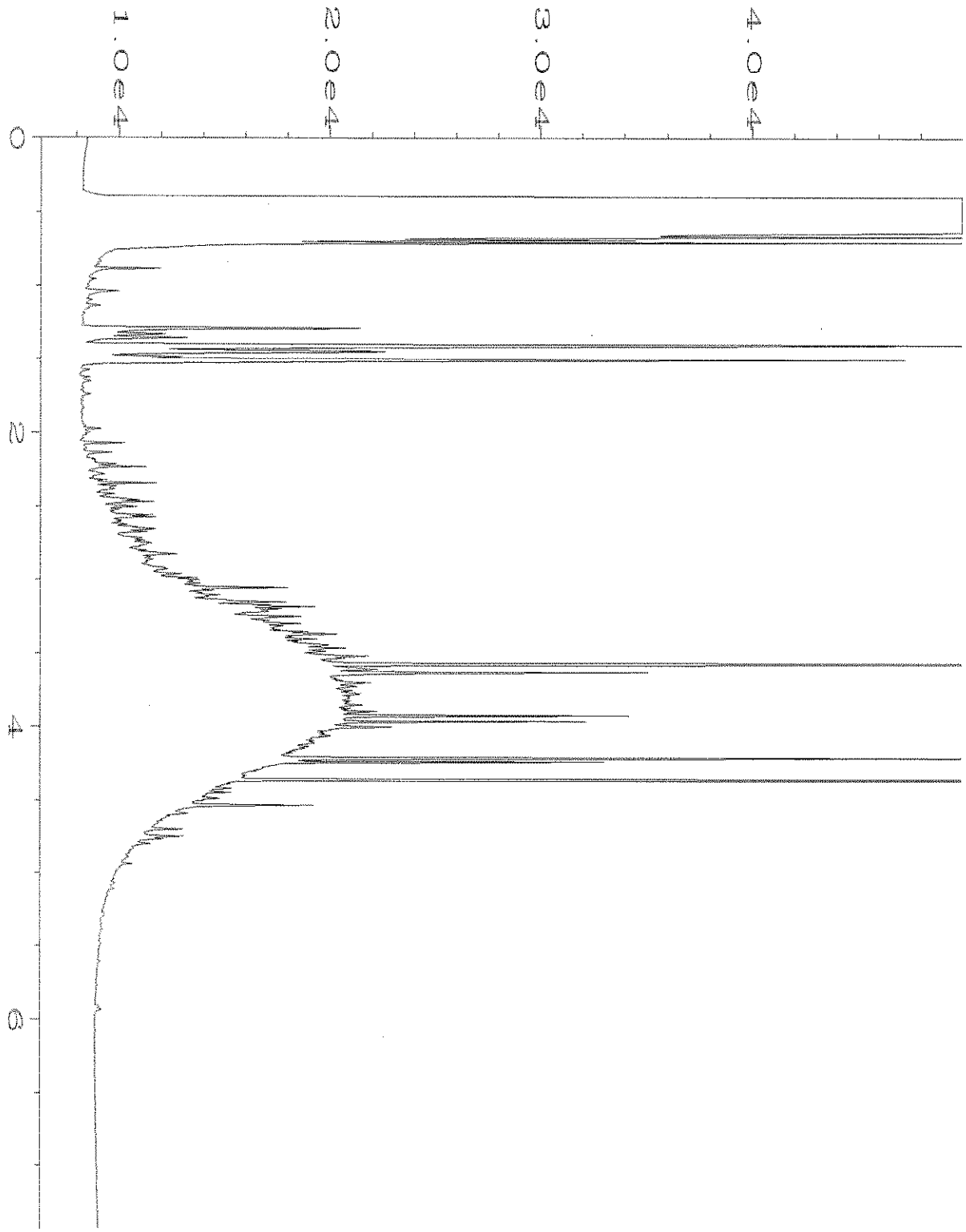


Data File Name : C:\HPCHEM\1\DATA\08-13-20\030F0901.D
Operator : TL
Instrument : GC1
Sample Name : 008152-08
Run Time Bar Code:
Acquired on : 13 Aug 20 07:32 PM
Report Created on: 14 Aug 20 08:48 AM

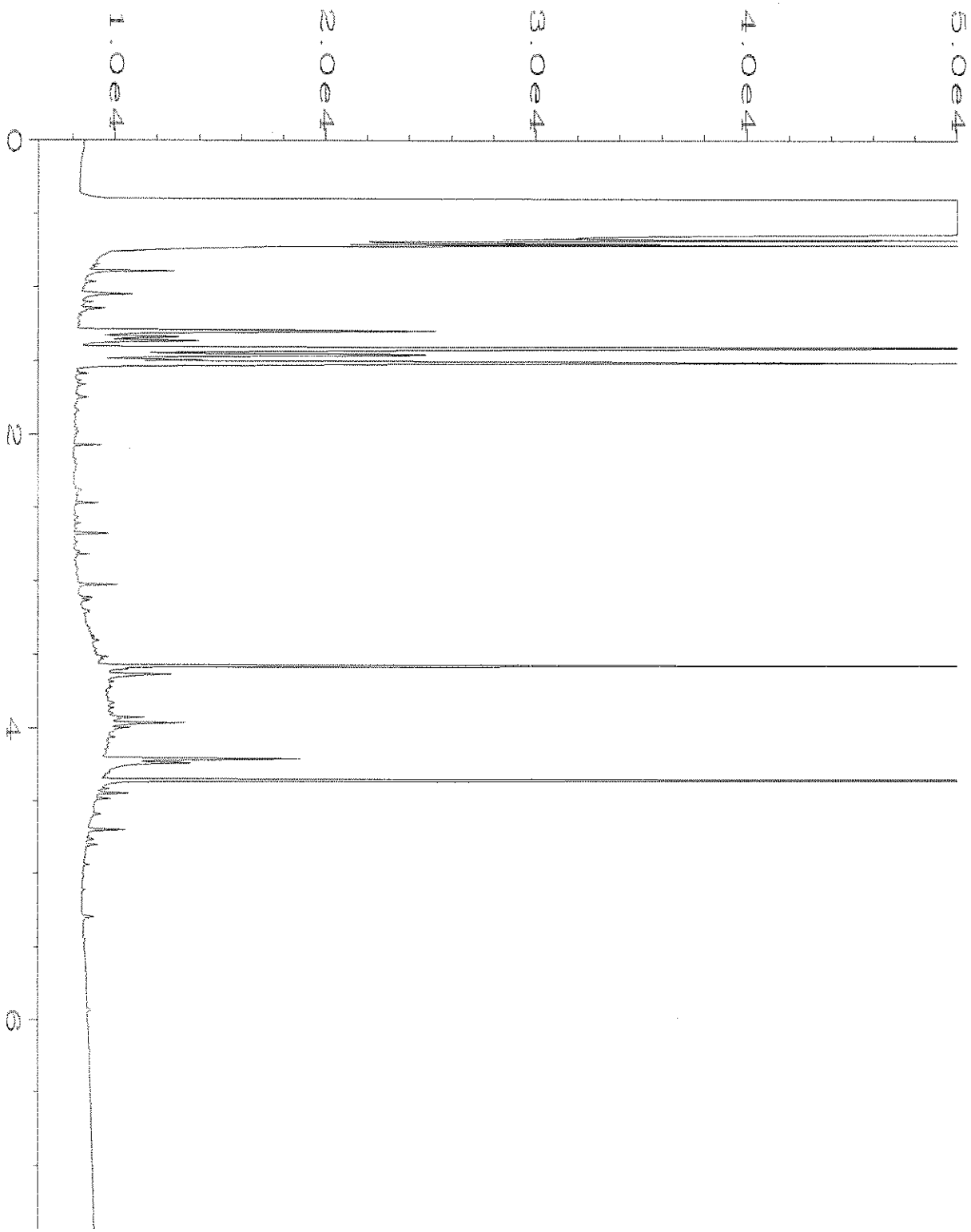
Page Number : 1
Vial Number : 30
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\08-13-20\031F0901.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 31
Sample Name	: 008152-09	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 9
Acquired on	: 13 Aug 20 07:44 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:48 AM	Analysis Method	: DEFAULT.MTH

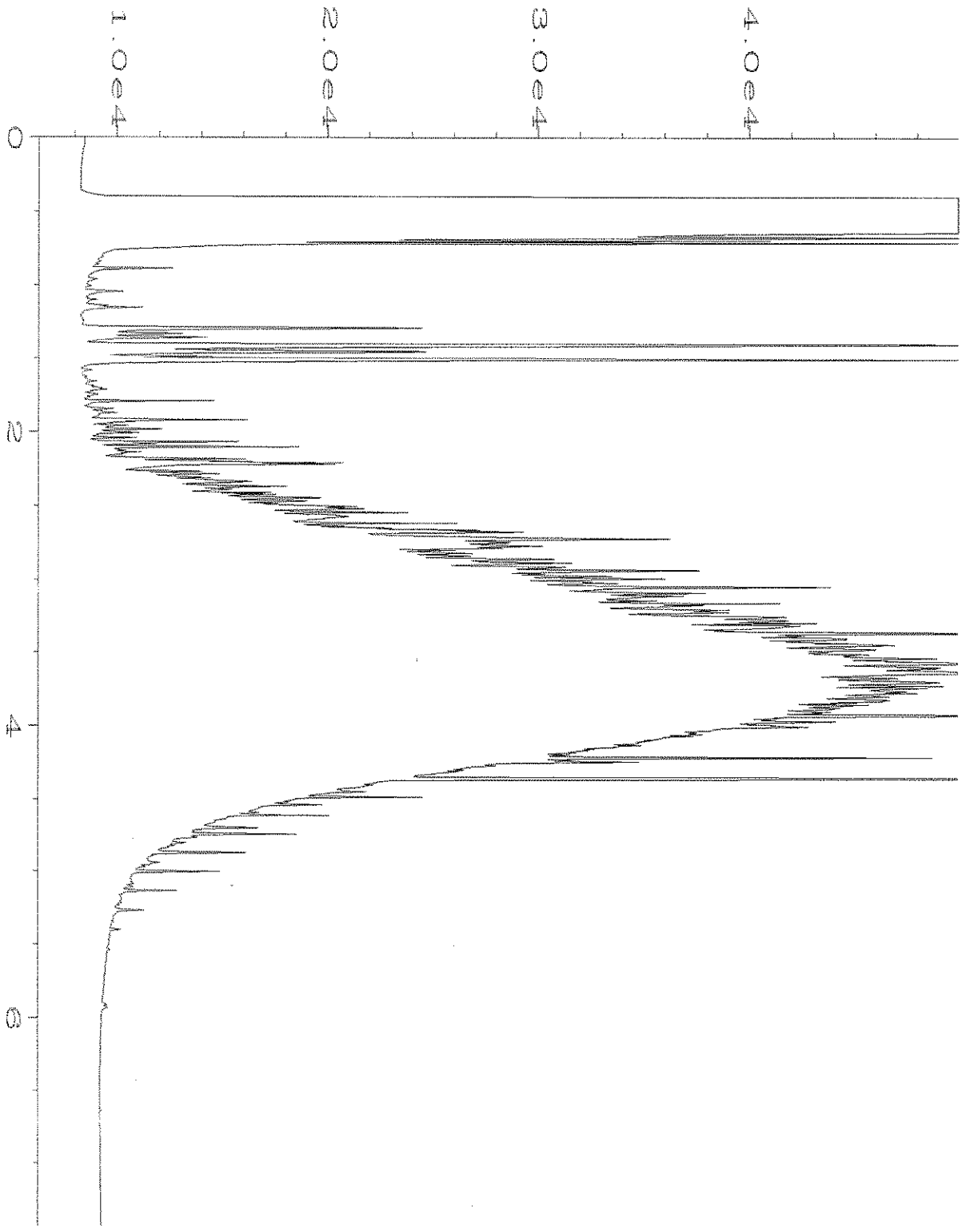


Data File Name	: C:\HPCHEM\1\DATA\08-13-20\032F0901.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 32
Sample Name	: 008152-10	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 9
Acquired on	: 13 Aug 20 07:55 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:48 AM	Analysis Method	: DEFAULT.MTH

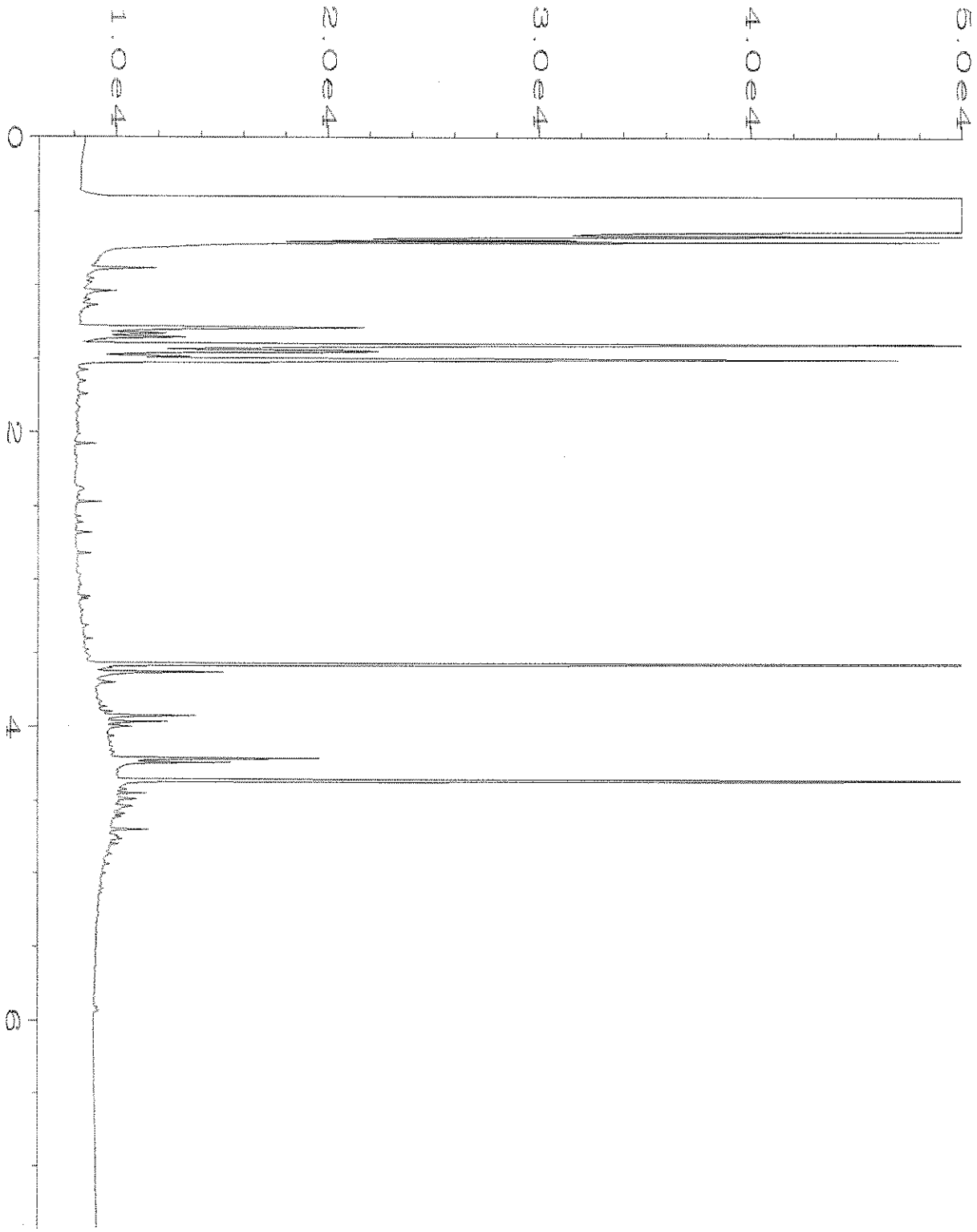


Data File Name : C:\HPCHEM\1\DATA\08-13-20\033F1101.D
Operator : TL
Instrument : GC1
Sample Name : 008152-11
Run Time Bar Code:
Acquired on : 13 Aug 20 08:31 PM
Report Created on: 14 Aug 20 08:48 AM

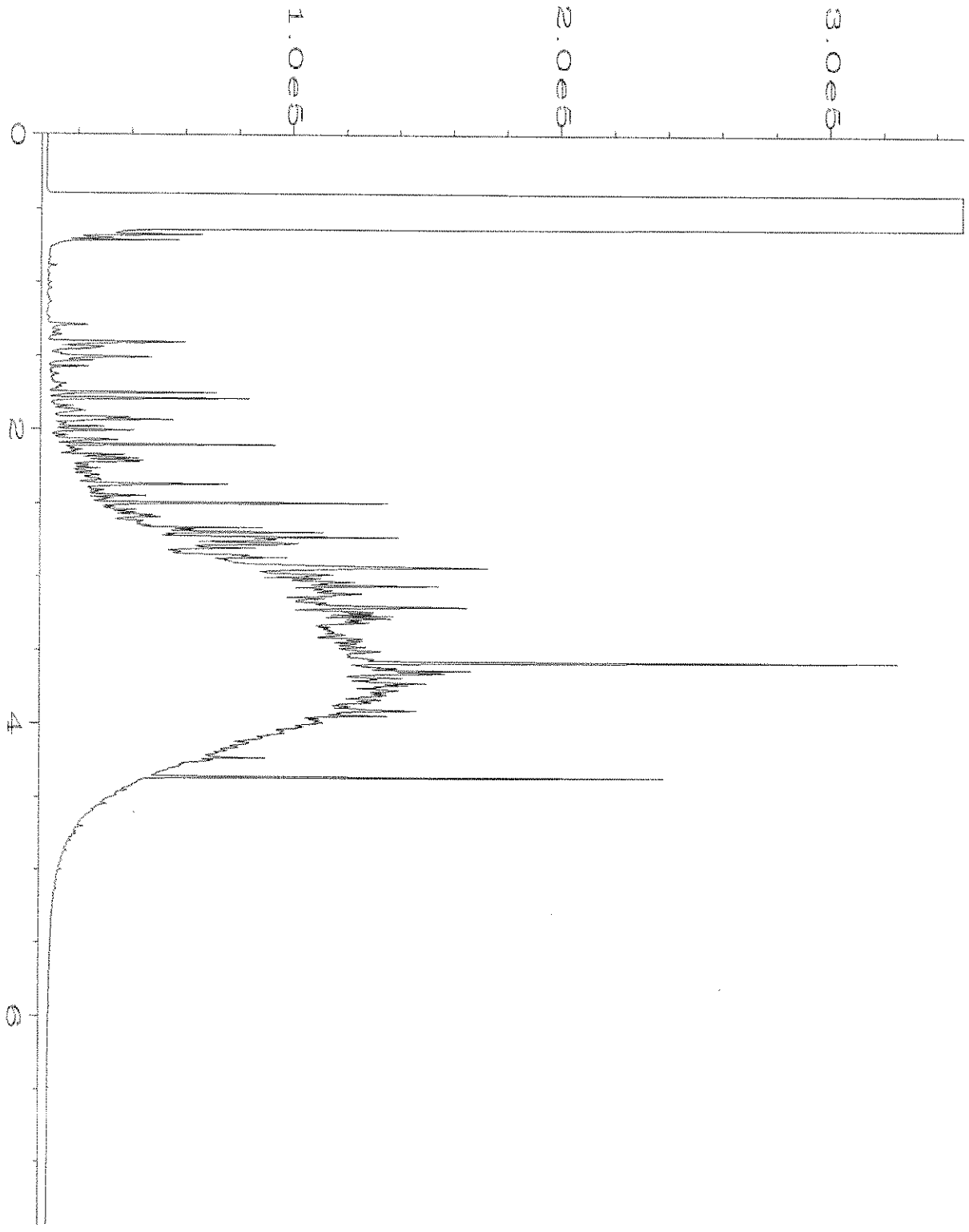
Page Number : 1
Vial Number : 33
Injection Number : 1
Sequence Line : 11
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



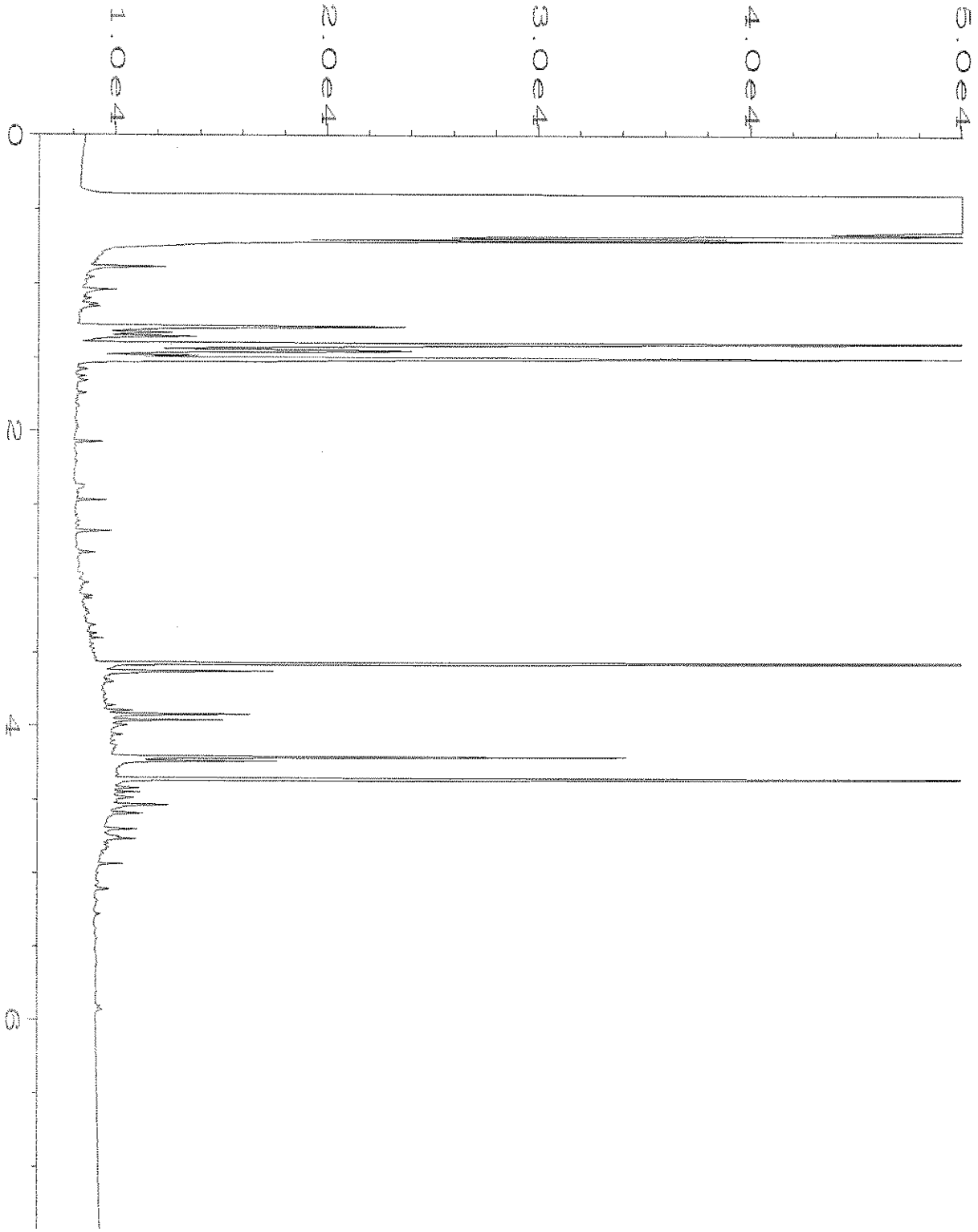
Data File Name	: C:\HPCHEM\1\DATA\08-13-20\034F1101.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 34
Sample Name	: 008152-12	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 11
Acquired on	: 13 Aug 20 08:43 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:48 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\08-13-20\035F1101.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 35
Sample Name	: 008152-13	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 11
Acquired on	: 13 Aug 20 08:54 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:49 AM	Analysis Method	: DEFAULT.MTH

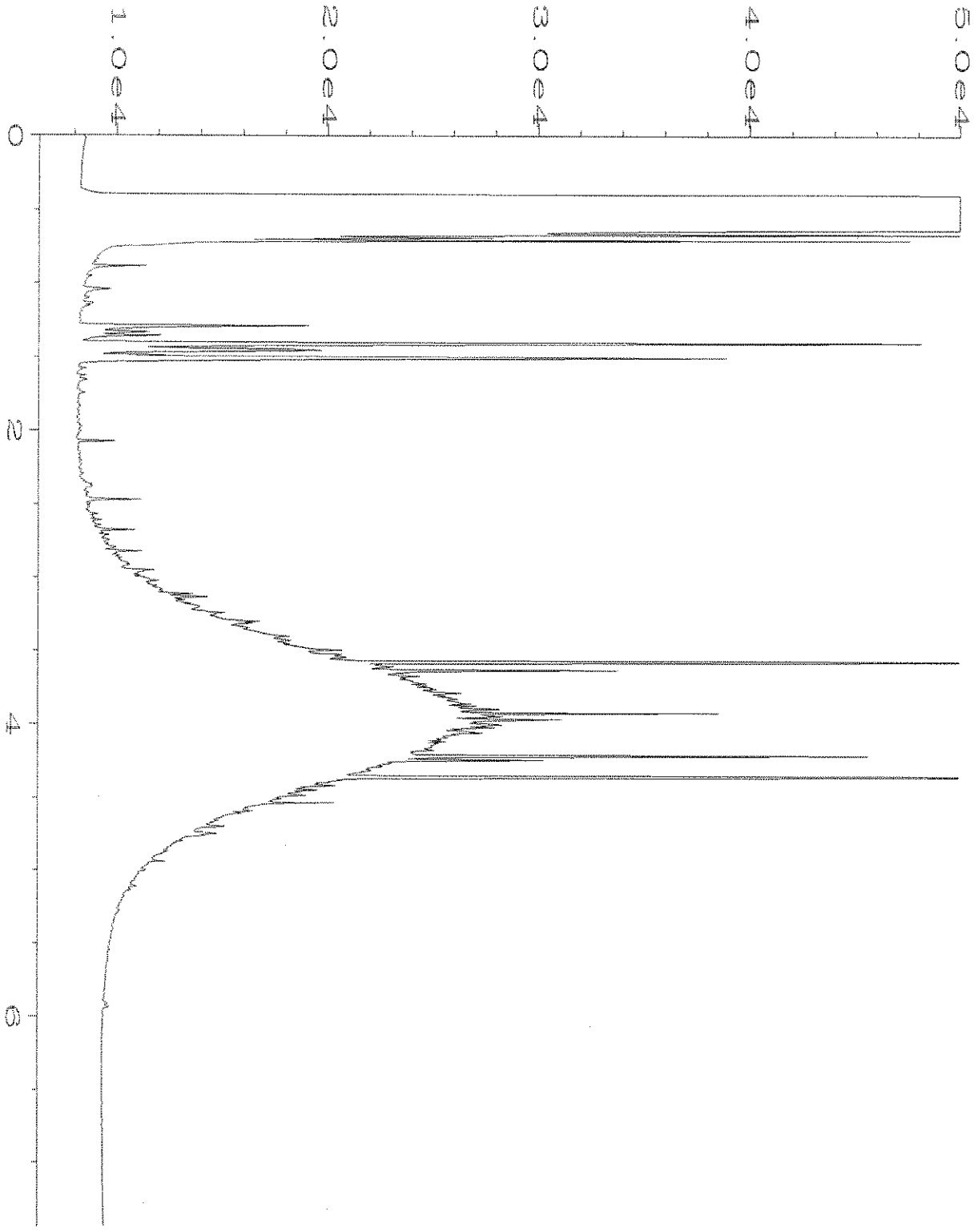


Data File Name	: C:\HPCHEM\1\DATA\08-13-20\036F1101.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 36
Sample Name	: 008152-14	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 11
Acquired on	: 13 Aug 20 09:06 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:49 AM	Analysis Method	: DEFAULT.MTH

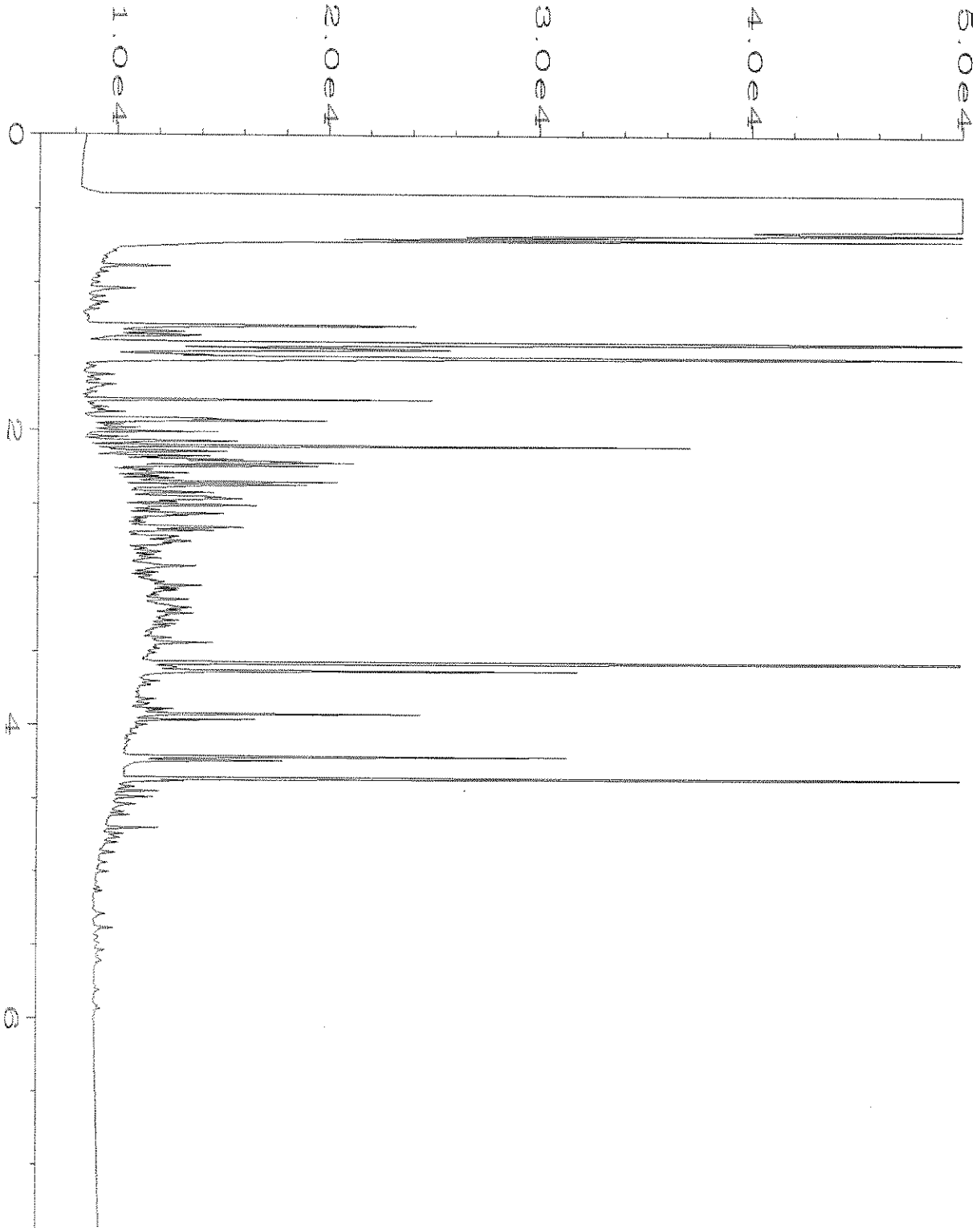


Data File Name : C:\HPCHEM\1\DATA\08-13-20\037F1101.D
Operator : TL
Instrument : GC1
Sample Name : 008152-15
Run Time Bar Code:
Acquired on : 13 Aug 20 09:18 PM
Report Created on: 14 Aug 20 08:49 AM

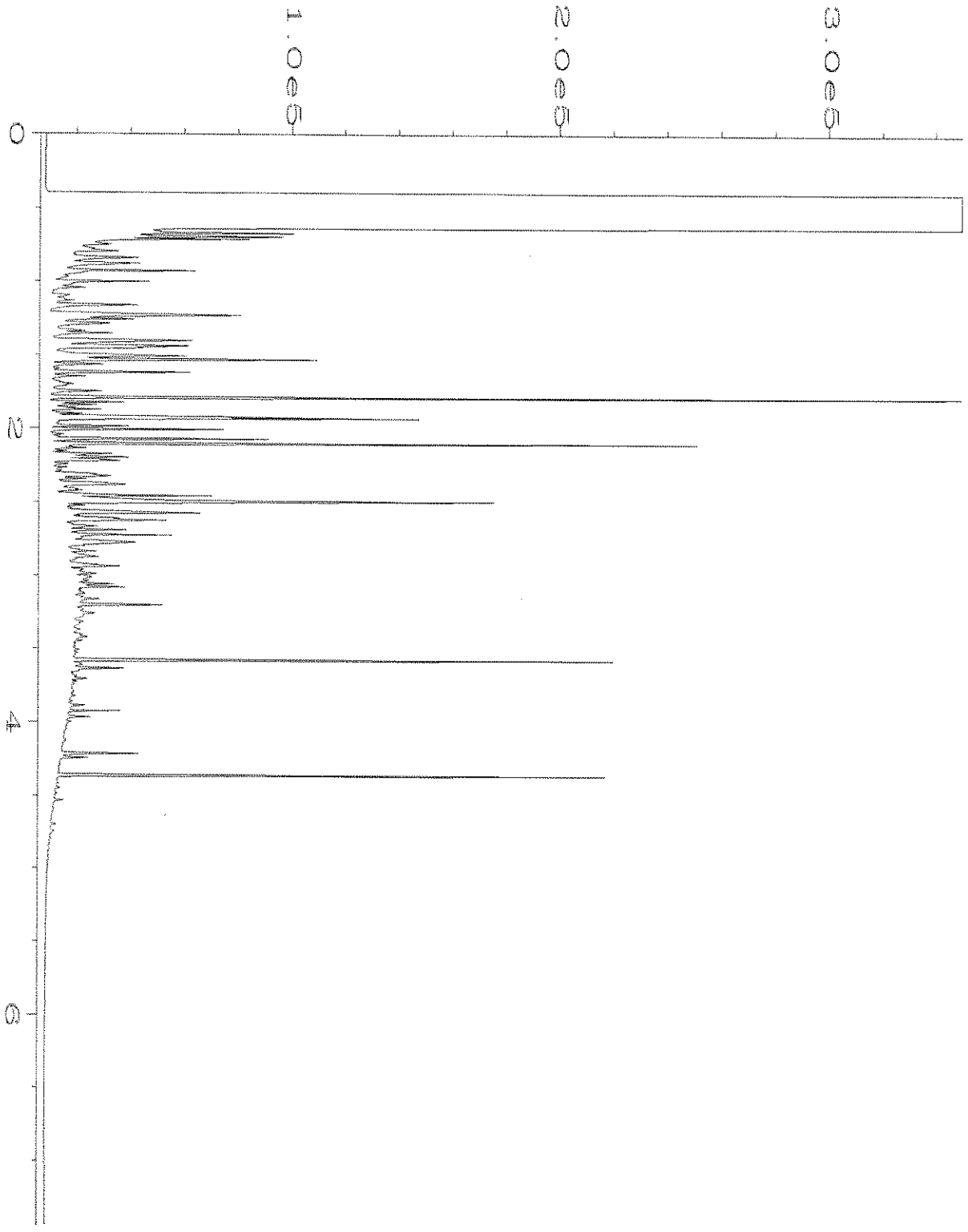
Page Number : 1
Vial Number : 37
Injection Number : 1
Sequence Line : 11
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



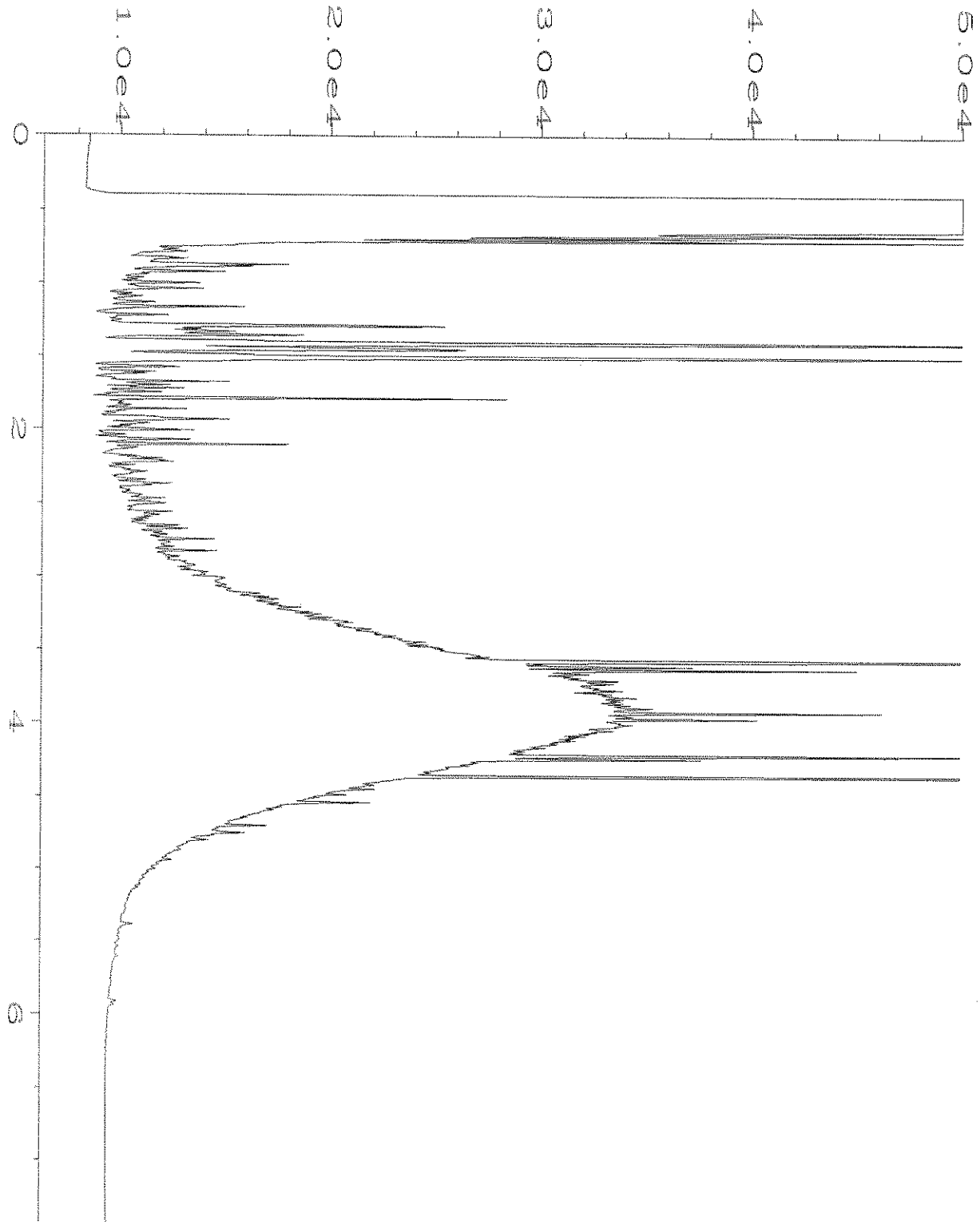
Data File Name	: C:\HPCHEM\1\DATA\08-13-20\038F1101.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 38
Sample Name	: 008152-16	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 11
Acquired on	: 13 Aug 20 09:30 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:49 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\08-13-20\039F1101.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 39
Sample Name	: 008152-17	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 11
Acquired on	: 13 Aug 20 09:42 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:49 AM	Analysis Method	: DEFAULT.MTH

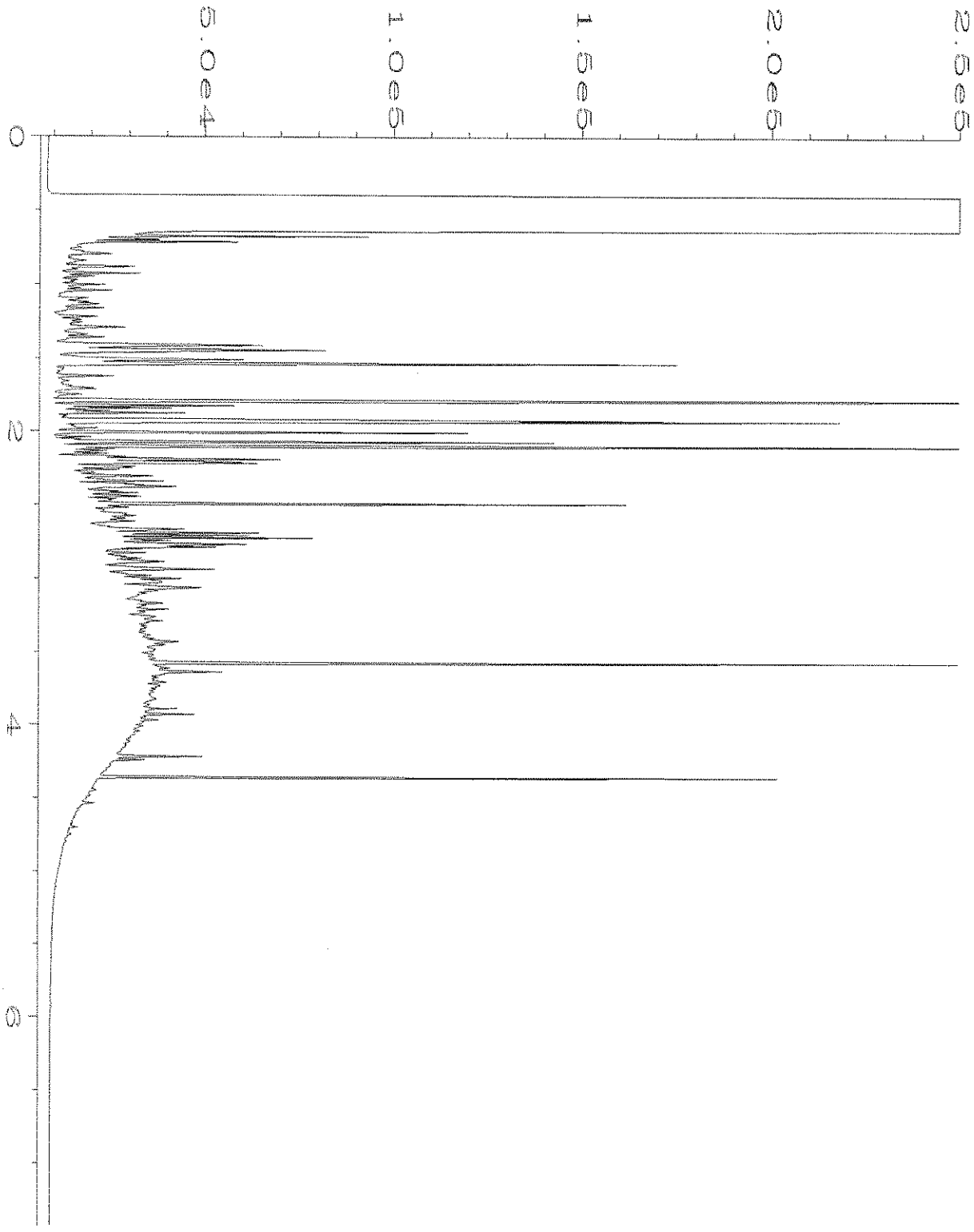


Data File Name	: C:\HPCHEM\1\DATA\08-13-20\040F1101.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 40
Sample Name	: 008152-18	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 11
Acquired on	: 13 Aug 20 09:54 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:50 AM	Analysis Method	: DEFAULT.MTH

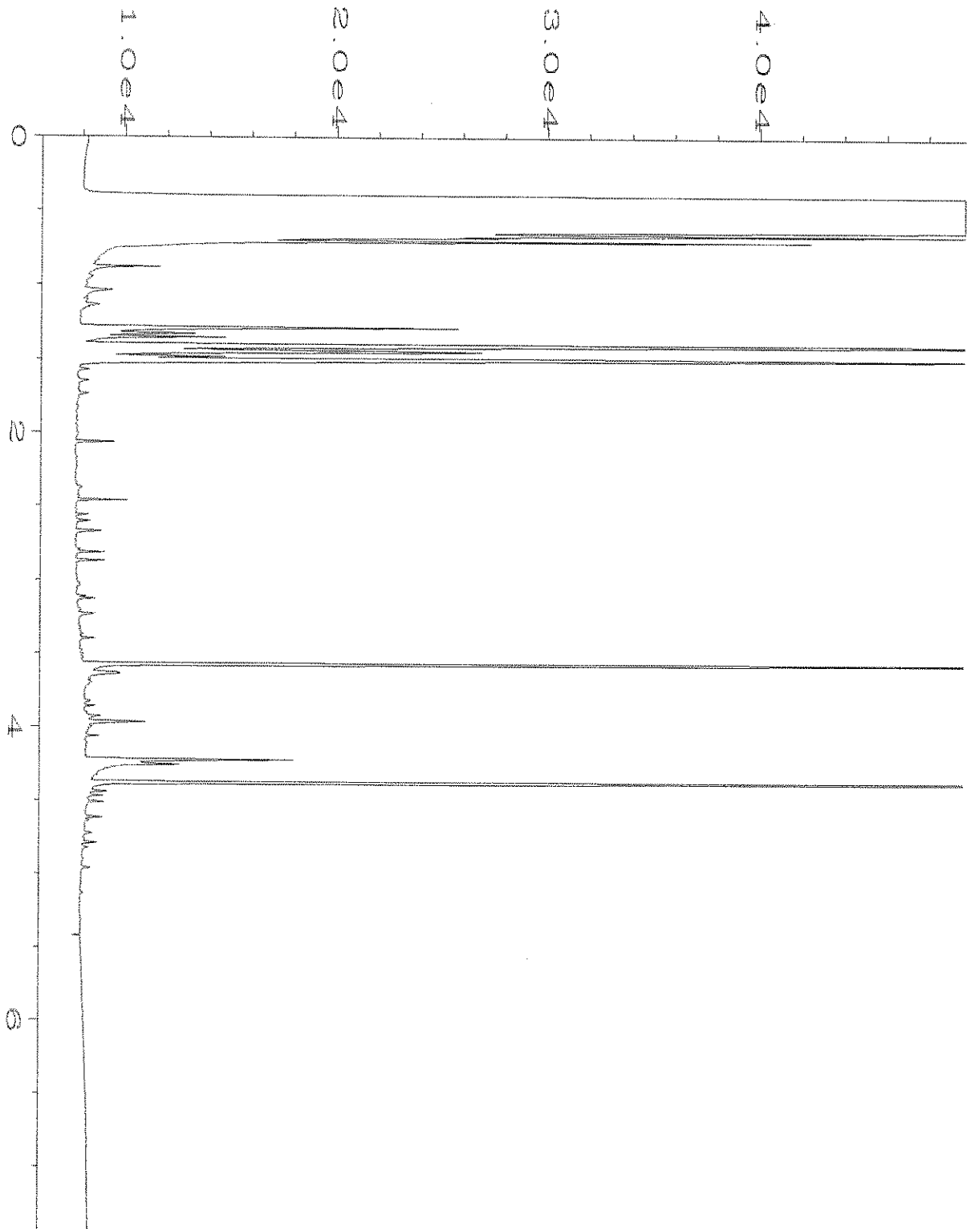


Data File Name : C:\HPCHEM\1\DATA\08-13-20\041F1101.D
Operator : TL
Instrument : GC1
Sample Name : 008152-19
Run Time Bar Code:
Acquired on : 13 Aug 20 10:05 PM
Report Created on: 14 Aug 20 08:50 AM

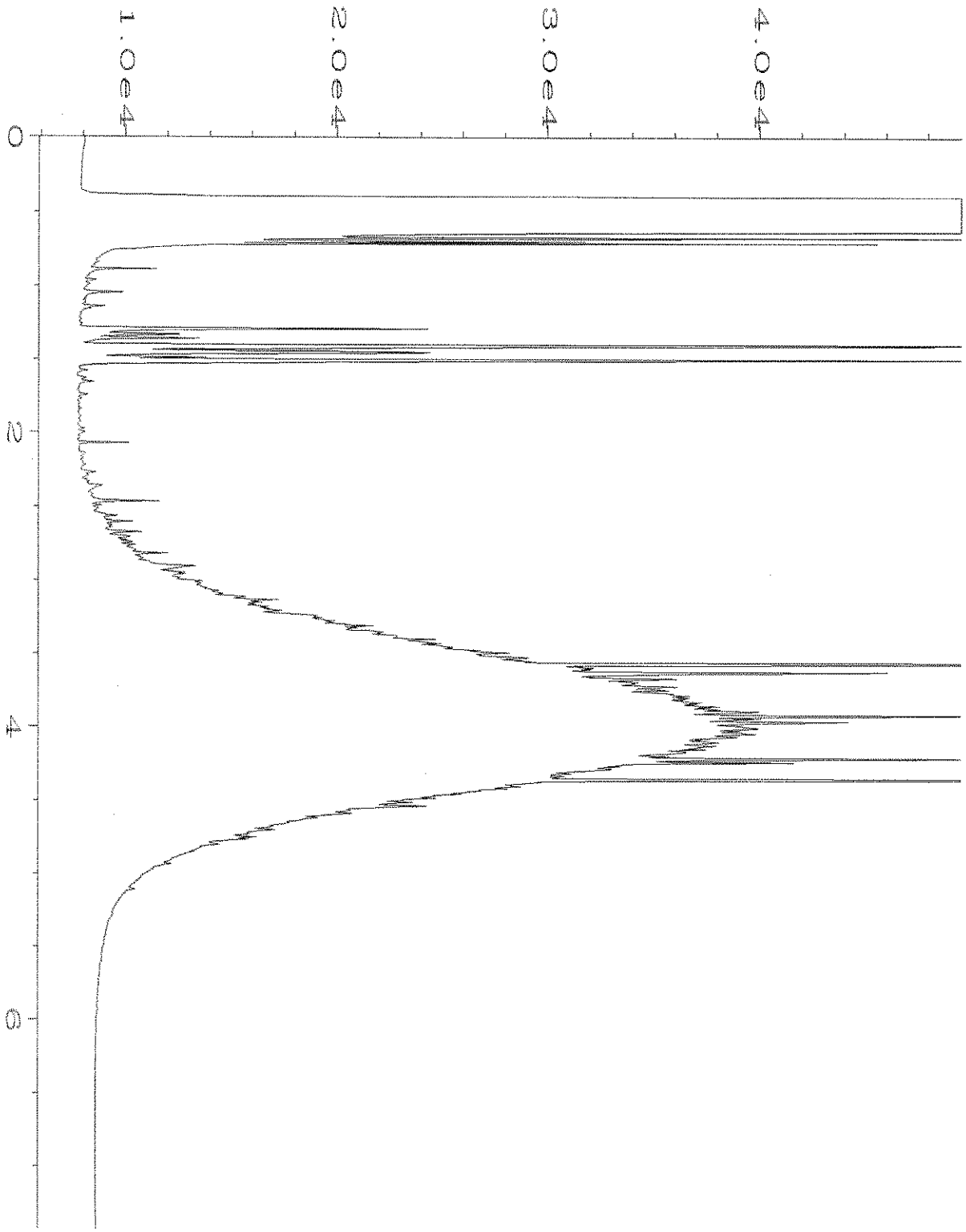
Page Number : 1
Vial Number : 41
Injection Number : 1
Sequence Line : 11
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



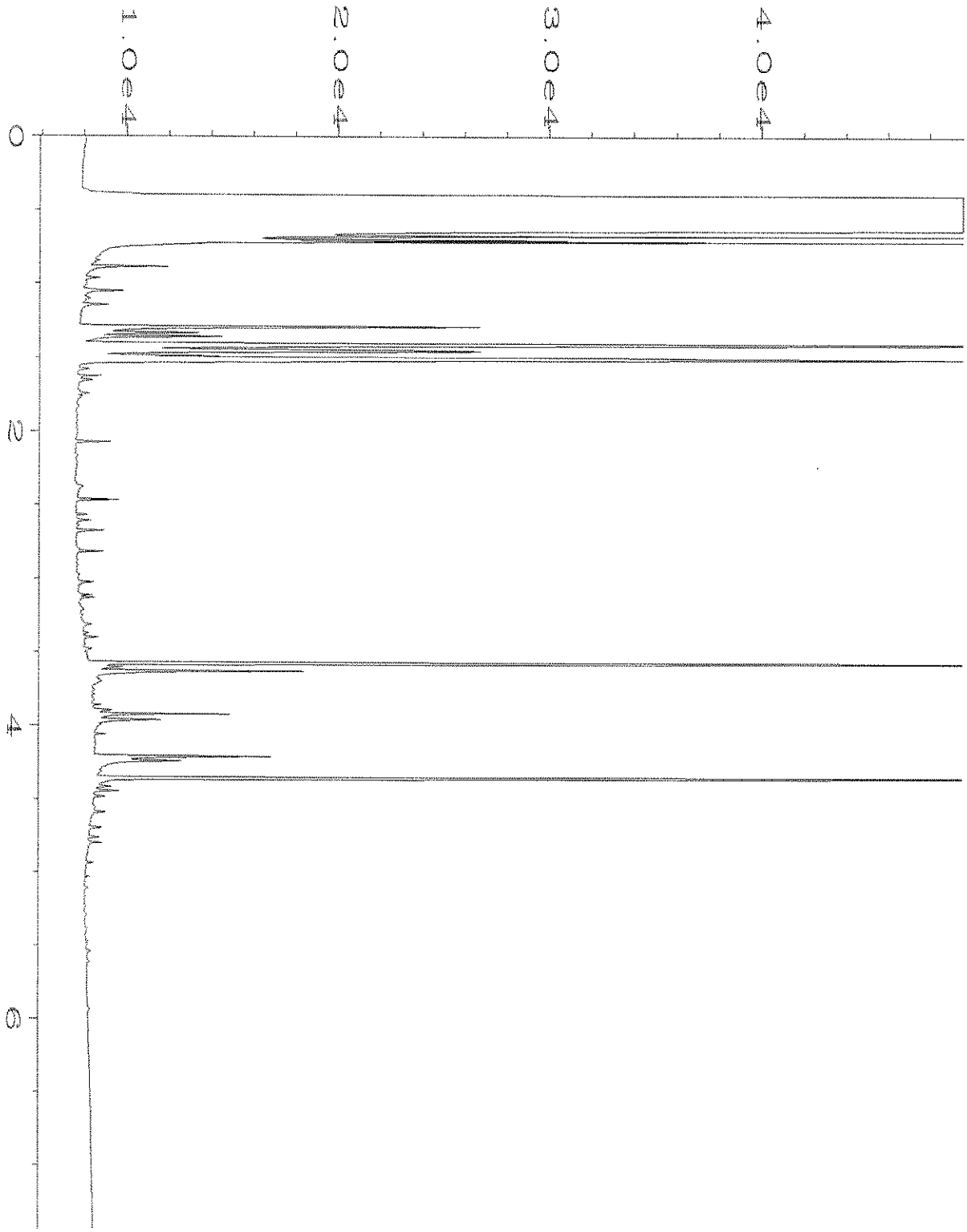
Data File Name	: C:\HPCHEM\1\DATA\08-13-20\042F1101.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 42
Sample Name	: 008152-20	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 11
Acquired on	: 13 Aug 20 10:17 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:50 AM	Analysis Method	: DEFAULT.MTH



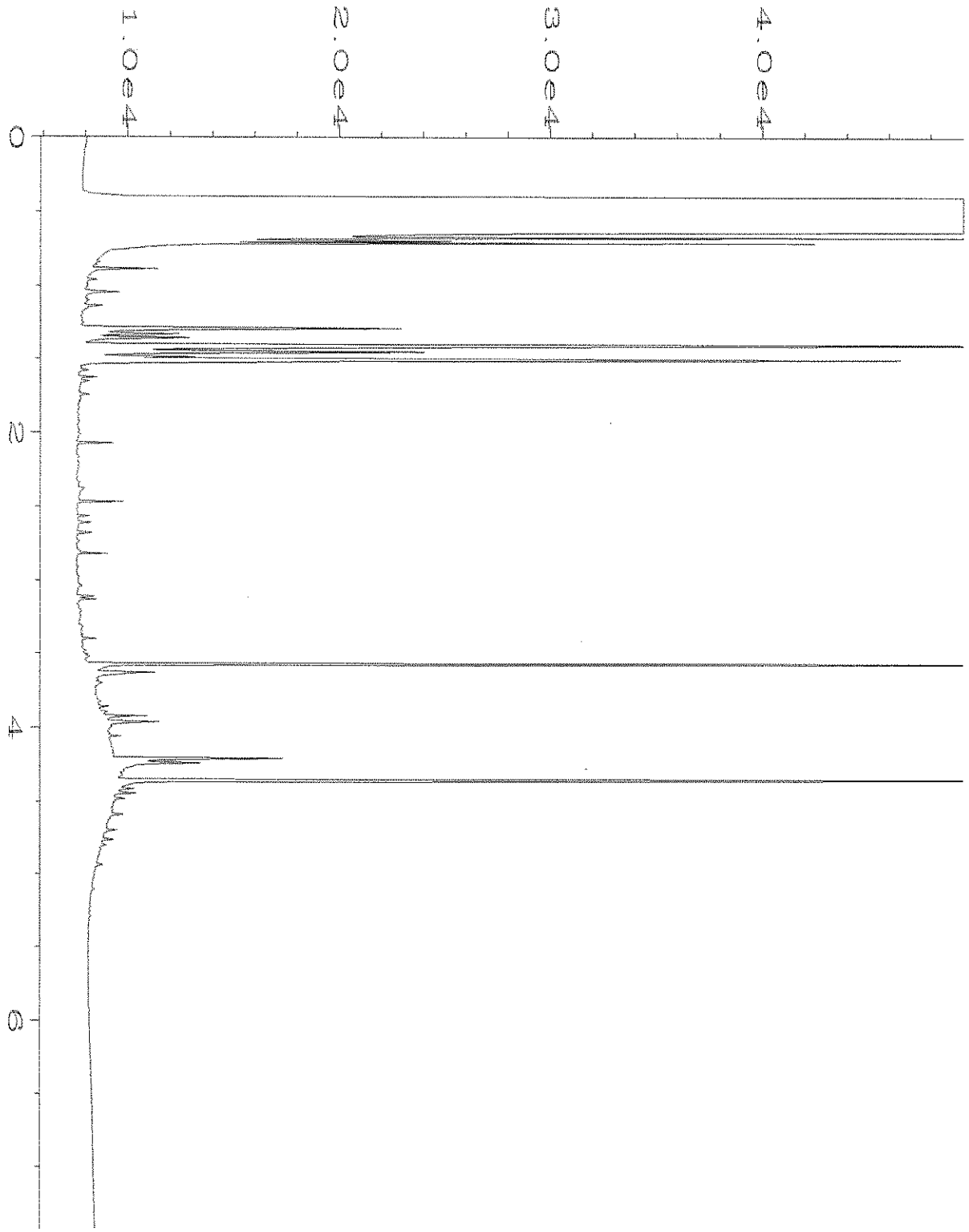
Data File Name	: C:\HPCHEM\1\DATA\08-12-20\018F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 18
Sample Name	: 008152-21	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 12 Aug 20 02:02 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Aug 20 08:11 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\08-12-20\019F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 19
Sample Name	: 008152-22	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 12 Aug 20 02:11 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Aug 20 08:11 AM	Analysis Method	: DEFAULT.MTH

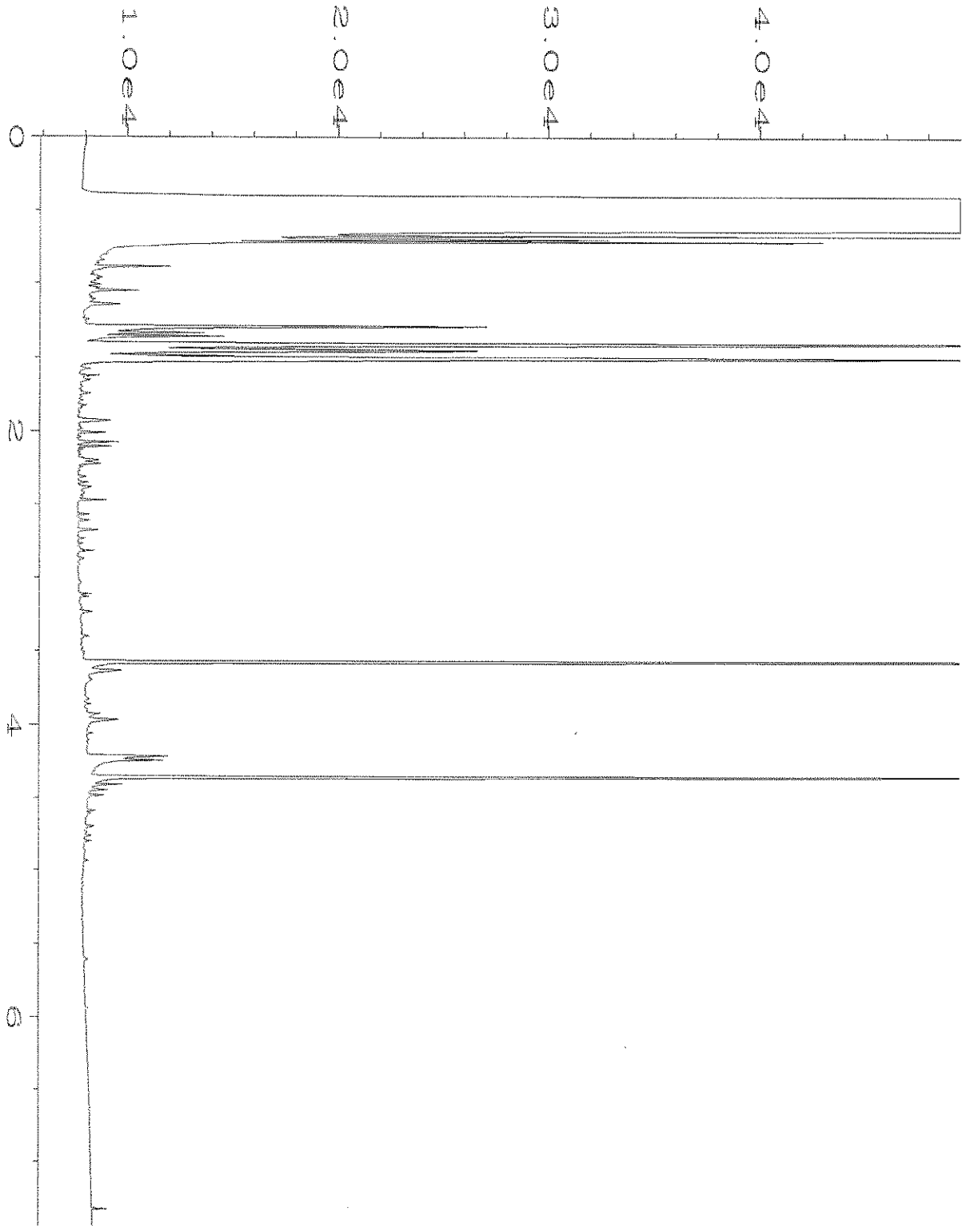


Data File Name	: C:\HPCHEM\1\DATA\08-12-20\020F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 20
Sample Name	: 008152-23	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 12 Aug 20 02:23 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Aug 20 08:11 AM	Analysis Method	: DEFAULT.MTH



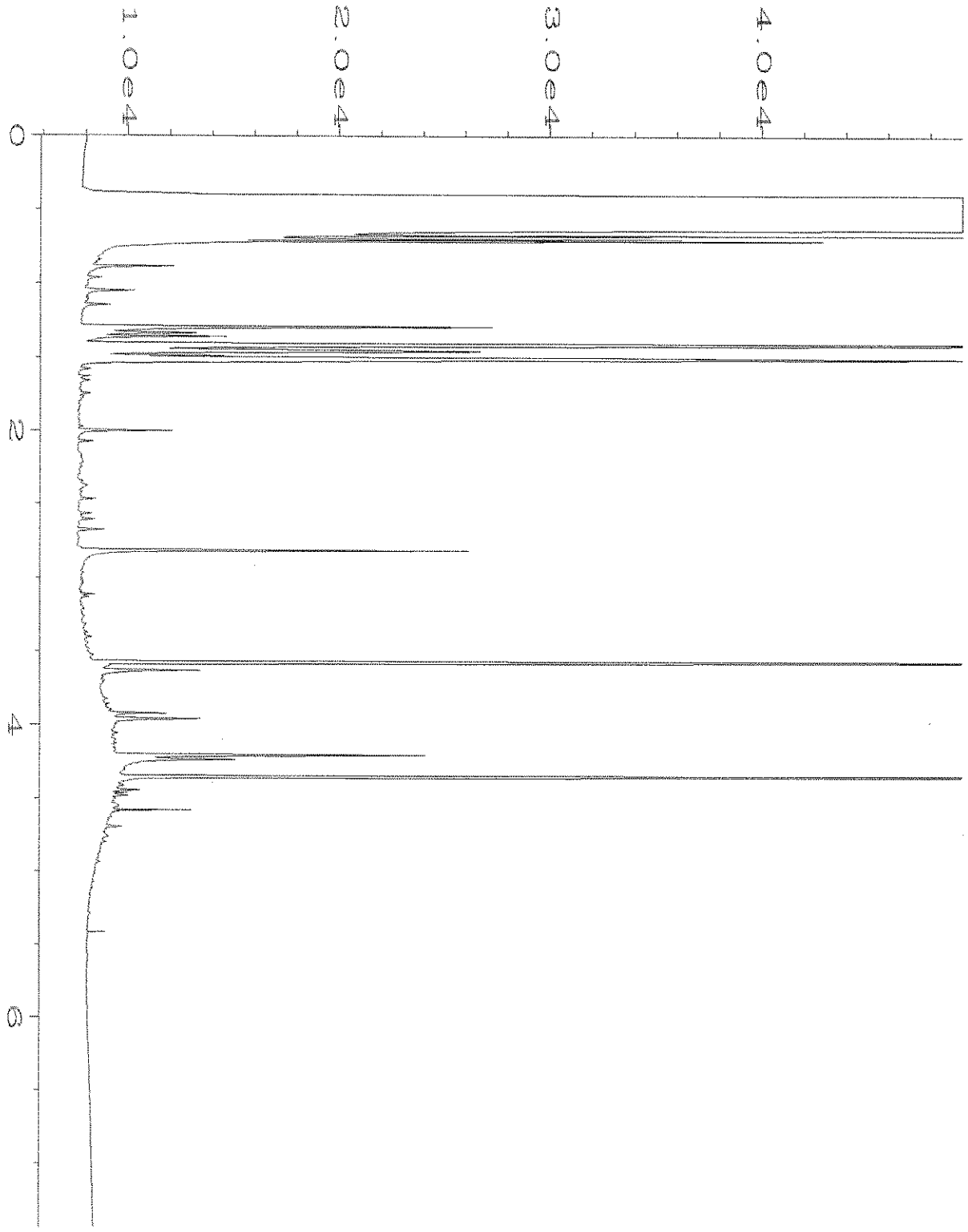
Data File Name : C:\HPCHEM\1\DATA\08-12-20\021F0701.D
Operator : TL
Instrument : GC1
Sample Name : 008152-24
Run Time Bar Code:
Acquired on : 12 Aug 20 02:34 PM
Report Created on: 13 Aug 20 08:12 AM

Page Number : 1
Vial Number : 21
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

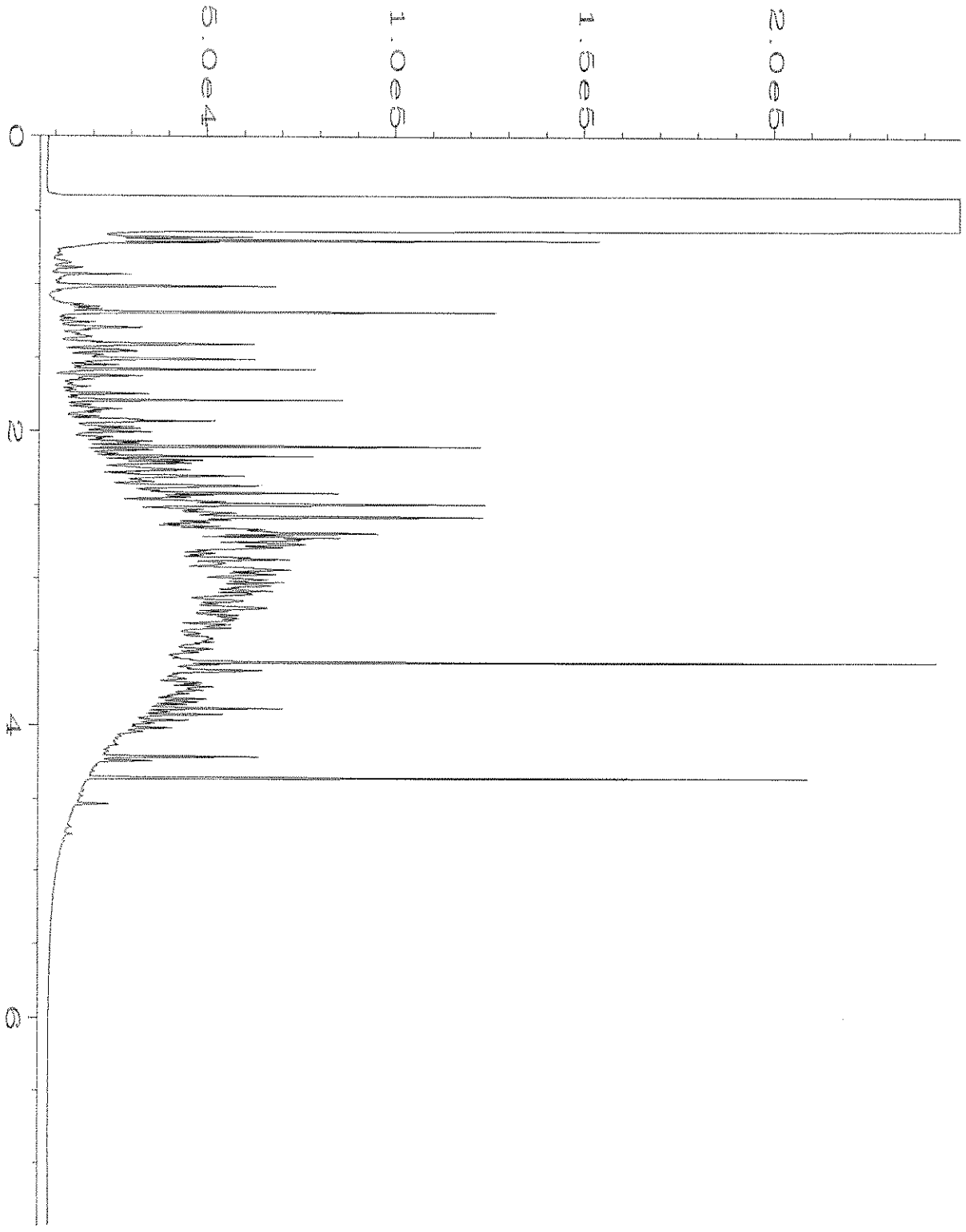


Data File Name : C:\HPCHEM\1\DATA\08-12-20\022F0701.D
Operator : TL
Instrument : GC1
Sample Name : 008152-25
Run Time Bar Code:
Acquired on : 12 Aug 20 02:46 PM
Report Created on: 13 Aug 20 08:12 AM

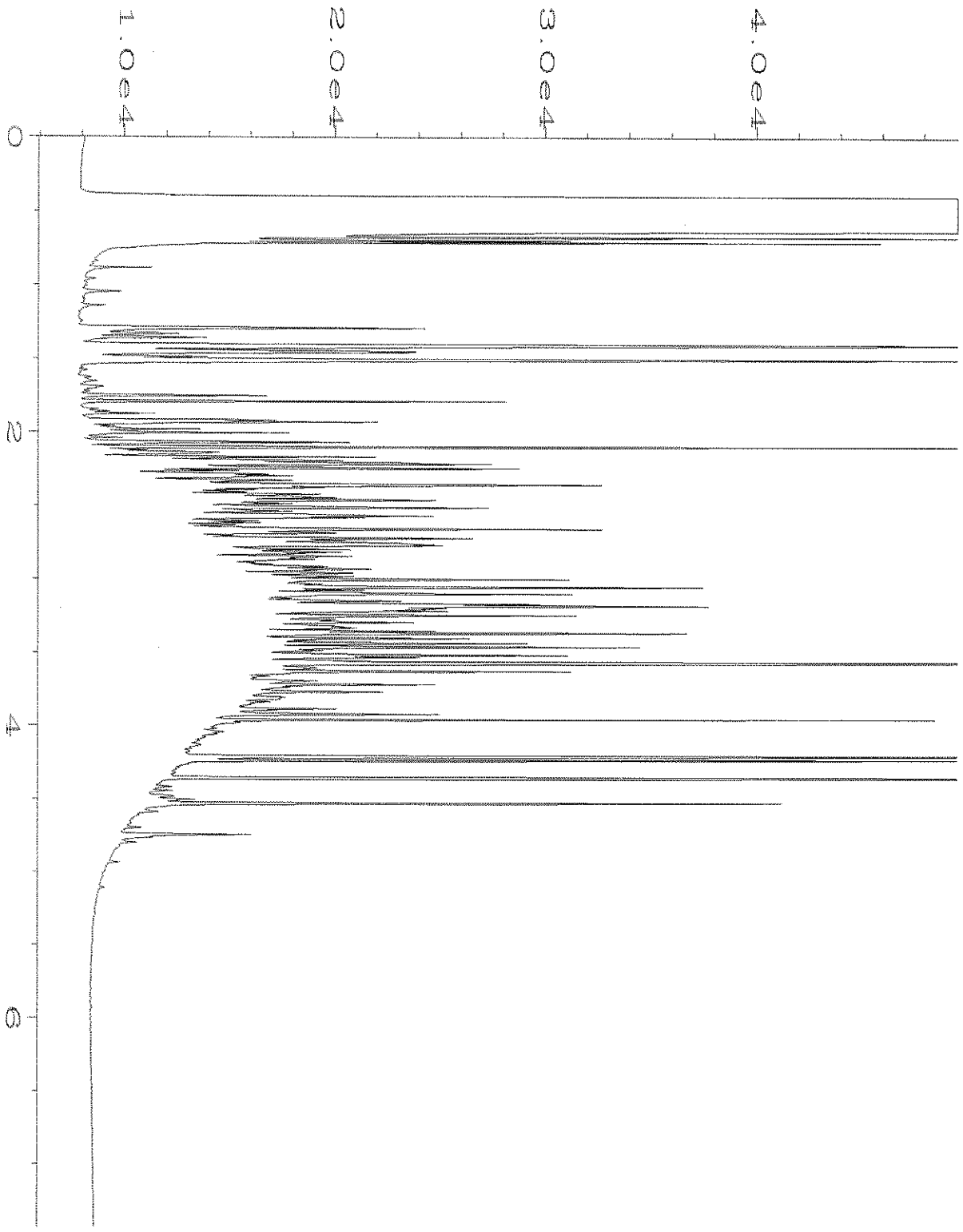
Page Number : 1
Vial Number : 22
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\08-12-20\023F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 23
Sample Name	: 008152-26	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 12 Aug 20 02:58 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Aug 20 08:12 AM	Analysis Method	: DEFAULT.MTH

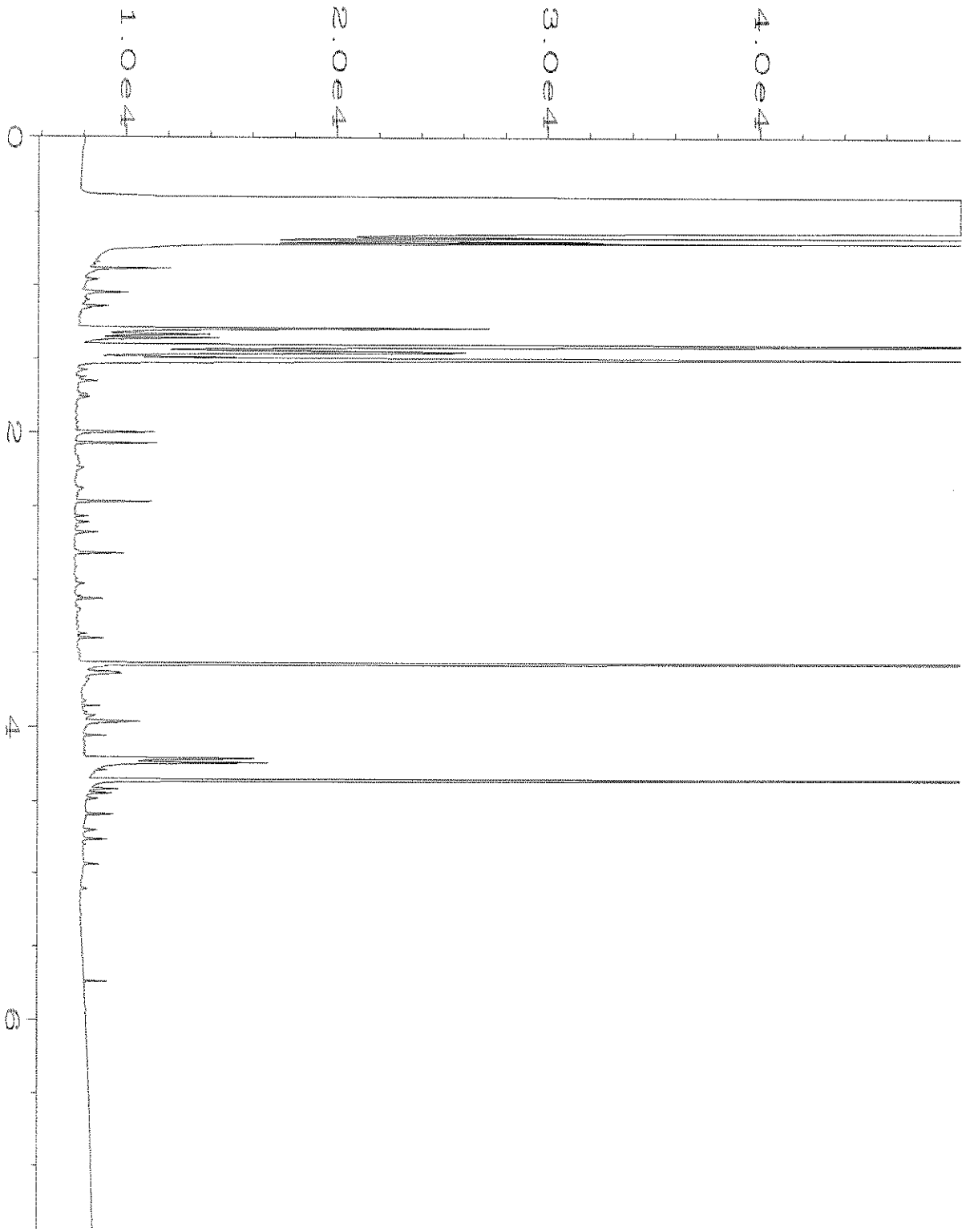


Data File Name	: C:\HPCHEM\1\DATA\08-12-20\024F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 24
Sample Name	: 008152-27	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 12 Aug 20 03:09 PM	Instrument Method	: DX.MTH
Report Created on:	13 Aug 20 08:12 AM	Analysis Method	: DEFAULT.MTH

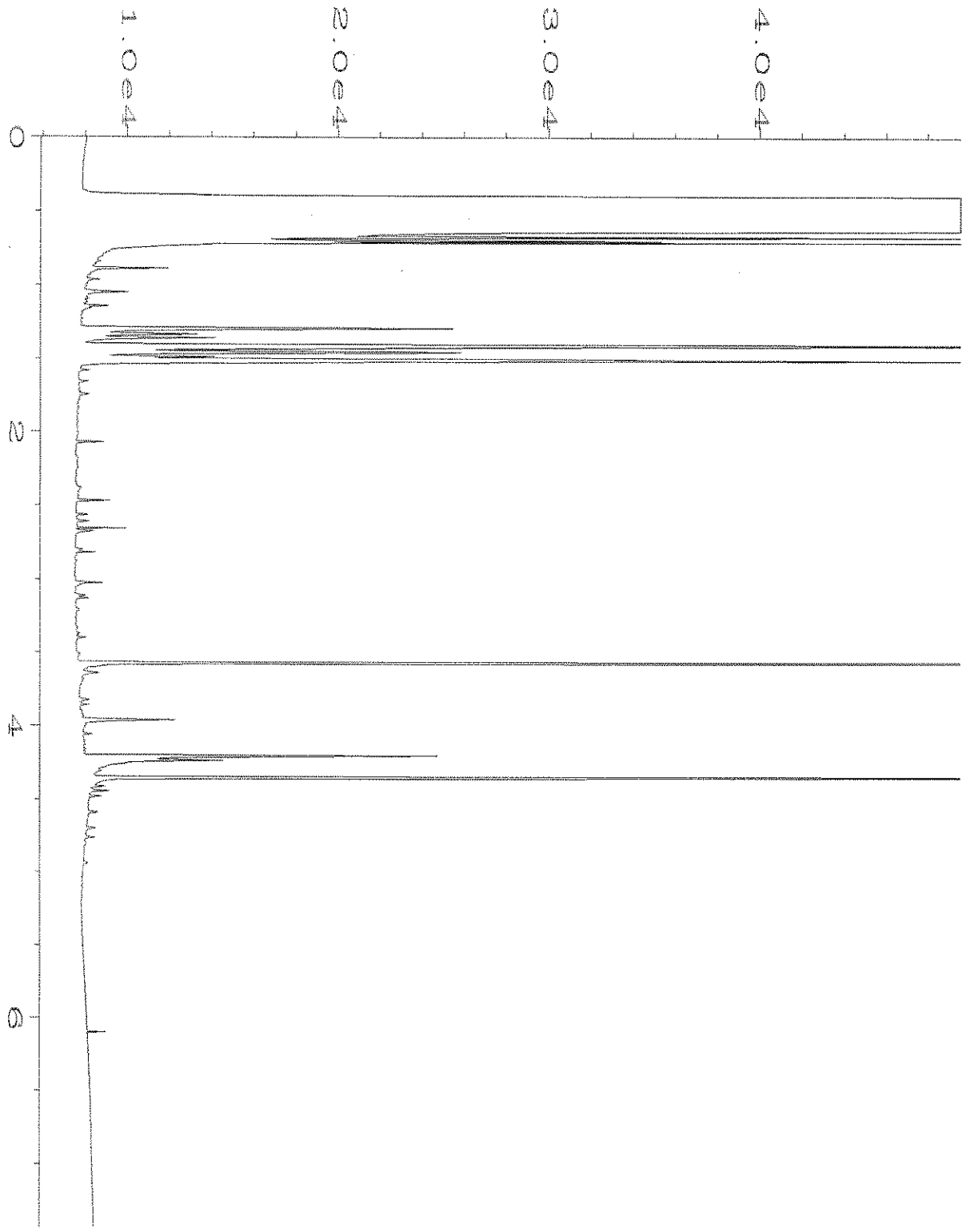


Data File Name : C:\HPCHEM\1\DATA\08-12-20\025F0701.D
Operator : TL
Instrument : GC1
Sample Name : 008152-28
Run Time Bar Code:
Acquired on : 12 Aug 20 03:21 PM
Report Created on: 13 Aug 20 08:12 AM

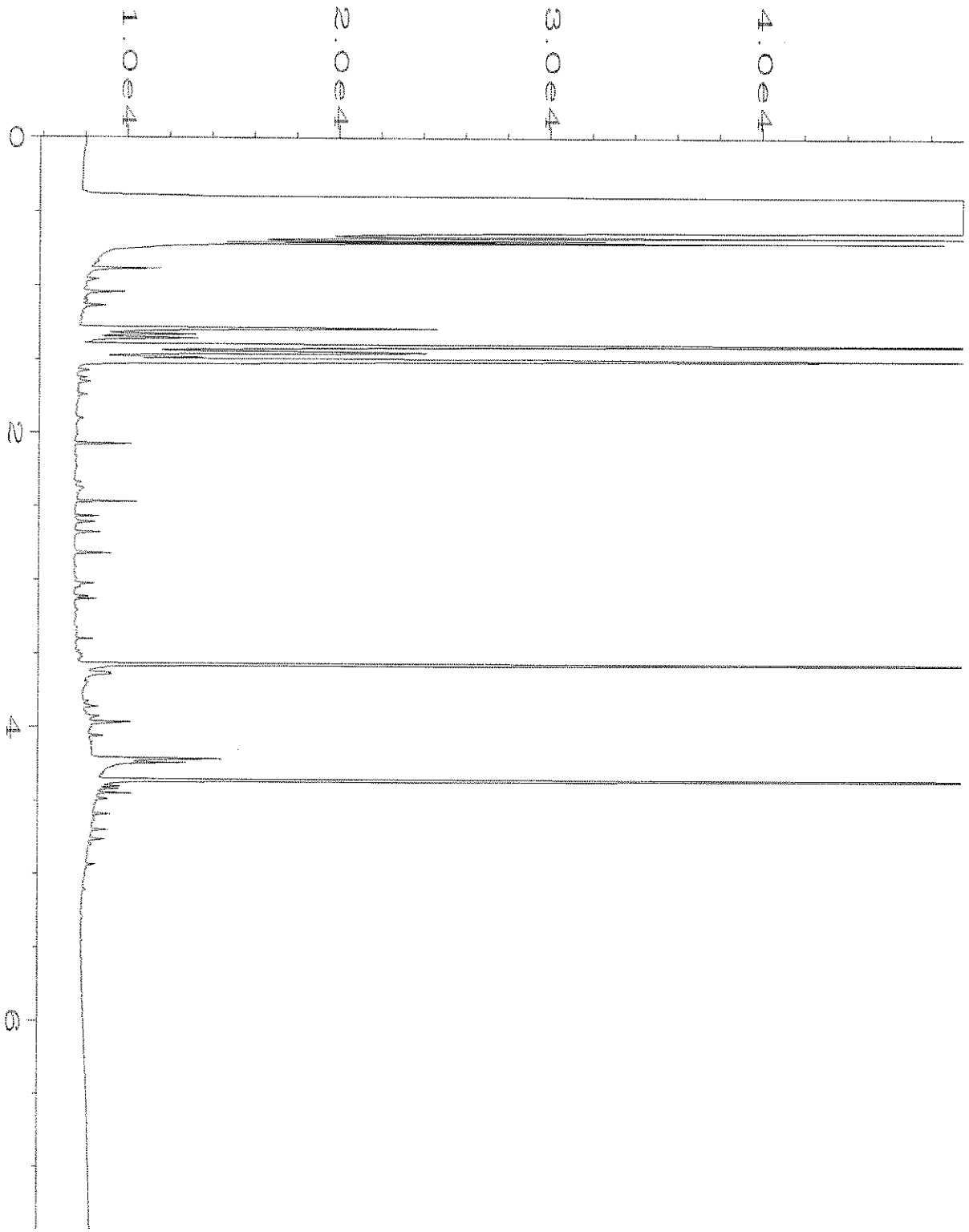
Page Number : 1
Vial Number : 25
Injection Number : 1
Sequence Line : 7
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



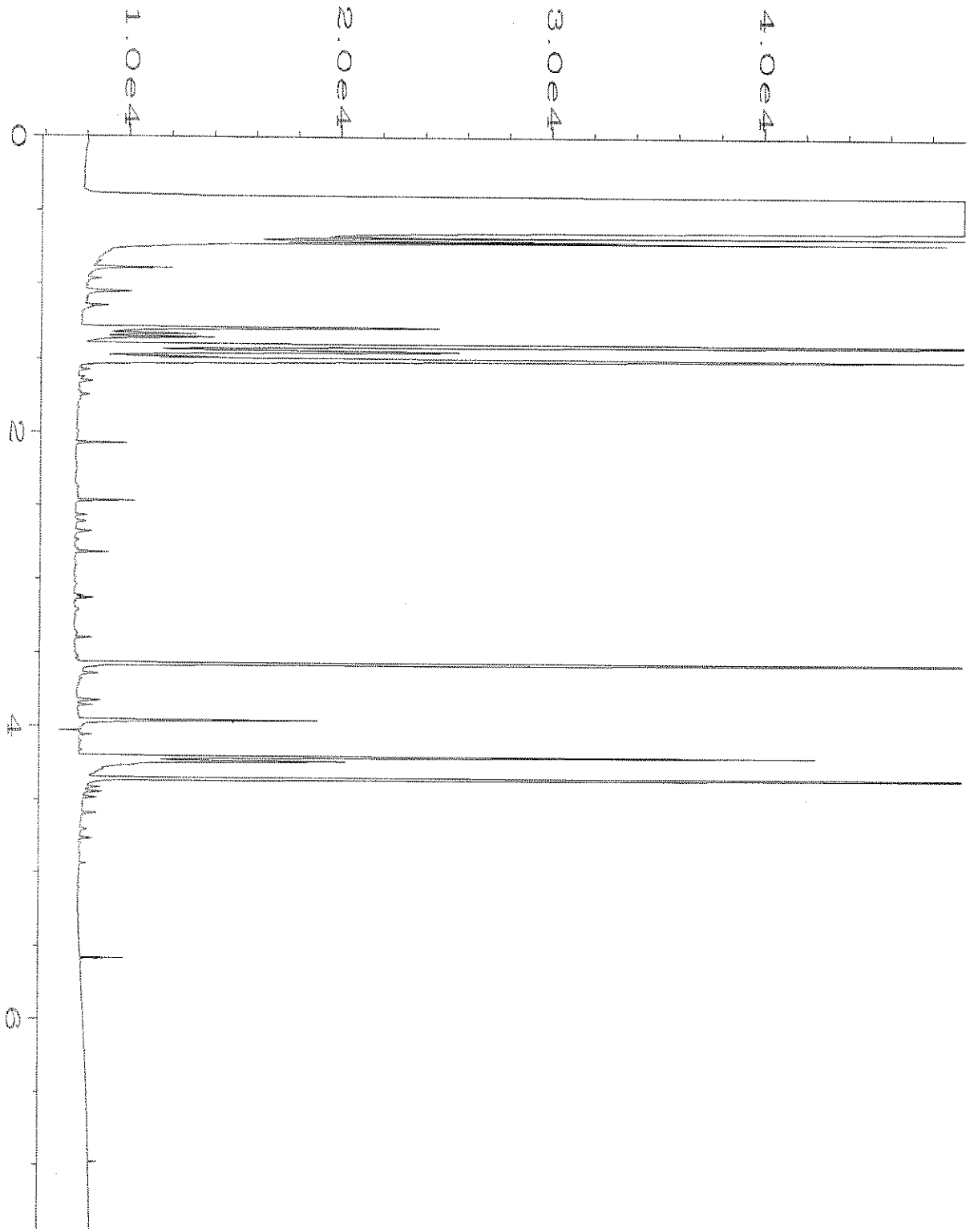
Data File Name	: C:\HPCHEM\1\DATA\08-12-20\026F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 26
Sample Name	: 008152-29	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 12 Aug 20 03:32 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Aug 20 08:12 AM	Analysis Method	: DEFAULT.MTH



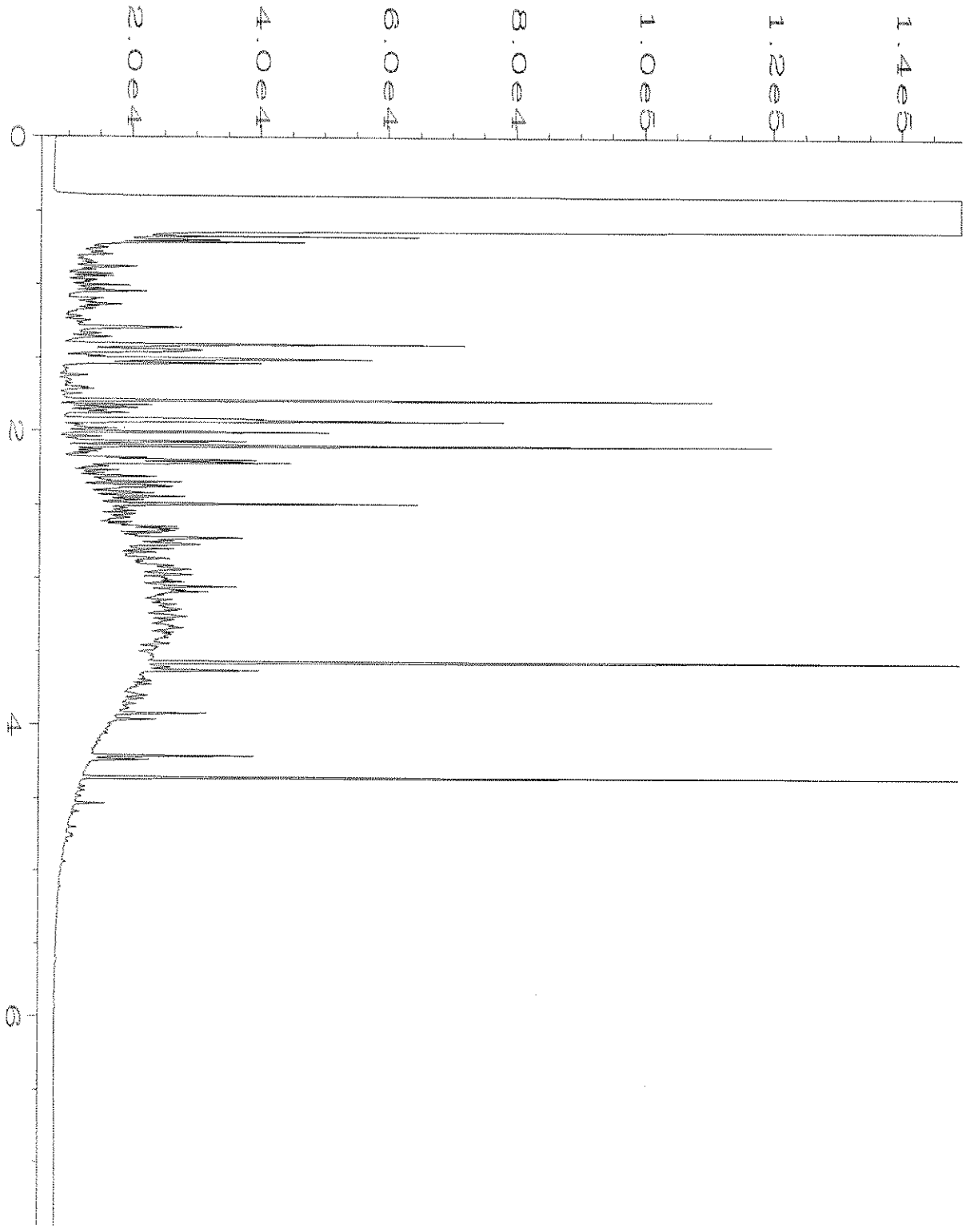
Data File Name	: C:\HPCHEM\1\DATA\08-12-20\027F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 27
Sample Name	: 008152-30	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 12 Aug 20 03:44 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Aug 20 08:12 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\08-12-20\030F0701.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 30
Sample Name	: 008152-31	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 7
Acquired on	: 12 Aug 20 04:19 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Aug 20 08:17 AM	Analysis Method	: DEFAULT.MTH

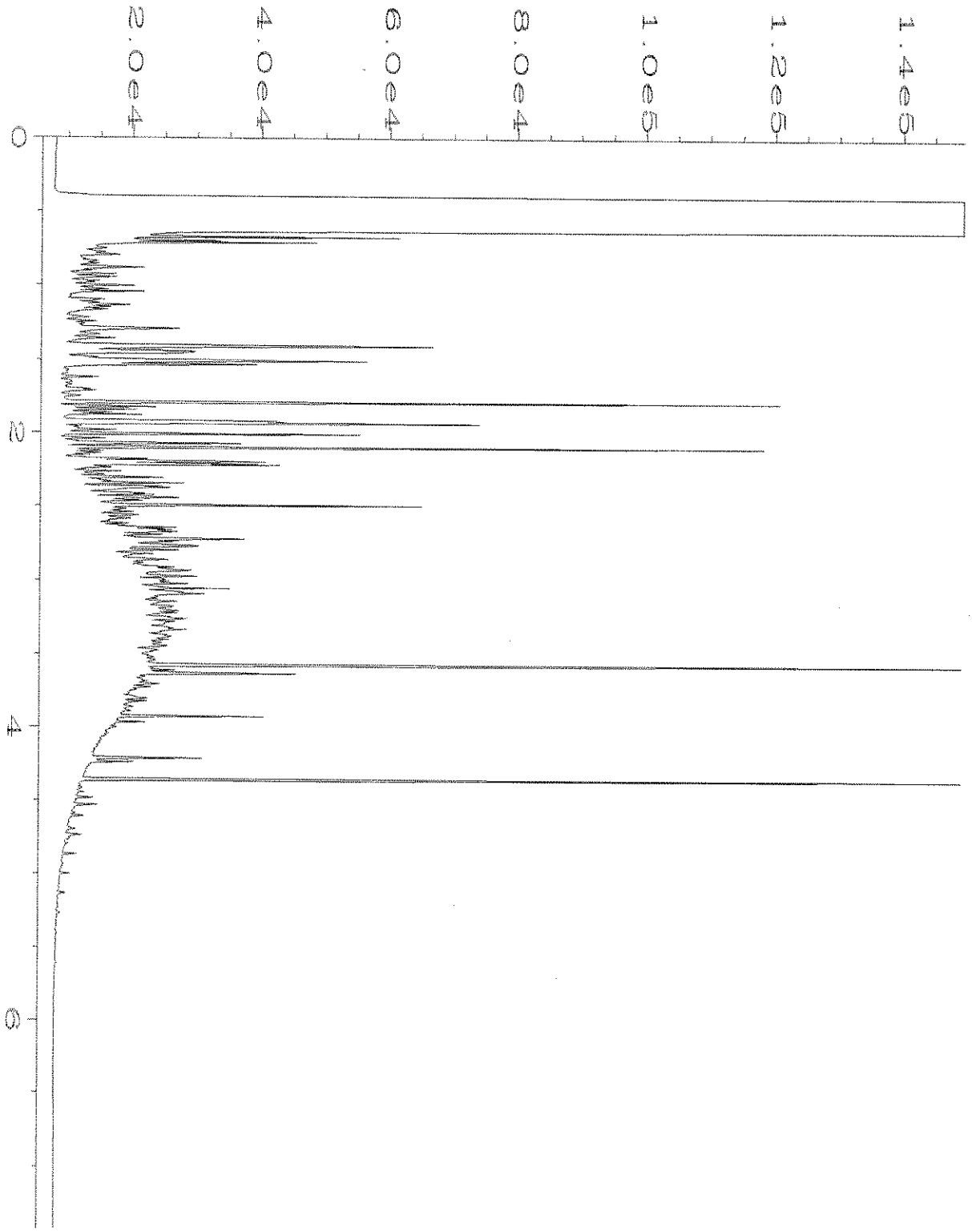


Data File Name	: C:\HPCHEM\1\DATA\08-12-20\031F0901.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 31
Sample Name	: 008152-32	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 9
Acquired on	: 12 Aug 20 04:55 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Aug 20 08:17 AM	Analysis Method	: DEFAULT.MTH



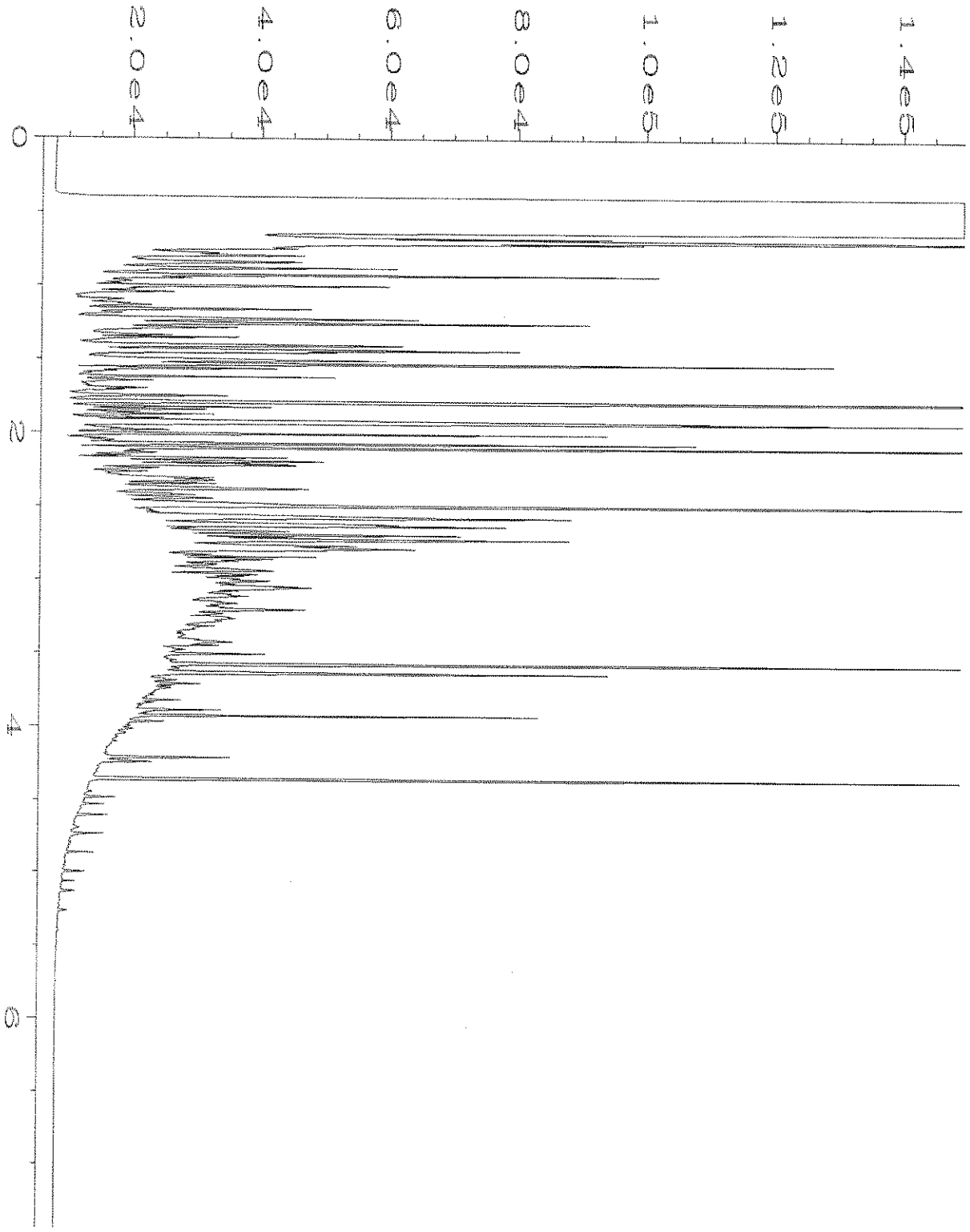
Data File Name : C:\HPCHEM\1\DATA\08-12-20\032F0901.D
Operator : TL
Instrument : GC1
Sample Name : 008152-33
Run Time Bar Code:
Acquired on : 12 Aug 20 05:06 PM
Report Created on: 13 Aug 20 08:17 AM

Page Number : 1
Vial Number : 32
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



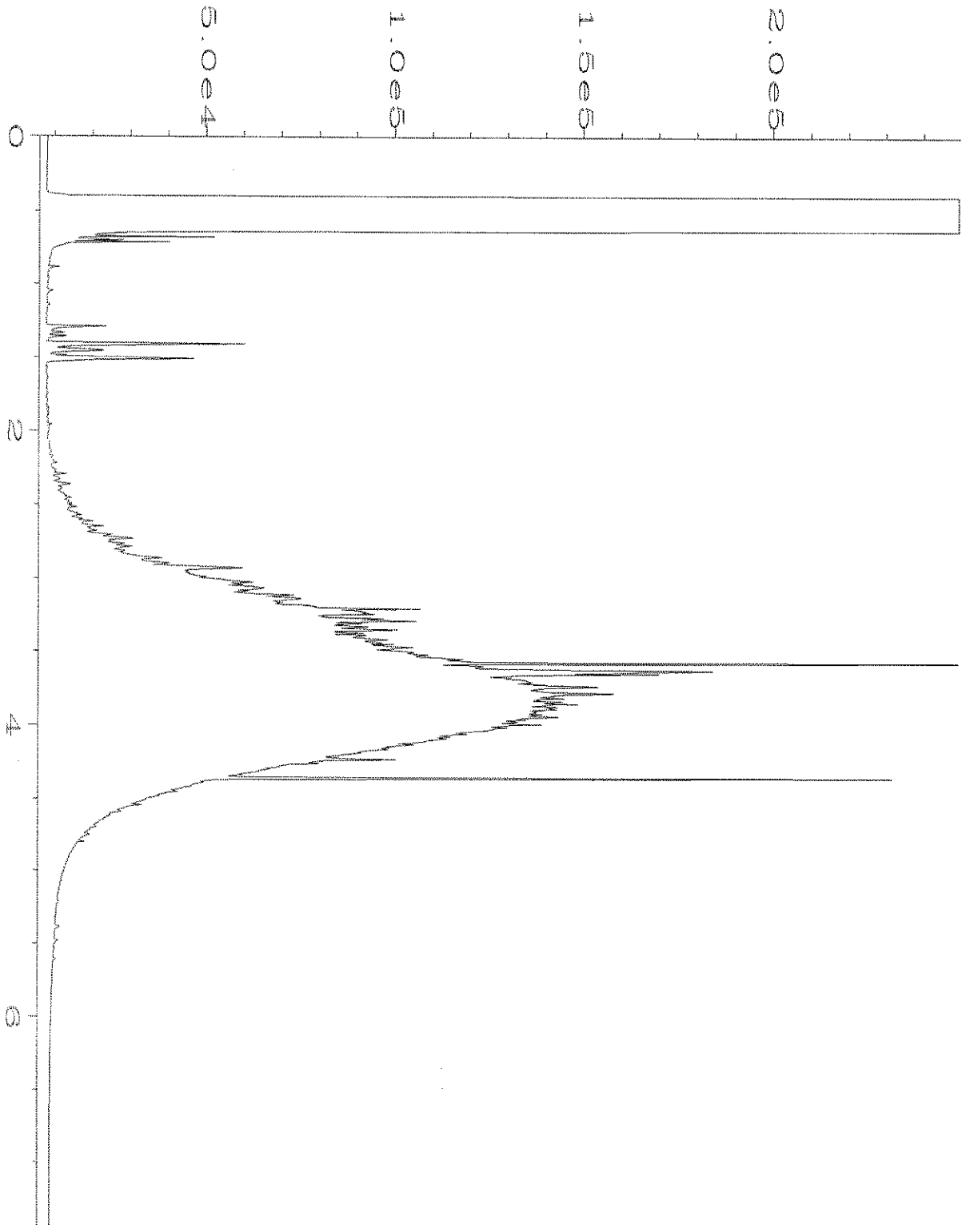
Data File Name : C:\HPCHEM\1\DATA\08-12-20\033F0901.D
Operator : TL
Instrument : GC1
Sample Name : 008152-34
Run Time Bar Code:
Acquired on : 12 Aug 20 05:18 PM
Report Created on: 13 Aug 20 08:17 AM

Page Number : 1
Vial Number : 33
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



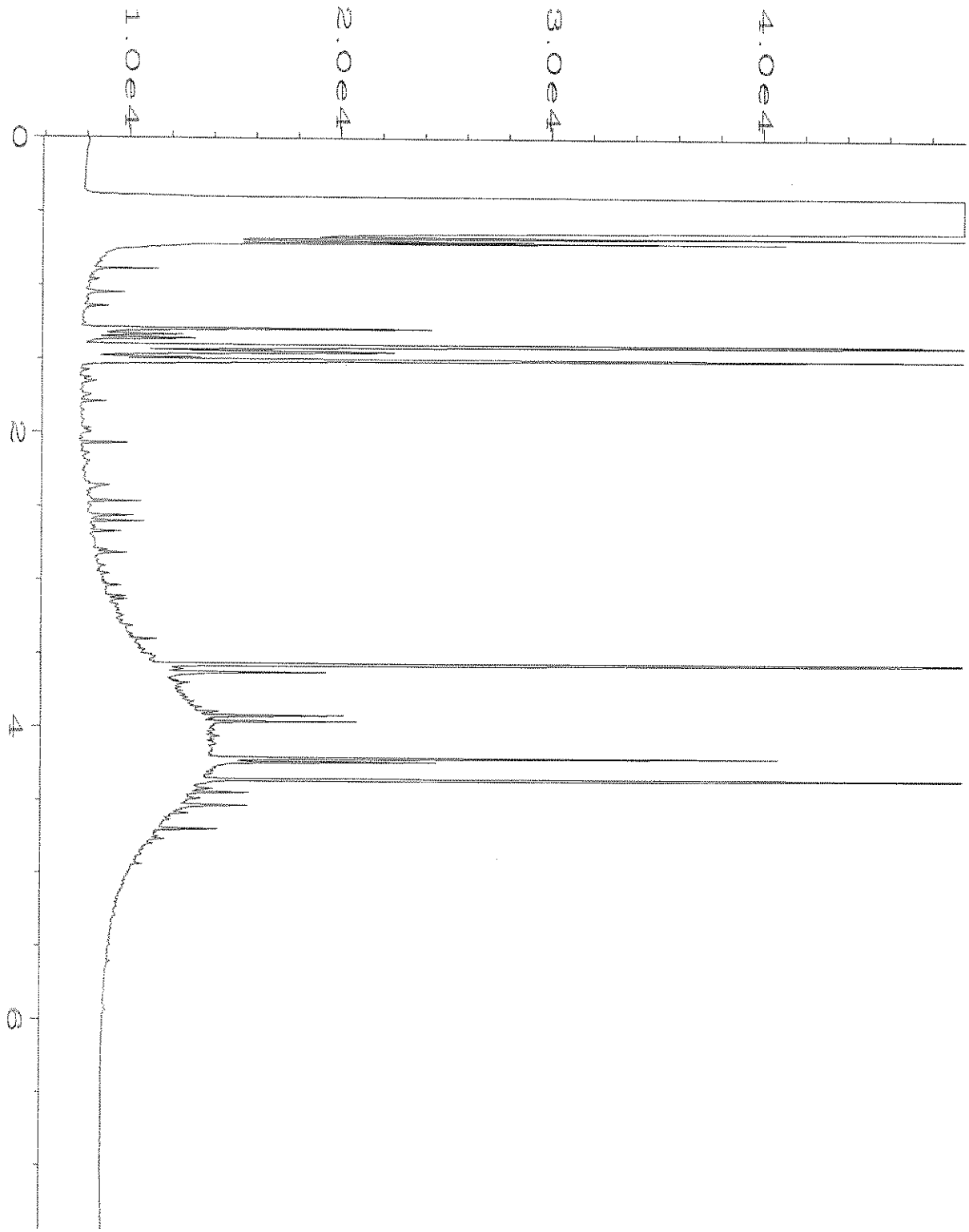
Data File Name : C:\HPCHEM\1\DATA\08-12-20\034F0901.D
Operator : TL
Instrument : GC1
Sample Name : 008152-35
Run Time Bar Code:
Acquired on : 12 Aug 20 05:30 PM
Report Created on: 13 Aug 20 08:17 AM

Page Number : 1
Vial Number : 34
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH

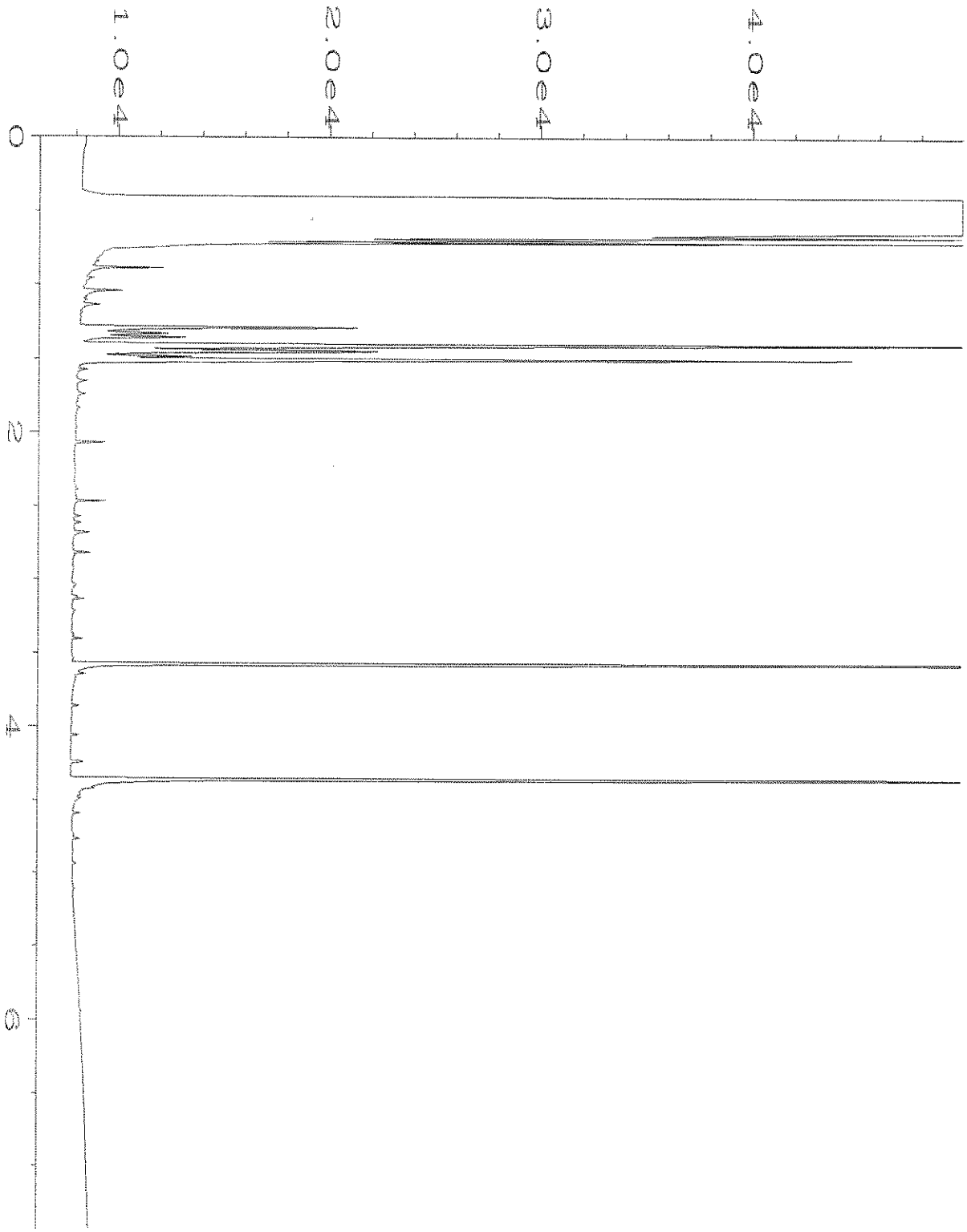


Data File Name : C:\HPCHEM\1\DATA\08-12-20\035F0901.D
Operator : TL
Instrument : GC1
Sample Name : 008152-36
Run Time Bar Code:
Acquired on : 12 Aug 20 05:41 PM
Report Created on: 13 Aug 20 08:18 AM

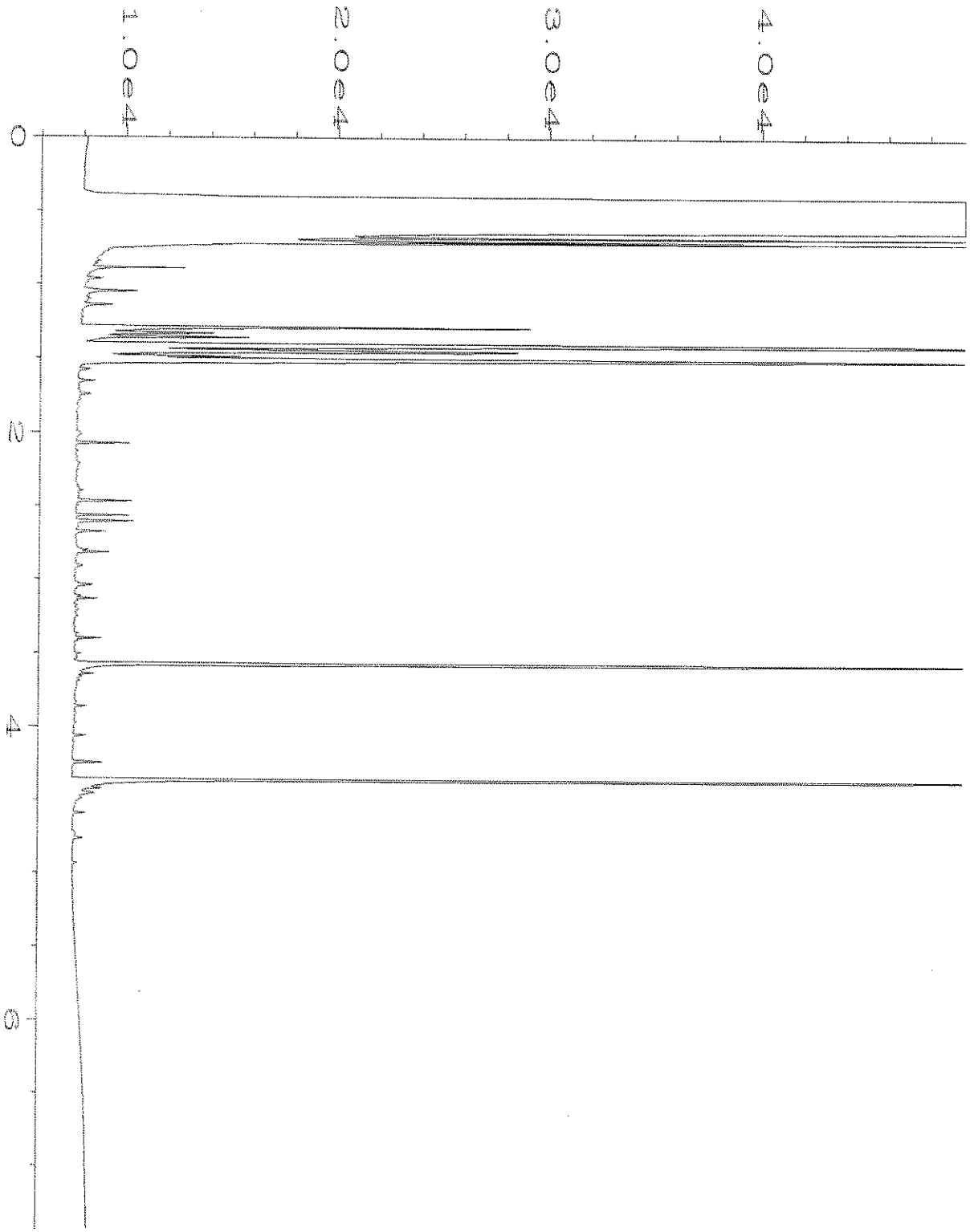
Page Number : 1
Vial Number : 35
Injection Number : 1
Sequence Line : 9
Instrument Method: DX.MTH
Analysis Method : DEFAULT.MTH



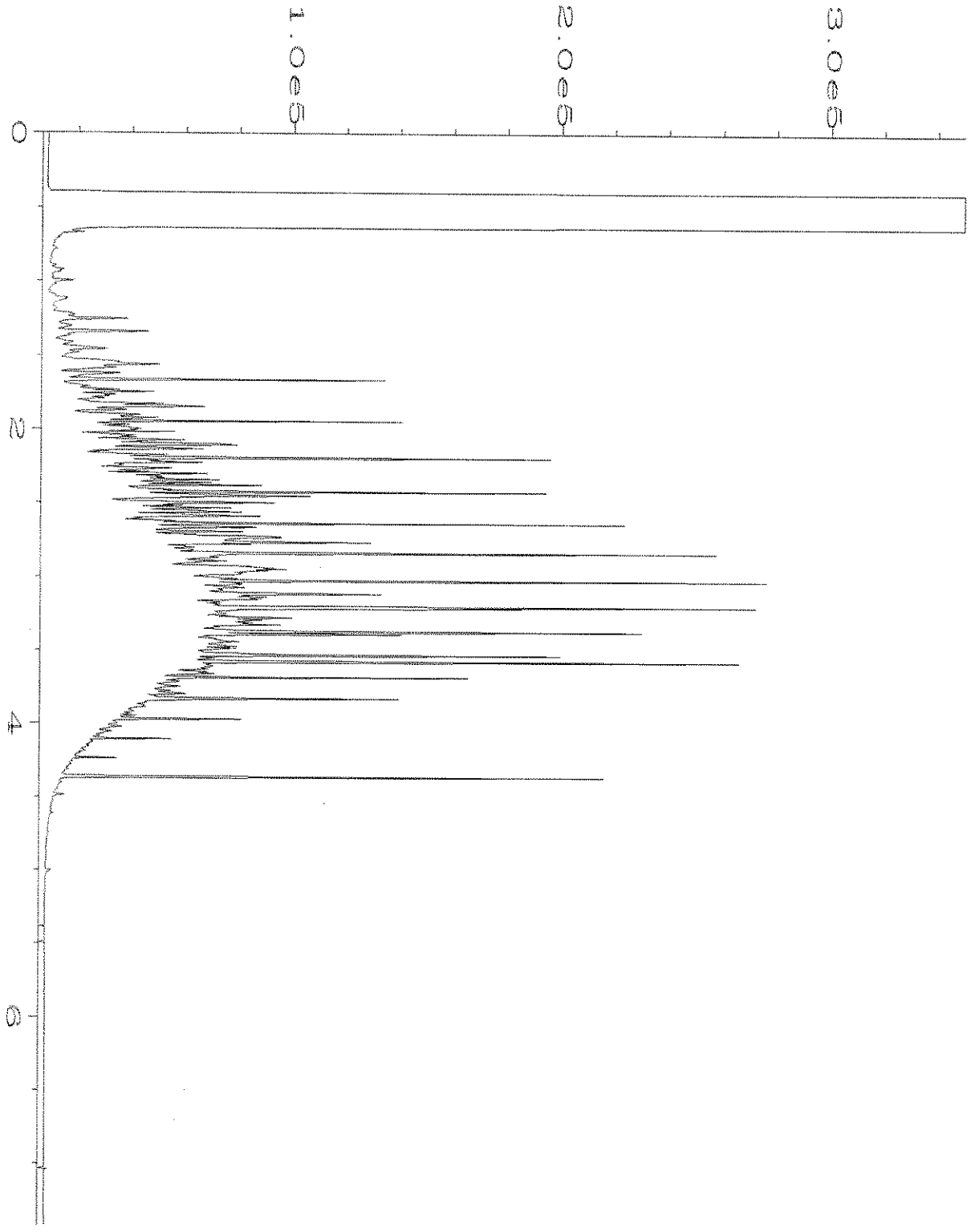
Data File Name	: C:\HPCHEM\1\DATA\08-12-20\036F0901.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 36
Sample Name	: 008152-37	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 9
Acquired on	: 12 Aug 20 05:53 PM	Instrument Method	: DX.MTH
Report Created on:	13 Aug 20 08:18 AM	Analysis Method	: DEFAULT.MTH



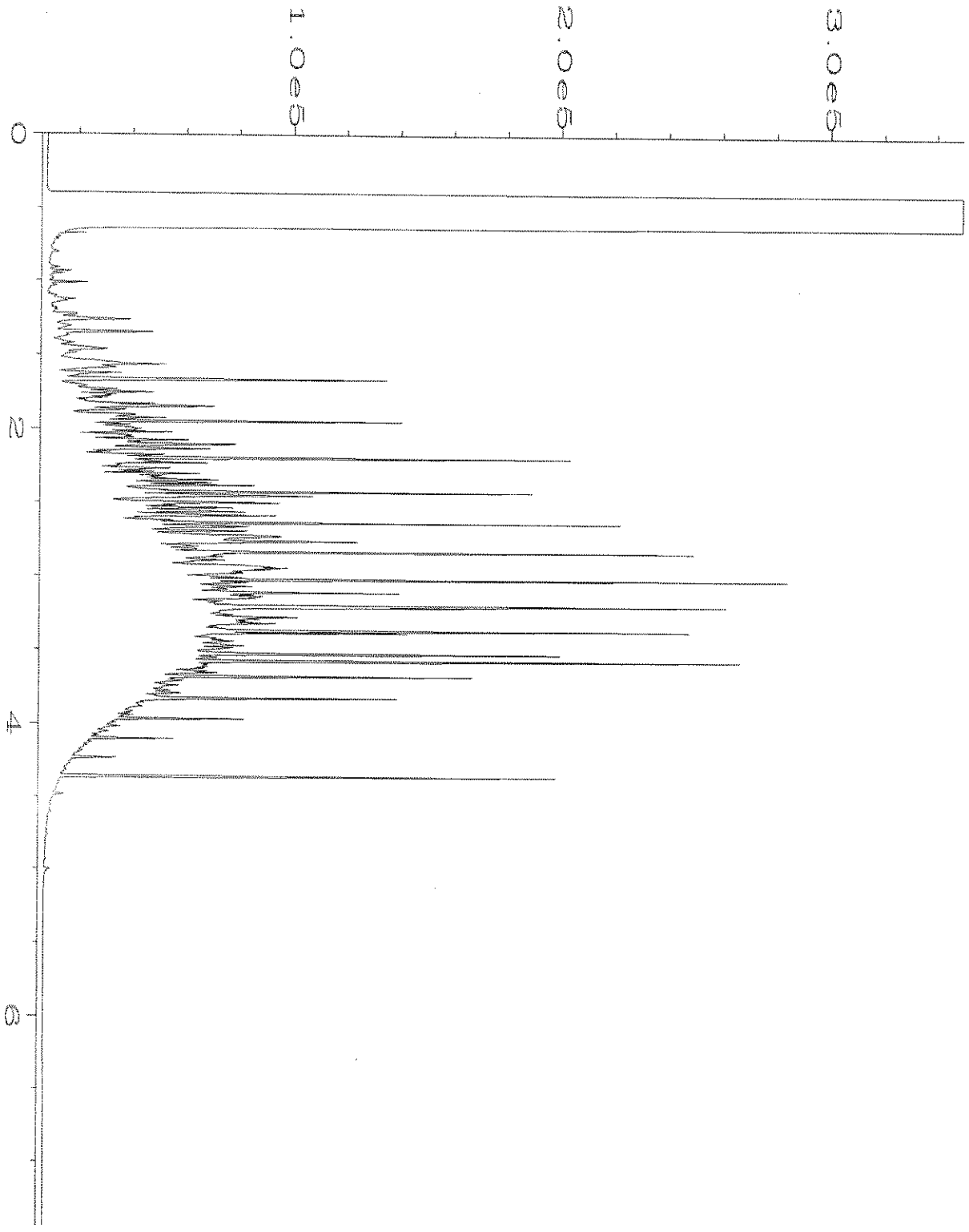
Data File Name	: C:\HPCHEM\1\DATA\08-13-20\020F0901.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 20
Sample Name	: 00-1840 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 9
Acquired on	: 13 Aug 20 05:34 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:50 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\08-12-20\014F0501.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 14
Sample Name	: 00-1841 mb	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 5
Acquired on	: 12 Aug 20 12:48 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Aug 20 08:18 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\08-13-20\005F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 60-170B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 13 Aug 20 02:12 PM	Instrument Method	: DX.MTH
Report Created on	: 14 Aug 20 08:50 AM	Analysis Method	: DEFAULT.MTH



Data File Name	: C:\HPCHEM\1\DATA\08-12-20\005F0601.D		
Operator	: TL	Page Number	: 1
Instrument	: GC1	Vial Number	: 5
Sample Name	: 1000 Dx 60-170B	Injection Number	: 1
Run Time Bar Code:		Sequence Line	: 6
Acquired on	: 12 Aug 20 01:45 PM	Instrument Method	: DX.MTH
Report Created on	: 13 Aug 20 08:18 AM	Analysis Method	: DEFAULT.MTH

008162

SAMPLE CHAIN OF CUSTODY

ME 08-11-20 AIH/VWS/COS

Page # 1 of 4

Report To Grabe Cisneros
Company Floyd|Snider
Address 601 Union St. Ste 600
City, State, ZIP Seattle 98101
Phone 292-2078 Email

SAMPLERS (signature) [signature]

PROJECT NAME: POL-TP4 | PO #:

REMARKS: Project specific RLs? - Yes / No | INVOICE TO:

TURNAROUND TIME
☒ Standard turnaround
☐ RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
☐ Archive samples
☐ Other
(Default: Dispose after 30 days)

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021B	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	PAHs 8270D SIM	Lead 6020	EDB, EDC, MTBE Naphtha	EDB Soil	Notes
MW-37-081020	01A-H	8/10/20	1157	W	8	X	X	X					X				(X) pp GC
MW-38-081020	02		1249	W	8	X	X	X					X				8/12/20 MG
MW-36-081020	03		1349	W	8	X	X	X					X				
MW-136-081020	04		1341	W	8	X	X	X					X				
UST-4-081020	05A-I		1451	W	9	X	X	X					X	X	X	(X)	
MW-34-081020	06A-H		1552	W	8	X	X			X			X			(X)	
MW-35-081020	07		1643	W	8	X	X			X			X			(X)	
MW-31-081020	08		1738	W	8	X	X	X					X				
MW-27-081020	09		1418	GW	8	X	X	X					X				
MW-26-081020	10	↓	1315	GW	8	X	X	X					X				

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: [signature]	Tyler Scott	F3	8/11	18:48
Received by: [signature]	BISRAT TADESSE	FBI	1	1
Relinquished by:				
Received by:		Samples received at	3	°C

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

008152

SAMPLE CHAIN OF CUSTODY

ME 08-11-20

COC/USS/ALL

Page # 2 of 4

Report To Gabe Cisneros

Company Floyd Snider

Address see page 1

City, State, ZIP

Phone Email

SAMPLERS (*signature*)

PROJECT NAME: POL-TPH

PO #

REMARKS

Project specific RLs? - Yes / No

INVOICE TO

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
- Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- Default: Dispose after 30 days

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	PAHs 8270D	Lead 6020	EDB, EDC, MTBE	EDB Soil	Notes
MW-19-081020	11A-H	8/10/20	16:50	GW	8	X	X	X		X			X			X	Time 16:15 8/12
MW-6-081020	12		1355	GW	8	X	X	X					X				
MW-01-081020	13		1245	GW	8	X	X	X					X				
MW-39-081020	14		1505	GW	8	X	X	X		X			X			X	
MW-13-081020	15		1559	GW	8	X	X	X					X				
MW-2-081020	16		1630	GW	8	X	X	X					X				
MW-15-081020	17		1745	GW	8	X	X	X					X				
MW-10-081020	18A-I		1717	GW	9	X	X	X		X			X	X	X	X	
MW-3-081020	19		1445	GW	9	X	X	X					X	X	X	X	
MW-8-081020	20A-R		1338	GW	18	X	X	X					X				MS/MSD

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Tyler Scott	ES	8/11	18:48
Received by:	BIBRAT TADESSE	FBI	1	1
Relinquished by:				
Received by:				

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

008152

SAMPLE CHAIN OF CUSTODY ME 08-11-20 AI4/VW5/CO5

Page # 3 of 4

Report To Gabe Cisneros

Company Floyd Snider

Address 601 Union St. Ste 600

City, State, ZIP Seattle, WA 98101

Phone 292-2078 Email gabe.cisneros@floydsnider.com

SAMPLERS (signature)	
PROJECT NAME: POL-TPH	PO #
REMARKS	INVOICE TO: POL-TPH Task 4
Project specific RLs? - Yes / No	

TURNAROUND TIME
- [x] Standard turnaround
- [ ] RUSH
Rush charges authorized by:

SAMPLE DISPOSAL
- [ ] Archive samples
- [ ] Other
- (Default:) Dispose after 30 days

ANALYSES REQUESTED

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8260	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	PAHs 8270D SIM			EDB 8011	Notes
MW-22-081120	21 A-H	8/11/20	0814	W	8	X	X	X					X				
MW-30-081120	22	8/11	0921	W	8	X	X	X					X				
MW-32-081120	23		1016	W	8	X	X	X					X				
T-2-081120	24		1103	W	8	X	X	X		X			X			(X)	
MW-25-081120	25		1203	W	8	X	X	X					X				
MW-17-081120	26		1225	GW	8	X	X	X					X				
MW-40-081120	27		1339	GW	8	X	X	X		X			X			(X)	
MW-33-081120	28		1103	GW	8	X	X	X					X				
MW-23-081120	29		0826	GW	8	X	X	X		X			X			(X)	
MW-29-081120	30 A-R		0929	GW	18	X	X	X					X				MS/MSD

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	[signature]	Tyler Scott	FS	8/11	18:40
Received by:	[signature]	Bisrat Tadesse	FBI	8/11	18:40
Relinquished by:					
Received by:					

Samples received at 2 °C

008152

SAMPLE CHAIN OF CUSTODY

ME 08-11-20 AIH/VWS/COS

Page # 4 of 4

Report To Gabe Cisneros
Company Floyd | Snider
Address 601 Union St. Ste 600
City, State, ZIP Seattle 98101
Phone _____ Email _____

SAMPLERS (*signature*)

PROJECT NAME: POL-TPH
PO #:

REMARKS:
INVOICE TO:

TURNAROUND TIME
- [X] Standard Turnaround
- [ ] RUSH _____
- Rush charges authorized by: _____

SAMPLE DISPOSAL
- [X] Dispose after 30 days
- [ ] Archive Samples
- [ ] Other _____

Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B 8260	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM (PAH's)	Lead - total	EDB/EDC MTBE, Naphth		EDB 8011	Notes
MW-18-081120	31 A-H	8/11/20	1004	GW	8		X	X	X			X					
MW-24-081120	32		0841	GW	8		X	X	X			X					
MW-7-081120	33 A-J		0900	GW	10		X	X	X			X	X	X		X	
MW-107-081120	34		0905	GW	10		X	X	X			X	X	X		X	
MW-12-081120	35 A-H		1310	GW	8		X	X	X	X		X				X	
MW-28-081120	36		1134	GW	8		X	X	X	X		X				X	
MW-14-081120	37		1346	GW	8		X	X	X			X					

ANALYSES REQUESTED

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Tyler Scott	FS	8/11	18:48
Received by:	BISRAT TADESSE	FBI	1	1
Relinquished by:				
Received by:		Samples received at 2 °C		

Friedman & Bruya, Inc.
3012 16th Avenue West
Seattle, WA 98119-2029
Ph. (206) 285-8282

3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Floyd | Snider
Gabe Cisneros
601 Union St., Suite 600
Seattle, WA 98101

RE: POL-TPH
Work Order Number: 2008153

August 19, 2020

Attention Gabe Cisneros:

Fremont Analytical, Inc. received 15 sample(s) on 8/12/2020 for the analyses presented in the following report.

Dissolved Gases by RSK-175
Dissolved Metals by EPA Method 200.8
Ion Chromatography by EPA Method 300.0
Total Alkalinity by SM 2320B

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes
Project Manager

Date: *08/19/2020*

CLIENT: Floyd | Snider
Project: POL-TPH
Work Order: 2008153

Work Order Sample Summary

Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received
2008153-001	MW-10-081020	08/10/2020 5:17 PM	08/12/2020 5:56 AM
2008153-002	MW-31-081020	08/10/2020 5:38 PM	08/12/2020 5:56 AM
2008153-003	MW-19-081020	08/10/2020 4:50 PM	08/12/2020 5:56 AM
2008153-004	MW-35-081020	08/10/2020 4:43 PM	08/12/2020 5:56 AM
2008153-005	MW-22-081120	08/11/2020 8:14 AM	08/12/2020 5:56 AM
2008153-006	MW-122-081120	08/11/2020 8:21 AM	08/12/2020 5:56 AM
2008153-007	MW-30-081120	08/11/2020 9:21 AM	08/12/2020 5:56 AM
2008153-008	MW-25-081120	08/11/2020 12:03 PM	08/12/2020 5:56 AM
2008153-009	MW-12-081120	08/11/2020 1:10 PM	08/12/2020 5:56 AM
2008153-010	MW-14-081120	08/11/2020 1:46 PM	08/12/2020 5:56 AM
2008153-011	MW-29-081120	08/11/2020 9:29 AM	08/12/2020 5:56 AM
2008153-012	MW-18-081120	08/11/2020 10:04 AM	08/12/2020 5:56 AM
2008153-013	MW-23-081120	08/11/2020 8:26 AM	08/12/2020 5:56 AM
2008153-014	MW-17-081120	08/11/2020 12:25 PM	08/12/2020 5:56 AM
2008153-015	MW-24-081120	08/11/2020 8:41 AM	08/12/2020 5:56 AM

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned

Case Narrative

WO#: **2008153**
Date: **8/19/2020**

CLIENT: Floyd | Snider
Project: POL-TPH

I. SAMPLE RECEIPT:
Samples receipt information is recorded on the attached Sample Receipt Checklist.

II. GENERAL REPORTING COMMENTS:
Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

III. ANALYSES AND EXCEPTIONS:
Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.

Qualifiers:

* - Flagged value is not within established control limits
B - Analyte detected in the associated Method Blank
D - Dilution was required
E - Value above quantitation range
H - Holding times for preparation or analysis exceeded
I - Analyte with an internal standard that does not meet established acceptance criteria
J - Analyte detected below Reporting Limit
N - Tentatively Identified Compound (TIC)
Q - Analyte with an initial or continuing calibration that does not meet established acceptance criteria (<20%RSD, <20% Drift or minimum RRF)
S - Spike recovery outside accepted recovery limits
ND - Not detected at the Reporting Limit
R - High relative percent difference observed

Acronyms:

%Rec - Percent Recovery
CCB - Continued Calibration Blank
CCV - Continued Calibration Verification
DF - Dilution Factor
DUP - Sample Duplicate
HEM - Hexane Extractable Material
ICV - Initial Calibration Verification
LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate
MB or MBLANK - Method Blank
MDL - Method Detection Limit
MS/MSD - Matrix Spike / Matrix Spike Duplicate
PDS - Post Digestion Spike
Ref Val - Reference Value
REP - Sample Replicate
RL - Reporting Limit
RPD - Relative Percent Difference
SD - Serial Dilution
SGT - Silica Gel Treatment
SPK - Spike
Surr - Surrogate

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-001
Client Sample ID: **MW-10-081020**

Collection Date: 8/10/2020 5:17:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	2.41	0.0863	D	mg/L	10	8/17/2020 3:42:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	ND	0.200	D	mg/L	2	8/12/2020 9:05:00 AM
Sulfate	ND	0.600	D	mg/L	2	8/12/2020 9:05:00 AM
NOTES: Diluted due to high levels of non-target analytes.						
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	2,250	2.00		µg/L	1	8/17/2020 4:49:16 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	117	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-002
Client Sample ID: **MW-31-081020**

Collection Date: 8/10/2020 5:38:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	ND	0.00863		mg/L	1	8/17/2020 3:25:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	4.35	0.200	D	mg/L	2	8/12/2020 9:28:00 AM
Sulfate	17.9	0.600	D	mg/L	2	8/12/2020 9:28:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	ND	2.00		µg/L	1	8/17/2020 4:03:23 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	200	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Collection Date: 8/10/2020 4:50:00 PM
Project: POL-TPH
Lab ID: 2008153-003
Matrix: Groundwater
Client Sample ID: **MW-19-081020**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	ND	0.00863		mg/L	1	8/17/2020 3:28:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	8.58	0.100	E	mg/L	1	8/12/2020 10:10:00 AM
Nitrate (as N)	7.73	0.400	DH	mg/L	4	8/13/2020 10:01:00 AM
Sulfate	16.0	1.20	D	mg/L	4	8/13/2020 10:01:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	ND	2.00		µg/L	1	8/17/2020 4:54:50 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	92.6	2.50		mg/L	1	8/19/2020 10:36:41 AM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Collection Date: 8/10/2020 4:43:00 PM
Project: POL-TPH
Lab ID: 2008153-004
Matrix: Groundwater
Client Sample ID: **MW-35-081020**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	0.0129	0.00863		mg/L	1	8/17/2020 3:30:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	15.0	0.200	DE	mg/L	2	8/12/2020 10:56:00 AM
Nitrate (as N)	13.0	1.00	DH	mg/L	10	8/13/2020 10:24:00 AM
Sulfate	8.33	0.600	D	mg/L	2	8/12/2020 10:56:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	25.8	2.00		µg/L	1	8/17/2020 4:25:40 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	78.0	2.50		mg/L	1	8/19/2020 10:36:41 AM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-005
Client Sample ID: **MW-22-081120**

Collection Date: 8/11/2020 8:14:00 AM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	4.02	0.173	D	mg/L	20	8/17/2020 3:45:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	ND	0.100		mg/L	1	8/12/2020 11:19:00 AM
Sulfate	0.305	0.300		mg/L	1	8/12/2020 11:19:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	1,090	2.00		µg/L	1	8/17/2020 5:25:57 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	146	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Collection Date: 8/11/2020 8:21:00 AM
Project: POL-TPH
Lab ID: 2008153-006
Matrix: Groundwater
Client Sample ID: **MW-122-081120**

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	2.76	0.173	D	mg/L	20	8/17/2020 4:12:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	ND	0.100		mg/L	1	8/12/2020 11:42:00 AM
Sulfate	0.301	0.300		mg/L	1	8/12/2020 11:42:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	1,070	2.00		µg/L	1	8/17/2020 5:37:11 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	151	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-007
Client Sample ID: **MW-30-081120**

Collection Date: 8/11/2020 9:21:00 AM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	ND	0.00863		mg/L	1	8/17/2020 3:59:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	46.4	0.500	DE	mg/L	5	8/12/2020 12:51:00 PM
Nitrate (as N)	41.6	2.50	DH	mg/L	25	8/13/2020 10:47:00 AM
Sulfate	129	7.50	D	mg/L	25	8/13/2020 10:47:00 AM

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	130	2.00		µg/L	1	8/17/2020 5:42:44 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	136	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-008
Client Sample ID: **MW-25-081120**

Collection Date: 8/11/2020 12:03:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	4.62	0.173	D	mg/L	20	8/17/2020 4:15:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	0.108	0.100		mg/L	1	8/13/2020 11:10:00 AM
Sulfate	0.335	0.300		mg/L	1	8/13/2020 11:10:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	1,430	2.00		µg/L	1	8/17/2020 5:48:18 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	190	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-009
Client Sample ID: **MW-12-081120**

Collection Date: 8/11/2020 1:10:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	4.60	0.173	D	mg/L	20	8/17/2020 5:14:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	ND	0.100		mg/L	1	8/13/2020 11:33:00 AM
Sulfate	0.309	0.300		mg/L	1	8/13/2020 11:33:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	1,840	2.00		µg/L	1	8/17/2020 5:53:51 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	195	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-010
Client Sample ID: **MW-14-081120**

Collection Date: 8/11/2020 1:46:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	1.55	0.0863	D	mg/L	10	8/17/2020 5:16:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	0.104	0.100		mg/L	1	8/13/2020 11:56:00 AM
Sulfate	2.36	0.300		mg/L	1	8/13/2020 11:56:00 AM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	87.9	2.00		µg/L	1	8/17/2020 5:59:25 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	219	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-011
Client Sample ID: **MW-29-081120**

Collection Date: 8/11/2020 9:29:00 AM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	0.0169	0.00863		mg/L	1	8/17/2020 4:50:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	2.22	0.100		mg/L	1	8/12/2020 2:23:00 PM
Sulfate	14.3	0.600	D	mg/L	2	8/13/2020 12:19:00 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	ND	2.00		µg/L	1	8/17/2020 6:04:58 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	48.8	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-012
Client Sample ID: **MW-18-081120**

Collection Date: 8/11/2020 10:04:00 AM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	0.0246	0.00863		mg/L	1	8/17/2020 4:52:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	0.541	0.100		mg/L	1	8/12/2020 2:46:00 PM
Sulfate	3.79	0.300		mg/L	1	8/12/2020 2:46:00 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	104	2.00		µg/L	1	8/17/2020 6:10:32 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	107	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-013
Client Sample ID: **MW-23-081120**

Collection Date: 8/11/2020 8:26:00 AM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	0.749	0.0863	D	mg/L	10	8/17/2020 5:18:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	ND	0.400	D	mg/L	4	8/12/2020 3:10:00 PM
Sulfate	7.34	1.20	D	mg/L	4	8/12/2020 3:10:00 PM
NOTES: Diluted due to high levels of non-target analytes.						
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	2,560	20.0	D	µg/L	10	8/19/2020 12:27:01 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	92.6	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-014
Client Sample ID: **MW-17-081120**

Collection Date: 8/11/2020 12:25:00 PM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	0.190	0.00863		mg/L	1	8/17/2020 5:04:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	0.269	0.100		mg/L	1	8/12/2020 3:33:00 PM
Sulfate	2.00	0.300		mg/L	1	8/12/2020 3:33:00 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	2.68	2.00		µg/L	1	8/17/2020 6:21:39 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	166	2.50		mg/L	1	8/19/2020 10:36:41 AM

Analytical Report

Work Order: **2008153**
Date Reported: **8/19/2020**

Client: Floyd | Snider
Project: POL-TPH
Lab ID: 2008153-015
Client Sample ID: **MW-24-081120**

Collection Date: 8/11/2020 8:41:00 AM
Matrix: Groundwater

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Dissolved Gases by RSK-175				Batch ID: R61228		Analyst: IH
Methane	ND	0.00863		mg/L	1	8/17/2020 5:06:00 PM
Ion Chromatography by EPA Method 300.0				Batch ID: 29325		Analyst: SS
Nitrate (as N)	0.945	0.100		mg/L	1	8/12/2020 3:56:00 PM
Sulfate	4.75	0.300		mg/L	1	8/12/2020 3:56:00 PM
Dissolved Metals by EPA Method 200.8				Batch ID: 29362		Analyst: CO
Manganese	6.36	2.00		µg/L	1	8/17/2020 6:38:23 PM
Total Alkalinity by SM 2320B				Batch ID: R61272		Analyst: WF
Alkalinity, Total (As CaCO3)	127	2.50		mg/L	1	8/19/2020 10:36:41 AM

Work Order: 2008153
CLIENT: Floyd | Snider
Project: POL-TPH

QC SUMMARY REPORT

Total Alkalinity by SM 2320B

Sample ID: **MB-R61272**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/19/2020**	RunNo: **61272**
Client ID: **MBLKW**	Batch ID: **R61272**		Analysis Date: **8/19/2020**	SeqNo: **1229183**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									

Sample ID: **LCS-R61272**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/19/2020**	RunNo: **61272**
Client ID: **LCSW**	Batch ID: **R61272**		Analysis Date: **8/19/2020**	SeqNo: **1229184**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	103	2.50	100.0	0	103	99.6	108				

Sample ID: **2008153-001CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/19/2020**	RunNo: **61272**
Client ID: **MW-10-081020**	Batch ID: **R61272**		Analysis Date: **8/19/2020**	SeqNo: **1229186**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	112	2.50						117.0	4.26	20	

Sample ID: **2008153-015CDUP**	SampType: **DUP**	Units: **mg/L**	Prep Date: **8/19/2020**	RunNo: **61272**
Client ID: **MW-24-081120**	Batch ID: **R61272**		Analysis Date: **8/19/2020**	SeqNo: **1229201**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	132	2.50						126.8	3.77	20	

Work Order: 2008153
CLIENT: Floyd | Snider
Project: POL-TPH

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **MB-29325** SampType: **MBLK** Units: **mg/L** Prep Date: **8/12/2020** RunNo: **61166**
Client ID: **MBLKW** Batch ID: **29325** Analysis Date: **8/12/2020** SeqNo: **1226587**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.300									

Sample ID: **LCS-29325** SampType: **LCS** Units: **mg/L** Prep Date: **8/12/2020** RunNo: **61166**
Client ID: **LCSW** Batch ID: **29325** Analysis Date: **8/12/2020** SeqNo: **1226556**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.682	0.100	0.7500	0	90.9	90	110				
Sulfate	3.48	0.300	3.750	0	92.7	90	110				

Sample ID: **2008139-001BDUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/12/2020** RunNo: **61166**
Client ID: **BATCH** Batch ID: **29325** Analysis Date: **8/12/2020** SeqNo: **1226578**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.14	0.100						1.149	0.436	20	
Sulfate	13.8	0.300						13.82	0.297	20	

Sample ID: **2008139-001BMS** SampType: **MS** Units: **mg/L** Prep Date: **8/12/2020** RunNo: **61166**
Client ID: **BATCH** Batch ID: **29325** Analysis Date: **8/12/2020** SeqNo: **1226579**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.91	0.100	0.7500	1.149	102	80	120				
Sulfate	18.0	0.300	3.750	13.82	113	80	120				E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Work Order: 2008153
CLIENT: Floyd | Snider
Project: POL-TPH

QC SUMMARY REPORT

Ion Chromatography by EPA Method 300.0

Sample ID: **2008139-001BMSD** SampType: **MSD** Units: **mg/L** Prep Date: **8/12/2020** RunNo: **61166**
Client ID: **BATCH** Batch ID: **29325** Analysis Date: **8/12/2020** SeqNo: **1226580**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.92	0.100	0.7500	1.149	103	80	120	1.912	0.574	20	
Sulfate	18.2	0.300	3.750	13.82	116	80	120	18.04	0.729	20	E

NOTES:
E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: **2008153-005CDUP** SampType: **DUP** Units: **mg/L** Prep Date: **8/12/2020** RunNo: **61166**
Client ID: **MW-22-081120** Batch ID: **29325** Analysis Date: **8/12/2020** SeqNo: **1226581**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	0.100						0		20	
Sulfate	0.333	0.300						0.3050	8.78	20	

Sample ID: **2008153-005CMS** SampType: **MS** Units: **mg/L** Prep Date: **8/12/2020** RunNo: **61166**
Client ID: **MW-22-081120** Batch ID: **29325** Analysis Date: **8/12/2020** SeqNo: **1226582**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.681	0.100	0.7500	0	90.8	80	120				
Sulfate	3.32	0.300	3.750	0.3050	80.5	80	120				

Work Order: 2008153
CLIENT: Floyd | Snider
Project: POL-TPH

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **MB-29362** SampType: **MBLK** Units: **µg/L** Prep Date: **8/17/2020** RunNo: **61249**
Client ID: **MBLKW** Batch ID: **29362** Analysis Date: **8/17/2020** SeqNo: **1228660**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	2.00									

Sample ID: **LCS-29362** SampType: **LCS** Units: **µg/L** Prep Date: **8/17/2020** RunNo: **61249**
Client ID: **LCSW** Batch ID: **29362** Analysis Date: **8/17/2020** SeqNo: **1228663**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	92.4	2.00	100.0	0	92.4	85	115				

Sample ID: **2008170-001BDUP** SampType: **DUP** Units: **µg/L** Prep Date: **8/17/2020** RunNo: **61249**
Client ID: **BATCH** Batch ID: **29362** Analysis Date: **8/17/2020** SeqNo: **1228665**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	2.00						0		30	

Sample ID: **MB-29361FB** SampType: **MBLK** Units: **µg/L** Prep Date: **8/17/2020** RunNo: **61249**
Client ID: **MBLKW** Batch ID: **29362** Analysis Date: **8/17/2020** SeqNo: **1228667**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	ND	2.00									

NOTES:
Filter Blank

Sample ID: **2008170-001BMS** SampType: **MS** Units: **µg/L** Prep Date: **8/17/2020** RunNo: **61249**
Client ID: **BATCH** Batch ID: **29362** Analysis Date: **8/17/2020** SeqNo: **1228672**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	501	2.00	500.0	1.643	99.9	70	130				

Work Order: 2008153
CLIENT: Floyd | Snider
Project: POL-TPH

QC SUMMARY REPORT

Dissolved Metals by EPA Method 200.8

Sample ID: **2008170-001BMSD** SampType: **MSD** Units: **µg/L** Prep Date: **8/17/2020** RunNo: **61249**
Client ID: **BATCH** Batch ID: **29362** Analysis Date: **8/17/2020** SeqNo: **1228673**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Manganese	503	2.00	500.0	1.643	100	70	130	501.0	0.321	30	

Work Order: 2008153
CLIENT: Floyd | Snider
Project: POL-TPH

QC SUMMARY REPORT

Dissolved Gases by RSK-175

Sample ID: **MB-R61228**	SampType: **MBLK**	Units: **mg/L**	Prep Date: **8/17/2020**	RunNo: **61228**
Client ID: **MBLKW**	Batch ID: **R61228**		Analysis Date: **8/17/2020**	SeqNo: **1228109**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00863									

Sample ID: **LCS-R61228**	SampType: **LCS**	Units: **mg/L**	Prep Date: **8/17/2020**	RunNo: **61228**
Client ID: **LCSW**	Batch ID: **R61228**		Analysis Date: **8/17/2020**	SeqNo: **1228108**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	1,120	0.00863	1,000	0	112	70	130				

Sample ID: **2008153-015BREP**	SampType: **REP**	Units: **mg/L**	Prep Date: **8/17/2020**	RunNo: **61228**
Client ID: **MW-24-081120**	Batch ID: **R61228**		Analysis Date: **8/17/2020**	SeqNo: **1228101**

Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane	ND	0.00863						0		30	

Sample Log-In Check List

Client Name:	**FS**	Work Order Number:	**2008153**
Logged by:	**Gabrielle Coeuille**	Date Received:	**8/12/2020 5:56:00 AM**

Chain of Custody

1.	Is Chain of Custody complete?	Yes ☑	No ☐	Not Present ☐
2.	How was the sample delivered?	Client		

Log In

3.	Coolers are present?	Yes ☑	No ☐	NA ☐
4.	Shipping container/cooler in good condition?	Yes ☑	No ☐	
5.	Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)	Yes ☑	No ☐	Not Present ☐
6.	Was an attempt made to cool the samples?	Yes ☑	No ☐	NA ☐
7.	Were all items received at a temperature of >2°C to 6°C *	Yes ☑	No ☐	NA ☐
8.	Sample(s) in proper container(s)?	Yes ☑	No ☐	
9.	Sufficient sample volume for indicated test(s)?	Yes ☑	No ☐	
10.	Are samples properly preserved?	Yes ☑	No ☐	
11.	Was preservative added to bottles?	Yes ☐	No ☑	NA ☐
12.	Is there headspace in the VOA vials?	Yes ☐	No ☑	NA ☐
13.	Did all samples containers arrive in good condition(unbroken)?	Yes ☑	No ☐	
14.	Does paperwork match bottle labels?	Yes ☑	No ☐	
15.	Are matrices correctly identified on Chain of Custody?	Yes ☑	No ☐	
16.	Is it clear what analyses were requested?	Yes ☑	No ☐	
17.	Were all holding times able to be met?	Yes ☑	No ☐	

Special Handling (if applicable)

18.	Was client notified of all discrepancies with this order?	Yes ☐	No ☐	NA ☑

Person Notified:		Date:	
By Whom:		Via:	☐ eMail ☐ Phone ☐ Fax ☐ In Person
Regarding:			
Client Instructions:			

19. Additional remarks:

Item Information

Item #	Temp ºC
Sample 1	2.4
Temp Blank 1	1.6

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Chain of Custody Record & Laboratory Services Agreement

Date: 8/10/20 Page: 1 of: 2

Laboratory Project No (internal): 2008153

Project Name: POL - TPH

Special Remarks: Lab Filter samples For Dissolved Manganese

Client: Floyd Snider

Project No:

Address: 601 Union St, Ste 600

Collected by: P.O., G.C., A.J + T.S

City, State, Zip: Seattle, WA 98101

Location: Longview, WA

Telephone: 206-292-2078

Report To (PM): Gabe Cisneros

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email: gabe.cisneros@floydsnider.com

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 524)	GX/BTEX	~~NWTPH-Dx~~ Manganese 200.8	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 / 200.8) Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	Methane RSK-175	Nitrate as N 300.0	Sulfate 300.0	Total Alkalinity SM 2320B	Comments
1 MW-10-081020	8/10/20	17:17	GW			X										X	X	X	X	
2 MW-3-081020		17:38	GW			X										X	X	X	X	
3 MW-19-081020		16:50	GW			X										X	X	X	X	
4 MW-35-081020		16:43	GW			X										X	X	X	X	
5 MW-22-081120	8/11/20	0814	GW			X										X	X	X	X	
6 MW-122-081120		0821	GW			X										X	X	X	X	
7 MW-30-081120		0921	GW			X										X	X	X	X	
8 MW-25-081120		1203	GW			X										X	X	X	X	
9 MW-12-081120		1310	GW			X										X	X	X	X	
10 MW-14-081120		1346	GW			X										X	X	X	X	

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg Mn Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): (Nitrate) Nitrite Chloride (Sulfate) Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x [signature]	8/11/20 0652	[signature]	8/12/20 5:56A
Relinquished x	Date/Time	Received x	Date/Time

Turn-around Time:

- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day _____ (specify)

Chain of Custody Record & Laboratory Services Agreement

Fremont Analytical
3600 Fremont Ave N.
Seattle, WA 98103
Tel: 206-352-3790
Fax: 206-352-7178

Date: 8/10/20 Page: 2 of: 2

Project Name: POL - TPH

Laboratory Project No (internal): 2008153

Special Remarks: Lab filter Samples for dissolved manganese

Client: Floyd Snider

Project No:

Address:

Collected by:

City, State, Zip: see page 1

Location: see page 1

Telephone:

Report To (PM):

Sample Disposal: ☐ Return to client ☒ Disposal by lab (after 30 days)

Fax:

PM Email:

Sample Name	Sample Date	Sample Time	Sample Type (Matrix)*	VOCs (EPA 8260 / 624)	GX/BTEX	BTEX	Gasoline Range Organics (GX)	Hydrocarbon Identification (HCID)	Diesel/Heavy Oil Range Organics (DX)	SVOCs (EPA 8270 / 625)	PAHs (EPA 8270 - SIM)	PCBs (EPA 8082 / 608)	Metals** (EPA 6020 (200.8))	Total (T) | Dissolved (D)	Anions (IC)***	EDB (8011)	Methane, ESK-175	Total Alkalinity SM2320B	Comments
1 MW-29-081120	8/11/20	0929	GW										X	D	X		X	X	
2 ~~MW-30-081120~~		~~0921~~	P.O.												~~X~~ P.O.				
3 MW-18-081120		1004	GW										X	D	X		X	X	
4 MW-23-081120		0826	GW										X	D	X		X	X	
5 MW-17-081120		1225	GW										X	D	X		X	X	
6 MW-24-081120		0841	GW										X	D	X		X	X	
7																			
8																			
9																			
10																			

*Matrix: A = Air, AQ = Aqueous, B = Bulk, O = Other, P = Product, S = Soil, SD = Sediment, SL = Solid, W = Water, DW = Drinking Water, GW = Ground Water, SW = Storm Water, WW = Waste Water

**Metals (Circle): MTCA-5 RCRA-8 Priority Pollutants TAL *Individual:* Ag Al As B Ba Be Ca Cd Co Cr Cu Fe Hg K Mg (Mn) Mo Na Ni Pb Sb Se Sr Sn Ti Tl U V Zn

***Anions (Circle): (Nitrate) Nitrite Chloride (Sulfate) Bromide O-Phosphate Fluoride Nitrate+Nitrite

I represent that I am authorized to enter into this Agreement with Fremont Analytical on behalf of the Client named above and that I have verified Client's agreement to each of the terms on the front and backside of this Agreement.

Relinquished	Date/Time	Received	Date/Time
x	8/11/20 0657	x	8/12/20 5:56 A
Relinquished	Date/Time	Received	Date/Time
x		x	

Turn-around Time:
- ☒ Standard
- ☐ 3 Day
- ☐ 2 Day
- ☐ Next Day
- Same Day ____ (specify)

Port of Longview TPH Site

Interim Data Report

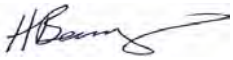
Appendix F
Soil Parameter Laboratory Data

Harold L Benny & Associates, LLC

Project:	Port of Longview	**Date Received:**	March 17, 2020
Project #:	2020-020	**Date Tested:**	March 18-25, 2020
Client :	PanGEO, Inc.	**Tested By:**	Harold Benny

CASE NARRATIVE

1. Samples were submitted for analysis on March 17, 2020. Three samples were submitted for archival. The remaining nine samples were submitted for grain size distribution by mechanical analysis according to ASTM D6913, Bulk Density by ASTM E1109, and specific gravity by ASTM D854. From the bulk density and the specific gravity, the porosity was to be calculated. ASTM E1109 is a method used for calculating the density of a waste stream by packing the soil into a mold to minimize void space. For this project, since no particles were found larger than #4 screen, a plexiglass, smaller mold (approximately 2.5 inches in height and 1.75 inches in diameter) was used to determine the bulk density.
2. For the specific gravity values, ASTM D854 was used. Three samples had a higher than expected specific gravity and were re-tested. Two of the three values did not change significantly and the original value was used. These were dark silty sands and the color may have been from Basaltic rocks, which typically have a lot of iron in them. The third value changed significantly and the new value was used in the calculation of porosity.
3. The samples were either dark brown or brown in color. The samples ranged from Silty Sands to Silt/Clay.
4. Many of the samples had small pieces of woody debris in them which probably affected the specific gravity numbers.
5. During the sieving process, a few sieve fractions, notably the #60 and the #100 sieves, needed to be hand sieved to ensure that all finer particles passed through the appropriate sieve.
6. The data is provided in a summary tables and plots.
7. There were no other noted anomalies in the samples or testing for this project.

Reviewed by: 

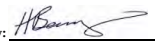
Harold L Benny & Associates, LLC

Project: Port of Longview
Project #: 2020-020
Date Received: March 17, 2020
Date Tested: March 18, 2020

Client: Floyd - Snider
Tested by: Harold Benny

Percent Finer Than Indicated Size, By ASTM D6913

Sample ID	3/4"	1/2"	3/8"	#4	#10	#20	#40	#60	#100	#140	#200
MW-33, 7.5-9	100.0	100.0	100.0	99.5	99.0	98.0	95.2	81.3	48.0	28.1	14.2
MW-33, 10-11	100.0	100.0	100.0	100.0	99.9	99.5	98.7	97.7	93.7	85.5	73.7
MW-33, 13-15	100.0	100.0	100.0	98.5	98.0	96.4	86.8	65.4	36.3	22.3	12.5
MW-33, 17.5-19	100.0	100.0	100.0	100.0	99.8	98.8	97.3	95.5	93.1	90.4	86.0
MW-33, 21-23	100.0	100.0	100.0	99.6	99.1	92.0	43.6	12.2	4.9	3.5	2.5
MW-34, 12-13	100.0	100.0	100.0	100.0	99.4	96.5	82.3	54.0	29.8	18.6	11.1
MW-34, 14-16	100.0	100.0	100.0	100.0	99.5	98.7	97.5	95.7	80.9	57.3	35.0
MW-34, 18-20	100.0	100.0	100.0	100.0	100.0	100.0	99.9	99.6	95.5	83.3	64.2
MW-34, 20.5-21.5	100.0	100.0	100.0	100.0	100.0	99.8	98.3	94.9	92.5	90.5	88.0

Reviewed by: 

Harold L Benny & Associates, LLC

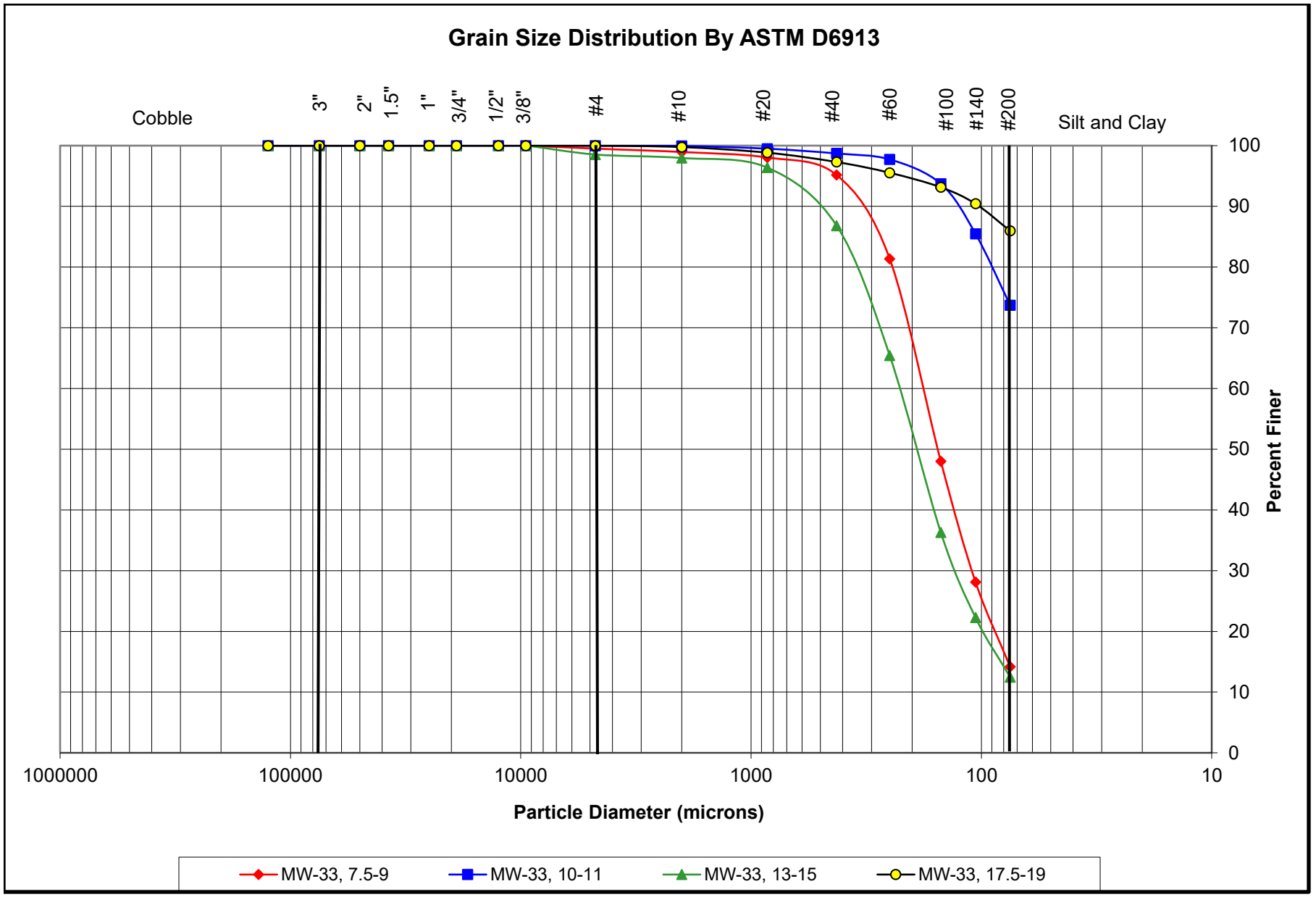
Project: Port of Longview
Project #: 2020-020
Date Received: March 17, 2020
Date Tested: March 18, 2020

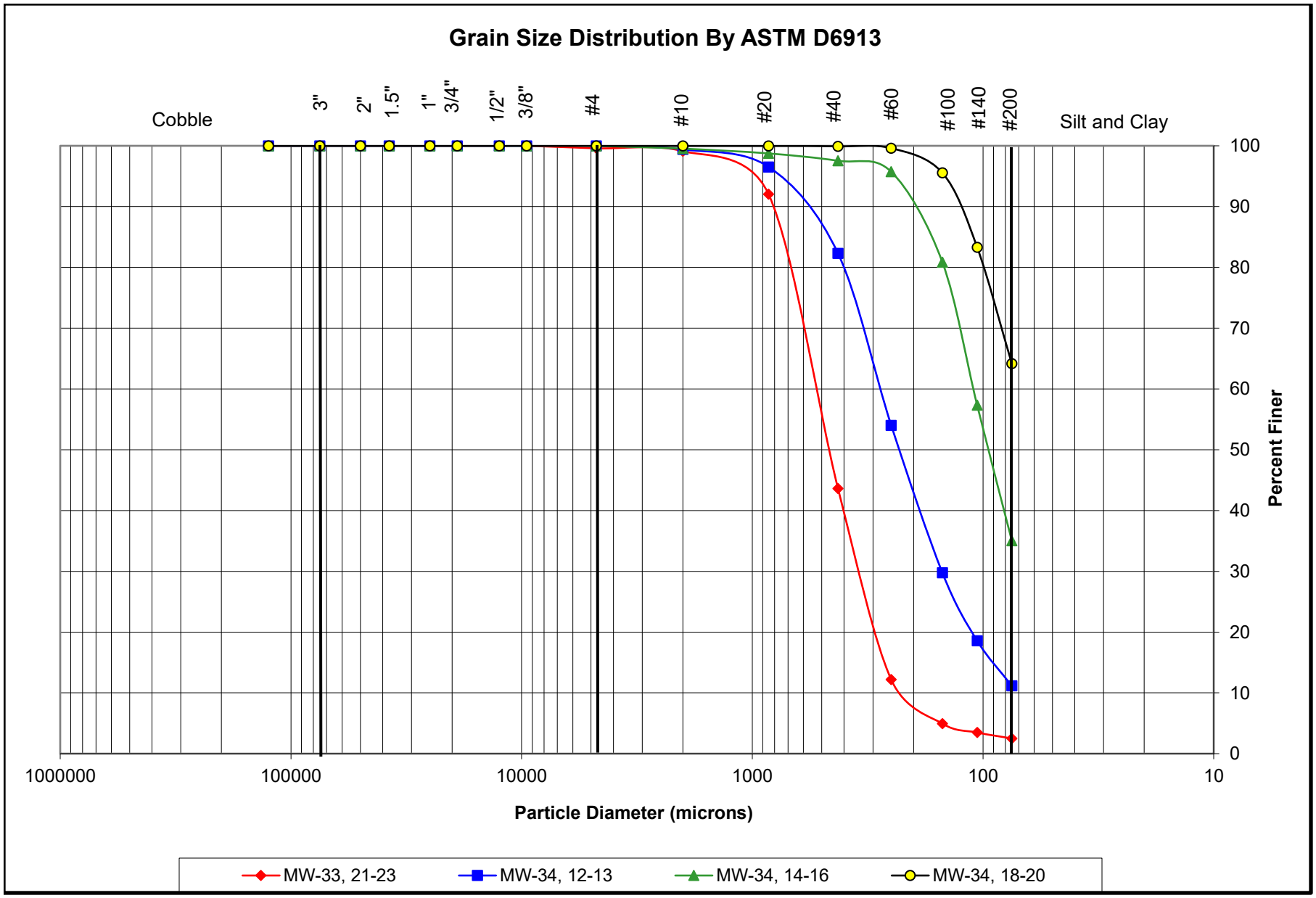
Client: Floyd - Snider
Tested by: Harold Benny

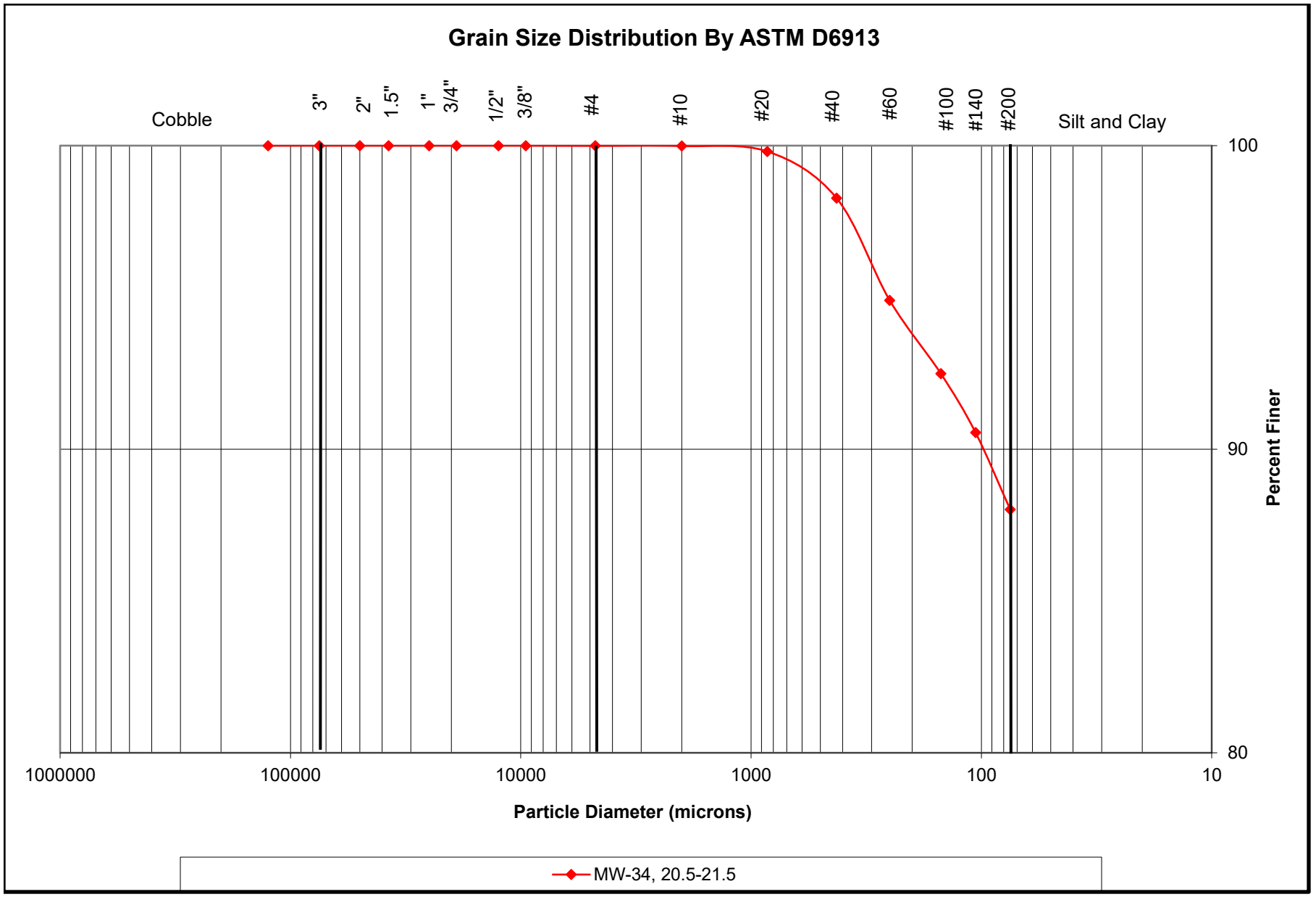
Percent Retained in Each Size Fraction, By ASTM D6913

Sieve Size (microns)	3/4-1/2"	1/2-3/8"	3/8-#4	4750-2000	2000-850	850-425	425-250	250-150	150-106	106-75	< 75
MW-33, 7.5-9	0.0	0.0	0.5	0.6	0.9	2.9	13.8	33.4	19.9	14.0	14.2
MW-33, 10-11	0.0	0.0	0.0	0.1	0.4	0.8	1.0	4.0	8.2	11.7	73.7
MW-33, 13-15	0.0	0.0	1.5	0.6	1.6	9.6	21.4	29.1	14.0	9.8	12.5
MW-33, 17.5-19	0.0	0.0	0.0	0.2	0.9	1.5	1.8	2.4	2.7	4.5	86.0
MW-33, 21-23	0.0	0.0	0.4	0.5	7.1	48.4	31.4	7.2	1.5	1.0	2.5
MW-34, 12-13	0.0	0.0	0.0	0.6	2.9	14.2	28.3	24.3	11.2	7.4	11.1
MW-34, 14-16	0.0	0.0	0.0	0.4	0.8	1.2	1.8	14.9	23.5	22.3	35.0
MW-34, 18-20	0.0	0.0	0.0	0.0	0.0	0.1	0.3	4.1	12.2	19.1	64.2
MW-34, 20.5-21.5	0.0	0.0	0.0	0.0	0.2	1.5	3.4	2.4	1.9	2.5	88.0

Reviewed by: HBenny


Grain Size Distribution By ASTM D6913
Cobble
3"
2"
1.5"
1"
3/4"
1/2"
3/8"
#4
#10
#20
#40
#60
#100
#140
#200
Silt and Clay
100
90
80
70
60
50
40
30
20
10
0
Percent Finer
1000000
100000
10000
1000
100
10
Particle Diameter (microns)
MW-33, 7.5-9
MW-33, 10-11
MW-33, 13-15
MW-33, 17.5-19


Grain Size Distribution By ASTM D6913
Cobble
3"
2"
1.5"
1"
3/4"
1/2"
3/8"
#4
#10
#20
#40
#60
#100
#140
#200
Silt and Clay
100
90
80
70
60
50
40
30
20
10
0
Percent Finer
1000000
100000
10000
1000
100
10
Particle Diameter (microns)
MW-33, 21-23
MW-34, 12-13
MW-34, 14-16
MW-34, 18-20


Grain Size Distribution By ASTM D6913
Cobble
3"
2"
1.5"
1"
3/4"
1/2"
3/8"
#4
#10
#20
#40
#60
#100
#140
#200
Silt and Clay
100
90
80
Percent Finer
1000000
100000
10000
1000
100
10
Particle Diameter (microns)
MW-34, 20.5-21.5

Harold L Benny & Associates, LLC

Project: Port of Longview
Project #: 2020-020
Date Received: March 17, 2020
Date Tested: March 18-25, 2020

Client: PanGEO, Inc.
Tested by: Harold Benny

Sample Parameters, ASTM E1109, D845

Sample ID	MW 33	MW 33	MW 33	MW 33	MW 33	MW 34	MW 34	MW 34	MW 34
Depth, ft	7.5-9	10-11	13-15	17.5-19	21-23	12-13	14-16	18-20	20.5-21.5
Sample Description	Dark Brown Silty Sand	Dark Brown Silt / Clay	Dark Brown Silty Sand	Dark Brown Silt / Clay	Dark Brown Sand	Dark Brown Silty Sand	Brown Silty Fine Sand	Brown Silt / Clay	Brown Silt / Clay
Wet Density, pcf	114.7	130.3	115.4	96.3	113.8	113.5	104.4	112.0	106.8
Moisture Content, %	40.3	56.3	37.3	63.5	39.2	35.1	36.2	47.8	55.4
Dry Density, pcf	89.7	86.3	92.2	56.7	89.5	91.7	81.9	82.3	72.4
Specific Gravity	2.718	2.630	2.699	2.554	2.577	2.656	2.679	2.635	2.605
Porosity	0.471	0.583	0.454	0.647	0.445	0.448	0.511	0.501	0.555

Reviewed by: HBenny

Port of Longview TPH Site

Interim Data Report

Appendix G
MTCA Method B and C
Calculation Workbooks

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/05/20
Site Name: POL-TPH
Sample Name: MW-39-13-14

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	7.575	0.04%
AL_EC >6-8	33.1	0.19%
AL_EC >8-10	199	1.13%
AL_EC >10-12	888	5.05%
AL_EC >12-16	4300	24.44%
AL_EC >16-21	4570	25.98%
AL_EC >21-34	629	3.58%
AR_EC >8-10	54.125	0.31%
AR_EC >10-12	500.5	2.84%
AR_EC >12-16	2680	15.23%
AR_EC >16-21	3290	18.70%
AR_EC >21-34	408.929	2.32%
Benzene	0	0.00%
Toluene	3.075	0.02%
Ethylbenzene	3.075	0.02%
Total Xylenes	5.7	0.03%
Naphthalene	21.5	0.12%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0.125	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.025	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0.071	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	17593.8	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Half detection limits were used for toluene, ethylbenzene, xylenes and benzo(a)anthracene.

The following constituents have never been detected within this area; therefore, zero was entered: benzene, EDB, EDC, some cPAHs.

No lab data for 1- and 2-Methylnaphthalenes available.

Laboratory values were used for porosity and fraction organic carbon from similar soil descriptions from the Site. The average porosity was used for site-specfic measurements for similar soil type at the depth where the sample was collected. The average TOC was used.

Default values were used for volumetric water content and soil bulk density.

The default value of 1 was used for the dilution factor.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.466	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.166	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.0403	Unitless
Dilution Factor:	1	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	800	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/5/2020
Site Name: POL-TPH
Sample Name: MW-39-13-14
Measured Soil TPH Concentration, mg/kg: **17,593.800**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,664	3.10E-08	6.61E+00	Fail
	Method C	33,638	7.69E-09	5.23E-01	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	277	1.05E-10	8.37E+00	Fail
	Target TPH GW Conc. @ 800 ug/L	639	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,663.61**	**33,638.47**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.66E+03	4.69E-09	1.00E+00	YES	3.36E+04	1.47E-08	1.00E+00
Total Risk=1E-5	*NO*	5.68E+06	1.00E-05	2.13E+03	*NO*	2.29E+07	1.00E-05	6.80E+02
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	*NO*	5.68E+05	1.00E-06	2.13E+02				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**412.46**
Protective Soil Concentration, mg/kg	**277.09**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	4.12E+02	2.12E-10	1.00E+00	2.77E+02
Total Risk = 1E-5	*NO*	3.08E+03	1.02E-10	9.41E+00	100% NAPL
Total Risk = 1E-6	*NO*	3.08E+03	1.02E-10	9.41E+00	100% NAPL
Risk of cPAHs mixture= 1E-5	*NO*	3.08E+03	1.02E-10	9.41E+00	100% NAPL
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 96000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	8.00E+02	1.73E-10	2.00E+00	**6.39E+02**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/05/20
Site Name: POL-TPH
Sample Name: OIP-20-11-11.5

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0.72	0.08%
AL_EC >6-8	25.8	2.84%
AL_EC >8-10	71.3	7.86%
AL_EC >10-12	119	13.11%
AL_EC >12-16	31.8	3.50%
AL_EC >16-21	7.05	0.78%
AL_EC >21-34	7.05	0.78%
AR_EC >8-10	49.586	5.46%
AR_EC >10-12	263.5	29.03%
AR_EC >12-16	279	30.74%
AR_EC >16-21	20.1	2.21%
AR_EC >21-34	20.1	2.21%
Benzene	0	0.00%
Toluene	0.73	0.08%
Ethylbenzene	0.338	0.04%
Total Xylenes	0.876	0.10%
Naphthalene	10.5	1.16%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0.125	0.01%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.005	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0.005	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	907.585	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Half detection limits were used for AL_EC >5-6, AL_EC >16-21, AL_EC >21-34, ethylbenzene, hexane, benzo(a)anthracene, and chrysene.

The following constituents have never been detected within this area; therefore, zero was entered: benzene, EDB, EDC, some cPAHs.

No lab data for 1- and 2-Methylnaphthalenes available.

Laboratory values were used for porosity and fraction organic carbon from similar soil descriptions from the Site. The average porosity was used for site-specfic measurements for similar soil type at the depth where the sample was collected. The average TOC was used.

Default values were used for volumetric water content and soil bulk density.

Sample collected above groundwater and thick silt layer; therefore, the default value of 20 was used for the dilution factor.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.559	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.259	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.0403	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	800	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/5/2020
Site Name: POL-TPH
Sample Name: OIP-20-11-11.5
Measured Soil TPH Concentration, mg/kg: **907.585**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,157	5.31E-09	4.21E-01	Pass
	Method C	34,696	1.32E-09	2.62E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	909	6.31E-11	9.99E-01	Pass
	Target TPH GW Conc. @ 800 ug/L	100% NAPL	NA	NA	Pass

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,157.29**	**34,695.92**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.16E+03	1.26E-08	1.00E+00	YES	3.47E+04	5.04E-08	1.00E+00
Total Risk=1E-5	*NO*	1.71E+06	1.00E-05	7.93E+02	*NO*	6.89E+06	1.00E-05	1.99E+02
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	*NO*	1.71E+05	1.00E-06	7.93E+01				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**260.25**
Protective Soil Concentration, mg/kg	**908.75**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	2.60E+02	6.31E-11	1.00E+00	9.09E+02
Total Risk = 1E-5	*NO*	7.72E+02	1.39E-11	3.04E+00	100% NAPL
Total Risk = 1E-6	*NO*	7.72E+02	1.39E-11	3.04E+00	100% NAPL
Risk of cPAHs mixture= 1E-5	*NO*	7.72E+02	1.39E-11	3.04E+00	100% NAPL
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 152000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	7.72E+02	1.39E-11	3.04E+00	**100% NAPL**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/05/20
Site Name: POL-TPH
Sample Name: OIP-23-14-15

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	8.325	0.07%
AL_EC >6-8	12.05	0.10%
AL_EC >8-10	137	1.17%
AL_EC >10-12	629	5.39%
AL_EC >12-16	2910	24.93%
AL_EC >16-21	3110	26.64%
AL_EC >21-34	467	4.00%
AR_EC >8-10	24.775	0.21%
AR_EC >10-12	436.1	3.74%
AR_EC >12-16	909	7.79%
AR_EC >16-21	2660	22.79%
AR_EC >21-34	320.917	2.75%
Benzene	0	0.00%
Toluene	3.375	0.03%
Ethylbenzene	3.375	0.03%
Total Xylenes	6.25	0.05%
Naphthalene	36.9	0.32%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0.125	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.025	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0.058	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	11674.275	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Half detection limits were used for toluene, ethylbenzene, xylenes, hexane, and benzo(a)anthracene.

The following constituents have never been detected within this area; therefore, zero was entered: benzene, EDB, EDC, some cPAHs.

No lab data for 1- and 2-Methylnaphthalenes available.

Laboratory values were used for porosity and fraction organic carbon from similar soil descriptions from the Site. The average porosity was used for site-specfic measurements for similar soil type at the depth where the sample was collected. The average TOC was used.

Default values were used for volumetric water content and soil bulk density.

The default value of 1 was used for the dilution factor.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.466	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.166	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.0403	Unitless
Dilution Factor:	1	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: 800 ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/5/2020
Site Name: POL-TPH
Sample Name: OIP-23-14-15
Measured Soil TPH Concentration, mg/kg: **11,674.275**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,584	2.97E-08	4.52E+00	Fail
	Method C	32,840	7.38E-09	3.56E-01	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	242	1.61E-10	9.63E+00	Fail
	Target TPH GW Conc. @ 800 ug/L	755	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,584.08**	**32,840.43**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.58E+03	6.58E-09	1.00E+00	YES	3.28E+04	2.08E-08	1.00E+00
Total Risk=1E-5	*NO*	3.93E+06	1.00E-05	1.52E+03	*NO*	1.58E+07	1.00E-05	4.82E+02
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	*NO*	3.93E+05	1.00E-06	1.52E+02				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**329.65**
Protective Soil Concentration, mg/kg	**241.73**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	3.30E+02	2.85E-10	1.00E+00	2.42E+02
Total Risk = 1E-5	*NO*	3.16E+03	1.55E-10	1.18E+01	100% NAPL
Total Risk = 1E-6	*NO*	3.16E+03	1.55E-10	1.18E+01	100% NAPL
Risk of cPAHs mixture= 1E-5	*NO*	3.16E+03	1.55E-10	1.18E+01	100% NAPL
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 96000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	8.00E+02	2.31E-10	2.57E+00	**7.55E+02**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/05/20
Site Name: POL-TPH
Sample Name: OIP-30-20-21

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0.78	0.01%
AL_EC >6-8	6.23	0.06%
AL_EC >8-10	32.8	0.34%
AL_EC >10-12	154	1.58%
AL_EC >12-16	1250	12.80%
AL_EC >16-21	1680	17.20%
AL_EC >21-34	1960	20.07%
AR_EC >8-10	17.2855	0.18%
AR_EC >10-12	48.07	0.49%
AR_EC >12-16	527	5.40%
AR_EC >16-21	1730	17.71%
AR_EC >21-34	2320	23.76%
Benzene	0	0.00%
Toluene	0.3115	0.00%
Ethylbenzene	0.3115	0.00%
Total Xylenes	0.703	0.01%
Naphthalene	8.03	0.08%
1-Methyl Naphthalene	13	0.13%
2-Methyl Naphthalene	15	0.15%
n-Hexane	0	0.00%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.05	0.00%
Benzo(b)fluoranthene	0.24	0.00%
Benzo(k)fluoranthene	0.05	0.00%
Benzo(a)pyrene	0.4	0.00%
Chrysene	2	0.02%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0.05	0.00%
Sum	9766.3115	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Half detection limits were used for toluene, ethylbenzene, benzo(a)anthracene, benzo(k)fluoranthracene, and indeno(1,2,3-cd)pyrene.

The following constituents have never been detected within this area; therefore, zero was entered: benzene,MTBE, n-hexane, EDB, EDC,and DiBenz(a,h)anthracene.

Laboratory values were used for porosity from similar soil descriptions from the Site. The average porosity was used for site-specfic measurements for similar soil type at the depth where the sample was collected.

Default values were used for TOC, volumetric water content, and soil bulk density.

The default value of 1 was used for the dilution factor to be conservative.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.559	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.259	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.001	Unitless
Dilution Factor:	1	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	800	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/5/2020
Site Name: POL-TPH
Sample Name: OIP-30-20-21
Measured Soil TPH Concentration, mg/kg: **9,766.312**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,206	4.43E-06	3.23E+00	Fail
	Method C	37,085	1.10E-06	2.63E-01	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protection	20	6.15E-09	4.94E+00	Fail
	Target TPH GW Conc. @ 800 ug/L	122	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,205.86**	**37,084.78**
Most Stringent Criterion	**Risk of cPAHs mixture= 1E-6**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	*NO*	3.02E+03	1.37E-06	1.00E+00	YES	3.71E+04	4.17E-06	1.00E+00
Total Risk=1E-5	*NO*	2.21E+04	1.00E-05	7.30E+00	*NO*	8.88E+04	1.00E-05	2.40E+00
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	YES	2.21E+03	1.00E-06	7.30E-01				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**343.58**
Protective Soil Concentration, mg/kg	**20.32**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	3.44E+02	7.96E-09	1.00E+00	2.03E+01
Total Risk = 1E-5	*NO*	1.31E+03	6.14E-09	4.99E+00	100% NAPL
Total Risk = 1E-6	*NO*	1.31E+03	6.14E-09	4.99E+00	100% NAPL
Risk of cPAHs mixture= 1E-5	*NO*	1.31E+03	6.14E-09	4.99E+00	100% NAPL
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	NA	NA	NA	NA	NA

Note: 100% NAPL is 161000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	8.00E+02	6.58E-09	2.79E+00	**1.22E+02**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/05/20
Site Name: POL-TPH
Sample Name: OIP-42-17-17.5

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	238	1.41%
AL_EC >6-8	597	3.53%
AL_EC >8-10	915	5.41%
AL_EC >10-12	1330	7.86%
AL_EC >12-16	4090	24.17%
AL_EC >16-21	3540	20.92%
AL_EC >21-34	992	5.86%
AR_EC >8-10	152.2	0.90%
AR_EC >10-12	512.8	3.03%
AR_EC >12-16	1240	7.33%
AR_EC >16-21	2620	15.48%
AR_EC >21-34	502.47	2.97%
Benzene	2.4	0.01%
Toluene	0.99	0.01%
Ethylbenzene	42.7	0.25%
Total Xylenes	4.1	0.02%
Naphthalene	23.2	0.14%
1-Methyl Naphthalene	41	0.24%
2-Methyl Naphthalene	29	0.17%
n-Hexane	45	0.27%
MTBE	3.385	0.02%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0.13	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0.4	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	16921.775	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Half detection limits were used for Toluene, Xylenes.

The following constituents have never been detected within this area; therefore, zero was entered: EDB, EDC, cPAHs, some cPAHs.

Laboratory values were used for Site-Specific porosity and fraction organic carbon. Average values were used from similar soil types at the depth the sample was collected.

Default values were used for volumetric water content and soil bulk density.

Although the sample was collected above groundwater, the default value of 1 was used for the dilution factor to be conservative.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.466	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.166	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.0403	Unitless
Dilution Factor:	1	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	800	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/5/2020
Site Name: POL-TPH
Sample Name: OIP-42-17-17.5
Measured Soil TPH Concentration, mg/kg: **16,921.775**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,698	2.96E-07	6.27E+00	Fail
	Method C	35,814	5.84E-08	4.72E-01	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	64	4.57E-04	2.21E+01	Fail
	Target TPH GW Conc. @ 800 ug/L	333	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,697.69**	**35,814.06**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.70E+03	4.72E-08	1.00E+00	YES	3.58E+04	1.24E-07	1.00E+00
Total Risk=1E-5	*NO*	5.71E+05	1.00E-05	2.12E+02	*NO*	2.90E+06	1.00E-05	8.09E+01
Risk of Benzene= 1E-6	*NO*	1.28E+05	2.24E-06	4.75E+01	NA			
Risk of cPAHs mixture= 1E-6	*NO*	1.03E+05	1.81E-06	3.83E+01				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**MTBE = 20 ug/L**
Protective Ground Water Concentration, ug/L	**159.68**
Protective Soil Concentration, mg/kg	**64.12**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	4.14E+02	1.09E-05	1.00E+00	1.67E+02
Total Risk = 1E-5	*NO*	3.79E+02	1.00E-05	9.16E-01	1.53E+02
Total Risk = 1E-6	YES	3.81E+01	1.00E-06	9.20E-02	1.53E+01
Risk of cPAHs mixture= 1E-5	*NO*	1.79E+04	6.66E-04	2.86E+01	100% NAPL
Benzene MCL = 5 ug/L	*NO*	2.39E+02	6.29E-06	5.77E-01	9.61E+01
MTBE = 20 ug/L	YES	1.60E+02	4.20E-06	3.86E-01	6.41E+01

Note: 100% NAPL is 92000 mg/kg TPH.

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	8.00E+02	2.17E-05	1.94E+00	**3.33E+02**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/05/20
Site Name: POL-TPH
Sample Name: OIP-47-11-12

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	244	5.40%
AL_EC >6-8	827	18.29%
AL_EC >8-10	332	7.34%
AL_EC >10-12	465	10.28%
AL_EC >12-16	6.65	0.15%
AL_EC >16-21	6.65	0.15%
AL_EC >21-34	6.65	0.15%
AR_EC >8-10	302	6.68%
AR_EC >10-12	1009	22.31%
AR_EC >12-16	1230	27.20%
AR_EC >16-21	6.65	0.15%
AR_EC >21-34	6.65	0.15%
Benzene		0.00%
Toluene		0.00%
Ethylbenzene		0.00%
Total Xylenes		0.00%
Naphthalene	41	0.91%
1-Methyl Naphthalene		0.00%
2-Methyl Naphthalene		0.00%
n-Hexane	23	0.51%
MTBE	15.8	0.35%
Ethylene Dibromide (EDB)		0.00%
1,2 Dichloroethane (EDC)		0.00%
Benzo(a)anthracene		0.00%
Benzo(b)fluoranthene		0.00%
Benzo(k)fluoranthene		0.00%
Benzo(a)pyrene		0.00%
Chrysene		0.00%
Dibenz(a,h)anthracene		0.00%
Indeno(1,2,3-cd)pyrene		0.00%
Sum	4522.05	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Half detection limits were used for AL_EC>12-16, AL_EC>16-21, AL_EC>21-34, AR_EC>16-21, AR_EC>21-34, toluene, ethylbenzene, and xylenes.

The following constituents have never been detected within this area; therefore, zero was entered: EDB, EDC, cPAHs.

No lab data for 1- and 2-Methylnaphthalenes available.

Laboratory values were used for Site-Specific porosity and fraction organic carbon. Average values were used from similar soil types at the depth the sample was collected.

Default values were used for volumetric water content and soil bulk density.

Sample was collected above the groundwater table; therefore the default value of 20 was used for the dilution factor.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.466	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.166	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.0403	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: 800 ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/5/2020
Site Name: POL-TPH
Sample Name: OIP-47-11-12
Measured Soil TPH Concentration, mg/kg: **4,522.050**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,854	0.00E+00	1.58E+00	Fail
	Method C	47,031	0.00E+00	9.61E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	73	0.00E+00	1.74E+00	Fail
	Target TPH GW Conc. @ 800 ug/L	1,345	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,854.00**	**47,031.14**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.85E+03	0.00E+00	1.00E+00	YES	4.70E+04	0.00E+00	9.99E-01
Total Risk=1E-5	NA	NA	NA	NA	NA	NA	NA	NA
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA		NA		
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**MTBE = 20 ug/L**
Protective Ground Water Concentration, ug/L	**47.65**
Protective Soil Concentration, mg/kg	**73.41**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	7.16E+02	0.00E+00	1.00E+00	1.16E+03
Total Risk = 1E-5	NA	NA	NA	NA	NA
Total Risk = 1E-6	NA	NA	NA	NA	NA
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	YES	4.76E+01	0.00E+00	6.79E-02	7.34E+01

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	8.00E+02	0.00E+00	1.10E+00	**1.35E+03**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/05/20
Site Name: POL-TPH
Sample Name: OIP-47-17

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis	Composition Ratio
	mg/kg	%
Petroleum EC Fraction		
AL_EC >5-6	7.24	0.56%
AL_EC >6-8	106	8.25%
AL_EC >8-10	100	7.79%
AL_EC >10-12	111	8.64%
AL_EC >12-16		0.00%
AL_EC >16-21		0.00%
AL_EC >21-34		0.00%
AR_EC >8-10	114.44	8.91%
AR_EC >10-12	342.5	26.67%
AR_EC >12-16	422	32.86%
AR_EC >16-21	17.8	1.39%
AR_EC >21-34	27	2.10%
Benzene	0	0.00%
Toluene	0.734	0.06%
Ethylbenzene	12	0.93%
Total Xylenes	3.56	0.28%
Naphthalene	18.5	1.44%
1-Methyl Naphthalene		0.00%
2-Methyl Naphthalene		0.00%
n-Hexane	1.3	0.10%
MTBE	0.254	0.02%
Ethylene Dibromide (EDB)		0.00%
1,2 Dichloroethane (EDC)		0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	1284.328	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Half detection limits were used for MTBE.

The following constituents have never been detected within this area; therefore, zero was entered: AL_EC>12-16, AL_EC>16-21, AL_EC>21-34, EDB, EDC, cPAHs.

No lab data for 1- and 2-Methylnaphthalenes available.

Laboratory values were used for Site-Specific porosity and fraction organic carbon. Average values were used from similar soil types at the depth the sample was collected.

Default values were used for volumetric water content and soil bulk density.

The default value of 1 was used for the dilution factor to be conservative.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.466	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.166	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.0403	Unitless
Dilution Factor:	1	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	800	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/5/2020
Site Name: POL-TPH
Sample Name: OIP-47-17
Measured Soil TPH Concentration, mg/kg: **1,284.328**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,398	0.00E+00	5.36E-01	Pass
	Method C	38,621	0.00E+00	3.33E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	Use A2.2	0.00E+00	2.83E+01	Fail
	Target TPH GW Conc. @ 800 ug/L	94	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,398.06**	**38,621.44**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.40E+03	0.00E+00	1.00E+00	YES	3.86E+04	0.00E+00	1.00E+00
Total Risk=1E-5	NA	NA	NA	NA	NA	NA	NA	NA
Risk of Benzene= 1E-6	NA	NA	NA	NA	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA		NA		
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**350.81**
Protective Soil Concentration, mg/kg	**42.57**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	3.51E+02	0.00E+00	1.00E+00	4.26E+01
Total Risk = 1E-5	NA	NA	NA	NA	NA
Total Risk = 1E-6	NA	NA	NA	NA	NA
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	NA	NA	NA	NA	NA
MTBE = 20 ug/L	*NO*	5.53E+02	0.00E+00	1.57E+00	6.48E+01

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	8.00E+02	0.00E+00	2.27E+00	**9.38E+01**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/05/20
Site Name: POL-TPH
Sample Name: OIP-66-12-12.5

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	0	0.00%
AL_EC >6-8	36.2	2.15%
AL_EC >8-10	243	14.41%
AL_EC >10-12	198	11.74%
AL_EC >12-16	266	15.77%
AL_EC >16-21	199	11.80%
AL_EC >21-34	44.5	2.64%
AR_EC >8-10	54.53	3.23%
AR_EC >10-12	190.03	11.27%
AR_EC >12-16	168.4	9.99%
AR_EC >16-21	176	10.44%
AR_EC >21-34	93	5.52%
Benzene	0.223	0.01%
Toluene	0.12	0.01%
Ethylbenzene	0.7	0.04%
Total Xylenes	1.87	0.11%
Naphthalene	9.97	0.59%
1-Methyl Naphthalene	1.7	0.10%
2-Methyl Naphthalene	1.9	0.11%
n-Hexane	1.1	0.07%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	1686.243	100.00%

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.559	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.259	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.0403	Unitless
Dilution Factor:	20	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	800	ug/L

Notes for Data Entry | **Set Default Hydrogeology**

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Half detection limits were used for Benzene.

The following constituents have never been detected within this area; therefore, zero was entered: MTBE, EDB, EDC, cPAHs.

No lab data for 1- and 2-Methylnaphthalenes available.

Laboratory values were used for porosity and fraction organic carbon from similar soil descriptions from the Site. The average porosity was used for site-specfic measurements for similar soil type at the depth where the sample was collected. The average TOC was used

Default values were used for volumetric water content and soil bulk density.

The sample was collected above groundwater, the default value of 20 was used for the dilution factor to be conservative.

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/5/2020
Site Name: POL-TPH
Sample Name: OIP-66-12-12.5
Measured Soil TPH Concentration, mg/kg: **1,686.243**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,339	1.23E-08	7.21E-01	Pass
	Method C	34,553	1.64E-09	4.88E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	2,405	4.66E-06	7.33E-01	Pass
	Target TPH GW Conc. @ 800 ug/L	100% NAPL	NA	NA	Pass

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,338.87**	**34,552.53**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.34E+03	1.70E-08	1.00E+00	YES	3.46E+04	3.37E-08	1.00E+00
Total Risk=1E-5	*NO*	1.37E+06	1.00E-05	5.87E+02	*NO*	1.03E+07	1.00E-05	2.97E+02
Risk of Benzene= 1E-6	*NO*	1.37E+05	1.00E-06	5.87E+01	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Benzene MCL = 5 ug/L**
Protective Ground Water Concentration, ug/L	**204.40**
Protective Soil Concentration, mg/kg	**2404.64**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.22E+02	7.16E-06	1.00E+00	2.83E+03
Total Risk = 1E-5	*NO*	2.69E+02	1.00E-05	1.24E+00	4.44E+03
Total Risk = 1E-6	YES	4.71E+01	1.00E-06	1.93E-01	3.30E+02
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	YES	2.04E+02	6.29E-06	9.14E-01	2.40E+03
MTBE = 20 ug/L	NA	NA	NA	NA	NA

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	4.29E+02	2.92E-05	2.23E+00	**100% NAPL**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/05/20
Site Name: POL-TPH
Sample Name: OIP-67-11-12

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	16.93	0.13%
AL_EC >6-8	248	1.90%
AL_EC >8-10	544	4.16%
AL_EC >10-12	796	6.09%
AL_EC >12-16	1480	11.32%
AL_EC >16-21	1500	11.47%
AL_EC >21-34	330	2.52%
AR_EC >8-10	485.3	3.71%
AR_EC >10-12	1821.1	13.92%
AR_EC >12-16	4290	32.80%
AR_EC >16-21	1230	9.40%
AR_EC >21-34	253	1.93%
Benzene	5.9	0.05%
Toluene	5.65	0.04%
Ethylbenzene	6.9	0.05%
Total Xylenes	12.8	0.10%
Naphthalene	48.9	0.37%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	0.32	0.00%
MTBE	4.93	0.04%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	13079.73	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Half detection limits were used for Benzene, toluene, ethylbenzene.

The following constituents have never been detected within this area; therefore, zero was entered: EDB, EDC, cPAHs.

No lab data for 1- and 2-Methylnaphthalenes available.

Laboratory values were used for porosity and fraction organic carbon from similar soil descriptions from the Site. The average porosity was used for site-specfic measurements for similar soil type at the depth where the sample was collected. The average TOC was used.

Default values were used for volumetric water content and soil bulk density.

The sample was collected above groundwater; however, the default value of 1 was used for the dilution factor to be conservative.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.559	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.259	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.0403	Unitless
Dilution Factor:	1	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here: 800 ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/5/2020
Site Name: POL-TPH
Sample Name: OIP-67-11-12
Measured Soil TPH Concentration, mg/kg: **13,079.730**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,485	3.25E-07	5.27E+00	Fail
	Method C	34,814	4.35E-08	3.76E-01	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	30	1.25E-03	6.24E+01	Fail
	Target TPH GW Conc. @ 800 ug/L	161	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,484.93**	**34,814.31**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.48E+03	6.17E-08	1.00E+00	YES	3.48E+04	1.16E-07	1.00E+00
Total Risk=1E-5	*NO*	4.03E+05	1.00E-05	1.62E+02	*NO*	3.01E+06	1.00E-05	8.64E+01
Risk of Benzene= 1E-6	*NO*	4.03E+04	1.00E-06	1.62E+01	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**Benzene MCL = 5 ug/L**
Protective Ground Water Concentration, ug/L	**151.29**
Protective Soil Concentration, mg/kg	**30.35**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	*NO*	2.81E+02	1.17E-05	1.00E+00	5.64E+01
Total Risk = 1E-5	*NO*	2.41E+02	1.00E-05	8.55E-01	4.83E+01
Total Risk = 1E-6	YES	2.40E+01	1.00E-06	8.54E-02	4.83E+00
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	YES	1.51E+02	6.29E-06	5.38E-01	3.04E+01
MTBE = 20 ug/L	*NO*	1.70E+02	7.06E-06	6.04E-01	3.41E+01

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	8.00E+02	3.33E-05	2.84E+00	**1.61E+02**

A1 Soil Cleanup Levels: Worksheet for Soil Data Entry: Refer to WAC 173-340-720, 740,745, 747, 750

1. Enter Site Information

Date: 09/05/20
Site Name: POL-TPH
Sample Name: OIP-67-14.5-15

2. Enter Soil Concentration Measured

Chemical of Concern or Equivalent Carbon Group	Measured Soil Conc dry basis mg/kg	Composition Ratio %
Petroleum EC Fraction		
AL_EC >5-6	4.42	0.18%
AL_EC >6-8	119	4.76%
AL_EC >8-10	145	5.80%
AL_EC >10-12	234	9.37%
AL_EC >12-16	205	8.20%
AL_EC >16-21	231	9.25%
AL_EC >21-34	21.8	0.87%
AR_EC >8-10	113.52	4.54%
AR_EC >10-12	426.2	17.06%
AR_EC >12-16	776	31.06%
AR_EC >16-21	185	7.40%
AR_EC >21-34	19.3	0.77%
Benzene	0.334	0.01%
Toluene	0.779	0.03%
Ethylbenzene	1.88	0.08%
Total Xylenes	2.6	0.10%
Naphthalene	11.8	0.47%
1-Methyl Naphthalene	0	0.00%
2-Methyl Naphthalene	0	0.00%
n-Hexane	1	0.04%
MTBE	0	0.00%
Ethylene Dibromide (EDB)	0	0.00%
1,2 Dichloroethane (EDC)	0	0.00%
Benzo(a)anthracene	0	0.00%
Benzo(b)fluoranthene	0	0.00%
Benzo(k)fluoranthene	0	0.00%
Benzo(a)pyrene	0	0.00%
Chrysene	0	0.00%
Dibenz(a,h)anthracene	0	0.00%
Indeno(1,2,3-cd)pyrene	0	0.00%
Sum	2498.633	100.00%

Notes for Data Entry | Set Default Hydrogeology

Clear All Soil Concentration Data Entry Cells

Restore All Soil Concentration Data cleared previously

REMARK:
Half detection limits were used for benzene, toluene.

The following constituents have never been detected within this area; therefore, zero was entered: EDB, EDC, cPAHs.

No lab data for 1- and 2-Methylnaphthalenes available.

Laboratory values were used for porosity and fraction organic carbon from similar soil descriptions from the Site. The average porosity was used for site-specfic measurements for similar soil type at the depth where the sample was collected. The average TOC was used.

Default values were used for volumetric water content and soil bulk density.

The default value of 1 was used for the dilution factor to be conservative.

3. Enter Site-Specific Hydrogeological Data

Total soil porosity:	0.559	Unitless
Volumetric water content:	0.3	Unitless
Volumetric air content:	0.259	Unitless
Soil bulk density measured:	1.5	kg/L
Fraction Organic Carbon:	0.0403	Unitless
Dilution Factor:	1	Unitless

4. Target TPH Ground Water Concentation (if adjusted)

If you adjusted the target TPH ground water concentration, enter adjusted value here:	800	ug/L

A2 Soil Cleanup Levels: Calculation and Summary of Results. Refer to WAC 173-340-720, 740, 745, 747, 750

Site Information

Date: 9/5/2020
Site Name: POL-TPH
Sample Name: OIP-67-14.5-15
Measured Soil TPH Concentration, mg/kg: **2,498.633**

1. Summary of Calculation Results

Exposure Pathway	Method/Goal	Protective Soil TPH Conc, mg/kg	With Measured Soil Conc		Does Measured Soil Conc Pass or Fail?
			RISK @	HI @	
Protection of Soil Direct Contact: Human Health	Method B	2,470	1.84E-08	1.01E+00	Fail
	Method C	36,388	2.46E-09	6.87E-02	Pass
Protection of Method B Ground Water Quality (Leaching)	Potable GW: Human Health Protectior	62	1.33E-04	2.65E+01	Fail
	Target TPH GW Conc. @ 800 ug/L	165	NA	NA	Fail

Warning! Check to determine if a simplified or site-specific Terrestrial Ecological Evaluation may be required (Refer to WAC 173-340-7490 through ~7494).

Warning! Check Residual Saturation (WAC340-747(10)).

2. Results for Protection of Soil Direct Contact Pathway: Human Health

	Method B: Unrestricted Land Use	Method C: Industrial Land Use
Protective Soil Concentration, TPH mg/kg	**2,470.15**	**36,387.93**
Most Stringent Criterion	**HI =1**	**HI =1**

Soil Criteria	Protective Soil Concentration @Method B				Protective Soil Concentration @Method C			
	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @	Most Stringent?	TPH Conc, mg/kg	RISK @	HI @
HI =1	YES	2.47E+03	1.82E-08	1.00E+00	YES	3.64E+04	3.59E-08	1.00E+00
Total Risk=1E-5	*NO*	1.36E+06	1.00E-05	5.50E+02	*NO*	1.01E+07	1.00E-05	2.79E+02
Risk of Benzene= 1E-6	*NO*	1.36E+05	1.00E-06	5.50E+01	NA			
Risk of cPAHs mixture= 1E-6	NA	NA	NA	NA				
EDB	NA	NA	NA	NA				
EDC	NA	NA	NA	NA				

3. Results for Protection of Ground Water Quality (Leaching Pathway)

3.1. Protection of Potable Ground Water Quality (Method B): Human Health Protection

Most Stringent Criterion	**HI=1**
Protective Ground Water Concentration, ug/L	**298.33**
Protective Soil Concentration, mg/kg	**61.59**

Ground Water Criteria	Protective Potable Ground Water Concentration @Method B				Protective Soil Conc, mg/kg
	Most Stringent?	TPH Conc, ug/L	RISK @	HI @	
HI=1	YES	2.98E+02	3.78E-06	1.00E+00	6.16E+01
Total Risk = 1E-5	*NO*	7.89E+02	1.00E-05	2.64E+00	1.63E+02
Total Risk = 1E-6	YES	7.86E+01	1.00E-06	2.64E-01	1.63E+01
Risk of cPAHs mixture= 1E-5	NA	NA	NA	NA	NA
Benzene MCL = 5 ug/L	*NO*	4.96E+02	6.29E-06	1.66E+00	1.02E+02
MTBE = 20 ug/L	NA	NA	NA	NA	NA

3.2 Protection of Ground Water Quality for TPH Ground Water Concentration previously adjusted and entered

Ground Water Criteria	Protective Ground Water Concentration			Protective Soil Conc, mg/kg
	TPH Conc, ug/L	Risk @	HI @	
Target TPH GW Conc = 800 ug/L	8.00E+02	1.01E-05	2.68E+00	**1.65E+02**