

2020-2021 Annual Report

Former Kelly-Moore Manufacturing Facility 5400-5800 Airport Way South Seattle, Washington Facility/Site #2163 VCP #NW2305 Project # PS21204540

Prepared for:

Kelly-Moore Paint Company, Inc.

301 W Hurst Boulevard, Hurst, Texas 76053

March 25, 2022



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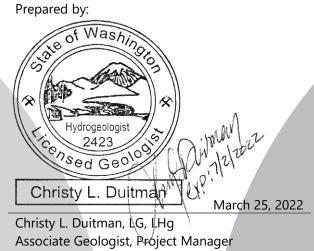
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March 25, 2022

This report was prepared by the staff of Wood Environment & Infrastructure Solutions, Inc., under the supervision of the Hydrogeologist whose seal and signature appear hereon.

The findings, recommendations, specifications, or professional opinions are presented within the limits described by the client, in accordance with generally accepted professional engineering and geologic practice. No warranty is expressed or implied.



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List of Acronyms and Abbreviations

µg/L	micrograms per liter
Amec Foster Wheeler	Amec Foster Wheeler Environment & Infrastructure, Inc.
BNSF	BNSF Railway Company
CATOX	catalytic oxidizer
Ecology	Washington Department of Ecology
EPA	U.S. Environmental Protection Agency
FID	flame ionization detector
Kelly-Moore	Kelly-Moore Paint Company, Inc.
MRE	destruction removal efficiency
MTCA	Model Toxics Control Act
NAVD88	North American Vertical Datum of 1988
O&M	operation and maintenance
PAHs	polycyclic aromatic hydrocarbons
PSCAA	Puget Sound Clean Air Agency
Site	former Kelly-Moore manufacturing facility located at 5400-5800 Airport Way South, Seattle, Washington
SVE	soil vapor extraction
ТРН	total petroleum hydrocarbons
TPH-D	total petroleum hydrocarbons in the diesel range
TPH-G	total petroleum hydrocarbons in the gasoline range
TPH-O	total petroleum hydrocarbons in the motor oil range
VCP	Washington State Voluntary Cleanup Program
VOCs	volatile organic compounds
Wood	Wood Environment & Infrastructure Solutions, Inc.



1.0 Introduction

1.1 Purpose

Wood Environment & Infrastructure Solutions, Inc. (Wood), prepared this report on behalf of Kelly-Moore Paint Company, Inc. (Kelly-Moore), for the former Kelly-Moore manufacturing facility located at 5400-5800 Airport Way South, Seattle, Washington (Site; Figure 1). Kelly-Moore's objective is to conduct remedial action at the Site in compliance with requirements established by the Washington State Department of Ecology (Ecology) under the state Model Toxics Control Act (MTCA) via the Washington State Voluntary Cleanup Program (VCP) and attain No Further Action status for the Site.

This report presents the results of groundwater and Site monitoring activities as summarized below.

- Dry season groundwater monitoring (August 2020 and September 2021);
- Wet season groundwater monitoring (March 2021);
- Soil vapor extraction (SVE) system operation and maintenance (O&M; January 2020 through December 2021); and
- Air sparge system O&M (January 2020 through December 2021).

Groundwater monitoring results (August 2019 and March 2020) and O&M activities (June 2019 through May 2020) were reported in the 2019 *Summary of Investigations and Remedial Actions* report dated September 28, 2020 (Wood, 2020).

1.2 Background

The Site is located on the east side of Airport Way South at the intersection of South Lucile Street and Airport Way South in the Georgetown neighborhood of Seattle, Washington (Figure 1), and covers approximately 2.7 acres. The Site is bordered on the north by BNSF Railway Company (BNSF) tracks and the Olympic Foundry, on the west by Airport Way South and the Airport Way South overpass, on the east by BNSF tracks and a steep hillside, and on the south by an Interstate 5 connector ramp overpass (Figure 1).

The Site has been used for a variety of industrial purposes since the early 1900s, and Kelly-Moore acquired the Site in 1994. Kelly-Moore used portions of the Site as a paint manufacturing plant for blending paints and pigments between approximately 1994 and 2008 and vacated the property by 2010. Kelly-Moore sold the southern portion of the Site to JST Georgetown, LLC, in 2011, and sold the northern portion of the Site to NCD GeorgeTown, LLC, in 2014. The new owners of the northern parcel demolished all of the former buildings and warehouses in 2015, during which time Kelly-Moore directed Wood (formerly Amec Foster Wheeler Environment & Infrastructure, Inc. [Amec Foster Wheeler]) to perform additional interim remedial actions and address known areas of contamination that were not accessible prior to the demolition. Construction of the new building on the northern parcel was completed in 2016. Elysian Brewing Company is the primary tenant of the new building constructed on this parcel, using it for brewing beer. The southern parcel is also leased by Elysian Brewing Company, which moved into the warehouse in 2011 to add bottling capacity to its operations.

2.0 Groundwater Monitoring

The groundwater monitoring program consists of collecting groundwater samples from eight wells twice a year, once during the dry season (August/September) and once during the wet season (March). Groundwater monitoring has been conducted twice a year since June 2016. Tables 1 through 3 provide



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information on groundwater elevations, field parameters, and groundwater analytical results. During the March 2021 wet season and September 2021 dry season groundwater sampling events, Wood performed additional groundwater analysis as part of review and optimization of the soil vapor extraction (SVE) treatment system. Five monitoring wells were sampled for the additional analyses: KMW-03R, KMW-04, KMW-06, KMW-09, and KMW-10 as discussed in Section 2.2. Two additional monitoring wells, BFK926 and BFK927, identified during a Site walk with Ecology on May 5, 2021, were also sampled during September 2021. Location of the two additional monitoring wells are shown on Figure 3.

2.1 Water Level Measurements and Hydrogeology

The groundwater monitoring program includes measuring water levels in each of the eight monitoring wells. The reference points for determining water level elevations are the tops of the polyvinyl chloride well casings, which have been surveyed relative to mean sea level (North American Vertical Datum of 1988 [NAVD88]). To reduce variation in groundwater level measurements, static water levels for all wells are measured on the same day and before the wells are purged and sampled. Groundwater levels were measured to the nearest 0.01 foot using an electronic water level meter. Groundwater measurements from August 20, 2020, March 22, 2021, and September 1, 2021 are presented in Table 1.

Groundwater elevation contours for water level measurements collected in August 2020, March 2021, and September 2021 are presented on Figures 2, 3, and 4, respectively. Water level measurements collected during both the dry and wet season groundwater monitorng events indicate that groundwater generally flows to the south and west-southwest, in agreement with measurements from previous years (Wood, 2020). Groundwater elevations across the Site vary seasonally, with higher groundwater elevations in the wet season and lower elevations in the dry season. The wet season/dry season range of elevations observed during the 2020–2021 reporting period was between 1.96 and 2.34 feet of elevation difference.

2.2 Groundwater Sampling Methodology

Groundwater samples were collected on August 19 and 20, 2020 and September 1 and 2, 2021, for the dry season and on March 22 through 24, 2021, for the wet season. The groundwater samples were collected in accordance with the procedures outlined in the *Additional Investigation Work Plan* (Amec Foster Wheeler, 2016). Samples were collected using a peristaltic pump with pre-installed dedicated polyethylene tubing using U.S. Environmental Protection Agency (EPA) low-flow sampling techniques. Groundwater parameters were measured at each well during purging using a YSI multi-parameter water quality meter and were recorded on field data sheets (Appendix A). Parameters measured were turbidity, pH, dissolved oxygen, specific conductivity, and oxidation reduction potential (Table 2). Representative unfiltered groundwater samples were collected upon stabilization of the water quality parameters over the course of three consecutive measurements.

Groundwater sample containers were filled directly from the pump tubing and were immediately placed on ice. Samples were transported under chain-of-custody protocols to Friedman & Bruya, Inc., in Seattle, Washington, for laboratory analyses. Groundwater samples from all eight monitoring wells during the reporting period and monitoring wells BFK926 and BFK927 during September 2021 were analyzed for the following:

- Volatile organic compounds (VOCs) by EPA Method 8260D;
- Polycyclic aromatic hydrocarbons (PAHs) by EPA Method 8270E with selected ion monitoring for some compounds;
- Total metals (arsenic, chromium, copper, lead, mercury, nickel, and zinc) by EPA Method 6020B;

- Total petroleum hydrocarbons (TPH) in the gasoline range (TPH-G) by Ecology method NWTPH Gx; and
- TPH in the diesel and motor oil ranges (TPH-D and TPH-O) by Ecology Method NWTPH-Dx.

Additionally, the five monitoring wells, KMW-03R, KMW-04, KMW-06, KMW-09, and KMW-10, were analyzed for the following analyses during the wet season in March 2021 and dry season in September 2021:

- Volatile fatty acids by EPA Method 300.0;
- Biological oxygen demand by Standard Method (SM) 5210B;
- Carbon dioxide by SM 2320/SM 4500-CO2D;
- Chemical oxygen demand by SM 5220D;
- Dissolved gases (methane, ethane, and ethene) by RSK-175;
- Dissolved metals (iron, calcium, manganese, magnesium, aluminum, and sodium) by EPA Method 200.8;
- Ion chromatography (sulfate, nitrate) by EPA Method 300.0;
- Total metals (iron, calcium, manganese, magnesium, aluminum, and sodium) by EPA Method 200.8 and EPA Method 6020B;
- Total alkalinity by SM 2320B;
- Hardness by EPA Method 200.8 and SM 2340B; and
- Total organic carbon by SM 5310C.

Laboratory data packages and data validation memoranda are included in Appendix B.

2.3 Data Validation Results

The groundwater monitoring results for the dry and wet season events were reviewed in accordance with the Quality Assurance Projection Plan (Amec Foster Wheeler, 2016, Attachment B). Documentation provided in the analytical data package was acceptable, data quality was acceptable, and results from these samples may be considered usable with the limitations described in the data validation assessment summaries provided in Appendix B. Data qualifiers added during validation are summarized below:

- August 2020:
 - Wood J/UJ-IS qualified samples KMW-04-082020, KMW-06-082020, KMW-09-082020, KMW-10-082020, and KMW-10-9-082020 for chromium because there was interference in the internal standard in the undiluted analyses. The affected samples were diluted and re-analyzed for chromium. Internal standard recoveries were acceptable, but chromium was not detected in the diluted re-analyses. Wood excluded the non-detected results from the re-analyses and J/UJ-IS from the original analyses as appropriate.
 - Wood J/UJ-IS qualified samples KMW-04-082020, KMW-09-082020, KMW-10-082020, and KMW-10-9-082020 for copper and nickel because there was interference in the internal standard in the undiluted analyses. The affected samples were diluted and re-analyzed for copper and nickel. Internal standard recoveries were acceptable, but copper and nickel were not detected in the diluted re-analyses. Wood excluded the non-detected results from the re-analyses and J/UJ-IS from the original analyses as appropriate.

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- March 2021:
 - Wood J-MI qualified samples KMW-06 and Duplicate1 for TPH-G because there was matrix interference.
 - Wood J/UJ-LS qualified sample KMW-06 for detected isopropylbenzene and n-propylbenzene, and remaining non-detected VOCs because of potential low analytical bias because the surrogate compound 4-bromofluorobenzene was low in the analysis.
 - Wood J/UJ-LS qualified sample Duplicate1 for detected methylene chloride, isopropylbenzene, n-propylbenzene, and 1,1,2,2-tetrachloroethane, and remaining non-detected VOCs because of potential low analytical bias because the surrogate compound 4-bromofluorobenzene was low in the analysis.
 - Wood excluded results from undiluted analyses where F&BI qualified results when detected concentrations were greater than the instrument's calibration range.
 - Wood J-HT qualified the sample KMW-06 for biochemical oxygen demand because the analysis was started more than 2 hours after the hold time.
 - Wood UH-JT qualified sample KMW-03R for nitrate because the analysis was started more than 2 hours after the hold time.
 - Wood excluded re-analysis sample of KMW-10 for the non-detected result from the 1:2 dilution analyzed outside of hold because the analytical sensitivity in the 1:5 dilution was sufficient to meet project goals.
 - Wood J-DS qualified all dilution samples for KMW-06, Duplicate1, and KMW-10 for biochemical oxygen demand because reported results may be biased low because they resulted in full oxygen depletion.
 - Wood UJ-RT qualified sample KMW-03R for non-detected volatile fatty acid because of the elevated receipt temperature.
- September 2021:
 - Wood J-FD qualified the detected TPH-G and TPH-O results from samples KMW-10 and Duplicate 1 because of sampling and/or analytical imprecision.
 - Wood J qualified the detected and UJ qualified the non-detected arsenic, lead, chromium, copper, and zinc results from samples KMW-10 and Duplicate 1 because of sampling and/or analytical imprecision.
 - Wood J-FD qualified the detected benzo(a)anthracene, chrysene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno (1,2,3-cd)pyrene results from samples KMW-10 and Duplicate 1 because of sampling and/or analytical imprecision.
 - Wood UJ-BC qualified the 1,1-dicloroethane results from BFK926, BFK927, KMW-04, KMW-06, KMW-09, KMW-10, and Duplicate 1 because the calibration standard did not meet criteria.
 - Wood J-HL qualified the aluminum results from KMW-06, KMW-10, and Duplicate 1 because of potential high analysis bias.
 - Wood J-HT qualified the carbon dioxide results from KMW-03R, KMW-06, KMW-09, KMW-10 and Duplicate 1 because of the missed hold times.
 - Wood J-RT qualified the detected and UJ-RT qualified non-detected VFA results from KMW-03R, KMW-04, KMW-06, KMW-09, KMW-10 and Duplicate 1 because of elevated receipt temperature.



A list of qualified data is presented in the data validation assessment summary (Appendix B).

2.4 Groundwater Analytical Results

Groundwater results for commonly detected compounds are presented in Table 3, along with the results for detected compounds in sampling events conducted since 2011. Figures 5 through 8 present select groundwater consituents for August 2020, March 2021, and September 2021, respectively.

2.4.1 Total Petroleum Hydrocarbons

The highest concentrations of TPH-G have been observed in the groundwater from KMW-04, KMW-06, KMW-09, and KMW-10 (Figures 5 through 8). During the August 2020, March 2021, and September 2021 sampling events, the concentrations of TPH-G exceeded the Site screening level (also the MTCA Method A Cleanup Level) of 800 micrograms per liter (µg/L) (where benzene is present), at wells KMW-04 (August 2020, 77,000 HS µg/L and March 2021, 19,000 µg/L), KMW-06 (August 2020, 5,400 µg/L, March 2021, 4,500 [estimated] µg/L, and September 7,600 µg/L), KMW-09 (August 2020, 990 µg/L), and KMW-10 (August 2020, 1,800 µg/L, March 2021, 31,000 µg/L, and September 31,000 [estimated] µg/L).

TPH-D and/or TPH-O have been detected in the groundwater from all of the monitoring wells except for KMW-02R and KMW-07 at least once since sampling began in 2011. During the most recent sampling events in August 2020, March 2021, and September 2021 (See Figures 5 through 8), the concentrations of TPH-D exceeded the Site screening level (also the MTCA Method A Cleanup Level) of 500 µg/L for the following wells, KMW-03 (August 2020, 700 µg/L), KMW-04 (August 2020, 5,800 µg/L, March 2021, 1,300 µg/L, and September 2021, 2,600 µg/L), KMW-06 (August 2020, 17,000 µg/L, March 2021, 35,000 µg/L, and September 2021, 19,000 µg/L), KMW-09 (August 2020, 13,000 µg/L, March 2021, 7,000 µg/L), and September 2021, 7,900 µg/L), and KMW-10 (August 2020, 10,000 µg/L, March 2021, 8,600 µg/L, and September 2021, 8,900 µg/L).

2.4.2 Volatile Organic Compounds

Groundwater samples were analyzed for the full list of VOC compounds. Toluene, ethylbenzene, and xylenes compounds were the most frequently detected VOCs, and were predominantly detected in the central area of the Site, where high concentrations of TPH-G also have been detected. These detections are most prevalent in the groundwater from KMW-04, and concentrations appear to have decreased over time, like the TPH-G concentrations in the groundwater from KMW-04. We expect to see VOC concentrations decrease in groundwater at KMW-04 as SVE and air sparging continue to target the western portion of the property. Benzene has not been detected in the Site monitoring wells since routine monitoring began in September 2017.

Other VOC compounds detected in the groundwater during the reporting period are 1,2,4trimethylbenzene, 1,3,5-trimethylbenzene, acetone, ethylbenzene, xylenes, and toluene which were detected in the groundwater collected from KMW-04 and/or KMW-10 during one or both sampling events (August 2020, March 2021, and/or September 2021).

Chlorinated VOCs were not detected in groundwater samples collected from the monitoring wells during the 2020 and 2021 sampling events, which is consistent with historical results.

2.4.3 Carcinogenic Polycyclic Aromatic Hydrocarbons

Carcinogenic PAHs were detected during the August 2020, March 2021, and September 2021 groundwater sampling events at KMW-06, KMW-08 (September 2021 only) and KMW-10 (March and September 2021 only) as shown on Figures 5 through 8. Samples from KMW-06 during March 2021 and

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KMW-10 during September 2021 exceeded the Site screening level of 0.20 μ g/L for the total Toxicity Equivalency Quotient.

2.4.4 Metals

Groundwater samples were analyzed for total arsenic, chromium, copper, lead, mercury, nickel, and zinc. The concentrations of metals in the groundwater samples were below Site screening levels, except for arsenic and lead (See Figures 5 through 8). For the 2020 and 2021 sampling events, arsenic was detected at concentrations that exceed the Ecology background level (also the MTCA Method A Cleanup Level) of 5.0 μ g/L at KMW-04 (August 2020, 17.9 μ g/L and September 2021, 16.9 μ g/L), KMW-06 (August 2020, 5.58 μ g/L, March 2021, 8.05 μ g/L, and September 2021, 5.93 μ g/L), and at KMW-10 (August 2020, 5.34 μ g/L, March 2021, 6.59 μ g/L, and September 2021, 48.7 [estimated] μ g/L). Lead was only detected at concentrations above the MTCA Method A Cleanup Level of 15.0 μ g/L at KMW-06 (29.7 μ g/L) during the March 2021 sampling event and KMW-10 (116 [estiamted] μ g/L) during the September 2021 sampling event.

2.5 Additional Groundwater Analytical Results

Additional groundwater sampling was conducted during the March and September 2021 sampling events at five wells (KMW-03R, KMW-04, KMW-06, KMW-09, and KMW-10) for optimalization of the treatment system. These additional groundwater results are presented in Table 3.

3.0 Soil Vapor Extraction/Air Sparge System Operations

3.1 Design, Installation, and Operations

3.1.1 SVE System Design and Installation

SVE and air sparging technologies were selected to address past subsurface releases of hydrocarbons associated with former paint manufacturing activities at the Site. SVE uses a vacuum to extract soil vapors from the subsurface, while in-situ air sparging injects air into the saturated zone to help volatilize hydrocarbons to increase the contaminant removal rate. Both methods introduce or help move oxygen into and through the subsurface, which also promotes aerobic biodegradation of residual hydrocarbons.

A series of eight horizontal SVE wells (SVE-01 through SVE-08) were installed beneath the building during redevelopment in 2015. After building construction was completed, a second set of five horizontal SVE wells (SVE-09 through SVE-13) were installed in the parking lot on the western side of the Site. A set of five air sparge wells (IAS-1 through IAS-5) were installed between the western SVE wells. Figure 8 shows the locations of the SVE horizontal wells at the Site, and Figure 9 shows the locations of the air sparge wells. Applicable permits and construction details were included in the *2017 Summary of Investigations and Remedial Actions* (Wood, 2018).

The SVE wells installed under the building were routed to a common manifold (referred to as the eastern manifold) located in a walkway between the north warehouse and the south warehouse. The SVE wells installed on the west side of the building were routed to a common manifold (referred to as the western manifold), which is located in a fenced-off area near the treatment equipment. Figure 10 shows the current configuration of the SVE and air sparge system.

The SVE (vacuum) blower and air sparge compressor were installed adjacent to the western manifold along with a catalytic oxidizer (CATOX) unit. The CATOX unit is used to treat the extracted soil vapor as well as volatized hydrocarbons sparged from the shallow groundwater recovered by the western SVE wells. The treatment system was permitted with the Puget Sound Clean Air Agency (PSCAA) as detailed in



the 2017 Summary of Investigations and Remedial Actions (Wood, 2018) and as approved by PSCAA per the Notice of Construction No. 11291, under Registration No. 29932, dated February 22, 2017.

Figure 11 is an abbreviated piping and instrumentation diagram showing the SVE system and the treatment equipment. Both eastern and western SVE manifolds route extracted soil vapor to the CATOX treatment unit. The combined SVE and air sparging system is equipped with automatic controls and an auto-dialer that notifies Wood and O&M personnel when the CATOX system or other components have shut down with an alarm condition or if specific maintenance tasks are required, such as disposal of condensate water that is produced by the SVE wells that is collected in the 30-gallon knock-out tank. The system is equipped with a 250-gallon polyethylene tote (referred to as the condensate storage tank) to store condensate water that is pumped from the knock-out tank Both the knock-out tank and the condensate storage tank have high level alarm switches directed to the control system to shut down the SVE blower if high level alarm conditions occur to reduce the risk of overfilling. The entire air sparging system is configured to shut down immediately upon an alarm condition of the SVE system.

3.1.2 SVE and Air Sparge Operations

The SVE system has operated semi-continuously between January 2020 and December 2021. Because the SVE and CATOX systems use three-phase electrical power, they are sensitive to local power variations and occassionally shut-down due to power fluctuations and outages. The system will also shut-down periodically due to high level alarm conditions in the condensate storage tank due to increased condensate production that typically peaks in the winter/wet season. In summer, power outages/fluctuations typically occur due to increased demand for air conditioning. When these events occur, O&M personnel are alerted via the auto-dialer and address the issue(s) during an expedited site visit. Due to elevated groundwater levels during the middle of the winter/wet season where groundwater actually starts to enter the western manifold SVE wells, these wells are closed along with deactivation of the nearby in-situ air sparging wells for a few months. When groundwater levels lower during the late winter/early spring, these wells to allow sufficient air movement without water entry, the western manifold wells are brought back on-line with the in-situ air sparging system.

3.2 SVE and Air Sparge Performance Evaluation

3.2.1 CATOX Performance Monitoring and Regulatory Compliance

Since initial startup of the SVE system in November 2017, performance monitoring vapor samples have been collected monthly from the CATOX influent vapor stream sampling port and at the effluent sample port on the emissions stack. In compliance with the PSCAA NOC requirements, monthly performance monitoring samples are field measured using either a photo ionization detector (PID) or a flame ionization detector (FID) calibrated to 100 parts per million hexane. PID/FID readings are reported on field forms presented in Appendix C. Monthly performance monitoring samples are also collected and submitted to Friedman & Bruya, Inc., in Seattle, Washington, for laboratory analyses of benzene and gasoline-range organic compounds (also referred to as TPH-G) by EPA Method TO-15. Monthly FID readings and monthly analytical results for SVE performance monitoring from January 2020 through December 2021 are summarized on Table 4, and analytical reports are provided in Appendix D.

The CATOX performance is determined by its mass removal efficiency (MRE) of gasoline-range organics compounds from extracted soil vapor from the SVE wells. MRE is calculated from results of PID/FID field measurements and analytical laboratory results of samples collected at the CATOX influent and at the effluent emissions stack. These data are shown in Table 5. MREs have exceeded the minimum PSCAA NOC requirements in 2020 and 2021 and demonstrate compliant system performance except for the January, February, and March 2020 monthly site visits. For the January through March 2020 monitoring results, the

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system was shut down, and extensive system troubleshooting and maintenance were performed as described in Section 3.1.2. Since March 2020, field PID/FID and laboratory analytical results have met permit requirements (see Table 5.).

3.2.2 SVE and Air Sparge Optimization and Performance Monitoring

Between November 2017 through December 2021, an estimated 7,635 pounds of gasoline range organic compounds or TPH-G (as hexane equivalent using FID results) were removed from the subsurface by the SVE system in conjunction with the air-sparge system. Table 4 summarizes the performance data. Mass removal rates are highest in the summer months when SVE concentrations are high due to lower groundwater levels, which causes the smear zone to be exposed for volatilization and recovery of volatile constituents through increased soil vapor flow by the SVE system. The flows from the individual SVE wells are optimized during the monthly site visits to maximize the concentration of hydrocarbons to the CATOX influent. The highest-concentration SVE wells have been lately from SVE-07 and SVE-08.

SVE mass removal rates generally diminish when site groundwater levels rise during the winter, thereby reducing the vadose zone thickness and available volume for subsurface vapor movement and with a decrease in SVE influent concentrations. Wet season operations are also less efficient due to intermittent alarm conditions and periodic shutdowns associated with increased condensate production at the CATOX knockout tank and occasional power outages and fluctuations due to storms. As mentioned above, when groundwater levels reach a high elevation with respect to the screened intervals of the western manifold SVE wells in the middle of winter, all of the western manifold SVE wells are closed in addition to the IAS wells. Monthly O&M visits are used to operate and adjust the SVE and air sparge systems (when operational) during the wet and dry seasons to optimize mass removal year round.

4.0 Upcoming Tasks

The following actions will be conducted before the end of 2022:

- Wood will install new groundwater monitoring wells on Site during the summer of 2022 per Ecology's request in its Opinion Letter dated November 2019 and per the Site walk conducted with Ecology on May 5, 2021. Installation of the monitoring wells has been delayed due to offsite property access negotations.
- Groundwater samples will be collected for the wet season sampling event in March 2022 and dry season sampling event in August 2022.
- SVE and air sparging system inspections (including performance monitoring sampling) will occur at least monthly. On-site personnel will continue to optimize SVE and air sparging operating conditions in order to maximize mass removal rates and CATOX performance.
- Kelly-Moore and Ecology would like to continue working together to take the necessary steps to eventually obtain "No Further Action" for the Site.

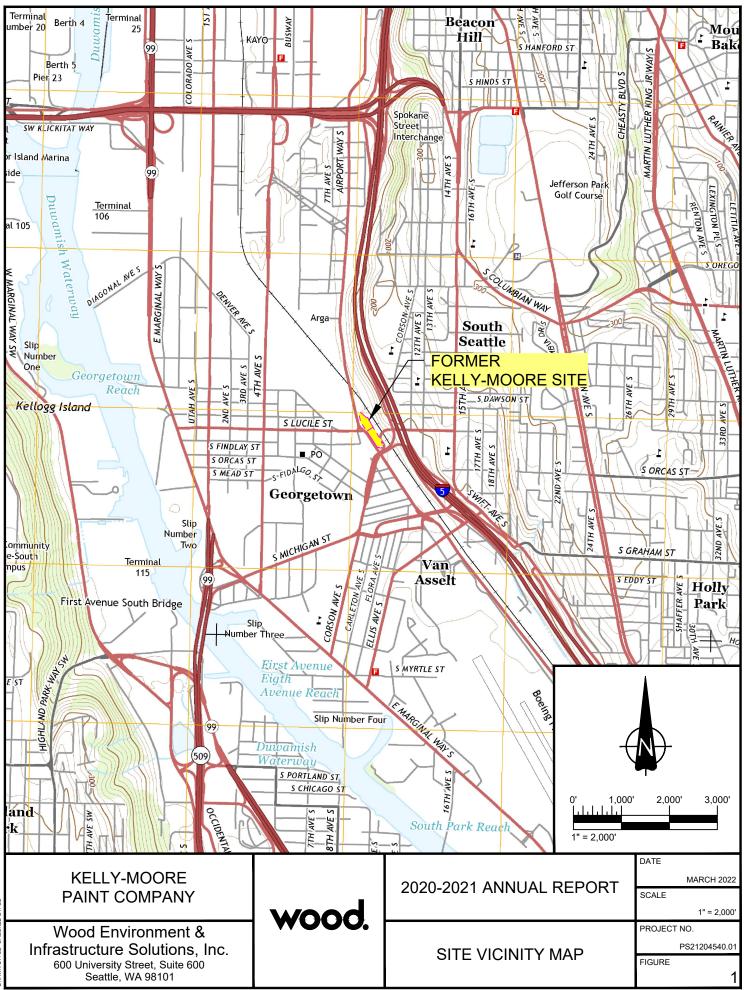
5.0 References

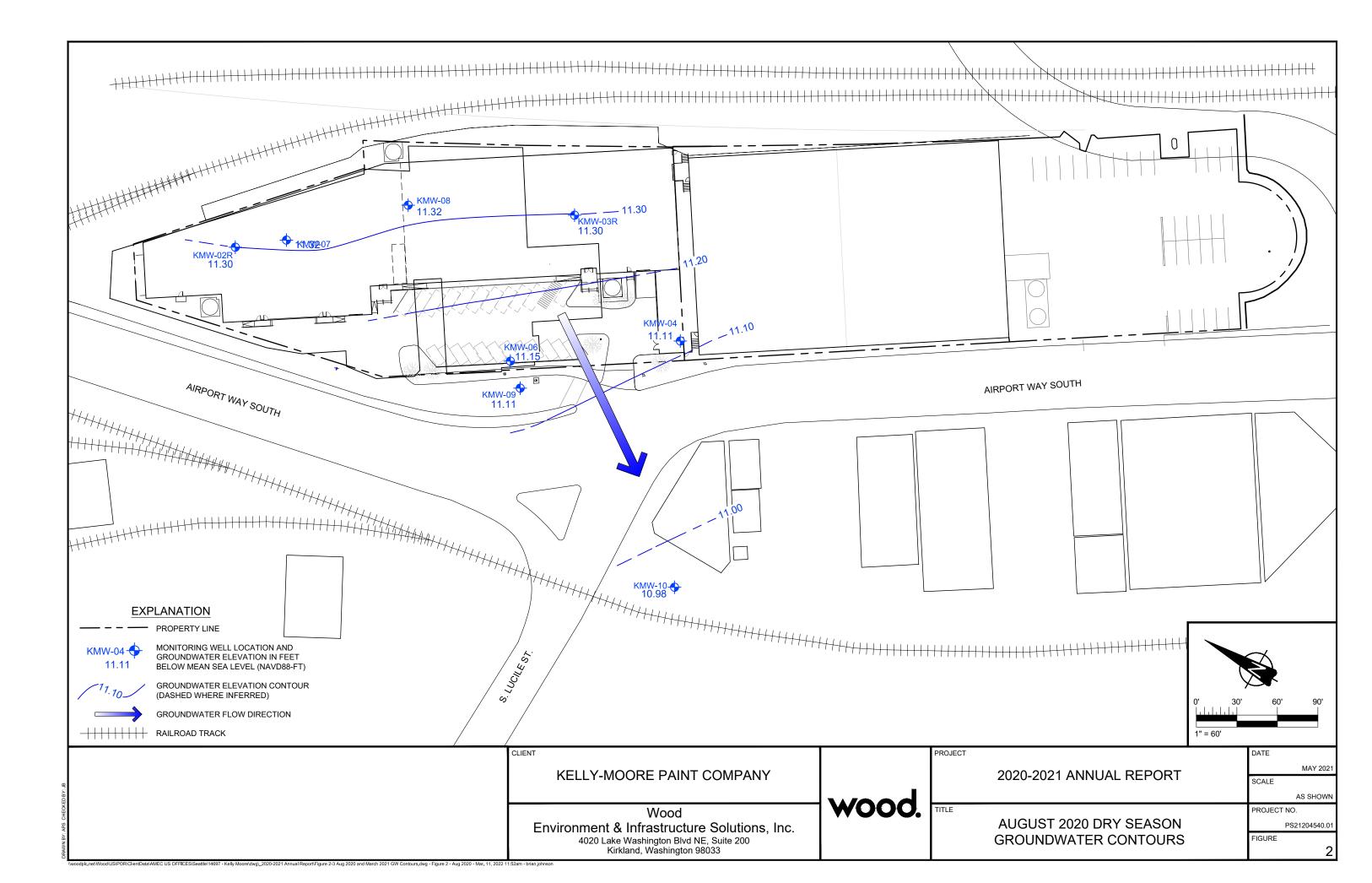
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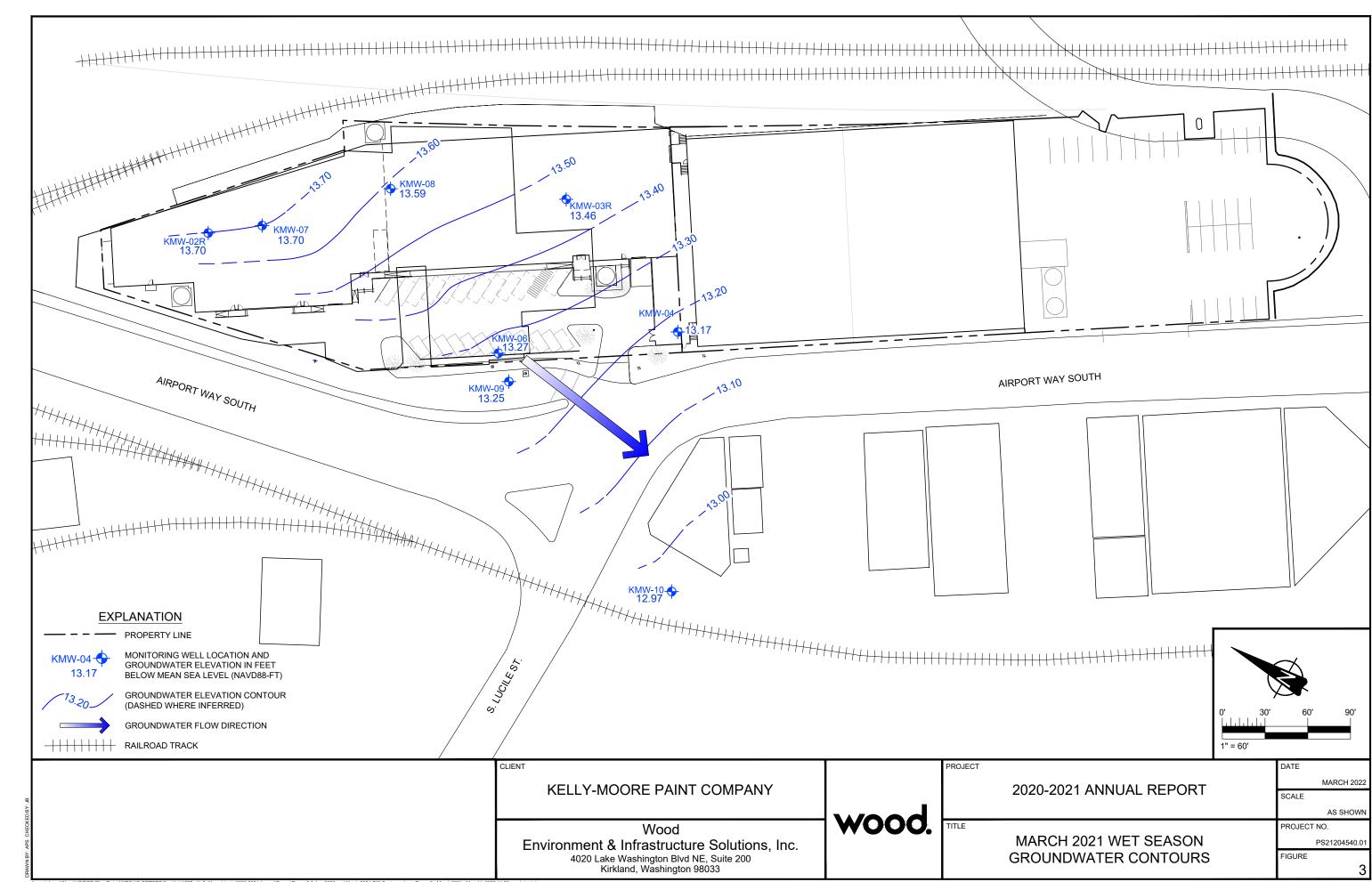
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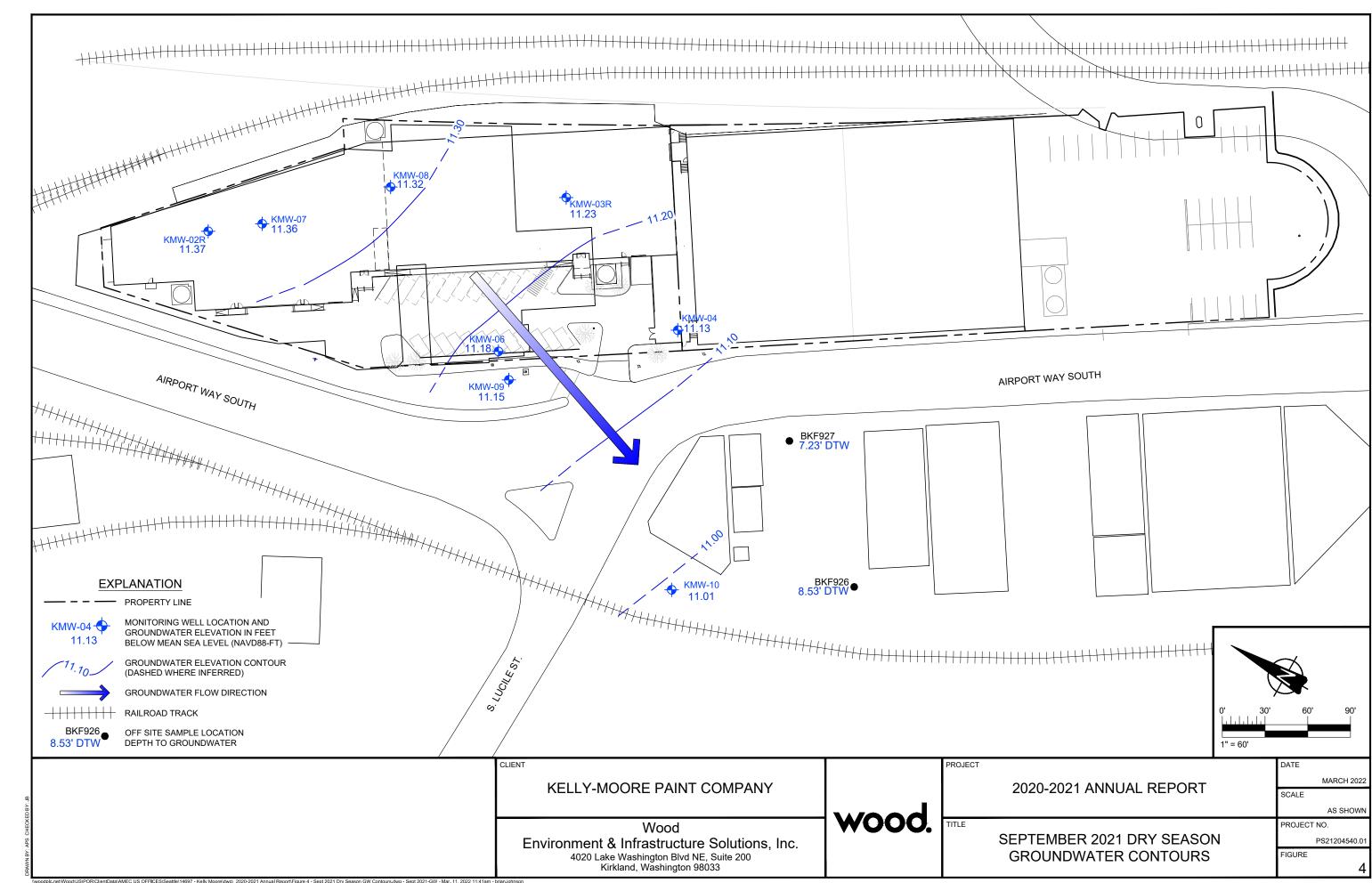


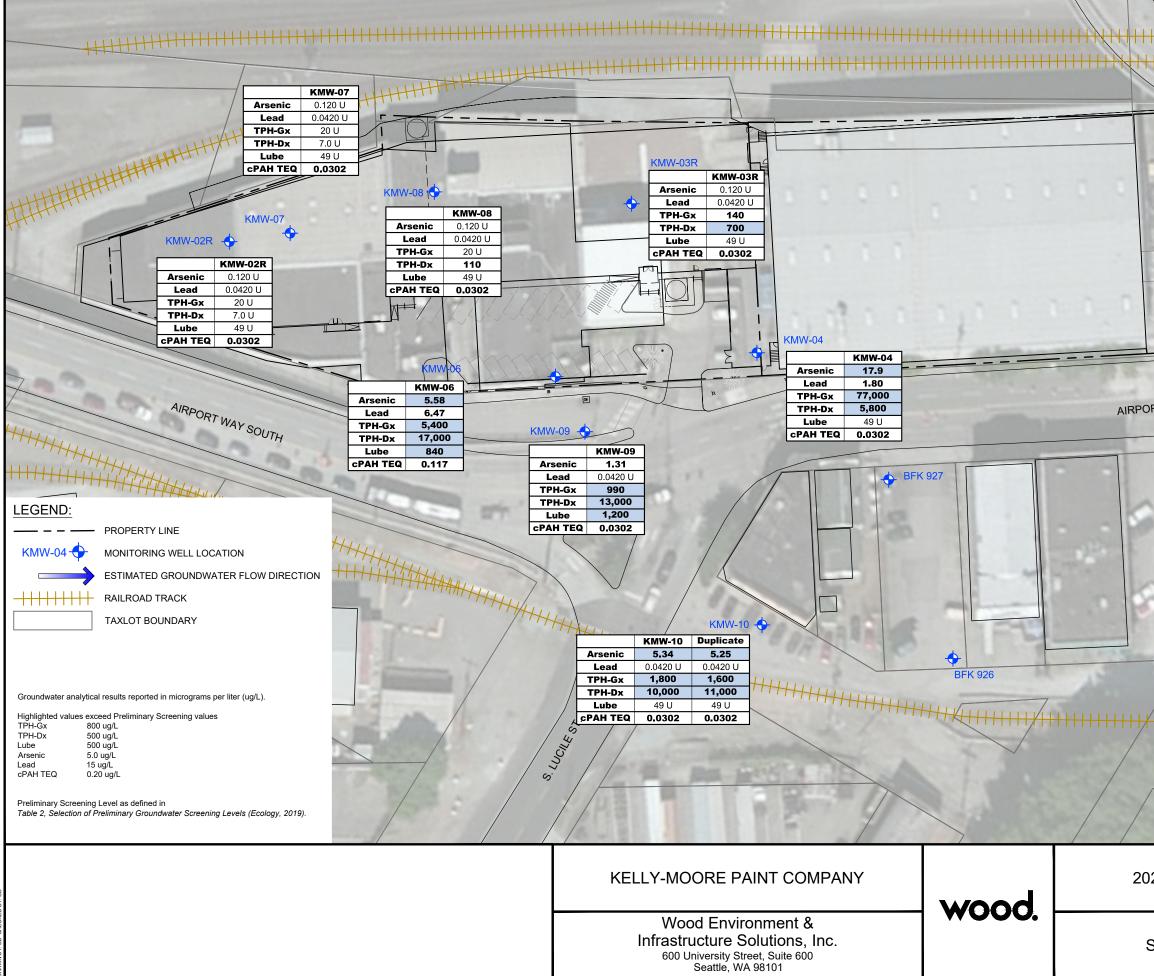






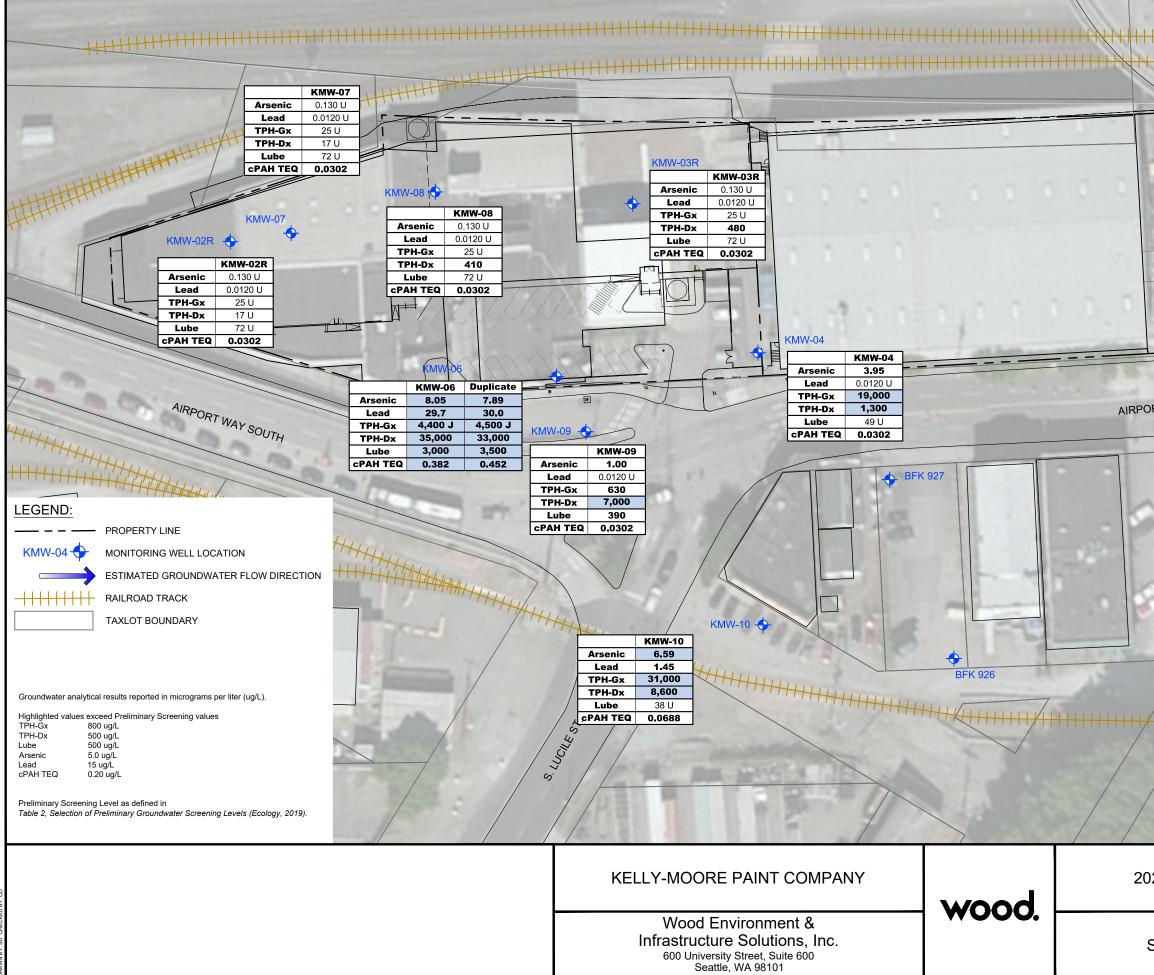






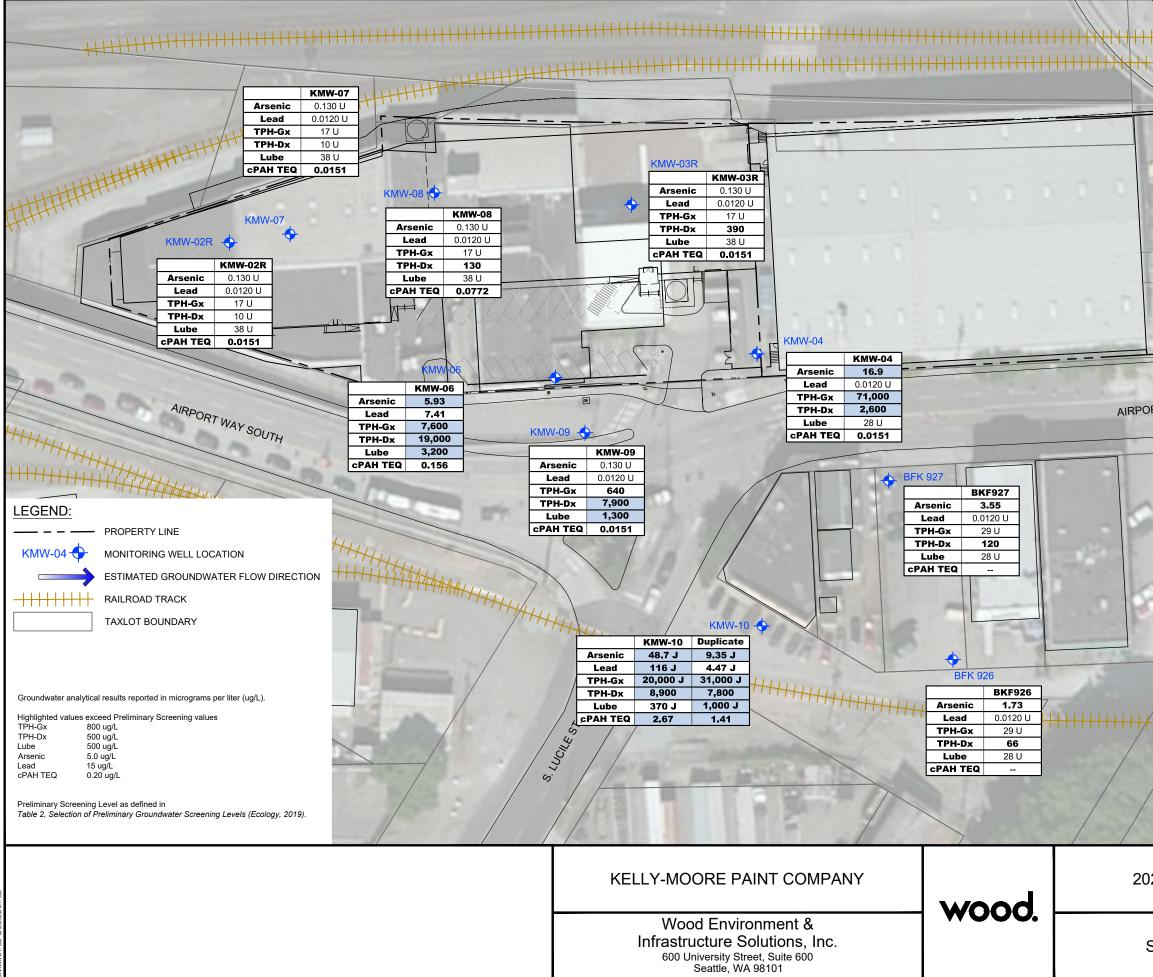
ater(Aug2020-March2021-Sept2021).dwg - 5 - Mar. 17, 2022 3:33pm - brian.johns

20-2021 ANNUAL REPORT		
20-2021 ANNUAL REPORT		
20-2021 ANNUAL REPORT		
20-2021 ANNUAL REPORT		
20-2021 ANNUAL REPORT Date MARCH 2022 SCALE 1" = 60' 1" = 60'	RT WAY SOUTH	-
20-2021 ANNUAL REPORT Date MARCH 2022 SCALE 1" = 60' 1" = 60'		
20-2021 ANNUAL REPORT Date MARCH 2022 SCALE 1" = 60' 1" = 60'		+
20-2021 ANNUAL REPORT SCALE MARCH 2022 SCALE 1" = 60" PROJECT NO.		60' 90'
AUGUST 2020 PROJECT NO.	20-2021 ANNUAL REPORT	MARCH 2022
SELECT CONSTITUENTS		PS21204540.01



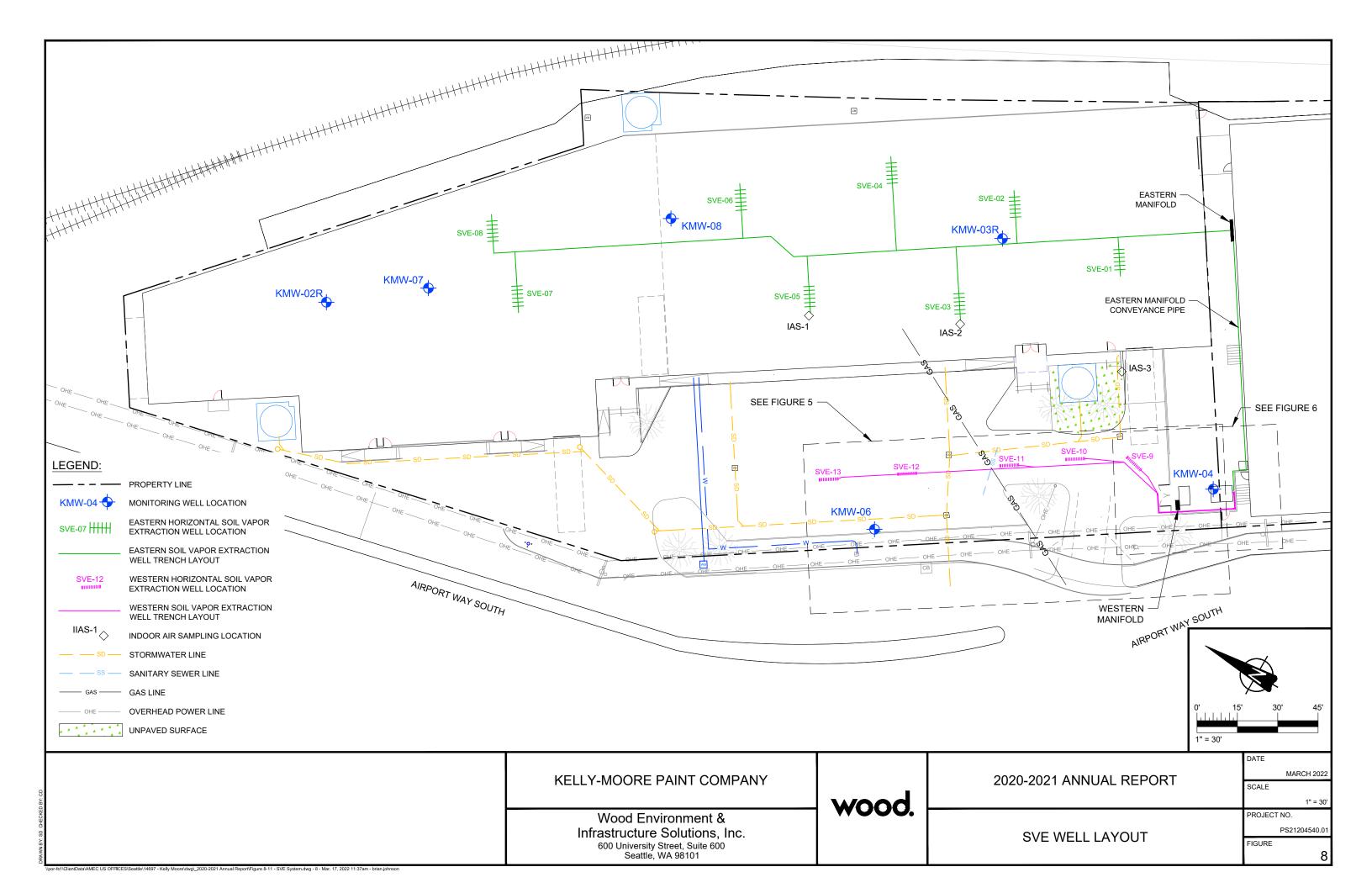
ter(Aug2020-March2021-Sept2021).dwg - 6 - Mar. 17, 2022 3:33pm - brian.johns

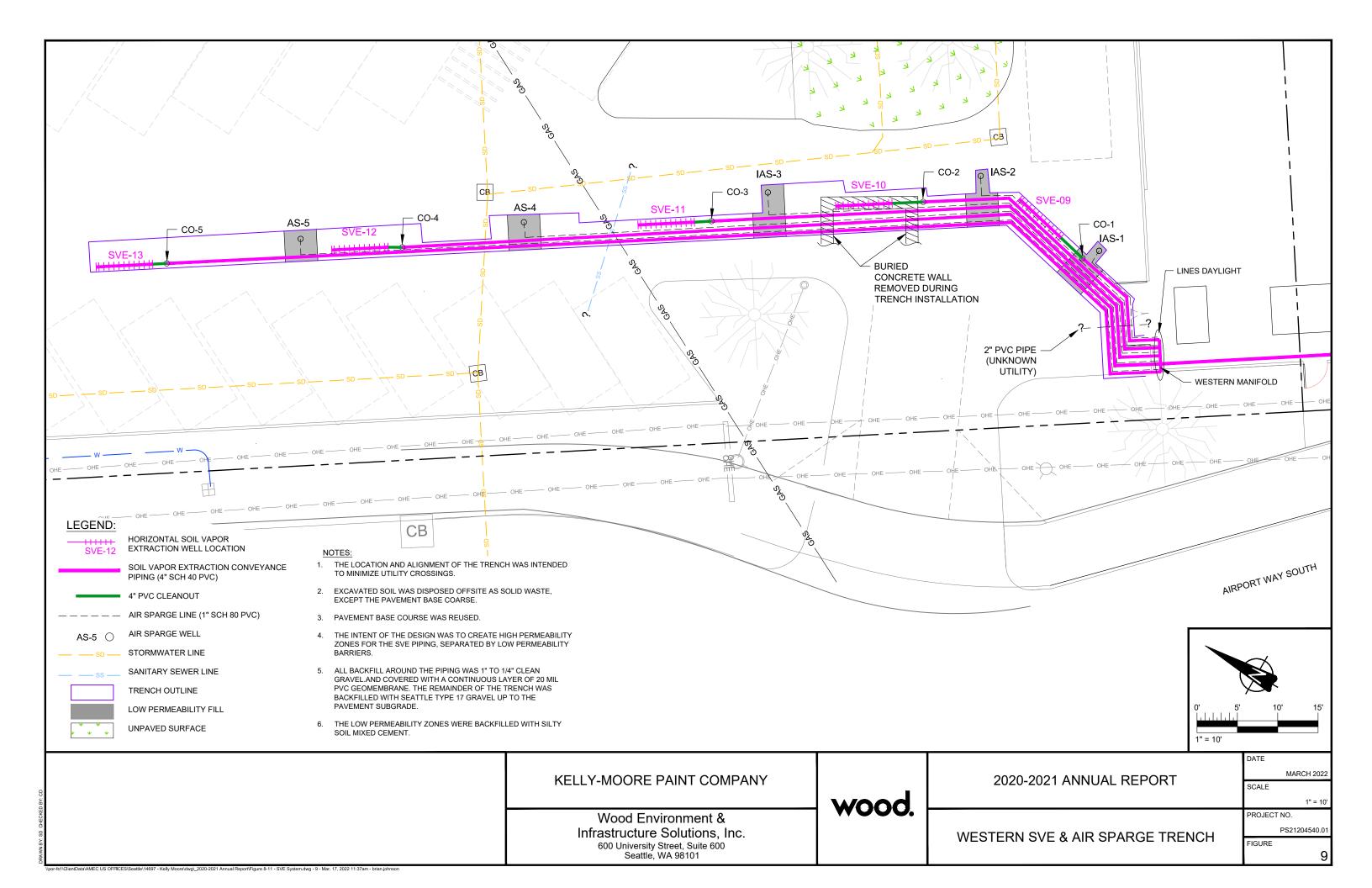
RT WAY SOUTH	-
+++++++++++++++++++++++++++++++++++++++	
0' 30' + + + + 1" = 60'	60' 90'
20-2021 ANNUAL REPORT	DATE MARCH 2022 SCALE 1" = 60'
MARCH 2021 SELECT CONSTITUENTS IN GROUNDWATER	PROJECT NO. PS21204540.01 FIGURE 6

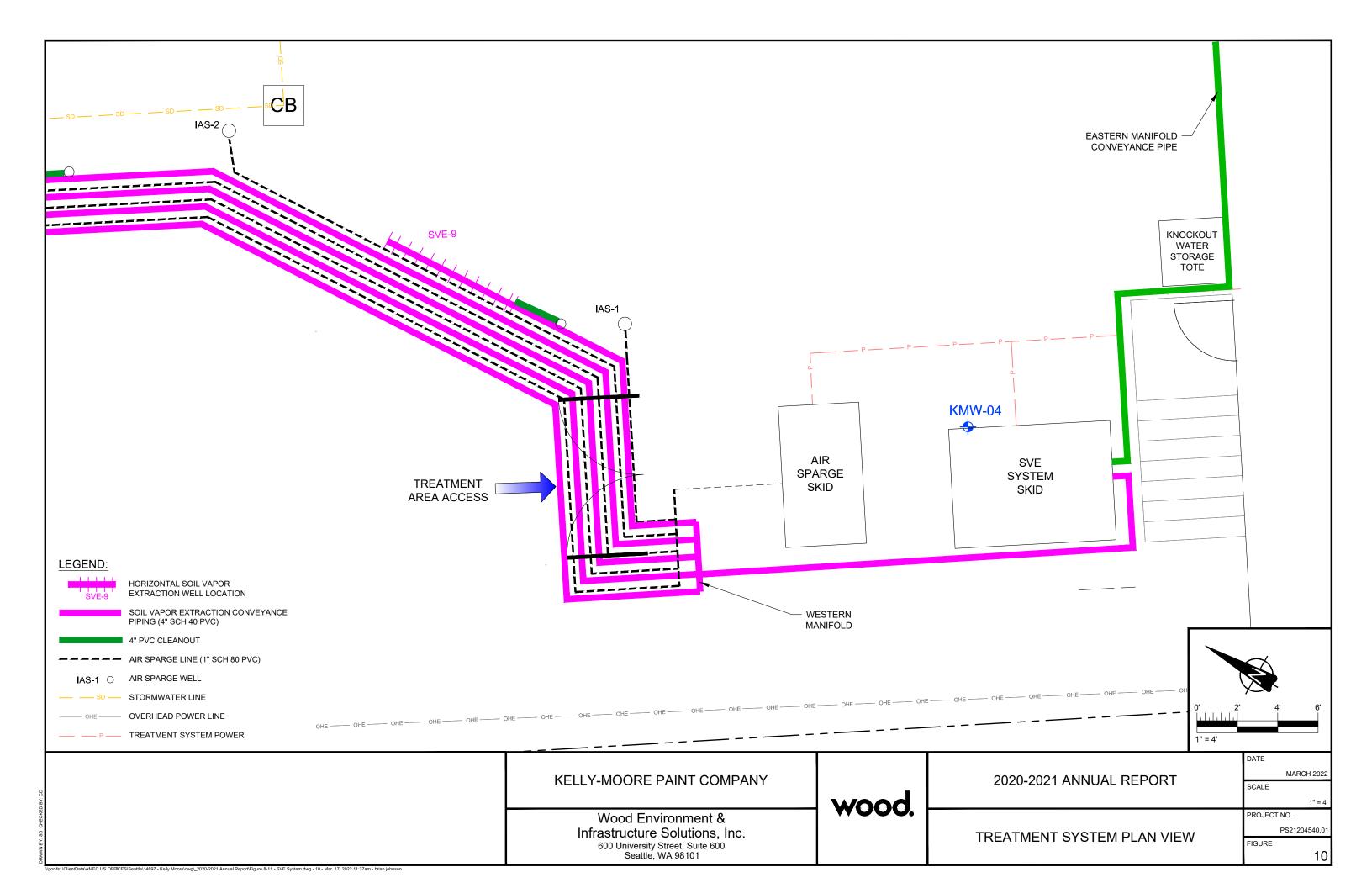


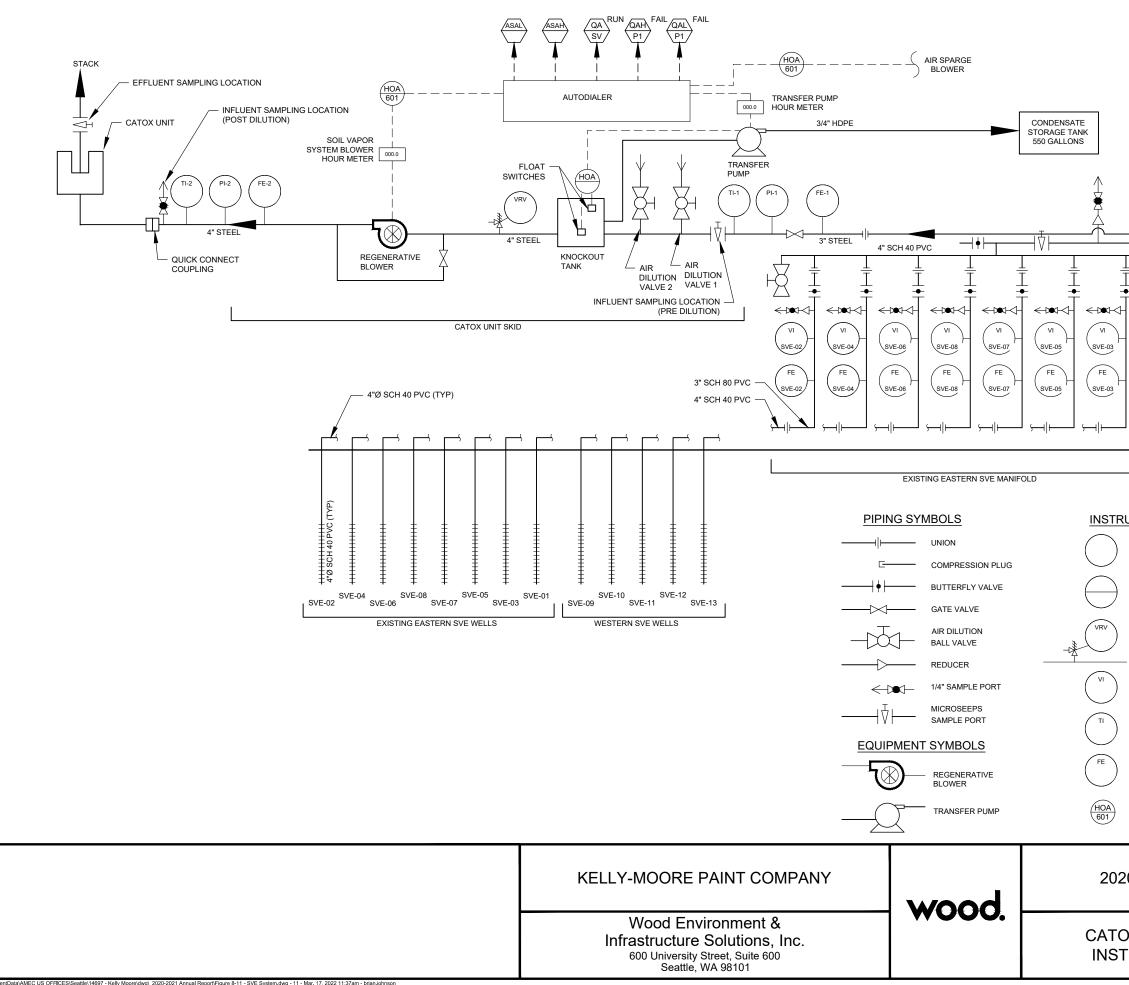
er(Aug2020-March2021-Sept2021).dwg - 7 - Mar. 17, 2022 3:34pm - brian.johns-

·	
RT WAY SOUTH	
0' 30' 1" = 60'	60' 90'
20-2021 ANNUAL REPORT	DATE MARCH 2022 SCALE
SEPTEMBER 2021 SELECT CONSTITUENTS IN GROUNDWATER	1" = 60' PROJECT NO. PS21204540.01 FIGURE









X ----- $\leftarrow \times$ \leftarrow \leftarrow \leftarrow SVE-09 SVE-13 SVE-01 SVE-10 SVE-11 SVE-12 FE FE FE FE SVE-01 SVE-09 SVE-10 SVE-11 SVE-12 SVE-13 GROUND SURFACE WESTERN SVE MANIFOLD INSTRUMENT LEGEND CON'T INSTRUMENT LEGEND EVENT ALARM FIELD MOUNTED QAL P1 TRANSFER PUMP FAIL ALARM CONTROL PANEL MOUNTED QAH TRANSFER PUMP HIGH LEVEL SWITCH FAIL ALARM P1 VACUUM RELIEF VALVE ASAH AIR SPARGE BLOWER HIGH PRESSURE ALARM VACUUM INDICATOR AIR SPARGE BLOWER LOW PRESSURE ALARM ABBREVIATIONS TEMPERATURE INDICATOR TYPICAL TYP FLOW ELEMENT POLYVINYL CHLORIDE PVC SCH SCHEDULE HAND OFF AUTO GAC GRANULAR ACTIVATED CARBON DATE MARCH 2022 2020-2021 ANNUAL REPORT SCALE N/A PROJECT NO. CATOX SYSTEM PROCESS AND PS21204540.07 **INSTRUMENTATION DIAGRAM** FIGURE 11





TABLE 1: GROUNDWATER ELEVATIONS

	WCS No	orth Zone	Ground				
			Surface	тос		Depth to Water	Groundwater
Well ID	Northing	Easting	Elevation	Elevation	Date	(feet below TOC)	Elevation (feet) ¹
					8/31/2017	9.58	12.05
					1/26/2018	7.56	14.07
					8/15/2018	9.96	11.67
					2/7/2019	9.17	12.46
KMW-02R ¹	205743.868	1273010.429	22.01	21.63	8/20/2019	10.78	10.85
					3/11/2020	NM	NM
					8/19/2020	10.33	11.30
					3/22/2021	7.93	13.70
					9/1/2021	10.26	11.37
					8/31/2017	9.52	12.02
					1/26/2018	7.87	13.67
					8/15/2018	9.93	11.61
					2/7/2019	9.37	12.17
KMW-03R ¹	205538.065	1273156.594	21.99	21.54	8/20/2019	10.7	10.84
					3/11/2020	NM	NM
					8/19/2020	10.24	11.30
					3/22/2021	8.08	13.46
					9/1/2021	10.31	11.23
					8/31/2017	6.63	11.93
					1/26/2018	5.35	13.21
					8/15/2018	7.06	11.50
					2/7/2019	6.60	11.96
KMW-04 ¹	205423.586	1273115.009	18.90	18.56	8/20/2019	7.89	10.67
					3/11/2020	5.91	12.65
					8/19/2020	7.45	11.11
					3/22/2021	5.39	13.17
					9/1/2021	7.43	11.13
					8/31/2017	7.87	11.93
					1/26/2018	6.48	13.32
					8/15/2018	8.29	11.51
					2/7/2019	7.77	12.03
KMW-06 ¹	205525.215	1273039.239	20.16	19.80	8/20/2019	9.09	10.71
					3/11/2020	7.08	12.72
					8/19/2020	8.65	11.15
					3/22/2021	6.53	13.27
					9/1/2021	8.62	11.18
					8/31/2017	9.57	12.06
					1/26/2018	7.93	13.70
KMW-07 ¹					8/15/2018	9.96	11.67
					2/7/2019	9.21	12.42
	205713.659	1273033.950	22.00	21.63	8/20/2019	10.79	10.84
					3/11/2020	NM	NM
					8/19/2020	10.31	11.32
					3/22/2021	7.93	13.70
					9/1/2021	10.27	11.36

Wood Environment & Infrastructure Solutions, Inc.

TABLE 1: GROUNDWATER ELEVATIONS

	WCS No	orth Zone	Ground							
			Surface	тос		Depth to Water	Groundwater			
Well ID	Northing	Easting	Elevation	Elevation	Date	(feet below TOC)	Elevation (feet) ¹			
					8/31/2017	9.59	12.06			
					1/26/2018	7.72	13.93			
					8/15/2018	10.00	11.65			
					2/7/2019	9.31	12.34			
KMW-08 ¹	205648.461	1273101.305	22.03	21.65	8/20/2019	10.80	10.85			
					3/11/2020	NM	NM			
					8/19/2020	10.33	11.32			
					3/22/2021	8.06	13.59			
					9/1/2021	10.33	11.32			
					8/31/2017	6.24	11.90			
					1/26/2018	4.86	13.28			
					8/15/2018	6.64	11.50			
					2/7/2019	6.15	11.99			
KMW-09 ²	205508.919	1273025.542	18.60	18.14	8/20/2019	7.48	10.66			
					3/11/2020	5.46	12.68			
					8/19/2020	7.03	11.11			
					3/22/2021	4.89	13.25			
					9/1/2021	6.99	11.15			
					8/31/2017	8.61	11.78			
					1/26/2018	7.51	12.88			
					8/15/2018	9.01	11.38			
					2/7/2019	8.65	11.74			
KMW-10 ²	205336.155	1272955.049	20.84	20.39	8/20/2019	9.89	10.50			
					3/11/2020	7.98	12.41			
					8/19/2020	9.41	10.98			
					3/22/2021	7.42	12.97			
					9/1/2021	9.38	11.01			

Former Kelly-Moore Manufacturing Facility, Seattle, Washington

Notes:

- 1. Survey completed on June 30, 2016, by Duane Hartman & Associates.
- 2. Survey completed on December 13, 2016, by Duane Hartman & Associates.
- Coordinate System and Zone: Washington State Plane, North Zone Coordinates. Horizontal Datum: NAD 83(91), North Zone, US feet. Vertical Datum: NAVD88, US feet.

Abbreviations:

NAD = North American Datum NAVD88 = North American Vertical Datum of 1988 NM = not measured TOC = top of casing WCS = Washington Coordinate System

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TABLE 2: GROUNDWATER PARAMETERS

Former Kelly-Moore Manufacturing Facility, Seattle, Washington

			SC	ORP	DO
Well ID	Date	рН	(ms/cm)	(mv)	(mg/L)
	8/31/2017	5.89	0.175	142.9	0.21
	1/26/2018	5.99	0.199	150.9	0.28
	8/16/2018	5.85	0.173	274	0.55
	2/8/2019	5.95	0.245	130.1	0.81
KMW-02R	8/20/2019	5.76	0.211	121	2.97
	3/11/2020	NM	NM	NM	NM
	8/19/2020	5.73	0.205	208.2	0.33
	3/24/2021	5.55	0.169	273.5	1.41
	9/1/2021	5.99	0.196	-330.9	1.01
	8/31/2017	7.07	0.477	-117.2	0.15
	1/26/2018	7.27	0.454	-102.2	0.19
	8/16/2018	7.03	0.378	112	0.47
	2/8/2019	6.97	0.582	-87	0.51
KMW-03R	8/20/2019	6.90	0.613	-47	2.19
	3/11/2020	NM	NM	NM	NM
	8/19/2020	6.56	0.411	-63.5	0.09
	3/22/2021	6.87	0.392	-61.7	0.59
	9/1/2021	6.97	0.311	-406.9	0.82
	8/31/2017	6.31	0.485	-92.0	0.07
	1/25/2018	6.40	0.276	-40.0	0.58
	8/16/2018	6.09	0.326	99.0	0.63
	2/7/2019	6.22	0.341	-74.0	0.62
KMW-04	8/20/2019	6.26	0.352	-52.0	2.38
	3/11/2020	6.15	0.293	-51.0	0.42
	8/20/2020	6.10	0.241	-51.9	0.1
	3/23/2021	5.58	0.179	91.4	1.65
	9/2/2021	6.15	0.192	-352.5	1.29
	8/31/2017	6.35	0.453	-90.3	0.10
	1/24/2018	6.56	0.314	-91.4	0.24
	8/16/2018	6.33	0.421	-39	0.37
	2/7/2019	6.18	0.635	-32	0.65
KMW-06	8/19/2019	6.32	0.49	-66	2.38
	3/11/2020	5.7	0.9	27.1	2.45
	8/20/2020	6.11	0.631	-59.9	0.14
	3/23/2021	5.82	0.836	-14	0.67
	9/2/2021	6.34	0.705	-372.3	0.80
	8/31/2017	6.02	0.283	56.2	0.00
	1/26/2018	6.32	0.280	56.1	0.32
	8/16/2018	6.02	0.200	268	0.52
	2/8/2019	6.23	0.318	51.1	0.52
KMW-07	8/20/2019	5.96	0.249	106	2.93
	3/11/2020	NM	NM	NM	NM
	8/19/2020	5.81	0.224	94	0.12
	3/24/2021	5.9	0.224	130.8	0.12
	9/1/2021	6.15	0.221	-383.6	0.07

Wood Environment & Infrastructure Solutions, Inc.

TABLE 2: GROUNDWATER PARAMETERS

Former Kelly-Moore Manufacturing Facility, Seattle, Washington

			SC	ORP	DO
Well ID	Date	рН	(ms/cm)	(mv)	(mg/L)
	8/31/2017	6.15	0.177	1.90	0.10
	1/26/2018	5.98	0.526	32.9	0.50
	8/16/2018	5.95	0.211	248	0.58
	2/8/2019	6.05	0.25	91.4	0.74
KMW-08	8/20/2019	5.58	2.508	133.7	2.26
	3/11/2020	NM	NM	NM	NM
	8/19/2020	4.99	0.176	195.7	0.14
	3/22/2021	5.49	0.203	94.1	1.27
	9/1/2021	5.73	0.167	-339.7	1.03
	8/31/2017	6.32	0.415	-95.1	0.21
	1/24/2018	6.56	0.396	-79.5	0.40
	8/16/2018	6.35	0.387	-24	0.47
	2/7/2019	6.42	0.4	-69	0.57
KMW-09	8/20/2019	6.4	0.314	-47	3.05
	3/11/2020	6.16	0.512	-55.6	0.35
	8/20/2020	6.08	0.615	-63.4	0.07
	3/23/2021	6.21	0.474	-45.8	0.59
	9/2/2021	6.39	0.426	-413.3	0.85
	8/31/2017	6.21	0.567	-86.3	0.15
	1/25/2018	6.46	0.656	-69.4	0.28
	8/16/2018	6.25	0.416	-15	0.46
	2/7/2019	6.53	0.43	-82	0.49
KMW-10	8/19/2019	6.26	0.612	-67	3.26
	3/11/2020	6.39	0.542	-63	0.37
	8/20/2020	6.12	0.551	-65.7	0.07
	3/23/2021	6.24	0.654	-63.7	0.61
	9/2/2021	6.38	0.682	-394.2	0.68

Abbreviations

DO = disolved oxygen

mg/L = milligrams per liter

ms/cm = millisiemens per centimeter

mv = millivolts

NM = not measured

ORP = oxidation reduction potential

SC = specific conductivity

TABLE 3: GROUNDWATER ANALYTICAL RESULTS

Former Kelly-Moore Manufacturing Facility, Seattle, Washington

						- BKRODG																																	
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							N	N	-17 KMW-028-01261	8 KMW-02K-081618	KMW-02R-020819	N N	N	KMW-02R-032421	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	KMW-09-090221	KMW-10-082020	FD	KMW-10-032321	KMW-10-090221	FD
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		Dissolved Aluminum			-	-	-	-	-	-	-	-	-	-	-	-	26.1 U	26.1 U	-	26.1 U	26.1 U	-	26.1 U	26.1 U	26.1 U	-	-	-	-	-	-	-	26.1 U	26.1 U	-	-	26.1 U	26.1 J	26.1 U
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Amin 729-95 5 5 5 5 5 5 <td></td> <td>Dissolved Silver</td> <td>7440-22-4</td> <td>ug/L</td> <td>-</td> <td>-</td> <td>-</td> <td>10.0 U</td> <td>-</td>		Dissolved Silver	7440-22-4	ug/L	-	-	-	10.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
hread 140 50 50 50 50 100 100 100 100 100 100 100 100 100		Dissolved Sodium			-	-	-	-	-	-	-	-	-	-	-	-	16,900	13,600	-	8,750	10,100	-	84,200	79,400	71,000	-	-	-	-	-	-	-	32,500	24,100	-	-	62,900	61,000	59,400
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copper 7440-58 ispace 740-50 740-50 740-50 740-50 740-50 740-50 <td></td> <td></td> <td>_</td> <td></td> <td></td> <td>_</td> <td>-</td> <td>- 11.0.11</td> <td>- 11.0.11</td> <td>- 0.180.11</td> <td>- 0.180.11</td> <td>- 0 180 U</td> <td>- 0.12011</td> <td>- 0.0830.11</td> <td>- 0.0830.1</td> <td>_</td> <td></td> <td></td> <td>1071</td> <td></td> <td></td> <td>1481</td> <td></td> <td></td> <td></td> <td>- 0.120.11</td> <td>- 0.0830.11</td> <td>- 0.0830.11</td> <td>- 0 120 11</td> <td>- 0.0830.11</td> <td>- 0.0830.11</td> <td></td> <td></td> <td></td> <td>1 05 1</td> <td>1 12 1</td> <td></td> <td><u> </u></td> <td></td>			_			_	-	- 11.0.11	- 11.0.11	- 0.180.11	- 0.180.11	- 0 180 U	- 0.12011	- 0.0830.11	- 0.0830.1	_			1071			1481				- 0.120.11	- 0.0830.11	- 0.0830.11	- 0 120 11	- 0.0830.11	- 0.0830.11				1 05 1	1 12 1		<u> </u>	
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Magesium Magesium <	Total Metals	Lead	_		15	0.0120 L	J 0.0120 U	J 1.10 U	1.10 U	0.120 U	0.120 U	0.120 U	0.0420 U	0.0120 U	0.0120 U	0.0420 U	0.0120 U		1.80			6.47		30.0	7.41	0.0420 U	0.0120 U	0.0120 U	0.0420 U	0.0120 U	0.0120 U	0.0420 U	· ·	0.0120 U	0.0420 U	0.0420 U		116 J	4.47 J
Image: state			-	<u> </u>	-	-	-	-	-	-	-	-	-	-	-	-	6,190	5,010	-	2,620	-	-	13,800	13,500	-	-	-	-	-	-	-	-	8,750	-	-	-	8,150	-	-
Nickel 7440-02 upl 100 0.0920 0.0920 0.0 1.82 2.15 1.64 1.62 1.64 0.0200 1.15 1.15 1.		Manganese	7439-96-5	ug/L	-	-	-	-	-	-	-	-	-	-	-	-	156	-	-	303	588	-	1,430	1,530	816	-	-	-	-	184	-	-	520	405	-	-	878	1,190	1,220
Selenium 7782-49 u/u - 5.60 5.60 5.60 <th< td=""><td></td><td></td><td></td><td><u> </u></td><td></td><td></td><td>_</td><td>_</td><td>J 0.500 U</td><td>_</td><td></td><td></td><td></td><td></td><td></td><td>_</td><td>_</td><td></td><td>0.0570 U</td><td>0.0280 U</td><td>0.0280 U</td><td>0.0570 U</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>0.0570 U</td><td>0.0570 U</td><td></td><td></td><td></td></th<>				<u> </u>			_	_	J 0.500 U	_						_	_		0.0570 U	0.0280 U	0.0280 U	0.0570 U													0.0570 U	0.0570 U			
Silver 7440-22-4 ug/L 11.0 11.0 0.0940 0.0940 0.0940 0.0940 0.0940 0.0940 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 0.09400 <				<u></u>	100	0.0920 L	J 0.0920 U	_	-	1.82	2.15	2.13		1.43	1.89			1.32		2.14	0.0920 U		21.5	16.8	0.460 U		1.77	1.31		7.08	1.70		0.460 U	0.230 U	0.170 UJ	0.170 UJ	0.460 U	24.0 J	0.460 U
Solum 740-23-5 ug/L - - - - - - - - - 70,00 53,800 61,900 Zinc 740-66-6 ug/L 4,800 0.680U - - 0.340U 0.340U <th< td=""><td></td><td></td><td>-</td><td><u> </u></td><td>-</td><td>-</td><td>-</td><td>_</td><td>_</td><td>-</td><td>-</td><td>-</td><td></td><td>-</td><td>-</td><td>_</td><td>_</td><td>-</td><td>-</td><td>-</td><td>-</td><td>-</td><td>- </td><td>-</td><td>-</td><td></td><td>-</td><td>-</td><td></td><td>-</td><td>-</td><td></td><td>-</td><td>-</td><td></td><td>-</td><td>-</td><td>-</td><td></td></th<>			-	<u> </u>	-	-	-	_	_	-	-	-		-	-	_	_	-	-	-	-	-	-	-	-		-	-		-	-		-	-		-	-	-	
Inc 740-66 u/u 4,800 0.680U 0.680U 0.260U 0.260U 6.47 - 0.340U 5.56 - 0.340U - 0.340U 0.340U - 3.40U - 3.40U 1.70U - 0.40U 3.40U 3.40U 3.40U 3.40U - 3.40U - 3.40U - 3.40U - 3.40U 3.40U - 3.40U 3.40U - 3.40U - 3.40U - 3.40U - 3.40U - 3.40U - 3.40U 3.40U - 3.40U 3.40U 3.40U - 3.40U 3.40U 3.40U - 3.40U 3				<u></u>	-	-	-	11.0 U	11.0 U	-	-	-	0.0940 U	-	-	0.0940 U	_	-	0.0940 U		-	0.0940 U		-	-	0.0940 U	-	-	0.0940 U	-	-	0.0940 U			0.0940 U	0.0940 U		-	-
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Active					4,000	0.000 U	. 0.000 0	+		0.200 0	0.200 0	0.47		0.540 0	3.30		_	-									0.340 0	0.540 0		500	49.1				-	+	-		
And Hardness (GCO3) T-Hardness (GCO3)			_		-			-	-	-	-	-	-	-	-	-	_		-			-			-	-	-	-	-	-	-				-	-			
Addition Gis20100 Mg/I Gis20100 Mg/I Gis20100 Mg/I Gis20100 Mg/I Gis20100 Mg/I Gis20100 Mg/I Gis20100			_		-	-	-	-	-	-	-	-	-	-	- 1	_	_	_	-		_	-				-	-	-	-	-	-	- 1			-	-	_		
Total Organic Carbon GIS-110-12 mg/L - - - - - - - - - - 32.4 34.9 34.	A.			<u> </u>	-	-	-	-	-	-	-	-	-	-	-	_	_		-		_	-				-	-	-	-	-	-	-			-	-	_		
Sulfate 14808-79-8 mg/L	Misc	Total Organic Carbon	GIS-110-012	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	2.60	2.59	-	5.08	14.8	-	157	157	91.5	-	-	-	-	-	-	-	19.0	28.1	-	-	32.4	34.9	34.5
		Nitrate	14797-55-8	mg/L	-	-	-	-	-	-	-	-	-	-	-	-	0.0334 U	0.0167 U	-	1.38	0.167 U	-	0.0835 U	0.0835 U	0.167 U	-	-	-	-	-	-	-	0.0668 U	0.167 U	-	-	0.0835 U	0.167 U	0.167 U
Volatile Fatty Acids (Acetic) 64-19-7 mg/L 0.100 U			_	J.	-	-	-	-	-	-	-	-	-	-	-	-	_		-		_	-				-	-	-	-	-	-	-			-	-	_		
		Volatile Fatty Acids (Acetic)	64-19-7	mg/L	-	-	-		-	-	-	-	-	-	-	-	0.100 UJ	0.100 UJ	-	0.100 U	3.24 J	-	0.100 U	0.100 U	1.00 UJ	-	-	-	-	-	-	-	0.100 U	0.100 UJ	-	-	0.100 U	0.100 J	0.190 J

TABLE 3: GROUNDWATER ANALYTICAL RESULTS

Former Kelly-Moore Manufacturing Facility, Seattle, Washington

				Location	PKE02	C PVE027		20 1/ 1/1/			-02R KMW-0						KMW 02P		KNAW 04	KNAW 04	KMW 06					KNAW 07	KNAM O	7 1/ 8/14/ 09		KWW 08	KN414/ 00	KN434/ 00					KMW 10	KNAW 10
											-02R KWW-0. 8/19 08/20/1						1									1												
				Sample ID		1221 BKF927-0902	21 KMW-02R-9-	1-17 KMW-02R	-012618 KMW-	-02R-081618 KMW-02F	020819 KMW-02R-082	119 кмw-02R-08192 N	0 KMW-02R-03242	KMW-02R-09012	1 KMW-03-081920	KMW-03R-032221	кмw-03R-090121 N	KMW-04-082020	KMW-04-032321	KMW-04-090221	кмw-06-082020 N	кмw-06-032321 с N	Duplicate 1-032321 FD	кмw-06-090221 N	KMW-07-081920	кмw-07-032421 N	кмw-07-09012 N	1 KMW-08-081920	KMW-08-032221	KMW-08-090121	кмw-09-082020	KMW-09-03232	1 KMW-09-090221	KMW-10-0820	20 кмw-10-9-08202 FD	о кмw-10-032321 N	кмw-10-090221 N	Dup1-20210902
Group	Analyte	CAS L		Sample Type Preliminary Screening					'				Ň		N								FD	N	N		N		N	N	N	N					N	FD
	1-Methylnaphthalene	90-12-0	ua/L	Level -		-	0.099	U 0.11	1.U		-	0.0090 U			0.0090 U	-		0.0090 U	-	-	0.0090 U	-	-		0.0090 U	-	-	0.0090 U	-		0.48			0.0090 (J 0.0090 U	-	-	
	2-Methylnaphthalene	91-57-6		-	-	_		U 0.11			-	0.0096 U	_	-	0.0096 U	_		0.52			0.0096 U		-		0.0096 U	_	-	0.0096 U			0.0096 U		-	_	J 0.0096 U	-	-	-
	Acenaphthene Acenaphthylene	83-32-9 208-96-8		-	-	-	0.099	_			84 U 0.0074	_	_	-	0.17 0.0064 U	-	-	0.0054 U 0.0064 U		-	1.2 4.8	-	-	-	0.0054 U 0.0064 U		-	0.064 0.0064 U	-	-	3.2 1.3	-	-	0.0054 0	J 0.0054 U 8.9	-	-	-
	Anthracene	120-12-7		-	-	-	0.099				34 U 0.0046		_	-	0.0056 U		-	0.0056 U		-	0.94	-	-	-	0.0004 U			0.0004 0	-		0.0056 U	-	-		J 0.0056 U		-	-
	Benzo(a)anthracene	56-55-3	J.	-		U 0.0045 L				0.008 U 0.008					0.0090 U																				J 0.0090 U		1.5 J	
	Benzo(a)pyrene Benzo(B&K)fluoranthene	50-32-8 B(BK)F	ug/L ug/L	-	0.012		0.0099	_		0034 U 0.00	34 U 0.0056	J 0.011 U	0.011 U	0.012 U	0.011 U	0.0056 U	0.012 U	0.011 U	0.024 U	0.012 U	0.089	0.31	0.37	0.12	0.011 U	0.011 U	0.012 U	0.011 U	0.0056 U	0.061	0.011 U	0.024 U	0.012 U	0.011 L	J 0.011 U	0.054	2.1 J	1.1 J -
	Benzo(b)fluoranthene	205-99-2	<u> </u>	-	_	U 0.0072 L	_	_		0034 U 0.003	34 U 0.0042	J 0.0064 U	0.0064 U	0.0072 U	0.0064 U	0.0090 U	0.0072 U	0.0064 U	0.014 U	0.0072 U	0.10	0.34	0.40	0.14	0.0064 U	0.0064 U	0.0072 L	J 0.0064 U	0.0090 U	0.059	0.0064 U	0.014 U	0.0072 U	0.0064	J 0.0064 U	0.045	2.0 J	
SVOCs	Benzo(g,h,i)perylene		ug/L	-	-	-	0.0099	U 0.01		0074 U 0.00		_	-	-	0.040 U	-	-	0.040 U	-	-	0.040 U	-	-	-	0.040 U	-	-	0.040 U	-	-	0.040 U	-	-	0.040 U		-	-	-
	Benzo(k)fluoranthene Chrysene	207-08-9	-	-		U 0.0075 L	_	U 0.01			16 U 0.0070 32 U 0.0048	_			0.0076 U 0.0062 U	0.0096 U	0.0075 U			0.0075 U 0.0071 U		0.11	0.11					J 0.0076 U J 0.0062 U		0.021					J 0.0076 U J 0.0062 U		0.66 J 1.5 J	
	Dibenzo(a,h)anthracene		ug/L	-	0.019		_	_		015 U 0.01		_	0.018 U	0.019 U	0.018 U	0.030 U	0.019 U			0.019 U				0.038 U	0.018 U					0.019 U	0.018 U		_		_			0.19 U
	Fluoranthene	206-44-0 86-73-7		-	-	-	0.099	_			16 U 0.0058 52 U 0.0088	_	-	-	0.0090 U 0.066	-	-	0.040	-	-	0.14	-	-	-	0.0090 U		-	0.13	-	-	0.0090 U 1.1		-	_	J 0.0090 U J 0.0062 U	-	-	-
	Fluorene Indeno(1,2,3-cd)pyrene	193-39-5	J.	-	- 0.015	- U 0.015 U				0082 0 0.000			_	0.015 U		0.020 U	- 0.015 U			0.015 U	0.0062 U 0.069	0.18	- 0.21	- 0.082	0.0062 U 0.020 U		- 0.015 U	0.12 0.020 U	- 0.020 U	- 0.043		- 0.030 U	- 0.015 U				- 1.2 J	- 0.69 J
	Naphthalene	91-20-3	J.	160	-	-	0.099			0028 U 0.002	28 U 0.01 U		-	-	0.014 U	-	-	6.8	-	-	0.014 U	-	-	-	0.014 U	-	-	0.014 U	-	-	0.014 U	-	-	0.014 L		-	-	-
	Phenanthrene Pyrene	85-01-8 129-00-0	-	-	-	-	0.099	_		013 U 0.01 0036 U 0.003	3 U 0.012 U 86 U 0.011 U	_	-	-	0.011 U 0.0062 U	-	-	0.091	-	-	0.29	-	-	-	0.011 U 0.0062 U		-	0.011 U 0.14	-	-	0.38	-	-	_	0.65 J 0.0062 U	-	-	-
	Gasoline Range Organics		ug/L	800	29 U	29 U	100 L	_		14 U 14		20 U	25 U	17 U	140	25 U	17 U	77,000	19,000	71,000		4,400 J	4,500 J	7,600	20 U	25 U	17 U	20 U	25 U	17 U	990	630	640	1,800	1,600	31,000	20,000 J	31,000 J
TPH	Diesel Range Organics		ug/L	500	66	_	270 L	_		5.4 U 7.8		_	17 U	10 U	700	480	390	5,800	1,300	2,600	17,000		33,000	19,000	7.0 U	17 U	10 U	110	410	130	13,000	7,000	7,900	10,000		8,600	8,900	7,800
	Lube Oil 1,1,1,2-Tetrachloroethane	LUBE OIL 630-20-6	ug/L ug/L	500	28 U 0.064		430 L 0.20 L	_		52 U 19 069 U 0.06		49 U 0.037 U	72 U 0.037 U	38 U 0.064 U	49 U 0.037 U	72 U 0.037 U	38 U 0.064 U	49 U 3.7 U	49 U 0.54 U	28 U 1.6 U	840 0.037 U	3,000 0.054 UJ	3,500 0.054 UJ	3,200 0.64 U	49 U 0.037 U	72 U 0.037 U	38 U 0.064 U	49 U 0.037 U	72 U 0.037 U	38 U 0.064 U	1,200 0.037 U	390 0.054 U	1,300 0.064 U	49 U 0.37 U	49 U 0.37 U	38 U 0.54 U	370 J 1.6 U	1,000 J 1.6 U
	1,1,1-Trichloroethane	71-55-6	J.	-		U 0.024 U	_	_		068 U 0.06		_	_	0.024 U		_	0.024 U		1.0 U	0.60 U		0.10 UJ	0.10 UJ	0.24 U	0.040 U	0.040 U	0.024 U	0.040 U	0.040 U	0.024 U	0.040 U	0.10 U	0.024 U	0.40 U	_	1.0 U		0.60 U
	1,1,2,2-Tetrachloroethane	79-34-5		-	0.051		_	_		058 U 0.05		_	0.041 U	0.051 U	0.041 U	0.041 U	0.051 U	4.1 U	2.6 U	1.3 U	0.041 U			0.51 U	0.041 U	0.041 U	0.051 U		0.041 U	0.051 U	0.041 U	0.26 U	0.051 U	0.41 U	_	2.6 U	1.3 U	1.3 U
	1,1,2-Trichloroethane 1,1-Dichloroethane	79-00-5 75-34-3	-	-	0.051	U 0.051 U JJ 0.025 U		_		.18 U 0.18 047 U 0.04			0.050 U 0.043 U	0.051 U 0.025 U		0.050 U 0.043 U	0.051 U 0.025 U		2.0 U 0.39 U	1.3 U 0.62 UJ	0.050 U 0.043 U	0.20 UJ 0.039 UJ	0.20 UJ 0.039 UJ	0.51 U 0.25 UJ	0.050 U 0.043 U	0.050 U 0.043 U	0.051 U 0.025 U		0.050 U 0.043 U	0.051 U 0.025 U	0.050 U 0.043 U	0.20 U 0.039 U	0.051 U 0.025 UJ			2.0 U 0.39 U		1.3 U 0.62 UJ
	1,1-Dichloroethene	75-35-4	-	-	0.013	U 0.013 U	_	_		088 U 0.08	8 U 0.080 L	_	0.058 U	0.013 U	_	0.058 U	0.013 U		1.1 U	0.32 U	0.058 U			0.13 U	0.058 U	0.058 U		_		0.013 U	0.058 U	0.11 U	0.013 U	0.58 U		1.1 U		0.32 U
	1,1-Dichloropropene	563-58-6	-	-		U 0.057 U	_	_		044 U 0.04					_		0.057 U		0.54 U	1.4 U		0.054 UJ		0.57 U	0.017 U					0.057 U			_			0.54 U		1.4 U
	1,2,3-Trichlorobenzene 1,2,3-Trichloropropane	87-61-6 96-18-4	<u> </u>	-	0.076	U 0.076 U U 0.065 U	_	_		037 U 0.03 079 U 0.07		0.033 U 0.013 U	0.033 U 0.013 U			0.033 U 0.013 U	0.076 U 0.065 U	3.3 U 1.3 U	0.38 U 1.0 U	1.9 U 1.6 U		0.038 UJ 0.10 UJ		0.76 U 0.65 U		0.033 U 0.013 U				0.076 U	0.033 U 0.013 U		_		_	0.38 U 1.0 U	1.9 U 1.6 U	1.9 U 1.6 U
	1,2,4-Trichlorobenzene	120-82-1	ug/L	-	0.053	U 0.053 U	_	_		062 U 0.06			0.026 U	0.053 U	_	0.026 U	0.053 U	2.6 U	0.33 U	1.3 U		0.033 UJ		0.53 U	0.026 U	0.026 U	0.053 U		0.026 U	0.053 U	0.026 U	0.033 U	0.053 U	0.26 U	0.26 U	0.33 U	1.3 U	1.3 U
	1,2,4-Trimethylbenzene 1,2-Dibromo-3-chloropropane	95-63-6 96-12-8	-	- 80	0.040 1.2 U	U 0.040 U 1.2 U	_	_		053 U 0.05		_	0.027 U 0.37 U	0.040 U 1.2 U	0.027 U 0.37 U	0.027 U 0.37 U	0.040 U 1.2 U	190 37 U	52 0.84 U	200 30 U		0.025 UJ 0.084 UJ		0.40 U 12 U	0.027 U 0.37 U	0.027 U 0.37 U	0.040 U 1.2 U	0.027 U 0.37 U	0.027 U 0.37 U	0.040 U 1.2 U	0.027 U 0.37 U	0.025 U 0.084 U	_	0.27 U 3.7 U	_	66 0.84 U	80 30 U	81 30 U
	1,2-Dibromoethane	106-93-4		-	0.013		_	_		050 U 0.05		_	0.043 U		_	0.043 U	0.013 U		0.64 U	0.32 U		0.061 UJ		0.13 U	0.043 U	0.043 U	0.013 U		0.043 U	0.013 U	0.043 U	0.064 U	_	_	_	0.64 U		
	1,2-Dichlorobenzene	95-50-1	-	-	_	U 0.026 U	_	_		030 U 0.03		_	_		_	_	0.026 U		0.33 U	0.65 U		0.033 UJ				0.024 U				0.026 U			_	_	_	0.33 U		0.65 U
	1,2-Dichloroethane 1,2-Dichloropropane	107-06-2 78-87-5	-	-		U 0.016 U U 0.051 U		_		027 U 0.02 061 U 0.06				0.016 U 0.051 U			0.016 U 0.051 U		0.44 U 0.39 U	0.40 U 1.3 U		0.044 UJ 0.039 UJ		0.16 U 0.51 U	0.15 U 0.037 U					0.016 U 0.051 U	0.15 U 0.037 U		0.016 U 0.051 U			0.44 U 0.39 U		0.40 U 1.3 U
	1,3,5-Trimethylbenzene	108-67-8		80	0.046		_	_		051 U 0.05			_		_	_	0.046 U	2.5 U	25	80		0.024 UJ		0.46 U					0.025 U	0.046 U	0.025 U		_	_	_	20	38	37
	1,3-Dichlorobenzene	541-73-1	<u> </u>	-		U 0.031 U	_	_		070 U 0.07							0.031 U		0.25 U			0.025 UJ				0.054 U		0.054 U		0.031 U			0.031 U					
	1,3-Dichloropropane 1.4-Dichlorobenzene	142-28-9 106-46-7	J.	-	0.086			_		084 U 0.08 068 U 0.06		0.043 U 0.037 U	0.043 U 0.037 U	0.086 U 0.033 U	0.043 U 0.037 U	0.043 U 0.037 U	0.086 U 0.033 U	4.3 U 3.7 U	0.28 U 0.24 U	2.1 U 0.82 U	0.043 U 0.037 U	0.028 UJ 0.024 UJ		0.86 U 0.33 U	0.043 U 0.037 U	0.043 U 0.037 U	0.086 U 0.033 U	0.043 U 0.037 U	0.043 U 0.037 U	0.086 U 0.033 U	0.043 U 0.037 U	0.028 U 0.024 U	0.086 U 0.033 U	0.43 U 0.37 U		0.28 U 0.24 U		2.1 U 0.82 U
	2,2-Dichloropropane	594-20-7	<u> </u>	-	0.050		_	_		096 U 0.09							0.050 U		2.5 U	1.2 U		0.25 UJ		0.50 U		0.064 U		_		0.050 U	0.064 U		_		_			1.2 U
	2-Butanone (MEK)	78-93-3	-	-	6.0 U	_	_	_		.41 U 0.4	U 0.26 U	2.7 U	2.7 U	6.0 U	2.7 U	2.7 U	6.0 U	270 U	100 U	150 U	2.7 U	10 UJ	10 UJ	60 U	2.7 U	2.7 U	6.0 U	2.7 U	2.7 U	6.0 U	2.7 U	10 U	6.0 U	27 U	27 U	100 U	150 U	150 U
VOCs	2-Chloroethyl vinyl ether 2-Chlorotoluene	110-75-8 95-49-8		-		- U 0.025 U	1.3 U 0.20 L	_			4 U 0.031 U	- 0.038 U	- 0.038 U	- 0.025 U	- 0.038 U	- 0.038 U	- 0.025 U	- 3.8 U	- 0.32 U	- 0.62 U	- 0.038 U	- 0.032 UJ	- 0.032 UJ	- 0.25 U	- 0.038 U	- 0.038 U	- 0.025 U	- 0.038 U	- 0.038 U	- 0.025 U	- 0.038 U	- 0.032 U	- 0.025 U	- 0.38 U	- 0.38 U	- 0.32 U	- 0.62 U	- 0.62 U
	2-Hexanone	591-78-6	<u> </u>	-	5.3 U		_	_			8 U 0.078 L	_	_	5.3 U	_	0.19 U	5.3 U		3.6 U			0.36 UJ				_		0.19 U					_	_	1.9 U			130 U
	4-Chlorotoluene 4-Isopropyltoluene	106-43-4 99-87-6		-	_	U 0.033 U	_				0 U 0.028 L 3 U 0.025 L	0.0.0.0	0.043 U									0.047 UJ						_					_		_			0.82 U
	4-Methyl-2-Pentanone (MIBK)	108-10-1		-	_		_	_			7 U 0.24 U	_	_		_	_																	_	_	_			
	Acetone	67-64-1	J.	7,200	_	4.3 U	_				0 U 2.2 U		_	_														_							_			
	Benzene Bromobenzene	71-43-2 108-86-1		5.0		_	_	_			8 U 0.020 L 6 U 0.044 L	_	-																						_			
	Bromochloromethane	74-97-5	<u> </u>	-	-	_	0.20 0				-	-	-	-	-	-	-	-	-	-	-	-				-		-	-	-	-		-	-	-	-	-	-
	Bromodichloromethane	75-27-4	<u> </u>	-		U 0.058 U	_	_			3 U 0.037 U	_	-	-	-	-	-		-	-	-					-		-					-		-	-		
	Bromoform Bromomethane	75-25-2 74-83-9		-		U 0.056 U 1.9 U	_	_			9 U 0.057 U 2 U 0.13 U	_																_					_		_			
	Carbon disulfide	75-15-0	<u> </u>	-	-	-	0.20 L	J 0.20	υ		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Carbon tetrachloride	56-23-5		-			_				7 U 0.030 U 0 U 0.027 U																											
	Chlorobenzene Chloroethane	108-90-7 75-00-3	-	-		U 0.030 U U 0.072 U	_				4 U 0.066 L	_	-																						_			
	Chloroform	67-66-3	ug/L	-	0.038	U 0.038 U	0.20 U	J 0.20) U 0.(049 U 0.04	9 U 0.048 L	0.083 U	0.083 U	0.038 U	0.083 U	0.083 U	0.038 U	8.3 U	1.7 U	0.95 U	0.083 U	0.17 UJ	0.17 UJ	0.38 U	0.083 U	0.083 U	0.038 U	0.083 U	0.083 U	0.038 U	0.083 U	0.17 U	0.038 U	0.83 U	0.83 U	1.7 U	0.95 U	0.95 U
	Chloromethane	74-87-3	-	-	1.6 U	1.6 U U 0.0089 L	_	_			8 U 0.038 L	_	-		0.41 U							0.75 UJ													_			
	cis-1,2-Dichloroethene cis-1,3-Dichloropropene	156-59-2 10061-01-5		-		U 0.0089 U J 0.10 U	_	_			8 U 0.058 U 9 U 0.041 U	_	-	-	-	-			-	-	-					-		-					-		-	-		
	Dibromochloromethane	124-48-1	ug/L	-	0.039	U 0.039 U	0.20 U	J 0.20) U 0.(077 U 0.07	7 U 0.030 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	3.9 U	0.82 U	0.97 U	0.039 U	0.082 UJ	0.082 UJ	0.39 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.039 U	0.082 U	0.039 U	0.39 U	0.39 U	0.82 U	0.97 U	0.97 U
	Dibromomethane Dichlorodifluoromethane	74-95-3 75-71-8		-		U 0.079 U	_	_			6 U 0.057 L	_	_	_	_	_										_		_					_	_	_	-	2.0 U	
	Bichloroumuol0methane	13-11-0	uy/L	-	0.054	0.054 0	0.201	, 0.20	.0 0.		0.0561	0.02 0	0.02 0	0.054 0	0.02.0	0.02 0	0.054 0	02.0	1.00	2.3 U	0.02.0	0.10 03	0.10 00	0.54 U	0.02 0	0.02 0	0.094 0	0.02 0	0.02 0	0.094 0	0.02 0	0.10 0	0.054 0	0.2 0	0.2 0	1.00	2.30	2.50

TABLE 3: GROUNDWATER ANALYTICAL RESULTS

Former Kelly-Moore Manufacturing Facility, Seattle, Washington

				Locatio	n BKF926	BKF927	KMW-02	R KMW-02F	KMW-02R	KMW-02R	KMW-02R	KMW-02R	KMW-02	KMW-02	KMW-03F	KMW-03R	KMW-03R	KMW-04	KMW-04	KMW-04	KMW-06	KMW-06	KMW-06	KMW-06	KMW-07	KMW-07	KMW-07	KMW-08	KMW-08	KMW-08	KMW-09	KMW-09	KMW-09	KMW-10	KMW-10	KMW-10	KMW-10	KMW-10
				Sample Dat	e 09/02/21	1 09/02/21	I 09/01/17	01/26/18	08/16/18	02/08/19	08/20/19	08/19/20	03/24/21	09/01/21	08/19/20	03/22/21	09/01/21	08/20/20	03/23/21	09/02/21	08/20/20	03/23/21	03/23/21	09/02/21	08/19/20	03/24/21	09/01/21	08/19/20	03/22/21	09/01/21	08/20/20	03/23/21	09/02/21	08/20/20	08/20/20	03/23/21	09/02/21	09/02/21
				Sample II	BKF926-09022	BKF927-09022	1 KMW-02R-9-1-1	7 KMW-02R-012618	8 KMW-02R-081618	KMW-02R-020819	KMW-02R-082019	KMW-02R-081920	KMW-02R-03242	KMW-02R-09012	KMW-03-081920	KMW-03R-032221	KMW-03R-090121	KMW-04-082020	KMW-04-032321	KMW-04-090221	KMW-06-082020	KMW-06-032321	Duplicate 1-032321	KMW-06-090221	KMW-07-081920	KMW-07-032421	KMW-07-090121	KMW-08-081920	KMW-08-032221	KMW-08-090121	KMW-09-082020	KMW-09-032321	KMW-09-090221	KMW-10-082020	KMW-10-9-082020	KMW-10-032321	KMW-10-090221	Dup1-20210902
				Sample Typ	e N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	N	N	N	N	N	N	N	N	N	FD	N	N	FD
				Preliminary	1																																	
Group	Analyte	CAS	Units	Screening																																		
	Ethylbenzene	100-41-4	ug/L	Level 700	0.0040.0	0.0040 U	0.20 U	0.20 U	0.039 U	0.039 U	0.032 U	0.022 U	0.022 U	0.0040 U	0.022 U	0.022 U	0.0040 U	6,400	1,500	5,300	0.022.11	0.036 UJ	0.026.111	0.040 U	0.022 U	0.022 U	0.004011	0.022 U	0.022.11	0.0040 U	0.02211	0.026.11	0.004011	96	110	2,500	1,800	1.800
	Hexachlorobutadiene	87-68-3		700	0.0040 U	-	0.20 U	0.20 U	0.039 0	0.039 U	0.052 U	0.022 U	0.022 0	0.0040 0	0.022 0	0.022 U	0.0040 0	5.6 U	0.75.11	0.92 U	0.022 U	0.036 0J	0.036 UJ	0.040 0	0.022 U	0.022 0	0.0040 0	0.022 U	0.022 0	0.0040 0	0.022 U	0.036 0	0.0040 0	90	0.56 U			0.92 U
	Iodomethane	74-88-4		-		0.037 0	2.0 U	1.0.1	0.094 0	0.094 0	0.050 0	0.056.0	0.056.0	0.057 0	0.056 0	0.050 0	0.057 0	5.0 U	0.75 0	0.92 0	0.056 0	0.075 0J	0.075 0J	0.37 0	0.050 0	0.056 0	0.037 0	0.056 0	0.056 0	0.037 0	0.056.0	0.075 0	0.037 0	0.56 0	0.56 0	0.75 0	- 0.92 0	
				-	_	- 0.047 U	2.0 0	1.0 0	-	-	-	-	-	-	-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-		-
	Isopropylbenzene	98-82-8		-	0.047 U 0.011 U		0.20 0	0.20 0	0.049 0	0.049 0	0.024 0	0.026 0	0.026 0	0.047 0	0.026 0	1.7	0.047 0	2.6 0	11	45	8.2	2.8 J	2.7 J	0.47 0	0.026 0	0.026 0	0.047 0	0.026 0	0.026 0	0.047 0	0.0	3.3	3.5	0.26 0	0.26 0	40	31 5.800	31 5.900
	m,p-Xylene	1330-20-7		1,600			0.40 0	0.40 0	0.066 0	0.066 0	0.074 0	0.25 0	0.25 0	0.011.0	0.25 0	0.25 0	0.011.0	2011	4,100	16,000	0.25 0	0.033 0J	0.033 UJ	0.11.0	0.25 0	0.25 0	0.011 U	0.25 0	0.25 0	0.011.0	0.25 0	0.035 0	0.011.0	400	470	4,000		
		1634-04-4		-	0.011 U	0.0110	0.20 0	0.20 0	0.050 0	0.050 0	0.046 0	0.030 0	0.030 0	0.0110	0.030 0	0.030 0	0.0110	3.0 0	0.38 0	0.28 0	0.030 0	0.038 0J	0.038 0J	0.110	0.030 0	0.030 0	0.0110	0.030 0	0.030 0	0.0110	0.030 0	0.038 0	0.0110	0.30 0	0.30 0	0.38 0		0.28 U
	Methylene chloride	75-09-2		-	2.3 U	2.3 0	2.0 U	1.0 0	0.0	0.0	1.9 0	2.0 0	2.0 0	2.3 0	2.0 0	2.0 0	2.3 0	200 0	14 0	570	2.0 0	1.4 UJ	5.0 J	23 0	2.0 0	2.0 0	2.3 U	2.0 0	2.0 0	2.3 0	2.0 0	1.4 0	2.3 0	20 0	20.0	14 0	57 U	57 U
	Naphthalene	91-20-3		160	0.029 U	0.029 U	1.0 U	1.0 0	0.042 0	0.042 0	0.038 0	0.032 0	0.032 0	0.029 0	0.032 0	0.032 0	0.029 0	3.2 0	0.20 0	0.72 0	0.032 0	0.020 UJ	0.020 UJ	0.29 0	0.032 0	0.032 0	0.029 0	0.032 0	0.032 0	0.029 0	0.032 0	0.020 0	0.029 0	0.32 0	0.32 0	0.20 0	0.72 0	0.72 U
	n-Butylbenzene	104-51-8		-	-	-	0.20 U	0.20 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	n-Hexane	110-54-3	<u>J.</u>	-	0.068 U		-	-	0.046 U	0.046 U	0.039 U	0.57 U	0.57 U	0.068 U	0.57 U	0.57 U	0.068 U	570	1.2 U	1.7 U	0.57 U	0.12 UJ	0.12 UJ	0.68 U	0.57 U	0.57 U	0.068 U	0.57 U	0.57 U	0.068 U	0.57 U	0.12 U	0.068 U	5.7 U	5.70	1.2 U		1.7 U
VOCs	n-Propylbenzene	103-65-1		-	0.040 U		0.20 U	0.20 U	0.030 U	0.030 U	0.033 U	0.033 U	0.033 U	0.040 U	0.033 U	3.1	0.040 U	3.3 U	0.28 U	33	10	3.6 J	3.5 J	0.40 U	0.033 U	0.033 U	0.040 U	0.033 U	0.033 U	0.040 U	5.9	3.5	3.6	0.33 U	0.33 U	38	27	25
(cont.)	o-Xylene	95-47-6	<u>J.</u>	1,600	0.0054 U		0.20 U	0.20 U	0.032 U	0.032 U	0.038 U	0.042 U	0.042 U	0.0054 U	0.042 U	0.042 U	0.0054 U	3,400	800	4,000	0.042 U	0.039 UJ	0.039 UJ	0.054 U	0.042 U	0.042 U	0.0054 U	0.042 U	0.042 U	0.0054 U	0.042 U	0.039 U	0.0054 U	0.42 U	0.42 U	1,300		2,100
. ,	sec-Butylbenzene	135-98-8		-	0.037 U		0.20 U	0.20 U	0.034 U	0.034 U	0.023 U	0.024 U	0.024 U	0.037 U	0.024 U	0.024 U	0.037 U	2.4 U	0.23 U	0.92 U	1.1	0.023 UJ	0.023 UJ	0.37 U	0.024 U	0.024 U	0.037 U	0.024 U	0.024 U	0.037 U	0.024 U	0.023 U	0.037 U	0.24 U	0.24 U	0.23 U		0.92 U
	Styrene	100-42-5		-	0.12 U		0.20 U	0.20 U	0.061 U	0.061 U	0.028 U	0.032 U	0.032 U	0.12 U	0.032 U	0.032 U	0.12 U	3.2 U	0.73 U	3.0 U	0.032 U	0.073 UJ	0.073 UJ	1.2 U	0.032 U	0.032 U	0.12 U	0.032 U	0.032 U	0.12 U	0.032 U	0.073 U	0.12 U	0.32 U	0.32 U	0.73 U		3.0 U
	tert-Butylbenzene	98-06-6		-	0.062 U		0.20 U	0.20 U	0.049 U	0.049 U	0.014 U	0.030 U	0.030 U	0.062 U	0.030 U	0.030 U	0.062 U	3.0 U	0.16 U	1.5 U	0.030 U	0.016 UJ	0.016 UJ	0.62 U	0.030 U	0.030 U	0.062 U	0.030 U	0.030 U	0.062 U	0.030 U	0.016 U	0.062 U	0.30 U	0.30 U	0.16 U		1.5 U
	Tetrachloroethene	127-18-4		-	0.0098 U	0.0098 U	0.20 U	0.20 U	0.076 U	0.076 U	0.088 U	0.056 U	0.056 U	0.0098 U	0.056 U	0.056 U	0.0098 U	5.6 U	0.74 U	0.24 U	0.056 U	0.074 UJ	0.074 UJ	0.098 U	0.056 U	0.056 U	0.0098 U	0.056 U	0.056 U	0.0098 U	0.056 U	0.074 U	0.0098 U	0.56 U	0.56 U	0.74 U		0.24 U
	Toluene	108-88-3		640	0.0044 U	0.0044 U	1.0 U	1.0 U	0.046 U	0.046 U	0.033 U	0.030 U	0.030 U	0.0044 U	0.030 U	0.030 U	0.0044 U	810	240	1,300	0.030 U	0.028 UJ	0.028 UJ	0.044 U	0.030 U	0.030 U	0.0044 U	0.030 U	0.030 U	0.0044 U	0.030 U	0.028 U	0.0044 U	0.30 U	0.30 U	3,200		1,900
	trans-1,2-Dichloroethene	156-60-5	ug/L	-	0.021 U	0.021 U	0.20 U	0.20 U	0.080 U	0.080 U	0.041 U	0.037 U	0.037 U	0.021 U	0.037 U	0.037 U	0.021 U	3.7 U	1.7 U	0.52 U	0.037 U	0.17 UJ	0.17 UJ	0.21 U	0.037 U	0.037 U	0.021 U	0.037 U	0.037 U	0.021 U	0.037 U	0.17 U	0.021 U	0.37 U	0.37 U	1.7 U	0.52 U	0.52 U
	trans-1,3-Dichloropropene	10061-02-6	i ug/L	-	0.048 U	0.048 U	0.20 U	0.20 U	0.079 U	0.079 U	0.049 U	0.050 U	0.050 U	0.048 U	0.050 U	0.050 U	0.048 U	5.0 U	0.59 U	1.2 U	0.050 U	0.059 UJ	0.059 UJ	0.48 U	0.050 U	0.050 U	0.048 U	0.050 U	0.050 U	0.048 U	0.050 U	0.059 U	0.048 U	0.50 U	0.50 U	0.59 U	1.2 U	1.2 U
	Trichloroethene	79-01-6	ug/L	4.0	0.0084 U	0.0084 U	0.20 U	0.20 U	0.046 U	0.046 U	0.084 U	0.085 U	0.085 U	0.0084 U	0.085 U	0.085 U	0.0084 U	8.5 U	0.46 U	0.21 U	0.085 U	0.046 UJ	0.046 UJ	0.084 U	0.085 U	0.085 U	0.0084 U	0.085 U	0.085 U	0.0084 U	0.085 U	0.046 U	0.0084 U	0.85 U	0.85 U	0.46 U	0.21 U	0.21 U
	Trichlorofluoromethane	75-69-4	ug/L	-	0.057 U	0.057 U	0.20 U	0.20 U	0.038 U	0.038 U	0.051 U	0.037 U	0.037 U	0.057 U	0.037 U	0.037 U	0.057 U	3.7 U	0.80 U	1.4 U	0.037 U	0.080 UJ	0.080 UJ	0.57 U	0.037 U	0.037 U	0.057 U	0.037 U	0.037 U	0.057 U	0.037 U	0.080 U	0.057 U	0.37 U	0.37 U	0.80 U	1.4 U	1.4 U
	Vinyl acetate	108-05-4	ug/L	-	-	-	1.0 U	1.0 U	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
	Vinyl chloride	75-01-4	ug/L	0.29	0.0054 U	0.0054 U	0.20 U	0.20 U	0.042 U	0.042 U	0.063 U	0.067 U	0.067 U	0.0054 U	0.067 U	0.067 U	0.0054 U	6.7 U	1.1 U	0.13 U	0.067 U	0.11 UJ	0.11 UJ	0.054 U	0.067 U	0.067 U	0.0054 U	0.067 U	0.067 U	0.0054 U	0.067 U	0.11 U	0.0054 U	0.67 U	0.67 U	1.1 U	0.13 U	0.13 U

Notes BOLD indicates analyte detections.

- = not analyzed

U = The analyte was not detected at the reporting limit indicated.

J = The value is an estimate.

U = The analyte was not detected at the estimated reporting limit indicated. FD = Field Duplicate

PD = FIEID DUPLICATE ug/L = micrograms per liter mg/L = milligram per liter Preliminary Screening Level as defined on Table 2, Selection of Preliminary Groundwater Screening Levels (Ecology, 2019). Concentration Exceeds Preliminary Screening Level

TABLE 4: SOIL VAPOR EXTRACTION SYSTEM ANALYTICAL SUMMARY^{1, 2, 3}

Former Kelly-Moore Manufacturing Facility, Seattle, Washington

		Benzene	ТРН	
Sample	Date ⁴	(mg/m ³)	(mg/m ³)	
	Western SVE			
SVE-09	11/7/17	0.069	310	
	5/30/19	<0.1	630	
	6/4/19	<0.1	440	
SVE-10	11/7/17	0.53	820 J	
	5/30/19	< 0.5	3,500	
	6/4/19	< 0.5	2,300	
SVE-11	11/7/17	0.069	220	
	5/30/19	<0.1	1,300	
	6/4/19	<0.1	660	
SVE-12	11/7/17	0.44	1,400 J	
	5/30/19	<0.1	3,300	
	6/4/19	<0.2	1,400	
SVE-13	11/7/17	0.23	600 J	
	5/30/19	<0.1	2,100	
	6/4/19	<0.1	760	
	Eastern SVE	Wells		
SVE-02	11/7/17	< 0.03	3.4	
	5/30/19	<0.1	<7.1	
	6/4/19	<0.1	14	
SVE-04	11/7/17	< 0.03	310	
	5/30/19	<0.1	470	
	6/4/19	<0.1	400	
SVE-06	11/7/17	0.041	280	
	5/30/19	<0.1	36	
	6/4/19	<0.1	33	
SVE-08	11/7/17	< 0.03	65	
	5/30/19	<0.1	30	
	6/4/19	<0.1	16	
SVE-07	11/7/17	< 0.03	82	
	5/30/19	<0.1	70	
	6/4/19	<0.1	230	
SVE-05	11/7/17	0.50	2,200 J	
	5/30/19	<0.2	5,100	
	6/4/19	< 0.5	3,500	
SVE-03	11/7/17	1.1	1,900 J	
	5/30/19	<0.2	1,900	
	6/4/19	<0.1	2,400	
SVE-01	11/7/17	0.14	450	
	5/30/19	<0.1	10	
	6/4/19	<0.1	14	

Notes:

1. Data qualifiers are as follows:

J = the result is estimated because the concentration exceeded the calibration range of the instrument.

2. **Bold** values indicate results above the detection limits.

3. Analytes that were not detected above the method detection limit are listed as less than the detection limit.

- 4. The SVE system began operating without air sparging on November 7, 2017. The SVE did not operate between October 16, 2018 and April 1, 2019. SVE system with air sparge began operating on May 29, 2019.
- 5. Benzene results, SW8021B through Feb. 2020, then TO-15 from March 2020 onward.
- 6. TPH results from NWPTW-Gx

Abbreviations:

- SVE = soil vapor extraction
- TPH = total petroleum hydrocarbons

TABLE 4: SOIL VAPOR EXTRACTION SYSTEM ANALYTICAL SUMMARY^{1, 2, 3}

Former Kelly-Moore Manufacturing Facility, Seattle, Washington

		Benzene	ТРН				
Sample	Date⁴	(mg/m ³)	(mg/m ³)				
Influent	3/21/18	< 0.034	140	Notes:			
	5/30/18	< 0.034	170	1. Data qualifiers are as follows:			
	6/29/18	< 0.034	530	J = the result is estimated because the			
	7/31/18	< 0.034	730	concentration exceeded the calibration			
	8/31/18	< 0.034	550	range of the instrument.			
	9/19/18	< 0.034	470	2. Bold values indicate results above the			
	10/16/18	< 0.034	1,900	detection limits.			
	4/3/19	< 0.034	670	3. Analytes that were not detected above th			
	5/3/19	< 0.034	-	method detection limit are listed as less			
	5/30/19	<0.10	1,100	than the detection limit.			
	6/4/19	<0.10	640	4. The SVE system began operating without			
	7/2/19	<0.10	-	air sparging on November 7, 2017. The SV did not operate between October 16, 201 and April 1, 2019. SVE system with air spa			
	8/7/19	0.22	-				
	1/9/20	< 0.50	8,200				
	2/14/20	<0.10	180	began operating on May 29, 2019.			
	3/17/20	< 0.0011	135	5. Benzene results, SW8021B through Feb. 2			
	4/20/20	0.035	90	then TO-15 from March 2020 onward.			
	5/18/20	0.0059	110	6. TPH results from NWPTW-Gx			
	6/16/20	0.065	170				
	7/20/20	0.055	260	Abbreviations:			
	8/27/20	0.12	840	SVE = soil vapor extraction			
	9/21/20	< 0.013	1,400	TPH = total petroleum hydrocarbons			
	10/26/20	<0.0028	980				
	11/18/20	0.035	140	-			
	12/14/20	< 0.0030	280				
	1/11/21	< 0.0030	140				
	2/9/21	0.032	370				
	3/9/21	0.057	420	1			
	4/6/21	0.020	320				
	5/11/21						
	6/16/21	< 0.00033	490				
	7/13/21	< 0.00034	2,400				
	8/5/21	< 0.00035	1,800				
	9/7/21	< 0.00034	600	-			
	10/5/21	< 0.00036	290				
	11/11/21	< 0.00039	89				
	12/8/21	< 0.00036	41	-			

TABLE 4: SOIL VAPOR EXTRACTION SYSTEM ANALYTICAL SUMMARY^{1, 2, 3}

Former Kelly-Moore Manufacturing Facility, Seattle, Washington

		Benzene	ТРН	
Sample	Date⁴	(mg/m ³)	(mg/m ³)	
Effluent	11/7/17	< 0.03	28	
	3/21/18	< 0.034	10	Notes:
	4/24/18	< 0.034	15	1. Data qualifiers are as follows:
	5/30/18	< 0.034	160	J = the result is estimated because the
	6/29/18	< 0.034	520	concentration exceeded the calibrati
	7/31/18	< 0.034	450	range of the instrument.
	8/31/18	< 0.034	23	2. Bold values indicate results above th
	9/19/18	< 0.034	59	detection limits.
	10/16/18	< 0.034	460	3. Analytes that were not detected above
	4/3/19	< 0.034	10	method detection limit are listed as
	5/3/19	< 0.034	-	than the detection limit.
	5/30/19	<0.10	41	4. The SVE system began operating wit
	6/4/19	<0.10	20	air sparging on November 7, 2017. T
	7/2/19	<0.10	-	did not operate between October 16
	8/7/19	<0.10	-	and April 1, 2019. SVE system with ai
	1/9/20	<0.10	1,400	began operating on May 29, 2019.
	2/14/20	<0.10	20	5. Benzene results, SW8021B through F
	3/17/20	<0.00086	<2.2	then TO-15 from March 2020 onward
	4/20/20	< 0.00023	<2.3	6. TPH results from NWPTW-Gx
	5/18/20	< 0.00023	<1.1	
	6/16/20	< 0.00025	<1.3	Abbreviations:
	7/20/20	< 0.00023	<1.2	SVE = soil vapor extraction
	8/27/20	< 0.00023	<0.92	TPH = total petroleum hydrocarbons
	9/21/20	< 0.00023	< 0.95	
	10/26/20	< 0.00022	<0.89	
	11/18/20	< 0.00023	< 0.95	
	12/14/20	< 0.00023	< 0.95	
	1/11/21	<0.00024	<0.98	
	2/9/21	<0.00016	<1.6	
	3/9/21	< 0.00040	<1.6	
	4/6/21	<0.000042	<1.6	
	5/11/21	<0.000067	<2.5	
	6/16/21	< 0.000043	<1.6	
	7/13/21	<0.000044	<1.6	
	8/5/21	<0.000044	<1.6	
	9/7/21	<0.000044	<1.6	
	10/5/21	<0.000047	<1.7	
	11/11/21	<0.000052	<1.9	
	12/8/21	<0.000046	<1.7	

TABLE 5: SVE/CATOX and PSCAA Permit Compliance Results Former Kelly-Moore Manufacturing Facility, Seattle, Washington

		c	ATOX Results (Ir	nfluent / Effluer	nt)			CATOX O	peration						Estim	ated Mass Rem	oval / Removal I	Rates ²					Estimated Pre-C	ontrol Emission	Estimated Post-C	Control Emission
											Usi	ng PID / FID Fie	Id Reading Resu	ults*	Using La	boratory Resu	lts - TPH Gasolin	ie Range	U	sing Laborator	y Results - Benze	ene	Rate for PSCA	A Condition ³	Rat	te
	PID / FID Fie	eld Readings	La	boratory Result	ts ¹					Operational	Mass	Mass	Mass	Cumulative	Mass	Mass	Mass	Cumulative	Mass	Mass	Mass	Cumulative	TPH-Gasoline	Benzene	TPH-Gasoline	Benzene
Field			TPH-Gaso	ine Range	Benzene		Extraction	Influent	Hour	Hours of	Removal	Removal	Removed	Mass	Removal	Removal	Removed	Mass	Removal	Removal	Removed	Mass	Range	Emission	Range	Emission
Visit	Influent	Effluent	Influent	Effluent	Influent	Effluent	Rate	Temperature	Meter	Interval	Efficiency	Rate	per Interval	Removed	Efficiency	Rate	per Interval	Removed	Efficiency	Rate	per Interval	Removed	Emission Rate	Rate	Emission Rate	Rate
Date	(ppmv)	(ppmv)	(µg/m³)	(µg/m³)	(µg/m³)	(µg/m³)	(scfm)	(°F)	(hours)	(hours)	(%)	(lbs/day)	(lbs)	(lbs)	(%)	(lbs/day)	(lbs)	(lbs)	(%)	(lbs/day)	(lbs)	(lbs)	(lbs/day)	(lbs/day)	(lbs/day)	(lbs/day)
NOC Conditions ⁴	-	≤ 10	-	-	-	-	-	> 650	-	-	See Notes	-	-	-	-	-	-	-	-	-	-	-	≤ 2.74	≤ 0.018	-	
1/9/2020	6,333.0	2,075.0	8,200,000	1,400,000	500.0	100.0	78	799	3,598.7	35.0	67.2%	105.10	153.3	2,861.2	82.9%	47.7	69.6	1,545.8	80.0%	0.00281	0.00205	0.17384	57.54	0.004	9.82	0.001
2/14/2020	55.0	1.3	180,000	20,000	100.0	99.0	198	665	3,897.0	298.3	97.6%	3.36	674.1	3,535.2	88.9%	2.9	314.3	1,860.1	1.0%	0.00002	0.01755	0.19139	3.21	0.002	0.36	0.002
3/17/2020	100.9	7.6	135,000	2,200	1.1	0.09	225	659	4,056.0	159.0	92.5%	6.64	33.1	3,568.4	98.4%	2.7	18.3	1,878.4	92.2%	0.00002	0.00013	0.19152	2.73	0.000	0.04	0.000
4/20/2020	98.9	4.8	90,000	2,300	35	0.23	155	696	4,854.0	798.0	95.1%	4.62	187.2	3,755.5	97.4%	1.2	65.0	1,943.4	99.3%	0.00048	0.00840	0.19992	1.26	0.000	0.03	0.000
5/18/2020	6.2	0.3	110,000	1,100	5.9	0.23	138	687	5,525.0	671.0	95.2%	0.26	68.1	3,823.7	99.0%	1.4	36.0	1,979.4	96.1%	0.00007	0.00776	0.20768	1.37	0.000	0.01	0.000
6/16/2020	25.0	1.3	170,000	1,300	65	0.25	150	701	6,164.0	639.0	94.8%	1.12	18.4	3,842.1	99.2%	2.3	48.3	2,027.7	99.6%	0.00087	0.01257	0.22025	2.29	0.001	0.02	0.000
7/20/2020	42.0	5.0	260,000	1,200	55	0.23	151	716	6,980.0	816.0	88.1%	1.77	49.2	3,891.2	99.5%	3.5	98.5	2,126.2	99.6%	0.00074	0.02750	0.24775	3.53	0.001	0.02	0.000
8/27/2020	321.0	7.5	840,000	920	120	0.23	125	705	7,885.2	905.2	97.7%	12.40	267.2	4,158.5	99.9%	9.4	244.3	2,370.5	99.8%	0.00135	0.03943	0.28719	9.45	0.001	0.01	0.000
9/21/2020	228.0	4.2	1,400,000	950	13	0.23	130	703	8,485.0	599.7	98.2%	9.21	270.0	4,428.4	99.9%	16.4	322.3	2,692.8	98.2%	0.00015	0.01869	0.30588	16.37	0.000	0.01	0.000
10/26/2020	195.0	3.0	980,000	890	2.8	0.22	277	690	9,181.0	696.0	98.5%	16.83	377.5	4,806.0	99.9%	24.4	591.1	3,283.9	92.1%	0.00006	0.00310	0.30898	24.42	0.000	0.02	0.000
11/18/2020	62.5	1.4	140,000	950	35	0.23	234	688	9,734.0	553.0	97.8%	4.52	246.0	5,052.0	99.3%	2.9	314.8	3,598.7	99.3%	0.00073	0.00917	0.31815	2.95	0.001	0.02	0.000
12/14/2020	25.9	1.8	280,000	950	3.0	0.23	279	697	10,343.0	609.0	93.1%	2.13	84.4	5,136.4	99.7%	7.0	126.0	3,724.7	92.3%	0.00007	0.01017	0.32832	7.03	0.000	0.02	0.000
1/11/2021	97.5	1.5	140,000	980	3.0	0.24	280	705	11,013.0	670.0	98.5%	8.51	148.4	5,284.8	99.3%	3.5	146.6	3,871.4	92.0%	0.00007	0.00194	0.33026	3.53	0.000	0.02	0.000
2/9/2021	309.0	3.0	370,000	1,600	32	0.16	63	684	11,690.0	677.0	99.0%	6.10	206.0	5,490.8	99.6%	2.1	78.8	3,950.2	99.5%	0.00018	0.00353	0.33379	2.10	0.000	0.01	0.000
3/9/2021	103.9	2.0	420,000	1,600	57	0.40	67	712	12,324.0	634.0	98.1%	2.16	109.1	5,599.9	99.6%	2.5	60.9	4,011.1	99.3%	0.00034	0.00689	0.34068	2.53	0.000	0.01	0.000
4/6/2021	230.0	3.7	320,000	1,600	20	0.042	67	560	12,994.8	670.8	98.4%	4.80	97.2	5,697.2	99.5%	1.9	62.1	4,073.2	99.8%	0.00012	0.00645	0.34713	1.93	0.000	0.01	0.000
5/11/2021	344.0	2.8	510,000	2,500	21	0.067	96	728	13,822.0	827.2	99.2%	10.37	261.3	5,958.5	99.5%	4.4	108.6	4,181.8	99.7%	0.00018	0.00519	0.35232	4.40	0.000	0.02	0.000
6/16/2021	124.4	5.5	490,000	1,600	0.33	0.043	286	707	14,689.0	867.0	95.6%	10.76	381.6	6,340.1	99.7%	12.6	306.2	4,487.9	87.0%	0.00001	0.00340	0.35572	12.61	0.000	0.04	0.000
7/13/2021	771.6	2.2	2,400,000	1,600	0.34	0.044	291	695	14,899.7	210.7	99.7%	70.85	358.2	6,698.2	99.9%	62.8	330.7	4,818.7	87.1%	0.00001	0.00007	0.35578	62.83	0.000	0.04	0.000
8/5/2021	505.0	5.1	1,800,000	1,600	0.35	0.044	290	706	15,452.0	552.3	99.0%	45.88	1,343.1	8,041.3	99.9%	46.9	1,262.4	6,081.0	87.4%	0.00001	0.00018	0.35596	46.96	0.000	0.04	0.000
9/7/2021	299.0	1.7	600,000	1,600	0.34	0.044	319	698	16,226.0	774.0	99.4%	30.01	1,223.7	9,265.0	99.7%	17.2	1,033.6	7,114.6	87.1%	0.00001	0.00027	0.35623	17.22	0.000	0.05	0.000
10/5/2021	137.1	0.3	290,000	1,700	0.36	0.047	247	690	16,899.0	673.0	99.8%	10.69	570.7	9,835.7	99.4%	6.4	330.6	7,445.2	86.9%	0.00001	0.00022	0.35645	6.44	0.000	0.04	0.000
11/11/21	23.1	1.0	89,000	1,900	0.39	0.052	290	684	17,768.0	869.0	95.7%	2.03	230.3	10,066.0	97.9%	2.3	157.1	7,602.3	86.7%	0.00001	0.00029	0.35673	2.32	0.000	0.05	0.000
12/8/21	6.0	0.5	41,000	1,700	0.36	0.046	79	728	18,389.0	621.0	91.7%	0.14	28.0	10,094.1	95.9%	0.3	33.0	7,635.3	87.2%	0.00000	0.00014	0.35687	0.29	0.000	0.01	0.000

* = mass as equivalent hexane

** = Pre-control inlet emissions based on laboratory data

Conversions / Constants		
Hexane Mol Weight =	86	grams/mol
Molar Volume =	24.45	liters
1 meter =	3.28	feet
1 pound =	453592	milligrams
1 day =	1440	minutes

Abbreviations

°F - degrees Fahrenheit
µg/m ³ - micrograms per cubic meter
% - percent
CATOX - Catalytic Oxidizers
PID - Photo Ionization Detector
FID - Flame Ionization Detector
lbs - pounds
NOC - Notice of Construction
ppmv - parts per million by volume
PSCAA - Puget Sound Clean Air Agency
scfm - standard cubic feet per minute
TPH - total petroleum hydrocarbons
USEPA - United States Environmental Protection Agency

Notes:

1) Laboratory results that are below reporting or method detection limits are presented with the respective limit values to facilitate calculations.

2) The estimated mass of contaminant removed per interval is obtained by multiplying the mass removal rate, averaged over the current and prior field visit, by the time elapsed for the interval as measured by the hour meter

3) Estimated pre-control emission rate is more than the maximum value (2.74 lb/day for TPH, 0.018 lb/day for benzene) for which no air treatment controls are required per PSCAA NOC conditions.

 Conditions from PSCAA Notice of Construction No. 11291, Registration No. 29932
 FID Field Reading for Removal Efficiency / Discharge Concentration

 Greater than or equal to 97% if inlet TPH is greater than or equal to 200 ppmv (measured as hexane with FID).

 2. Greater than or equal to 90% if inlet TPH is less than 200 ppmv (measured as hexane with FID). Effluent at less than or equal to 10 ppmv (measured as hexane with FID).
 CATOX flow rate must not exceed 300 scfm. 5. Use only electric CATOX. CATOX temperature must be a minimum of 650F degrees.
 System must shutdown if CATOX temperature drops below 650F degrees during normal operation. 8. CATOX must have sensor to monitor system temperature continuously. No Air Treatment Controls are Required if: 9. Pre-control TPH emissions are less than or equal to 2.74 lbs/day 10. Pre-control benzene emissions are less than equal to 0.018 lbs/day 5) TPH-Gasoline Range and benzene concentrations were analyzed by NWTPH-Gx and USEPA Method 8021B from January-February 2020 and by USEPA Method TO-15 and NWTPH-Gx since March 2020. Benzene influent and effluent laboratory results that are 100 and 99 μg/m3 represent samples that were below the detection level of 100 μg/m3. The 99 value is used to keep the calculations from dividing by zero. Actual values could be lower than shown.

6) The January 9, 2020 field results reflect the CATOX system restart after months of being offline and is not indicative of continuous operation. Initial startup concentrations are usually higher than during extended operation and CATOX may not have been consistently reached above minimum temperature which is required for removal efficiency.

7) The April 6, 2021 CATOX influent temperature recorded is likely not indicative of CATOX operating conditions due to incorrect configuration of the meter, which was remedied on the same day. See Appendix C.



Appendix A

Field Forms, Groundwater Monitoring

wood

MONITORING WELL/PIEZOMETER NUMBER- KMW-02R

Project Name: Kelly-Moore

Project Number: <u>14697009</u>

Date: 8/19/20 Weather Conditions: OK

Location: Seattle, WA Sampler: Lucas Kerner

Wind Speed/Direction: _//A

WELL INFORMATION

Casing Diameter (in):	2"
Top of Casing Elevation (ft):	21.63'
initial Depth to Water (ft):	0.33
Wellhead Condition:OK	AY

Groundwater Elevation (ft): Depth of Well Casing (ft): Actual Purge Volume (gal): _____ I.7.Seeller

. PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Al/n'-Notes
10.33	11:36	7.02	0.227	15,8	184.1	2.07	9.71	200
10.35	11:34	5.89	0.213	15.0	2052	0.67	8.01	200
10.35	11:47	5.84	0.212	14.9	1,912	0.61	6.02	200
10.35	11:49	5.80	0.211	<u> 4.9</u>	202	0.52	6,58	200
10.35	11:47	5.79	0.210	14.9	192	0.42	7.97	200
10.35	11:50	5.76	0.105	15.0	223.9	0.38	9.35	200
10.35	11:53	5.77	<u>0,705</u>	15.0	244.4	0.33	ji is _	175
10.36	1:56	5,78	0.205	15.3	204.8	0.29	14.95	Bubbleson Turk
10.36	11:59	5.70	0.704	15.3	210.2	0.36	7,50	
0.36	12:02	5.75	0.705	15.2	209.5	0.31	6.48	
(9.30	<u>n:05</u> _	5.73	0.105	<u> 5.</u> 2	2.805	0.33	6.5	
ļ	17:00	COLLEG	T SAMPLE					
L			-					

Sample ID No.: KMW-02R- 0			
Water Level Ind. Model & No.:	Solinst Model 101		
ORP/DO Meter Model & No.:	YSI-Pro Dss		
Purge Equipment Used:	Peristaltic Pump with dedica	ted tubing	
Sampling Equipment Used:	YSI Pro Dss		
Purge Start Time:		Sample Collection Time:	12:06
Purge Completion Time:		Purging Method:	SAA
Average Purge Rate (mL/min):		Sample Containers Used:	Lab Provided
Analytical Lab: Friedman & Bri	uya Inc.	Chemical Analyses: See	
Other Field Observations:			

Updated 1/31/19

Page _ 1 _ of _ _

wood

MONITORING WELL/PIEZOMETER NUMBER- KMW-03R

Project Name: Kelly-Moore		
Proto of Numbers 44007000		Date: 09/(9/20
Project Number: <u>14697009</u>	· We	ather Conditions:trai pone c
Location: Seattle, WA		
Sampler: Lucas Kerner	Win	d Speed/Direction://
•		

WELL INFORMATION

Casing Diameter (in):	2"
Top of Casing Elevation (ft):	21.54'
Initial Depth to Water (ft):	10.7.9
Wellhead Condition:	OKK

Groundwater Elevation (ft): _____ Depth of Well Casing (ft): _____ Actual Purge Volume (gal): _____

PURGING MEASUREMENTS

	WL (ft _btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
	10.41	14:18	4.14	10.454	179	-24	0.38	4.70	
	0.36	14:4	6.20	0.446	18.2	-29.4		4.94	
	19.40	14:24	6.28	0.441	181	-37	0.15	4.45	
	10.40	[4:27	6.38	0.418	18.0	-43	0.18	S.R.	
	10.39	14:30	* 6.42	0.424	17.9	-46.8	0.16	8.15	
14:3	10.41	JAN MA	03 6-46	0.422	17.9	-50.0	0.15	۹,۵	
1436	10.42	19,5%	6.48	0.422	17.7	-93,7	0.12	12.8	
1435	(0.9	<u> (4,68) (</u>	12.51	0.419	17.7	-56.7	0.17	180	
142	0.43	19:9941	6,94	0.416	<u>_</u>]] .7	-62	0.10	21.5	
1445	6.43	1446	6.56	0.411	17.7	-63.5	0.09	12	
1938	-Lee	Strength Land	An and an an an			· · · · ·			
14.5			An anger of Annual Array		·	h			
5.						and the state of	1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 - 1999 -	Contraction of the second s	
									- the second sec

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Sample ID No.: KMW-03R- Water Level Ind. Model & No.: Solinst Model 101 ORP/DO Meter Model & No.: YSI-Pro Dss Purge Equipment Used: Peristaltic Pump with ded Sampling Equipment Used: YSI Pro Dss	icated tubing
Purge Start Time: 14:45 Purge Completion Time: 14:45 Average Purge Rate (mL/min): 150 Analytical Lab: Friedman & Bruya Inc.	Sample Collection Time:14:45Purging Method:SAASample Containers Used:Lab ProvidedChemical Analyses:See COC
Other Field Observations:	17x Youl Vax
	32 125-1 plaster y Haller

Updated 1/31/19

Page _ 1 _ of _ __

wood

MONITORING WELL/PIEZOMETER NUMBER- KMW-04

Project Name: Kelly-Moore

Location: <u>Seattle, WA</u> Sampler: <u>Lucas Kerner</u>

Project Number: 14697009

Date: _(181	0/20	
Weather Conditions:	SU	V Jo's	

Wind Speed/Direction: _//A

WELL INFORMATION

Casing Diameter (in):	2"	
Top of Casing Elevation (ft):	18.56'	
Initial Depth to Water (ft):	745	
Wellhead Condition:	OKAY	TRUSTED

Groundwater Elevation (ft): _	
Depth of Well Casing (ft):	
Actual Purge Volume (gal):	1 Sach
	7.11

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
7.48	123	6.59	0.430	19.5	-396	3.00	12	
748	17.26	6.39	0.429	17.8	-49.9	0 67	11.3	
748	12:29	0.34	OUR	17.8	-510	0.76	12	
740	11:32	6.24	0.403	122	-515	0.14	16	
7.43	11:35	Gulf	034	127	-51.5	0.0	20	
7.46	1238_	6.09	0.187	179	-51.2	0.0	2	
7.48	1241	6.10	0.263	129	-51.9	0.11	20	
1.43	12.44	6.10	0.7.51	179	-52.1	0.10	A.5	
748	1247	610	0.247	18.0	-517	0.10	9.2	
7,48	150	6.10	0.291	18.1	-519	0.0	19.0	

Sample ID No.: KMW-04-	082020		
Water Level Ind. Model & No.:	Solinst Model 101		
ORP/DO Meter Model & No.:	YSI-Pro Dss		
Purge Equipment Used:	Peristaltic Pump with dedica	ated tubing	·
Sampling Equipment Used:	YSI Pro Dss		
Purge Start Time: Purge Completion Time:	12:20	Sample Collection Time: Purging Method:	17.50 SAA
Average Purge Rate (mL/min)	200	Sample Containers Used:	Lab Provided
Analytical Lab: Friedman & Br	A	Chemical Analyses: <u>See</u>	<u> </u>
Other Field Observations:	ANGE Valv	in monumer	



MONITORING WELL/PIEZOMETER NUMBER- KMW-06

Project Name: Kelly-Moore

Project Number: 14697009		
Location: Seattle, WA	_	
Sampler: Lucas Kerner	30	

Date: _	8/2012)	
Weather Conditions:	: SUN 70'S	

Wind Speed/Direction: ______

WELL INFORMATION

Casing Diameter (In):	2"
Top of Casing Elevation (ft)	: 19.80'
Initial Depth to Water (ft):	8.65
Wellhead Condition:	ØK

Groundwater Elevation (ft): _____ Depth of Well Casing (ft): _____ Actual Purge Volume (gal): ______

Page _1_ of

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
874	1123	6.04	0.649	18.9	-32	0.64	37	
8.78	11:26	6.50	0.645	18.9	-41.7	0.30	49	
879	11-29	6.03	0.638	19.1	46	0.18	63	
873	1:32	6.05	0.676	19.Z.	-52.2	011	93	Buyble
878	1:35	6.06	6623	14.4	-54.6	0.82	84	Ontride tempine
8.72	1:38	6.07	0.675	19.5	- 55.0	0.75	84	
878	11:41	6.00	0628	15.5	-957	0.29	85	
8.78	1(-44	6.0	0632	19.6	-575	0.19	94	
8.70	11:47	611	0.630	196	-587	0.16	100	
8-73	11:50	6-11	0631	14.5	-57.9	a14	(27)	
								5
								Talles from
								a day a sintel
								FAUNTrochecall

Sample ID No.: KMW-06- 8/20/20	
Water Level Ind. Model & No.: Solinst Model 101	
ORP/DO Meter Model & No.: YSI-Pro Dss	
Purge Equipment Used: Peristaltic Pump with dec	licated tubing
Sampling Equipment Used: YSI Pro Dss	
Purge Start Time: .?o	Sample Collection Time: 11:50
Purge Completion Time: 1:50	Purging Method: SAA
Average Purge Rate (mL/min): 200 -t/	Sample Containers Used: Lab Provided
Analytical Lab: Friedman & Bruya Inc.	Chemical Analyses: See COC
Other Field Observations: MS/MSD taken, 27 bettles.	2K
Other Field Observations: M6/MSD taken, 27 bottles.	18 voas, 8 amber, & 3 metals

VOC

MONITORING WELL/PIEZOMETER NUMBER- KMW-07

Project Name: Kelly-Moore

Location: <u>Seattle, WA</u> Sampler: <u>Lucas Kerner</u>

· · - j - · · · · · · · · · · · · · · · · · ·	
Project Number:	14697009

Date:	8/19/22	
Weather Conditions:	OKAY	

Wind Speed/Direction: _//A

WELL INFORMATION

Casing Diameter (in):	2"
Top of Casing Elevation (ft):	21.63'
Initial Depth to Water (ft):	10.31
Weilhead Condition:	KAY

Groundwater Elevation (ft): _____ Depth of Well Casing (ft): _____ Actual Purge Volume (gal): _____

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DÔ (mg/L)	Turbidity (NTUs)	Notes
0.36	12:33	SAL	0.215	16.0	8ા.પ	0.49	S2	
10.35	12:36	5.80	0.212	16.4	101.6	0.30	.37	
10.36	11:35	5.80	0.44	16.2	<u>99.4</u>	0.23	24	
10.37	<u> (1:41</u>	5.80	0.116	16.1	91.4	0.18	20	
10.37	12:45	<u>S.80</u>	0.220	16.2	93.3	0.15	26	
10.32	12:48	5.81	0.223	6.	94.8	013	26	
10.38	12:51	5.81	_0.224	16.2	94.8	10.12	27 %	•7
10.38	12:54	5.81	0.114	16.	94.0	0.12	27	
	fs	ranghers	Stab 40	15				
	2				/02			
					$\angle \mathcal{I}$			
								
			5					

Sample ID No.: KMW-07-081920		· · · · · ·	
Water Level Ind. Model & No.: Solinst Mo ORP/DO Meter Model & No.: YSI-Pro D	del 101		
ORP/DO Meter Model & No.: YSI-Pro D	SS		
Purge Equipment Used: Peristaitic Sampling Equipment Used: YSI Pro De	Pump with dedicate	ed tubing	
V Sampling Equipment Used: YSI Pro D			
Purge Start Time: 11.30		Sample Collection Time:	3:00
Purge Completion Time: 12:5	<u>iy</u>	Purging Method:	SAA
Average Purge Rate (mL/min):0		Sample Containers Used:	Lab Provided
Analytical Lab: Friedman & Bruya Inc.	<u></u>	Chemical Analyses: See C	00
		_32	

Other Field Observations:

wood

GROUNDWATER SAMPLING LOG Low Flow Sampling

MONITORING WELL/PIEZOMETER NUMBER- KMW-08

Project Name: Kelly-Moore

Date: 08/19/20

Project Number: <u>14697009</u>	
Location: Seattle, WA	
Sampler: Lucas Kerner	

Weather Conditions: DIM SIN INA

Wind Speed/Direction: __///

WELL INFORMATION

Casing Diameter (in):	2"
Top of Casing Elevation (ft):	21.65
Initial Depth to Water (ft):	10.33
Wellhead Condition:9	K/M

Groundwater Elevation (ft): ____ Depth of Weil Casing (ft): Actual Purge Volume (gai): _________

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
10.44	13:03	4.85	0.246	18.1	142	0.40	140	ORANGE
10.42	13:20	4.82	0.216	18.0	196.6		94	
10.42	13.79	4.81	0.195	18.1	202.3	0.22	34	
10.44	12:52	4.83	0.187	182	205.6	0.19	20	
0.43	1335	<u>Ц.</u> 97	0.181	18.3	2081	0.17	16	
0.44	1338	490	0.178	18.2	2001	0.16	12_	
10.49	134]	4.96	0.176	183	2036	0.16	17	
60.44	1344	199 4	V.176_	10.3	2001	10.15		
10.44	1347	4.98	0.176	10.3	197	0.15	Π.	
10.44	1350	4.99	0176	183	195.7	0.14	12	
	·····					14		
						ZN		
								and the second sec

Sample ID No.: KMW-08- AQ 1972						
Water Level Ind. Model & No.: Solinst M	Todel 101					
ORP/DO Meter Model & No.: YSI-Prol						
Purge Equipment Used: Peristalti	Peristaltic Pump with dedicated tubing					
Sampling Equipment Used: YSI Pro I						
Purge Start Time: 13:7	2.0 Sample Collection Time: <u>13:50</u> 2.50 Purging Method: SAA					
Average Purge Rate (mL/min): 75						
Analytical Lab: Friedman & Bruya Inc.	Chemical Analyses: See COC					

Other Field Observations:

Page <u>1</u> of <u>1</u>



MONITORING WELL/PIEZOMETER NUMBER- KMW-09

Project Name: Kelly-Moore

	Date: 08/20/20
Project Number: <u>14697009</u>	Weather Conditions: Juni 77°
Location: Seattle, WA	
Sampler: Lucas Kerner	Wind Speed/Direction://A

WELL INFORMATION

Casing Diameter (in):	<u>2"</u>
Top of Casing Elevation (ft):	18.14'
Initial Depth to Water (ft):	7.03
Wellhead Condition:	KAY

Groundwater Elevation (ft): _____ Depth of Well Casing (ft): _____ Actual Purge Volume (gal): __] . 75

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
7.04	10:32	5.97	0.675	18:3	-40.5	0.23	173	Berty Subbles
7.04	10.36	5.97	0.670	18.7	-46.1	0.15	20	
7.04	10:39	5.99	0.615	19.0	-50	0.16	27	· · ·
7.04	10:42	6.03	0.613	19.2	- 95	0.12	31	
704	10.45	6.04	0.613	19.7	-57.1	0.10	41	
7.04	10:48	6.05	0.612	15.2	- 59.1	0.09	47	
7.04	10:51	6.05	0.613	19.3	-60,6	0.08	SO	
1.04	10:54	6.12	0.614	19.1	-63.3	607	CB 4	2
705	10:57	6.09,	0.614	19.1	-67.9	0.07	48	
7.05	(i)	6.50	0.6(5	19.1	634	0.07	51	
					S	HAD 5		
				1	a			
				20	\mathcal{O}			

Sample ID No .: KMW-09- 08	2020		
Water Level Ind. Model & No.:	Solinst Model 101		
	YSI-Pro Dss		
	Peristaltic Pump with dedica	ited tubing	
Sampling Equipment Used:	YSI Pro Dss		·
Purge Start Time:	0.50	Sample Collection Time:	11.00
Purge Completion Time:	1:00	Purging Method:	SAA
Average Purge Rate (mL/min):		Sample Containers Used:	
Analytical Lab: Friedman & Bru	uya Inc.	Chemical Analyses: See (
		·	

Other Field Observations: _

wood.

GROUNDWATER SAMPLING LOG Low Flow Sampling

MONITORING WELL/PIEZOMETER NUMBER- KMW-10

Project Name: Kelly-Moore

Weathe
Wind Sp

Date: <u>2 /20/20</u> eather Conditions: <u>5, w//Y</u>

Wind Speed/Direction: Te North

WELL INFORMATION

Casing Diameter (in):	2*
Top of Casing Elevation (ft):	20.39'
Initial Depth to Water (ft):	9,41
Wellhead Condition: 0 K	AY

Groundwater Elevation (ft): _____ Depth of Well Casing (ft): _____ Actual Purge Volume (gal): _____

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
9.41	9345				·····	·		·····
9.44	0848	9.99	0.535	17.1	-50	0.41	30	
9.44	0851	6.01	0.539	17.1	- 56	0.23	37	Bubbles
9.44	0854	6.03	0.543	(7.	- 60	0.15	93 IR	
9.45	0857	6.05	0.542	17.2	-61.8	0.13	-1	
9.45	9:00	6.07	0.546	17.1	63.7	0.09	22+	Bubbles
9.45	9:03	6.09	0.549	17.)	-64	0.09	25	
9.45	1.00	6.12	0.550	17.2	-65.Z	0.08	75	
9.46	9:07	6.13	0.550	[F-1	-65.4	0.07	26	
9.46	9:12	G.12	0.551	17.2	-45.7	607	24	
	4:15							
	· · · · · · · · · · · · · · · · · · ·			_			· · · · · · · · · · · · · · · · · · ·	
					_			

Sample ID No.: KMW-10- 082020

Water Level Ind. Model & No.:	Solinst Model 101		
ORP/DO Meter Model & No.:	YSI-Pro Dss		
Purge Equipment Used:	Peristaltic Pump with dedicat	ted tubing	
Sampling Equipment Used:	YSI Pro Dss		·
Purge Start Time: Purge Completion Time: Average Purge Rate (mL/min): Analytical Lab: <u>Friedman & Br</u>	<u>0945</u> <u>9:12</u> 1 <u>25</u> uya Inc.	Sample Collection Time: Purging Method: Sample Containers Used: Chemical Analyses: <u>See (</u>	

Other Field Observations: Duplicate: KMW-10-9- 19820 20

taken @ 9 : 70.

Updated 1/31/19

Page _ 1 _ of _/



MONITORING WELL/PIEZOMETER NUMBER- KMW-02R

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Project Name.	Kelly-WOOTE	Date: 3/29/21
Project Number	: 14697009	Weather Conditions:
Location: Seattle Sampler:	e, WA BC	Wind Speed/Direction:NA
	v	

Casing Diameter (in): Top of Casing Elevation (ft)	2"	Groundwater Elevation (ft): Depth of Well Casing (ft):	
Initial Depth to Water (ft):	7.98 3/22	7,81 3/24 Actual Purge Volume (gal):	35-1
Wellhead Condition:	NIPW	10	

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
7.85	0978	6,10	0,204	13,6	240,0	1.71	9.7	
7.86	0926	5.46	0178	13,7	763.8	1,01	110	
7.86	0931	5,47	0.169	13,8	267.4	1.11	12.8	
7.87	0936	5,49	0.169	13.8	270.4	1.29	3.8	
7.87	0941	5.51	0-169	13.8	271,9	1.36	14.0	
7.87	0947	5.55	0,169	13,9	273.5	1,41	1513	
							1. A.	
		2 12-12-13						
			Real States				a contract of the	and the second

Sample ID No.: KMW-02R- Water Level Ind. Model & No.:	Solinst Model 101		Stall States and States
ORP/DO Meter Model & No.:	YSI-Pro Dss		
Purge Equipment Used:	Peristaltic Pump with dedicat	ed tubing	
Sampling Equipment Used:	YSI Pro Dss	Sample Collection Time:	0955
Purge Start Time:	0918	Purging Method:	SAA
Purge Completion Time: Average Purge Rate (mL/min)	:	Sample Containers Used: Chemical Analyses: See C	Lab Provided
Analytical Lab: Friedman & B	ruya Inc.		
Other Field Observations:	Droppin 170 headspice	e Samplity comple	te e joct

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GROUNDWATER SAMPLING LOG Low Flow Sampling

MONITORING WELL/PIEZOMETER NUMBER- KMW-03R

Project Name:	Kelly-Moore		
		Date:	3/22/21
Project Number:	14697009	Weather Conditions:	Indoor
Location: Seattle	, WA		
Sampler:	BL	Wind Speed/Direction: _	NA

WELL INFORMATION

Casing Diameter (in):	2"		
Top of Casing Elevation (ft):	21.54'		
Initial Depth to Water (ft):	\$ 1 8,08'		
Wellhead Condition:	Gued		

Groundwater Elevation (ft): Depth of Well Casing (ft): 394 Actual Purge Volume (gal): _

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
SAL 8.26	1304	6.53	0.343	15.9	26.3	1.04	4.9	
8,26	1310	6.71	0.372	15.9	-32.8	O.H.	5.2	
8-26	1315	6.79	6,381	15,9	-45,6	0.71	7,2	
8.28	1320	6.82	0,384	15.9	-51.1	0.67	8,2	
8.31	1326	6,84	0.387	15.9	-56.2	0.64	15.2	La tra
8.28	1332	6.86	0,388	15.9	-59.2	0,62	20.9	
8,29	1337	6.86	0,391	1519	-60.2	0,61	29.6	
8,28	1343	6,87	0.392	15.9	-61,7	0,54	38.8	Sanghly

Sample ID No .: KMW-03R-		
Water Level Ind. Model & No .:	Solinst Model 101	and the second
ORP/DO Meter Model & No.:	YSI-Pro Dss	
Purge Equipment Used:	Peristaltic Pump with de	edicated tubing
Sampling Equipment Used:	YSI Pro Dss	
Purge Start Time: Purge Completion Time:	12:58	Sample Collection Time: 1'34Y Purging Method: SAA
Average Purge Rate (mL/min)	:	Sample Containers Used: Lab Provided
Analytical Lab: Friedman & Bi	ruya Inc.	Chemical Analyses: See COC
Other Field Observations:		@ 13 1417, O.O pp PD herdspice

MONITORING WELL/PIEZOMETER NUMBER- KMW-04

Project Name: Kelly-Moore

	Date: 25 3/23/21
Project Number: 14697009	Weather Conditions: Suny 50°F
Location: Seattle, WA	
Sampler: BL	Wind Speed/Direction:

WELL INFORMATION

Casing Diameter (in):	2"		Groundwater Elevation (ft):	
Top of Casing Elevation (ft):	18.56'		Depth of Well Casing (ft):	
Initial Depth to Water (ft):	5.39 3/22	5,41	3/23 Actual Purge Volume (gal):	2.5 391
Wellhead Condition:	Old, balts			

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes	
5.44	1436	6.37	0,212	13.3	69.0	2.10	23.4		
5,44	1443	6.12	0.205	12.6	62.3	0,75	50.2		
5.44	1448	6.01	0,199	12,5	58.6	0.69	135.7		
5,44	1454	5,83	0,183	12.4	66,7	0,92	145.4		
5,44	1501	5.72	0,140	12.3	75,0	1.30	158.2		
5.45	1506	5,64	0,182	12,3	81.7	1.33	18.2	Bubbles were on	Sensor
5.45	1572	5,61	0,179	12.2	85.6	1,34	16.7		
5,45	1519	5.58	0,179	12.2	91.4	1,65	22,1		

Sample ID No .: KMW-04-	and the second						
Water Level Ind. Model & No .:	Solinst Model 101						
ORP/DO Meter Model & No.:	YSI-Pro Dss						
Purge Equipment Used:	Peristaltic Pump with dedicated tubing						
Sampling Equipment Used:	YSI Pro Dss						
Purge Start Time:	1434	Sample Collection Time:	1520				
Purge Completion Time:	1519	Purging Method:	SAA				
Average Purge Rate (mL/min)	÷	Sample Containers Used:	Lab Provided				
Analytical Lab: Friedman & Bi	ruya Inc.	Chemical Analyses: See	000				
Other Field Observations:	2.2 ppm PIO Land speak	_ , Samplily can	plete @ 1542				
		6					

Updated 1/31/19

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MONITORING WELL/PIEZOMETER NUMBER- KMW-06

Project	Name. <u>r</u>	celly-Moore	,				Date:	3/23/21	
Project	Number: 1	4697009			We	ather Co	nditions:	Cloudy, 40's of	
-	n: Seattle, \		Constant and	2.5					
	:	11			Wi	nd Speed	/Direction:	No unled	
ampiei									
				WELL	INFOR	MATIO	V		
acina I	Diameter (i	in).	2"			Groundw	ater Elevatio	n (ft):	
on of C	asing Fley	vation (ft):	19.80'					(gal): 2.5 gs	
nitial De	epth to Wa	ter (ft):	G.S Fair	3 3/22		Actual P	urge Volume	(gal): 2.5 gal	
ellhead	d Conditio	n:	Fair						
			PL	JRGING	MEAS	UREME	NTS		2
	and the second	pН							
WL (ft		(std.	SC	Temp.		DO	Turbidity	Netza	
btoc)	Time	units)	(ms/cm)	(°C)	(mv)	(mg/L)	(NTUs)	Notes	
057	OSTE	5.4	0,737	13.8	118	2,00	29.2		
263	0530	5.71	0.777	14.1	24,9	0,81	30.6		
161	0837	SIFF	0,792	14.0	0.7	0,68	31,1		
10.0	0842	5179	0,909	14.0	-6.8	0.66	33.9		
0.62	0849	5.81	0,824	13.9	-146	0,63	32.6		·
6.60	0855	5,81	0,837	13.5	-13.1	0.63	32.9		
0.60	Osci	5.82	0.836	13,6	1420	0.67	32.2	Shewn on purse	water
		1.16				- the second			
		inter	-			Friend			
		1.2.3	2			1 × 1			
-					1	1.5			1.0.1
					2.5	1.55			1. 1.
			905		-				
1.05	-	0	+ Du	1:1 1	0 0	ett a	940	The	
ample	ID No.: KI	MW-06-	+ Dur	plicate 1			1.0		
			designed to be a set of the set o	All a second and a second as	and the second second	and the second second	Contraction of the		-
	Meter Mo		YSI-Pro Ds Peristaltic F		dedicate	dtubing			
	g Equipme			A COLORADO A COLORADO A COLORADO	deulcate	u tubing	101	0905 0	940
	tart Time:			522		Comple	Collection Ti	12000 1-00	
	ompletion	Time:		05 00	5		Collection Til Method:	SAA	~
	Purge Rat							sed: Lab Provided	
	al Lab: Fri			1			Analyses:		
ther Ei	eld Observ	ationer	67.5 P	ID RPM	hendesp	400	Seall	, entro e o	407
	CIU UUSEIN	alluis.	011		- AND	-	1 Jampin		1 2 1

MONITORING WELL/PIEZOMETER NUMBER- KMW-07

Project Name: Kelly-Moore

nditions: Indeer
/Direction:NA
/[

Casing Diameter (in): 2" Groundwater Elevation (ft): Top of Casing Elevation (ft): 21.63' Depth of Well Casing (ft): Initial Depth to Water (ft): 7.9.3 3/22 Actual Purge Volume (gal): 2.25 7.1 Wellhead Condition: NSJ 3/24 3/24

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
787	1054	6.06	0,200	14.7	3075	108	39.5	
7.89	1100	6.04	0,191	14,8	ZCdo2	0,81	25,1	
7.17	1105	6.02	0,191	14.8	226.8	0.71	21.8	
7.84	1110	6.01	0,189	14.8	203.0	0.68	23.0	
7.88	1116	5.98	0,189	14.8	172.6	0.65	24.1	
7.98	1121	5.96	0,192	14.9	1580	0.66	29,7	
7.88	1125	5)94	0,198	14.9	148.3	0.67	33.6	
7.88	1132	5192	0,207	14.9	135.9	0,67	41.8	
7,88	1136	5,90	0,221	14,5	130.8	0,67	44.3	

Sample ID No.: <u>KMW-07-</u> Water Level Ind. Model & No.:	Solinst Model 101		
ORP/DO Meter Model & No.:	YSI-Pro Dss		
Purge Equipment Used:	Peristaltic Pump with dedicate	ed tubing	and the second second
Sampling Equipment Used:	YSI Pro Dss		
Purge Start Time:	1051	Sample Collection Time:	676 1136
Purge Completion Time: Average Purge Rate (mL/min)	:	Purging Method: Sample Containers Used: Chemical Analyses: See C	
Analytical Lab: Friedman & B			
Other Field Observations:	0.0 ppm PED headspe	a , Samplify comp	lete @ 1149

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MONITORING WELL/PIEZOMETER NUMBER- KMW-08

8.12 1502 5.72 0.140 14.9 41.8 2.90 32.0 Hored + Mar Low flow 9.12 1508 5.51 0.140 14.9 74.9 1.54 17.3 6.12 1514 5.52 0.161 15.0 82.3 1.27 6247.6 9.13 1520 5.51 0.160 15.1 84.3 1.20 94.6 8.11 1528 5.53 0.196 15.2 86.8 1.20 51.6
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B.12 1502 5.72 0.140 14.9 41.8 2.90 32.0 Ashed + Mood have Along 9.12 1508 5.51 0.140 14.9 74.9 1.54 17.3 8.12 1508 5.51 0.140 14.9 74.9 1.54 17.3 8.12 1514 5.52 0.161 15.0 82.3 1.27 16.473.6 9.13 1520 5.51 0.160 15.1 84.3 1.20 94.6 8.11 1528 5.53 0.196 15.2 96.8 1.20 51.6
9,1C 1508 $5,51$ $0,190$ $19,7$ $74,1$ 1151 1753 $6,12$ 1514 $5,52$ $0,161$ 1500 $82,3$ $1,27$ $6247,6$ $9,13$ 1520 $5,51$ $0,160$ $15,1$ $84,3$ $1,20$ $94,6$ $8,11$ 1528 $5,53$ $0,196$ $15,2$ $86,8$ $1,20$ $51,6$
9,1C 1508 $5,51$ $0,190$ $19,7$ $74,1$ 1151 1753 $6,12$ 1514 $5,52$ $0,161$ $15,0$ $82,3$ $1,27$ $6247,6$ $9,13$ 1520 $5,51$ $0,160$ $15,1$ $84,3$ $1,20$ $94,6$ $8,11$ 1528 $5,53$ $0,196$ $15,2$ $86,8$ $1,20$ $51,6$
9,13 1520 5,51 0,180 15,1 84,3 1,20 94,6 8,11 1528 5,53 0,196 15,2 86,8 1,20 51.6
8.11 1528 5,53 0,196 15:2 86.8 1,20 51.6
8,12 1536 5,49 0.203 15,2 94,1 1,27 25.2

Updated 1/31/19

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GROUNDWATER SAMPLING LOG Low Flow Sampling

MONITORING WELL/PIEZOMETER NUMBER- KMW-09

Proj	ect	Name:	Kelly-Moore

	Date: 3/23/2/	
Project Number: 14697009	Weather Conditions: Clady 40's of	
Location: Seattle, WA)
Sampler: BL	Wind Speed/Direction: No into N	/

WELL INFORMATION

Casing Diameter (in):	2"			Groundwater Elevation (ft):	and the second se
Top of Casing Elevation (ft)	: 18.14'			Depth of Well Casing (ft):	
Initial Depth to Water (ft):	4,89	3/22	11/11-	Actual Purge Volume (gal):	Zgal
Wellhead Condition:	Far		7.678	3/23	

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
4.96	1100	6.23	0,516	14.2	-175	0,96	19.5	
4A7	1105	6.24	0,509	14.2	-35,9	0.74	76,5	
4.97	1110	6.24	0,501	14.2	-40.3	0168	24.3	
4.97	1116	6.23	0.459	14.3	-42,9	0.64	23.1	
4.97	1122	6,22	0,484	14.6	-44.8	0,61	20.8	
4,47	1128	6121	0,474	14.7	-45:8	0,59	20,1	

Water Level Ind. Model & No.			
ORP/DO Meter Model & No.:	YSI-Pro Dss		
Purge Equipment Used:	Peristaltic Pump with	n dedicated tubing	
Sampling Equipment Used:	YSI Pro Dss		
Purge Start Time:	1055	Sample Collection Time:	1130
Purge Completion Time:	1130	Purging Method:	SAA
Average Purge Rate (mL/min)		Sample Containers Used:	Lab Provided
Analytical Lab: Friedman & B		Chemical Analyses: See C	200
		headspace Samples can	mpleted 1157
Other Field Observations:	12.0 ppm 120	headspace Samphy can	merere list



Page 1 of ____

GROUNDWATER SAMPLING LOG Low Flow Sampling

MONITORING WELL/PIEZOMETER NUMBER- KMW-10

Project Name: Kelly-Moore	Date: 3/23/21
Project Number: 14697009	Weather Conditions: Claudy 40'sf
Location: Seattle, WA	
Sampler: 5C	Wind Speed/Direction:

WELL INFORMATION

Casing Diameter (in):	2"		Groundwater Elevation (ft): _	
Top of Casing Elevation (ft)	: 20.39'		Depth of Well Casing (ft):	
Initial Depth to Water (ft):	7,42 31	22 7.45	Actual Purge Volume (gal):	2571
Wellhead Condition:	Fair	- ///	-3/23	

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
7,49	1259	6.28	0,658	14,4	-5513	0,73	43,5	
7.49 3	1205	6.28	0.656	14,5	-61.3	0.67	39.3	
7,49	1309	6,25	0,654	14,5	-63,2	0,64	427	
7.49	1314	6,24	0.654	14.6	-63,7	0.61	47.5	
1000								
			the state of the				Day and	
				322				

Sample ID No.: <u>KMW-10-</u> Water Level Ind. Model & No.: ORP/DO Meter Model & No.: Purge Equipment Used:	YSI-Pro Dss Peristaltic Pump with dedicated tubing
Sampling Equipment Used:	YSI Pro Dss
Purge Start Time: Purge Completion Time: Average Purge Rate (mL/min) Analytical Lab: <u>Friedman & Br</u>	ruya Inc. Chemical Analyses: See COC
Other Field Observations:	0.0 ppm PID head space, Sampling complete @ 1347
- When fourth went b	of the west of 0.04 bas



MONITORING WELL/PIEZOMETER NUMBER- KMW-02R

	Date: 9/1/21
Project Number: 14697009	Weather Conditions: NA
Location: Seattle, WA	
Sampler: BC	Wind Speed/Direction: NA

WELL INFORMATION

Casing Diameter (in):	2"		
Top of Casing Elevation (ft):			
Initial Depth to Water (ft):	10,26		
Wellhead Condition:	New		

Groundwater Elevation (ft): Depth of Well Casing (ft): Actual Purge Volume (gal):

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
1033	127	6.44	0.252	151	-342.9	406	75,2	
10,29	1133	6.10	0.212	15.3	-328,4	1.23	20,5	
10.29	1137	603	0,205	15.3	-335,6	113	18.6	
10,29	1142	6.00	0.201	15.4	-336.8	1.06	23.9	
10.30	1147	5199	0,198	15.5	-336.2	1.03	31.2	
10,27	1156	5,98	0197	ISI7	-336,0	1.00	41,2	
10,27	1203	6.00	0-198	16.2	-335,4	101	45.0	
10.29	1212	5.99	0,196	16.0	-336,9	1.01	51.6	

er Model & No.: YSI-F	Pro Dss		
ment Used: Perist	altic Pump with dedic	ated tubing	Section and
	Pro Dss		
Time:	1126	Sample Collection Time:	1220
ab: Friedman & Bruva In	C.	Chemical Analyses: See (COC
letion Time: ge Rate (mL/min); ab: <u>Friedman & Bruya In</u> Observations: Sampli	1212 ZOJML (nh) C.	Purging Method: Sample Containers Used: Chemical Analyses: See C	SAA Lab Prov

Updated 1/31/19



MONITORING WELL/PIEZOMETER NUMBER- KMW-03R

Project Name: Kelly-Moore

	Date:	7(1/2021
Project Number: 14697009	Weather Conditions:	NA
Location: Seattle, WA		
Sampler: BL	Wind Speed/Direction:	NA

WELL INFORMATION

Casing Diameter (in):	2"
Top of Casing Elevation (ft	: 21.54'
Initial Depth to Water (ft):	10,31
Wellhead Condition:	New

Groundwater Elevation (ft): _____ Depth of Well Casing (ft): _____ Actual Purge Volume (gal): _____ パアラッヘ

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. 6 units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
10.39	1533	670	0,343	18.3	-35517	1.20	11,9	
10,35	1550	6.92	0,313	19.7	-375,9	0,99	6,9	
10,36	1225	6.91	0-313	18,9	-390,3		513	
10.35	1603	6.93	0.313	18.5	-405.8	0,82	6.5	
10.36	1610	6.95	0-312	18,7	400.5	0,84	5.8	
10.36	1614	6.97	0.311	18.6	406.9	0-82	C.7	
lane i			the state of the s	1				
			Case Theres					
. Sheethe				a since				
F MAR								
				-				

ORP/DO Meter Model & No.:	YSI-Pro Dss	and the second	
urge Equipment Used:	Peristaltic Pump with dedica	ated tubing	
ampling Equipment Used:	YSI Pro Dss		
Purge Start Time:	1529	Sample Collection Time:	1620
Purge Completion Time:	1614	Purging Method:	SAA
Average Purge Rate (mL/min)	1: # 147mL nh	Sample Containers Used:	Lab Provided
Analytical Lab: Friedman & B	ruya Inc.	Chemical Analyses: See (
	8 11 11	101.00	
Other Field Observations:	Demoking complete	1645	

Updated 1/31/19

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GROUNDWATER SAMPLING LOG Low Flow Sampling

MONITORING WELL/PIEZOMETER NUMBER- KMW-04

Project Name: Kelly-Moore

Casing Diameter (in):

Project Numb	er: 14697009	1 1 1 1 1
Location: Sea	ttle, WA	
Sampler:	BL	

WELL INFORMATION Groundwater Elevation (ft): ___ Depth of Well Casing (ft):

Wind Speed/Direction: NW, low

Date:

Weather Conditions:

	-		
Top of Casing Elevation (ft):	18.56'		and the second
Initial Depth to Water (ft):	Sale.	7,43	09/1/21
Wellhead Condition:	5.000	Good	

2"

Actual Purge Volume (gal): 3, 5 71

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
7.52	TUS	1				1-10-5-1		
7,50	167	6,57	0,547	181	-212,7	6.70	15.4	
750	1630	615	0176	19/2	-318,6	482	Mic	
7.50	1635	614	0,177	19.0	-313.8	490	14.0	
721	1640	6.14	0,179	1962	-325.4	1.60	15,6	
7.57	1649	6.15	0,196	18,2	- 341.Z	1.42	21.2	
249	1656	6.15	0-191	19.2	-351.7	1,42	23.0	
7.49	1700	6.15	01192	19/2	-352.5	1.29	22.5	
	-	List in the		51.P.3				
	-			Annella		CHE S		and a set of
and the		and with the	a the					-318 Sec. 19
	fred wind	A starting						
	have a series	term the state	The Name					

ORP/DO Meter Model & No.:	Solinst Model 101 YSI-Pro Dss		A COLUMN TWO IS NOT
Purge Equipment Used:	Peristaltic Pump with dec	icated tubing	
Sampling Equipment Used:	YSI Pro Dss		
Purge Start Time:	1615	Sample Collection Time:	1710
Purge Completion Time:	1766	Purging Method:	SAA
Average Purge Rate (mL/min)	:/min	Sample Containers Used:	
Analytical Lab: Friedman & B	ruya Inc.	Chemical Analyses: See	200

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MONITORING WELL/PIEZOMETER NUMBER- KMW-06

Flugect Name. Reny-Woore	Proj	ect Name:	Kelly-Moore
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	Date:	9/2/2021
Project Number: 14697009	Weather Conditions:	Jumy, 601'5°F
Location: Seattle, WA		
Sampler:	Wind Speed/Direction:	SE, I.W

WELL INFORMATION

Casing Diameter (in): 2"	Groundwater Elevation (ft):
Top of Casing Elevation (ft): 19.80'	Depth of Well Casing (ft):
Initial Depth to Water (ft): 9.62 on 9/1/21 Wellhead Condition:	Actual Purge Volume (gal): 15 34
Wellhead Condition: Goed Fely, 1 /26 H	t stripped

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
8.63	0922	(and the second		the second second second
8.73	0924	C.34	0,674	18:3	-139.3	181	35.0	The Manual Provide State
8,72	0932	6.33	0,672	18.9	-355.9	189	35.7	A THE REAL PROPERTY.
9,71	0937	6.33	0,674	19.1	-363.0	0.89	39.5	
8.71	0944	6.34	0,690	19.1	-365.5		39.9	
871	0951	6.34	0,702	19.3	-364.7	0,86	39.5	
8:71	0957	6.34	0.705	19,3	-372.3	0.84	39.0	
all and				Pro Land				
	The second s	-		A				
Carl And		Sand and		2 mar		and the second		
		2.0.00						
						1000		

Water Level Ind. Model & No.:			
ORP/DO Meter Model & No.:	YSI-Pro Dss		Letter and the second
Purge Equipment Used:	Peristaltic Pump with dedi	cated tubing	
Sampling Equipment Used:	YSI Pro Dss		
Purge Start Time:	0922	Sample Collection Time:	1015
Purge Completion Time:	0959	Purging Method:	SAA
Average Purge Rate (mL/min)	: 153 mL/mm	Sample Containers Used:	Lab Provided
Analytical Lab: Friedman & B		Chemical Analyses: See	

Other Field Observations:_

Updated 1/31/19

wood.



MONITORING WELL/PIEZOMETER NUMBER- KMW-07

	Date:	9	12021
Project Number: 14697009	Weather Conditions:	2	A
Location: Seattle, WA			
Sampler:BL	Wind Speed/Direction:	NA	F

WELL INFORMATION

Casing Diameter (in):	2"	
Top of Casing Elevation (ft):	21.63'	
Initial Depth to Water (ft):		10,271
Wellhead Condition:	Ne	J.

......

Groundwater Elevation (ft): _____ Depth of Well Casing (ft): _____ Actual Purge Volume (gal): _____2, 5 jnl

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
10.27	1251							
10,32	1256	6.24	0,724	17.2	-364.7	111	29.7	
10:32	1307	621	0,214	1724	-390.4	0,92	77.8	bibles
10:33	1312	6.19	0.221	17.4	-389.6	6.98	98.1	bubbles
10.32	1317	617	0,225	125	-388.1	0,83	51.4	Gulbles
10.32	1322	6.16	0,231	175	-387.6	0.75	50,3	
10:32	1330	Gillo	6237	176	-377.1	0.83	111,2	possible bubbles
10.32	1336	6.15	0.242	17,5	-383,6	0.77	104.4	
	1 A							

ORP/DO Meter Model & No.:	YSI-Pro Dss		and the second	
Purge Equipment Used:	Peristaltic Pump with dee	dicat	ed tubing	
Sampling Equipment Used:	YSI Pro Dss		I have a set of the set of the	
Purge Start Time:	1251		Sample Collection Time:	1340
Purge Completion Time:	1237		Purging Method:	SAA
Average Purge Rate (mL/min)	: ZOS MUM		Sample Containers Used:	Lab Provided
Analytical Lab: Friedman & Br			Chemical Analyses: See (200
Other Field Observations:	Samphily complete	a	1356	

Updated 1/31/19



MONITORING WELL/PIEZOMETER NUMBER- KMW-08

	Date:	9/1/21	
Project Number: 14697009	Weather Conditions:	NA	
Location: Seattle, WA		NA	
Sampler:BL	Wind Speed/Direction:	IVA	

WELL INFORMATION

Casing Diameter (in):	2"
Top of Casing Elevation (ft):	21.65'
Initial Depth to Water (ft):	10133'
Wellhead Condition:	New

Project Name: Kelly-Moore

Groundwater Elevation (ft): _____ Depth of Well Casing (ft): _____ Actual Purge Volume (gal): ______175_95

PURGING MEASUREMENTS

WL (ft btoc)	∿Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes	
10.38		5.67	0,195	619.4	-329.0	0,83	51.1	Prith weter very	+
10.38	1431	514	0.157	20,2	-327.7	1,05	60.5	(
10138	1440	ST	0.163	20,2.	335.7	1.07	58.3		
10.38	1445	5.73	0.165	2013	-339.3	1.04	55.0		
10,38	1449	5.73	0,167	20.3	-339.7	1,03	55.7		
		L D. C.L.		ki					
		E DA		1					
			7 512 a F					The shall have	
				Contraction of					
farmer 1	a land			1 and 1	and the		THE P		
				200 200					
	Call and	Contraction of the		1 desile					
				U					
The star		6	an alimet						

ORP/DO Meter Model & No.:	and the second se						
Purge Equipment Used:	Peristaltic Pump with dedicated tubing						
Sampling Equipment Used:	YSI Pro Dss						
Purge Start Time:	1414	Sample Collection Time:	1455				
Purge Completion Time:	1450	Purging Method:	SAA				
Average Purge Rate (mL/min)	: 184 allan	Sample Containers Used:	Lab Provided				
Analytical Lab: Friedman & Bi	ruya Inc.	Chemical Analyses: See C					
Other Field Observations:	Sendily complete	1520					

Updated 1/31/19

wood.

GROUNDWATER SAMPLING LOG Low Flow Sampling

MONITORING WELL/PIEZOMETER NUMBER- KMW-09

	Pro	ject Name:	Kelly-Moore
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		Date:	9/2/2021
Project Number:	14697009	Weather Conditions:	Surry Sos of
Location: Seattle,	WA		1
Sampler:	BL.	Wind Speed/Direction:	SE low

Casing Diameter (in):	2"
Top of Casing Elevation (ft):	18.14'
Initial Depth to Water (ft):	6.99 00 91/21
Wellhead Condition: 6	200

Groundwater Elevation (ft): Depth of Well Casing (ft): Actual Purge Volume (gal): 3 21

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
7.01	0745							- Alexand Long
7.03	6750	6.38	0.422	170	-385.9	413	15.1	
7.04	0756	6.38	0,420	17,3	-397,8	0,91	18.7	
703	0801	6.39	0.413	175	-405.8	0.92	33.7	
7.04	6967	6.39	0.416	176	-413.3	0.77	52.6	Bubbles
7.01	0813	6.39	0.421	1777	-419.3	Concentration of the second second	7572	1
3.04	0819	6.39	0.424	178	4-419;	2 0,71	70.1	V
703	0724	0.31	0.425	17.8	-414.9	0,70	38.0	
7.04	0830	C.39	0.426	17.9	-413, 3	6.85	38.C	
S. E.			RL KIT					
	MALINE		and the second		Sec. 14			

ORP/DO Meter Model & No.:	Solinst Model 101 YSI-Pro Dss		San Martin Constants
	Peristaltic Pump with dec	dicated tubing	mar har and a little
	YSI Pro Dss		
Purge Start Time:	0745	Sample Collection Time:	0840
Purge Completion Time:	0930	Purging Method:	SAA
Average Purge Rate (mL/min):	252 nl/mm	Sample Containers Used:	Lab Provided
Analytical Lab: Friedman & Br	uya Inc.	Chemical Analyses: See	

Updated 1/31/19



MONITORING WELL/PIEZOMETER NUMBER- KMW-10

Project Name:	Kelly-Moore	and the second	
		Date:	9/2/21
Project Number: 14697009		Weather Conditions:	Juny, To's of
Location: Seatt	le, WA		NW
Sampler:	BL	Wind Speed/Direction:	SE low

WELL INFORMATION

Casing Diameter (in):	2"
Top of Casing Elevation (ft):	20.39'
Initial Depth to Water (ft):	9.78 m & 9/1/21
Wellhead Condition:	An

Groundwater Elevation (ft): _____ Depth of Well Casing (ft): _____ Actual Purge Volume (gal): _____3

PURGING MEASUREMENTS

WL (ft btoc)	Time	pH (std. units)	SC (ms/cm)	Temp. (°C)	ORP (mv)	DO (mg/L)	Turbidity (NTUs)	Notes
9,37	1415	-						
9.40	1418	6.43	0,690	18,3	-268,9	1.17	720	Bibbles
9.39	1405	6.40	0,692	18,7	-363,5	0.88	33,5	
9.40	1430	6.40	0,690	19:8	-373,8		44.6	
9.40	1435	6.39	0-6888	18,5	-385.0	0.81	81.9	
9,40	1442	6.39	0,687	18,5	-388.9	071	29.7	
9.44	1448	6.40	0.681	18,3	-313.0	0.70	27,2	
9.39	1455	6.39	0.687	18,4	-396.0	0,68	\$32	
9,40	1583	6138	0,682	18,4	-394,2	0,68	8512	

Sample ID No.: KMW-10- Water Level Ind. Model & No.:	Solinst Model 101		
ORP/DO Meter Model & No.:	YSI-Pro Dss	and service and se	
Purge Equipment Used:	Peristaltic Pump with ded	icated tubing	and the second
Sampling Equipment Used:	YSI Pro Dss		
Purge Start Time:	1415	Sample Collection Time:	1510 + 1540 (Dup)
Purge Completion Time:	1563	Purging Method:	SAA
Average Purge Rate (mL/min):	Z37 ml/mh	Sample Containers Used:	Lab Provided
Analytical Lab: Friedman & Br		Chemical Analyses: See (
Other Field Observations:	and the second second		

	MON	TOPING			ow San	npling		-926
			WELL/PIE			assa - sasa		
oject Na	me: Ke	ly Moon	e feitht Ca	mpeny			Date:	9/2/2021 Suny 60-70's
oject Nu	mber:	14697	009	• 1	Weat	ther Con	ditions:	Sunny 60-70's
cation: _	Je	atting wh					\$	
impier				Win	d/Directi	on:		sc 10w
				WELL I	NFORM	ATION		
sing Dia	meter (in):	7"		-		ter Elevation	n (ft): <u>-</u>
p of Cas	ing Eleva	tion (ft): -		- /	/ De	epth of W	ell Casing (ft): -
tial Dept	h to Wate Condition	er (ft):	- 	<u>on</u> 9/2	121 A	ctual Pur	ge Volume (ft): gal):Z_S\
inicau c	onution	-	det	-				
			PU	RGING	MEASU	REMEN	TS	
		pН						
WL (ft btoc)	Time	(std. units)	SC (ms/cm)	Temp.	ORP	DO	Turbidity	
8,53	1)16	unitaj	(ms/cm)	(°C)	(mv)	(mg/L)	(NTUs)	Notes
8.53	1119	6.48	0.344	179	~1/7 9	170	1/92	0.1/1
8,53	1124	6.18	0.343	173	-117,9	1.76	168.2	Bibbtes
863	1/29	6.47	0,340	18,0	-311.6		81.2	
9.53	1136	6.48	0,338	17,0	- 371.6	0.83	72.2	and the second second
8,53	1142	6.47		172	-408,9	0.71	56.0	and a strength
9.53	1149	6.46	0,332	123	-418,2	0.68	60.7	
\$53	1155	6.45	0.330	134		0.65	59,0	
8.57	1201	6.44	0,330	UT-4	-420.7	and the second se	61.2	
						0.01	GIL	
					TRUE 7			
	an and				173-1		Land State	and the second second
	RH	7926		Sti Ball	and the second	PL DET		AND THE SHARE
mple ID_	DA	100						
ater Leve	el Ind. Mo	del & No.:		Ander	tot '	Interte	ice Neter	- 122
	eter Mode			Poo DSS			1	Arrive Call
	ipment Us Equipmen		Parl	pump, 1	non ded	icaded +	-biy	
mpning i	-quipmen	n oseu.		, hund	-			
rge Star	t Time:		111	6		ample C	allection Tin	1210
	pletion T	īme:	W	20)		Purging N	ollection Tin lethod:	SAL
		(mL/min):		milmin	S	ample C	ontainers Us	sed: Lib ImMed
alytical	Lab:	FR	RT		_ c	hemical	Analyses: _	See loc
	Observa	and the second second						

wood GROUNDWATER SAMPLING LOG Low Flow Sampling MONITORING WELL/PIEZOMETER NUMBER _ BKF 927 Kelly Moore Paht Company Date: 9/2/202 14697009 Weather Conditions: Sury, 70's °F Project Name: Project Number: Seattle, WA Location: JE, low Sampler: BL Wind/Direction: WELL INFORMATION Zn Casing Diameter (in): Groundwater Elevation (ft): -Top of Casing Elevation (ft): -ABY 7.23' on 7/1/21 Initial Depth to Water (ft): Wellhead Condition: PURGING MEASUREMENTS pH WL (ft (std. SC ORP Temp. DO Turbidity btoc) Time units) (ms/cm) (°C) (mv) (mg/L)(NTUs) Notes 7.22 1238 st Seconds turbich -275,7 1,06 19,5 122 1240 657 0,453 131.1 6.56 0.441 -389.2 7.22 1219 20,0 0.78 1221 6.56 20,4 1256 0,432 -390,0 722 0.75 150.7 -383.2 72 6.56 0,419 20,9 1305 0,79 153.0 -377.9 7,20 1309 6.57 0.419 21,9 Punp turned at brief 0.79 1290 0-421 723 2 1911 6.54 19.7 -399.8 0.72 176.5 723 6.53 0,405 -408.0 131.6 0,67 1320 20.2 1323 7.23 6.53 0,404 20,3 -4071 0,67 122.8 Sample ID_BKF927 Add tol Interface water 122 Solingt Water Level Ind. Model & No .: YSE Pro PSS ORP/DO Meter Model & No .: Purge Equipment Used: Real Pump non destrated trates Sampling Equipment Used:

Purge Start Time:	1238
Purge Completion Time:	1323
Purge Completion Time: Average Purge Rate (mL/min); Analytical Lab:	MG AL AM
Analytical Lab:	L

Sample Collection Time: 1332 Purging Method: Sample Containers Used: Chemical Analyses: ____

Leb Provided Sec coc

Other Field Observations: ____

Updated 7/17/20



Appendix B

Analytical Data, Groundwater Monitoring

ORGANIC DATA ASSESSMENT SUMMARY

Project Information					
Project Name:	Kelly-Moore Paint	Lab Name:	Friedman & Bruya, Inc.		
Project Number:	0146970060.00010	Lab Report Number:	008315		
Reviewer's Name:	Marie Bevier	Number of Samples:	10		
Review Date:	09/11/2020	Matrix:	Water		

Field Sample Identification	Collection Date	Laboratory Sample Identification	Note
KMW-02R-081920	08/19/2020	008315 -01	
KMW-03-081920	08/19/2020	008315 -02	
KMW-04-082020	08/20/2020	008315 -03	
KMW-06-082020	08/20/2020	008315 -04	
KMW-07-081920	08/19/2020	008315 -05	
KMW-08-081920	08/19/2020	008315 -06	
KMW-09-082020	08/20/2020	008315 -07	
KMW-10-082020	08/20/2020	008315 -08	
KMW-10-9-082020	08/20/2020	008315 -09	Field duplicate of KMW-10-082020
Trip Blanks		008315 -10	

Field Duplicate Assessment						
Analyte	Reporting Primary Limit Result		Duplicate Result	RPD		
Samples KMW-10-082020 and KMW-10-9-082020						
GRO	100 µg/L	1,800	1,600	12%		
DRO	50 μg/L	10,000	11,000	9.5%		
Arsenic	1 μg/L	5.34	5.25	1.7%		
Barium	1 μg/L	18.6	18.9	1.6%		
Chromium	1 μg/L	1.05 J	1.12 J	6.5%		
Ethylbenzene	10 µg/L	96	110	14%		
m,p-Xylene	20 µg/L	400	470	16%		
Acenaphthylene	0.04 μg/L	8.7	8.9	2.3%		
Phenanthrene	0.04 μg/L	0.69	0.65	6.0%		

Notes: μg/L = micrograms per liter RPD = relative percent difference

As	Assessment Summary					
Par	ameter:	Gasoline- Range Organics (GRO) by NWTPH-Gx	Diesel Range Organics (DRO) and Oil Range Organics (ORO) by NWTPH-Dx	Metals by EPA Method 6020B	Volatile Organic Compounds (VOCs) by EPA Method 8260D	Polycyclic Aromatic Hydrocarbons (PAHs) by EPA Method 8270E
1.	Chain of Custody	Chain of custody	is complete.			
2.	Receipt Temperature	The recorded rec	eipt temperature is a	acceptable at 3 degr	ees Celsius.	
3.	Hold Time	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
4.	Blank Detections	None	None	None	None	None
5.	Surrogate Recoveries	Informational ^a	Acceptable	Not applicable	Acceptable	Informational ^e
6.	Laboratory Control Sample (LCS) Recoveries	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
7.	LCS/LCS Duplicate (LCSD) Precision	Not applicable	Acceptable	Not applicable	Not applicable	Not applicable
8.	Matrix Spike (MS) Recoveries	Acceptable (KMW-03- 081920)	Not applicable	Acceptable (KMW-02R- 081920)	Acceptable (KMW-03- 081920)	Acceptable (KMW-03- 081920)
9.	MS,MS Duplicate (MSD) Precision	Acceptable	Not applicable	Acceptable	Acceptable	Acceptable
10.	Other Quality Control Issues	None	Informational ^b	Qualification ^{c, d}	None	None

Qual	Qualifier Definitions					
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.					
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.					

Reas	Reason Code Definitions					
EXC	This result has been excluded from the dataset.					
IS	Internal standard recovery is outside of method-specified limits.					

Notes	Description	Action Required
а	According to the laboratory's notes, surrogate recoveries for samples KMW-04-082020 and KMW-06-082020 are outside of limits due to sample matrix effects.	Wood agrees that high target analyte concentrations in the affected samples would impact surrogate recoveries and it is not possible to assess data usability for these samples based on surrogate recoveries.
b	According to the laboratory's notes, DRO chromatograms from samples KMW-03-081920, KMW-04-082020, KMW-08-081920, KMW-10-082020, and KMW-10-9-082020; and DRO and ORO chromatograms from samples KMW-06-082020 and KMW-09-082020 do not match the chromatographic patterns of the hydrocarbon standards used or quantification.	None.
с	According to the laboratory's notes, there is interference in the internal standard used to quantify chromium in the undiluted analysis of samples KMW-04-082020, KMW-06-082020, KMW-09-082020, KMW-10-082020, and KMW-10-9-082020.	The affected samples were diluted and re-analyzed for chromium. Internal standard recoveries were acceptable, but chromium was not detected in the diluted re-analyses. Based on professional judgement, Wood excluded the non-detected results from the re-analyses (EXC) and J or UJ qualified the chromium results from the original analyses, as appropriate, due to the internal standard recoveries outside of limits. (J/UJ-IS)
d	According to the laboratory's notes, there is interference in the internal standard used to quantify copper and nickel in the undiluted analysis of samples KMW-04-082020, KMW-09-082020, KMW-10-082020, and KMW-10-9-082020.	The affected samples were diluted and reanalyzed for copper and nickel. Internal standard recoveries were acceptable, but copper and nickel were not detected in the diluted re-analyses. Based on professional judgement, Wood excluded the non-detected results from the re-analyses (EXC) and J or UJ qualified the copper and nickel results from the original analyses, as appropriate, due to the internal standard recoveries outside of limits. (J/UJ-IS)
e	Recoveries of the surrogate compounds 2-fluorophenol and phenol-d6 are high in samples KMW-03-081920 (38%, 28%), KMW-07-081920 (40%, 28%), KMW-08-081920 (44%, 29%), KMW-10-082020 (36%, 30%), and KMW-10-9-082020 (35%, 28%); phenol-d6 recovery is high in sample KMW-04-082020 at 27%; and 2-fluorophenol recovery is high in sample KMW-09-082020 at 38%.	Acid-extractable compounds are not target analytes and data usability is not adversely affected by the high surrogate recoveries.

Data Qualified During Validation					
Sample Identification	Method	Parameter	Concentration	Qualifier and Reason Code	
KMW-04-082020	EPA 6020B	Chromium	1.07 µg/L	J-IS	
KMW-04-082020	EPA 6020B	Copper	15.0 µg/L	J-IS	
KMW-04-082020	EPA 6020B	Nickel	< 1 µg/L	UJ-IS	
KMW-04-082020	EPA 6020B	Chromium	< 10 µg/L	EXC	
KMW-04-082020	EPA 6020B	Copper	< 50 µg/L	EXC	
KMW-04-082020	EPA 6020B	Nickel	< 10 µg/L	EXC	
KMW-06-082020	EPA 6020B	Chromium	1.48 µg/L	J-IS	
KMW-06-082020	EPA 6020B	Chromium	< 10 µg/L	EXC	
KMW-09-082020	EPA 6020B	Chromium	< 1 µg/L	UJ-IS	
KMW-09-082020	EPA 6020B	Copper	< 5 µg/L	UJ-IS	
KMW-09-082020	EPA 6020B	Nickel	1.26 µg/L	J-IS	
KMW-09-082020	EPA 6020B	Chromium	< 10 µg/L	EXC	
KMW-09-082020	EPA 6020B	Copper	< 50 µg/L	EXC	
KMW-09-082020	EPA 6020B	Nickel	< 10 µg/L	EXC	

Data Qualified During Validation					
Sample Identification	· Mothod Parameter Loncentra		Concentration	Qualifier and Reason Code	
KMW-10-082020	EPA 6020B	Chromium	1.05 µg/L	J-IS	
KMW-10-082020	EPA 6020B	Copper	< 5 µg/L	UJ-IS	
KMW-10-082020	EPA 6020B	Nickel	< 1 µg/L	UJ-IS	
KMW-10-082020	EPA 6020B	Chromium	< 10 µg/L	EXC	
KMW-10-082020	EPA 6020B	Copper	< 50 µg/L	EXC	
KMW-10-082020	EPA 6020B	Nickel	< 10 µg/L	EXC	
KMW-10-9-082020	EPA 6020B	Chromium	1.12 µg/L	J-IS	
KMW-10-9-082020	EPA 6020B	Copper	< 5 µg/L	UJ-IS	
KMW-10-9-082020	EPA 6020B	Nickel	< 1 µg/L	UJ-IS	
KMW-10-9-082020	EPA 6020B	Chromium	< 10 µg/L	EXC	
KMW-10-9-082020	EPA 6020B	Copper	< 50 µg/L	EXC	
KMW-10-9-082020	EPA 6020B	Nickel	< 10 µg/L	EXC	

DATA ASSESSMENT SUMMARY

Project Information					
Project Name:	Kelly-Moore Paint	Lab Names:	Friedman & Bruya, Inc. (F&BI), Fremont Analytical (Fremont), and Amtest Laboratories (Amtest)		
Project Number:	0146970060.00010	Lab Report Numbers:	F&BI: 103413, 103441, and 103462 Fremont: 2103381 and 2103389		
Reviewer's Name:	Marie Bevier	Number of Samples:	9		
Review Date:	04/15/2021	Matrix:	Water		

Field Sample	Collection	Laboratory Sample Identification			Note
Identification	Date	F&BI	Fremont	Amtest	Note
KMW-03R	03/22/2021	103413 -01	2103381-001	21-A003783	MS/MSD for calcium, magnesium, and TOC. MS for volatile organic acids. Laboratory duplicate for BOD, alkalinity, carbon dioxide, TOC, and volatile organic acids.
KMW-08	03/22/2001	103413-02			
KMW-04	03/23/2021	103441 -01	2103389-001	21-A003778	MS/MSD for dissolved metals (EPA 200.8) and TOC Laboratory duplicate for alkalinity, BOD, carbon dioxide, dissolved metals (EPA 200.8), and TOC
KMW-06	03/23/2021	103441 -02	2103389-002	21-A003779	
KMW-09	03/23/2021	103441 -03	2103389-003	21-A003780	
KMW-10	03/23/2021	103441 -04	2103389-004	21-A003781	
Duplicate1	03/23/2021	103441 -05	2103389-005	21-A003782	Field duplicate of KMW-06 Laboratory duplicate for dissolved gases
KMW-02R	03/24/2021	103462-01			MS/MSD for DRO, metals, SVOCs, and VOCs
KMW-07	03/24/2021	103462-02			

Notes:

BOD = biochemical oxygen demand DRO = diesel-range organics MS/MSD = matrix spike/matrix spike duplicate SVOC = semivolatile organic compounds TOC = total organic carbon VOC = volatile organic compound

Field Duplicate Assessment Average Primary Duplicate PDD							
Analyte	Reporting Limit	Result	Result	RPD			
Samples KMW-06 and Duplicate1							
Gasoline Range Organics	100 μg/L	4,400	4,500	2.2%			
Diesel Range Organics	50 μg/L	35,000	33,000	5.9%			
Motor Oil Range Organics	250 μg/L	3,000	3,500	15%			
Iron, Dissolved	50 μg/L	37,900	35,900	5.4%			
Manganese, Dissolved	1 μg/L	1,450	1,440	0.69%			
Calcium	0.05 mg/L	51.4	51.3	0.19%			
Magnesium	0.05 mg/L	13.1	13.0	0.77%			
Hardness (as CaCO3)	0.05 mg/L	182	182	0.0%			
Arsenic	1 μg/L	8.05	7.89	2.0%			
Chromium	5.5 μg/L	< 10	5.2	NC			
Copper	5 μg/L	96.5	74.6	26%			
Iron	50 μg/L	42,800	45,200	5.5%			
Lead	1 μg/L	29.7	30.0	1.0%			
Manganese	1 μg/L	1,430	1,530	6.8%			
Nickel	1 μg/L	21.5	16.8	24%			
Zinc	5 μg/L	148	117	23%			
Benzo(a)anthracene	0.02 μg/L	0.057	0.070	20%			
Chrysene	0.02 μg/L	0.13	0.14	7.4%			
Benzo(a)pyrene	0.02 μg/L	0.31	0.37	18%			
Benzo(b)fluoranthene	0.02 μg/L	0.34	0.40	16%			
Benzo(k)fluoranthene	0.02 μg/L	0.11	0.11	0.0%			
Indeno(1,2,3-cd)pyrene	0.02 μg/L	0.18	0.21	15%			
Isopropylbenzene	1 μg/L	2.8	2.7	3.6%			
Methylene Chloride	5 μg/L	< 5	5.0	NC			
n-Propylbenzene	1 μg/L	3.6	3.5	2.8%			
1,1,2,2-Tetrachloroethane	1 μg/L	< 1	1.2	NC			
Biochemical Oxygen Demand	2.00 mg/L	39.5	39.4 J	0.25%			
Dissolved Methane	0.0675 mg/L	1.38	1.40	1.4%			
Sulfate	12.0 mg/L	121	135	11%			
Calcium, Dissolved	525 μg/L	61,300	56,400	8.3%			
Magnesium, Dissolved	100 μg/L	14,600	13,800	5.6%			
Sodium, Dissolved	250 μg/L	84,200	79,400	5.87%			
Aluminum	100 µg/L	303	309	2.0%			
Calcium	200 µg/L	54,100	54,400	0.55%			
Magnesium	100 µg/L	13,800	13,500	2.2%			
Sodium	200 µg/L	92,700	90,600	2.3%			
Total Organic Carbon	2.50 mg/L	157	157	0.0%			
Alkalinity	2.50 mg/L	162	162	0.0%			
Carbon Dioxide	2.50 mg/L	264	255	3.5%			
Chemical Oxygen Demand	10.0 mg/L	98.0	119	19%			

Notes:

< = less than NC = not calculable μg/L = micrograms per liter RPD = relative percent difference mg/L = milligrams per liter

As	sessment Su	mmary: F&BI 10	3413, 103441, and	d 103462		
Par	ameter:	Gasoline- Range Organics (GRO) by NWTPH-Gx	Diesel Range Organics (DRO) and Motor Oil Range Organics (ORO) by NWTPH-Dx	Dissolved Metals by EPA Method 6020B	Hardness by EPA Method 200.0 and SM 2340B	Total Metals by EPA Method 6020B
1.	Chain of Custody	Chains of custody	/ are complete.			
2.	Receipt Temperature	The recorded rec	eipt temperatures ar	e acceptable at 3, 4	, and 4 degrees Cel	sius.
3.	Hold Time	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
4.	Blank Detections	None	None	None	None	None
5.	Surrogate Recoveries	Qualification ^a	Acceptable	NA	NA	NA
6.	Laboratory Control Sample (LCS) Recoveries	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
7.	LCS/LCS Duplicate (LCSD) Precision	Acceptable	Acceptable	NA	NA	NA
8.	Matrix Spike (MS) Recoveries	NA	Acceptable	NA	Informational ^b	Acceptable
9.	MS/MS Duplicate (MSD) Precision	NA	Acceptable	NA	Informational ^c	Acceptable
10.	Laboratory Duplicate Precision	NA	NA	NA	NA	NA
11.	Other Quality Control Issues	None	Informational ^d	None	None	None

Parameter:		Semivolatile Compounds by EPA Method 8270E	Volatile Organic Compounds (VOCs) by EPA Method 8260D			
1.	Chain of Custody	Chains of custody	/ are complete.			
2.	Receipt Temperature	The recorded rec	The recorded receipt temperatures are acceptable at 3, 4, and 4 degrees Celsius.			
3.	Hold Time	Acceptable	Acceptable			
4.	Blank Detections	None	None			
5.	Surrogate Recoveries	Acceptable	Qualification e,f,g			
6.	LCS Recoveries	Acceptable	Acceptable			
7.	LCS/LCSD Precision	NA	Informational ^h			
8.	MS Recoveries	Acceptable	Acceptable			
9.	MS/MSD Precision	Acceptable	Acceptable			
10.	Laboratory Duplicate Precision	NA	NA			
11.	Other Quality Control Issues	None	Exclusion ⁱ			

As	Assessment Summary: Freemont 2103381 and 2103389					
Parameter:		Biochemical Oxygen Demand (BOD) by SM 5210B	Dissolved Gases by RSK-175	Anions by EPA Method 300.0	Dissolved Metals by EPA Method 200.8	Total Metals by EPA Method 200.8
1.	Chain of Custody	Chains of custody	are complete.			
2.	Receipt Temperature	The recorded reco	eipt temperatures a	e acceptable at 3.4	and 1.1 degrees Ce	elsius.
3.	Hold Time	Qualification ^j	Acceptable	Qualification ^k Exclusion ^I	Acceptable	Acceptable
4.	Blank Detections	None	None	None	None	None
5.	Surrogate Recoveries	NA	NA	NA	NA	NA
6.	LCS) Recoveries	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable
7.	LCS/LCSD Precision	NA	NA	NA	NA	NA
8.	MS Recoveries	NA	NA	NA	Acceptable	NA
9.	MS/MSD Precision	NA	NA	NA	Acceptable	NA
10.	Laboratory Duplicate Precision	Acceptable	Acceptable	NA	Acceptable	NA
11.	Other Quality Control Issues	Qualification ^m	None	None	None	None

As	Assessment Summary: Freemont 2103381 and 2103389					
Par	ameter:	Total Organic Carbon by SM 5310C	Total Alkalinity by SM 2320B	Carbon Dioxide by SM 2320B/ SM 4500-CO2D	Chemical Oxygen Demand by SM 5220D	
1.	Chain of Custody	Chains of custody	/ are complete.			
2.	Receipt Temperature	The recorded rec	eipt temperatures ar	e acceptable at 3.4	and 1.1 degrees Ce	elsius.
3.	Hold Time	Acceptable	Acceptable	Acceptable	Acceptable	
4.	Blank Detections	None	None	None	None	
5.	Surrogate Recoveries	NA	NA	NA	NA	
6.	LCS Recoveries	Acceptable	Acceptable	Acceptable	Acceptable	
7.	LCS/LCSD Precision	NA	NA	NA	NA	
8.	MS Recoveries	Acceptable	NA	NA	NA	
9.	MS/MSD Precision	Acceptable	NA	NA	NA	
10.	Laboratory Duplicate Precision	Acceptable	Acceptable	Acceptable	NA	
11.	Other Quality Control Issues	None	None	None	None	

As	Assessment Summary: AmTest				
Par	ameter:	Volatile Fatty Acids by EPA 300.0 modified			
1.	Chain of Custody	Chain of custody i	s complete.		
2.	Receipt Temperature	Qualification ⁿ			
3.	Hold Time	Acceptable			
4.	Blank Detections	Acceptable			
5.	Surrogate Recoveries	NA			
6.	Standard Reference Material Recoveries	Acceptable			
7.	LCS/LCSD Precision	NA			
8.	MS Recoveries	Acceptable			
9.	MS/MSD Precision	NA			
10.	Laboratory Duplicate Precision	Acceptable			
11.	Other Quality Control Issues	None			

Qualifier Definitions				
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.			
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.			

Reas	eason Code Definitions			
DS	All BOD dilutions resulted in full oxygen depletion. Result may be biased low.			
EXC	There are multiple results for the same analyte in the same sample and this result should not be used for reporting purposes.			
ΗΤ	Maximum-recommended hold time was exceeded.			
LS	Low surrogate recovery. Result may be biased low.			
МІ	Possible matrix interference.			
PC	Potential laboratory contamination.			
RT	Elevated sample receipt temperature.			

Notes	Description	Action Required
а	According to the laboratory's notes there was matrix interference, and they did not report surrogate recoveries for the GRO analyses of samples KMW-06 and its field duplicate, Duplicate1.	Wood J qualified the GRO results from samples KMW-06 and Duplicate1 because of uncertainty with the reported GRO results due to the matrix interference. (J-MI)
b	Calcium (735%, 257%) and magnesium (172%, MS) recoveries were outside of limits in the MS and/or MSD performed on sample KMW-03R.	The calcium and magnesium concentrations detected in the unspiked native sample, at 53.4 mg/L and 5.79 mg/L, respectively, are more than four times the spike concentrations of 1 mg/L and it is not possible to assess data usability based on MS recoveries.
С	Reported RPDs between calcium and magnesium results were high at 96% and 40%, respectively, in the MS and MSD performed on sample KMW-03R.	The reported RPDs are based on recoveries, not the concentrations detected in the MS and MSD. When Wood recalculated the RPDs based on the detected concentrations both results were less than the laboratory's maximum limit of 20%, indicating acceptable analytical precision.
d	According to the laboratory's notes, the DRO chromatograms from samples Duplicate1, KMW-03R, KMW-04, KMW-06, KMW-08, KMW-09, and KMW-10 do not match the analytical standard used for quantitation.	None. Results are being reported as diesel range and all compounds present in the same retention time range as the diesel standard would correctly be identified as diesel range.
e	Recovery of the surrogate compound 4-bromofluorobenzene was low in the VOC analysis of sample KMW-06.	Wood J qualified the detected isopropylbenzene and n-propylbenzene results and UJ qualified the remaining non-detected VOC results from this sample because of potential low analytical bias. (J/UJ-LS)
f	Recovery of the surrogate compound 4-bromofluorobenzene was low in the VOC analysis of sample Duplicate1.	Wood J qualified the detected methylene chloride, isopropylbenzene, n-propylbenzene, and 1,1,2,2-tetrachloroethane results and UJ qualified the remaining non-detected VOC results from this sample because of potential low analytical bias. (J/UJ-LS)
g	According to the laboratory's notes, the methylene chloride detection in sample Duplicate1 may be due to laboratory contamination.	Wood J qualified the methylene chloride result from this sample because of the potential laboratory contamination. (J-PC)
h	The relative percent difference between bromomethane results was high in the LCS and LCSD associated with the analysis of samples Duplicate1, KMW-04, KMW-06, KMW-09, and KMW-10.	Bromomethane was not detected in the associated samples and data usability is not adversely affected by the potential analytical imprecision.
i	F&BI ve qualified results when the detected concentrations were greater than the instrument's calibration range.	Wood excluded the ve qualified results from the undiluted analyses. (EXC)
j	The BOD analysis of sample KMW-06 was started more than two hours after the EPA- recommended maximum hold time of 48 hours from sample collection.	Wood J qualified the BOD result from this sample because of the missed hold time. (J-HT)
k	Sample KMW-03R was analyzed for nitrate more than two hours outside the EPA- recommended maximum hold time of 48 hours from sampling until analysis.	Wood UJ qualified the non-detected nitrate result from sample KMW-03R because of the missed hold time. (UJ-HT)
1	Sample KMW-10 was initially analyzed for nitrate at a 1:5 dilution within the method- recommended maximum hold time and was reanalyzed outside of hold at a 1:2 dilution.	Wood excluded the non-detected result from the 1:2 dilution analyzed outside of hold because analytical sensitivity in the 1:5 dilution was sufficient to meet project goals. (EXC)
m	According to the laboratory's notes, all dilutions of samples KMW-06, Duplicate1, and KMW-10 for BOD resulted in full oxygen depletion and the true values are equal to or greater than the reported results.	Wood J qualified the BOD result from samples KMW-06, Duplicate1, and KMW-10 because the reported results may be biased low. (J-DS)
n	The receipt temperature for sample KMW-03R was high at 6.8 degrees Celsius upon receipt at AmTest.	Wood UJ qualified the non-detected volatile fatty acid result from this sample because of the elevated receipt temperature (UJ-RT)

Data Qualified Dur	ing Validation			
Sample Identification	Method	Parameter	Concentration	Qualifier and Reason Code
Duplicate1	EPA 8260D	Isopropylbenzene	2.7 µg/L	J-LS
Duplicate1	EPA 8260D	Methylene chloride	5.0 µg/L	J-LS, PC
Duplicate1	EPA 8260D	n-Propylbenzene	3.5 µg/L	J-LS
Duplicate1	EPA 8260D	1,1,2,2-Tetrachloroethane	1.2 µg/L	J-LS
Duplicate1	EPA 8260D	All remaining results		UJ-LS
Duplicate1	NWTPH-Gx	GRO	4,500 µg/L	J-MI
Duplicate1	SM5210B	BOD	39.4 mg/L	J-DS
KMW-03R	EPA 300.0	Nitrate	< 0.200 mg/L	UJ-HT
KMW-03R	EPA 300.0 mod	Volatile fatty acids	< 0.1 mg/L	UJ-RT
KMW-04	EPA 8260D	m,p-Xylene	4,500 µg/L	EXC
KMW-06	EPA 8260D	Isopropylbenzene	2.8 µg/L	J-LS
KMW-06	EPA 8260D	n-Propylbenzene	3.6 µg/L	J-LS
KMW-06	EPA 8260D	All remaining results		UJ-LS
KMW-06	NWTPH-Gx	GRO	4,400 µg/L	J-MI
KMW-06	SM 5210B	BOD	39.5 mg/L	J-HT, DS
KMW-10	EPA 300.0	Nitrate	< 0.200 mg/L	EXC
KMW-10	EPA 8260D	Ethylbenzene	2,300 µg/L	EXC
KMW-10	EPA 8260D	Toluene	2,600 µg/L	EXC
KMW-10	EPA 8260D	m,p-Xylene	4,400 µg/L	EXC
KMW-10	SM 5210B	BOD	38.9 mg/L	J-DS

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 28, 2020

Lucas Kerner, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Kerner:

Included are the results from the testing of material submitted on August 20, 2020 from the Kelly-Moore 014697, F&BI 008315 project. There are 46 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.

Gal Nelf

Michael Erdahl Project Manager

Enclosures WEI0828R.DOC

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on August 20, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly-Moore 014697, F&BI 008315 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
008315 -01	KMW-02R-081920
008315 -02	KMW-03-081920
008315 -03	KMW-04-082020
008315 -04	KMW-06-082020
008315 -05	KMW-07-081920
008315 -06	KMW-08-081920
008315 -07	KMW-09-082020
008315 -08	KMW-10-082020
008315 -09	KMW-10-9-082020
008315 -10	Trip Blank

A 6020B internal standard failed the acceptance criteria for several samples. The samples were diluted and reanalyzed with acceptable results. Both data sets were reported.

Several 8270 surrogates exceeded the laboratory acceptance criteria. No analytes associated with that surrogates were detected in the samples, therefore the data were acceptable.

All other quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Date of Report: 08/28/20 Date Received: 08/20/20 Project: Kelly-Moore 014697, F&BI 008315 Date Extracted: 08/25/20 Date Analyzed: 08/25/20

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

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<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate (<u>% Recovery)</u> (Limit 51-134)
KMW-02R-081920 008315-01	<100	88
KMW-03-081920 008315-02	140	93
KMW-04-082020 008315-03 1/10	77,000	ip
KMW-06-082020 008315-04	5,400	ip
KMW-07-081920 008315-05	<100	89
KMW-08-081920 008315-06	<100	90
KMW-09-082020 008315-07	990	122
KMW-10-082020 008315-08	1,800	116
KMW-10-9-082020 008315-09	1,600	116
Method Blank ^{00-1804 MB}	<100	94

ENVIRONMENTAL CHEMISTS

Date of Report: 08/28/20 Date Received: 08/20/20 Project: Kelly-Moore 014697, F&BI 008315 Date Extracted: 08/21/20 Date Analyzed: 08/21/20

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)

<u>Sample ID</u> Laboratory ID	Diesel Range (C ₁₀ -C ₂₅)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆)	Surrogate <u>(% Recovery)</u> (Limit 51-134)
KMW-02R-081920 008315-01	<50	<250	69
KMW-03-081920 008315-02	700 x	<250	82
KMW-04-082020 008315-03	5,800 x	<250	84
KMW-06-082020 008315-04	17,000 x	840 x	60
KMW-07-081920 008315-05	<50	<250	85
KMW-08-081920 008315-06	110 x	<250	91
KMW-09-082020 008315-07	13,000 x	1,200 x	69
KMW-10-082020 008315-08	10,000 x	<250	84
KMW-10-9-082020 008315-09	11,000 x	<250	88
Method Blank 00-1905 MB	<50	<250	76

ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-02R-081920 08/20/20 08/24/20 08/24/20 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-01 008315-01.045 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	<1		
Barium	9.60		
Cadmium	<1		
Chromium	<1		
Lead	<1		
Mercury	<1		
Selenium	<1		
Silver	<1		

ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-03-081920 08/20/20 08/24/20 08/25/20 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-02 008315-02.043 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	<1		
Barium	10.4		
Cadmium	<1		
Chromium	<1		
Lead	<1		
Mercury	<1		
Selenium	<1		
Silver	<1		

ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-04-082020 08/20/20 08/24/20 08/25/20 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-03 008315-03.045 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	17.9		
Barium	6.06		
Cadmium	<1		
Chromium	$1.07~\mathrm{J}$		
Lead	1.80		
Mercury	<1		
Selenium	<1		
Silver	<1		

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	KMW-04-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697
Date Extracted:	08/24/20	Lab ID:	008315-03 x10
Date Analyzed:	08/25/20	Data File:	008315-03 x10.044
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		

Chromium

<10

ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-06-082020 08/20/20 08/24/20 08/25/20 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-04 008315-04.047 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	5.58		
Barium	23.7		
Cadmium	1.26		
Chromium	$1.48~\mathrm{J}$		
Lead	6.47		
Mercury	<1		
Selenium	<1		
Silver	<1		

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	KMW-06-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697
Date Extracted:	08/24/20	Lab ID:	008315-04 x10
Date Analyzed:	08/25/20	Data File:	008315-04 x10.046
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		

Chromium

<10

ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-07-081920 08/20/20 08/24/20 08/25/20 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-05 008315-05.048 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	<1		
Barium	4.21		
Cadmium	<1		
Chromium	<1		
Lead	<1		
Mercury	<1		
Selenium	<1		
Silver	<1		

ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-08-081920 08/20/20 08/24/20 08/25/20 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-06 008315-06.049 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	<1		
Barium	14.5		
Cadmium	<1		
Chromium	<1		
Lead	<1		
Mercury	<1		
Selenium	<1		
Silver	<1		

ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-09-082020 08/20/20 08/24/20 08/25/20 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-07 008315-07.056 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	1.31		
Barium	21.9		
Cadmium	<1		
Chromium	<1 J		
Lead	<1		
Mercury	<1		
Selenium	<1		
Silver	<1		

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	KMW-09-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697
Date Extracted:	08/24/20	Lab ID:	008315-07 x10
Date Analyzed:	08/25/20	Data File:	008315-07 x 10.055
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		

Chromium

<10

ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-10-082020 08/20/20 08/24/20 08/25/20 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-08 008315-08.058 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	5.34		
Barium	18.6		
Cadmium	<1		
Chromium	$1.05~{ m J}$		
Lead	<1		
Mercury	<1		
Selenium	<1		
Silver	<1		

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

KMW-10-082020	Client:	Wood Environment & Infrastructure Solutions
08/20/20	Project:	Kelly-Moore 014697
08/24/20	Lab ID:	008315-08 x10
08/25/20	Data File:	008315-08 x 10.057
Water	Instrument:	ICPMS2
ug/L (ppb)	Operator:	SP
Concentration		
ug/L (ppb)		
	08/20/20 08/24/20 08/25/20 Water ug/L (ppb) Concentration	08/20/20Project:08/24/20Lab ID:08/25/20Data File:WaterInstrument:ug/L (ppb)Operator:Concentration

Chromium

<10

ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-10-9-082020 08/20/20 08/24/20 08/25/20 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-09 008315-09.060 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	5.25		
Barium	18.9		
Cadmium	<1		
Chromium	$1.12~\mathrm{J}$		
Lead	<1		
Mercury	<1		
Selenium	<1		
Silver	<1		

ENVIRONMENTAL CHEMISTS

Analysis For Total Metals By EPA Method 6020B

Client ID:	KMW-10-9-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697
Date Extracted:	08/24/20	Lab ID:	008315-09 x10
Date Analyzed:	08/25/20	Data File:	008315-09 x10.059
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator :	SP
	Concentration		
Analyte:	ug/L (ppb)		

Chromium

<10

ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank NA 08/24/20 08/24/20 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 I0-491 mb I0-491 mb.036 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	<1		
Barium	<1		
Cadmium	<1		
Chromium	<1		
Lead	<1		
Mercury	<1		
Selenium	<1		
Silver	<1		

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-02R- 08/20/20 08/24/20 08/24/20 Water ug/L (ppb)	081920	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly-Moore 014697 008315-01 082418.D GCMS4 VM	z Infrastructure Solutions
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 100 94 93	Lower Limit: 57 63 60	Upper Limit: 121 127 133	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromet Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethe trans-1,2-Dichloroethane 2,2-Dichloroethane 2,2-Dichloroethane 2,2-Dichloroethane 1,1-Dichloroethane 1,1,2-Dichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethan 1,2-Dichloropropen Carbon tetrachlorid Benzene Trichloroethene 1,2-Dichloropropan Bromodichlorometh Dibromomethane 4-Methyl-2-pentane cis-1,3-Dichloroprop Toluene trans-1,3-Dichloroprop	hane er (MTBE) ethene eene (EDC) ne e de nane pene		Tetrachl Dibromo 1,2-Dibr Chlorobe Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propy Bromofo 1,3,5-Tr 1,1,2,2-T 1,2,3-Tr 2-Chloro 4-Chloro tert-But 1,2,4-Tr sec-Buty p-Isopro 1,3-Dich 1,2-Dich 1,2-Dibr 1,2,4-Tr	nzene Petrachloroethane ene ene ene m lbenzene orm lbenzene enzene imethylbenzene Cetrachloroethane ichloropropane otoluene otoluene ylbenzene pyltoluene lorobenzene lorobenzene lorobenzene omo-3-chloropropane ichlorobenzene orobutadiene	$ \begin{array}{c} <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <2 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1$
1,1,2-Trichloroetha 2-Hexanone		<1 <10	-	ichlorobenzene	<1

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-03-08 08/20/20 08/24/20 08/24/20 Water ug/L (ppb)	81920	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly-Moore 014697 008315-02 082413.D GCMS4 VM	t Infrastructure Solutions
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 100 97 95	Lower Limit: 57 63 60	Upper Limit: 121 127 133	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromet Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethe trans-1,2-Dichloroethane 2,2-Dichloropethane 2,2-Dichloropethane 1,1-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,2-Dichloropethane 1,2-Dichloropethane 1,2-Dichloropethane 1,2-Dichloropethane 1,2-Dichloropethane 1,2-Dichloropethane 1,2-Dichloropethane 1,2-Dichloropethane 1,2-Dichloropethane 1,2-Dichloropethane 1,3-Dichloropethane 4-Methyl-2-pentane cis-1,3-Dichloropethane trans-1,3-Dichloropethane	hane er (MTBE) thene e ene (EDC) ne e le hane pene		Tetrachl Dibromo 1,2-Dibr Chlorobe Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propy Bromofo 1,3,5-Tr 1,1,2,2-T 1,2,3-Tr 2-Chloro 4-Chloro tert-But 1,2,4-Tr sec-Buty p-Isopro 1,3-Dich 1,2-Dich 1,2-Dibr 1,2,4-Tr	nzene Petrachloroethane ene ene ene m lbenzene orm lbenzene enzene imethylbenzene Cetrachloroethane ichloropropane otoluene otoluene ylbenzene pyltoluene lorobenzene lorobenzene lorobenzene omo-3-chloropropane ichlorobenzene orobutadiene	$ \begin{array}{c} <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <2 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1$
1,1,2-Trichloroetha 2-Hexanone		<1 <10	-	ichlorobenzene	<1

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-04-0 08/20/20 08/24/20 08/24/20 Water ug/L (ppb)	82020	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly-Moore 014697 008315-03 1/100 082433.D GCMS4 VM	t Infrastructure Solutions
Surrogates: 1,2-Dichloroethane- Toluene-d8 4-Bromofluorobenze		% Recovery: 99 97 94	Lower Limit: 57 63 60	Upper Limit: 121 127 133	
Compounds:		Concentration ug/L (ppb)	Compou	inds:	Concentration ug/L (ppb)
Dichlorodifluoromet Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluorometh Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethe trans-1,2-Dichloroethane 2,2-Dichloropethane 2,2-Dichloropethane 1,1-Dichloroethane 1,1,2-Dichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1-Dichloropropene Carbon tetrachlorid Benzene Trichloroethene 1,2-Dichloropropane Bromodichlorometh Dibromomethane 4-Methyl-2-pentanc cis-1,3-Dichloroprop	hane rr (MTBE) thene e ene (EDC) ne e le ane pone pone pone	<100 < 1,000 < 20 < 500 < 100 < 100 < 100 < 5,000 < 100 < 500 < 500 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 <	Tetrach Dibromo 1,2-Dibr Chlorob Ethylbe 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propy Bromob 1,3,5-Tr 1,1,2,2-T 1,2,3-Tr 2-Chloro 4-Chloro tert-But 1,2,4-Tr sec-Buty p-Isopro 1,3-Dich 1,2-Dich 1,2-Dibr 1,2,4-Tr Hexachl Naphtha	nzene Fetrachloroethane ene ene ene ylbenzene orm lbenzene enzene imethylbenzene Fetrachloroethane ichloropropane otolue	<100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100 < 100
Toluene	oropene	810	Hexachl Naphtha	orobutadiene	<100

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-06-08 08/20/20 08/24/20 08/24/20 Water ug/L (ppb)	32020	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly-Moore 014697 008315-04 082414.D GCMS4 VM	t Infrastructure Solutions
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenze		% Recovery: 98 96 90	Lower Limit: 57 63 60	Upper Limit: 121 127 133	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluorometh Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethe trans-1,2-Dichloroe 1,1-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane 1,2-Dichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,2-Dichloropropen Carbon tetrachlorid Benzene Trichloroethene 1,2-Dichloropropan Bromodichlorometh Dibromomethane 4-Methyl-2-pentano cis-1,3-Dichloroprop Toluene	nane r (MTBE) thene e ene (EDC) ne e le aane pone pene		Tetrachl Dibromo 1,2-Dibr Chlorobe Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propy Bromobo 1,3,5-Tr: 1,1,2,2-T 1,2,3-Tr: 2-Chloro 4-Chloro tert-But 1,2,4-Tr: sec-Buty p-Isopro 1,3-Dich 1,2-Dibr 1,2,4-Tr:	nzene Cetrachloroethane ene e Vlbenzene rm lbenzene enzene imethylbenzene Cetrachloroethane ichloropropane otoluene	$<1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <2 \\ <1 \\ <1$
trans-1,3-Dichlorop 1,1,2-Trichloroetha 2-Hexanone		<1 <1 <10	Naphtha 1,2,3-Tri	alene ichlorobenzene	<1 <1

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-07-08 08/20/20 08/24/20 08/24/20 Water ug/L (ppb)	31920	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly-Moore 014697 008315-05 082415.D GCMS4 VM	t Infrastructure Solutions
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenze		% Recovery: 98 95 94	Lower Limit: 57 63 60	Upper Limit: 121 127 133	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluorometh Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethe trans-1,2-Dichloroe 1,1-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane 1,1-Dichloroethane 1,1-Trichloroethane 1,1-Trichloroethane 1,1-Dichloropropan Carbon tetrachlorid Benzene Trichloroethene 1,2-Dichloropropan Bromodichlorometh Dibromomethane 4-Methyl-2-pentano cis-1,3-Dichloroprop Toluene	hane or (MTBE) thene e ene (EDC) ne e le e nane one		Tetrachl Dibromo 1,2-Dibr Chlorobe Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propy Bromobo 1,3,5-Tr: 1,1,2,2-T 1,2,3-Tr: 2-Chloro 4-Chloro tert-But 1,2,4-Tr: sec-Buty p-Isopro 1,3-Dich 1,2-Dibr 1,2,4-Tr:	nzene Cetrachloroethane ene e Vlbenzene rm lbenzene enzene imethylbenzene Cetrachloroethane ichloropropane otoluene	$ \begin{array}{c} <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <2 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1$
trans-1,3-Dichlorop 1,1,2-Trichloroetha 2-Hexanone		<1 <1 <10	Naphtha		<1 <1 <1

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-08-08 08/20/20 08/24/20 08/24/20 Water ug/L (ppb)	81920	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly-Moore 014697 008315-06 082416.D GCMS4 VM	t Infrastructure Solutions
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 99 98 95	Lower Limit: 57 63 60	Upper Limit: 121 127 133	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromet Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethe trans-1,2-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane 1,1-Dichloroethane 2-Butanone (MEK) 1,2-Dichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,2-Dichloropropan Carbon tetrachlorid Benzene Trichloroethene 1,2-Dichloropropan Bromodichlorometh Dibromomethane 4-Methyl-2-pentane cis-1,3-Dichloropropan	hane er (MTBE) othene e ene (EDC) ne e le hane pene	$<1 \\<10 \\<0.2 \\<5 \\<1 \\<1 \\<50 \\<1 \\<5 \\<5 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1$	Tetrachl Dibromo 1,2-Dibr Chlorobe Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propy Bromobe 1,3,5-Tr 1,1,2,2-T 1,2,3-Tr 2-Chloro 4-Chloro tert-But 1,2,4-Tr sec-Buty p-Isopro 1,3-Dich 1,2-Dich 1,2-Dibr 1,2,4-Tr Hexachl	nzene 'etrachloroethane ene '' 'lbenzene frm lbenzene enzene imethylbenzene 'etrachloroethane ichloropropane toluene ylbenzene pyltoluene lorobenzene lorobenzene lorobenzene omo-3-chloropropane ichlorobenzene orobutadiene	$ \begin{array}{c} <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <2 \\ <1 \\ <1 \\ <2 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1$
trans-1,3-Dichlorop 1,1,2-Trichloroetha 2-Hexanone		<1 <1 <10	Naphtha 1,2,3-Tri	alene ichlorobenzene	<1 <1

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-09-08 08/20/20 08/24/20 08/24/20 Water ug/L (ppb)	32020	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly-Moore 014697 008315-07 082417.D GCMS4 VM	t Infrastructure Solutions
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenze		% Recovery: 99 91 93	Lower Limit: 57 63 60	Upper Limit: 121 127 133	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluorometh Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethet trans-1,2-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane 1,1-Dichloropropan cis-1,2-Dichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1,1-Dichloropropan Carbon tetrachlorid Benzene Trichloroethene 1,2-Dichloropropan Bromodichlorometh Dibromomethane 4-Methyl-2-pentano cis-1,3-Dichloropropan Toluene	nane r (MTBE) thene e ene (EDC) ne e le ane pone poene	$ \begin{array}{c} <1 \\ <10 \\ <0.2 \\ <5 \\ <1 \\ <1 \\ <50 \\ <1 \\ <5 \\ <5 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1$	Tetrachl Dibromo 1,2-Dibr Chlorobe Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propy Bromobe 1,3,5-Tr 1,1,2,2-T 1,2,3-Tr 2-Chloro 4-Chloro tert-But 1,2,4-Tr sec-Buty p-Isopro 1,3-Dich 1,2-Dich 1,2-Dibr 1,2,4-Tr Hexachl	nzene 'etrachloroethane ene '' 'lbenzene rm lbenzene enzene imethylbenzene 'etrachloroethane ichloropropane toluene ylbenzene pyltoluene lorobenzene lorobenzene lorobenzene omo-3-chloropropane ichloropropane ichloropropane	$<1 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1 \\<2 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1 \\<1$
trans-1,3-Dichlorop 1,1,2-Trichloroetha 2-Hexanone		<1 <1 <10	Naphtha 1,2,3-Tri	alene ichlorobenzene	<1 <1

ENVIRONMENTAL CHEMISTS

		1			
Client Sample ID:	KMW-10-0	82020	Client:		& Infrastructure Solutions
Date Received:	08/20/20		Project:	Kelly-Moore 014697	
Date Extracted:	08/24/20		Lab ID:	008315-08 1/10	
Date Analyzed:	08/24/20		Data File:	082421.D	
Matrix:	Water		Instrument:	GCMS4	
Units:	ug/L (ppb)		Operator:	VM	
			т	TT	
a ,		0/ D	Lower	Upper	
Surrogates:	1.4	% Recovery:	Limit:	Limit:	
1,2-Dichloroethane	e-d4	98	57	121	
Toluene-d8		99	63	127	
4-Bromofluorobenz	ene	95	60	133	
		Concentration			Concentration
Compounds:		ug/L (ppb)	Compou	nds:	ug/L (ppb)
Dichlorodifluorome	ethane	<10	1 3-Dich	loropropane	<10
Chloromethane	onano	<100		loroethene	<10
Vinyl chloride		<2		ochloromethane	<10
Bromomethane		<50		omoethane (EDB)	<10
Chloroethane		<10	Chlorob		<10
Trichlorofluoromet	hana	<10	Ethylbe		96
Acetone	nane	<500		Fetrachloroethane	<10
1,1-Dichloroethene		<10	m,p-Xyl		400
Hexane		<10 <50			400 <10
			o-Xylene		
Methylene chloride		<50	Styrene		<10
Methyl t-butyl ethe		<10		vlbenzene	<10
trans-1,2-Dichloroe		<10	Bromofo		<50
1,1-Dichloroethane		<10		lbenzene	<10
2,2-Dichloropropan		<10	Bromob		<10
cis-1,2-Dichloroeth	ene	<10		imethylbenzene	<10
Chloroform		<10		Fetrachloroethane	<10
2-Butanone (MEK)		<200		ichloropropane	<10
1,2-Dichloroethane		<10	2-Chloro		<10
1,1,1-Trichloroetha		<10	4-Chloro		<10
1,1-Dichloropropen		<10		ylbenzene	<10
Carbon tetrachlorie	de	<10		imethylbenzene	<10
Benzene		<3.5	l l	lbenzene	<10
Trichloroethene		<10		pyltoluene	<10
1,2-Dichloropropan		<10		lorobenzene	<10
Bromodichlorometh	hane	<10		lorobenzene	<10
Dibromomethane		<10	1,2-Dich	lorobenzene	<10
4-Methyl-2-pentan	one	<100	1,2-Dibr	omo-3-chloropropane	<100
cis-1,3-Dichloropro	pene	<10	1,2,4-Tr	ichlorobenzene	<10
Toluene		<10	Hexachl	orobutadiene	<10
trans-1,3-Dichlorop	oropene	<10	Naphtha	alene	<10
1,1,2-Trichloroetha	-	<10	1,2,3-Tr	ichlorobenzene	<10
2-Hexanone		<100			

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-10-9- 08/20/20 08/24/20 08/24/20 Water ug/L (ppb)	.082020	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly-Moore 014697 008315-09 1/10 082422.D GCMS4 VM	z Infrastructure Solutions
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 98 95 95	Lower Limit: 57 63 60	Upper Limit: 121 127 133	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromet Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethe trans-1,2-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane Chloroform 2-Butanone (MEK) 1,2-Dichloroethane 1,1-Trichloroethane 1,1-Dichloropropan Carbon tetrachlorid Benzene Trichloroethene 1,2-Dichloropropan Bromodichlorometh Dibromomethane 4-Methyl-2-pentane cis-1,3-Dichloropro	hane er (MTBE) ethene ene (EDC) ne e le hane pene	<10 <10 <10 <2 <50 <10 <10 <500 <10 <50 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20 <20	1,3-Dich Tetrachl Dibromo 1,2-Dibr Chloroby Ethylbe: 1,1,1,2-7 m,p-Xyla o-Xylene Isopropy Bromofo n-Propy Bromofo 1,3,5-Tr 1,1,2,2-7 1,2,3-Tr 2-Chloro 4-Chloro tert-But 1,2,4-Tr sec-Buty p-Isopro 1,3-Dich 1,2-Dibr 1,2,4-Tr	loropropane loroethene ochloromethane omoethane (EDB) enzene nzene Cetrachloroethane ene orm lbenzene enzene imethylbenzene Cetrachloroethane ichloropropane otoluene ylbenzene imethylbenzene otoluene ylbenzene pyltoluene lorobenzene lorobenzene lorobenzene omo-3-chloropropane orobutadiene	<10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10 <10
1,1,2-Trichloroetha 2-Hexanone	-	<10 <100	-	ichlorobenzene	<10

ENVIRONMENTAL CHEMISTS

		J			
Client Sample ID:	Trip Blank		Client:		z Infrastructure Solutions
Date Received:	08/20/20		Project:	Kelly-Moore 014697	
Date Extracted:	08/24/20		Lab ID:	008315-10	
Date Analyzed:	08/24/20		Data File:	082412.D	
Matrix:	Water		Instrument:	GCMS4	
Units:	ug/L (ppb)		Operator :	VM	
			- -		
a			Lower	Upper	
Surrogates:		% Recovery:	Limit:	Limit:	
1,2-Dichloroethane-d4		99	57	121	
Toluene-d8		98	63	127	
4-Bromofluorobenzene		94	60	133	
		Concentration			Concentration
Compounds:		ug/L (ppb)	Compounds:		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
		<0.35	1,2,4-Trimethylbenzene		<1
Benzene Twicklassethere			sec-Butylbenzene		
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			

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Bla Not Applica 08/24/20 08/24/20 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly-Moore 014697 00-1858 mb 082408.D GCMS4 VM	z Infrastructure Solutions
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 101 94 93	Lower Limit: 57 63 60	Upper Limit: 121 127 133	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromethane Trichlorofluorometha Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethe trans-1,2-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,2-Dichloropropan Benzene Trichloroethene 1,2-Dichloropropan Bromodichlorometh Dibromomethane 4-Methyl-2-pentano cis-1,3-Dichloropropan Toluene	hane er (MTBE) thene e ene (EDC) ne e le hane pene	$ \begin{array}{c} <1 \\ <10 \\ <0.2 \\ <5 \\ <1 \\ <1 \\ <50 \\ <1 \\ <5 \\ <5 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1$	Tetrachl Dibromo 1,2-Dibr Chlorobe Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propy Bromobe 1,3,5-Tr 1,1,2,2-T 1,2,3-Tr 2-Chloro 4-Chloro tert-But 1,2,4-Tr sec-Buty p-Isopro 1,3-Dich 1,2-Dich 1,2-Dibr 1,2,4-Tr Hexachl	nzene Petrachloroethane ene ene ene m lbenzene orm lbenzene enzene imethylbenzene Cetrachloroethane ichloropropane otoluene otoluene ylbenzene pyltoluene lorobenzene lorobenzene lorobenzene omo-3-chloropropane ichlorobenzene orobutadiene	$ \begin{array}{c} <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <2 \\ <1 \\ <1 \\ <2 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1$
trans-1,3-Dichlorop 1,1,2-Trichloroetha 2-Hexanone	-	<1 <1 <10	Naphtha 1,2,3-Tri	alene ichlorobenzene	<1 <1

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-02R- 08/20/20 08/21/20 08/21/20 Water ug/L (ppb)	081920	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-01 1/2 082120.D GCMS9 ya
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 38 vo 26 vo 78 85 80 89	Lower Limit: 15 10 17 50 50 50 50	Upper Limit: 33 20 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Naphthalene 2-Methylnaphthale 1-Methylnaphthale Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthe Benzo(k)fluoranthe	ne ne ne	$<0.4 \\<0.4 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\\\0.04 \\<0.04 \\\\0$		
Indeno(1,2,3-cd)pyr Dibenz(a,h)anthrac Benzo(g,h,i)perylen	ene	<0.04 <0.04 <0.08		

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-03-08 08/20/20 08/21/20 08/21/20 Water ug/L (ppb)	81920	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-02 1/2 082121.D GCMS9 ya
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 38 vo 28 vo 78 74 84 84 84	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 33 20 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Naphthalene		<0.4		
2-Methylnaphthale		< 0.4		
1-Methylnaphthale	ne	< 0.4		
Acenaphthylene		< 0.04		
Acenaphthene		0.17		
Fluorene		0.066		
Phenanthrene		< 0.04		
Anthracene		< 0.04		
Fluoranthene		< 0.04		
Pyrene		< 0.04		
Benz(a)anthracene		< 0.04		
Chrysene		< 0.04		
Benzo(a)pyrene		< 0.04		
Benzo(b)fluoranthe		< 0.04		
Benzo(k)fluoranthe		< 0.04		
Indeno(1,2,3-cd)pyr		< 0.04		
Dibenz(a,h)anthrac		< 0.04		
Benzo(g,h,i)perylen	e	< 0.08		

ENVIRONMENTAL CHEMISTS

111019 212 1 01 20				
Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-04-08 08/20/20 08/21/20 08/22/20 Water ug/L (ppb)	82020	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-03 1/2 082122.D GCMS9 ya
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol		$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 33 20 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Naphthalene		6.8		
2-Methylnaphthale	ne	0.52		
1-Methylnaphthale	ene	< 0.4		
Acenaphthylene		< 0.04		
Acenaphthene		< 0.04		
Fluorene		0.040		
Phenanthrene		0.091		
Anthracene		< 0.04		
Fluoranthene		0.040		
Pyrene		0.044		
Benz(a)anthracene		< 0.04		
Chrysene		< 0.04		
Benzo(a)pyrene		< 0.04		
Benzo(b)fluoranthe		< 0.04		
Benzo(k)fluoranthe		< 0.04		
Indeno(1,2,3-cd)pyr		< 0.04		
Dibenz(a,h)anthrac		< 0.04		
Benzo(g,h,i)peryler	ie	< 0.08		

ENVIRONMENTAL CHEMISTS

111101.9 212 1 01 200		eempennee 25		
Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-06-08 08/20/20 08/21/20 08/22/20 Water ug/L (ppb)	82020	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-04 1/2 082123.D GCMS9 ya
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol		$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 33 20 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Naphthalene		< 0.4		
2-Methylnaphthale	ne	< 0.4		
1-Methylnaphthale	ene	< 0.4		
Acenaphthylene		4.8		
Acenaphthene		1.2		
Fluorene		< 0.04		
Phenanthrene		0.29		
Anthracene		0.94		
Fluoranthene		0.14		
Pyrene		0.26		
Benz(a)anthracene		0.063		
Chrysene		0.063		
Benzo(a)pyrene		0.089		
Benzo(b)fluoranthe		0.10		
Benzo(k)fluoranthe		< 0.04		
Indeno(1,2,3-cd)pyr		0.069		
Dibenz(a,h)anthrac		< 0.04		
Benzo(g,h,i)peryler	ie	< 0.08		

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-07-08 08/20/20 08/21/20 08/22/20 Water ug/L (ppb)	1920	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-05 1/2 082124.D GCMS9 ya
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	ol	% Recovery: 40 vo 28 vo 80 76 84 92	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 33 20 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Naphthalene 2-Methylnaphthalei 1-Methylnaphthalei Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthei Benzo(k)fluoranthei Indeno(1,2,3-cd)pyr Dibenz(a,h)anthrac	ne ne ene ene	$<0.4 \\<0.4 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.03 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.08 \\\\0$		

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-08-08 08/20/20 08/21/20 08/22/20 Water ug/L (ppb)	81920	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-06 1/2 082125.D GCMS9 ya
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 44 vo 29 vo 83 81 88 95	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 33 20 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Naphthalene		< 0.4		
2-Methylnaphthale		< 0.4		
1-Methylnaphthale	ne	< 0.4		
Acenaphthylene		< 0.04		
Acenaphthene		0.064		
Fluorene		0.12		
Phenanthrene		< 0.04		
Anthracene		0.11		
Fluoranthene		0.13		
Pyrene		0.14		
Benz(a)anthracene		< 0.04		
Chrysene		< 0.04		
Benzo(a)pyrene		< 0.04		
Benzo(b)fluoranthe		< 0.04		
Benzo(k)fluoranthe	ene	< 0.04		
Indeno(1,2,3-cd)pyr	rene	< 0.04		
Dibenz(a,h)anthrac	ene	< 0.04		
Benzo(g,h,i)perylen	e	< 0.08		

ENVIRONMENTAL CHEMISTS

Client Sample ID:KMW-0Date Received:08/20/20Date Extracted:08/21/20Date Analyzed:08/22/20Matrix:WaterUnits:ug/L (pp)))	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-07 1/2 082126.D GCMS9 ya
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophenol Terphenyl-d14		Lower Limit: 15 10 17 50 50 50 50	Upper Limit: 33 20 143 150 150 150
Compounds:	Concentration ug/L (ppb)		
Naphthalene 2-Methylnaphthalene 1-Methylnaphthalene Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthene Benzo(k)fluoranthene Indeno(1,2,3-cd)pyrene Dibenz(a,h)anthracene	<0.4 <0.4 0.48 1.3 3.2 1.1 0.38 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04		
Benzo(g,h,i)perylene	< 0.08		

ENVIRONMENTAL CHEMISTS

111019 212 1 01 200				
Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-10-03 08/20/20 08/21/20 08/22/20 Water ug/L (ppb)	82020	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-08 1/2 082127.D GCMS9 ya
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	ıol	% Recovery: 36 vo 30 vo 82 72 102 86	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 33 20 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Naphthalene		<0.4		
2-Methylnaphthale	ne	< 0.4		
1-Methylnaphthale	ne	< 0.4		
Acenaphthylene		8.7		
Acenaphthene		< 0.04		
Fluorene		< 0.04		
Phenanthrene		0.69		
Anthracene		< 0.04		
Fluoranthene		< 0.04		
Pyrene		< 0.04		
Benz(a)anthracene		< 0.04		
Chrysene		< 0.04		
Benzo(a)pyrene		< 0.04		
Benzo(b)fluoranthe	ene	< 0.04		
Benzo(k)fluoranthe	ene	< 0.04		
Indeno(1,2,3-cd)pyr	rene	< 0.04		
Dibenz(a,h)anthrac	ene	< 0.04		
Benzo(g,h,i)perylen	ie	< 0.08		

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-10-9 08/20/20 08/21/20 08/22/20 Water ug/L (ppb)	-082020	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 008315-09 1/2 082128.D GCMS9 ya
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 35 vo 28 vo 73 68 88 88 82	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 33 20 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Naphthalene 2-Methylnaphthale 1-Methylnaphthale Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthe Benzo(k)fluoranthe Indeno(1,2,3-cd)pyr	ne ne ne	$<0.4 \\<0.4 \\<0.4 \\8.9 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\<0.04 \\\\0.04 \\<0.04 \\\\0.04$		
Dibenz(a,h)anthrac Benzo(g,h,i)perylen		<0.04 <0.08		

ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank Not Applicable 08/21/20 08/21/20 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697 00-1904 mb 082119.D GCMS9 ya
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	% Recovery: 22 13 79 78 nol 77 86	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 33 20 143 150 150 150
Compounds:	Concentration ug/L (ppb)		
Naphthalene 2-Methylnaphthalei 1-Methylnaphthalei Acenaphthylene Acenaphthene Fluorene Phenanthrene Anthracene Fluoranthene Pyrene Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthei Benzo(k)fluoranthei Indeno(1,2,3-cd)pyr Dibenz(a,h)anthrac	ne <0.2 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02		

ENVIRONMENTAL CHEMISTS

Date of Report: 08/28/20 Date Received: 08/20/20 Project: Kelly-Moore 014697, F&BI 008315

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 008315-02 (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	130	94	101	53 - 117	7
Laboratory Code: Laboratory Control Sample Percent							
	Reporting	Spike	Recovery	Acceptance	9		
Analyte	Units	Level	LCS	Criteria			
Gasoline	ug/L (ppb)	1,000	110	69-134			

40

ENVIRONMENTAL CHEMISTS

Date of Report: 08/28/20 Date Received: 08/20/20 Project: Kelly-Moore 014697, F&BI 008315

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

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	84	88	58 - 134	5

ENVIRONMENTAL CHEMISTS

Date of Report: 08/28/20 Date Received: 08/20/20 Project: Kelly-Moore 014697, F&BI 008315

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 008315-01 (Matrix Spike)

Laboratory Cou	c. 000010 01 (/IRC)	Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	<1	87	92	75 - 125	6
Barium	ug/L (ppb)	50	9.60	101	106	75 - 125	5
Cadmium	ug/L (ppb)	5	<1	98	101	75 - 125	3
Chromium	ug/L (ppb)	20	<1	92	93	75 - 125	1
Lead	ug/L (ppb)	10	<1	87	89	75 - 125	2
Mercury	ug/L (ppb)	5	<1	93	97	75 - 125	4
Selenium	ug/L (ppb)	5	<1	93	95	75 - 125	2
Silver	ug/L (ppb)	5	<1	94	99	75 - 125	5

Laboratory Code: Laboratory Control Sample

Laboratory Co	de: Laboratory	Control Se	impie	
			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	90	80-120
Barium	ug/L (ppb)	50	93	80-120
Cadmium	ug/L (ppb)	5	93	80-120
Chromium	ug/L (ppb)	20	98	80-120
Lead	ug/L (ppb)	10	96	80-120
Mercury	ug/L (ppb)	5	99	80-120
Selenium	ug/L (ppb)	5	93	80-120
Silver	ug/L (ppb)	5	93	80-120

ENVIRONMENTAL CHEMISTS

Date of Report: 08/28/20 Date Received: 08/20/20 Project: Kelly-Moore 014697, F&BI 008315

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 008315-02 (Matrix Spike)

	\mathbf{D} +	C	Course 1	Percent	Percent	Accort	מתת
	Reporting	Spike	Sample	Recovery		Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20
Dichlorodifluoromethane	ug/L (ppb)	50	<1	70	71	10-172	1
Chloromethane	ug/L (ppb)	50	<10	83	86	25-166	4
Vinyl chloride	ug/L (ppb)	50 50	<0.2	86 102	89	36-166	3 3
Bromomethane Chloroethane	ug/L (ppb)	$50 \\ 50$	<5 <1	98	105 100	47-169 46-160	3
Trichlorofluoromethane	ug/L (ppb) ug/L (ppb)	50 50	<1	98 97	98	46-160	2
Acetone	ug/L (ppb)	250	<50	87	98 94	10-182	8
1,1-Dichloroethene	ug/L (ppb)	200 50	<1	98	99	60-136	1
Hexane	ug/L (ppb)	50	<5	79	55 78	52-150	1
Methylene chloride	ug/L (ppb)	50	<5	93	95	67-132	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	<1	98	100	74-127	2
trans-1,2-Dichloroethene	ug/L (ppb)	50	<1	94	94	72-129	0
1.1-Dichloroethane	ug/L (ppb)	50	<1	93	95	70-128	$\tilde{2}$
2,2-Dichloropropane	ug/L (ppb)	50	<1	80	79	36 - 154	1
cis-1,2-Dichloroethene	ug/L (ppb)	50	<1	96	98	71-127	2
Chloroform	ug/L (ppb)	50	<1	96	97	65-132	1
2-Butanone (MEK)	ug/L (ppb)	250	<20	86	91	10-129	6
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	<1	94	96	48-149	2
1,1,1-Trichloroethane	ug/L (ppb)	50	<1	95	95	60-146	0
1,1-Dichloropropene	ug/L (ppb)	50	<1	95	97	69-133	2
Carbon tetrachloride	ug/L (ppb)	50	<1	92	94	56 - 152	2
Benzene	ug/L (ppb)	50	< 0.35	93	95	76-125	2
Trichloroethene	ug/L (ppb)	50	<1	88	89	66-135	1
1,2-Dichloropropane	ug/L (ppb)	50	<1	85	89	78-125	5
Bromodichloromethane	ug/L (ppb)	50	<1	86	88	61 - 150	2
Dibromomethane	ug/L (ppb)	50	<1	90	93	66-141	3
4-Methyl-2-pentanone	ug/L (ppb)	250	<10	91	96	10-185	5
cis-1,3-Dichloropropene	ug/L (ppb)	50	<1	85	89	72-132	5
Toluene	ug/L (ppb)	50	<1	92	93	76-122	1
trans-1,3-Dichloropropene	ug/L (ppb)	50	<1	87	89	76-130	2
1,1,2-Trichloroethane	ug/L (ppb)	50	<1	80	83	68-131	4
2-Hexanone	ug/L (ppb)	250	<10	88	94	10-185	7
1,3-Dichloropropane	ug/L (ppb)	50 50	<1	92	96	71-128	4
Tetrachloroethene Dibromochloromethane	ug/L (ppb) ug/L (ppb)	50 50	<1 <1	93 88	94 90	10-226 70-139	$\frac{1}{2}$
1,2-Dibromoethane (EDB)	ug/L (ppb)	50 50	<1	95	90 98	69-134	2 3
Chlorobenzene	ug/L (ppb)	50 50	<1	95 96	98 98	77-122	2
Ethylbenzene	ug/L (ppb)	50 50	<1	94	96	69-135	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50 50	<1	94 94	93	73-137	1
m,p-Xylene	ug/L (ppb)	100	<2	95	96	69-135	1
o-Xylene	ug/L (ppb)	50	<1	97	98	60-140	1
Styrene	ug/L (ppb)	50	<1	91	92	71-133	1
Isopropylbenzene	ug/L (ppb)	50	<1	97	97	65-142	0
Bromoform	ug/L (ppb)	50	<5	94	97	65-142	3 3
n-Propylbenzene	ug/L (ppb)	50	<1	93	95	58-144	2
Bromobenzene	ug/L (ppb)	50	<1	94	98	75-124	4
1.3.5-Trimethylbenzene	ug/L (ppb)	50	<1	94	95	66-137	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	<1	99	103	51 - 154	4
1.2.3-Trichloropropane	ug/L (ppb)	50	<1	91	95	53-150	4
2-Chlorotoluene	ug/L (ppb)	50	<1	94	96	66-127	2
4-Chlorotoluene	ug/L (ppb)	50	<1	92	95	65-130	3
tert-Butylbenzene	ug/L (ppb)	50	<1	97	97	65-137	0
1,2,4 Trimethylbenzene	ug/L (ppb)	50	<1	95	97	59-146	2
sec-Butylbenzene	ug/L (ppb)	50	<1	95	96	64-140	1
p-Isopropyltoluene	ug/L (ppb)	50	<1	94	95	65-141	1
1,3-Dichlorobenzene	ug/L (ppb)	50	<1	96	98	72-123	2
1,4-Dichlorobenzene	ug/L (ppb)	50	<1	95	98	69-126	3
1,2-Dichlorobenzene	ug/L (ppb)	50	<1	97	99	69-128	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50	<10	88	92	32-164	4
1,2,4-Trichlorobenzene	ug/L (ppb)	50	<1	98	99	66-136	1
Hexachlorobutadiene	ug/L (ppb)	50	<1	97	98	60-143	1
Naphthalene	ug/L (ppb)	50	<1	95	97	44-164	2
1.2.3-Trichlorobenzene	ug/L (ppb)	50	<1	102	103	69-148	1

ENVIRONMENTAL CHEMISTS

Date of Report: 08/28/20 Date Received: 08/20/20 Project: Kelly-Moore 014697, F&BI 008315

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Laboratory Code: Laborat	J I I I I I I I I I I I I I I I I I I I		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Dichlorodifluoromethane	ug/L (ppb)	50	70	25-158
Chloromethane	ug/L (ppb)	50	82	45-156
Vinyl chloride	ug/L (ppb)	50 50	85	50-154
Bromomethane	ug/L (ppb)	50 50	100 93	55-143
Chloroethane Trichlorofluoromethane	ug/L (ppb) ug/L (ppb)	250	93 92	58-146 50-150
Acetone	ug/L (ppb) ug/L (ppb)	250 250	92 85	22-155
1,1-Dichloroethene	ug/L (ppb)	50	93	67-136
Hexane	ug/L (ppb)	50	86	57-137
Methylene chloride	ug/L (ppb)	50	80	39-148
Methyl t-butyl ether (MTBE)	ug/L (ppb)	50	91	64-147
trans-1,2-Dichloroethene	ug/L (ppb)	50	89	68-128
1,1-Dichloroethane	ug/L (ppb)	50	89	74-135
2,2-Dichloropropane	ug/L (ppb)	50	114	55-143
cis-1,2-Dichloroethene	ug/L (ppb)	50	93	74-136
Chloroform	ug/L (ppb)	50	91	74-134
2-Butanone (MEK)	ug/L (ppb)	250	87	37-150
1,2-Dichloroethane (EDC)	ug/L (ppb)	50	89	66-129
1,1,1-Trichloroethane	ug/L (ppb)	50	91	74-142
1,1-Dichloropropene	ug/L (ppb)	50	92	77-129
Carbon tetrachloride	ug/L (ppb)	50	88	75-158
Benzene Trichloroethene	ug/L (ppb)	50 50	89 84	69-134
1,2-Dichloropropane	ug/L (ppb)	50 50	84 83	67-133
Bromodichloromethane	ug/L (ppb) ug/L (ppb)	50 50	83 82	71-134 76-132
Dibromomethane	ug/L (ppb)	50 50	87	68-132
4-Methyl-2-pentanone	ug/L (ppb)	250	89	65-138
cis-1,3-Dichloropropene	ug/L (ppb)	200 50	90	74-140
Toluene	ug/L (ppb)	50	89	72-122
trans-1,3-Dichloropropene	ug/L (ppb)	50	92	80-136
1,1,2-Trichloroethane	ug/L (ppb)	50	80	75-124
2-Hexanone	ug/L (ppb)	250	90	60-136
1,3-Dichloropropane	ug/L (ppb)	50	91	76-126
Tetrachloroethene	ug/L (ppb)	50	92	76-121
Dibromochloromethane	ug/L (ppb)	50	87	84-133
1,2-Dibromoethane (EDB)	ug/L (ppb)	50	94	82-115
Chlorobenzene	ug/L (ppb)	50	94	83-114
Ethylbenzene	ug/L (ppb)	50	92	77-124
1,1,1,2-Tetrachloroethane	ug/L (ppb)	50	91	84-127
m,p-Xylene	ug/L (ppb)	100 50	93 93	81-112
o-Xylene Styrene	ug/L (ppb) ug/L (ppb)	50 50	93 89	81-121 84-119
Isopropylbenzene	ug/L (ppb)	50 50	89 94	80-117
Bromoform	ug/L (ppb)	50	95	74-136
n-Propylbenzene	ug/L (ppb)	50	92	74-126
Bromobenzene	ug/L (ppb)	50	92	80-121
1,3,5-Trimethylbenzene	ug/L (ppb)	50	92	78-123
1,1,2,2-Tetrachloroethane	ug/L (ppb)	50	96	66-126
1,2,3-Trichloropropane	ug/L (ppb)	50	89	67-124
2-Chlorotoluene	ug/L (ppb)	50	92	77-127
4-Chlorotoluene	ug/L (ppb)	50	92	78-128
tert-Butylbenzene	ug/L (ppb)	50	92	80-123
1,2,4-Trimethylbenzene	ug/L (ppb)	50	93	79-122
sec-Butylbenzene	ug/L (ppb)	50	93	80-116
p-Isopropyltoluene	ug/L (ppb)	50	92	81-123
1,3-Dichlorobenzene	ug/L (ppb)	50	94	83-113
1,4-Dichlorobenzene	ug/L (ppb)	50 50	93	81-112
1,2-Dichlorobenzene	ug/L (ppb)	50 50	94 87	84-112
1,2-Dibromo-3-chloropropane	ug/L (ppb)	50 50	87 94	57-141
1,2,4-Trichlorobenzene Hexachlorobutadiene	ug/L (ppb) ug/L (ppb)	50 50	94 95	72-130 53-141
Naphthalene	ug/L (ppb) ug/L (ppb)	50 50	90 90	64-133
1.2.3-Trichlorobenzene	ug/L (ppb)	50 50	96	65-136
1,2,0 III0II0I00EllZelle	սեւը (Իիր)	50	50	00-100

ENVIRONMENTAL CHEMISTS

Date of Report: 08/28/20 Date Received: 08/20/20 Project: Kelly-Moore 014697, F&BI 008315

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 008315-02 1/2 (Matrix Spike)

Laboratory code. 000510-02 1	Reporting	Spike	Sample	Percent Recovery	Percent Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Naphthalene	ug/L (ppb)	5	< 0.4	77	75	50-150	3
2-Methylnaphthalene	ug/L (ppb)	5	< 0.4	83	83	50 - 150	0
1-Methylnaphthalene	ug/L (ppb)	5	< 0.4	82	82	50 - 150	0
Acenaphthylene	ug/L (ppb)	5	< 0.04	78	78	50 - 150	0
Acenaphthene	ug/L (ppb)	5	0.17	72	73	50 - 150	1
Fluorene	ug/L (ppb)	5	0.066	79	78	50 - 150	1
Phenanthrene	ug/L (ppb)	5	< 0.04	88	88	50 - 150	0
Anthracene	ug/L (ppb)	5	< 0.04	90	91	50 - 150	1
Fluoranthene	ug/L (ppb)	5	< 0.04	97	98	50 - 150	1
Pyrene	ug/L (ppb)	5	< 0.04	91	97	50 - 150	6
Benz(a)anthracene	ug/L (ppb)	5	< 0.04	95	97	50 - 150	2
Chrysene	ug/L (ppb)	5	< 0.04	94	95	50 - 150	1
Benzo(a)pyrene	ug/L (ppb)	5	< 0.04	99	101	50 - 150	2
Benzo(b)fluoranthene	ug/L (ppb)	5	< 0.04	99	103	50 - 150	4
Benzo(k)fluoranthene	ug/L (ppb)	5	< 0.04	101	100	50 - 150	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	< 0.04	94	96	50 - 150	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	< 0.04	93	94	50 - 150	1
Benzo(g,h,i)perylene	ug/L (ppb)	5	< 0.08	90	91	50-150	1

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Naphthalene	ug/L (ppb)	5	80	76	70-130	5
2-Methylnaphthalene	ug/L (ppb)	5	85	80	70-130	6
1-Methylnaphthalene	ug/L (ppb)	5	84	79	70-130	6
Acenaphthylene	ug/L (ppb)	5	88	86	70-130	2
Acenaphthene	ug/L (ppb)	5	82	81	70-130	1
Fluorene	ug/L (ppb)	5	89	87	70-130	2
Phenanthrene	ug/L (ppb)	5	85	86	70-130	1
Anthracene	ug/L (ppb)	5	89	91	70-130	2
Fluoranthene	ug/L (ppb)	5	95	98	70-130	3
Pyrene	ug/L (ppb)	5	89	92	70-130	3
Benz(a)anthracene	ug/L (ppb)	5	91	93	70-130	2
Chrysene	ug/L (ppb)	5	91	93	70-130	2
Benzo(a)pyrene	ug/L (ppb)	5	97	99	70-130	2
Benzo(b)fluoranthene	ug/L (ppb)	5	101	100	70-130	1
Benzo(k)fluoranthene	ug/L (ppb)	5	95	101	70-130	6
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	87	85	70-130	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	84	85	70-130	1
Benzo(g,h,i)perylene	ug/L (ppb)	5	82	82	70-130	0

ENVIRONMENTAL CHEMISTS

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.

 ${\rm J}$ - 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.

	008315			SAMPLI	E CHAIN	IOF	CUS	STC	DY	т	M	Εı	18	20		0	VW	4/ DQU/	ATY
	Report To Lucas Ker	ne		SAMPL	ERS (signo	ature)			-			-					rage	#	<u> </u>
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•	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	Total Metals - Zay	Tem! Mercury	1-1 KN		No	otes
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#### 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

September 8, 2020

Lucas Kerner, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Kerner:

Included are the additional results from the testing of material submitted on August 20, 2020 from the Kelly-Moore 014697, F&BI 008315 project. There are 18 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.

help Cale

Michael Erdahl Project Manager

Enclosures WEI0908R.DOC

### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on August 20, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly-Moore 014697, F&BI 008315 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
008315 -01	KMW-02R-081920
008315 -02	KMW-03-081920
008315 -03	KMW-04-082020
008315 -04	KMW-06-082020
008315 -05	KMW-07-081920
008315 -06	KMW-08-081920
008315 -07	KMW-09-082020
008315 -08	KMW-10-082020
008315 -09	KMW-10-9-082020
008315 -10	Trip Blanks

A 6020B internal standard failed the acceptance criteria for several samples. The samples were diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

# ENVIRONMENTAL CHEMISTS

Client ID:	KMW-02R-081920	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-01
Date Analyzed:	08/24/20	Data File:	008315 - 01.045
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Copper	<5		
Nickel	2.06		

# ENVIRONMENTAL CHEMISTS

Client ID:	KMW-02R-081920	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-01
Date Analyzed:	08/24/20	Data File:	008315-01.107
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Connor	<5		
Copper			
Nickel	2.07		

# ENVIRONMENTAL CHEMISTS

Client ID:	KMW-03-081920	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-02
Date Analyzed:	08/25/20	Data File:	008315-02.043
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Copper	<5		
Nickel	1.99		

# ENVIRONMENTAL CHEMISTS

Client ID:	KMW-04-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-03
Date Analyzed:	08/25/20	Data File:	008315-03.045
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Copper	$15.0~\mathrm{J}$		
Nickel	<1 J		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID:	KMW-04-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-03 x10
Date Analyzed:	08/25/20	Data File:	008315-03 x10.044
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Copper	<50		
Nickel	<10		

# ENVIRONMENTAL CHEMISTS

Client ID:	KMW-06-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-04 x10
Date Analyzed:	08/25/20	Data File:	008315-04  x 10.046
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
C			
Copper	64.2		
Nickel	11.9		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID:	KMW-07-081920	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-05
Date Analyzed:	08/25/20	Data File:	008315 - 05.048
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Copper	<5		
Nickel	1.15		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID:	KMW-08-081920	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-06
Date Analyzed:	08/25/20	Data File:	008315-06.049
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
aı .	_		
Chromium	<1		
Nickel	4.26		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID:	KMW-09-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-07
Date Analyzed:	08/25/20	Data File:	008315-07.056
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
a			
Copper	<5 J		
Nickel	$1.26 \mathrm{J}$		

10

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID:	KMW-09-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-07  x10
Date Analyzed:	08/25/20	Data File:	008315-07  x 10.055
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Copper	<50		
Nickel	<10		
1101001	410		

# ENVIRONMENTAL CHEMISTS

Client ID:	KMW-10-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-08
Date Analyzed:	08/25/20	Data File:	008315-08.058
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Copper	<5 J		
Nickel	<0.0 <1 J		
	10		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID:	KMW-10-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-08 x10
Date Analyzed:	08/25/20	Data File:	008315-08  x10.057
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Copper	<50		
Nickel	<10		

# ENVIRONMENTAL CHEMISTS

Client ID:	KMW-10-9-082020	Client:	Wood Environment & Infrastructure Solutions
Date Received:	08/20/20	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	008315-09
Date Analyzed:	08/25/20	Data File:	008315-09.060
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
0			
Copper	<5 J		
Nickel	<1 J		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID: Date Received: Date Extracted: Date Analyzed:	KMW-10-9-082020 08/20/20 08/24/20 08/25/20	Client: Project: Lab ID: Data File:	Wood Environment & Infrastructure Solutions Kelly-Moore 014697, F&BI 008315 008315-09 x10 008315-09 x10.059 LCDMC9
Matrix: Units:	Water ug/L (ppb)	Instrument: Operator:	ICPMS2 SP
Analyte:	Concentration ug/L (ppb)	operator.	51
Copper Nickel	<50 <10		

# ENVIRONMENTAL CHEMISTS

Client ID:	Method Blank	Client:	Wood Environment & Infrastructure Solutions
Date Received:	NA	Project:	Kelly-Moore 014697, F&BI 008315
Date Extracted:	08/24/20	Lab ID:	I0-491 mb
Date Analyzed:	08/24/20	Data File:	I0-491 mb.036
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Chromium	<1		
Nickel	<1		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 09/08/20 Date Received: 08/20/20 Project: Kelly-Moore 014697, F&BI 008315

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Co	de: 008315-01 (	Matrix Sp	oike)				
Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Copper Nickel	ug/L (ppb) ug/L (ppb)	$\begin{array}{c} 20\\ 20\end{array}$	<5 2.06	90 93	90 95	75-125 75-125	$\begin{array}{c} 0 \\ 2 \end{array}$

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Copper	ug/L (ppb)	20	94	80-120
Nickel	ug/L (ppb)	20	95	80-120

### ENVIRONMENTAL CHEMISTS

## **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.

 ${\rm J}$  - 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.

	008315 S.			SAMPLE CHAIN OF CUSTODY ME 08/201						0/2	0	Vu	14/ DQU	ATIY							
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	Sample ID	Lab 1	D	Date Sampled	Time Sampled	,	imple Type	# of Jars	NWTPH-Dx	NWTPH-G _x	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	TONI MONIC - ZAN	Temt Merug	+4 100		- & - - - - - - - - - - - - - - - - - -	per LK 09/1 Notee
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#### 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 1, 2021

Brady Lubenow, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Lubenow:

Included are the results from the testing of material submitted on March 22, 2021 from the Kelly Moore-Seattle, F&BI 103413 project. There are 26 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.

Nelf

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI0401R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on March 22, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore-Seattle, F&BI 103413 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
103413 -01	KMW-03R
103413 -02	KMW-08

Sample KMW-03R was sent to Fremont Analytical for BOD, COD, dissolved gasses, dissolved and total cations, sulfate, nitrate, TOC, and alkalinity analyses. In addition, the sample was sent to Amtest for volatile fatty acids. The report from Fremont is enclosed. The report from Amtest will be forwarded upon receipt.

The dissolved metals samples were filtered at Friedman and Bruya on March 23, 2021 at 11:30. The data were flagged accordingly.

All quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/21 Date Received: 03/22/21 Project: Kelly Moore-Seattle, F&BI 103413 Date Extracted: 03/25/21 Date Analyzed: 03/26/21

# RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Gasoline Range	Surrogate ( <u>% Recovery)</u> (Limit 51-134)
KMW-03R ¹⁰³⁴¹³⁻⁰¹	<100	92
KMW-08 103413-02	<100	92
Method Blank 01-585 MB2	<100	94

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/21 Date Received: 03/22/21 Project: Kelly Moore-Seattle, F&BI 103413 Date Extracted: 03/23/21 Date Analyzed: 03/23/21

### 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)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	<u>Motor Oil Range</u> (C ₂₅ -C ₃₆ )	Surrogate <u>(% Recovery)</u> (Limit 41-152)
KMW-03R ¹⁰³⁴¹³⁻⁰¹	480 x	<250	114
KMW-08 103413-02	410 x	<250	107
Method Blank 01-706 MB2	<50	<250	96

# ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Metals By EPA Method 6020B

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix:	KMW-03R f 03/22/21 03/25/21 03/26/21 Water	Client: Project: Lab ID: Data File: Instrument:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103413 103413-01 103413-01.056 ICPMS2
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron Manganese	$\begin{array}{c} 265\\ 134 \end{array}$		

# ENVIRONMENTAL CHEMISTS

# Analysis For Dissolved Metals By EPA Method 6020B

Client ID:	Method Blank f	Client:	Wood Environment & Infrastructure
Date Received:	NA	Project:	Kelly Moore-Seattle, F&BI 103413
Date Extracted:	03/25/21	Lab ID:	I1-191 mb
Date Analyzed:	03/25/21	Data File:	I1-191 mb.106
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Iron	<50		
Manganese	<1		

## ENVIRONMENTAL CHEMISTS

# Analysis For Hardness By EPA Method 200.8 and SM 2340B

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Client ID:	KMW-03R	Client:	Wood Environment & Infrastructure
Date Received:	03/22/21	Project:	Kelly Moore-Seattle, F&BI 103413
Date Extracted:	03/23/21	Lab ID:	103413-01 x10
Date Analyzed:	03/24/21	Data File:	103413-01 x10.026
Matrix:	Water	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP
	Concentration		
Analyte:	mg/L (ppm)		
Calcium	53.4		
Magnesium	5.79		

Hardness (as CaCO3)

## ENVIRONMENTAL CHEMISTS

# Analysis For Hardness By EPA Method 200.8 and SM 2340B

 $<\!0.35$ 

Hardness (as CaCO3)

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix:	Method Blank NA 03/23/21 03/24/21 Water	Client: Project: Lab ID: Data File: Instrument:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103413 I1-184 mb I1-184 mb.025 ICPMS2
Units:	mg/L (ppm)	Operator:	SP
Analyte:	Concentration mg/L (ppm)		
Calcium Magnesium	<0.05 <0.05		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-03R 03/22/21 03/23/21 03/23/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103413 103413-01 103413-01.082 ICPMS2 SP
Analyte:		Concentration ug/L (ppb)		
Arsenic		<1		
Chromium		<1		
Copper		<5		
Iron		883		
Lead		<1		
Manganese		156		
Mercury		<1		
Nickel		1.54		
Zinc		<5		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-08 03/22/21 03/23/21 03/23/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103413 103413-02 103413-02.083 ICPMS2 SP
Analyte:		Concentration ug/L (ppb)		
Arsenic		<1		
Chromium		<1		
Copper		<5		
Lead		<1		
Manganese		184		
Mercury		<1		
Nickel		7.08		
Zinc		306		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID: Date Received: Date Extracted: Date Analyzed:	KMW-08 03/22/21 03/23/21 03/25/21	Client: Project: Lab ID: Data File:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103413 103413-02 x100 103413-02 x100.049
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron	5,800		

10

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank NA 03/23/21 03/23/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103413 I1-181 mb2 I1-181 mb2.061 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	<1		
Chromium	<1		
Copper	<5		
Iron	<50		
Lead	<1		
Manganese	<1		
Mercury	<1		
Nickel	<1		
Zinc	<5		

# ENVIRONMENTAL CHEMISTS

# Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-03R 03/22/21 03/23/21 03/23/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103413 103413-01 1/2 032313.D GCMS8 VM
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 43 30 95 83 98 96	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 11 \\ 10 \\ 16 \\ 12 \\ 35 \end{array}$	Upper Limit: 99 65 145 138 132 138
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthe Benzo(k)fluoranthe Indeno(1,2,3-cd)pyr Dibenz(a,h)anthrac	ene ene rene	<0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04		

# ENVIRONMENTAL CHEMISTS

# Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-08 03/22/21 03/23/21 03/23/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103413 103413-02 1/2 032314.D GCMS8 VM
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 33 25 74 79 112 98	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 11 \\ 10 \\ 16 \\ 12 \\ 35 \end{array}$	Upper Limit: 99 65 145 138 132 138
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthe Benzo(k)fluoranthe Indeno(1,2,3-cd)pyr Dibenz(a,h)anthrac	ene ene rene	<0.04 <0.04 <0.04 <0.04 <0.04 <0.04		

# ENVIRONMENTAL CHEMISTS

# Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Bla Not Applica 03/23/21 03/23/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103413 01-709 mb2 032311.D GCMS8 VM
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 30 18 100 103 89 94	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 11 \\ 10 \\ 16 \\ 12 \\ 35 \end{array}$	Upper Limit: 99 65 145 138 132 138
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthe Benzo(k)fluoranthe Indeno(1,2,3-cd)pyr Dibenz(a,h)anthrac	ene ene rene	<0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02		

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-03R 03/22/21 03/23/21 03/23/21 Water ug/L (ppb)	1 ,	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 103413-01 032340.D GCMS4 JCM	
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 107 102 110	Lower Limit: 86 88 88	Upper Limit: 113 114 112	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome	ethane	<1	1,3-Dich	loropropane	<1
Chloromethane		<10	Tetrachl	loroethene	<1
Vinyl chloride		< 0.2		ochloromethane	<1
Bromomethane		<5		omoethane (EDB)	<1
Chloroethane	_	<1	Chlorob		<1
Trichlorofluoromet	hane	<1	Ethylber		<1
Acetone		<50		Fetrachloroethane	<1
1,1-Dichloroethene		<1	m,p-Xyle		<2 <1
Hexane Methylene chloride		<5 <5	o-Xylene Styrene	9	<1
Methyl t-butyl ethe		<5 <1	-	vlbenzene	1.7
trans-1,2-Dichloroe		<1	Bromofo		<5
1,1-Dichloroethane		<1		lbenzene	3.1
2,2-Dichloropropan		<1	Bromobe		<1
cis-1,2-Dichloroeth		<1		imethylbenzene	<1
Chloroform		<1		Fetrachloroethane	<1
2-Butanone (MEK)		<20		ichloropropane	<1
1,2-Dichloroethane	(EDC)	<1	2-Chloro	otoluene	<1
1,1,1-Trichloroetha	ine	<1	4-Chloro		<1
1,1-Dichloropropen		<1		ylbenzene	<1
Carbon tetrachlorid	de	<1		imethylbenzene	<1
Benzene		< 0.35	•	vlbenzene	<1
Trichloroethene		<1		pyltoluene	<1
1,2-Dichloropropan		<1		lorobenzene	<1
Bromodichlorometh Dibromomethane	nane	<1 <1		lorobenzene	<1 <1
4-Methyl-2-pentane	<b>on</b> o	<10		llorobenzene omo-3-chloropropane	<10
cis-1,3-Dichloropro		<10		ichlorobenzene	<10
Toluene	Polic	<1		orobutadiene	<1
trans-1,3-Dichlorop	propene	<1	Naphtha		<1
1,1,2-Trichloroetha	-	<1	-	ichlorobenzene	<1
2-Hexanone	-	<10	-,-,		

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-08 03/22/21 03/23/21 03/23/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 103413-02 032341.D GCMS4 JCM	
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 100 100 102	Lower Limit: 86 88 88	Upper Limit: 113 114 112	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome	ethane	<1		loropropane	<1
Chloromethane		<10		oroethene	<1
Vinyl chloride		< 0.2		ochloromethane	<1
Bromomethane		<5		omoethane (EDB)	<1
Chloroethane		<1	Chlorob	<1	
Trichlorofluoromet	hane	<1	Ethylber		<1
Acetone		<50		etrachloroethane	<1
1,1-Dichloroethene		<1 <5	m,p-Xyle		<2 <1
Hexane Methylene chloride		<5 <5	o-Xylene Styrene		<1
Methyl t-butyl ethe		<5 <1	-	lbenzene	<1
trans-1,2-Dichloroe		<1	Bromofo		<5
1,1-Dichloroethane		<1		lbenzene	<1
2,2-Dichloropropan		<1	Bromobe		<1
cis-1,2-Dichloroeth		<1		imethylbenzene	<1
Chloroform	0110	<1		letrachloroethane	<1
2-Butanone (MEK)		<20		ichloropropane	<1
1,2-Dichloroethane		<1	2-Chloro		<1
1,1,1-Trichloroetha		<1	4-Chloro	otoluene	<1
1,1-Dichloropropen	e	<1	tert-But	ylbenzene	<1
Carbon tetrachlori	de	<1		imethylbenzene	<1
Benzene		< 0.35		lbenzene	<1
Trichloroethene		<1		pyltoluene	<1
1,2-Dichloropropar		<1		lorobenzene	<1
Bromodichloromet	nane	<1	,	lorobenzene	<1
Dibromomethane		<1		lorobenzene	<1
4-Methyl-2-pentan		<10		omo-3-chloropropane	<10
cis-1,3-Dichloropro	pene	<1		ichlorobenzene	<1
Toluene		<1		orobutadiene	<1
trans-1,3-Dichlorog		<1	Naphtha 1 2 2 Tra		<1
1,1,2-Trichloroetha 2-Hexanone	me	<1 <10	1,2,3-1r	ichlorobenzene	<1
2-mexamone		<b>\10</b>			

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Bla Not Applica 03/23/21 03/23/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 01-648 mb 032308.D GCMS4 JCM	
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 99 100 96	Lower Limit: 86 88 88	Upper Limit: 113 114 112	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome	thane	<1	1,3-Dich	loropropane	<1
Chloromethane		<10		loroethene	<1
Vinyl chloride		< 0.2	Dibromo	ochloromethane	<1
Bromomethane		<5	1,2-Dibr	omoethane (EDB)	<1
Chloroethane		<1	Chlorobe	enzene	<1
Trichlorofluoromet	hane	<1	Ethylber		<1
Acetone		<50	1,1,1,2-7	etrachloroethane	<1
1,1-Dichloroethene		<1	m,p-Xyle		<2
Hexane		<5	o-Xylene	9	<1
Methylene chloride		<5	Styrene		<1
Methyl t-butyl ethe		<1		lbenzene	<1
trans-1,2-Dichloroe		<1	Bromofo		<5
1,1-Dichloroethane		<1	n-Propy		<1
2,2-Dichloropropan		<1	Bromobe		<1
cis-1,2-Dichloroeth	ene	<1		imethylbenzene	<1
Chloroform		<1		letrachloroethane	<1
2-Butanone (MEK)		<20		ichloropropane	<1
1,2-Dichloroethane		<1	2-Chloro 4-Chloro		<1
1,1,1-Trichloroetha 1,1-Dichloropropen		<1 <1		ylbenzene	<1 <1
Carbon tetrachloric		<1		imethylbenzene	<1
Benzene	ie	<0.35		lbenzene	<1
Trichloroethene		<0.55		pyltoluene	<1
1,2-Dichloropropan	P	<1		lorobenzene	<1
Bromodichlorometh		<1		lorobenzene	<1
Dibromomethane	luile	<1		lorobenzene	<1
4-Methyl-2-pentance	one	<10		omo-3-chloropropane	<10
cis-1,3-Dichloropro		<1		ichlorobenzene	<1
Toluene	-	<1		orobutadiene	<1
trans-1,3-Dichlorop	oropene	<1	Naphtha	alene	<1
1,1,2-Trichloroetha	ne	<1	-	ichlorobenzene	<1
2-Hexanone		<10			

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/21 Date Received: 03/22/21 Project: Kelly Moore-Seattle, F&BI 103413

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Gasoline	ug/L (ppb)	1,000	108	88	70-119	20

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/21 Date Received: 03/22/21 Project: Kelly Moore-Seattle, F&BI 103413

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	$\operatorname{RPD}$
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	116	112	63-142	4

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/21 Date Received: 03/22/21 Project: Kelly Moore-Seattle, F&BI 103413

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Coc	le: 103389-01 x	10 (Matri	ix Spike)	Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Iron	ug/L (ppb)	100	26,800	0 b	722 b	75 - 125	200 b
Manganese	ug/L (ppb)	20	904	0 b	261 b	75 - 125	200 b

Laboratory Code: 103389-01 x10 (Matrix Spike)

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Iron	ug/L (ppb)	100	93	80-120
Manganese	ug/L (ppb)	20	93	80-120

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/21 Date Received: 03/22/21 Project: Kelly Moore-Seattle, F&BI 103413

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8 AND SM 2340B

Laboratory Co	de: 103413-01 x	10 (Matri	x Spike)	Percent	Percent		
Analyte	Reporting Units	Spike Level	Sample Result	Recovery MS	Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Calcium Magnesium	mg/L (ppm) mg/L (ppm)	$\begin{array}{c} 1.0\\ 1.0\end{array}$	$53.4 \\ 5.79$	735 b 172 b	257 b 115 b	70-130 70-130	96 b 40 b

Laboratory Code: 103413-01 x10 (Matrix Spike)

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Calcium	mg/L (ppm)	1.0	102	85-115
Magnesium	mg/L (ppm)	1.0	100	85-115

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/21 Date Received: 03/22/21 Project: Kelly Moore-Seattle, F&BI 103413

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 103375-01 (Matrix Spike)

Laboratory Cot	ue. 105575-01	(mains of	like)				
	Reporting	Spike	Sample	Percent Recovery	Percent Recoverv	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit $20$ )
Arsenic	ug/L (ppb)	10	4.78	105	106	75-125	1
Chromium	ug/L (ppb)	20	<1	96	97	75 - 125	1
Copper	ug/L (ppb)	20	10.3	97	99	75 - 125	2
Iron	ug/L (ppb)	100	132	91	90	75 - 125	1
Lead	ug/L (ppb)	10	<1	95	97	75 - 125	2
Manganese	ug/L (ppb)	20	4.48	98	98	75 - 125	0
Mercury	ug/L (ppb)	5	<1	98	99	75 - 125	1
Nickel	ug/L (ppb)	20	1.04	96	96	75 - 125	0
Zinc	ug/L (ppb)	50	9.20	92	92	75 - 125	0
	• • • •						

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	106	80-120
Chromium	ug/L (ppb)	20	98	80-120
Copper	ug/L (ppb)	20	100	80-120
Iron	ug/L (ppb)	100	93	80-120
Lead	ug/L (ppb)	10	101	80-120
Manganese	ug/L (ppb)	20	99	80-120
Mercury	ug/L (ppb)	<b>5</b>	100	80-120
Nickel	ug/L (ppb)	20	96	80-120
Zinc	ug/L (ppb)	50	95	80-120

### ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/21 Date Received: 03/22/21 Project: Kelly Moore-Seattle, F&BI 103413

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	5	98	97	70-130	1
Chrysene	ug/L (ppb)	5	93	93	70-130	0
Benzo(a)pyrene	ug/L (ppb)	5	91	92	70-130	1
Benzo(b)fluoranthene	ug/L (ppb)	5	97	99	70-130	2
Benzo(k)fluoranthene	ug/L (ppb)	5	96	96	70-130	0
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	101	99	57-141	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	98	95	57-137	3

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/21 Date Received: 03/22/21 Project: Kelly Moore-Seattle, F&BI 103413

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 103230-09 (Matrix Spike)

	Reporting	Spike	Sample	Recovery	Acceptance
A		-	-		-
Analyte	Units	Level	Result	MS	Criteria
Dichlorodifluoromethane Chloromethane	ug/L (ppb) ug/L (ppb)	10 10	<1 <10	100 77	10-172 25-166
Vinvl chloride	ug/L (ppb) ug/L (ppb)	10	<0.2	86	36-166
Bromomethane	ug/L (ppb)	10	<5	125	47-169
Chloroethane	ug/L (ppb)	10	<1	86	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	85	44-165
Acetone	ug/L (ppb)	50	<50	91	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	95	58-142
Hexane	ug/L (ppb)	10	<5	83	38 - 152
Methylene chloride	ug/L (ppb)	10	<5	102	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	95	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	94	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	92	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	77	36-154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	92	63-134
Chloroform	ug/L (ppb)	10	<1	95	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	101	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1 <1	97 94	48-149
1,1,1-Trichloroethane 1,1-Dichloropropene	ug/L (ppb) ug/L (ppb)	10 10	<1	94 94	60-146 69-133
Carbon tetrachloride	ug/L (ppb) ug/L (ppb)	10	<1	94 96	56-152
Benzene	ug/L (ppb)	10	<0.35	96 96	57-135
Trichloroethene	ug/L (ppb)	10	<1	93	66-135
1.2-Dichloropropane	ug/L (ppb)	10	<1	93	59-136
Bromodichloromethane	ug/L (ppb)	10	<1	86	61-150
Dibromomethane	ug/L (ppb)	10	<1	95	66-141
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	103	10-185
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	83	52 - 147
Toluene	ug/L (ppb)	10	<1	95	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	79	53 - 142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	96	68-131
2-Hexanone	ug/L (ppb)	50	<10	104	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<1	96	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	96	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	86	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	97	62-135
Chlorobenzene Ethylbenzene	ug/L (ppb) ug/L (ppb)	10 10	<1 <1	98 95	63-130 60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb) ug/L (ppb)	10	<1	90 90	56-143
m,p-Xylene	ug/L (ppb)	20	<2	95	69-135
o-Xylene	ug/L (ppb)	10	<1	94	60-140
Styrene	ug/L (ppb)	10	<1	89	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	90	65-142
Bromoform	ug/L (ppb)	10	<5	78	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	92	58-144
Bromobenzene	ug/L (ppb)	10	<1	97	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	92	59-134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	95	51 - 154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	97	53-150
2-Chlorotoluene	ug/L (ppb)	10	<1	93	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	92	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	92	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	89	59-146
sec-Butylbenzene	ug/L (ppb)	10 10	<1 <1	91 91	64-140 65 141
p-Isopropyltoluene 1.3-Dichlorobenzene	ug/L (ppb) ug/L (ppb)	10	<1	91 96	65-141 60-131
1,3-Dichlorobenzene	ug/L (ppb) ug/L (ppb)	10	<1	96 95	60-131
1,2-Dichlorobenzene	ug/L (ppb) ug/L (ppb)	10	<1	95 95	60-129 60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	55 79	32-164
1.2.4-Trichlorobenzene	ug/L (ppb)	10	<10	88	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	84	60-143
Naphthalene	ug/L (ppb)	10	<1	85	44-164
1.2.3-Trichlorobenzene	ug/L (ppb)	10	<1	89	69-148

### ENVIRONMENTAL CHEMISTS

Date of Report: 04/01/21 Date Received: 03/22/21 Project: Kelly Moore-Seattle, F&BI 103413

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code. Laboratory Co	Sintion Sample	,	Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	111	112	25-158	(1111111 20)
Chloromethane	ug/L (ppb)	10	94	90	45-156	4
Vinyl chloride	ug/L (ppb)	10	95	96	50-154	1
Bromomethane	ug/L (ppb)	10	138	133	55-143	4
Chloroethane	ug/L (ppb)	10	93	95	58-146	2
Trichlorofluoromethane	ug/L (ppb)	10	102	104	50-150	2
Acetone	ug/L (ppb)	50	95	94	22-155	1
1,1-Dichloroethene	ug/L (ppb)	10	107	108	67-136	1
Hexane	ug/L (ppb)	10	95	96	57-137	1
Methylene chloride	ug/L (ppb)	10	102	100	19-178	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	103	104	64-147	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	99	102	68-128	3
1,1-Dichloroethane	ug/L (ppb)	10	98	100	74-135	2
2,2-Dichloropropane	ug/L (ppb)	10	103	103	55-143	0
cis-1,2-Dichloroethene	ug/L (ppb)	10	101	99	74-136	2
Chloroform	ug/L (ppb)	10	102	103	74-134	1
2-Butanone (MEK)	ug/L (ppb)	50	107	108	37-150	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	104	104	66-129	0
1,1,1-Trichloroethane	ug/L (ppb)	10	101	102	74 - 142	1
1,1-Dichloropropene	ug/L (ppb)	10	102	105	77-129	3
Carbon tetrachloride	ug/L (ppb)	10	106	109	75-158	3
Benzene	ug/L (ppb)	10	101	104	69-134	3
Trichloroethene	ug/L (ppb)	10	101	100	67-133	1
1,2-Dichloropropane	ug/L (ppb)	10	102	100	71-134	2 0
Bromodichloromethane	ug/L (ppb)	10	97 100	97 107	66-126	
Dibromomethane	ug/L (ppb)	10	106	107	68-132	1
4-Methyl-2-pentanone	ug/L (ppb)	$   50 \\   10 $	109 100	$\frac{112}{102}$	$65-138 \\ 74-140$	$\frac{3}{2}$
cis-1,3-Dichloropropene Toluene	ug/L (ppb) ug/L (ppb)	10	100	102	74-140 72-122	2
trans-1,3-Dichloropropene	ug/L (ppb) ug/L (ppb)	10	95	94	80-136	2
1,1,2-Trichloroethane	ug/L (ppb) ug/L (ppb)	10	95 101	94 101	75-124	0
2-Hexanone	ug/L (ppb) ug/L (ppb)	50	101	113	60-136	4
1,3-Dichloropropane	ug/L (ppb)	10	105	103	76-126	2
Tetrachloroethene	ug/L (ppb)	10	101	105	76-120	1
Dibromochloromethane	ug/L (ppb)	10	97	97	84-133	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	103	102	82-115	1
Chlorobenzene	ug/L (ppb)	10	103	104	83-114	1
Ethylbenzene	ug/L (ppb)	10	100	101	77-124	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	99	99	84-127	0
m,p-Xylene	ug/L (ppb)	20	104	103	81-112	1
o-Xylene	ug/L (ppb)	10	100	103	81-121	3
Styrene	ug/L (ppb)	10	99	99	84-119	0
Isopropylbenzene	ug/L (ppb)	10	98	99	80-117	1
Bromoform	ug/L (ppb)	10	94	96	69-121	2
n-Propylbenzene	ug/L (ppb)	10	97	99	74-126	2
Bromobenzene	ug/L (ppb)	10	103	104	80-121	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	97	99	78-123	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	97	101	66-126	4
1,2,3-Trichloropropane	ug/L (ppb)	10	101	104	67-124	3
2-Chlorotoluene	ug/L (ppb)	10	96	98	77-127	2
4-Chlorotoluene	ug/L (ppb)	10	98	99	78-128	1
tert-Butylbenzene	ug/L (ppb)	10	97	99	80-123	2
1,2,4-Trimethylbenzene	ug/L (ppb)	10	95	96	79-122	1
sec-Butylbenzene	ug/L (ppb)	10	96	99	80-116	3
p-Isopropyltoluene	ug/L (ppb)	10	96	99	81-123	3
1,3-Dichlorobenzene	ug/L (ppb)	10	101	104	83-113	3
1,4-Dichlorobenzene	ug/L (ppb)	10 10	102 99	104	81-112 84-112	$\frac{2}{1}$
1,2-Dichlorobenzene	ug/L (ppb)			100		$\frac{1}{2}$
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	91	93	57-141	
1,2,4-Trichlorobenzene	ug/L (ppb)	10	92 92	$95 \\ 94$	72-130	$\frac{3}{2}$
Hexachlorobutadiene Naphthalene	ug/L (ppb) ug/L (ppb)	10 10	92 92	94 94	53-141 64-133	2
1,2,3-Trichlorobenzene	ug/L (ppb) ug/L (ppb)	10	92 94	94 95	65-136	2
1,2,0 IIIGIIOIODEIIZEIIE	ugun (hhn)	10	54	55	00-100	1

### ENVIRONMENTAL CHEMISTS

## **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.

 ${\rm J}$  - 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.

03413			SAMPLE	CHAIN	OF (	CUS	то	DY		Ĉ	>3-	22	2	1	٧Ŵ	3/1	AT3/1E03	•
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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	CIAHS RWINK EPA 8270	PCBs EPA 8082	١.	.2	ໍຕໍ	°,		
KMW-03R	PI A-R	3/22/21	1344	Giu	18	X	×			ズ	*		$\star$	$\star$	*	×	See Rer	urks #1-4
KMW-08	02 A-J	$\checkmark$	1538	$\overline{\mathbf{V}}$	10	$\times$	$\checkmark$			$\star$	$\checkmark$		$\checkmark$				See barr	ks #1
* Remarks															L			
1. Total Metals (As, 1	Cr, Cu, Pb.	$H_{g,N_{1,2}}$	;) by G	ozóß						,								
2. Volatile Fatty Acids	by SMSS60	+ Bic	logical O	riger De	mind	67	SM	521	0B/	GRÍ	ъЧC	5.1	÷.		nica	0	ryger Der	the lense
by EPA 410,1-22,EI	PHY 10,3; EPH	410i4, SM S	220 7 Di	555/VCD 9	9585 (	pet	WOR	10	theo	eje	the	e,C	$o_{2})$	67	RSE	-17	5 Apr	
3. Dissolved AND Tot	ml Cations (	Fe, Ca, Mr	Ma Al	Na) by E	Pt 60	ZOB	ł	A	n) V	5	(50	Ifate	10	trate	4)6	Y E	A 300,0	300.1
4. Total Organic Carl	n b gives	4/SM 5310	B + Alka	lipity b	SMZ	320	169	<del>4</del> 3i	0,1	· <del>}</del>	Ha	2	55 (	Jy 5	M z	340	≏ B	
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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: 103413 Work Order Number: 2103381

March 30, 2021

#### **Attention Michael Erdahl:**

Fremont Analytical, Inc. received 1 sample(s) on 3/23/2021 for the analyses presented in the following report.

Biochemical Oxygen Demand by SM 5210B Carbon Dioxide by SM 2320B/SM4500-CO2D 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 Metals by EPA Method 200.8 Total Alkalinity by SM 2320B Total Organic Carbon by SM 5310C

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,

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Brianna Barnes Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910



CLIENT: Project:	Friedman & Bruya 103413	Work Order Sample Summary				
Work Order:	2103381					
Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received			
2103381-001	KMW-03R	03/22/2021 1:44 PM	03/23/2021 4:34 PM			

Note: If no "Time Collected" is supplied, a default of 12:00AM is assigned



**Case Narrative** 

WO#: **2103381** Date: **3/30/2021** 

CLIENT:Friedman & BruyaProject:103413

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 & Acronyms**



 WO#:
 2103381

 Date Reported:
 3/30/2021

#### 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
- 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 MCL - Maximum Contaminant Level 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:
 2103381

 Date Reported:
 3/30/2021

Client: Friedman & Bruya Project: 103413			(	Collection	Date	<b>e:</b> 3/22/20	21 1:44:00 PM
Lab ID: 2103381-001 Client Sample ID: KMW-03R			l	Matrix: Gr	ound	water	
Analyses	Result	RL	Qual	Units	DF	Da	te Analyzed
Biochemical Oxygen Demand by	<u>SM 5210B</u>			Batch	ID: I	R66184	Analyst: SS
Biochemical Oxygen Demand	3.32	2.00		mg/L	1	3/24/	2021 11:10:00 AM
Dissolved Gases by RSK-175				Batch	ID: I	R66194	Analyst: MS
Methane	0.373	0.0675	D	mg/L	10	3/29/	2021 4:03:00 PM
Ethene	ND	0.0146		mg/L	1		2021 3:41:00 PM
Ethane	ND	0.0151		mg/L	1	3/29/2	2021 3:41:00 PM
Ion Chromatography by EPA Met	<u>thod 300.0</u>			Batch	ID: 3	31757	Analyst: SS
Nitrate (as N)	ND	0.200	DH	mg/L	2	3/24/	2021 8:24:00 PM
Sulfate	36.2	3.00	D	mg/L	5	3/26/	2021 5:07:00 PM
Dissolved Metals by EPA Method	<u>1 200.8</u>			Batch	ID: (	31792	Analyst: TN
Aluminum	ND	100		µg/L	1	3/29/	2021 3:44:20 PM
Calcium	58,100	525		µg/L	1	3/29/	2021 3:44:20 PM
Magnesium	6,550	100		µg/L	1		2021 3:44:20 PM
Sodium	16,900	250		µg/L	1	3/29/	2021 3:44:20 PM
Total Metals by EPA Method 200	<u>).8</u>			Batch	ID: (	31762	Analyst: EH
Aluminum	327	100		µg/L	1	3/25/2	2021 5:49:45 PM
Calcium	55,300	200		µg/L	1	3/25/	2021 5:49:45 PM
Magnesium	6,190	100		µg/L	1	3/25/	2021 5:49:45 PM
Sodium	16,800	200		µg/L	1	3/25/	2021 5:49:45 PM
Total Organic Carbon by SM 531	<u>0C</u>			Batch	ID: I	R66219	Analyst: SS
Total Organic Carbon	2.60	0.500		mg/L	1	3/30/2	2021 10:08:00 AM
Total Alkalinity by SM 2320B				Batch	ID: I	R66198	Analyst: WF
Alkalinity, Total (As CaCO3)	153	2.50		mg/L	1	3/30/	2021 10:18:28 AM
Carbon Dioxide by SM 2320B/SM	<u>14500-CO2D</u>			Batch	ID: I	R66199	Analyst: WF
Carbon Dioxide	145	2.50		mg/L	1	3/30/	2021 10:18:51 AM



# **Analytical Report**

 Work Order:
 2103381

 Date Reported:
 3/30/2021

Client: Friedman & Bruya				Collection	Date: 3	3/22/2021 1:44:00 PM
Project: 103413 Lab ID: 2103381-001 Client Sample ID: KMW-03R				Matrix: G	roundwa	ater
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Chemical Oxygen Demand by S	<u>M 5220D</u>			Batch	n ID: R6	6180 Analyst: LB
Chemical Oxygen Demand	ND	10.0		mg/L	1	3/29/2021 3:28:06 PM



	103381 riadraan & Dru								QC	SUMMA	RY REF	PORT
	riedman & Bru <u>y</u> 03413	ya						E	Biochemical Oxy	/gen Demar	nd by SM	5210B
Sample ID: MB-66184	S	ampType	MBLK			Units: <b>mg/L</b>		Prep Date:	3/24/2021	RunNo: 66	184	
Client ID: MBLKW	В	atch ID:	R66184					Analysis Date:	3/24/2021	SeqNo: 13	31755	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit RPD Ref Va	I %RPD	RPDLimit	Qual
Biochemical Oxygen D	Demand		ND	2.00								
Sample ID: LCS-66184	<b>4</b> Sa	ampType	LCS			Units: mg/L		Prep Date:	3/24/2021	RunNo: 66	184	
Client ID: LCSW	В	atch ID:	R66184					Analysis Date:	3/24/2021	SeqNo: 13	31756	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RPD Ref Va	l %RPD	RPDLimit	Qual
Biochemical Oxygen D	Demand		195	2.00	198.0	0	98.3	84.6	115.4			
Sample ID: 2103381-0	001ADUP Sa	ampType	DUP			Units: mg/L		Prep Date:	3/24/2021	RunNo: 66	184	
Client ID: KMW-03R	В	atch ID:	R66184					Analysis Date:	3/24/2021	SeqNo: 13	31763	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit RPD Ref Va	I %RPD	RPDLimit	Qual
Biochemical Oxygen D	Demand		3.53	2.00					3.324	4 6.01	20	



	nan & Bruya							-	SUMMAI al Alkalini		
Project:         10341           Sample ID:         MB-R66198	SampType: MBLK			Units: <b>mg/L</b>		•	3/30/2021		RunNo: 661	198	
Client ID: MBLKW Analyte	Batch ID: R66198 Result	RL	SPK value	SPK Ref Val	%REC	Analysis Date: LowLimit F	3/30/2021 lighLimit RP	D Ref Val	SeqNo: 133 %RPD	32116 RPDLimit	Qual
Alkalinity, Total (As CaCO3)	ND	2.50									
Sample ID: LCS-R66198	SampType: LCS			Units: <b>mg/L</b>		Prep Date:	3/30/2021		RunNo: 661	198	
Client ID: LCSW	Batch ID: R66198					Analysis Date:	3/30/2021		SeqNo: 133	32117	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RP	D Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3)	101	2.50	100.0	0	101	99.1	105				
Sample ID: 2103381-001AI	UP SampType: DUP			Units: mg/L		Prep Date:	3/30/2021		RunNo: 661	198	
Client ID: KMW-03R	Batch ID: R66198					Analysis Date:	3/30/2021		SeqNo: 133	32119	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit RP	D Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO3	159	2.50						152.8	4.08	20	



CLIENT: Frie	3381 dman & Bruya						C	arbon l	QC S Dioxide by			-
<b>Project:</b> 103	413						0				/31414300	-0020
Sample ID: MB-R66199	SampType:	BLK			Units: <b>mg/L</b>		Prep Date	3/30/20	21	RunNo: 661	99	
Client ID: MBLKW	Batch ID:	R66199					Analysis Date	3/30/20	21	SeqNo: 133	2121	
Analyte	F	Result	RL S	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCO	03)	ND 2	.50									
Carbon Dioxide		ND 2	.50									
Sample ID: LCS-R66199	SampType	LCS			Units: mg/L		Prep Date	3/30/20	21	RunNo: 661	99	
Client ID: LCSW	Batch ID:	R66199					Analysis Date	3/30/20	21	SeqNo: 133	2122	
Analyte	F	Result	RL S	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As CaCo	D3)	101 2	2.50	100.0	0	101	94.3	116				
Sample ID: 2103381-001	GDUP SampType:	DUP			Units: mg/L		Prep Date:	3/30/20	21	RunNo: 661	99	
Client ID: KMW-03R	Batch ID:	R66199					Analysis Date	3/30/20	21	SeqNo: 133	2124	
Analyte	F	Result	RL S	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide		153 2	2.50						145.3	5.11	20	

Original



Work Order:         2103381           CLIENT:         Friedma           Project:         103413	n & Bruya						Cher	QC S nical Oxyg	SUMMAI en Demar		
Sample ID: MB-R66180	SampType: MBLK			Units: mg/L		Prep Date	: 3/29/202	21	RunNo: 661	180	
Client ID: MBLKW	Batch ID: R66180					Analysis Date	: 3/29/202	21	SeqNo: 133	31561	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	ND	10.0									
Sample ID: LCS-R66180	SampType: LCS			Units: mg/L		Prep Date	: 3/29/20	21	RunNo: 661	180	
Client ID: LCSW	Batch ID: R66180					Analysis Date	: <b>3/29/20</b> 2	21	SeqNo: 133	81562	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	76.5	10.0	75.00	0	102	87.2	113				
Sample ID: 2103360-001BDUI	SampType: DUP			Units: mg/L		Prep Date	: 3/29/20	21	RunNo: 661	180	
Client ID: BATCH	Batch ID: R66180					Analysis Date	3/29/202	21	SeqNo: 133	31564	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	25.8	10.0						26.46	2.66	30	
Sample ID: 2103360-001BMS	SampType: MS			Units: <b>mg/L</b>		Prep Date	: 3/29/202	21	RunNo: 661	180	
Client ID: BATCH	Batch ID: R66180					Analysis Date	3/29/202	21	SeqNo: 133	81565	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	97.3	10.0	75.00	26.46	94.5	60.3	143				
Sample ID: 2103360-001BMS	D SampType: MSD			Units: mg/L		Prep Date	: 3/29/202	21	RunNo: 661	180	
Client ID: BATCH	Batch ID: R66180					Analysis Date	: 3/29/202	21	SeqNo: 133	31566	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen Demand	95.9	10.0	75.00	26.46	92.6	60.3	143	97.33	1.44	30	



Work Order: CLIENT: Project:	2103381 Friedman & B 103413	Bruya							lon Ch	QC S	SUMMAI		
Sample ID: MB-31	757	SampType	MBLK			Units: <b>mg/L</b>		Prep Dat	te: 3/24/2	021	RunNo: 661	96	
Client ID: MBLK	W	Batch ID:	31757					Analysis Dat	te: 3/24/2	021	SeqNo: 133	32067	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)			ND	0.100									
Sulfate			ND	0.600									
Sample ID: LCS-3	1757	SampType	LCS			Units: mg/L		Prep Dat	te: 3/24/2	021	RunNo: 661	96	
Client ID: LCSW	,	Batch ID:	31757					Analysis Dat	te: 3/24/2	021	SeqNo: 133	32068	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)			0.689	0.100	0.7500	0	91.9	90	110				
Sulfate			3.52	0.600	3.750	0	93.8	90	110				
Sample ID: 21033	69-001BDUP	SampType	DUP			Units: mg/L		Prep Dat	te: 3/24/2	021	RunNo: 661	96	
Client ID: BATCH	н	Batch ID:	31757					Analysis Dat	te: 3/24/2	021	SeqNo: 133	32070	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)			ND	0.100						0		20	Н
Sulfate NOTES:			119	0.600						118.4	0.0616	20	E
	alue. The amount e	exceeds the I	inear workir	ig range of	the instrument								
Sample ID: 21033	69-001BMS	SampType	MS			Units: mg/L		Prep Dat	te: 3/24/2	021	RunNo: 661	96	
Client ID: BATCH	н	Batch ID:	31757					Analysis Dat	te: <b>3/24/2</b>	021	SeqNo: 133	32071	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)			0.693	0.100	0.7500	0	92.4	80	120				Н
Sulfate			122	0.600	3.750	118.4	83.3	80	120				E

NOTES:

E - Estimated value. The amount exceeds the linear working range of the instrument.



Work Order:2103381CLIENT:Friedman &Project:103413	Bruya						lon Ch	QC S	SUMMAI		
Sample ID: 2103369-001BMSD	SampType: <b>MSD</b>			Units: mg/L		Prep Date	: 3/24/20	21	RunNo: 661	96	
Client ID: BATCH	Batch ID: 31757					Analysis Date	: 3/24/20	21	SeqNo: 133	32072	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.680	0.100	0.7500	0	90.7	80	120	0.6930	1.89	20	Н
Sulfate NOTES:	121	0.600	3.750	118.4	73.3	80	120	121.6	0.311	20	ES
S,E - Outlying spike recovery(ies	s) observed due to sample	concentrati	on above calib	prated range.							
Sample ID: 2103398-001BDUP	SampType: <b>DUP</b>			Units: mg/L		Prep Date	3/24/20	21	RunNo: 661	96	
Client ID: BATCH	Batch ID: 31757					Analysis Date	: 3/25/20	21	SeqNo: 133	32089	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	1.72	0.200						1.736	0.694	20	D
Sulfate	19.2	1.20						19.26	0.448	20	D
Sample ID: 2103398-001BMS	SampType: <b>MS</b>			Units: mg/L		Prep Date	: 3/24/20	21	RunNo: 661	96	
Client ID: BATCH	Batch ID: 31757					Analysis Date	: 3/25/20	21	SeqNo: 133	32090	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit I	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	2.83	0.200	1.500	1.736	73.2	80	120				DS
Sulfate	27.6	1.20	7.500	19.26	112	80	120				D

NOTES:

S - Outlying spike recoveries were associated with this sample due to high sample concentration.



CLIENT: F	2103381 Friedman & E 103413	Bruya								QC S Total Orga	SUMMA Anic Carbo		
Sample ID: MB-R662	219	SampType	MBLK			Units: <b>mg/L</b>		Prep Date	e: <b>3/30/20</b>	)21	RunNo: 662	219	
Client ID: MBLKW		Batch ID:	R66219					Analysis Date	e: 3/30/20	)21	SeqNo: 133	32370	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	I		ND	0.500									
Sample ID: LCS-R66	219	SampType	LCS			Units: mg/L		Prep Date	e: 3/30/20	)21	RunNo: 662	219	
Client ID: LCSW		Batch ID:	R66219					Analysis Date	e: 3/30/20	)21	SeqNo: 133	32371	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	I		5.08	0.500	5.000	0	102	89.3	113				
Sample ID: 2103381-	-001CDUP	SampType	DUP			Units: mg/L		Prep Date	e: 3/30/20	)21	RunNo: 662	219	
Client ID: KMW-03	R	Batch ID:	R66219					Analysis Date	e: 3/30/20	)21	SeqNo: 133	32360	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	I		2.66	0.500						2.602	2.20	20	
Sample ID: 2103381-	-001CMS	SampType	MS			Units: mg/L		Prep Date	e: 3/30/20	)21	RunNo: 662	219	
Client ID: KMW-03	R	Batch ID:	R66219					Analysis Date	e: 3/30/20	)21	SeqNo: 133	82361	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	1		7.62	0.500	5.000	2.602	100	69.1	120				
Sample ID: 2103381-	-001CMSD	SampType	MSD			Units: mg/L		Prep Date	e: 3/30/20	)21	RunNo: 662	219	
Client ID: KMW-03	R	Batch ID:	R66219					Analysis Date	e: <b>3/30/20</b>	)21	SeqNo: 133	32362	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	Ì		7.42	0.500	5.000	2.602	96.3	69.1	120	7.622	2.75	30	

Fremont
Analytical

	2103381	Du								QC S	SUMMA	RY REF	PORT
	Friedman & I 103413	Bruya							Dis	solved Me	tals by EP	A Method	d 200.8
Sample ID: MB-317		SampType:	MBLK			Units: µg/L		Pren Dat	te: <b>3/29/20</b>	121	RunNo: 661	185	
Client ID: MBLKV			31792					Analysis Da			SeqNo: 133		
							0/ DEO	-			•		0
Analyte		R	esult	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			ND	100									
Calcium			ND	525									
Magnesium			ND	100									
Sodium			ND	250									
Sample ID: LCS-31	792	SampType:	LCS			Units: µg/L		Prep Dat	te: <b>3/29/20</b>	21	RunNo: 661	85	
Client ID: LCSW		Batch ID:	31792					Analysis Da	te: <b>3/29/20</b>	21	SeqNo: 133	81784	
Analyte		R	esult	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			929	100	1,000	0	92.9	85	115				
Calcium		1	1,040	525	1,000	0	104	50	150				
Magnesium			908	100	1,000	0	90.8	50	150				
Sodium			955	250	1,000	0	95.5	50	150				
Sample ID: 210338	9-001FDUP	SampType:	DUP			Units: µg/L		Prep Dat	te: <b>3/29/20</b>	21	RunNo: 661	85	
Client ID: BATCH		Batch ID:	31792					Analysis Da	te: <b>3/29/20</b>	21	SeqNo: 133	81786	
Analyte		R	esult	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			ND	100						0		30	
Calcium		16	6,100	525						16,870	4.74	30	
Magnesium		2	2,550	100						2,779	8.57	30	
Sodium		8	3,160	250						8,750	6.98	30	
Sample ID: 210338	9-001FMS	SampType:	MS			Units: µg/L		Prep Dat	te: <b>3/29/20</b>	21	RunNo: 661	85	
Client ID: BATCH		Batch ID:	31792					Analysis Da	te: <b>3/29/20</b>	21	SeqNo: 133	81787	
Analyte		R	esult	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		5	5,230	100	5,000	0	105	50	150				
Calcium		21	,200	525	5,000	16.870	86.5	50	150				

## Original



Work Order: 2103381								QC S		RY REF	PORT
CLIENT: Friedman & Project: 103413	& Bruya						Dis	solved Met	als by EP	A Method	d 200.8
Sample ID: 2103389-001FMS	SampType: <b>MS</b>			Units: µg/L		Prep Date	e: <b>3/29/20</b>	)21	RunNo: 66'	185	
Client ID: BATCH	Batch ID: 31792					Analysis Date	e: <b>3/29/20</b>	)21	SeqNo: 13	31787	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium	7,500	100	5,000	2,779	94.5	70	130				
Sodium	13,500	250	5,000	8,750	95.1	50	150				
Sample ID: 2103389-001FMSD	SampType: <b>MSD</b>			Units: µg/L		Prep Date	e: <b>3/29/20</b>	)21	RunNo: 66	185	
Client ID: BATCH	Batch ID: 31792					Analysis Date	e: <b>3/29/20</b>	)21	SeqNo: 13	31788	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5,030	100	5,000	0	101	50	150	5,232	3.91	30	
Calcium	21,600	525	5,000	16,870	94.9	50	150	21,200	1.97	30	
Magnesium	7,480	100	5,000	2,779	94.0	70	130	7,504	0.369	30	
Sodium	13,600	250	5,000	8,750	96.4	50	150	13,510	0.468	30	
Sample ID: MB-31791FB	SampType: MBLK			Units: µg/L		Prep Date	e: <b>3/29/20</b>	)21	RunNo: 66'	185	
Client ID: MBLKW	Batch ID: 31792					Analysis Date	e: <b>3/29/20</b>	)21	SeqNo: 13	31804	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	100									
Calcium	ND	525									
Magnesium	ND	100									
Sodium	ND	250									

Fremont
Analytical

Work Order: 2103381								QC S	SUMMA	RY REF	PORT
CLIENT: Friedman & Project: 103413	& Bruya							Total Met	tals by EP	A Method	d 200.8
Sample ID: MB-31762	SampType: <b>MBLK</b>			Units: µg/L		Prep Dat	e: <b>3/25/2</b> 0	021	RunNo: 66	117	
Client ID: MBLKW	Batch ID: <b>31762</b>					Analysis Dat			SegNo: 13		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	•		RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	ND	100									
Calcium	ND	200									
Magnesium	ND	100									
Sodium	ND	200									
Sample ID: LCS-31762	SampType: LCS			Units: µg/L		Prep Dat	e: <b>3/25/2</b>	021	RunNo: 66	117	
Client ID: LCSW	Batch ID: 31762					Analysis Dat	te: <b>3/25/2</b> 0	021	SeqNo: 13	30418	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	1,020	100	1,000	0	102	85	115				
Calcium	969	200	1,000	0	96.9	50	150				
Magnesium	948	100	1,000	0	94.8	50	150				
Sodium	1,090	200	1,000	0	109	50	150				
Sample ID: 2103367-001BDUP	SampType: <b>DUP</b>			Units: µg/L		Prep Dat	e: <b>3/25/2</b> 0	021	RunNo: 66	117	
Client ID: BATCH	Batch ID: 31762					Analysis Dat	te: <b>3/25/2</b> 0	021	SeqNo: 13	30420	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	693	100						736.6	6.11	30	
Calcium	1,090	200						1,196	9.45	30	
Magnesium	911	100						883.7	3.08	30	
Sodium	129,000	200						120,900	6.45	30	Е
NOTES: E - Estimated value. The amou	nt exceeds the linear working	g range of t	the instrumen	t.							
Sample ID: 2103367-001BMS	SampType: MS			Units: µg/L		Prep Dat	e: <b>3/25/2</b> 0	021	RunNo: 66	117	
Client ID: BATCH	Batch ID: 31762					Analysis Dat	te: <b>3/25/2</b> 0	021	SeqNo: 13	30421	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum	5,710	100	5,000	736.6	99.5	70	130				



Work Order: CLIENT:	2103381 Friedman &	Bruya								SUMMAI		
Project: Sample ID: 21033 Client ID: BATC		SampType: <b>MS</b> Batch ID: <b>31762</b>			Units: <b>µg/L</b>		Prep Da Analysis Da	te: 3/25/20 te: 3/25/20	21	RunNo: 661 SeqNo: 133	117	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium Magnesium Sodium <b>NOTES:</b> S,E - Outlying s	pike recovery(ies)	5,950 5,680 121,000 ) observed due to sample o	200 100 200 concentratio	5,000 5,000 5,000 on above calib	1,196 883.7 120,900 prated range.	95.1 96.0 -5.04	50 70 50	150 130 150				ES
Sample ID: 21033 Client ID: BATC		SampType: MSD Batch ID: 31762			Units: µg/L		Prep Da Analysis Da			RunNo: 661 SeqNo: 133		
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum Calcium Magnesium		5,590 5,850 5,600	100 200 100	5,000 5,000 5,000	736.6 1,196 883.7	97.0 93.0 94.3	70 50 70	130 150 130	5,712 5,951 5,685	2.20 1.77 1.52	30 30 30	
Sodium		127,000	200	5,000	120,900	113	50	150	120,600	4.78	30	Е

#### NOTES:

E - Estimated value. The amount exceeds the linear working range of the instrument.



Work Order: CLIENT: Project:	2103381 Friedman & 103413	Bruya									SUMMA solved Gas		
Sample ID: LCS-R	866194	SampType	: LCS			Units: <b>mg/L</b>		Prep Dat	te: 3/29/20	021	RunNo: 66'	194	
Client ID: LCSW	1	Batch ID:	R66194					Analysis Dat	te: 3/29/20	021	SeqNo: 13	31999	
Analyte			Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane			987	0.00675	1,000	0	98.7	66.7	141				
Ethene			987	0.0146	1,000	0	98.7	68.6	139				
Ethane			988	0.0151	1,000	0	98.8	69.3	136				
Sample ID: MB-R	66194	SampType	: MBLK			Units: mg/L		Prep Dat	te: <b>3/29/2</b> (	021	RunNo: 66'	194	
Client ID: MBLK	W	Batch ID:	R66194					Analysis Dat	te: 3/29/20	021	SeqNo: 13:	32000	
Analyte			Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane			ND	0.00675									
Ethene			ND	0.0146									
Ethane			ND	0.0151									
Sample ID: 21033	89-005AREP	SampType	E REP			Units: mg/L		Prep Dat	te: <b>3/29/2</b> (	021	RunNo: 66'	194	
Client ID: BATC	н	Batch ID:	R66194					Analysis Dat	te: <b>3/29/2</b> 0	021	SeqNo: 13	31973	
Analyte			Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane			1.43	0.00675						1.652	14.1	30	E
Ethene			ND	0.0146						0		30	
Ethane			ND	0.0151						0		30	
NOTES:													

NOTES:

E - Estimated value. The amount exceeds the linear working range of the instrument.



## Sample Log-In Check List

Client Name: FB		Work Order Numb	er: 2103381		
Logged by: Carissa True		Date Received:	3/23/2021	4:34:00 PM	
Chain of Custody					
1. Is Chain of Custody complete?		Yes 🖌	No 🗌	Not Present	
2. How was the sample delivered?		<u>Client</u>			
<u>Log In</u>					
3. Coolers are present?		Yes 🗹	No 🗌		
4. Shipping container/cooler in good cor	ndition?	Yes 🖌	No 🗌		
5. Custody Seals present on shipping co (Refer to comments for Custody Seal		Yes	No 🗌	Not Present 🗹	
6. Was an attempt made to cool the sar	nples?	Yes 🖌	No 🗌		
7. Were all items received at a temperat	ture of >2°C to 6°C *	Yes 🗹	No 🗌		
8. Sample(s) in proper container(s)?		Yes 🖌	No 🗌		
9. Sufficient sample volume for indicate	d 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 🖌		
13. Did all samples containers arrive in g	ood condition(unbroken)?	Yes 🖌	No 🗌		
14. Does paperwork match bottle labels?		Yes 🗹	No 🗌		
15. Are matrices correctly identified on C	hain of Custody?	Yes 🖌	No 🗌		
16. Is it clear what analyses were request	ted?	Yes 🖌	No 🗌		
17. Were all holding times able to be met	?	Yes 🗹	No 🗌		
Special Handling (if applicable)					
18. Was client notified of all discrepancie	s with this order?	Yes	No 🗌	NA 🗹	
Person Notified:	Date	:			
By Whom:	Via:	eMail Pho	one 🗌 Fax [	In Person	
Regarding:					
Client Instructions:					
19. Additional remarks:					

3/24/21 - log in both sample delivery groups under one WO per ME -CG 3/26/21 - remove Total & Dissolved Mn from project per ME -CG

#### Item Information

Item #	Temp ⁰C
Sample 1	3.4

^{*} Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

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Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 Professional Analytical Services

Apr 8 2021 Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL

Dear MICHAEL ERDAHL:

Enclosed please find the analytical data for your 10413 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
KMW-03R	Water	21-A003783	Actc Acd

Your sample was received on Wednesday, March 24, 2021. At the time of receipt, the sample was logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,

Aaron W. Young Vice President

PO Number: B-194

BACT = Bacteriological CONV = Conventionals MET = Metals ORG = Organics NUT=Nutrients DEM=Demand **MIN=Minerals** 

Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 www.amtestlab.com



Professional Analytical Services

#### **ANALYSIS REPORT**

Date Received: 03/24/21 Date Reported: 4/ 8/21

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL Project Name: 10413 PO Number: B-194 All results reported on an as received basis.

AMTEST Identification Number	21-A003783
Client Identification	KMW-03R
Sampling Date	03/22/21, 13:44

#### **Organic Acids**

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Organic Acid (as Acetic)	< 0.1	mg/l		0.1	EPA 300.0 mod	KS	04/05/21

on la? Aardn W. Young Vice President

Am Test Inc. 13600 NE 126th PL Suite C Kirkland, WA, 98034 (425) 885-1664 www.amtestlab.com



#### QC Summary for sample number: 21-A003783

#### DUPLICATES

Organic Acid	(as Acetic)	mg/l	< 0.1			
ANALYTE		UNITS	RESULT			
BLANKS						
Ciganic Acia		lind,	12.00	11.01		100.0 /0
Organic Acid	(as Acetic)	mg/l	2.00	1.91		95.5 %
ANALYTE		UNITS	TRUE VALUE	MEASURED	VALUE	RECOVERY
STANDAR	D REFERENCE MATERIA	LS				
21-A003783	Organic Acid (as Acetic)	mg/l	< 0.1	1.92	2.00	96.00 %
SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	-	RECOVERY
MATRIX SF	PIKES					
21-A003783	Organic Acid (as Acetic)	mg/l	< 0.1	< 0.1		
SAMPLE #	ANALYTE	UNITS	SAMPLE VAL	UE DUP VAL	UE R	RPD

### SUBCONTRACT SAMPLE CHAIN OF CUSTODY

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#### 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 12, 2021

Brady Lubenow , Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Lubenow:

Included are the amended results from the testing of material submitted on March 23, 2021 from the Kelly Moore-Seattle, F&BI 103441 project. As requested, the J qualified metals results were removed and only over-range VOC compounds were reported in the sample dilutions.

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: Christy Duitman WEI0402R.DOC

#### 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 2, 2021

Brady Lubenow , Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Lubenow:

Included are the results from the testing of material submitted on March 23, 2021 from the Kelly Moore-Seattle, F&BI 103441 project. There are 50 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: Christy Duitman WEI0402R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on March 23, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore-Seattle, F&BI 103441 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
103441 -01	KMW-04
103441 -02	KMW-06
103441 -03	KMW-09
103441 -04	KMW-10
103441 -05	Duplicate1

The samples were sent to Fremont Analytical for BOD, COD, dissolved gasses, dissolved and total cations, sulfate, nitrate, TOC, and alkalinity analyses. In addition, the samples were sent to Amtest for volatile fatty acids. The report is enclosed.

A 6020B internal standard failed the acceptance criteria for the samples. The samples were diluted and reanalyzed with acceptable results. Both data sets were reported.

Dissolved samples were filtered at Friedman & Bruya, Inc on March 24th, 2021 at 11:34 AM.

All other quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/23/21 Project: Kelly Moore-Seattle, F&BI 103441 Date Extracted: 03/25/21 Date Analyzed: 03/26/21 and 03/30/21

## RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	<u>Gasoline Range</u>	Surrogate ( <u>% Recovery)</u> (Limit 51-134)
KMW-04 103441-01 1/10	19,000	111
KMW-06 103441-02	4,400	ip
KMW-09 103441-03	630	109
KMW-10 103441-04 1/10	31,000	118
Duplicate1 103441-05	4,500	ip
Method Blank 01-585 MB2	<100	94

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/23/21 Project: Kelly Moore-Seattle, F&BI 103441 Date Extracted: 03/24/21 Date Analyzed: 03/24/21

### 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)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
KMW-04 103441-01 1/1.3	1,300 x	<320	116
KMW-06 103441-02	35,000 x	3,000 x	88
KMW-09 103441-03	7,000 x	390 x	118
KMW-10 103441-04	8,600 x	<320	115
Duplicate1 103441-05	33,000 x	3,500 x	82
Method Blank 01-722 MB	<50	<250	118

## ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix:	KMW-04 f 03/23/21 03/25/21 03/26/21 Water		Client: Project: Lab ID: Data File: Instrument:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-01 x20 103441-01 x20.057 ICPMS2
Units:	ug/L (ppb)		Operator:	SP
Analyte:		Concentration ug/L (ppb)		
Iron Manganese		$5{,}650\\341$		

## ENVIRONMENTAL CHEMISTS

Client ID: Date Received:	KMW-06 f 03/23/21		Client: Project:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441
Date Extracted:	03/25/21		Lab ID:	103441-02 x100
Date Analyzed:	03/26/21		Data File:	103441-02 x100.058
Matrix:	Water		Instrument:	ICPMS2
Units:	ug/L (ppb)		Operator:	SP
Analyte:	С	Concentration ug/L (ppb)		
Iron		37,900		
Manganese		1,450		

## ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted:	KMW-09 f 03/23/21 03/25/21	Client: Project: Lab ID:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-03 x100
Date Analyzed:	03/26/21	Data File:	103441-03 x100.071
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentrat ug/L (ppb		
Iron Manganese	$21,\!600\\511$		

## ENVIRONMENTAL CHEMISTS

## Analysis For Dissolved Metals By EPA Method 6020B

989

Manganese

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix:	KMW-10 f 03/23/21 03/25/21 03/26/21 Water	Client: Project: Lab ID: Data File: Instrument:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-04 x100 103441-04 x100.072 ICPMS2
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron	35,900		

7

## ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix:	Duplicate1 f 03/23/21 03/25/21 03/26/21 Water	Client: Project: Lab ID: Data File: Instrument:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-05 x100 103441-05 x100.073 ICPMS2
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron Manganese	35,900 1,440		

## ENVIRONMENTAL CHEMISTS

Client ID:	Method Blank f	Client:	Wood Environment & Infrastructure
Date Received:	NA	Project:	Kelly Moore-Seattle, F&BI 103441
Date Extracted:	03/25/21	Lab ID:	I1-191 mb
Date Analyzed:	03/25/21	Data File:	I1-191 mb.106
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
	Concentration		
Analyte:	ug/L (ppb)		
Iron	<50		
Manganese	<1		

### ENVIRONMENTAL CHEMISTS

## Analysis For Hardness By EPA Method 200.8 and SM 2340B

46.6

Hardness (as CaCO3)

Client ID:	KMW-04	Client:	Wood Environment & Infrastructure
Date Received:	03/23/21	Project:	Kelly Moore-Seattle, F&BI 103441
Date Extracted:	03/24/21	Lab ID:	103441-01 x10
Date Analyzed:	03/24/21	Data File:	103441-01 x10.078
Matrix:	Water	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP
	Concentration		
Analyte:	mg/L (ppm)		
Calcium	14.6		
Magnesium	2.47		

#### ENVIRONMENTAL CHEMISTS

### Analysis For Hardness By EPA Method 200.8 and SM 2340B

182

Client ID:	KMW-06	Client:	Wood Environment & Infrastructure
Date Received:	03/23/21	Project:	Kelly Moore-Seattle, F&BI 103441
Date Extracted:	03/24/21	Lab ID:	103441-02 x10
Date Analyzed:	03/24/21	Data File:	103441-02 x10.079
Matrix:	Water	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP
	Concentration		
Analyte:	mg/L (ppm)		
Calcium	51.4		
Magnesium	13.1		

#### ENVIRONMENTAL CHEMISTS

### Analysis For Hardness By EPA Method 200.8 and SM 2340B

102

Client ID:	KMW-09	Client:	Wood Environment & Infrastructure
Date Received:	03/23/21	Project:	Kelly Moore-Seattle, F&BI 103441
Date Extracted:	03/24/21	Lab ID:	103441-03 x10
Date Analyzed:	03/24/21	Data File:	103441-03 x10.080
Matrix:	Water	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP
	Concentration		
Analyte:	mg/L (ppm)		
Calcium	27.8		
Magnesium	7.82		

#### ENVIRONMENTAL CHEMISTS

### Analysis For Hardness By EPA Method 200.8 and SM 2340B

104

Client ID:	KMW-10	Client:	Wood Environment & Infrastructure
Date Received:	03/23/21	Project:	Kelly Moore-Seattle, F&BI 103441
Date Extracted:	03/24/21	Lab ID:	103441-04 x10
Date Analyzed:	03/24/21	Data File:	103441-04 x10.081
Matrix:	Water	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP
	Concentration		
Analyte:	mg/L (ppm)		
Calcium	20.2		
	30.3		
Magnesium	6.78		

#### ENVIRONMENTAL CHEMISTS

### Analysis For Hardness By EPA Method 200.8 and SM 2340B

182

Client ID: Date Received:	Duplicate1 03/23/21	Client: Project:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441
Date Extracted:	03/24/21	Lab ID:	103441-05 x10
Date Analyzed:	03/24/21	Data File:	103441-05 x10.082
Matrix:	Water	Instrument:	ICPMS2
Units:	mg/L (ppm)	Operator:	SP
Analyte:	Concentration mg/L (ppm)		
Calcium	51.3		
Magnesium	13.0		

#### ENVIRONMENTAL CHEMISTS

### Analysis For Hardness By EPA Method 200.8 and SM 2340B

 $<\!0.35$ 

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix:	Method Blank NA 03/24/21 03/24/21 Water	Client: Project: Lab ID: Data File: Instrument:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 I1-184 mb2 I1-184 mb2.077 ICPMS2
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration mg/L (ppm)		
Calcium Magnesium	<0.05 <0.05		

## ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-04 03/23/21 03/24/21 03/24/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-01 103441-01.098 ICPMS2 SP
Analyte:		Concentration ug/L (ppb)		
Arsenic		3.95		
Chromium		<1		
Copper		<5		
Lead		<1		
Manganese		303		
Mercury		<1		
Nickel		2.14		
Zinc		<5		

### ENVIRONMENTAL CHEMISTS

## Analysis For Total Metals By EPA Method 6020B

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix:	KMW-04 03/23/21 03/24/21 03/24/21 Water	Client: Project: Lab ID: Data File: Instrument:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-01 x10 103441-01 x10.110 ICPMS2
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron	7,290		

17

### ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-06 03/23/21 03/24/21 03/24/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-02 103441-02.099 ICPMS2 SP
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Arsenic Lead	$8.05 \\ 29.7$		
Mercury	<1		

### ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-06 03/23/21 03/24/21 03/24/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-02 x10 103441-02 x10.111 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Chromium	<10		
Copper	96.5		
Iron	42,800		
Manganese	1,430		
Nickel	21.5		
Zinc	148		

### ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-09 03/23/21 03/24/21 03/24/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-03 103441-03.100 ICPMS2 SP
Units.	ug/L (ppb)	Operator.	51
Analyte:	Concentration ug/L (ppb)		
Arsenic	1.00		
Lead	<1		
Mercury	<1		

### ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-09 03/23/21 03/24/21 03/24/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-03 x10 103441-03 x10.112 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Chromium	<10		
Copper	<50		
Iron	33,100		
Manganese	520		
Nickel	<10		
Zinc	<50		

### ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-10 03/23/21 03/24/21 03/24/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-04 103441-04.101 ICPMS2 SP
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	6.59		
Lead	1.45		
Mercury	<1		

## ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-10 03/23/21 03/24/21 03/24/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-04 x10 103441-04 x10.113 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Chromium	<10		
Copper	<50		
Manganese	878		
Nickel	<10		
Zinc	<50		

### ENVIRONMENTAL CHEMISTS

## Analysis For Total Metals By EPA Method 6020B

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix:	KMW-10 03/23/21 03/24/21 03/25/21 Water	Client: Project: Lab ID: Data File: Instrument:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-04 x200 103441-04 x200.113 ICPMS2
Units:	ug/L (ppb)	Operator:	SP
Analyte:	Concentration ug/L (ppb)		
Iron	$57,\!300$		

24

### ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Duplicate1 03/23/21 03/24/21 03/24/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-05 103441-05.102 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	7.89		
Chromium	5.20		
Copper	74.6		
Lead	30.0		
Mercury	<1		
Nickel	16.8		
Zinc	117		

### ENVIRONMENTAL CHEMISTS

### Analysis For Total Metals By EPA Method 6020B

Manganese

Client ID:	Duplicate1	Client:	Wood Environment & Infrastructure
Date Received:	03/23/21	Project:	Kelly Moore-Seattle, F&BI 103441
Date Extracted:	03/24/21	Lab ID:	103441-05 x10
Date Analyzed:	03/24/21	Data File:	103441-05 x10.114
Matrix:	Water	Instrument:	ICPMS2
Units:	ug/L (ppb)	Operator:	SP
Analyte: Iron	Concentration ug/L (ppb) 45,200		

1,530

## ENVIRONMENTAL CHEMISTS

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank NA 03/24/21 03/24/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 I1-183 mb2 I1-183 mb2.089 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	<1		
Chromium	<1		
Copper	<5		
Iron	<50		
Lead	<1		
Manganese	<1		
Mercury	<1		
Nickel	<1		
Zinc	<5		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-04 03/23/21 03/25/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-01 1/2 032509.D GCMS9 YA
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 36 31 92 87 102 100	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 61 46 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene		< 0.04		
Chrysene		< 0.04		
Benzo(a)pyrene		< 0.04		
Benzo(b)fluoranthe	ene	< 0.04		
Benzo(k)fluoranthe	ene	< 0.04		
Indeno(1,2,3-cd)pyr	rene	< 0.04		
Dibenz(a,h)anthrac	ene	< 0.04		

### ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-06 03/23/21 03/25/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-02 1/2 032510.D GCMS9 YA
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 33 18 95 71 84 87	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	UpperLimit:6146143150150150
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthe Benzo(k)fluoranthe Indeno(1,2,3-cd)pyr Dibenz(a,h)anthrac	ene ene rene	$\begin{array}{c} 0.057 \\ 0.13 \\ 0.31 \\ 0.34 \\ 0.11 \\ 0.18 \\ < 0.04 \end{array}$		

### ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-09 03/23/21 03/25/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-03 1/2 032511.D GCMS9 YA
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 39 28 76 58 80 96	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 61 46 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthe Benzo(k)fluoranthe Indeno(1,2,3-cd)pyr Dibenz(a,h)anthrac	ene ene rene	<0.04 <0.04 <0.04 <0.04 <0.04 <0.04 <0.04		

### ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-10 03/23/21 03/25/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-04 1/2 032513a.D GCMS9 YA
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	$\% \ { m Recovery:} \ 25 \ 27 \ 70 \ 60 \ 85 \ 99 \ 99$	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 61 46 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene		0.041		
Chrysene		< 0.04		
Benzo(a)pyrene		0.054		
Benzo(b)fluoranthe	ne	0.045		
Benzo(k)fluoranthe		< 0.04		
Indeno(1,2,3-cd)pyr		< 0.04		
Dibenz(a,h)anthrac	ene	< 0.04		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Duplicate1 03/23/21 03/25/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-05 1/2 032514.D GCMS9 YA
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 35 23 84 68 83 100	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 61 46 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene		0.070		
Chrysene		0.14		
Benzo(a)pyrene		0.37		
Benzo(b)fluoranthe	ene	0.40		
Benzo(k)fluoranthe		0.11		
Indeno(1,2,3-cd)pyr		0.21		
Dibenz(a,h)anthrac	eene	< 0.04		

### ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Bla Not Applica 03/25/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 01-726 mb 032506.D GCMS9 YA
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	$\% \ { m Recovery:} \ 28 \ 16 \ 97 \ 95 \ 90 \ 115$	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 61 46 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthe Benzo(k)fluoranthe Indeno(1,2,3-cd)pyr Dibenz(a,h)anthrac	ene ene rene	<0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-04 03/23/21 03/24/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 103441-01 1/10 032537.D GCMS4 JCM	
Surrogates: 1,2-Dichloroethane-d4 Toluene-d8 4-Bromofluorobenzene		% Recovery: 99 103 99	Lower Limit: 86 88 88	Upper Limit: 113 114 112	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome	ethane	<10	1,3-Dich	loropropane	<10
Chloromethane		<100		loroethene	<10
Vinyl chloride		<2	Dibromo	ochloromethane	<10
Bromomethane		<50		omoethane (EDB)	<10
Chloroethane		<10	Chlorobenzene		<10
Trichlorofluoromethane		<10	Ethylbenzene		1,500
Acetone		<500		Tetrachloroethane	<10
1,1-Dichloroethene		<10	m,p-Xyle		4,500 ve
Hexane		<50 <50	o-Xylene	Ĵ,	800 <10
Methylene chloride Methyl t-butyl ethe		<50 <10	Styrene	lbenzene	<10 11
trans-1,2-Dichloroe		<10 <10	Bromofo		<50
1,1-Dichloroethane		<10		lbenzene	<10
2,2-Dichloropropar		<10	Bromobe		<10
cis-1,2-Dichloroeth		<10	1,3,5-Trimethylbenzene		25
Chloroform		<10		Tetrachloroethane	<10
2-Butanone (MEK)	)	<200		ichloropropane	<10
1,2-Dichloroethane		<10	2-Chloro		<10
1,1,1-Trichloroetha		<10	4-Chloro		<10
1,1-Dichloropropen		<10		ylbenzene	<10
Carbon tetrachlori	de	<10		imethylbenzene	52
Benzene		<3.5		lbenzene	<10
Trichloroethene 1,2-Dichloropropar		<10 <10		pyltoluene lorobenzene	<10 <10
Bromodichloromet		<10 <10		lorobenzene	<10 <10
Dibromomethane	lialle	<10		lorobenzene	<10
4-Methyl-2-pentan	one	<100		omo-3-chloropropane	<100
cis-1,3-Dichloropro		<10		ichlorobenzene	<10
Toluene	-	240		orobutadiene	<10
trans-1,3-Dichlorop	propene	<10	Naphtha	alene	<10
1,1,2-Trichloroetha		<10		ichlorobenzene	<10
2-Hexanone		<100			

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-04 03/23/21 03/24/21 03/24/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-01 1/200 032434.D GCMS13 JCM
			Lower	Upper
Surrogates:		% Recovery:	Limit:	Limit:
1,2-Dichloroethane	-d4	100	85	117
Toluene-d8		99	88	112
4-Bromofluorobenz	ene	110	90	111
<b>a</b> 1		Concentration		
Compounds:		ug/L (ppb)		
m,p-Xylene		4,100		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-06 03/23/21 03/24/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 103441-02 032525.D GCMS4 JCM	
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 107 99 87 ip	Lower Limit: 86 88 88	Upper Limit: 113 114 112	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome	ethane	<1	1,3-Dich	loropropane	<1
Chloromethane		<10		oroethene	<1
Vinyl chloride		< 0.2		ochloromethane	<1
Bromomethane		<5		omoethane (EDB)	<1
Chloroethane		<1	Chlorobe		<1
Trichlorofluoromet	hane	<1	Ethylber		<1
Acetone		<50		Cetrachloroethane	<1
1,1-Dichloroethene	1	<1	m,p-Xyle		<2
Hexane		<5	o-Xylene	) )	<1
Methylene chloride		<5	Styrene	11	<1
Methyl t-butyl ethe		<1		lbenzene	2.8
trans-1,2-Dichloroe		<1	Bromofo		<5
1,1-Dichloroethane		<1	n-Propy		3.6
2,2-Dichloropropan		<1	Bromobe		<1 <1
cis-1,2-Dichloroeth Chloroform	ene	<1 <1		imethylbenzene Yetrachloroethane	<1
2-Butanone (MEK)		<20		ichloropropane	<1
1,2-Dichloroethane		<20 1</td <td>2-Chloro</td> <td></td> <td>&lt;1</td>	2-Chloro		<1
1,1,1-Trichloroetha		<1	4-Chloro		<1
1,1-Dichloropropen		<1		ylbenzene	<1
Carbon tetrachlori		<1		imethylbenzene	<1
Benzene		< 0.35		vlbenzene	<1
Trichloroethene		<1		pyltoluene	<1
1,2-Dichloropropan	ne	<1		lorobenzene	<1
Bromodichloromet	hane	<1	1,4-Dich	lorobenzene	<1
Dibromomethane		<1	1,2-Dich	lorobenzene	<1
4-Methyl-2-pentan	one	<10	1,2-Dibr	omo-3-chloropropane	<10
cis-1,3-Dichloropro	pene	<1	1,2,4-Tri	ichlorobenzene	<1
Toluene		<1		orobutadiene	<1
trans-1,3-Dichlorop		<1	Naphtha		<1
1,1,2-Trichloroetha	ine	<1	1,2,3-Tr	ichlorobenzene	<1
2-Hexanone		<10			

## ENVIRONMENTAL CHEMISTS

Date Received: Date Extracted: Date Analyzed: Matrix:	KMW-09 03/23/21 03/24/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 103441-03 032526.D GCMS4 JCM	
Surrogates: 1,2-Dichloroethane- Toluene-d8 4-Bromofluorobenze		% Recovery: 107 100 106	Lower Limit: 86 88 88	Upper Limit: 113 114 112	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluoromet Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluorometh Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ether trans-1,2-Dichloroeth 1,1-Dichloroethane 2,2-Dichloropropane cis-1,2-Dichloroethe Chloroform 2-Butanone (MEK) 1,2-Dichloroethane 1,1,1-Trichloroethane Carbon tetrachloride Benzene Trichloroethene 1,2-Dichloropropane Bromodichloromethe	ane r (MTBE) chene ne (EDC) ne e	$<1 \\ <10 \\ <0.2 \\ <5 \\ <1 \\ <1 \\ <50 \\ <1 \\ <5 \\ <5 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1$	Tetrachl Dibromo 1,2-Dibr Chlorobe Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propyl Bromobe 1,3,5-Tri 1,1,2,2-T 1,2,3-Tri 2-Chloro tert-But 1,2,4-Tri sec-Buty p-Isopro 1,3-Dich	nzene Vetrachloroethane ene Vlbenzene rm Ibenzene enzene imethylbenzene Vetrachloroethane ichloropropane otoluene	<1 <1 <1 <1 <1 <1 <1 <2 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1
Dibromomethane 4-Methyl-2-pentano cis-1,3-Dichloroprop Toluene trans-1,3-Dichloropr 1,1,2-Trichloroethar 2-Hexanone	ropene	<1 <10 <1 <1 <1 <1 <1 <10	1,2-Dibr 1,2,4-Tri Hexachl Naphtha	lorobenzene omo-3-chloropropane ichlorobenzene orobutadiene alene ichlorobenzene	<1 <10 <1 <1 <1 <1 <1

## ENVIRONMENTAL CHEMISTS

Date Received: Date Extracted: Date Analyzed: Matrix:	KMW-10 03/23/21 03/24/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 103441-04 1/10 032538.D GCMS4 JCM	
Surrogates: 1,2-Dichloroethane-o Toluene-d8 4-Bromofluorobenze:		% Recovery: 103 102 98	Lower Limit: 86 88 88	Upper Limit: 113 114 112	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorometh Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluorometh Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ether trans-1,2-Dichloroethane 2,2-Dichloropropane cis-1,2-Dichloroethane Chloroform 2-Butanone (MEK) 1,2-Dichloroethane ( 1,1,1-Trichloroethane 1,1-Dichloropropene Carbon tetrachloride Benzene Trichloroethene 1,2-Dichloropropane Bromodichloromethane Dibromomethane 4-Methyl-2-pentanon cis-1,3-Dichloropropene	ane (MTBE) hene ne EDC) e e	$<10 \\ <100 \\ <2 \\ <500 \\ <10 \\ <500 \\ <10 \\ <500 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <10 \\ <$	Tetrachl Dibromo 1,2-Dibr Chlorobe Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propy Bromofo 1,3,5-Tr: 1,1,2,2-T 1,2,3-Tr: 2-Chloro 4-Chloro tert-But 1,2,4-Tr: sec-Buty p-Isopro 1,3-Dich 1,2-Dich 1,2-Dibr	nzene Fetrachloroethane ene e Vlbenzene orm lbenzene enzene imethylbenzene Fetrachloroethane ichloropropane otoluene	$<10 \\<10 \\<10 \\<10 \\<10 \\2,300 ve \\<10 \\4,400 ve \\1,300 \\<10 \\40 \\<50 \\38 \\<10 \\20 \\<10 \\<10 \\<10 \\<10 \\<10 \\<10 \\<10 \\<1$
Toluene trans-1,3-Dichloropr 1,1,2-Trichloroethan 2-Hexanone		2,600 ve <10 <10 <100	Naphtha	orobutadiene alene ichlorobenzene	<10 <10 <10

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-10 03/23/21 03/24/21 03/24/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103441 103441-04 1/200 032437.D GCMS13 JCM
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 92 91 118	Lower Limit: 85 88 90	Upper Limit: 117 112 111
Compounds:		Concentration ug/L (ppb)		
Ethylbenzene m,p-Xylene Toluene		2,500 4,600 3,200		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Duplicate1 03/23/21 03/24/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 103441-05 032527.D GCMS4 JCM	
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 106 98 86 ip	Lower Limit: 86 88 88	Upper Limit: 113 114 112	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromet Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethe trans-1,2-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane 2,2-Dichloropethane 1,1-Trichloroethane 1,1-Trichloroethane 1,1-Dichloropropan Carbon tetrachlorid Benzene Trichloroethene 1,2-Dichloropropan Bromodichlorometh Dibromomethane 4-Methyl-2-pentan	hane er (MTBE) ethene ene ene (EDC) ine ie de hane one	$<1 \\ <10 \\ <0.2 \\ <5 \\ <1 \\ <50 \\ <1 \\ <5 \\ 5.0 \ lc \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1 \\ <$	Tetrachl Dibromo 1,2-Dibr Chlorobo Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propy Bromofo 1,3,5-Tr 1,1,2,2-T 1,2,3-Tr 2-Chloro 4-Chloro tert-But 1,2,4-Tr sec-Buty p-Isopro 1,3-Dich 1,4-Dich 1,2-Dibr	nzene Cetrachloroethane ene dibenzene rm lbenzene enzene imethylbenzene Cetrachloroethane ichloropropane otoluene ylbenzene imethylbenzene dibenzene pyltoluene lorobenzene lorobenzene omo-3-chloropropane	
cis-1,3-Dichloropro Toluene trans-1,3-Dichlorop 1,1,2-Trichloroetha 2-Hexanone	propene	<1 <1 <1 <1 <10	Hexachl Naphtha	ichlorobenzene orobutadiene alene ichlorobenzene	<1 <1 <1 <1

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Bla Not Applica 03/24/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 01-662 mb 032507.D GCMS4 JCM	
Surrogates:		% Recovery:	Lower Limit:	Upper Limit:	
1,2-Dichloroethane	-d4	99	86	113	
Toluene-d8		100	88	114	
4-Bromofluorobenz	ene	102	88	112	
		Concentration			Concentration
Compounds:		ug/L (ppb)	Compou	nds:	ug/L (ppb)
Dichlorodifluorome	ethane	<1		loropropane	<1
Chloromethane		<10		loroethene	<1
Vinyl chloride		<0.2		ochloromethane	<1
Bromomethane		<5		omoethane (EDB)	<1
Chloroethane Trichlorofluoromet	h	<1	Chlorobe		<1 <1
Acetone	nane	<1 <50	Ethylber 1 1 1 2 7	Tetrachloroethane	<1
1,1-Dichloroethene		<50 <1	m,p-Xyle		<2
Hexane		<5	o-Xylene		<1
Methylene chloride	•	<5	Styrene	-	<1
Methyl t-butyl ethe		<1	•	lbenzene	<1
trans-1,2-Dichloroe		<1	Bromofo	orm	<5
1,1-Dichloroethane		<1		lbenzene	<1
2,2-Dichloropropan		<1	Bromobe		<1
cis-1,2-Dichloroeth	ene	<1		imethylbenzene	<1
Chloroform		<1		Tetrachloroethane	<1
2-Butanone (MEK) 1,2-Dichloroethane		<20 <1	1,2,3-11 2-Chloro	ichloropropane	<1 <1
1,1,1-Trichloroetha		<1	4-Chlore		<1
1,1-Dichloropropen		<1		ylbenzene	<1
Carbon tetrachlorio		<1		imethylbenzene	<1
Benzene		< 0.35		lbenzene	<1
Trichloroethene		<1	p-Isopro	pyltoluene	<1
1,2-Dichloropropan		<1		lorobenzene	<1
Bromodichlorometh	nane	<1		lorobenzene	<1
Dibromomethane		<1		lorobenzene	<1
4-Methyl-2-pentane		<10		omo-3-chloropropane	<10
cis-1,3-Dichloropro	pene	<1		ichlorobenzene orobutadiene	<1
Toluene trans-1,3-Dichlorop	ronano	<1 <1	Naphtha		<1 <1
1,1,2-Trichloroetha		<1	_	ichlorobenzene	<1
2-Hexanone		<10	1, <b>2</b> ,0 11		· <b>±</b>

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/23/21 Project: Kelly Moore-Seattle, F&BI 103441

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Gasoline	ug/L (ppb)	1,000	108	88	70-119	20

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/23/21 Project: Kelly Moore-Seattle, F&BI 103441

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	$\operatorname{RPD}$
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	120	108	63-142	11

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/23/21 Project: Kelly Moore-Seattle, F&BI 103441

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR DISSOLVED METALS USING EPA METHOD 6020B

Laboratory Cod	le: 103389-01 x	10 (Matri	ix Spike)	Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Iron	ug/L (ppb)	100	26,800	0 b	$722 \mathrm{~b}$	75 - 125	200 b
Manganese	ug/L (ppb)	20	904	0 b	261 b	75 - 125	200 b

Laboratory Code: 103389-01 x10 (Matrix Spike)

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Iron	ug/L (ppb)	100	93	80-120
Manganese	ug/L (ppb)	20	93	80-120

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/23/21 Project: Kelly Moore-Seattle, F&BI 103441

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 200.8 AND SM 2340B

Laboratory Coo	de: 103413-01 x	10 (Matri	x Spike)	Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	$\operatorname{Result}$	MS	MSD	Criteria	(Limit 20)
Calcium	mg/L (ppm)	1.0	53.4	$735 \mathrm{b}$	$257 \mathrm{b}$	70-130	96 b
Magnesium	mg/L (ppm)	1.0	5.79	172 b	115 b	70-130	40 b

Laboratory Code: 103413-01 x10 (Matrix Spike)

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Calcium	mg/L (ppm)	1.0	102	85-115
Magnesium	mg/L (ppm)	1.0	100	85-115

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/23/21 Project: Kelly Moore-Seattle, F&BI 103441

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 103416-01 (Matrix Spike)

Laboratory Coue.	105410-01	(mains op	(IKC)	Percent	Percent		
Analyte	Reporting Units	Spike Level	Sample Result	Recovery MS	Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Analyte	Units	Level	nesun	MD	MoD	Orneria	(LIIIIII 20)
Arsenic	ug/L (ppb)	10	<1	111	115	75 - 125	4
Chromium	ug/L (ppb)	20	<1	103	101	75 - 125	2
Copper	ug/L (ppb)	20	8.10	102	103	75 - 125	1
Iron	ug/L (ppb)	100	67.8	105	99	75 - 125	6
Lead	ug/L (ppb)	10	32.2	105	90	75 - 125	15
Manganese	ug/L (ppb)	20	5.67	104	102	75 - 125	2
Mercury	ug/L (ppb)	<b>5</b>	<1	99	100	75 - 125	1
Nickel	ug/L (ppb)	20	<1	101	99	75 - 125	2
Zinc	ug/L (ppb)	50	53.3	100	91	75 - 125	9

		Percent				
	Reporting	Spike	Recovery	Acceptance		
Analyte	Units	Level	LCS	Criteria		
Arsenic	ug/L (ppb)	10	106	80-120		
Chromium	ug/L (ppb)	20	100	80-120		
Copper	ug/L (ppb)	20	112	80-120		
Iron	ug/L (ppb)	100	101	80-120		
Lead	ug/L (ppb)	10	100	80-120		
Manganese	ug/L (ppb)	20	103	80-120		
Mercury	ug/L (ppb)	<b>5</b>	100	80-120		
Nickel	ug/L (ppb)	20	99	80-120		
Zinc	ug/L (ppb)	50	101	80-120		

### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/23/21 Project: Kelly Moore-Seattle, F&BI 103441

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 103462-01 1/2 (Matrix Spike)

Laboratory Code. 105402-01 1/		pike)		Percent	Percent		
Analyte	Reporting Units	Spike Level	Sample Result	Recovery MS	Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	5	< 0.04	106	102	50-150	4
Chrysene	ug/L (ppb)	5	< 0.04	99	96	50-150	3
Benzo(a)pyrene	ug/L (ppb)	5	< 0.04	112	109	50 - 150	3
Benzo(b)fluoranthene	ug/L (ppb)	5	< 0.04	110	106	50 - 150	4
Benzo(k)fluoranthene	ug/L (ppb)	5	< 0.04	105	104	50 - 150	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	< 0.04	102	101	50 - 150	1
Dibenz(a,h)anthracene	ug/L (ppb)	5	< 0.04	98	93	50 - 150	5

#### Laboratory Code: Laboratory Control Sample

Laboratory Code: Laboratory Co	ontrol Sampl	e	Percent	
Analyte	Reporting Units	Spike Level	Recovery LCS	Acceptance Criteria
Benz(a)anthracene	ug/L (ppb)	5	99	70-130
Chrysene	ug/L (ppb)	5	96	70-130
Benzo(a)pyrene	ug/L (ppb)	5	103	70-130
Benzo(b)fluoranthene	ug/L (ppb)	5	98	62-130
Benzo(k)fluoranthene	ug/L (ppb)	5	97	70-130
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	113	70-130
Dibenz(a,h)anthracene	ug/L (ppb)	5	111	70-130

### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/23/21 Project: Kelly Moore-Seattle, F&BI 103441

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 103429-01 (Matrix Spike)

	Reporting	Spike	Sample	Recovery	Acceptance
Analyte	Units	Level	Result	MS	Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	110	10-172
Chloromethane	ug/L (ppb) ug/L (ppb)	10	<10	79	25-166
Vinvl chloride	ug/L (ppb)	10	<0.2	91	36-166
Bromomethane	ug/L (ppb)	10	<5	126	47-169
Chloroethane	ug/L (ppb)	10	<1	92	46-160
Trichlorofluoromethane	ug/L (ppb)	10	<1	99	44-165
Acetone	ug/L (ppb)	50	<50	96	10-182
1,1-Dichloroethene	ug/L (ppb)	10	<1	105	58-142
Hexane	ug/L (ppb)	10	<5	101	38 - 152
Methylene chloride	ug/L (ppb)	10	<5	113	50-145
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	103	61-136
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	103	61-136
1,1-Dichloroethane	ug/L (ppb)	10	<1	99	63-135
2,2-Dichloropropane	ug/L (ppb)	10	<1	106	36 - 154
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	100	63-134
Chloroform	ug/L (ppb)	10	<1	103	61-135
2-Butanone (MEK)	ug/L (ppb)	50	<20	107	10-129
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	104	48-149
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	102	60-146
1,1-Dichloropropene	ug/L (ppb)	10	<1	103	69-133
Carbon tetrachloride	ug/L (ppb)	10	<1	105	56-152
Benzene	ug/L (ppb)	10	< 0.35	104	57-135
Trichloroethene	ug/L (ppb)	10	<1	102	66-135
1,2-Dichloropropane	ug/L (ppb)	10	<1 <1	100	59-136
Bromodichloromethane Dibromomethane	ug/L (ppb)	10 10	<1	96 105	61-150
4-Methyl-2-pentanone	ug/L (ppb)	10 50	<10	105	66-141
cis-1,3-Dichloropropene	ug/L (ppb) ug/L (ppb)	50 10	<10	98	10-185 52-147
Toluene	ug/L (ppb) ug/L (ppb)	10	<1	98 100	50-137
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	89	53-142
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	89 99	68-131
2-Hexanone	ug/L (ppb)	50	<10	109	10-185
1,3-Dichloropropane	ug/L (ppb)	10	<10	98	60-135
Tetrachloroethene	ug/L (ppb)	10	<1	111	10-226
Dibromochloromethane	ug/L (ppb)	10	<1	92	52-145
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	101	62-135
Chlorobenzene	ug/L (ppb)	10	<1	103	63-130
Ethylbenzene	ug/L (ppb)	10	<1	99	60-133
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	97	56-143
m,p-Xylene	ug/L (ppb)	20	<2	102	69-135
o-Xylene	ug/L (ppb)	10	<1	100	60-140
Styrene	ug/L (ppb)	10	<1	98	60-133
Isopropylbenzene	ug/L (ppb)	10	<1	97	65-142
Bromoform	ug/L (ppb)	10	<5	89	54-148
n-Propylbenzene	ug/L (ppb)	10	<1	97	58-144
Bromobenzene	ug/L (ppb)	10	<1	100	61-130
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	97	59 - 134
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	96	51 - 154
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	98	53 - 150
2-Chlorotoluene	ug/L (ppb)	10	<1	96	66-127
4-Chlorotoluene	ug/L (ppb)	10	<1	97	65-130
tert-Butylbenzene	ug/L (ppb)	10	<1	96	65-137
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	93	59-146
sec-Butylbenzene	ug/L (ppb)	10	<1	97	64-140
p-Isopropyltoluene	ug/L (ppb)	10	<1	97	65-141
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	101	60-131
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	101	60-129
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	98	60-130
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	89	32-164
1,2,4-Trichlorobenzene	ug/L (ppb)	10	<1	94	52-138
Hexachlorobutadiene	ug/L (ppb)	10	<1	98	60-143
Naphthalene	ug/L (ppb)	10	<1	93	44-164

### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/23/21 Project: Kelly Moore-Seattle, F&BI 103441

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Laboratory Code. Laborator	· 1		Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	$\operatorname{RPD}$
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	98	104	25-158	6
Chloromethane	ug/L (ppb)	10	83	82	45 - 156	1
Vinyl chloride	ug/L (ppb)	10	88	90	50 - 154	2
Bromomethane	ug/L (ppb)	10	106	134	55-143	23 vo
Chloroethane	ug/L (ppb)	10	82	88	58-146	7
Trichlorofluoromethane	ug/L (ppb)	10	91	96	50-150	
Acetone 1,1-Dichloroethene	ug/L (ppb)	50 10	$95 \\ 105$	$95 \\ 104$	22-155 67-136	0
Hexane	ug/L (ppb)	10	88	104 90	57-135	1 2
Methylene chloride	ug/L (ppb) ug/L (ppb)	10	108	109	19-178	2
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	100	103	64-147	3
trans-1.2-Dichloroethene	ug/L (ppb)	10	100	100	68-128	1
1,1-Dichloroethane	ug/L (ppb)	10	96	97	74-135	1
2,2-Dichloropropane	ug/L (ppb)	10	99	98	55-143	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	99	99	74-136	0
Chloroform	ug/L (ppb)	10	101	102	74-134	1
2-Butanone (MEK)	ug/L (ppb)	50	105	107	37-150	2
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	102	105	66-129	3
1,1,1-Trichloroethane	ug/L (ppb)	10	100	99	74 - 142	1
1,1-Dichloropropene	ug/L (ppb)	10	99	100	77-129	1
Carbon tetrachloride	ug/L (ppb)	10	103	106	75-158	3
Benzene	ug/L (ppb)	10	101	102	69-134	1
Trichloroethene	ug/L (ppb)	10	99	100	67-133	1
1,2-Dichloropropane	ug/L (ppb)	10	99	101	71-134	2
Bromodichloromethane	ug/L (ppb)	10	96 102	94	66-126	$\frac{2}{2}$
Dibromomethane 4-Methyl-2-pentanone	ug/L (ppb)	10 50	103 108	105 109	68-132 65-138	2
4-Metny1-2-pentanone cis-1,3-Dichloropropene	ug/L (ppb) ug/L (ppb)	50 10	97	98	74-140	1
Toluene	ug/L (ppb)	10	99	99	72-122	0
trans-1,3-Dichloropropene	ug/L (ppb)	10	90	89	80-136	1
1,1,2-Trichloroethane	ug/L (ppb)	10	97	100	75-124	3
2-Hexanone	ug/L (ppb)	50	103	106	60-136	3
1.3-Dichloropropane	ug/L (ppb)	10	98	100	76-126	2
Tetrachloroethene	ug/L (ppb)	10	102	103	76-121	1
Dibromochloromethane	ug/L (ppb)	10	92	93	84-133	1
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	101	102	82-115	1
Chlorobenzene	ug/L (ppb)	10	101	104	83-114	3
Ethylbenzene	ug/L (ppb)	10	97	99	77-124	2
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	96	96	84-127	0
m,p-Xylene	ug/L (ppb)	20	100	101	81-112	1
o-Xylene	ug/L (ppb)	10	98	99	81-121	1
Styrene	ug/L (ppb)	10 10	96 94	98 96	84-119 80-117	$\frac{2}{2}$
Isopropylbenzene Bromoform	ug/L (ppb) ug/L (ppb)	10	94 88	96 91	69-121	2 3
n-Propylbenzene	ug/L (ppb)	10	97	98	74-126	1
Bromobenzene	ug/L (ppb)	10	104	103	80-121	1
1,3,5-Trimethylbenzene	ug/L (ppb)	10	98	97	78-123	1
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	100	100	66-126	0
1,2,3-Trichloropropane	ug/L (ppb)	10	102	102	67-124	Õ
2-Chlorotoluene	ug/L (ppb)	10	99	97	77-127	2
4-Chlorotoluene	ug/L (ppb)	10	99	98	78-128	1
tert-Butylbenzene	ug/L (ppb)	10	97	97	80-123	0
1,2,4-Trimethylbenzene	ug/L (ppb)	10	95	95	79-122	0
sec-Butylbenzene	ug/L (ppb)	10	96	97	80-116	1
p-Isopropyltoluene	ug/L (ppb)	10	96	97	81-123	1
1,3-Dichlorobenzene	ug/L (ppb)	10	101	101	83-113	0
1,4-Dichlorobenzene	ug/L (ppb)	10	100	102	81-112	2
1,2-Dichlorobenzene	ug/L (ppb)	10	99	101	84-112	2
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	90	93	57-141	3
1,2,4-Trichlorobenzene	ug/L (ppb) ug/L (ppb)	10 10	92 89	93 92	72-130 53-141	1 3
Hexachlorobutadiene Naphthalene	ug/L (ppb) ug/L (ppb)	10	89 91	92 91	64-133	3 0
1,2,3-Trichlorobenzene	ug/L (ppb)	10	91 94	91 95	65-136	0
1, <b>2</b> ,0 11101000000000	(GLT (PPD)	10	01	00	00 100	1

### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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Report To Christy Du	itman		SAMPLI	ERS (signc	ature)	450	v	L.					<u></u> '_	]	Page #	#0 NAROUND '	f FIME
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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars		NWTPH-Gx	BTEX EPA 8021		VOCS EPA 8260 COMS AMORE EPA 8270				m	Ľ,	No	tes
KMW-04	OLAR	3/23/2021	1520	GW	18	X	Х	m		X X		X	X	X	$\times$	See Ren	vks #1-
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* Remarks											<u> </u>	ļ					
1. Johal Metals (As, Ca 2. Vulatile Futty Acids by EPA 410.4, SM 5220	r, Cu, Pb, Ho , SM 5560 F	, Ni, Zn) Biological Ex	by 6020 t	by SMS	<del>2108/</del>	EPA N	105	1+1	chan T	iet a	×494	n Di	mad	67	GP/	410.12	· , EPA v
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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: 103441 Work Order Number: 2103389

March 31, 2021

#### **Attention Michael Erdahl:**

Fremont Analytical, Inc. received 5 sample(s) on 3/24/2021 for the analyses presented in the following report.

Biochemical Oxygen Demand by SM 5210B Carbon Dioxide by SM 2320B/SM4500-CO2D 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 Metals by EPA Method 200.8 Total Alkalinity by SM 2320B Total Organic Carbon by SM 5310C

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,

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910

Original

Brianna Barnes Project Manager

DoD-ELAP Accreditation #79636 by PJLA, ISO/IEC 17025:2017 and QSM 5.3 for Environmental Testing ORELAP Certification: WA 100009 (NELAP Recognized) for Environmental Testing Washington State Department of Ecology Accredited for Environmental Testing, Lab ID C910



CLIENT: Project: Work Order:	Friedman & Bruya 103441 2103389	Work Order S	der Sample Summary				
Lab Sample ID	Client Sample ID	Date/Time Collected	Date/Time Received				
2103389-001	KMW-04	03/23/2021 3:20 PM	03/24/2021 9:46 AM				
2103389-002	KMW-06	03/23/2021 9:05 AM	03/24/2021 9:46 AM				
2103389-003	KMW-09	03/23/2021 11:30 AM	03/24/2021 9:46 AM				
2103389-004	KMW-10	03/23/2021 1:20 PM	03/24/2021 9:46 AM				
2103389-005	Duplicate 1	03/23/2021 9:40 AM	03/24/2021 9:46 AM				



**Case Narrative** 

WO#: **2103389** Date: **3/31/2021** 

CLIENT:Friedman & BruyaProject:103441

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 & Acronyms**



 WO#:
 2103389

 Date Reported:
 3/31/2021

### 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
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

Acronyms:

%Rec - Percent Recoverv **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 MCL - Maximum Contaminant Level 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



Client: Friedman & Bruya Project: 103441				Collectior	n Dat	<b>e:</b> 3/23/202	21 3:20:00 PM
Lab ID: 2103389-001 Client Sample ID: KMW-04				Matrix: W	ater		
Analyses	Result	RL	Qual	Units	DF	Dat	e Analyzed
Biochemical Oxygen Demand by	<u>SM 5210B</u>			Batcl	h ID:	R66256	Analyst: SS
Biochemical Oxygen Demand	12.9	2.00		mg/L	1	3/25/2	2021 11:15:00 AM
Dissolved Gases by RSK-175				Batcl	h ID:	R66194	Analyst: MS
Methane	0.260	0.00675		mg/L	1	3/29/2	2021 3:45:00 PM
Ethene	ND	0.0146		mg/L	1	3/29/2	2021 3:45:00 PM
Ethane	ND	0.0151		mg/L	1	3/29/2	2021 3:45:00 PM
Ion Chromatography by EPA Met	<u>hod 300.0</u>			Batcl	h ID:	31757	Analyst: SS
Nitrate (as N)	1.38	0.200	D	mg/L	2	3/24/2	2021 8:47:00 PM
Sulfate	40.5	3.00	D	mg/L	5	3/26/2	2021 5:30:00 PM
Dissolved Metals by EPA Method	200.8			Batcl	h ID:	31792	Analyst: TN
Aluminum	ND	100		µg/L	1	3/29/2	2021 3:22:04 PM
Calcium	16,900	525		µg/L	1	3/29/2	2021 3:22:04 PM
Magnesium	2,780	100		µg/L	1	3/29/2	2021 3:22:04 PM
Sodium	8,750	250		µg/L	1	3/29/2	2021 3:22:04 PM
Total Metals by EPA Method 200	<u>.8</u>			Batcl	h ID:	31762	Analyst: EH
Aluminum	ND	100		µg/L	1	3/25/2	2021 5:55:19 PM
Calcium	14,700	200		µg/L	1	3/25/2	2021 5:55:19 PM
Magnesium	2,620	100		µg/L	1	3/25/2	2021 5:55:19 PM
Sodium	8,370	200		µg/L	1	3/25/2	2021 5:55:19 PM
Total Organic Carbon by SM 5310	<u>)C</u>			Batcl	h ID:	R66258	Analyst: SS
Total Organic Carbon	5.08	0.500		mg/L	1	3/31/2	2021 10:10:00 AM
Total Alkalinity by SM 2320B				Batcl	h ID:	R66239	Analyst: WF
Alkalinity, Total (As CaCO3)	15.3	2.50		mg/L	1	3/31/2	2021 10:56:16 AM
Carbon Dioxide by SM 2320B/SM	4500-CO2D			Batcl	h ID:	R66240	Analyst: WF
Carbon Dioxide	41.9	2.50		mg/L	1	3/31/2	2021 10:56:42 AM



Client: Friedman & Bruya				Collection	Date:	3/23/2021 3:20:00 PM
Project: 103441 Lab ID: 2103389-001				Matrix: W	ater	
Client Sample ID: KMW-04 Analyses	Result	RL	Qual	Units	DF	Date Analyzed
		RL	Quai			
Chemical Oxygen Demand by S				Dato	IID. KC	
Chemical Oxygen Demand	12.6	10.0		mg/L	1	3/29/2021 3:28:06 PM



Client: Friedman & Bruya Project: 103441			(	Collectior	n Date: 3	3/23/20	21 9:05:00 AM				
Lab ID: 2103389-002 Client Sample ID: KMW-06			I	Matrix: W	ater						
Analyses	Result	RL	Qual	Units	DF	Da	te Analyzed				
Biochemical Oxygen Demand by SM 5210B Batch ID: R66256 Analyst: SS											
Biochemical Oxygen Demand NOTES:	39.5	2.00	Н	mg/L	1	3/25/	2021 11:15:00 AM				
All dilutions resulted in full oxygen depletion. equal to or greater than posted result.	Result calcul	ated using the s	smallest am	ount of sam	ple (large	st dilution	). True value				
Dissolved Gases by RSK-175				Batc	h ID: R6	6194	Analyst: MS				
Methane	1.38	0.0675	D	mg/L	10	3/29/	2021 4:06:00 PM				
Ethene	ND	0.0146		mg/L	1	3/29/	2021 3:47:00 PM				
Ethane	ND	0.0151		mg/L	1	3/29/	2021 3:47:00 PM				
Ion Chromatography by EPA Metho	<u>d 300.0</u>			Batc	h ID: 31	757	Analyst: SS				
Nitrate (as N)	ND	0.500	D	mg/L	5	3/24/	2021 9:56:00 PM				
Sulfate	121	12.0	D	mg/L	20	3/26/	2021 5:53:00 PM				
<b>NOTES:</b> Diluted due to high levels of non-target analy	tes.										
Dissolved Metals by EPA Method 20	<u>0.8</u>			Batc	h ID: 31	792	Analyst: TN				
Aluminum	ND	100		µg/L	1	3/29/	2021 3:49:54 PM				
Calcium	61,300	525		µg/L	1	3/29/	2021 3:49:54 PM				
Magnesium	14,600	100		µg/L	1		2021 3:49:54 PM				
Sodium	84,200	250		µg/L	1	3/29/	2021 3:49:54 PM				
Total Metals by EPA Method 200.8				Batc	h ID: 31	762	Analyst: EH				
Aluminum	303	100		μg/L	1	3/25/	2021 6:00:53 PM				
Calcium	54,100	200		µg/L	1	3/25/	2021 6:00:53 PM				
Magnesium	13,800	100		µg/L	1	3/25/	2021 6:00:53 PM				
Sodium	92,700	200		µg/L	1	3/25/	2021 6:00:53 PM				
Total Organic Carbon by SM 5310C				Batc	h ID: R6	6258	Analyst: SS				
Total Organic Carbon	157	2.50	D	mg/L	5	3/31/	2021 10:33:00 AM				
Total Alkalinity by SM 2320B				Batc	h ID: R6	6239	Analyst: WF				
Alkalinity, Total (As CaCO3)	162	2.50		mg/L	1	3/31/	2021 10:56:16 AM				



Client: Friedman & Bruya	Collection Date: 3/23/2021 9:05:00 AM							
Project: 103441								
Lab ID: 2103389-002				Matrix: W	ater			
Client Sample ID: KMW-06								
Analyses	Result	RL	Qual	Units	DF	Date Analyzed		
Carbon Dioxide by SM 2320B/	SM4500-CO2D			Batcl	n ID: Ré	66240 Analyst: WF		
Carbon Dioxide	264	2.50		mg/L	1	3/31/2021 10:56:42 AM		
Chemical Oxygen Demand by	<u>SM 5220D</u>			Batcl	n ID: Re	66180 Analyst: LB		
Chemical Oxygen Demand	98.0	10.0		mg/L	1	3/29/2021 3:28:06 PM		



Client: Friedman & Bruya Project: 103441				Collectior	n Date:	3/23/2021 11:30:00 AM
Lab ID: 2103389-003 Client Sample ID: KMW-09			I	Matrix: W	ater	
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Biochemical Oxygen Demand by	<u>SM 5210B</u>			Batc	h ID: R6	6256 Analyst: SS
Biochemical Oxygen Demand	11.5	2.00		mg/L	1	3/25/2021 11:15:00 AM
Dissolved Gases by RSK-175				Batc	h ID: Re	6194 Analyst: MS
Methane	0.700	0.0675	D	mg/L	10	3/29/2021 4:08:00 PM
Ethene	ND	0.0146		mg/L	1	3/29/2021 3:49:00 PM
Ethane	ND	0.0151		mg/L	1	3/29/2021 3:49:00 PM
Ion Chromatography by EPA Meth	<u>10d 300.0</u>			Batc	h ID: 31	757 Analyst: SS
Nitrate (as N)	ND	0.400	D	mg/L	4	3/24/2021 10:19:00 PM
Sulfate	58.2	6.00	D	mg/L	10	3/26/2021 6:16:00 PM
NOTES:						
Diluted due to high levels of non-target an	alytes.					
Dissolved Metals by EPA Method	<u>200.8</u>			Batc	h ID: 31	792 Analyst: TN
Aluminum	ND	100		µg/L	1	3/29/2021 3:55:28 PM
Calcium	31,500	525		µg/L	1	3/29/2021 3:55:28 PM
Magnesium	8,850	100		µg/L	1	3/29/2021 3:55:28 PM
Sodium	32,500	250		µg/L	1	3/29/2021 3:55:28 PM
Total Metals by EPA Method 200.	<u>8</u>			Batc	h ID: 31	762 Analyst: EH
Aluminum	ND	100		µg/L	1	3/25/2021 6:06:28 PM
Calcium	30,100	200		µg/L	1	3/25/2021 6:06:28 PM
Magnesium	8,750	100		µg/L	1	3/25/2021 6:06:28 PM
Sodium	30,400	200		µg/L	1	3/25/2021 6:06:28 PM
Total Organic Carbon by SM 5310	<u>C</u>			Batc	h ID: Re	6258 Analyst: SS
Total Organic Carbon	19.0	0.500		mg/L	1	3/31/2021 10:56:00 AM
Total Alkalinity by SM 2320B				Batc	h ID: Re	6239 Analyst: WF
Alkalinity, Total (As CaCO3)	110	2.50		mg/L	1	3/31/2021 10:56:16 AM



Client: Frie	dman & Bruya	Collection Date: 3/23/2021 11:30:00 AM							
Project: 1034	441								
Lab ID: 2103	3389-003				Matrix: W	ater			
Client Sample	e ID: KMW-09								
Analyses		Result	RL	Qual	Units	DF	Date Analyzed		
Carbon Diox	ide by SM 2320B/SM	1500-CO2D			Batc	h ID: R6	6240 Analyst: WF		
Carbon Dioxid	e	115	2.50		mg/L	1	3/31/2021 10:56:42 AM		
<u>Chemical Ox</u>	kygen Demand by SM	<u>5220D</u>			Batc	h ID: R6	6180 Analyst: LB		
Chemical Oxy	gen Demand	59.1	10.0		mg/L	1	3/29/2021 3:28:06 PM		



Client: Friedman & Bruya Project: 103441				Collectior	n Date: 3	3/23/2021 1:20:00 PM
Lab ID: 2103389-004 Client Sample ID: KMW-10			I	Matrix: W	ater	
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Biochemical Oxygen Demand by Si	<u>M 5210B</u>			Batc	h ID: R6	6256 Analyst: SS
Biochemical Oxygen Demand NOTES:	38.9	2.00		mg/L	1	3/25/2021 11:15:00 AM
All dilutions resulted in full oxygen depletion equal to or greater than posted result.	Result calcul	ated using the s	smallest am	ount of sam	ple (large	st dilution). True value
Dissolved Gases by RSK-175				Batc	h ID: R6	6194 Analyst: MS
Methane	5.79	0.270	D	mg/L	40	3/29/2021 4:11:00 PM
Ethene Ethane	ND ND	0.0146 0.0151		mg/L mg/L	1 1	3/29/2021 3:51:00 PM 3/29/2021 3:51:00 PM
Ion Chromatography by EPA Metho	od 300.0			Batc	h ID: 31	757 Analyst: SS
Nitrate (as N)	ND	0.500	D	mg/L	5	3/24/2021 10:42:00 PM
Nitrate (as N)	ND	0.200	DH	mg/L	2	3/26/2021 7:25:00 PM
Sulfate NOTES:	1.77	1.20	D	mg/L	2	3/26/2021 7:25:00 PM
Diluted due to high levels of non-target analy	/tes.					
Dissolved Metals by EPA Method 2	<u>00.8</u>			Batc	h ID: 31	792 Analyst: TN
Aluminum	ND	100		µg/L	1	3/29/2021 4:01:02 PM
Calcium	33,600	525		µg/L	1	3/29/2021 4:01:02 PM
Magnesium Sodium	7,420 62,900	100 250		μg/L μg/L	1 1	3/29/2021 4:01:02 PM 3/29/2021 4:01:02 PM
Total Metals by EPA Method 200.8	,				h ID: 31	
Aluminum	156	100		µg/L	1	3/25/2021 6:12:02 PM
Calcium	35,500	200		µg/L	1	3/25/2021 6:12:02 PM
Magnesium	8,150	100		µg/L	1	3/25/2021 6:12:02 PM
Sodium	70,300	200		µg/L	1	3/25/2021 6:12:02 PM
Total Organic Carbon by SM 5310C				Batc	h ID: R6	6258 Analyst: SS
Total Organic Carbon	32.4	0.500		mg/L	1	3/31/2021 11:19:00 AM



Client: Friedman & Bruya				Collectior	Date	<b>e:</b> 3/23/202	21 1:20:00 PM	
Project: 103441 Lab ID: 2103389-004				Matrix: W	ater			
Client Sample ID: KMW-10 Analyses	Result	RL	Qual	Units	DF	Dat	e Analyzed	
Total Alkalinity by SM 2320B				Batcl	n ID: I	R66239	Analyst: WF	_
Alkalinity, Total (As CaCO3)	215	2.50		mg/L	1	3/31/2	2021 10:56:16 AM	
Carbon Dioxide by SM 2320B/SM4	500-CO2D			Batcl	n ID: I	R66240	Analyst: WF	
Carbon Dioxide	203	2.50		mg/L	1	3/31/2	2021 10:56:42 AM	
Chemical Oxygen Demand by SM	<u>5220D</u>			Batcl	n ID: I	R66180	Analyst: LB	
Chemical Oxygen Demand	127	10.0		mg/L	1	3/29/2	2021 3:28:06 PM	



Client: Friedman & Bruya Project: 103441			(	Collectior	n Date: 3	3/23/20	21 9:40:00 AM
Lab ID: 2103389-005			I	Matrix: W	ater		
Client Sample ID: Duplicate 1 Analyses	Result	RL	Qual	Units	DF	Da	te Analyzed
Biochemical Oxygen Demand by	<u>SM 5210B</u>			Batc	h ID: R6	6256	Analyst: SS
Biochemical Oxygen Demand NOTES:	39.4	2.00	Н	mg/L	1	3/25/	2021 11:15:00 AM
All dilutions resulted in full oxygen deplet equal to or greater than posted result.	tion. Result calcula	ted using the	smallest am	ount of sam	ple (larges	st dilutior	n). True value
Dissolved Gases by RSK-175				Batc	h ID: R6	6194	Analyst: MS
Methane	1.40	0.0675	D	mg/L	10	3/29/	2021 4:13:00 PM
Ethene	ND	0.0146		mg/L	1		2021 3:53:00 PM
Ethane	ND	0.0151		mg/L	1	3/29/	2021 3:53:00 PM
Ion Chromatography by EPA Me	<u>thod 300.0</u>			Batc	h ID: 317	757	Analyst: SS
Nitrate (as N)	ND	0.500	D	mg/L	5	3/24/	2021 11:05:00 PM
Sulfate	135	12.0	D	mg/L	20	3/26/	2021 7:48:00 PM
<b>NOTES:</b> Diluted due to high levels of non-target a	nalytes.						
Dissolved Metals by EPA Method	<u>d 200.8</u>			Batc	h ID: 317	792	Analyst: TN
Aluminum	ND	100		µg/L	1	3/29/	2021 4:06:36 PM
Calcium	56,400	525		µg/L	1		2021 4:06:36 PM
Magnesium	13,800	100		µg/L	1		2021 4:06:36 PM
Sodium	79,400	250		µg/L	1	3/29/	2021 4:06:36 PM
Total Metals by EPA Method 200	<u>).8</u>			Batc	h ID: 317	762	Analyst: EH
Aluminum	309	100		µg/L	1	3/25/	2021 6:28:48 PM
Calcium	54,400	200		µg/L	1	3/25/	2021 6:28:48 PM
Magnesium	13,500	100		µg/L	1		2021 6:28:48 PM
Sodium	90,600	200		µg/L	1	3/25/	2021 6:28:48 PM
Total Organic Carbon by SM 531	<u>0C</u>			Batc	h ID: R6	6258	Analyst: SS
Total Organic Carbon	157	2.50	D	mg/L	5	3/31/	2021 11:42:00 AM
Total Alkalinity by SM 2320B				Batc	h ID: R6	6239	Analyst: WF
Alkalinity, Total (As CaCO3)	162	2.50		mg/L	1	3/31/	2021 10:56:16 AM



Client: Friedman & Bruya				Collectior	Date:	3/23/2021 9:40:00 AM
Project: 103441 Lab ID: 2103389-005 Client Sample ID: Duplicate 1				Matrix: W	ater	
Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Carbon Dioxide by SM 2320B/S	M4500-CO2D			Batcl	n ID: R6	6240 Analyst: WF
Carbon Dioxide	255	2.50		mg/L	1	3/31/2021 10:56:42 AM
Chemical Oxygen Demand by S	<u>SM 5220D</u>			Batcl	n ID: R6	6180 Analyst: LB
Chemical Oxygen Demand	119	10.0		mg/L	1	3/29/2021 3:28:06 PM



CLIENT: Frie	)3389 edman & Bruya 3441						Bioche	QC S mical Oxyg	SUMMAI en Demar		-
Sample ID: MB-66256	SampType:	MBLK		Units: <b>mg/L</b>			e: <b>3/25/20</b>		RunNo: 662		
Client ID: MBLKW Analyte	Batch ID: R	R66256 Result RI	_ SPK value	SPK Ref Val	%REC	Analysis Date		<b>21</b> RPD Ref Val	SeqNo: 133 %RPD	32976 RPDLimit	Qual
Biochemical Oxygen De	mand	ND 2.00	)								
Sample ID: LCS-66256	SampType:	LCS		Units: mg/L		Prep Date	e: <b>3/25/20</b>	21	RunNo: 662	256	
Client ID: LCSW	Batch ID:	R66256				Analysis Date	e: <b>3/25/20</b>	21	SeqNo: 133	32977	
Analyte	R	Result RI	_ SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Biochemical Oxygen De	mand	194 2.00	) 198.0	0	97.9	84.6	115.4				
Sample ID: 2103389-00	<b>1BDUP</b> SampType:	DUP		Units: mg/L		Prep Date	e: <b>3/25/20</b>	21	RunNo: 662	256	
Client ID: KMW-04	Batch ID:	R66256				Analysis Date	e: <b>3/25/20</b>	21	SeqNo: 133	32979	
Analyte	R	Result RI	_ SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Biochemical Oxygen De	mand	12.4 2.00	)					12.92	3.79	20	



Work Order: CLIENT: Project:	2103389 Friedman & 103441	Bruya									SUMMAI al Alkalini		
Sample ID: MB-R66	6239	SampType	MBLK			Units: <b>mg/L</b>		Prep Da	te: 3/31/20	21	RunNo: 662	239	
Client ID: MBLKV	v	Batch ID:	R66239					Analysis Da	te: 3/31/20	21	SeqNo: 133	32672	
Analyte		F	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-R6	6239	SampType	LCS			Units: mg/L		Prep Da	te: 3/31/20	21	RunNo: 662	239	
Client ID: LCSW		Batch ID:	R66239					Analysis Da	te: 3/31/20	21	SeqNo: 133	32673	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As	CaCO3)		101	2.50	100.0	0	101	99.1	105				
Sample ID: 210338	9-001BDUP	SampType	DUP			Units: mg/L		Prep Da	te: 3/31/20	21	RunNo: 662	239	
Client ID: KMW-0	4	Batch ID:	R66239					Analysis Da	te: 3/31/20	21	SeqNo: 133	32675	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As	CaCO3)		15.8	2.50						15.28	3.08	20	
Sample ID: 210339	8-006BDUP	SampType	DUP			Units: mg/L		Prep Da	te: 3/31/20	21	RunNo: 662	239	
Client ID: BATCH		Batch ID:	R66239					Analysis Da	te: 3/31/20	21	SeqNo: 133	32796	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As	CaCO3)		110	2.50						105.0	4.44	20	



CLIENT:	2103389 Friedman & B	ruya						C	arbon I	QC S Dioxide by	SUMMAI		
,	103441												0015
Sample ID: MB-R662	240	SampType	BLK			Units: mg/L		Prep Date:	3/31/202	21	RunNo: 662	40	
Client ID: MBLKW	,	Batch ID:	R66240					Analysis Date:	3/31/202	21	SeqNo: 133	2664	
Analyte		I	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As C	CaCO3)		ND	2.50									
Carbon Dioxide			ND	2.50									
Sample ID: LCS-R66	6240	SampType	LCS			Units: mg/L		Prep Date:	3/31/202	21	RunNo: 662	40	
Client ID: LCSW		Batch ID:	R66240					Analysis Date:	3/31/202	21	SeqNo: 133	2665	
Analyte		I	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Alkalinity, Total (As C	CaCO3)		101	2.50	100.0	0	101	94.3	116				
Sample ID: 2103389	-001CDUP	SampType	DUP			Units: mg/L		Prep Date:	3/31/202	21	RunNo: 662	40	
Client ID: KMW-04	Ļ	Batch ID:	R66240					Analysis Date:	3/31/202	21	SeqNo: 133	2667	
Analyte		I	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Carbon Dioxide			42.6	2.50						41.91	1.69	20	



CLIENT: F	2103389 Friedman & I 103441	Bruya							Che	QC S mical Oxyg	SUMMAI en Demar		
Sample ID: MB-R661	180	SampType	: MBLK			Units: <b>mg/L</b>		Prep Date	e: <b>3/29/20</b>	)21	RunNo: 661	80	
Client ID: MBLKW		Batch ID:	R66180					Analysis Date	e: <b>3/29/20</b>	)21	SeqNo: 133	81561	
Analyte		l	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen De	mand		ND	10.0									
Sample ID: LCS-R66	5180	SampType	E LCS			Units: <b>mg/L</b>		Prep Date	e: <b>3/29/20</b>	)21	RunNo: 661	80	
Client ID: LCSW		Batch ID:	R66180					Analysis Date	e: <b>3/29/20</b>	021	SeqNo: 133	81562	
Analyte		l	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen De	mand		76.5	10.0	75.00	0	102	87.2	113				
Sample ID: 2103360-	-001BDUP	SampType	: DUP			Units: mg/L		Prep Date	e: <b>3/29/20</b>	)21	RunNo: 661	80	
Client ID: BATCH		Batch ID:	R66180					Analysis Date	e: <b>3/29/20</b>	)21	SeqNo: 133	81564	
Analyte		I	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen De	mand		25.8	10.0						26.46	2.66	30	
Sample ID: 2103360-	-001BMS	SampType	: MS			Units: mg/L		Prep Date	e: <b>3/29/20</b>	)21	RunNo: 661	80	
Client ID: BATCH		Batch ID:	R66180					Analysis Date	e: <b>3/29/20</b>	)21	SeqNo: 133	81565	
Analyte		I	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen De	mand		97.3	10.0	75.00	26.46	94.5	60.3	143				
Sample ID: 2103360-	-001BMSD	SampType	: MSD			Units: <b>mg/L</b>		Prep Date	e: <b>3/29/20</b>	)21	RunNo: 661	80	
Client ID: BATCH		Batch ID:	R66180					Analysis Date	e: <b>3/29/20</b>	)21	SeqNo: 133	81566	
Analyte		I	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Chemical Oxygen De	mand		95.9	10.0	75.00	26.46	92.6	60.3	143	97.33	1.44	30	



Work Order:         2103389           CLIENT:         Friedman 8           Project:         103441	& Bruya						Ion Chi	QC S omatogra	SUMMAI		
Sample ID: MB-31757	SampType: MBLK			Units: <b>mg/L</b>		Prep Date	3/24/202	21	RunNo: 661	96	
Client ID: MBLKW	Batch ID: 31757					Analysis Date	3/24/202	21	SeqNo: 133	2067	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	0.100									
Sulfate	ND	0.600									
Sample ID: LCS-31757	SampType: LCS			Units: mg/L		Prep Date	3/24/202	21	RunNo: 661	96	
Client ID: LCSW	Batch ID: 31757					Analysis Date	3/24/202	21	SeqNo: 133	2068	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.689	0.100	0.7500	0	91.9	90	110				
Sulfate	3.52	0.600	3.750	0	93.8	90	110				
Sample ID: 2103369-001BDUP	SampType: <b>DUP</b>			Units: mg/L		Prep Date	: 3/24/202	21	RunNo: 661	96	
Client ID: BATCH	Batch ID: 31757					Analysis Date	3/24/202	21	SeqNo: 133	2070	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	ND	0.100						0		20	Н
Sulfate	119	0.600						118.4	0.0616	20	Е
<b>NOTES:</b> E - Estimated value. The amou	nt exceeds the linear working	ng range of	the instrument								
Sample ID: 2103369-001BMS	SampType: <b>MS</b>			Units: mg/L		Prep Date	: 3/24/202	21	RunNo: 661	96	
Client ID: BATCH	Batch ID: 31757					Analysis Date	3/24/202	21	SeqNo: 133	2071	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)	0.693	0.100	0.7500	0	92.4	80	120				Н
Sulfate	122	0.600	3.750	118.4	83.3	80	120				Е

NOTES:

E - Estimated value. The amount exceeds the linear working range of the instrument.



Work Order: CLIENT: Project:	2103389 Friedman & 103441	Bruya							lon Ch	QC S romatogra	SUMMAI		-
Sample ID: 210336	69-001BMSD	SampType	MSD			Units: mg/L		Prep Dat	e: <b>3/24/20</b>	)21	RunNo: 661	196	
Client ID: BATCH	4	Batch ID:	31757					Analysis Dat	e: <b>3/24/20</b>	)21	SeqNo: 133	32072	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)			0.680	0.100	0.7500	0	90.7	80	120	0.6930	1.89	20	Н
Sulfate NOTES: S - Analyte conc E - Estimated va		0	•		, ( ,	118.4 	73.3	80	120	121.6	0.311	20	ES
Sample ID: 210339	98-001BDUP	SampType	DUP			Units: mg/L		Prep Dat	e: <b>3/24/20</b>	)21	RunNo: 661	196	
Client ID: BATCH	4	Batch ID:	31757					Analysis Dat	e: <b>3/25/20</b>	)21	SeqNo: 133	32089	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)			1.72	0.200						1.736	0.694	20	D
Sulfate			19.2	1.20						19.26	0.448	20	D
Sample ID: 210339	98-001BMS	SampType	MS			Units: mg/L		Prep Dat	e: <b>3/24/20</b>	)21	RunNo: 661	196	
Client ID: BATCH	4	Batch ID:	31757					Analysis Dat	e: <b>3/25/20</b>	)21	SeqNo: 133	32090	
Analyte		F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Nitrate (as N)			2.83	0.200	1.500	1.736	73.2	80	120				DS
Sulfate			27.6	1.20	7.500	19.26	112	80	120				D

NOTES:

S - Outlying spike recovery(ies) observed.



Work Order: 21033								QC S			POR [.]
	nan & Bruya							Total Orga	nic Carbo	n hy SM	5310
Project: 10344	1							rotar orga			5510
Sample ID: MB-R66258	SampType: MBLK			Units: <b>mg/L</b>		Prep Dat	e: <b>3/30/20</b>	21	RunNo: 662	258	
Client ID: MBLKW	Batch ID: R66258					Analysis Dat	e: <b>3/30/20</b>	21	SeqNo: 133	33039	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	ND	0.500									
Sample ID: 2103389-001DI	DUP SampType: DUP			Units: mg/L		Prep Dat	e: 3/30/20	21	RunNo: 662	258	
Client ID: KMW-04	Batch ID: R66258					Analysis Dat	e: <b>3/30/20</b>	21	SeqNo: 133	33042	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon NOTES:	5.09	0.500						5.160	1.42	20	Q
Q - Indicates an analyte	vith a continuing calibration that d	oes not me	et established	acceptance criteria							
Sample ID: 2103389-001DI	<b>MS</b> SampType: <b>MS</b>			Units: <b>mg/L</b>		Prep Dat	e: <b>3/30/20</b>	21	RunNo: 662	258	
Client ID: KMW-04	Batch ID: R66258					Analysis Dat	e: <b>3/30/20</b>	21	SeqNo: 133	33043	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	10.0	0.500	5.000	5.160	96.8	69.1	120				
Sample ID: 2103389-001DI	ISD SampType: MSD			Units: mg/L		Prep Dat	e: <b>3/30/20</b>	21	RunNo: 662	258	
Client ID: KMW-04	Batch ID: R66258					Analysis Dat	e: <b>3/30/20</b>	21	SeqNo: 13	33044	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon	9.90	0.500	5.000	5.160	94.7	69.1	120	9.998	1.02	30	
Sample ID: 2103494-005AI	DUP SampType: DUP			Units: mg/L		Prep Dat	e: <b>3/31/20</b>	21	RunNo: 662	258	
Client ID: BATCH	Batch ID: R66258					Analysis Dat	e: <b>3/31/20</b>	21	SeqNo: 133	33056	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Total Organic Carbon NOTES:	53.2	0.500						53.31	0.186	20	E

E - Estimated value. The amount exceeds the linear working range of the instrument.



Work Order: CLIENT: Project:	2103389 Friedman & 103441	a Bruya								SUMMAF		
Sample ID: 21034 Client ID: BATC		SampType: <b>MS</b> Batch ID: <b>R66258</b>			Units: <b>mg/L</b>			te: 3/31/2021 te: 3/31/2021		RunNo: 662 SeqNo: 133		
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD R	ef Val	%RPD	RPDLimit	Qual
Total Organic Carb <b>NOTES:</b> E - Estimated va		57.7 It exceeds the linear workir	0.500	5.000 the instrument	53.31	87.3	69.1	120				E
Sample ID: LCSR		SampType: LCS Batch ID: R66258			Units: <b>mg/L</b>			te: 3/31/2021 te: 3/31/2021		RunNo: 662 SeqNo: 133		
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit RPD R	ef Val	%RPD	RPDLimit	Qual
Total Organic Carb	oon	4.92	0.500	5.000	0	98.4	89.3	113				

Fremont
Analytical

Work Order:	2103389									QC 9	SUMMAI	RY REF	POR
CLIENT:	Friedman &	Bruya							D'-				
Project:	103441								DIS	solved Me	tais by EP	A Method	a 200.
Sample ID: MB-31	792	SampType	e: MBLK			Units: µg/L		Prep Dat	e: <b>3/29/20</b>	21	RunNo: 661	85	
Client ID: MBLK	N	Batch ID:	31792					Analysis Dat	e: <b>3/29/20</b>	21	SeqNo: 133	31781	
Analyte			Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			ND	100									
Calcium			ND	525									
Magnesium			ND	100									
Sodium			ND	250									
Sample ID: LCS-3	1792	SampType	e: LCS			Units: µg/L		Prep Dat	e: <b>3/29/20</b>	21	RunNo: 661	85	
Client ID: LCSW		Batch ID:	31792					Analysis Dat	e: <b>3/29/20</b>	21	SeqNo: 133	31784	
Analyte			Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			929	100	1,000	0	92.9	85	115				
Calcium			1,040	525	1,000	0	104	50	150				
Magnesium			908	100	1,000	0	90.8	50	150				
Sodium			955	250	1,000	0	95.5	50	150				
Sample ID: 210338	9-001FDUP	SampType	e: DUP			Units: µg/L		Prep Dat	e: <b>3/29/20</b>	21	RunNo: 661	85	
Client ID: KMW-	)4	Batch ID:	31792					Analysis Dat	e: <b>3/29/20</b>	21	SeqNo: 133	1786	
Analyte			Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			ND	100						0		30	
Calcium			16,100	525						16,870	4.74	30	
Magnesium			2,550	100						2,779	8.57	30	
Sodium			8,160	250						8,750	6.98	30	
Sample ID: 210338	9-001FMS	SampType	e: MS			Units: µg/L		Prep Dat	e: <b>3/29/20</b>	21	RunNo: 661	85	
Client ID: KMW-	)4	Batch ID:	31792					Analysis Dat	e: <b>3/29/20</b>	21	SeqNo: 133	1787	
Analyte			Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum			5,230	100	5,000	0	105	50	150				

## Original



Work Ord	der:	2103389									00.5	SUMMA		ORT
CLIENT:		Friedman &	Bruya											
Project:		103441								Dis	solved Met	als by EP	A Method	1 200.8
Sample ID: 2	2103389	9-001FMS	SampType	MS			Units: µg/L		Prep Date	e: <b>3/29/20</b>	21	RunNo: 661	185	
Client ID:	KMW-04	4	Batch ID:	31792					Analysis Date	e: <b>3/29/20</b>	21	SeqNo: 133	31787	l
Analyte			F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Magnesium				7,500	100	5,000	2,779	94.5	70	130				
Sodium			1	3,500	250	5,000	8,750	95.1	50	150				
Sample ID: 2	2103389	9-001FMSD	SampType	MSD			Units: µg/L		Prep Date	e: <b>3/29/20</b>	21	RunNo: 661	185	
Client ID:	KMW-04	4	Batch ID:	31792					Analysis Date	e: <b>3/29/20</b>	21	SeqNo: 133	31788	
Analyte			F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum				5,030	100	5,000	0	101	50	150	5,232	3.91	30	
Calcium			2	1,600	525	5,000	16,870	94.9	50	150	21,200	1.97	30	
Magnesium				7,480	100	5,000	2,779	94.0	70	130	7,504	0.369	30	
Sodium			1	3,600	250	5,000	8,750	96.4	50	150	13,510	0.468	30	
Sample ID:	MB-317	91FB	SampType	MBLK			Units: µg/L		Prep Date	e: <b>3/29/20</b>	21	RunNo: 661	185	
Client ID:	MBLKW	I	Batch ID:	31792					Analysis Date	e: <b>3/29/20</b>	21	SeqNo: 133	31804	
Analyte			F	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum				ND	100									
Calcium				ND	525									
Magnesium				ND	100									
Sodium				ND	250									
Analyte Aluminum Calcium Magnesium				Result ND ND ND	100 525 100	SPK value	SPK Ref Val	%REC						

Fremont
Analytical

	103389 riedman & Bruya 03441								-	SUMMAI		
Sample ID: MB-31762	SampT	/pe: MBLK			Units: µg/L		Prep Da	te: 3/25/20	21	RunNo: 661	117	
Client ID: MBLKW	Batch I	D: 31762					Analysis Da	te: 3/25/20	21	SeqNo: 133	30417	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		ND	100									
Calcium		ND	200									
Magnesium		ND	100									
Sodium		ND	200									
Sample ID: LCS-3176	2 SampT	/pe: <b>LCS</b>			Units: µg/L		Prep Da	te: 3/25/20	21	RunNo: 661	117	
Client ID: LCSW	Batch I	D: 31762					Analysis Da	te: 3/25/20	21	SeqNo: 133	30418	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		1,020	100	1,000	0	102	85	115				
Calcium		969	200	1,000	0	96.9	50	150				
Magnesium		948	100	1,000	0	94.8	50	150				
Sodium		1,090	200	1,000	0	109	50	150				
Sample ID: 2103367-0	001BDUP SampT	/pe: DUP			Units: µg/L		Prep Da	te: 3/25/20	21	RunNo: 661	117	
Client ID: BATCH	Batch I	D: 31762					Analysis Da	te: 3/25/20	21	SeqNo: 133	30420	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		693	100						736.6	6.11	30	
Calcium		1,090	200						1,196	9.45	30	
Magnesium		911	100						883.7	3.08	30	
Sodium NOTES:		129,000	200						120,900	6.45	30	E
	. The amount exceeds t	ne linear workin	ig range of t	he instrument	t.							
Sample ID: 2103367-0	001BMS SampT	/pe: <b>MS</b>			Units: µg/L		Prep Da	te: 3/25/20	21	RunNo: 661	117	
Client ID: BATCH	Batch I	D: <b>31762</b>					Analysis Da	te: 3/25/20	21	SeqNo: 133	30421	
Analyte		Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Aluminum		5,710	100	5,000	736.6	99.5	70	130				

QC SUMMARY REPORT

Total Metals by EPA Method 200.8



CLIENT: Friedman & Bruya

#### **Project:** 103441

<b>Project:</b> 103441									•		
Sample ID: 2103367-001BMS	SampType: MS			Units: µg/L		Prep Da	te: 3/25/20	21	RunNo: 661	17	
Client ID: BATCH	Batch ID: 31762					Analysis Da	te: 3/25/20	21	SeqNo: 133	80421	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Calcium	5,950	200	5,000	1,196	95.1	50	150				
Magnesium	5,680	100	5,000	883.7	96.0	70	130				
Sodium	121,000	200	5,000	120,900	-5.04	50	150				ES

#### NOTES:

S - Analyte concentration was too high for accurate spike recovery(ies).

E - Estimated value. The amount exceeds the linear working range of the instrument.

Sample ID: 2103367-001BMSD SampType: MSD				Units: µg/L Pre			Prep Date: 3/25/2021			RunNo: 66117		
Client ID: BATCH	Batch ID: 31762					Analysis Date: 3/25/2021				SeqNo: 1330422		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual	
Aluminum	5,590	100	5,000	736.6	97.0	70	130	5,712	2.20	30		
Calcium	5,850	200	5,000	1,196	93.0	50	150	5,951	1.77	30		
Magnesium	5,600	100	5,000	883.7	94.3	70	130	5,685	1.52	30		
Sodium	127,000	200	5,000	120,900	113	50	150	120,600	4.78	30	Е	

#### NOTES:

E - Estimated value. The amount exceeds the linear working range of the instrument.



Work Order:	2103389									2.00	SUMMAI	RY RFF	OR.
CLIENT:	Friedman &	Bruya											
Project:	103441									Diss	solved Gas	ses by R	5K-17
Sample ID: LCS-R	866194	SampType	e: LCS			Units: mg/L		Prep Dat	te: 3/29/20	)21	RunNo: 661	194	
Client ID: LCSW	1	Batch ID:	R66194					Analysis Dat	te: <b>3/29/20</b>	)21	SeqNo: 133	31999	
Analyte			Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vethane			987	0.00675	1,000	0	98.7	66.7	141				
Ethene			987	0.0146	1,000	0	98.7	68.6	139				
Ethane			988	0.0151	1,000	0	98.8	69.3	136				
Sample ID: MB-R	66194	SampType	e: MBLK			Units: mg/L		Prep Dat	te: <b>3/29/20</b>	)21	RunNo: 661	194	
Client ID: MBLK	W	Batch ID:	R66194					Analysis Dat	te: 3/29/20	)21	SeqNo: 133	32000	
Analyte			Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Methane			ND	0.00675									
Ethene			ND	0.0146									
Ethane			ND	0.0151									
Sample ID: 21033	89-005AREP	SampType	e: REP			Units: mg/L		Prep Dat	te: 3/29/20	)21	RunNo: 661	194	
Client ID: Duplic	cate 1	Batch ID:	R66194					Analysis Dat	te: 3/29/20	)21	SeqNo: 133	31973	
Analyte			Result	RL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	RPD Ref Val	%RPD	RPDLimit	Qual
Vethane			1.43	0.00675						1.652	14.1	30	E
Ethene			ND	0.0146						0		30	
Ethane			ND	0.0151						0		30	
NOTES													

#### NOTES:

E - Estimated value. The amount exceeds the linear working range of the instrument.



# Sample Log-In Check List

Client Name: FB	Work Order Numb	er: 2103389	
Logged by: Carissa True	Date Received:	3/24/2021	9:46:00 AM
Chain of Custody			
1. Is Chain of Custody complete?	Yes 🗹	No 🗌	Not Present
2. How was the sample delivered?	<u>Client</u>		
Log In			
3. Coolers are present?	Yes 🖌	No 🗌	NA 🗌
4. Shipping container/cooler in good condition?	Yes 🗹	No 🗌	
<ol> <li>Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)</li> </ol>	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 🗌	
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 Pho	one 🗌 Fax	In Person
Regarding:			
Client Instructions:			

#### Item Information

Item #	Temp °C
Sample 1	1.1

* Note: DoD/ELAP and TNI require items to be received at 4°C +/- 2°C

#### 2103589 SUBCONTRACT SAMPLE CHAIN OF CUSTODY Page # ____ l SUBCONTRACTER From-+ TURNAROUND TIME Send Report To Michael Erdahl Page 30 of 30 Standard TAT PO# PROJECT NAME/NO. Friedman and Bruya, Inc. $\Box$ RUSH Company B-201 103441 Rush charges authorized by: 3012 16th Ave W Address SAMPLE DISPOSAL REMARKS □ Dispose after 30 days City, State, ZIP_Seattle, WA 98119 □ Return samples Please Email Results Phone # (206) 285-8282 merdahl@friedmanandbruya.com □ Will call with instructions ANALYSES REQUESTED COZ Dioxins/Furans Volutile Fatty Acrine VPH Total + Disculated Alkelinitz 王王 # of Lab Date Time Nitak MS, AI, No Notes Sample ID Matrix SFI 12S Sulfle TOC Sampled Sampled jars ID CoD BOD x 1520 × KMW-04 3/23/21 water × X x × x х 0905 × × KMW-06 × × × X x × x $\mathbf{k}$ $\mathbf{x}$ (130 × X * x × × KMW - 09 × Y × KMW-10 × × 1320 × × × × × x 5 × 8 × y × 0940 X Dolrate × i. 5 TIME COMPANY DATE PRINT NAME Friedman & Bruya, Inc. SIGNATURE Relinquished by Michael Erdahl Friedman & Bruya 3/24/21 0755 3012 16th Avenue West 0946 Received by: FAI Seattle, WA 98119-2029 Roan Strell 3/24/21 Ryon Litter Relinquished by: Ph. (206) 285-8282 Received by: Fax (206) 283-5044



Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664

Professional Analytical Services

Apr 8 2021 Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL

Dear MICHAEL ERDAHL:

Enclosed please find the analytical data for your 103441 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
KMW-04	Water	21-A003778	Actc Acd
KMW-06	Water	21-A003779	Actc Acd
KMW-09	Water	21-A003780	Actc Acd
KMW-10	Water	21-A003781	Actc Acd
DUPLICATE 1	Water	21-A003782	Actc Acd

Your samples were received on Wednesday, March 24, 2021. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,

aron W Aaron W. Young

Vice President

PO Number: B-194

BACT = Bacteriological CONV = Conventionals MET = Metals ORG = Organics NUT=Nutrients **DEM=Demand** 

MIN=Minerals

Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 www.amtestlab.com



Professional Analytical Services

### **ANALYSIS REPORT**

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL Project Name: 103441 PO Number: B-194 All results reported on an as received basis. Date Received: 03/24/21 Date Reported: 4/ 8/21

AMTEST Identification Number	21-A003778
Client Identification	KMW-04
Sampling Date	03/23/21, 15:20

#### **Organic Acids**

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Organic Acid (as Acetic)	< 0.1	mg/l		0.1	EPA 300.0 mod	KS	04/05/21

AMTEST Identification Number	21-A003779
Client Identification	KMW-06
Sampling Date	03/23/21, 09:05

## **Organic Acids**

PARAMETER	RESULT	UNITS		D.L.	METHOD	ANALYST	DATE
Organic Acid (as Acetic)	< 0.1	mg/l		0.1	EPA 300.0 mod	KS	04/05/21

AMTEST Identification Number	21-A003780
Client Identification	KMW-09
Sampling Date	03/23/21, 11:30

## **Organic Acids**

PARAMETER	RESULT	UNITS	Q D.L.		METHOD	ANALYST	DATE	
Organic Acid (as Acetic)	< 0.1	mg/l		0.1	EPA 300.0 mod	KS	04/05/21	

AMTEST Identification Number	21-A003781
Client Identification	KMW-10
Sampling Date	03/23/21, 13:20

### **Organic Acids**

PARAMETER	RESULT UNITS		Q	D.L.	METHOD	ANALYST	DATE	
Organic Acid (as Acetic)	< 0.1	mg/l		0.1	EPA 300.0 mod	KS	04/05/21	

AMTEST Identification Number	21-A003782
Client Identification	DUPLICATE 1
Sampling Date	03/23/21, 09:40

## **Organic Acids**

PARAMETER	RESULT UNITS Q		Q	D.L.	METHOD	ANALYST	DATE	
Organic Acid (as Acetic)	< 0.1	mg/l		0.1	EPA 300.0 mod	KS	04/05/21	

on w M Aardn W. Young Vice President

Am Test Inc. 13600 NE 126th PL Suite C Kirkland, WA, 98034 (425) 885-1664 www.amtestlab.com



QC Summary for sample numbers: 21-A003778 to 21-A003782

#### DUPLICATES

SAMPLE #  ANALYTE	UNITS	SAMPLE VAL	UE  DUP VAL	UE F	RPD
21-A003783 Organic Acid (as Acetic)	mg/l	< 0.1	< 0.1		
MATRIX SPIKES					
SAMPLE # ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
21-A003783 Organic Acid (as Acetic)	mg/l	< 0.1	1.92	2.00	96.00 %
STANDARD REFERENCE MATERIAL	_S				
ANALYTE	UNITS	TRUE VALUE	MEASURED	VALUE	RECOVERY
Organic Acid (as Acetic)	mg/l	2.00	1.91		95.5 %
BLANKS					
ANALYTE	UNITS	RESULT			
Organic Acid (as Acetic)	mg/l	< 0.1			

# SUBCONTRACT SAMPLE CHAIN OF CUSTODY

Send Report <u>To</u>	Michae	l Erdahl		SU	JBCONT	RACT	ER	Anti	7						# NAROUND 7	of TIME
			. <b>T</b> .	ROJECT	ECT NAME/NO. PO					0#	Standard TAT					
• •		an and Bruya th Ave W	i. Inc		l	034	41			B-19	14		□ RUSH Rush charges authorized by:			
City, State, ZIP Phone #(206) 28			edmanandbruy		EMARKS Pl		mail R	lesults	3				🗆 Retu	ose a: irn sa	PLE DISPO fter 30 days mples vith instruct	
······						<b></b>			ANALY	YSES	REQUE	STED			1	
Sample ID	Lab ID	Date Sampled	Time Sampled	Matrix	# of jars	Dioxins/Furans	EPH	Volutile Filly Acids							No	otes
KMW-04	3778	3/23/21	1520	water	(			X		·						
KMW-06	79	1	0905	t	ł			¥								
KMW - 09	80		(130		1			Y								
KMW-10	SI		1320		t			7								
Deplicate 1	82		0940	*	)			۶							· · · · · · · · · · · · · · · · · · ·	
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Friedman & Bruy 3012 16th Avenue		Relinquished	SIGNATURE	1 K	Mich	I ael Er	PRINT dahl	NAM	E	1	Friedm	COMPA an & B			DATE 3/24/21	TIME 075
Seattle, WA 98119		Received by: Relinquished I		ZF	5 A.	STAA	в				AMTE	ST			3/24/21	Z:55
Ph. (206) 285-828. Fax (206) 283-504	2 [4	Received by:	<i></i>						*							
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#### 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 2, 2021

Brady Lubenow , Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Lubenow:

Included are the results from the testing of material submitted on March 24, 2021 from the Kelly Moore-Seattle, F&BI 103462 project. There are 19 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.

Nelf

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI0402R.DOC

### ENVIRONMENTAL CHEMISTS

## CASE NARRATIVE

This case narrative encompasses samples received on March 24, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore-Seattle, F&BI 103462 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Wood Environment & Infrastructure Solutions
103462 -01	KMW-02R
103462 -02	KMW-07

All quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/24/21 Project: Kelly Moore-Seattle, F&BI 103462 Date Extracted: 03/31/21 Date Analyzed: 03/31/21

# RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

<u>Sample ID</u> Laboratory ID	Gasoline Range	Surrogate ( <u>% Recovery)</u> (Limit 51-134)
KMW-02R ¹⁰³⁴⁶²⁻⁰¹	<100	96
KMW-07 103462-02	<100	96
Method Blank ^{01-594 MB}	<100	97

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/24/21 Project: Kelly Moore-Seattle, F&BI 103462 Date Extracted: 03/26/21 Date Analyzed: 03/26/21

## 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)

<u>Sample ID</u> Laboratory ID	Diesel Range (C10-C25)	Motor Oil Range (C25-C36)	Surrogate <u>(% Recovery)</u> (Limit 41-152)
KMW-02R ¹⁰³⁴⁶²⁻⁰¹	<50	<250	114
KMW-07 103462-02	<50	<250	123
Method Blank 01-728 MB	<50	<250	121

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-02R 03/24/21 03/25/21 03/25/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103462 103462-01 103462-01.150 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	<1		
Chromium	<1		
Copper	<5		
Lead	<1		
Mercury	<1		
Nickel	1.43		
Zinc	<5		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-07 03/24/21 03/25/21 03/25/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103462 103462-02 103462-02.151 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic	<1		
Chromium	<1		
Copper	<5		
Lead	<1		
Mercury	<1		
Nickel	1.77		
Zinc	<5		

# ENVIRONMENTAL CHEMISTS

# Analysis For Total Metals By EPA Method 6020B

Client ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Blank NA 03/25/21 03/25/21 Water ug/L (ppb)	Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103462 I1-192 mb I1-192 mb.107 ICPMS2 SP
Analyte:	Concentration ug/L (ppb)		
Arsenic Chromium Copper Lead Moreury	<1 <1 <5 <1		
Mercury Nickel Zinc	<1 <1 <5		

# ENVIRONMENTAL CHEMISTS

# Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-02R 03/24/21 03/25/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103462 103462-01 1/2 032507.D GCMS9 YA
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol		$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 61 46 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene		< 0.04		
Chrysene		< 0.04		
Benzo(a)pyrene		< 0.04		
Benzo(b)fluoranthe	ne	< 0.04		
Benzo(k)fluoranthe		< 0.04		
Indeno(1,2,3-cd)pyr		< 0.04		
Dibenz(a,h)anthrac	ene	< 0.04		

# ENVIRONMENTAL CHEMISTS

# Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-07 03/24/21 03/25/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103462 103462-02 1/2 032508.D GCMS9 YA
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromophen Terphenyl-d14	nol	% Recovery: 36 26 100 89 75 103	$\begin{array}{c} {\rm Lower} \\ {\rm Limit:} \\ 15 \\ 10 \\ 17 \\ 50 \\ 50 \\ 50 \end{array}$	Upper Limit: 61 46 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene		< 0.04		
Chrysene		< 0.04		
Benzo(a)pyrene		< 0.04		
Benzo(b)fluoranthe	ene	< 0.04		
Benzo(k)fluoranthe	ene	< 0.04		
Indeno(1,2,3-cd)pyr		< 0.04		
Dibenz(a,h)anthrac	ene	< 0.04		

# ENVIRONMENTAL CHEMISTS

# Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Bla Not Applica 03/25/21 03/25/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Infrastructure Kelly Moore-Seattle, F&BI 103462 01-726 mb 032506.D GCMS9 YA
Surrogates: 2-Fluorophenol Phenol-d6 Nitrobenzene-d5 2-Fluorobiphenyl 2,4,6-Tribromopher Terphenyl-d14	nol	$\% \ { m Recovery:} \ 28 \ 16 \ 97 \ 95 \ 90 \ 115$	Lower Limit: 15 10 17 50 50 50	Upper Limit: 61 46 143 150 150 150
Compounds:		Concentration ug/L (ppb)		
Benz(a)anthracene Chrysene Benzo(a)pyrene Benzo(b)fluoranthe Benzo(k)fluoranthe Indeno(1,2,3-cd)pyr Dibenz(a,h)anthrac	ene ene rene	<0.02 <0.02 <0.02 <0.02 <0.02 <0.02 <0.02		

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-02R 03/24/21 03/30/21 03/30/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 103462-01 033026.D GCMS4 JCM	
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 101 97 100	Lower Limit: 86 88 88	Upper Limit: 113 114 112	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromet Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethe trans-1,2-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane 1,1-Dichloroethane 1,1,1-Trichloroethane 1,1,1-Trichloroethane 1,1-Dichloropropan Carbon tetrachlorid Benzene Trichloroethene 1,2-Dichloropropan Bromodichlorometh Dibromomethane 4-Methyl-2-pentane cis-1,3-Dichloropro	hane er (MTBE) ethene ene (EDC) ne e de hane one		Tetrachl Dibromo 1,2-Dibr Chlorobe Ethylber 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propy Bromobo 1,3,5-Tr 1,1,2,2-T 1,2,3-Tr 2-Chloro 4-Chloro tert-But 1,2,4-Tr sec-Buty p-Isopro 1,3-Dich 1,2-Dibr 1,2,4-Tr Hexachl	nzene 'etrachloroethane ene '' 'lbenzene '' 'lbenzene enzene imethylbenzene 'etrachloroethane ichloropropane toluene ylbenzene imethylbenzene imethylbenzene pyltoluene lorobenzene lorobenzene lorobenzene omo-3-chloropropane ichlorobenzene orobutadiene	<1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <
trans-1,3-Dichlorog 1,1,2-Trichloroetha 2-Hexanone	-	<1 <1 <10	Naphtha 1,2,3-Tri	alene ichlorobenzene	<1 <1

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	KMW-07 03/24/21 03/30/21 03/30/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 103462-02 033027.D GCMS4 JCM	
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 99 98 100	Lower Limit: 86 88 88	Upper Limit: 113 114 112	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome	ethane	<1	1,3-Dich	loropropane	<1
Chloromethane		<10		loroethene	<1
Vinyl chloride		< 0.2	Dibromo	ochloromethane	<1
Bromomethane		<5		omoethane (EDB)	<1
Chloroethane		<1	Chlorobe		<1
Trichlorofluoromet	hane	<1	Ethylbenzene		<1
Acetone		<50		Tetrachloroethane	<1
1,1-Dichloroethene		<1	m,p-Xyle		<2
Hexane		<5	o-Xylene	9	<1
Methylene chloride		<5	Styrene		<1
Methyl t-butyl ether (MTBE)		<1		lbenzene	<1
trans-1,2-Dichloroe		<1	Bromofo		<5
1,1-Dichloroethane		<1	n-Propy		<1
2,2 Dichloropropan		<1	Bromobe		<1
cis-1,2-Dichloroeth	ene	<1		imethylbenzene	<1
Chloroform		<1		etrachloroethane	<1
2-Butanone (MEK)		<20	1,2,3-1r 2-Chloro	ichloropropane	<1 <1
1,2-Dichloroethane 1,1,1-Trichloroetha		<1 <1	4-Chlore		<1
1,1-Dichloropropen		<1		ylbenzene	<1
Carbon tetrachlori		<1		imethylbenzene	<1
Benzene	ue	<0.35		vlbenzene	<1
Trichloroethene		<1		pyltoluene	<1
1,2-Dichloropropan	e	<1		lorobenzene	<1
Bromodichlorometl		<1		lorobenzene	<1
Dibromomethane		<1	,	lorobenzene	<1
4-Methyl-2-pentan	one	<10		omo-3-chloropropane	<10
cis-1,3-Dichloropro		<1		ichlorobenzene	<1
Toluene		<1		orobutadiene	<1
trans-1,3-Dichlorop	oropene	<1	Naphtha	alene	<1
1,1,2-Trichloroetha	ine	<1		ichlorobenzene	<1
2-Hexanone		<10			

# ENVIRONMENTAL CHEMISTS

# Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Date Received: Date Extracted: Date Analyzed: Matrix: Units:	Method Bla Not Applica 03/30/21 03/30/21 Water ug/L (ppb)		Client: Project: Lab ID: Data File: Instrument: Operator:	Wood Environment & Kelly Moore-Seattle, 01-673 mb 033008.D GCMS4 JCM	
Surrogates: 1,2-Dichloroethane Toluene-d8 4-Bromofluorobenz		% Recovery: 101 96 102	Lower Limit: 86 88 88	Upper Limit: 113 114 112	
Compounds:		Concentration ug/L (ppb)	Compou	nds:	Concentration ug/L (ppb)
Dichlorodifluorome Chloromethane Vinyl chloride Bromomethane Chloroethane Trichlorofluoromet Acetone 1,1-Dichloroethene Hexane Methylene chloride Methyl t-butyl ethe trans-1,2-Dichloroethane 2,2-Dichloropropan cis-1,2-Dichloroethane Chloroform 2-Butanone (MEK) 1,2-Dichloroethane 1,1-Trichloroethane 1,1-Dichloropropan Carbon tetrachlorid Benzene Trichloroethene 1,2-Dichloropropan Bromodichloromethane	hane er (MTBE) ethene ene (EDC) ne e le	$ \begin{array}{c} <1 \\ <10 \\ <0.2 \\ <5 \\ <1 \\ <1 \\ <50 \\ <1 \\ <5 \\ <5 \\ <1 \\ <1 \\ <1 \\ <1 \\ <1$	Tetrachl Dibromo 1,2-Dibr Chlorobe Ethylben 1,1,1,2-T m,p-Xyle o-Xylene Styrene Isopropy Bromofo n-Propyl Bromobe 1,3,5-Tri 1,1,2,2-T 1,2,3-Tri 2-Chloro 4-Chloro tert-But 1,2,4-Tri sec-Buty p-Isopro 1,3-Dich 1,4-Dich	nzene Cetrachloroethane ene ene dibenzene mm lbenzene enzene imethylbenzene cetrachloroethane ichloropropane otoluene ylbenzene imethylbenzene imethylbenzene dibenzene pyltoluene lorobenzene lorobenzene	<1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <1 <
4-Methyl-2-pentane cis-1,3-Dichloropro Toluene trans-1,3-Dichlorop 1,1,2-Trichloroetha 2-Hexanone	pene propene	<1 <10 <1 <1 <1 <1 <10	1,2-Dibr 1,2,4-Tri Hexachl Naphtha	lorobenzene omo-3-chloropropane ichlorobenzene orobutadiene alene ichlorobenzene	<10 <10 <1 <1 <1 <1 <1

### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/24/21 Project: Kelly Moore-Seattle, F&BI 103462

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory	Code: (Matri	x Spike)					
				Percen	t Percent		
	Reporting	Spike	Sampl	e Recover	ry Recovery	Acceptance	$\operatorname{RPD}$
Analyte	Units	Level	Resul	t MS	MSD	Criteria	(Limit 20)
Gasoline	ug/L (ppb)	1,000	<100	90	95	53 - 117	5
Laboratory	Code: Labora	atory Contro	ol Sample				
				Percent			
	R	leporting	Spike	Recovery	Acceptance		
Analyte		Units	Level	LCS	Criteria		
Gasoline	u	g/L (ppb)	1,000	100	69-134		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/24/21 Project: Kelly Moore-Seattle, F&BI 103462

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL EXTENDED USING METHOD NWTPH-Dx

Laboratory Code:	103462-01 (Matri	x 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	108	119	50-150	10
Laboratory Code: 1	Laboratory Contr	ol Sampl	e Percent				
Analyte	Reporting Units	Spike Level	Recovery LCS				
Diesel Extended	ug/L (ppb)	2,500	110	63-14	42		

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#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/24/21 Project: Kelly Moore-Seattle, F&BI 103462

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TOTAL METALS USING EPA METHOD 6020B

Laboratory Code: 103462-01 (Matrix Spike)

Laboratory Co	ue. 103402-01 (	main of	JIKC)	Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20)
Arsenic	ug/L (ppb)	10	<1	87	85	75 - 125	2
Chromium	ug/L (ppb)	20	<1	97	95	75 - 125	2
Copper	ug/L (ppb)	20	<5	94	95	75 - 125	1
Lead	ug/L (ppb)	10	<1	90	89	75 - 125	1
Mercury	ug/L (ppb)	5	<1	93	94	75 - 125	1
Nickel	ug/L (ppb)	20	1.48	93	92	75 - 125	1
Zinc	ug/L (ppb)	50	<5	89	89	75 - 125	0

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	88	80-120
Chromium	ug/L (ppb)	20	95	80-120
Copper	ug/L (ppb)	20	104	80-120
Lead	ug/L (ppb)	10	95	80-120
Mercury	ug/L (ppb)	<b>5</b>	98	80-120
Nickel	ug/L (ppb)	20	100	80-120
Zinc	ug/L (ppb)	50	97	80-120

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/24/21 Project: Kelly Moore-Seattle, F&BI 103462

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR SEMIVOLATILES BY EPA METHOD 8270E

Laboratory Code: 103462-01 1/2 (Matrix Spike)

Laboratory Code. 105402-01 1/		pike)		Percent	Percent		
Analyte	Reporting Units	Spike Level	Sample Result	Recovery MS	Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Benz(a)anthracene	ug/L (ppb)	5	< 0.04	106	102	50-150	4
Chrysene	ug/L (ppb)	5	< 0.04	99	96	50-150	3
Benzo(a)pyrene	ug/L (ppb)	5	< 0.04	112	109	50 - 150	3
Benzo(b)fluoranthene	ug/L (ppb)	5	< 0.04	110	106	50 - 150	4
Benzo(k)fluoranthene	ug/L (ppb)	5	< 0.04	105	104	50 - 150	1
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	< 0.04	102	101	50 - 150	1
Dibenz(a,h)anthracene	ug/L (ppb)	5	< 0.04	98	93	50-150	5

#### Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Benz(a)anthracene	ug/L (ppb)	5	99	70-130
Chrysene	ug/L (ppb)	5	96	70-130
Benzo(a)pyrene	ug/L (ppb)	5	103	70-130
Benzo(b)fluoranthene	ug/L (ppb)	5	98	62-130
Benzo(k)fluoranthene	ug/L (ppb)	5	97	70-130
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	113	70-130
Dibenz(a,h)anthracene	ug/L (ppb)	5	111	70-130

### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/24/21 Project: Kelly Moore-Seattle, F&BI 103462

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: 103462-01 (Matrix Spike)

		a .1	а 1	Percent	Percent	<b>A</b> 1	סחח
	Reporting	Spike	Sample	Recovery		Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria	(Limit 20
Dichlorodifluoromethane	ug/L (ppb)	10	<1	80	84	10-172	5
Chloromethane	ug/L (ppb)	10	<10	58	61	25-166	5
Vinyl chloride	ug/L (ppb)	10	<0.2	65	67	36-166	3
Bromomethane	ug/L (ppb)	10	<5	95	95	47-169	0
Chloroethane	ug/L (ppb)	10	<1	65	69	46-160	6
Trichlorofluoromethane Acetone	ug/L (ppb)	10 50	<1 <50	73 80	76 80	44-165 10-182	4
1,1-Dichloroethene	ug/L (ppb)	50 10	<50 <1	80 79	80 81	10-182 58-142	$0 \\ 2$
Hexane	ug/L (ppb)	10	<5	79 72	81 73	38-142 38-152	2
Methylene chloride	ug/L (ppb) ug/L (ppb)	10	<0 <5	72 94	104	38-152 50-145	110
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	85	88	61-136	3
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	77	79	61-136	3
1,1-Dichloroethane	ug/L (ppb)	10	<1	80	80	63-135	0
2,2-Dichloropropane	ug/L (ppb)	10	<1	81	81	36-154	0
cis-1.2-Dichloroethene	ug/L (ppb)	10	<1	83	86	63-134	4
Chloroform	ug/L (ppb)	10	<1	88	89	61-135	1
2-Butanone (MEK)	ug/L (ppb)	50	<20	95	95	10-129	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	<1	91	92	48-149	1
1.1.1-Trichloroethane	ug/L (ppb)	10	<1	85	87	60-146	2
1,1-Dichloropropene	ug/L (ppb)	10	<1	83	85	69-133	2
Carbon tetrachloride	ug/L (ppb)	10	<1	87	90	56-152	3
Benzene	ug/L (ppb)	10	< 0.35	86	86	57-135	ŏ
Trichloroethene	ug/L (ppb)	10	<1	88	91	66-135	3
1,2-Dichloropropane	ug/L (ppb)	10	<1	88	90	59-136	2
Bromodichloromethane	ug/L (ppb)	10	<1	86	89	61-150	3
Dibromomethane	ug/L (ppb)	10	<1	95	97	66-141	2
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	107	110	10-185	3
cis-1,3-Dichloropropene	ug/L (ppb)	10	<1	91	94	52 - 147	3
Toluene	ug/L (ppb)	10	<1	99	100	50-137	1
trans-1,3-Dichloropropene	ug/L (ppb)	10	<1	96	97	53 - 142	1
1,1,2-Trichloroethane	ug/L (ppb)	10	<1	109	107	68-131	2
2-Hexanone	ug/L (ppb)	50	<10	115	113	10-185	2
1,3-Dichloropropane	ug/L (ppb)	10	<1	106	107	60-135	1
Tetrachloroethene	ug/L (ppb)	10	<1	105	105	10-226	0
Dibromochloromethane	ug/L (ppb)	10	<1	99	99	52 - 145	0
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	<1	107	109	62-135	2
Chlorobenzene	ug/L (ppb)	10	<1	107	109	63-130	2
Ethylbenzene	ug/L (ppb)	10	<1	104	103	60-133	1
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	103	105	56-143	2
m,p-Xylene	ug/L (ppb)	20	<2	108	105	69-135	3
o-Xylene	ug/L (ppb)	10	<1	106	107	60-140	1
Styrene	ug/L (ppb)	10	<1	106	105	60-133	1
Isopropylbenzene	ug/L (ppb)	10 10	<1 <5	104 100	103	65-142	1 0
Bromoform	ug/L (ppb) ug/L (ppb)		<5 <1	100	100	54-148	$0 \\ 2$
n-Propylbenzene Bromobenzene	ug/L (ppb)	10 10	<1	108	110 118	58-144 61-130	2
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	107	118	59-134	2 3
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	<1	107	110	51-154	0
1,1,2,2-1 etrachoroethane 1,2,3-Trichloropropane	ug/L (ppb)	10	<1	115	115	53-150	1
2-Chlorotoluene	ug/L (ppb)	10	<1	107	110	66-127	3
4-Chlorotoluene	ug/L (ppb)	10	<1	107	110	65-130	3
tert-Butylbenzene	ug/L (ppb)	10	<1	109	110	65-137	1
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	105	107	59-146	2
sec-Butylbenzene	ug/L (ppb)	10	<1	109	110	64-140	1
p-Isopropyltoluene	ug/L (ppb)	10	<1	105	108	65-141	0
1.3-Dichlorobenzene	ug/L (ppb)	10	<1	114	115	60-131	1
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	113	116	60-129	3
1,2-Dichlorobenzene	ug/L (ppb)	10	<1	113	110	60-120	1
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	<10	99	100	32-164	1
1.2.4-Trichlorobenzene	ug/L (ppb)	10	<10	105	100	52-138	4
Hexachlorobutadiene	ug/L (ppb)	10	<1	105	101	60-143	4
Naphthalene	ug/L (ppb)	10	<1	100	99	44-164	3

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/02/21 Date Received: 03/24/21 Project: Kelly Moore-Seattle, F&BI 103462

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR VOLATILES BY EPA METHOD 8260D

Laboratory Code: Laboratory Control Sample

Laboratory Code. Laborator	y control sample	·	Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	111	108	25-158	3
Chloromethane	ug/L (ppb)	10	83	83	45-156	0
Vinyl chloride	ug/L (ppb)	10	88	87	50 - 154	1
Bromomethane	ug/L (ppb)	10	128	125	55-143	2
Chloroethane	ug/L (ppb)	10	88	85	58-146	3
Trichlorofluoromethane	ug/L (ppb)	10	95	95	50-150	0
Acetone	ug/L (ppb)	50	88	90	22-155	2
1,1-Dichloroethene	ug/L (ppb)	10 10	99 88	96 87	67-136 57-137	
Hexane Methylene chloride	ug/L (ppb) ug/L (ppb)	10	88 97	87 96	57-137 19-178	1
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	95	95	64-147	0
trans-1,2-Dichloroethene	ug/L (ppb)	10	94	92	68-128	2
1.1-Dichloroethane	ug/L (ppb)	10	90	89	74-135	1
2,2-Dichloropropane	ug/L (ppb)	10	97	95	55-143	2
cis-1.2-Dichloroethene	ug/L (ppb)	10	93	92	74-136	1
Chloroform	ug/L (ppb)	10	94	93	74-134	1
2-Butanone (MEK)	ug/L (ppb)	50	97	97	37-150	0
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	94	94	66-129	0
1,1,1-Trichloroethane	ug/L (ppb)	10	95	94	74-142	1
1,1-Dichloropropene	ug/L (ppb)	10	95	93	77-129	2
Carbon tetrachloride	ug/L (ppb)	10	97	95	75-158	2
Benzene	ug/L (ppb)	10	93	94	69-134	1
Trichloroethene	ug/L (ppb)	10	92	93	67-133	1
1,2-Dichloropropane	ug/L (ppb)	10	92	91	71-134	$\frac{1}{2}$
Bromodichloromethane Dibromomethane	ug/L (ppb) ug/L (ppb)	10 10	88 96	86 97	66-126 68-132	2
4-Methyl-2-pentanone	ug/L (ppb) ug/L (ppb)	50	103	103	65-138	0
cis-1,3-Dichloropropene	ug/L (ppb) ug/L (ppb)	10	92	92	74-140	0
Toluene	ug/L (ppb)	10	102	98	72-122	4
trans-1,3-Dichloropropene	ug/L (ppb)	10	95	91	80-136	4
1,1,2-Trichloroethane	ug/L (ppb)	10	102	97	75-124	5
2-Hexanone	ug/L (ppb)	50	109	109	60-136	0
1,3-Dichloropropane	ug/L (ppb)	10	102	98	76-126	4
Tetrachloroethene	ug/L (ppb)	10	108	104	76-121	4
Dibromochloromethane	ug/L (ppb)	10	97	91	84-133	6
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	104	100	82-115	4
Chlorobenzene	ug/L (ppb)	10	106	102	83-114	4
Ethylbenzene	ug/L (ppb)	10	102	97	77-124	5
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10 20	99	94 100	84-127 81-112	5
m,p-Xylene o-Xylene	ug/L (ppb)	20 10	104 102	98	81-112 81-121	4
Styrene	ug/L (ppb) ug/L (ppb)	10	102	98 97	84-119	4
Isopropylbenzene	ug/L (ppb)	10	101	95	80-117	5
Bromoform	ug/L (ppb)	10	93	90	69-121	3
n-Propylbenzene	ug/L (ppb)	10	102	98	74-126	4
Bromobenzene	ug/L (ppb)	10	108	104	80-121	4
1,3,5-Trimethylbenzene	ug/L (ppb)	10	100	98	78-123	2
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	103	99	66-126	4
1,2,3-Trichloropropane	ug/L (ppb)	10	105	102	67-124	3
2-Chlorotoluene	ug/L (ppb)	10	102	98	77-127	4
4-Chlorotoluene	ug/L (ppb)	10	102	98	78-128	4
tert-Butylbenzene	ug/L (ppb)	10	101	98	80-123	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	97	95	79-122	2 2
sec-Butylbenzene	ug/L (ppb)	10 10	99 100	97 95	80-116	2 5
p-Isopropyltoluene 1.3-Dichlorobenzene	ug/L (ppb) ug/L (ppb)	10	100	95 101	81-123 83-113	а З
1,3-Dichlorobenzene	ug/L (ppb) ug/L (ppb)	10	104	101 102	83-113 81-112	3
1,2-Dichlorobenzene	ug/L (ppb)	10	108	102	84-112	4
1,2-Dibromo-3-chloropropane	ug/L (ppb)	10	88	88	57-141	0
1.2.4-Trichlorobenzene	ug/L (ppb)	10	89	92	72-130	3
Hexachlorobutadiene	ug/L (ppb)	10	89	91	53-141	2
Naphthalene	ug/L (ppb)	10	89	92	64-133	3
1,2,3-Trichlorobenzene	ug/L (ppb)	10	88	93	65-136	6

### ENVIRONMENTAL CHEMISTS

## **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.

 ${\rm J}$  - 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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Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 Professional Analytical Services

Oct 1 2021 Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL

Dear MICHAEL ERDAHL:

Enclosed please find the analytical data for your 109059 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
KMW-09	Water	21-A013135	Actc Acd
KMW-06	Water	21-A013136	Actc Acd
KMW-10	Water	21-A013137	Actc Acd
KMW-04	Water	21-A013138	Actc Acd
DUP1-20210902	Water	21-A013139	Actc Acd

Your samples were received on Friday, September 3, 2021. At the time of receipt, the samples were logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,

aron W Aaron W. Young

Vice President

PO Number: B-401

BACT = Bacteriological CONV = Conventionals MET = Metals ORG = Organics NUT=Nutrients DEM=Demand **MIN=Minerals** 

Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 www.amtestlab.com



### **ANALYSIS REPORT**

Date Received: 09/03/21 Date Reported: 10/ 1/21

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL Project Name: 109059 PO Number: B-401 All results reported on an as received basis.

AMTEST Identification Number	21-A013135
Client Identification	KMW-09
Sampling Date	09/02/21, 08:40

### **Organic Acids**

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Organic Acid (as Acetic)	< 0.1	mg/l		0.1	EPA 300.0 mod	KS	09/20/21

AMTEST Identification Number	21-A013136
Client Identification	KMW-06
Sampling Date	09/02/21, 10:15

## **Organic Acids**

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Organic Acid (as Acetic)	< 1	mg/l		1	EPA 300.0 mod	KS	09/20/21

AMTEST Identification Number	21-A013137
Client Identification	KMW-10
Sampling Date	09/02/21, 15:10

# **Organic Acids**

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Organic Acid (as Acetic)	0.10	mg/l		0.1	EPA 300.0 mod	KS	09/20/21

AMTEST Identification Number	21-A013138
Client Identification	KMW-04
Sampling Date	09/02/21, 17:10

### **Organic Acids**

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Organic Acid (as Acetic)	3.24	mg/l		0.1	EPA 300.0 mod	KS	09/20/21

AMTEST Identification Number	21-A013139
Client Identification	DUP1-20210902
Sampling Date	09/02/21, 15:40

## **Organic Acids**

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Organic Acid (as Acetic)	0.19	mg/l		0.1	EPA 300.0 mod	KS	09/20/21

Aaron W. Young Vice President

Am Test Inc. 13600 NE 126th PL Suite C Kirkland, WA, 98034 (425) 885-1664 www.amtestlab.com



QC Summary for sample numbers: 21-A013135 to 21-A013139

#### DUPLICATES

SAMPLE # ANALYTE	UNITS	SAMPLE VAL	JE  DUP VAL	UE R	PD
21-A013140 Organic Acid (as Acetic)	mg/l	< 0.1	< 0.1		
MATRIX SPIKES					
SAMPLE # ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
21-A013140 Organic Acid (as Acetic)	mg/l	< 0.1	2.26	2.00	113.00 %
STANDARD REFERENCE MATERIA	LS				
ANALYTE	UNITS	TRUE VALUE	MEASURED	VALUE	RECOVERY
Organic Acid (as Acetic)	mg/l	2.00	2.04		102. %
BLANKS					
ANALYTE	UNITS	RESULT			
Organic Acid (as Acetic)	mg/l	< 0.1			

# SUBCONTRACT SAMPLE CHAIN OF CUSTODY

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Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 Professional Analytical Services

Oct 1 2021 Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL

Dear MICHAEL ERDAHL:

Enclosed please find the analytical data for your 109029 project.

The following is a cross correlation of client and laboratory identifications for your convenience.

CLIENT ID	MATRIX	AMTEST ID	TEST
KMW-03R	Water	21-A013140	Actc Acd

Your sample was received on Friday, September 3, 2021. At the time of receipt, the sample was logged in and properly maintained prior to the subsequent analysis.

The analytical procedures used at AmTest are well documented and are typically derived from the protocols of the EPA, USDA, FDA or the Army Corps of Engineers.

Following the analytical data you will find the Quality Control (QC) results.

Please note that the detection limits that are listed in the body of the report refer to the Practical Quantitation Limits (PQL's), as opposed to the Method Detection Limits (MDL's).

If you should have any questions pertaining to the data package, please feel free to contact me.

Sincerely,

Aaron W. Young Vice President

PO Number: B-401

BACT = Bacteriological CONV = Conventionals MET = Metals ORG = Organics NUT=Nutrients DEM=Demand **MIN=Minerals** 

Am Test Inc. 13600 NE 126TH PL Suite C Kirkland, WA 98034 (425) 885-1664 www.amtestlab.com



### **ANALYSIS REPORT**

Professional Analytical Services

Date Received: 09/03/21 Date Reported: 10/ 1/21

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Attention: MICHAEL ERDAHL Project Name: 109029 PO Number: B-401 All results reported on an as received basis.

AMTEST Identification Number	21-A013140
Client Identification	KMW-03R
Sampling Date	09/01/21, 16:20

### **Organic Acids**

PARAMETER	RESULT	UNITS	Q	D.L.	METHOD	ANALYST	DATE
Organic Acid (as Acetic)	< 0.1	mg/l		0.1	EPA 300.0 mod	KS	09/20/21

ron W Aaron W. Young Vice President

Am Test Inc. 13600 NE 126th PL Suite C Kirkland, WA, 98034 (425) 885-1664 www.amtestlab.com



#### QC Summary for sample number: 21-A013140

#### DUPLICATES

SAMPLE #	ANALYTE	UNITS	SAMPLE VAL	UE  DUP VAL	UE R	PD
21-A013140	Organic Acid (as Acetic)	mg/l	< 0.1	< 0.1		
MATRIX SF						
IVIA I KIA SP	INES					
SAMPLE #	ANALYTE	UNITS	SAMPLE VALUE	SMPL+ SPK	SPK AMT	RECOVERY
21-A013140	Organic Acid (as Acetic)	mg/l	< 0.1	2.26	2.00	113.00 %
STANDARI ANALYTE Organic Acid	D REFERENCE MATERIAL	UNITS	TRUE VALUE	MEASURED	VALUE	RECOVERY 102. %
BLANKS ANALYTE			RESULT	1-101		1.02.70
Organic Acid	(as Acetic)	mg/l	< 0.1			

# SUBCONTRACT SAMPLE CHAIN OF CUSTODY

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## DATA ASSESSMENT SUMMARY

Project Information			
Project Name:	Kelly-Moore Paint	Lab Names:	Friedman & Bruya, Inc. (F&BI), and Fremont Analytical (Fremont) Am Test Laboratories (Am Test)
Project Number:	PS21204540.01	Lab Report Numbers:	F&BI: 109029, 109058, 109059 Fremont: 2109050, 2109056 Am Test C21-A013135, C21-A013140
Reviewer's Name:	Marie Bevier Rebecca Enzor	Number of Samples:	12
Review Date:	09/27/2021	Matrix:	Water

Field Sample	Collection	Note			
Identification	Date	F&BI	Fremont	Am Test	NOLE
KMW-02R	09/01/2021	109029-01			MS for VOCs
KMW-07	09/01/2021	109029-02			
KMW-08	09/01/2021	109029-03			
KMW-03R	09/01/2021	109029-04	2109050-001	21-A013140	Lab duplicate and MS/MSD for anions, dissolved 200.8 metals, TOC, and VFA
BKF926	09/02/2021	109058-01			
BKF927	09/02/2021	109058-02			
Trip Blank	09/02/2021	109058-03			
KMW-09	09/02/2021	109059-01	2109056-001	21-A013135	Lab duplicate for BOD, carbon dioxide, and TOC MS/MSD for TOC
KMW-06	09/02/2021	109059-02	2109056-002	21-A013136	Lab duplicate for alkalinity
KMW-10	09/02/2021	109059-03	2109056-003	21-A013137	MS/MSD for hardness and 200.8 metals
KMW-04	09/02/2021	109059-04	2109056-004	21-A013138	Lab duplicate for dissolved gases
DUP1-20210902	09/02/2021	109059-05	2109056-005	21-A013139	Field duplicate of KMW-10

#### Notes:

Notes: BOD = biochemical oxygen demand MS = matrix spike MSD = matrix spike duplicate TOC = total organic carbon VFA = volatile fatty acids VOC = volatile organic compound

Qua	Qualifier Definitions							
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.							
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.							

Reas	Reason Code Definitions						
EXC	There are multiple results for the same analyte in the same sample and this result should not be used for reporting purposes.						
FD	Imprecision between primary and field duplicate results.						
BC	The calibration standard did not meet method-specified criteria.						
HL	High laboratory control sample (LCS) recovery. Result may be biased high.						
HT	Maximum-recommended hold time was exceeded.						
RT	Elevated sample receipt temperature.						

Analyte	Average Reporting	Primary Result	Duplicate Result	RPD	Notes
	Limit				
Gasoline Range Organics	amples KMW-10 ar 1,000 µg/L	20,000	31,000	43%	J-FD
			,	43% 13%	J-FD
Diesel Range Organics	50 µg/L	8,900	7,800		
Motor Oil Range Organics	250 µg/L	370	1,000	92%	J-FD
Arsenic (6020)	1 µg/L	48.7	9.35	136%	J-FD
Lead (6020)	1 µg/L	116	4.47	185%	J-FD
Chromium (6020)	15 µg/L	38.1	< 10	NC	J/UJ-FD
Copper (6020)	75 μg/L	129	< 50	NC	J/UJ-FD
Nickel (6020)	15 µg/L	24	< 10	NC	± RL
Zinc (6020)	75 µg/L	380	< 50	NC	J/UJ-FD
Benzo(a)anthracene	0.3 µg/L	1.5	0.80	61%	J-FD
Chrysene	0.3 µg/L	1.5	0.79	62%	J-FD
Benzo(a)pyrene	0.3 µg/L	2.1	1.1	63%	J-FD
Benzo(b)fluoranthene	0.3 µg/L	2.0	1.1	58%	J-FD
Benzo(k)fluoranthene	0.3 µg/L	0.66	0.35	61%	J-FD
Indeno(1,2,3-cd)pyrene	0.3 µg/L	1.2	0.69	54%	J-FD
Toluene	25 µg/L	1,900	1,900	0.0%	
Ethybenzene	25 µg/L	1,800	1,800	0.0%	
m,p-Xylene	50 µg/L	5,800	5,900	1.7%	
o-Xylene	25 µg/L	2,100	2,100	0.0%	
Isopropylbenzene	25 µg/L	31	31	0.0%	
n-Propylbenzene	25 µg/L	27	25	7.7%	
1,3,5-Trimethylbenzene	25 µg/L	38	37	2.7%	
1,2,4-Trimethylbenzene	25 µg/L	80	81	1.2%	
Biochemical Oxygen Demand	2 mg/L	56.1	48.8	14%	

Analyte	Average Reporting Limit	Primary Duplicate Result Result		RPD	Notes
S	amples KMW-10 an	d Dup1-20210	)902		
Dissolved Methane	0.338 mg/L	6.39	6.26	2.1%	
Sulfate	6 mg/L	12.6	11.9	5.7%	
Hardness	5 mg/L	134	130	3.0%	
Calcium, Dissolved (200.8)	5,250 µg/L	34,100	35,400	3.7%	
Iron, Dissolved (200.8)	100 µg/L	15,900	19,100	18%	
Manganese, Dissolved (200.8)	1.8 µg/L	1,180	1,210	2.5%	
Sodium, Dissolved (200.8)	2,500 µg/L	61,000	59,400	2.7%	
Aluminum (200.8)	300 µg/L	624	348	57%	± RL
Calcium (200.8)	1,500 µg/L	36,700	36,000	1.9%	
Iron (200.8)	750 μg/L	89,300	78,600	13%	
Manganese (200.8)	15 µg/L	1,190	1,220	2.5%	
Sodium (200.8)	1,500 µg/L	53,800	61,900	14%	
Total Organic Carbon	0.50 mg/L	34.9	34.5	1.2%	
Alkalinity	2.50 mg/L	169	166	1.8%	
Carbon Dioxide	2.50 mg/L	226	241	6.4%	
Chemical Oxygen Demand	100 mg/L	104	111	6.5%	
Organic Acid (as Acetic)	0.1 mg/L	0.10	0.19	62%	± RL

#### Notes:

mg/L = milligrams per liter

 $\begin{array}{ll} \mbox{ < = less than } & \mbox{ } \mu g/L = micrograms per liter \\ \mbox{ NC = not calculable } & \mbox{ } RPD = relative percent difference \\ \mbox{ } \pm RL = the difference between concentrations is less than the reporting limit } \end{array}$ 

As	Assessment Summary: F&BI 109029, 109058, 109059						
Parameter:		Gasoline- Range Organics (GRO) by NWTPH-Gx	Diesel Range Organics (DRO) and Motor Oil Range Organics (ORO) by NWTPH-Dx	Total Metals by EPA Method 6020B	Polycyclic Aromatic Hydrocarbons by EPA Method 8270E	Volatile Organic Compounds by EPA Method 8260D	
1.	Chain of Custody	CoC not present i	n the data package	for 109059, otherwi	se acceptable		
2.	Receipt Temperature	Sample receipt co	ondition not recorded	d for 109059, otherw	vise acceptable		
3.	Hold Time	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	
4.	Blank Detections	Acceptable Acceptable		Acceptable	Acceptable	Acceptable	
5.	Surrogate Recoveries	Informational ^a	Acceptable	Not Applicable	Informational ^{f,g}	Acceptable	
6.	Laboratory Control Sample (LCS) Recoveries	Acceptable	Acceptable	Acceptable	Acceptable	Informational ⁱ	
7.	LCS/LCS Duplicate (LCSD) Precision	Not applicable	Acceptable	Not applicable	Acceptable	Informational ^j	
8.	Matrix Spike (MS) Recoveries	Not applicable	Not applicable	Not applicable	Not applicable	Acceptable	
9.	MS/MS Duplicate (MSD) Precision	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	
10.	Laboratory Duplicate Precision	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	
11.	Other Quality Control Issues	Qualification ^b	Qualification ^c Informational ^d	Qualification ^e	Qualification ^h	Qualification ^k Reporting ^I	

As	Assessment Summary: Freemont 2109050, 2109056							
Par	ameter:	Biochemical Oxygen Demand (BOD) by SM 5210B	Dissolved Gases by RSK-175	Anions by EPA Method 300.0	Hardness by EPA Method 200.8/SM 2340B	Dissolved Metals by EPA Method 200.8		
1.	Chain of Custody	Acceptable	Acceptable					
2.	Receipt Temperature	Acceptable						
3.	Hold Time	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable		
4.	Blank Detections	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable		
5.	Surrogate Recoveries	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable		
6.	LCS Recoveries	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable		
7.	LCS/LCSD Precision	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable		
8.	MS Recoveries	Not applicable	Not applicable	Acceptable	Acceptable	Informational m		
9.	MS/MSD Precision	Not applicable	Not applicable	Acceptable	Acceptable	Informational ⁿ		
10.	Laboratory Duplicate Precision	Acceptable	Acceptable	Acceptable	Not applicable	Acceptable		
11.	Other Quality Control Issues	None	None	None	None	None		

As	Assessment Summary: Freemont 2109050, 2109056						
Par	ameter:	Total Metals by EPA Method 200.8	Total Organic Carbon by SM 5310C	Total Alkalinity by SM 2320B	Carbon Dioxide by SM 2320B/ SM4500-CO2D	Chemical Oxygen Demand by SM 5220D	
1.	Chain of Custody	Acceptable					
2.	Receipt Temperature	Acceptable		1	1		
3.	Hold Time	Acceptable	Acceptable	Acceptable	Qualification ^q	Acceptable	
4.	Blank Detections	Acceptable	Acceptable	Acceptable	Acceptable	Acceptable	
5.	Surrogate Recoveries	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	
6.	LCS Recoveries	Qualification °	Acceptable	Acceptable	Acceptable	Acceptable	
7.	LCS/LCSD Precision	Not applicable	Not applicable	Not applicable	Not applicable	Not applicable	
8.	MS Recoveries	Informational ^p	Acceptable	Not applicable	Not applicable	Not applicable	
9.	MS/MSD Precision	Acceptable	Acceptable	Not applicable	Not applicable	Not applicable	
10.	Laboratory Duplicate Precision	Not applicable	Acceptable	Acceptable	Acceptable	Not applicable	
11.	Other Quality Control Issues	None	None	None	None	None	

As	Assessment Summary: AmTest 21-A0103135 and 21-A013140				
Par	ameter:	ter: Acids by EPA 300.0 modified			
1.	Chain of Custody	Chain of custody i	Chain of custody is complete.		
2.	Receipt Temperature	Qualification ^{r, s}			
3.	Hold Time	Acceptable			
4.	Blank Detections	None			
5.	Surrogate Recoveries	NA			
6.	Standard Reference Material Recoveries	Acceptable			
7.	LCS/LCSD Precision	NA			
8.	MS Recoveries	Acceptable			
9.	MS/MSD Precision	NA			
10.	Laboratory Duplicate Precision	Acceptable			
11.	Other Quality Control Issues	None			

Notes	Description	Action Required		
а	According to the laboratory's notes, F&BI did not report surrogate recovery from the GRO analysis of sample KMW-04 due to matrix interference.	The sample was analyzed at a 1:10 dilution due to a high target analyte concentrations and Wood did not assess data usability for this sample based on the surrogate recovery.		
b	The RPD between GRO results from sample KMW-10 and it field duplicate Dup1-20210902 was high at 43%.	Wood J qualified the detected GRO results from samples KMW-10 and Dup1-20210902 because of sampling and/or analytical imprecision. (J-FD)		
с	The RPD between ORO results from sample KMW-10 and it field duplicate Dup1-20210902 was high at 92%.	Wood J qualified the detected ORO results from samples KMW-10 and Dup1-20210902 because of sampling and/or analytical imprecision. (J-FD)		
d	According to the laboratory's notes, the DRO chromatograms for samples BKF926, BKF927, KMW-03R, and KMW-08; and the ORO chromatograms for samples KMW-06, KMW-09, KMW-10, and Dup1-20210902 do not match the analytical standards used for quantification.	None. Results are being reported as diesel or motor oil range and all compounds present in the same retention time ranges as the diesel or motor oil standards would correctly be identified as diesel or motor oil range.		
e	RPDs between arsenic and lead results from sample KMW-10 and its field duplicate Dup1-20210902 were high at 136% and 185%, respectively. Additionally, differences between chromium, copper, and zinc results were greater than the reporting limit.	Wood J qualified the detected and UJ qualified the non-detected arsenic, lead, chromium, copper, and zinc results from samples KMW-10 and Dup1-20210902 because of sampling and/or analytical imprecision. (J/UJ-FD)		
f	F&BI did not recover the surrogate compound 2-fluorophenol from sample KMW-04.	2-Fluorophenol is not associated with PAH analytes and data usability is not adversely affected by the lack of surrogate recovery.		
g	Recovery of the surrogate compound terphenyl-d14 was high at 152% in sample KMW-02R.	Target analytes were not detected in the sample and data usability is not adversely affected by the potential high analytical bias.		

Notes	Description	Action Required
h	RPDs between benzo(a)anthracene (61%), chrysene (62%), benzo(a)pyrene (61%), benzo(b)fluoranthene (58%), benzo(k)fluoranthene (61%), and indeno(1,2,3-cd)pyrene (54%) results from sample KMW-10 and its field duplicate Dup1-20210902 were high.	Wood J qualified the detected benzo(a)anthracene, chrysene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, and indeno(1,2,3-cd)pyrene results from samples KMW-10 and Dup1-20210902 because of sampling and/or analytical imprecision. (J-FD)
i	Trichlorofluoromethane recovery was high at 135% in the LCS associated with the analysis of samples BKF926, BKF927, KMW-04, KMW-06, KMW-09, KMW-10, and Dup1-20210902.	Trichlorofluoromethane was not detected in the associated samples and data usability is not adversely affected by the potential high analytical bias.
j	The RPD between bromodichloromethane results was high at 25% in the LCS and LCSD associated with the analysis of samples KMW-02R, KMW-03R, KMW-07, and KMW-08.	Bromodichloromethane was not detected in the associated samples and data usability is not adversely affected by the potential analytical imprecision.
k	According to the laboratory's notes, 1,1-dichloroethane did not meet specified criteria in the calibration standard associated with the analysis of samples BFK926, BFK927, KMW-04, KMW-06, KMW-09, KMW-10, and Dup1-20210902.	Wood UJ qualified the 1,1-dichloroethane results from the associated samples because the calibration standard did not meet criteria. (UJ-BC)
I	According to the laboratory's notes, the ethylbenzene, m,p-xylene, and o-xylene results from the 1:25 dilution performed on sample KMW-04 were greater than the instrument's calibration range.	Ethylbenzene, m,p-xylene, and o-xylene results from sample KMW-04 should be reported from the 1:200 dilution, not from the 1:25 dilution; and all other results should be reported from the 1:25 dilution, not from the 1:200 dilution. (EXC)
m	Calcium (-45.5%, 194%) and sodium (38.1%, MS) recoveries were outside of limits in the MS and/or MSD performed on sample KMW-03R.	The calcium and sodium concentrations detected in the unspiked native sample were greater than four times the spike concentrations and it is not possible to assess data usability for these analytes in this sample based on MS recoveries.
n	It appears that Fremont miscalculated RPDs between MS and MSD results in the dissolved metal analysis of sample KMW-03R.	Fremont reported RPDs of 200% for aluminum and 175% for iron. Wood recalculated RPDs based on reported MS and MSD results. All recalculated RPDs were less than the laboratory-specified maxima of 30%.
0	Aluminum recovery was high at 123% in the LCS associated with the analysis of samples KMW-03R, KMW-04, KMW-06, KMW-09, KMW-10, and Dup1-20210902.	Wood J qualified the aluminum results from samples KMW-06, KMW-10, and Dup1-20210902 because of potential high analytical bias. (J-HL) Aluminum was not detected in the remaining samples and data usability is not adversely affected by the potential high analytical bias.
р	Iron (168%, MS) and sodium (279%, 343%) recoveries were high in the MS and/or MSD performed on sample KMW-10.	Th iron and sodium concentrations detected in the unspiked native sample were greater than four times the spike concentrations and it is not possible to assess data usability for these analytes in this sample based on MS recoveries.
q	Sample KMW-03R was analyzed for carbon dioxide 9 days outside the recommended maximum hold time and samples KMW-04, KMW-06, KMW-09, KMW-10, and Dup1-20210902 were analyzed 13 days outside the recommended maximum hold time of 24 hours.	Wood J qualified the detected carbon dioxide results from the associated samples because of the missed hold times. (J-HT)
r	The temperature of samples KMW-03R was high at 20.2 degrees Celsius upon receipt at AmTest.	Wood UJ qualified the non-detected VFA result from this sample because of the elevated receipt temperature (UJ-RT)
S	The temperature of samples KMW-04, KMW-06, KMW-09, KMW-10, and Duplicate 1 was high at 10.8 degrees Celsius upon receipt at AmTest.	Wood J qualified the detected and UJ qualified the non-detected VFA results from these samples because of the elevated receipt temperature (J/UJ-RT)

Data Qualified During Validation							
Sample Identification	Method	Parameter	Concentration	Qualifier and Reason Code			
BKF926	8260D	1,1-Dichloroethane	<1 µg/L	UJ-BC			
BKF927	8260D	1,1-Dichloroethane	<1 µg/L	UJ-BC			
Dup1-20210902	200.8	Aluminum	348 µg/L	J-HL			
DUP1-20210902	300.0 mod	Organic Acid (as Acetic)	0.19 mg/L	J-RT			
Dup1-20210902	6020	Arsenic	9.35 µg/L	J-FD			
Dup1-20210902	6020	Chromium	< 10 µg/L	UJ-FD			
Dup1-20210902	6020	Copper	< 50 µg/L	UJ-FD			
Dup1-20210902	6020	Lead	4.47 μg/L	J-FD			
Dup1-20210902	6020	Zinc	< 50 µg/L	UJ-FD			
Dup1-20210902	8260D	1,1-Dichloroethane	< 25 µg/L	UJ-BC			
Dup1-20210902	8270E	Benzo(a)anthracene	0.80 µg/L	J-FD			
Dup1-20210902	8270E	Chrysene	0.79 µg/L	J-FD			
Dup1-20210902	8270E	Benzo(a)pyrene	1.1 µg/L	J-FD			
Dup1-20210902	8270E	Benzo(b)fluoranthene	1.1 µg/L	J-FD			
Dup1-20210902	8270E	Benzo(k)fluoranthene	0.35 µg/L	J-FD			
Dup1-20210902	8270E	Indeno(1,2,3-cd)pyrene	0.69 µg/L	J-FD			
Dup1-20210902	NWTPH-Dx	Motor Oil Range Organics	1,000 µg/L	J-FD			
Dup1-20210902	NWTPH-Gx	Gasoline Range Organics	31,000 µg/L	J-FD			
Dup1-20210902	SM4500-CO2D	Carbon dioxide	241 mg/L	J-HT			
KMW-03R	300.0 mod	Organic Acid (as Acetic)	< 0.1 mg/L	UJ-RT			
KMW-03R	SM4500-CO2D	Carbon dioxide	144 mg/L	J-HT			
KMW-04	300.0 mod	Organic Acid (as Acetic)	3.24 mg/L	J-RT			
KMW-04	8260D	1,1-Dichloroethane	< 25 µg/L	UJ-BC			
KMW-04	8260D (1:25 dilution)	Ethylbenzene	5,200 µg/L	EXC			
KMW-04	8260D (1:25 dilution)	m,p-Xylene	17,000 μg/L	EXC			
KMW-04	8260D (1:25 dilution)	o-Xylene	4,100 µg/L	EXC			
KMW-04	8260D (1:200 dilution)	All analytes except for ethylbenzene, m,p-xylene, and o-Xylene	200 – 10,000 µg/L	EXC			
KMW-04	SM4500-CO2D	Carbon dioxide	60.6 mg/L	J-HT			
KMW-06	200.8	Aluminum	111 µg/L	J-HL			
KMW-06	300.0 mod	Organic Acid (as Acetic)	< 1 mg/L	UJ-RT			
KMW-06	8260D	1,1-Dichloroethane	< 10 µg/L	UJ-BC			
KMW-06	SM4500-CO2D	Carbon dioxide	291 mg/L	J-HT			
KMW-09	300.0 mod	Organic Acid (as Acetic)	< 0.1 mg/L	UJ-RT			
KMW-09	8260D	1,1-Dichloroethane	< 1 µg/L	UJ-BC			
KMW-09	SM4500-CO2D	Carbon dioxide	129 mg/L	J-HT			
KMW-10	200.8	Aluminum	624 µg/L	J-HL			
KMW-10	300.0 mod	Organic Acid (as Acetic)	0.10 mg/L	J-RT			
KMW-10	6020	Arsenic	48.7 µg/L	J-FD			
KMW-10	6020	Chromium	38.1 µg/L	J-FD			
KMW-10	6020	Copper	129 µg/L	J-FD			
KMW-10	6020	Lead	116 µg/L	J-FD			
KMW-10	6020	Nickel	24 µg/L	J-FD			
KMW-10	6020	Zinc	380 µg/L	J-FD			
KMW-10	8260D	1,1-Dichloroethane	< 25 µg/L	UJ-BC			
KMW-10	8270E	Benzo(a)anthracene	1.5 µg/L	J-FD			
KMW-10	8270E	Chrysene	1.5 µg/L	J-FD			
KMW-10	8270E	Benzo(a)pyrene	2.1 µg/L	J-FD			
KMW-10	8270E	Benzo(b)fluoranthene	2.0 µg/L	J-FD			
KMW-10	8270E	Benzo(k)fluoranthene	0.66 µg/L	J-FD			
KMW-10	8270E	Indeno(1,2,3-cd)pyrene	1.2 µg/L	J-FD			
KMW-10	NWTPH-Dx	Motor Oil Range Organics	370 µg/l	J-FD			
KMW-10	NWTPH-Gx	Gasoline Range Organics	20,000 µg/L	J-FD			
KMW-10	SM4500-CO2D	Carbon dioxide	226 mg/L	J-HT			



# **Appendix C**

Field Forms, SVE-AS Operations & Monitoring

## SVE System Monthly Inspection Log. Kelly Moore. Date: 01-09-2020

Item	Inspected (Y/N)	nauges etc.)		
Above Ground Piping	Yes	VAC GAUGGE (2013) CMANIFOLD ARE ARMAGED VAC GAUGGE NOT WORKING - PIPE + VANES OK		
Control Pump (Regenerative Blower)	YES	(On / Off) ol		
Entrainment Pump (Transfer Pump)	YES	(Auto / Hand / Off) Auro		
Pressure Gauges/Flow Meters	YES	VAC GAUGES CMAN 2 FOLDS HAVE ISSUES		
Knockout Tank (record level)	VES	% full 1/1		
Knockout Water Tote (record level)	455	% full 35 1/,		
Dilution Valve Status	yes	CLOSED 100'/.		
Recirculation Valve Status	yes	0PEN 100%		

## Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

### CATOX Screen Readings

Item	Units	Reading	Operating Range
Hour Meter	H-M	3598.7	4
Catox In (T1)	٥F	799	>650
Catox Out (T ₂ )	٥F	927	600 - 650
Heat Ex (T ₃ )	٥F	561	300 - 400
Flow	SCFM	-78	<300
LEL	%	14	5-15

### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	- 0,40" WC
PI – 1	"WC (vacuum)	2.25" WC
TI – 1	۰F	36'F
FE-2	"WC	0,40 "WC

FID FLAME FID FLAME OUT @ INF SCREENING, ALSO FLAME OUP FID Measurements @ VOC SLREENING OF SVE WELLS 12 + 13. FID WOULD NOT RESTART AFTER LAST FLAM OUT @SVE-12 HOC SCREENING.

Location	Time		eading om)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC)
Western Manifold	NO RE	ADINC	0		a service services	
SVE - 13	1315-HRS	*> 633	3 PPM	4	0.00"	0,100 "
SVE - 12	1320-1845			4	0,50"	0.010 "
SVE - 11	1308	NO FZ		4	1.20"	0,005 "
SVE - 10	1305	1		4	1.00"	0,007 "
SVE - 09	1300			5	0.00"	0,010"
Eastern manifold	NO READS	NG I	NO FID			
SVE - 01	1339			6	0,00"	0.007"
SVE - 03	1344	14 9766	Conception	Se apple sent	0.50"	0.015"
SVE - 05	1343	N.57.71		e e sua ll'a cese caste	0.00"	0.007"
SVE - 07	1341			6	0,00 11	0.009 "
SVE - 08	1341	in es	1 Same	OV T CHAMBERS	1.75"	0.001 "
SVE - 06	1340	and -	See. 1 . 15	le	0,50"	0,006 "
SVE - 04	1340	- C		6	Bit 1,00"	0.005"
SVE - 02	01-1	a comp	12	Care La Maria	12.0" - BROKEN	0.007"
SVE Influent	1250	* > 633	SPPM			
SVE Effluent	1235	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	5 PPM			

Influent Sample ID: TNF- 010920 Influent Sample Time: 1250 - NR5

1.0 + 0.6

+ Recorder

Effluent Sample ID: EFF - 010920 Effluent Sample Time: 1235 HRS

Field Representative (Print and Sign): C. Husen

Date of Visit: 01-09-2020

G. KLOCKEMAN George Hagan

1 of 2

## AS System Monthly Inspection Log, Kelly Moore. Date: <u>6/-09-2020</u> Visual/Audio Inspection

Item	Inspected (Y/N)		Condition (Cracks, leaks, non-operationa gauges, etc.)	
Above Ground Piping	N	IA	942	
Regenerative Blower			(Auto / Hand / Off)	
Heat Exchanger		1	(Auto / Hand / Off)	
Pressure Gauges/Flow Meters		2	+12 	
Vent Valve Status	-1015	4	ar.	

### System Gauge Readings

Item	Units	Reading	g Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	NA	
PI – 3	psi		0 - 30
TI - 3	٥F	2 Color	150 - 200

### After Heat Exchanger

Item	Units	Reading	Operating Range
Hour Meter Heat Exchanger	Hour's / Minutes	NA	
PI – 4	psi		0 - 30
TI – 4	۰F	+	150 - 200

## Air Flow Monitoring

01 09 2020

Location	ті	ime	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS - 1	N	A	1 35 10 13 14 14 14 14 14 14 14 14 14 14 14 14 14		
AS – 2	Mar B			19 19 19 19 2 4	
AS – 3	5.65			12.1	1
AS – 4	ч.				
AS – 5		L	35		

Additional Notes. System (CATOK) RESTART AFTER NEW CATALYST CELL + SEAL ON 1-7-20
RESTART CATOR 1-8-20 AFTER SER SET OVERNIGHT, ADJUST & MONITORED FOR VOL'S +0,E,
1-9-20, SVE-CATOR OPERATION CARRINAL, MONITOR VOL'S FOR DE, FID KEPT SAUTTING
DOWN, DESTRUCTION EFFERINCY + VOC VALUES WARNOW, COLECTED JAN-2020
SUS VAPOR SAMPLES & DELZUERED TO LAB. SYSTEM (CATOR) DATA READ + RECORDED
AIR SPAREGE System OFF UNTIL WE KNOW (CATOX) DE.
CATOX OPERATIONAL COUR DEPARTURE.
MAY 25 2 5

Field Representative (Print and Sign): Drong C Hoegan 

## SVE System Monthly Inspection Log. Kelly Moore. Date: 2-14-2020

### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	Jes	
Control Pump (Regenerative Blower)	yes 1	(On / Off)
Entrainment Pump (Transfer Pump)	yes	(Auto) Hand / Off)
Pressure Gauges/Flow Meters	Tes	
Knockout Tank (record level)	10	% full
Knockout Water Tote (record level)	30	% full
Dilution Valve Status	100%. cla	sed
Recirculation Valve Status	yes	open

### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	3897	
Catox In (T1)	٥F	665	>650
Catox Out (T2)	٥F	602	600 - 650
Heat Ex (T ₃ )	٥F	367	300 - 400
Flow	SCFM	198.	<300
LEL	%	03	5-15

Item	Units	Adjusted allfour
FE – 1	"WC G	HOSEFM or . OIN
PI – 1	"WC (vacuum)	-16" WE 20.5
TI-1	٥F	40°F
FE-2	"WC	17050FM10.01

## FID Measurements PID CALIBRATED TO 100 APM HEXANE G.H.

Location	Time	PTD FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure ("WC)
Western Manifold	11:05	33.4			
SVE – 13	1104	1.2 0000	- 2 m	0.75"	,009"
SVE - 12	1102	58.7	7	1.511	.010"
SVE - 11	11:00	5.5	2	1 "	,0104
SVE - 10	1058	35.2	7	16"	.010"
SVE - 09	1055	1.9	- 2	-	.0104
Eastern manifold	1137	13,5 PPM		The second s	
SVE - 01	11:17	3.2	2	Ð	.007"
SVE - 03	1126-44	19.8	7	1411	.0071
SVE - 05	11:24	50	- F.	14.5"	.667"
SVE - 07	11:20	510	2707	0	· 007"
SVE - 08	1128-14	5.2	1 2 - 1 - 2 - 6 - 2 - 6 - 1 C	13"	. 008"
SVE - 06	112944	216	2	1 **	.008"
SVE - 04	113245	13	2	50	.007
SVE - 02	1133 #1	1.1	2	10.5"	.007
SVE Influent	1014	55 ppd			
SVE Effluent	1011	1.3 pp M		States to state the	

Influent Sample ID: 1NF-02142020 Influent Sample Time: 10:23 Effluent Sample ID: EFF_01142020 Effluent Sample Time: 10:26

Field Representative (Print and Sign): Gravin Klockeman Date of Visit: 2-14-2020

## AS System Monthly Inspection Log, Kelly Moore. Date: 2-14-20 Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	ч	
Regenerative Blower	Y	(Auto) Hand / Off)
Heat Exchanger	ů,	(Auto/ Hand / Off)
Pressure Gauges/Flow Meters	Ň	1
Vent Valve Status	u.	open gol.

### System Gauge Readings

Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	2377	5
PI – 3	psi	11.5	0 - 30
TI – 3	°F	186	150 - 200

Item	Units	Reading	Operating Range
Hour Meter Heat Exchanger	Hour's / Minutes	2378	
PI – 4	psi	10	0 - 30
TI – 4	٥F	68	150 - 200

### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	1135-163	20% open	3.5	6.5
AS – 2		1	3.0	5.5
AS – 3			3.5	6.0
AS – 4		5 C	3.5	10.0
AS – 5	2	L	3.5	6.0

Additional Notes.

is flow to a OSCFM Ke-look The debruary 2020 Syster Recorded System data sau es Valor 2. Hagan 1

Field Representative (Print and Sign): Start VlockemanDate of Visit: 2-14-2020

## SVE System Monthly Inspection Log. Kelly Moore. Date: 3-17-2020

Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

#### Condition (Cracks, leaks, non-operational Inspected Item (Y/N)gauges, etc.) Above Ground Piping Jes Control Pump (Regenerative Blower) (On/Off) 25 (Auto / Hand / Off) Entrainment Pump (Transfer Pump) yes Pressure Gauges/Flow Meters Jes Knockout Tank (record level) % full yes Knockout Water Tote (record level) Je3 % full **Dilution Valve Status** yes 100 **Recirculation Valve Status** 85) liges

## CATOX Screen Readings

Units	Reading	Operating Range
H-M	4056	
٥F	659	>650
٥F	603	600 - 650
٥F	370	300 - 400
SCFM	225	<300
%	-	5-15
	H-M °F °F SCFM	H-M 4056 •F 659 •F 603 •F 370 SCFM 225

correct with

### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	0,015 "
PI – 1	"WC (vacuum)	12,5" 420
TI – 1	٥F	44° F
FE-2	"WC	1,2"wc

### FID Measurements

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC)
Western Manifold	1127	13.2			
SVE - 13	1114	2.0	02 # G	1	.014"
SVE - 12	1117	2,5	1	10.5"	.015"
SVE - 11	1119	0.8	Ce M 6	1"	,014"
SVE - 10	1122	59.6	1	10.5"	·015"
SVE - 09	1124	2.1	German 6	Q	,014"
Eastern manifold	1163	0.111			
SVE - 01	1142	0.5	6	O	-021"
SVE - 03	1047	90.5	37 57 +1274	9n	,015"
SVE - 05	1149	325.0	. No in	12"	,014"
SVE - 07	1151	12.1	1	1.2"	.015"
SVE - 08	1139	0.9	6	Cit 10 19.5"	. 014 "
SVE - 06	1138	0.6	6	2.4"	-013"
SVE - 04	1135	2.3	6	2.5"	.013"
SVE - 02	1133	1.3	6	2.6"	.013"
SVE Influent	1246	100.9			
SVE Effluent	1243	7.6			

Influent Sample ID: <u>INF. 03172020</u> Influent Sample Time: <u>13:09</u>

Effluent Sample ID: EFF-03172020 Effluent Sample Time: 12154

Field Representative (Print and Sign): Gravin Wockeme Date of Visit: 3-17-2020

INFLUENT + EFFLUENT SAMPLES WERE COLLECTED VIA 1. LITER SUMMAVESSELS. ANALYSIS REQUEST IS BTEX BY TO-15 + TPH-G AS HEXANE.

## AS System Monthly Inspection Log, Kelly Moore. Date: 3-17-2020 Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	Jes	
Regenerative Blower	pair	(Auto / Hand / Off)
Heat Exchanger	yes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	Jes	
Vent Valve Status	7	Planer out for repair

### System Gauge Readings

Be	efore Hea	t Exchange	r	After	Heat Exc	changer	
Item	Units	Reading	Operating Range	Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	2497		Hour Meter Heat Exchanger	Hour's / Minutes	24977	
PI – 3	psi		0 - 30	PI – 4	psi	-	0 - 30
TI – 3	°F		150 – 200	TI – 4	٩F	Manuar -	150 - 200

### **Air Flow Monitoring**

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS - 1	17.4	CON	11	
AS - 2	Unit	offlive	, blower	TUO
AS – 3	6-6			
AS – 4	100 1	Lepair		
AS – 5		1		

Additional Notes.

CATOX RESTART. MARCH 2020 SySTEM VAPOR SAMPLES COLLECTED.

RECORDED ALL SYSTEM'S DATA. SVE . CATOX OPERATIONAL COUR DUPARTURE.

2460

Field Representative (Print and Sign): Town Plocken Date of Visit: 3-17-2020

Co. Hugan

## SVE System Monthly Inspection Log. Kelly Moore. Date: 4-20-2020

## Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	
Control Pump (Regenerative Blower)	ses	(On/ Off)
Entrainment Pump (Transfer Pump)	Jes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	Jes	
Knockout Tank (record level)	Jes	% full 30 70
Knockout Water Tote (record level)	Jes	% full 40 70
Dilution Valve Status	yes	Closed 100%
Recirculation Valve Status	Jes	1

#### CATOX Screen Readings

Item	Units	Reading	Operating Range
Hour Meter	H-M	4854	
Catox In (T1)	٥F	696	>650
Catox Out (T2)	٥F	658	600 - 650
Heat Ex (T ₃ )	٥F	413	300 - 400
Flow	SCFM	65	<300
LEL	%		5-15

LABROKEN

#### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	0.011"
PI – 1	"WC (vacuum)	4.5"
TI – 1	٥F	50°F
FE-2	"WC	1.8"

### FID Measurements

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure ("WC)
Western Manifold	10:07	23.8			
SVE – 13	10:05	25.8	4	1.5"	"510.
SVE - 12	10:03	26,2	1	2"	-011"
SVE - 11	10:02	8.0	5	1.,	.011"
SVE - 10	9:59	73.0	1	3.5"	.010"
SVE - 09	9:58	2.7	5	.0	- 011 -
Eastern manifold	10:34	37.2			
SVE - 01	10:32	5.0	6	-0-	.012"
SVE - 03	10:30	10.9	and the second sec	1.25.	. 012 "
SVE - 05	10:28	94.6	Ň	3.0"	.012~
SVE - 07	10:25	5.3	1	3.6"	-013"
SVE - 08	10:23	2.2	6	3.5"	. 012"
SVE - 06	10:22	2.7	6	-0-	.012"
SVE - 04	10:20	5.9	6	1,5"	.0114
SVE - 02	10:16	7.2	6	2.51	.012"
SVE Influent	915	98.9			
SVE Effluent	915	4.8			

Influent Sample ID: INF.4_20_2020 Influent Sample Time: 9:34

Effluent Sample ID: EFF-4-20-2020 Effluent Sample Time: 9:24

Field Representative (Print and Sign)

Gravin Hockemen Cronge Hagan IHA

1 of 2

## AS System Monthly Inspection Log, Kelly Moore. Date: 4-20-2020 Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)	
Above Ground Piping	ises		
Regenerative Blower	yes	Auto / Hand / Off)	
Heat Exchanger	yes	(Auto / Hand / Off)	GK
Pressure Gauges/Flow Meters	yes	After the georges have share we	ant the
Vent Valve Status	yes		Here

### System Gauge Readings

Before Heat Exchanger							
ltem	Units	Reading	Operating Range	Item			
Hour Meter Sparge Blower	Hour's / Minutes	2649		Hour Meter Heat Exchanger			
PI – 3	psi	9	0 - 30	PI – 4			
TI – 3	۰F	2056	150 – 200	TI – 4			

## After Heat Exchanger

Item	Units	Reading	Operating Range
Hour Meter Heat Exchanger	Hour's / Minutes	2649	
PI – 4	psi	8.5	0 - 30
TI – 4	٥F	73°F	150 – 200

### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	9:53	200	3.5	10
AS – 2	9:54		3.0	9.5
AS – 3	9:54		3.5	9.5
AS – 4	9:54		3.5	9.5
AS – 5	9:55	-	3.0	9,5

Additional Notes.

A5-5 very dirty. DE= 95.170. getting issues regarding inspection. Collect full round April inspection. Conducted house keepive tasks amples collected 1015 canister USING

Field Representative (Print and Sign):

Gravin Klockewan Groge Hagan IHIT

## SVE System Monthly Inspection Log. Kelly Moore. Date: 5-18-2020

### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	
Control Pump (Regenerative Blower)	yes	(On / Off)
Entrainment Pump (Transfer Pump)	yes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	405	<u> </u>
Knockout Tank (record level)	Yes	% full 40%
Knockout Water Tote (record level)	yes	% full 40%
Dilution Valve Status	yes	Fully closed
Recirculation Valve Status	yes	Actusted to set stow @
		40% open GK

### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	5525	
Catox In (T1)	٥F	687	>650
Catox Out (T2)	٥F	657	600 - 650
Heat Ex (T ₃ )	۰F	419	300 - 400
Flow	SCFM	138	<300
LEL	%	NOTIN	5-15
0	1	usegh	

### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	-017"
PI – 1	"WC (vacuum)	6,5"H20
TI – 1	٥F	55
FE-2	"WC	138 SCFM

@ 21. 5 Amps on Me

### **FID Measurements**

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC)
Western Manifold	929	4.2			
SVE – 13	927	3-9	- H	2	.017
SVE - 12	926	3.4	7	2	.017
SVE – 11	924	3-2	3		,017
SVE - 10	923	24.3	7	3	.017
SVE - 09	921	1.4	3	0	016
Eastern manifold	949	45.9			
SVE - 01	947	2.7	2	0	F10.
SVE - 03	945	49.8	7	4	.017
SVE - 05	942	85.5	7	3	,017
SVE - 07	940	4.6	7	5.5	-017
SVE - 08	938	1.3	2	4.5	.018
SVE - 06	937	2.2	2.	2	.019
SVE - 04	935	26.8	2 TO 5	1.5	-02
SVE - 02	933	0.6	2	2.5	:016
SVE Influent	Stella	6.2	D.E. CALCU	ATTED C 91	and the second
SVE Effluent	Bonny	0.3	Sale in the second second		Seattle seattle

Influent Sample ID: 18-2020 Influent Sample Time: 1014

Effluent Sample ID: CFF- 9-18-2020 Effluent Sample Time: ______

Field Representative (Print and Sign):

_ Date of Visit: 5-18-2020 Graving Klockeman - IHA. -Hagan

## AS System Monthly Inspection Log, Kelly Moore. Date: 5-18-2020 Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	-
Regenerative Blower	Jes	(Auto Hand / Off)
Heat Exchanger	yes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	yes	
Vent Valve Status	yes	OPEN 60%

### System Gauge Readings

	Be	efore Heat	t Exchange	r	- 1
	Item	Units	Reading	Operating Range	lte
	Hour Meter Sparge Blower	Hour's / Minutes	3320		Ho Me He Exch
	Pl – 3	psi	9	0 - 30	PI
Į	TI – 3	٥F	220	150 – 200	TI

Item	Units	Reading	Operating Range
Hour Meter Heat Exchanger	Hour's / Minutes	3320	
PI-4	psi	9	0 - 30
TI – 4	°F	76	150 - 200

### Air Flow Monitoring

### T

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	965	200	2.5	9.7
AS – 2	946		1,75	9.5
AS – 3	906	and the second	2	9.5
AS – 4	906		2.5	9.25
AS – 5	906	the d	2	9.5

Additional Notes. ALE FLOW GAUGE. black build up compare to AS-1-PAS-4. SVE4 to position )/0 opened P55 water in vacuum gages on SVE pipes. SVE5 gage C Noise coming from poleement. heart ex. Sands need like something be coming loose morected Jas mary pelt and conduit see any issues. Also, we replaced and and chart peper for CATOX.

Field Representative (Print and Sign)

Grouin Klockenien Ground Hagan - JHA.

## SVE System Monthly Inspection Log. Kelly Moore. Date: 10-2020

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	YES	Crack on coupler on blower artlet
Control Pump (Regenerative Blower)	yes	(On) Off)
Entrainment Pump (Transfer Pump)	yes	(Auto )Hand / Off)
Pressure Gauges/Flow Meters	yes	
Knockout Tank (record level)	yes	% full 3025011
Knockout Water Tote (record level)	yes	% full 45% full
Dilution Valve Status	Jes	Closed fully
Recirculation Valve Status	Jes	

## Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	6164	
Catox In (T1)	٥F	701	>650
Catox Out (T ₂ )	°F	660	600 - 650
Heat Ex (T ₃ )	٥F	410	300 - 400
Flow	SCFM	1301	<b>O</b> <300
LEL	%	-	5-15

### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	0.021
Pl – 1	"WC (vacuum)	7.25
TI – 1	٥F	52.5
FE-2	"WC	0.021

### **FID Measurements**

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC)
Western Manifold	1016	4.6			
SVE - 13	1015	1.9	2	0	-020
SVE - 12	1013	4.4	7	5.5	.019
SVE - 11	1012	3.1	2	Ð	.020
SVE - 10	(010	22.5	7	6.5	,620
SVE - 09	1008	3.7	2	Ð	-019
Eastern manifold	1036	69.5		La Barris Charles	
SVE - 01	1020	2.0	2	0	hv-020000
SVE - 03	1022	202.0	7	5.25	9-00.00
SVE - 05	1025	71	7	5.5	0.000
SVE - 07	1026	13.2	4	5.5	1000
SVE - 08	1028	48	2	6.5	0.001
SVE - 06	1030	3.0	Z	2	0.001
SVE - 04	1032	10.8	6	6.5	0.001
SVE - 02	1034	3.2	7	A	0.001
SVE Influent	913	25.0	and the second		
SVE Effluent	906	7513		ALL	a har start and a start

Cavin Frodeman

G. Hagan

Influent Sample ID: INF_6-16-20 Influent Sample Time: 9-34 Effluent Sample ID: EFF_6-16-20 Effluent Sample Time: 9:31

Date of Visit: 6-16-2020

Field Representative (Print and Sign)

1 of 2

## AS System Monthly Inspection Log, Kelly Moore. Date: 6-16-2000 Visual/Audio Inspection

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	0
Regenerative Blower	Jes	(Auto/ Hand / Off)
Heat Exchanger	Vjes	(Auto) Hand / Off) Still Slight rattle
Pressure Gauges/Flow Meters	Jes	Contraction of the second
Vent Valve Status	yes	

### System Gauge Readings

Be	Before Heat Exchanger			After			
Item	Units	Reading	Operating Range	Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	3958.9		Hour Meter Heat Exchanger	Hour's / Minutes	3959.3	
PI – 3	psi	85	0 - 30	Pl – 4	psi	9.5	0 - 30
TI – 3	٥F	220	150 – 200	TI – 4	٥F	76	150 – 200

### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS - 1	9:51	200	to 3.5	10
AS – 2	5.1		J-to 2.5	0
AS – 3			4-9-53.0	9.5
AS - 4			9.53.5	9.5
AS – 5	-	-	+2-53.5	12.0

Additional Notes.

vo. Heat Exchanger Hill makely Slight GR With 94.8 eplacer IN TANES AVAR Keplaced Nober coupler on blower sitet air spange compress outlet temp. hanged blower o Olec. collected to repairs 2020 SYSTEM'S VAPOR Lunia SAMPLES WERE COLLECTED TO DAY. Date of Visit: 6-16-2020 Field Representative (Print and Sign) Granta Workenso 6. Hag an

## SVE System Monthly Inspection Log. Kelly Moore. Date: 7-20-20-20

## Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	
Control Pump (Regenerative Blower)	yes	(Op / Off)
Entrainment Pump (Transfer Pump)	yes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	ses	
Knockout Tank (record level)	Yes	% full 30 20
Knockout Water Tote (record level)	Jes	% full 45 20
Dilution Valve Status	yes	Closed willy
Recirculation Valve Status	yes	

### CATOX Screen Readings

Item	Units	Reading	Operating Range
Hour Meter	H-M	6980	
Catox In (T1)	٥F	716	>650
Catox Out (T2)	٥F	665	600 - 650
Heat Ex (T ₃ )	٥F	448	300 - 400
Flow	SCFM	151	<300
LEL	%		5-15

### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	-0-
Pl – 1	"WC (vacuum)	6.5
TI – 1	٥F	62
FE-2	"WC	1, 2" H20

## Cod FID Measurements

PID

·E com

Location	Time	アエクィン -F <del>ID</del> Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC )
Western Manifold	101B	10.0			
SVE - 13	1014	4.1	2	0	.002
SVE - 12	1012	14.6	7	4.5	,000
SVE - 11	1010	6.3	2	-0-	-005
SVE - 10	1009	35.0	7	4.5	.002
SVE - 09	1006	17.0	2	-9-	1001
Eastern manifold	1040	114.2			
SVE - 01	1038	24.2	-2	-0-	-001
SVE - 03	1035	340	7	5	0002
SVE - 05	1033	73-9	T.	4.5	,003
SVE - 07	1030	19	7	4	.001
SVE - 08	1029	5.0	3	5	64,7003 x
SVE - 06	1026	4.6	~2	0	.003
SVE - 04	1024	32.0	5	3.5	1000
SVE - 02	1022	2.3	2	0	0
SVE Influent	917	61-9-0-42	0.4		
SVE Effluent	a10	GH-42-0-1	.0		

Gain Hockeman

George Hogen

Influent Sample ID: NF-7-20-2000 Influent Sample Time: 9:42 Effluent Sample ID: 645 7-20-2020 Effluent Sample Time: 945

Date of Visit:

-20-2020

1 of 2

Field Representative (Print and Sign):

## AS System Monthly Inspection Log, Kelly Moore. Date: 7-20-2020 Visual/Audio Inspection

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	R
Regenerative Blower	yes	(Auto / Hand / Off)
Heat Exchanger	Jes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	405	
Vent Valve Status	yes	

### System Gauge Readings

Be	Before Heat Exchanger			After Heat Exchanger			
Item	Units	Reading	Operating Range	Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	4774		Hour Meter Heat Exchanger	Hour's / Minutes	4775	
PI – 3	psi	8.5	0 - 30	PI – 4	psi	9.5	0 - 30
TI – 3	°F	235	150 – 200	TI – 4	۰F	90	150 – 200

### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS - 1	958	20°	3	10.5
AS – 2	959	22. N	2.5	10
AS – 3	959		3	10
AS – 4	959		325	10
AS – 5	959	- + · · ·	2.25	9.75

Additional Notes.

DE=8870, then we calibrated PIT 9120. ) ang George installed SUE DIDING drip leas on all shelp wate not get into pressure gauges. Also, new conder was adjusted. as viborhous caused it to move down. Replaced 110 011111 aavae Charle F~R Before to 27amps. cho 50 Cott

_ Date of Visit: 7-20-2020 Field Representative (Print and Sign): Gravin Clockenon grouge Horgan

## SVE System Monthly Inspection Log. Kelly Moore. Date: <u>all-17-20</u>

### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	-y	-0.K.
Control Pump (Regenerative Blower)	4	(On)/Off)
Entrainment Pump (Transfer Pump)	4	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	¥	O.K
Knockout Tank (record level)	4	% full 45% Full
Knockout Water Tote (record level)	ч	% full 25%. Full
Dilution Valve Status	-11	100%. closed
Recirculation Valve Status	Y	OPEN 45%, Ampio @ DEIVE MOTOR 23.

### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	7.885.24	
Catox In (T1)	٥F	705	>650
Catox Out (T ₂ )	٥F	648	600 - 650
Heat Ex (T ₃ )	٥F	432	300 - 400
Flow	SCFM	125	<300
LEL	%	NA	5-15

### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	O, ODI HOD, INDCEM
PI – 1	"WC (vacuum)	4.5 HED
TI – 1	٥F	62'F
FE-2	"WC	0.12 420

### FID Measurements

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC )
Western Manifold	10:28	106		1.25	
SVE – 13	10:25	19.8	2	Citte "H20	.003
SVE – 12	10:23	111	7	3.25"420	,003
SVE – 11	10:20	25.8	2	0.0"420	-003
SVE - 10	10:13	152.6	7	3.75"H20	.003
SVE – 09	10:16	26	2	0.0" +20	.002
Eastern manifold	10:54	195			
SVE - 01	10:51	103	2		.004
SVE – 03	10:47	563	7	3.75 "H2O	.003
SVE - 05	10:45	251	7	4.0" 42	
SVE - 07	10:42	59.5	7	2.8"4-2	. 00H
SVE - 08	10:40	8.1	2	4.0" H20	
SVE - 06	10:39	9.1	2	1.0" H20	.003
SVE - 04	10:36	101	7	2.25" H20	.006
SVE - 02	10:33	13.0	2	O"H2D	,004
SVE Influent	1002 Has	321.991	DÉ € 97,6		
SVE Effluent	0959042				March 19 19 19 19

Influent Sample ID: INF. 9-17-20 Influent Sample Time: 1001 Hrs Effluent Sample ID: EFF_ 8-27-20 Effluent Sample Time: 0943-#25

Field Representative (Print and Sign):

Date of Visit: 8-27-20

1 of 2

## AS System Monthly Inspection Log, Kelly Moore. Date: 03-27-20 Visual/Audio Inspection

Item	(117) 91-9-0,000		
Above Ground Piping	ч	C:K	
Regenerative Blower	Ч	(Auto / Hand / Off)	
Heat Exchanger	Ч	(Auto/ Hand / Off)	
Pressure Gauges/Flow Meters	Ч	BLACK SOOT IN AIR FLOW GAUGES	
Vent Valve Status	Ч	OPEN SO'	

### System Gauge Readings

Be	Before Heat Exchanger			t Exchanger After H		
Item	Units	Reading	Operating Range	Item	ι	
Hour Meter Sparge Blower	Hour's / Minutes	5,679,9		Hour Meter Heat Exchanger	H M	
PI – 3	psi	8.5PSI	0 - 30	PI – 4		
TI – 3	٥F	228'F	150 – 200	TI – 4		

## fter Heat Exchanger

Item	Units	Reading	Operating Range
Hour Meter Heat Exchanger	Hour's / Minutes	5680.4	
PI – 4	psi	10.0 PSZ	0 - 30
TI – 4	°F	85'F	150 - 200

### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	0932	OPEN 20%.	3.0 PSI	11.0 SCEM
AS – 2	1	1	2.25 PSI	11.0 SEFM
AS – 3			3.0 PSI	10.5 SEFM
AS – 4			3,0 PSI	10:5 SCFM
AS – 5	7	đ	2.5 PSZ	10:0 SEFM

Additional Notes.

System operational Cour arrival, Found 4"x 3" coupler Post Blower Has Moved. Replaced 4" x 3" Ferre Coupler with a 4" x 3" Marine exhaust Bellow's couples. Screened influent & effluent paper streams, DEC 97.6%. Collected The influent + effluent system's laper somples for August-2020, Sustavij data, All operational ( our departure. Recorded the

Field Representative (Print and Sign): <u>Groupe Hoosen</u> Date of Visit: <u>8-27-20</u>

## SVE System Monthly Inspection Log. Kelly Moore. Date: 9-21- 20

## Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item (Y.		Condition (Cracks, leaks, non-operational gauges, etc.)	
Above Ground Piping	z	O.K.	
Control Pump (Regenerative Blower)	3	On/ Off)	
Entrainment Pump (Transfer Pump)	9	(Auto / Hand / Off)	
Pressure Gauges/Flow Meters	Y	OK	
Knockout Tank (record level)	ч	% full 30/,	
Knockout Water Tote (record level)	×	% full 50% @ 120 gel	
Dilution Valve Status	3	100% Closed	
Recirculation Valve Status	yes	50% open	

### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	\$484.97	
Catox In (T1)	٥F	703	>650
Catox Out (T ₂ )	٥F	686	600 - 650
Heat Ex (T ₃ )	°F	465	300 - 400
Flow	SCFM	130	<300
LEL	%	NIA	5-15

### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	0,002" WC
<b>PI</b> – 1	"WC (vacuum)	6" 420
TI – 1	٥F	57 F
FE-2	''WC	1.2" 420

### FID Measurements

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure ("WC)
Western Manifold	10:20	219.4			
SVE – 13	10:18	38.3	2	Ð	-001
SVE - 12	10:16	382.0	7	2.25"	-0-
SVE - 11	10:14	13.2	2	Ð	4
SVE – 10	10:11	168.9	7	2.0"	-0-
SVE - 09	10:09	16.9	2	Ð	.001
Eastern manifold	10:45	404.3		<b>Basel Apply</b> 10	
SVE - 01	10:41	193.8	Z	0	.002
SVE - 03	13:38	838.1	Ŧ	3"	.001
SVE - 05	10:36	497.6	7	1.75"	. 001
SVE – 07	10:33	139.3	Ŧ	2.6"	.001
SVE - 08	10:31	18	2	2.5 "	100.
SVE - 06	10:29	22.7	2	Ð	.001
SVE - 04	10:27	252.1	7	0.75"	.001
SVE - 02	10:25	18	2	Ð	.001
SVE Influent	0944	228. PPM	DE, 98,15		
SVE Effluent	3940	4,20 PPM			

Influent Sample ID: 10-20-21-2020 Influent Sample Time: 9:47 Effluent Sample ID: EFF_9-21-2020 Effluent Sample Time: 9:37

____ Date of Visit: 9-21-2020

Field Representative (Print and Sign)

Gavin Klockeman Curge Hagan

1 of 2

## AS System Monthly Inspection Log, Kelly Moore. Date: <u>9-21-20</u> Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	
Regenerative Blower	3	Auto Hand / Off)
Heat Exchanger	4	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	Ч	
Vent Valve Status	yes	open 50%

### System Gauge Readings

	Before Heat Exchanger			After Heat Exchanger				
	Item	Units	Reading	Operating Range	Item	Units	Reading	Operating Range
Blower	Hour Meter Sparge Blower	Hour's / Minutes	9279.3		Hour Meter Heat Exchanger	Hour's / Minutes	9279,7	
	PI – 3	psi	8.5	0 - 30	PI – 4	psi	10.0	0 - 30
[	TI – 3	°F	223	150 – 200	TI – 4	۰F	78	150 - 200

### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	10:52	20°	2	10.5
AS – 2	1		1.25	10.25
AS – 3			2	10
AS – 4			2	10
AS – 5	+	+	15	10

Additional Notes.

Dirstems operational at day Callecled wal We an upon echor found, issu es Were Sustern eplen DON econded sterry dala lion An-the M anth parte nus a ill +1 00 0 an - JHA Reals HAGAA hagen 60 4 Date of Visit: 9-21-2020 Field Representative (Print and Sign): Gawin Klockemen

## SVE System Monthly Inspection Log. Kelly Moore. Date: 16-76-20

### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	ACIK
Control Pump (Regenerative Blower)	yes	(On/ Off)
Entrainment Pump (Transfer Pump)	yes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	ijes	O.K
Knockout Tank (record level)	yes	% full 50 %. Full
Knockout Water Tote (record level)	yes	% full gol, full
Dilution Valve Status	yes	100% closed
Recirculation Valve Status	yes	90% Closed

### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	9131	
Catox In (T1)	۰F	690	>650
Catox Out (T ₂ )	٥F	653	600 - 650
Heat Ex (T ₃ )	٥F	358	300 - 400
Flow	SCFM	277-CFM	<300
LEL	%	NA	5-15

### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	10.010" WC_
Pl – 1	"WC (vacuum)	14 H20-V40
TI – 1	٥F	50'F
FE-2	"WC	24

## Bust Blower Temp 74'F. Amps on Motor @ 11.79 FID Measurements

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum ("WC)	Differential Pressure (''WC )
Western Manifold	10:26	94.6			
SVE – 13	10:24	14.0	2	2	0.001
SVE - 12	10:22	116.7	7	10.5	0.001
SVE - 11	10:21	14.8	2	-0-	0.001
SVE - 10	10:19	133.7	7	10.5	-0-
SVE - 09	10:18	9.5	2		0-
Eastern manifold	10:47	400		A BERNELLE	
SVE - 01	10:45	120	7	-O-	0.001
SVE - 03	10:43	786	7	10	<del>.</del>
SVE – 05	10:41	361	7	10	0-
SVE - 07	10:39	96.4	7	9.5	0.001
SVE - 08	10:37	11.5	2	10	0.001
SVE - 06	10:35	16.7	2	2	0.002
SVE - 04	10:33	152	7	8.25	-0-
SVE - 02	10:31	12.8	2	1.5	0.001
SVE Influent	9:43	195 PPM			
SVE Effluent	9:40	3.0 PPM			A State of the second sec

Gavin Klockeman

George Hagan

Influent Sample ID: 10-26-2010 Influent Sample Time: 10:01 Effluent Sample ID: UF-10-26-2020 Effluent Sample Time: 9:48

Field Representative (Print and Sign):

____ Date of Visit: 10-26-2020

1 of 2

## AS System Monthly Inspection Log, Kelly Moore. Date: 10-26-2020 Visual/Audio Inspection

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yer	47
Regenerative Blower	yes	(Auto / Hand / Off)
Heat Exchanger	ses.	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	yeg	
Vent Valve Status	405	

### System Gauge Readings

	Be	efore Hea	t Exchange	r R	1
	Item	Units	Reading	Operating Range	Ite
	Hour- Meter Sparge Blower	Hour's / Minutes	6968.2		Ho Me He Excha
	PI – 3	psi	8.5	0 - 30	PI ·
ĺ	TI – 3	٥F	210	150 - 200	TI

After	Heat Ex	changer	
Item	Units	Reading	Operating Range
Hour Meter Heat Exchanger	Hour's / Minutes	6968.7	
PI – 4	psi	至10	0 - 30
TI – 4	°F	60	150 - 200

### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS - 1	10:54	200	3.0	11
AS – 2			2.25	10.5
AS – 3			3.0	10,25
AS – 4			3.0	10.5
AS – 5		-	2.5	10.25

Additional Notes.

filters Jamples replaced air Onser different after frame amoster on influent divition. air alves 30gallous power wested. 1 days we gelee was Total gerllons in \$ tote = 205 garlons. We are about 25 gallous from possible shotdown

Field Representative (Print and Sign): Gavin Hockeman Gavin Hockeman George Hagan

## SVE System Monthly Inspection Log. Kelly Moore. Date: 11-18-20 Cog40-rby

## Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	d Condition (Cracks, leaks, non-operational gauges, etc.)		
Above Ground Piping	y	0		
Control Pump (Regenerative Blower)	4	(On/ Off)		
Entrainment Pump (Transfer Pump)	Y	(Auto) Hand / Off)		
Pressure Gauges/Flow Meters	Y	O,K		
Knockout Tank (record level)	4	% full 25% Full		
Knockout Water Tote (record level)	4	% full So /. Full 110 gal in 20 Days . A		
Dilution Valve Status	3	100%. CLOSED		
Recirculation Valve Status	Ч	951. CLOSED		

### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	9734	
Catox In (T1)	٥F	688 F	>650
Catox Out (T ₂ )	٥F	645 F	600 - 650
Heat Ex (T ₃ )	٥F	344 F	300 – 400
Flow	SCFM	234CFM	<300
LEL	%	N14	5-15

### System Gauge Readings

Item	Units	Reading
FE – 1	''WC	0.000 "H2D
<b>PI</b> – 1	"WC (vacuum)	11.5 "Hed VAC
TI – 1	٥F	47°F
FE-2	"WC	2.0" P270CFM

### FID Measurements

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC )
Western Manifold	11:50	83.7			
SVE - 13	11:23	9.0	2	-0-	0.001
SVE - 12	11:51	110.5	7	8.2	0.002
SVE - 11	11:19	10.3	2	-0-	0.001
SVE - 10	11:17	78.5	7	8	0,001
SVE - 09	11:15	6.6	2	0	0,002
Eastern manifold	11:48	108.9			
SVE - 01	11:47	71.3	7	4	0.001
SVE - 03	11:44	621.3	7	6	0.001
SVE - 05	11:37	207.2	7	5	0,000
SVE - 07	11:34	125.4	7	5	0,000
SVE - 08	11:32	5.6	2	5.75	0.002
SVE - 06	11:30	7.1	5	0.5	0.001
SVE - 04	11:28	47.4	7	4	0.001
SVE - 02	11:26	5.9	2	025	0.001
SVE Influent	10:18	62.5			
SVE Effluent	10:15	1.4			

 Influent Sample ID: <u>uf - 11-18-2020</u>
 Effluent Sample ID: <u>Eff - 11-18-2020</u>

 Influent Sample Time: <u>10: T6</u>
 Effluent Sample ID: <u>Eff - 11-18-2020</u>

 Field Representative (Print and Sign): <u>10: T6</u>
 Date of Visit: <u>11-18-2020</u>

 Conce Flogan : George dogon II-18-20
 1 of 2

## AS System Monthly Inspection Log, Kelly Moore. Date: 11-18-20 Visual/Audio Inspection

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)		
Above Ground Piping	y	O.K.		
Regenerative Blower	4	(Auto)/ Hand / Off)		
Heat Exchanger	9	(Auto) Hand / Off)		
Pressure Gauges/Flow Meters	5	0. K.		
Vent Valve Status	3	open 40%		

### System Gauge Readings

Be	Before Heat Exchanger			After Heat Exchanger			
Item	Units	Reading	Operating Range	Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	7520		Hour Meter Heat Exchanger	Hour's / Minutes	7520	
PI – 3	psi	8.0 PSF	0 - 30	PI – 4	psi	9.5 PSI	0 - 30
TI – 3	٥F	210°F	150 – 200	TI – 4	۰F	65.F	150 – 200

### **Air Flow Monitoring**

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	1053	open 20%,	3.0	10,5
AS – 2	1461	1	2.5	10,5
AS – 3			3.0	10.5
AS – 4			3.25	10.5
AS – 5	_	2	3.0	11.5

Additional Notes.

from Su ornel, NOTE 110 goal operat our nerale 2. tote 5 55 year Me slew ·- Da To 20 wer 55g8 70 inte d n Chart MM Cartre daes 9 020 Vaper som al SVE-DI Well HOM System dal

Field Representative (Print and Sign) 2020 Date of Visit: 11-18 GEORGE HAGAN ; George Hagen. 11-18.20 IHA ENV.

## SVE System Monthly Inspection Log. Kelly Moore. Date: 12-14-2020

Visual/Audio Inspection.	Located at; 5400 Airport Way	South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	
Control Pump (Regenerative Blower)	yes	(On Off)
Entrainment Pump (Transfer Pump)	nes	(Auto/ Hand / Off)
Pressure Gauges/Flow Meters	Jes	
Knockout Tank (record level)	40	% full
Knockout Water Tote (record level)	75	% full × pumped down to empty
Dilution Valve Status	yez	100°Zo closed
Recirculation Valve Status	Jes	20% open

### CATOX Screen Readings

Item	Units	Beading	Operating Range
Hour Meter	H-M	10343	
Catox In (T1)	°F	6A7	>650
Catox Out (T ₂ )	٥F	635	600 - 650
Heat Ex (T ₃ )	٥F	341	300 - 400
Flow	SCFM	279	<300
LEL	%	-	5-15

### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	0,001"
PI – 1	''WC (vacuum)	13"
TI – 1	٥F	48°F
FE-2	"WC	1.8"

## FID Measurements

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC )
Western Manifold	10:42	9.5			
SVE – 13	10:40	2.2	2	0	.002
SVE – 12	10:38	11.1	7	9"	.002
SVE – 11	10:30	1.6	2-	0	200.
SVE - 10	10:34	18.4	7	94	.003
SVE - 09	10:33	7.5	2	Ð	.003
Eastern manifold	(1: iD	64.0			
SVE - 01	11:07	34.7	7	6	-002
SVE - 03	(102	446	7	6.5	.002
SVE - 05	11:00	69.8	7	6.5	.002
SVE - 07	10:58	30.8	7	5.4	.002
SVE - 08	10:56	1.7	2	6.5	. 003
SVE - 06	10:53	2.5	5	1.5	.003
SVE - 04	10:51	19.2	Ť	4.5	.003
SVE - 02	1D:48	1.9	2	0	.003
SVE Influent	9:45	25.9	DE=012°	70	
SVE Effluent	9:43	1.8	00 10		A POSTACE STATE

Influent Sample ID: M--12-14-2020 Influent Sample Time: 10:10 Effluent Sample ID: EFF-12-14-2020 Effluent Sample Time: 9:57

Field Representative (Print and Sign):

Date of Visit: 12-14-2020 Gravin Klockenan

## AS System Monthly Inspection Log, Kelly Moore. Date: 12-14-2020 Visual/Audio Inspection

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	6
Regenerative Blower	yes	(Auto / Hand / Off)
Heat Exchanger	Jes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	yes	
Vent Valve Status	yes	

### System Gauge Readings

ltem	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	8129	
Pl – 3	psi	8.5	0 - 30
Tl – 3	٥F	240	150 - 200

Item	Units	Reading	Operating Range
Hour Meter Heat Exchanger	Hour's / Minutes	8129.4	
PI-4	psi	9.5	0 - 30
TI – 4	٥F	65°F	150 - 200

### **Air Flow Monitoring**

Location	Time	Valve Position (record appx angle)	Pressure () (psi)	Air Flow (SCFM )
AS – 1	10:30	20°	NOLOS 3	10.5
AS – 2			2.5	10
AS – 3			3	10
AS – 4			3	D
AS – 5		1	3	11.5

V

Additional Notes. Jamples collected w. Most ms 6201 applied 5 Taper no to drums chart iana Wells accessed, No in Nells spora es drop & Tota from each Rel Measured Depth ellen welle. an sparge of The ous the air sporge Mar ugol installed on Date of Visit: 12-14-2020 Field Representative (Print and Sign): Gain Klockeman George Hagan

## SVE System Monthly Inspection Log. Kelly Moore. Date: 1-11-2021

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	fes	
Control Pump (Regenerative Blower)	yes	(On / Off)
Entrainment Pump (Transfer Pump)	yes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	Yes	<u> </u>
Knockout Tank (record level)	yes	% full 5 /,
Knockout Water Tote (record level)	yer	% full 60%, 145 gal
Dilution Valve Status	yes	ioo'l. CLOSED
Recirculation Valve Status	400	65'1, CLOSED

## Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	11,013	
Catox In (T1)	٥F	707	>650
Catox Out (T2)	٥F	636	600 - 650
Heat Ex (T ₃ )	۰F	342	300 - 400
Flow	SCFM	280	<300
LEL	%	NIA	5-15

#### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	0,002
PI – 1	"WC (vacuum)	20 ¹¹ H20
TI – 1	٥F	42'F
FE-2	"WC	1.5"

POST BLOWDE TEMP 68"F POST BLOWER PRESSURE 0,0 PSI

### **FID Measurements**

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC)
Western Manifold	11:10	31.9			
SVE - 13	11:08	3.5	2	0	0.003
SVE - 12	11:07	39.7	7	18.5	0.002
SVE - 11	11:04	0.4	2	1.0	0.00.3
SVE - 10	11:00	6.3	7	17.0	0.002
SVE - 09	10:58	0.1	ż	0.8	0.003
Eastern manifold	11:42	159.6			
SVE - 01	11:39	102	2	0.8	0.004
SVE - 03	11:37	120	7	18	0,004
SVE - 05	11:30	314	7	18.5	0.004
SVE - 07	11:27	1900	277	13.5	0.004
SVE - 08	11:21	230	2-73	18	0.003
SVE - 06	11:19	0.7	2	3.5	0.004
SVE - 04	11:17	0.9	2	5.5	0.003
SVE - 02	11:16	1.4	2	1.0	0.003
SVE Influent	10:20	97.5	DE= 9849		
SVE Effluent	10:15	1.5	yt 10,1%		

Influent Sample ID: 10: 1-11-2021 Influent Sample Time: 10:35 Effluent Sample ID: EFF_1_1_2021 Effluent Sample Time: 10:24

Date of Visit: 1-11-2021

Field Representative (Print and Sign):

Gittagen

1 of 2

## AS System Monthly Inspection Log, Kelly Moore. Date: 1-11-2021 Visual/Audio Inspection

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	
Regenerative Blower	yes (	(Auto DHand / Off)
Heat Exchanger	vez	(Auto) Hand / Off)
Pressure Gauges/Flow Meters	Jes	
Vent Valve Status	yes	

### System Gauge Readings

ltem	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	8794.6	
PI – 3	psi	8.5	0 - 30
TI – 3	°F	315-Gk	150 - 200

### After Heat Exchanger

Item	Units	Reading	Operating Range
Hour Meter Heat Exchanger	Hour's / Minutes	8795	-
PI – 4	psi	11.5	0 - 30
TI – 4	°F	60	150 - 200

## Gaege broken

## Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	10:51	20°	4	10
AS – 2	10:51	1	3	10.25
AS – 3	10:51		3.5	10
AS – 4	10:51		3.75	10.5
AS – 5	10:51	1	3.5	10 5

Additional Notes. marte & 0900 thes	
Additional Notes. on site C oyder and ink. Prained Bled water	
from air sparge manifold. Adjusted E. Manis Fold SUEDI-> 2,	
SUED7-72, SUEDY-72. Final Adjustment SUED8-03, SUED7-07.	

of Ste Cizzo-drs

Field Representative (Print and Sign) Date of Visit: 1-11-2021

2 of 2

## SVE System Monthly Inspection Log. Kelly Moore. Date: 2-9-21

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	-
Control Pump (Regenerative Blower)	yes	(On) Off)
Entrainment Pump (Transfer Pump)	yes	(Auto)/ Hand / Off)
Pressure Gauges/Flow Meters	yes	
Knockout Tank (record level)	yes	% full 40'),
Knockout Water Tote (record level)	yes	% full 60%. @ 160 gel
Dilution Valve Status	yes	100% CLOSED
Recirculation Valve Status	YES	75% OPEN

### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

### CATOX Screen Readings

Item	Units	Reading	Operating Range
Hour Meter	H-M	11,690	HRS
Catox In (T1)	٥F	684'F	>650
Catox Out (T ₂ )	٥F	645'F	600 - 650
Heat Ex (T ₃ )	٥F	367'F	300 - 400
Flow	SCFM	63CFM	<300
LEL	%	NA	5-15

#### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	0,003 " 120
PI – 1	"WC (vacuum)	30" 420
TI – 1	۰F	33'F
FE-2	"WC	0,50 " H2D

LOW INFLUENT VOL'S (5- PPMINE, EFF @ 1.2ppm) LOW DE, CALCULATED ( 36%, SCREENED) FID Measurements ALL VIE, WELLS INDEPENDANTLY ( 21"420 VAC TO MAKE ADJUSTMENTS × **FID Measurements** 

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC )
Western Manifold	1130	2.2 PPM			
SVE – 13	1135	3,0 PPM	Icel, CLOSED		
SVE - 12	1140	3.0 PPM	1	WEST MAN	IFOLD AATR
SVE - 11	1145	2.0 PPM	ALC: No.		SHUTOFF DU
SVE - 10	1150	1.5 PPM	and a second sec	To LONG VOC	15, Susperia
SVE - 09	1155	1,4 PPM	đ		RE SURMERGE
astern manifold	1455	545 PPM		and the second second	
SVE - 01	1050	4.0 PPM	100%, CLOSED	LOW VOUS	-1
SVE - 03	1055	3.0 PPM	100%, CLOSED	LOW VOUS	·
SVE - 05	1345	25:0 PPM	2		
SVE - 07	1347	790, CPPM	7		
SVE - 08	1342	325.0 PPM	2		18.276.144
SVE - 06	1340	25.0 PPM	2		
SVE - 04	1105	· AISPPM	100% CLOSED	Low Voci	5,
SVE - 02	1109	2,3 PPM	100% CLOSED	LOW VOC	
SVE Influent	1255	309,0 PPM			
SVE Effluent	1250	3.0 PPM	D.E. 99%/1	Contraction of the second	

lockeman

Influent Sample ID: TNF_ 2 . 9 . 2021 Influent Sample Time: 1320 - H 35

Effluent Sample ID: EFF-1-9-2021 Effluent Sample Time: 1309-HPS

Date of Visit: 29 2021

Field Representative (Print and Sign):

1 of 2

## AS System Monthly Inspection Log, Kelly Moore. Date: 2-9-2021 Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	lizes	
Regenerative Blower	yes	(Auto / Hand / Off)
Heat Exchanger	yes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	yes	
Vent Valve Status	yes	

### System Gauge Readings

Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	9471,5	Ars/min
PI – 3	psi	eff	0 - 30
TI – 3	٥F	dl	150 - 200

#### After Heat Exchanger

Item	Units	Reading	Operating Range
Hour Meter Heat Exchanger	Hour's / Minutes	9472,0	the / min
PI – 4	psi	off	0 - 30
TI – 4	٥F	off	150 - 200

### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	AIR SPARE	G SUSTOM SH	WA OFF, WEST	MANIFOLD
AS - 2	SHUT OFF	No Voc'S FROM		NECT HIGH
AS – 3	GROUND WA			ENTRACTION WEL
AS – 4	SUBMERGED,			
AS - 5				

Additional Notes. SUSTEM OFERATIONEL COUR ARRIVAL, LOW INLET VOUS & DE, SCREENED HELVE WELLS TMADE ADJUSTMENTS INLET VOL'S ADJUSTMENTS 4 DE, (PRIOR TO TO VE WEL INF VOL'S EFEVOLS C 1,200M. DE C 56% AFTER VE ADJUSTMENTS EFF Vic's C3. Oppm, D.E. 99 FISE VOC'S 309.0PPM ADJUSTMENTS ARE SUCCEBSFUL, SUE-CATOX OBISRATING ON VE WELL'S 05,04,07,08, ALL OTHER WELLS SHIET OFF AIR SPARGE UNIT SHUT OFF. FEB-2021 SASTEMS SAMPLES & SYSTEM DATA COLLECTED TODAY, RECALBRATED PID WAILE ONSLITE, CHANGED CALLET PAPER _____ Date of Visit: 2 - 9 - 20 21 Field Representative (Print and Sign): Currer Hagen

## SVE System Monthly Inspection Log. Kelly Moore. Date: 3-9-2021

### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	
Control Pump (Regenerative Blower)	Jes	(On Off)
Entrainment Pump (Transfer Pump)	Jes	(Auto)/ Hand / Off)
Pressure Gauges/Flow Meters	Jes	
Knockout Tank (record level)	Jes	% full O To full
Knockout Water Tote (record level)	Jes	% full O 20 full
Dilution Valve Status	Jes	100% closed
Recirculation Valve Status	yes	15 % closed

### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	12324	
Catox In (T ₁ )	٥F	712	>650
Catox Out (T ₂ )	٥F	662	600 - 650
Heat Ex (T ₃ )	٥F	412	300 - 400
Flow	SCFM	67	<300
LEL	%	NA	5-15

# 501, gh System Gauge Readings

ltem	Units	Reading
FE – 1	"WC	0.002 that
PI – 1	"WC (vacuum)	30" Hao
TI – 1	٥F	38°F
FE-2	"WC	2 is "Hac

### FID Measurements

PZTET TUBE CLOCKED, FULLED & CLO ANOB GEVENCE THE CORRECT READENCE.

and the second second	Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC)
	Western Manifold	ALEX			GHL	
s –	SVE – 13	~	-		Niton O	NIM
3	SVE - 12	-	-	1 = Closed	1	)
-	SVE - 11	~	-			
	SVE - 10	67	-	1		
1	SVE - 09	-			L	1
	Eastern manifold	11:12	388			
	SVE - 01		sed	+ 1	Ð	N/M
	SVE - 03		losed	1 1	25 \$	NIM
	SVE - 05	11:08	109	3	29	0.0
	SVE - 07	11:06	1069	7	29	
	SVE - 08	11:03	444	3	29.5	
	SVE - 06	11:01	42-2	2	ů.	1
	SVE - 04	100% cla	sed	1 1	- <del>0</del>	NIM
-	SVE - 02		esed	1 1	0	NIM
	SVE Influent	9:35	103.9	AE. C98%		
	SVE Effluent	9:25	2.0			

Influent Sample Time: 10-34 10:34

Field Representative (Print and Sign):

Effluent Sample Time: 10:20 Date of Visit: 3 - 9 - 2021

Gawin Klockeman conge theojen

1 of 2

## AS System Monthly Inspection Log, Kelly Moore. Date: 3-9-2021 Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	Jes	
Regenerative Blower	Des	(Auto / Hand / Off)
Heat Exchanger	Jes	(Auto / Hand (Of))
Pressure Gauges/Flow Meters	yes	
Vent Valve Status	yes	100 % open

## * Air Sporge off

System Gauge Readings Before Heat Exchange

Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	9471.9	
PI – 3	psi	-	0 - 30
TI – 3	٥F		150 - 200

Item	Units	Reading	Operating Range
Hour Meter Heat Exchanger	Hour's / Minutes	7472.3	
PI – 4	psi	-	0 - 30
TI – 4	٥F	-	150 - 200

## Air Flow Monitoring X An - S man

r Flow Monito	oring 🗡 🏳	tic Sporg	e off	
Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1				
AS – 2				
AS – 3				
AS – 4				
AS – 5				

Additional Notes.

Ran air spange for a little while so it doesn't sit for long. Chart paper was journed so we fixed it. PK-100. Record ed the March 2021 battery in the anze Collected The March 2021 System Vapor System date and the battery change in chart recorder all parameters Samples Will need to be representationed, tow ainflow & higher Vocuum Causing Water in VE Pipe to Settle C it's howest Point, _ Date of Visit: 3-9-2021 Field Representative (Print and Sign) Gravin Klockeman Gronge Hoegen

## SVE System Monthly Inspection Log. Kelly Moore. Date: 4-6-2021

#### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	
Control Pump (Regenerative Blower)	yes	(Op// Off)
Entrainment Pump (Transfer Pump)	Jes	(Auto)/ Hand / Off)
Pressure Gauges/Flow Meters	yes	
Knockout Tank (record level)	15	% full 30 gal
Knockout Water Tote (record level)	5	% full \$,0 qae
Dilution Valve Status	Ø	1/0 open
Recirculation Valve Status	50%	open

#### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	12994.8	
Catox In (T1)	°F	360	>650
Catox Out (T ₂ )	٥F	660	600 - 650
Heat Ex (T ₃ )	٥F	407	300 - 400
Flow	SCFM	67	<300
LEL	%	)	5-15

#### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	0.001
Pl – 1	"WC (vacuum)	30
TI – 1	٥F	39
FE-2	"WC	0.10

#### **FID Measurements**

Location		me	FID F	Reading opm)	Valve Po (record	osition		uum VC)	Pre	rentia ssure NC )
Western Manifold	2	A	N	I.A			and the			
SVE - 13						t	N	A	N	14
SVE - 12			1			Ì				
SVE - 11										
SVE - 10					1					1.
SVE - 09	-	Ł	0	L	1		2	-	1	
Eastern manifold	ID	:55	18	0		and the second	No. Set	and the	alle des	
SVE - 01	NI	4		IA	1		مارا <i>ل</i> م	Pt .	N	IA
SVE - 03	2	-			1		1		-	-
SVE - 05	10:	42	118	3	3		27	.5	0.0	04
SVE - 07		38	191	6	5		27	-	9.c	04
SVE - 08	10:	36		16.6	-3	>	29.4	5	0.0	
SVE - 06	19:	34	6.		-	2	4.	5	0.00	
SVE - 04	N	R	1	A		1	N		M	1 1
SVE - 02	-	-		1		i		-		2
SVE Influent	92	0	27	30						
SVE Effluent	92	0		.7	DE=9	8.4%	The second	PEGE LA		

currently closed

Effluent Sample ID: EH- 4-6-2021 Effluent Sample Time: ____9:39 Influent Sample Time: ______ 10:02 Date of Visit: 4-6-2021 1

Field Representative (Print and Sign)

GUL

1 of 2

Gravin Klockeman Grange Hogan

## AS System Monthly Inspection Log, Kelly Moore. Date: 4-6-2021 Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	~
Regenerative Blower	yes	(Auto / Hand Off))
Heat Exchanger	Jes	(Auto / Hand Off)
Pressure Gauges/Flow Meters	yes	U
Vent Valve Status	yes	

# System Gauge Readings Air Sporge wrrently off

Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	9472.9	
PI – 3	psi	OFF	0 - 30
TI – 3	٥F	2	150 - 200

After	Heat Exe	changer '	
Item	Units	Reading	Operating Range
Hour Meter Heat Exchanger	Hour's / Minutes	9473.6	
PI – 4	psi	OFF	0 - 30
TI – 4	٩P	2	150 – 200

# Air Flow Monitoring 'Air sparge currently off

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	OFF	OFF	OFF	OFF
AS – 2		1	Ĩ	1
AS – 3				
AS – 4				
AS – 5	- 4	-	1	C

Additional Notes. NEED TO RESEARCH THE HIGH PRESSURE SENSOR BEFOR DISASSEMBLY. Git. an air sperge for about them. Changed chert paper. High pressure alarm on air spage, mable te remedy the alarm. Troubleshot the filow gauge without SUCCESS. ALL PARAMETERS ARE CURRENTLY BEENCE RECORDED ON THE CHART PAPER. SUE-CATOX OPERATIONAL COUR DEPARTURE.

Gunge Hagun

Field Representative (Print and Sign): Date of Visit: 4-6-2021 Gaisin Klockeman

Kelly Noore Site Log BOOK 4-6-20 0350 G. Hagen & G. Klockener on site. SUE - CATOX operational a our arrival, activated the AS unit A Ban for 1-they then thereigh the write AS unit shut down due to High Pressure, After Troubleshooting the problem & think the H.P. Switch is Bad. We callected the April 2021 system Vapor samples of system data was recorded. Our D.E. for Voc destruction was calculated to be 98:4%. C1130 drs we departed the Site leaving the SUE-CATOX operational. Cottogan 4-16-2021 G. Magan + G. Klockeman ausite @ Dum. We cleaned up the area using a shop vac. Clean at and grinded Not on the CATOX Skid De remedied the high pressure alarm on the air sparge unit by disassembling, cleaning and reassembling The switch we painted problem areas on the skid and The top plate of the CATOX. The paper on the paper chart Das bunched up so we fixed it. The TI temp was configured incorrectly from a previous attempt to calibrate the flow meter. That was also fixed. We installed a larger Vacuum gauge before the blower. CATOX: 13238 hours Sporge: 9475 hours . Heat Ex: 9474 hrs 5.2-21 0930 C. HAGAN ON SITE. IN 05-01-21 @ 2030-HRS Received Notification of system Shut down. System off Comparison Auspected Sauten finding to issues. Monitored Chart paper C 2030- the lost evenings it Show's the Temp's Fall out C that Time, Nothing else. Restert system C0933246 Monitored temps rise & system became operational once again. Monitored operations, The SUE-CATOR is operating normally. I roticed the blomer. inder no lood, is a bit noisy, under load it becomes quiet, thered blaver 0il - O.K. Ran Air sperge unit for 3-Munites-O.K. SVE-CATOX 10R5-13,606. T-1@ 711'F. T-2@ 634'F. T-3@ 362'F. 30"H2D VAC @ The System, Sperge blower this @ 9,473. HEAT EXCHANCER HIS 9,474. CIOIS HIS Cittagen off inte,

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# SVE System Monthly Inspection Log. Kelly Moore. Date: 5-9-2021 64 Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA 3-11-2021

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	<u>~</u>
Control Pump (Regenerative Blower)	yes	(On) Off)
Entrainment Pump (Transfer Pump)	Jes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	Jes	
Knockout Tank (record level)	Jes	% full 15
Knockout Water Tote (record level)	yes	% full 35
Dilution Valve Status	Jes	Closed fully
Recirculation Valve Status	yes	55% closed

## CATOX Screen Readings

Item	Units	Reading	Operating Range
Hour Meter	H-M	13822	
Catox In (T1)	٥F	728	>650
Catox Out (T ₂ )	٥F	658	600 - 650
Heat Ex (T ₃ )	°F	397	300 - 400
Flow	SCFM	96	<300
LEL	%	n/A	5-15

#### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	D.012" WC
PI – 1	"WC (vacuum)	32 WC
TI – 1	٥F	49°F
FE-2	"WC	0.2" WC

#### FID Measurements

$\frown$	Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC )	]
N C	Western Manifold	NIA	ALA				
Ser 1	SVE – 13			NA	NA	NIA	
5	SVE - 12		A Street				
专 /	SVE - 11						
21	SVE - 10						
Un	SVE – 09	1	1	2	T	1	
currently of	Eastern manifold	10:30	335-7462				
off 3	SVE - 01	NIA -					
ot 2	SVE – 03	AJ4.					
	SVE - 05	10:30	420-04.6	3-5G.H.	27"	. 007	* Tool new
	SVE - 07	1	3,920-73,600	7	29.5"	.009	readings
	SVE - 08		890-0820	3-75	30"	.007	30 min. After
	SVE - 06	+	8.8-80	2	4.9"	.007	SVE-08 pos.
627	SVE - 04	NA -					went from
offz	SVE - 02	NA -					3-85
2	SVE Influent	9:15	344 ppm	DE=99.2%	1		
	SVE Effluent	9:11	2.8 ppm				
$\bigcirc$	Influent Sample ID: Influent Sample Time Field Representative	e:48	021	Effluent Sample Effluent Sample Date of Wernan	Time: <u>9:2</u>	1	2
			Gronge House	jan 5-11	.2021		

#### AS System Monthly Inspection Log, Kelly Moore. Date: 5-9 2021 Gle Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	yes	
Regenerative Blower	45	(Auto / Hand / Øff)
Heat Exchanger	yes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	NO.	
Vent Valve Status His Sparage System remain	No.	

#### System Gauge Readings

Be	efore Hea	t Exchange	1	After	Heat Ex	changer	
Item	Units	Reading	Operating Range	Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	9473.2		Hour Meter Heat Exchanger	Hour's / Minutes	9474.)	
PI – 3	psi	JA	0 - 30	PI – 4	psi	NA	0 - 30
TI – 3	٩c	-	150 - 200	TI – 4	٥F	1	150 – 200

#### Air Flow Monitoring

Location	Tim	(recor	Position d appx gle)	Pr	ressure (psi)	Air I (SC	⁼low FM)
AS – 1	NIA	م ر ا	4	N	A	N	IA
AS – 2							
AS – 3							
AS – 4							
AS – 5	2	1	•	1		1	

Additional Notes.

air spar Cheurs and DTW measurements on wells: exercise the equipment. 100k , KMW-06=7.16', KMW-09=5. KMW-04=6.02 to position 5 and dings sted took new rea f=11.5000 0 influer 51 asea me.

Field Representative (Print and Sign): Garin Klockeman 5-11-202 George Hogan 5-11-2021.

## Post Adjustments Data

## SVE System Monthly Inspection Log. Kelly Moore. Date: 6-16-2021

#### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	Jes	6
Control Pump (Regenerative Blower)	yes	(On / Off)
Entrainment Pump (Transfer Pump)	yes	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	Ses	
Knockout Tank (record level)	Jes	% full 30
Knockout Water Tote (record level)	Jes	% full 40
Dilution Valve Status	Ses	fully closed
Recirculation Valve Status	Jes	Fully closed, Motor C 15 Amps.

#### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	11689	
Catox In (T1)	٥F	707	>650
Catox Out (T ₂ )	٥F	646	600 - 650
Heat Ex (T ₃ )	٥F	364	300 - 400
Flow	SCFM	286	<300
LEL	%	NA	5-15

#### System Gauge Readings

ltem	Units	Reading
FE – 1	"WC	. 001 "60
PI – 1	"WC (vacuum)	S7"WC
TI – 1	۰F	G)°F
FE-2	"WC	20.8.00

## FID Measurements VALVE POSITION 1 = Funy CLOSED VALVE.

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Pre	erential ssure WC )
Western Manifold	13:38	43.0		Sector Sector	D.P	(CFM
SVE – 13	13:35	46.3	2	ч	Ø	40.5
SVE - 12	13:32	35.0	2	20	.001	92
SVE – 11	13:30	53.8	1	ø		
SVE - 10	13:27	177.5	2	4	100-	25
SVE - 09	13:25	6.6	1	Ø	-	+-
Eastern manifold	13:47	330.6			3.	
SVE - 01	Closed					+1
SVE - 03	closed		1			-1-
SVE - 05	closed					
SVE - 07	13:43	1375	7	52	Ø	26
SVE - 08	13:41	447.8	3	50	ø	19
SVE - 06	closed					-1
SVE - 04	closed					1
SVE - 02	closed	4	1			
SVE Influent	13:20	124.4	NE=951.9			
SVE Effluent	13:16	5.5	10.0%			

Effluent Sample ID: _____ Effluent Sample Time: _/ Influent Sample ID: _____ Influent Sample Time: _ Date of Visit: 6-16-2021 Field Representative (Print and Sign): Gavin Klockenon

Post Adjustments Data

## AS System Monthly Inspection Log, Kelly Moore. Date: 6-16-2021 Visual/Audio Inspection

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	Jes	6
Regenerative Blower	yes	(Auto Hand / Off)
Heat Exchanger	yes	(Auto/ Hand / Off)
Pressure Gauges/Flow Meters	yes	
Vent Valve Status	yes	40% spen

#### System Gauge Readings

Be	Before Heat Exchanger			After	Heat Ex	changer	
ltem	Units	Reading	Operating Range	Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	9477.8		Hour Meter Heat Exchanger	Hour's / Minutes	94 <b>80</b> .3	
PI – 3	psi	200-4	.50-30	PI – 4	psi	0	0 - 30
TI – 3	٥F	260	150 - 200	TI – 4	٥F	86	150 - 200

T

#### Air Flow Monitoring

#### Valve Position Air Flow (record appx Pressure Location Time (SCFM) angle) (psi) Ø 3:56 5 AS - 1AS - 243 3 3.5 AS – 3 Ø AS - 490 .5 90 AS - 5

Additional Notes.

Post adjustment data. Restarted air sporge. SUE-09 and SVE-11 are closed but sample port is open to relieve pressure. sitencer from air sparge vent value. DE=95.6% removed with influent concentration bass flow 200ppm.

Field Representative (Print and Sign): Gravin blockemen George Hagun.

## SVE System Monthly Inspection Log. Kelly Moore. Date: 7-13-21

#### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	y	
Control Pump (Regenerative Blower)	Y	(Op/ Off)
Entrainment Pump (Transfer Pump)	y	(Auto) Hand / Off)
Pressure Gauges/Flow Meters	У	
Knockout Tank (record level)	y	% full 40%. Full C15 gallons
Knockout Water Tote (record level)	9	% full 40%. Full @ 15 gallons % full 30%, Fuel @ 75 yellows
Dilution Valve Status	3	100%. Closed
Recirculation Valve Status	4	100% Closed

TOTE CAPACITY IS 250 gallons

#### CATOX Screen Readings

Item	Units	Reading	Operating Range
Hour Meter	H-M	14.899.65	the - Min
Catox In (T1)	٥F	695 F	>650
Catox Out (T2)	٥F	382'F	600 - 650
Heat Ex (T ₃ )	٥F	691'F	300 - 400
Flow	SCFM	291 CFM	<300
LEL	%	NIA	5-15

#### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	0.001 1/ 1/20
PI – 1	"WC (vacuum)	45" #20
TI – 1	٥F	62'F
FE-2	"WC	1.0"

POST BLOWER TEMP 96'F POST BLOWER PRESSURE 0.0 PSI

#### **FID Measurements**

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Pres	rential ssure VC )	West Man:
Western Manifold	10:18	4.6			DP	CFM	>DP=0.002"
SVE - 13	10:14	0.3	2	ø	0.001	20	CFM=122efm
SVE - 12	10:12	1.6	2	14	0.001	60	
SVE - 11	10:09	3.2	1	Ø	0.001	0.07	
SVE - 10	10:03	4.1	2	Ø	0.001	13	- ×
SVE - 09	10:05	9.8	1	Ø	Ø	0.3	]
Eastern manifold	10:44	1273			10.001	150	
SVE - 01	10:31	D.7	١	ø	ø	0.4	]
SVE - 03	10:30	0.4	1	14	0.001	30	]
SVE - 05	10:28	2.2	1	9.5	0.001	29	
SVE - 07	10:36	4090	7	38	ø	75	]
SVE - 08	10:33	781	.3	40	Ø	9	1
SVE - 06	10:26	H.(e	Ĩ	Ø	ø	0.17	1
SVE - 04	10:25	5.4	1	Ø	Ø	0.4	]
SVE - 02	10:22	Z.4	1.	Ø	ø	0.07	1
SVE Influent	9:21	771.6	DE=99 27		14000	ALC: NO	1
SVE Effluent	9:15	2.2	DE 11.7/0	40.000	Neglation"		

Gronge Hagan

Influent Sample ID: ln(-7-13-202)Influent Sample Time: _______

Effluent Sample ID: Eff_7-13-2021 Effluent Sample Time: 9:37

7-13-21

Field Representative (Print and Sign): Gavin Klockeman Date of Visit: 7-13-2021

## AS System Monthly Inspection Log, Kelly Moore. Date: <u>7-13-21</u> Visual/Audio Inspection

Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
4	6
Ч	(Auto/ Hand / Off)
ч	(Auto)/ Hand / Off)
y	$\bigcirc$
У	40% 0000

#### System Gauge Readings

	Before Heat Exchanger				Heat Exc	hanger	
Item	Units	Reading	Operating Range	Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	9,629.2	Hrz - Min	Hour Meter Heat Exchanger	Hour's / Minutes	9690,2	HR-MM
PI – 3	psi	4.5 PSI	0 - 30	PI – 4	psi	4.0PSI	0 - 30
TI – 3	۰F	170'F	150 - 200	TI – 4	٥F	76.5 F	150 - 200

#### **Air Flow Monitoring**

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	0950	closed	0	0
AS – 2	1	open 100%	3,25 BJZ	20.5 SCFM
AS – 3		closed	-	0
AS – 4		OPEN 100'/,	3.50 PSI	18.25 SCFM
AS – 5	1	OPEN 100%	3.25 PSI	18.0 SCFM

Additional Notes.

Changed	chaft paper	r. Cleaned	up the skie	with
Simple G	chart paper	ed sample	25 and do	ita
- 1				

Field Representative (Print and Sign): <u>Gavin Klockeman</u> Date of Visit: <u>7-13-2021</u> Group Hagan <u>7-13-27</u>

## SVE System Monthly Inspection Log. Kelly Moore. Date: 8-5-2021

### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	y	0
Control Pump (Regenerative Blower)	J	(On)/Off)
Entrainment Pump (Transfer Pump)	Ч	(Auto) Hand / Off)
Pressure Gauges/Flow Meters	9	
Knockout Tank (record level)	Y	% full 3% - REMARD 30 yal Manually
Knockout Water Tote (record level)	У	% full 3/, - REMARD 30 yal Manually % full 1/3 Full ( 105 gallons
Dilution Valve Status	ц	Closed 100%
Recirculation Valve Status	Ч	closed ico/.

#### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	15,451,47	H-M
Catox In (T1)	٥F	706'F	>650
Catox Out (T ₂ )	٥F	681'F	600 - 650
Heat Ex (T ₃ )	٥F	373 F	300 - 400
Flow	SCFM	290.CFM	<300
LEL	%	NIA	5-15

#### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	O WC/HZU, 303 CFM
PI – 1	"WC (vacuum)	46"HZD
TI – 1	٩F	163'F
FE-2	"WC	1.5"HZD

Post Blower Temp 99'F Post Blower Pressure C.CPSI

#### FID Measurements

Location	Time	FID Reading (ppm)	Iz's 100% CLOSED. Valve Position (record notch)	Vacuum (''WC )	Due	rential ssure VC)Fしい	o(cFM)
Western Manifold	10:33	3.2			0.002	180	
SVE – 13	10:31	3.9	2	$\bigcirc$	0.0	21	
SVE - 12	10:30	3.1	3	14	0.0	72	
SVE - 11	10:28	4,7	l	0	-	-	
SVE - 10	10:26	3.5	2	D	0.0	13	
SVE - 09	10:24	15.0	1	D		-	
Eastern manifold	10:51	844.0			(au S	170	
SVE - 01	10:48	2.3	X	D	-	_	
SVE - 03	10:46	6.8	1	12		-	
SVE - 05	10:44	1.8	N	3	-	7	
SVE - 07	10:57	1669	7	38	0,0	90	
SVE - 08	10:55	197.6	3	40	0.0	34	
SVE - 06	10:42	1.5	1	0	-	-	
SVE - 04	10:41	1.2	1	D	-		
SVE - 02	10:39	1.7	1	Ø		-	
SVE Influent	0940-ity	505 PPM					
SVE Effluent	0932-itus	5.1 PPM	D.E. Calcul	lated to	be 9	1%	

Influent Sample ID: INF-08-05-21 Influent Sample Time: ICIO-iHJ Effluent Sample ID: EFF - 09-05-21 Effluent Sample Time: ______6455 - Ha

Field Representative (Print and Sign): 6-

Date of Visit: 8-5-202/

n Klockeman

Noo

## AS System Monthly Inspection Log, Kelly Moore. Date: <u>8-5-2021</u> Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	4	8
Regenerative Blower	y	(Auto)/ Hand / Off)
Heat Exchanger	í.	(Auto)/ Hand / Off)
Pressure Gauges/Flow Meters	Z	$\sim$
Vent Valve Status	ч	open to /1

#### System Gauge Readings

Be	Before Heat Exchanger			After Heat Exchanger			
ltem	Units	Reading	Operating Range	Item	Units	Reading	Operating Range
Hour Meter Sparge Blower	Hour's / Minutes	10,241.7	H - M.	Hour Meter Heat Exchanger	Hour's / Minutes	10,242.4	H - M
PI – 3	psi	4.5	0 - 30	PI – 4	psi	3,75	0 - 30
TI – 3	٥F	180"F	150 – 200	TI – 4	٥F	85'F	150 - 200

#### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	1017 - My	closed -		
AS – 2		open ico/	3,25	20.5 CFM
AS – 3		closed -		
AS – 4		open 100%	3,50	18.5 CFM
<b>AS</b> – 5	2	open 100%,	3.25	18.5 CFM

Additional Notes.

system data and samples. Collected Diped dasn Greased Zerks on both motors. quement running well and

Date of Visit: 8-5-2021 Field Representative (Print and Sign): 100 Gavin Klockeman e Hoyan

## SVE System Monthly Inspection Log. Kelly Moore. Date: <u>9-2-21</u>

#### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	Y	~
Control Pump (Regenerative Blower)	4	On Off)
Entrainment Pump (Transfer Pump)	4	(Auto/ Hand / Off)
Pressure Gauges/Flow Meters	y	OK
Knockout Tank (record level)	Ч	% full 30%. @ 20 gal
Knockout Water Tote (record level)	4	% full 65%. @ 189 gel
Dilution Valve Status	y	100%. Closed
Recirculation Valve Status	4	100%. closed

#### CATOX Screen Readings

Item	Units	Reading	Operating Range
Hour Meter	H-M	16,226.	
Catox In (T1)	٥F	698'8	>650
Catox Out (T ₂ )	٥F	666"F	600 - 650
Heat Ex (T ₃ )	٥F	351'F	300 - 400
Flow	SCFM	319	<300
LEL	%	NA	5-15

System Gauc	e Readings	5	Cry
Item	Units	Reading	
FE – 1	"WC	O.ODI HZC	3-25
PI – 1	"WC (vacuum)	31"	
Tl – 1	۰F	64 F	
FE-2	"WC	0160 420	

60

#### **FID Measurements**

Location	Time	P2D Gul FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential
Western Manifold	10:19	10,1			8.001 245
SVE – 13	10:17	2,4	2	0.0 "wc	0.002 15
SVE - 12	10:15	18.1:	3	9.5" we	0,002 48
SVE - 11	10:13	4.6	3	1" 02	0,002 les
SVE - 10	10:11	5.4	2	1,5 "we	0.001 8.75
SVE - 09	10:08	40.9.	3	6"00	0,001 57
Eastern manifold	10:27	517		A DAY ST. SANS	0.001 89
SVE - 01	NIA -		1 = closed	.otwc	N/A -+
SVE - 03	ALA -		1 = Cloned	7"wc	N/A +++
SVE - 05	NIA -		1 = Closed	6.50 "we	Dia -++
SVE - 07	10:30	1230	7	23 "wa	0,001 23
SVE – 08	10:24	130.3	4	24"we	0.000 7.0
SVE - 06	NIX -		1 = Closed	.0	N/A
SVE – 04	N 14 -		1= Closed	A	NA
SVE - 02	NIA-		1 = Closed	e	NA
SVE Influent	9:27	299	D- 99/19		A States and a state
SVE Effluent	9:22	1.7	DE= 97.47.		
nfluent Sample ID: ] nfluent Sample Time	nf_9-7	-2021	Effluent Sample Effluent Sample		17-20-21

Gavin Klockeman

Field Representative (Print and Sign): Course Hagan Date of Visit: 9.7-21

A Visit: G. 7-71

1 of 2

# AS System Monthly Inspection Log, Kelly Moore. Date: 9/7/2/

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	4	~
Regenerative Blower	4	(Auto) Hand / Off)
Heat Exchanger	3	(Auto) Hand / Off)
Pressure Gauges/Flow Meters	3	
Vent Valve Status	4	60% open

#### System Gauge Readings

Be	Before Heat Exchanger			After	After Heat Exchanger			
Item	Units	Reading	Operating Range	Item	Units	Reading	Operating Range	
Hour Meter Sparge Blower	Hour's / Minutes	11,013.6		Hour Meter Heat Exchanger	Hour's / Minutes	11,014.5		
PI – 3	psi	4,75	0 - 30	PI – 4	psi	4.0	0 - 30	
TI – 3	٥F	177'F	150 – 200	<b>TI</b> – 4	٥F	81'F	150 – 200	

#### **Air Flow Monitoring**

Location Time AS-1 0950-144		Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM) 5:0 ⁵ CFM	
		Ho'l open	3.0		
AS – 2	1		2.25	i	
AS – 3			2,75		
AS – 4			2.75		
AS – 5			2,50		

Additional Notes.

our arrival, Collected The September 2021 Operational 0 Vapor samples & system; date, We tried To Zero & Span The Old air flow arriver NO success, All operations are normal @ our departure.

Field Representative (Print and Sign):_	Geo	rge Abag an	_ Date of Visit:	9-7-21
	2	Klocheman		

## SVE System Monthly Inspection Log. Kelly Moore. Date: 10-5-2021

## Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)	
Above Ground Piping	5		
Control Pump (Regenerative Blower)	3	((On)/ Off)	
Entrainment Pump (Transfer Pump)	n	(Auto / Hand / Off)	
Pressure Gauges/Flow Meters	Y		
Knockout Tank (record level)	4	% full 45	
Knockout Water Tote (record level)	У	% full -20 25	
Dilution Valve Status	4	100% closed	
Recirculation Valve Status	Y	100%. Closed	

#### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	16.899	His
Catox In (T1)	٥F	640	>650
Catox Out (T2)	٥F	647	600 - 650
Heat Ex (T ₃ )	٥F	349	300 - 400
Flow	SCFM	247	<300
LEL	%	NIA	5-15

#### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	O" HZO
PI – 1	"WC (vacuum)	32"
TI – 1	٥F	55°F
FE-2	"WC	0.6" H20

#### **FID Measurements**

Location	Time	FID Reading (ppm)	Valve Position (record notch)	Vacuum (''WC )	Pres	ential sure /C)
Western Manifold	10:46	19.1			0,0	FFM
SVE – 13	10=43	2.6	2	1	0.0	RY
SVE - 12	10.47	47.0	3	12	0,0	TZ.
SVE - 11	10:37	3.7	(k 3 3 3	5 1	00000	at GI
SVE – 10	10:37	57.4	2	5	0.0	XB
SVE - 09	10:35	72.3	3	7	0,0	11
Eastern manifold	11:09	212			0.0	
SVE - 01	10:01	3.5	1	D	NA	
SVE - 03	10:59	137.5	t	8		100
SVE – 05	10:56	6.5	1	6.5	1	
SVE - 07	11:06	926.2	7	30	. 001	
SVE - 08	11:03	1175	4	32	0.0	1.1.1
SVE - 06	10:55	6.7	1	Ø	NA	
SVE - 04	10:52	0.1	1	Ø		
SVE - 02	10:50	1.8	1	Ø	L	
SVE Influent	9:55	137.1	D-= 99	\$7		
SVE Effluent	9:50	03	De II.	0 10		

Influent Sample ID: <u>Inf-10-5-2021</u> Influent Sample Time: <u>10:18</u> Effluent Sample ID: EFF_10-5-2021 Effluent Sample Time: 10:01

Field Representative (Print and Sign):

____ Date of Visit: 10-5-2021

George Hagen

## AS System Monthly Inspection Log, Kelly Moore. Date: 10-5-2021 Visual/Audio Inspection

Item	Inspected (Y/N)	<ul> <li>Condition (Cracks, leaks, non-operation gauges, etc.)</li> </ul>	
Above Ground Piping	4	0	
Regenerative Blower	y	(Auto)/ Hand / Off)	
Heat Exchanger	4	((Auto / Hand / Off)	
Pressure Gauges/Flow Meters	Ч		
Vent Valve Status	5		

#### System Gauge Readings

Be	Before Heat Exchanger			After	After Heat Exchanger			
ltem	Units	Reading	Operating Range	ltem	Units	Reading	Operating Range	
Hour Meter Sparge Blower	Hour's / Minutes	11686.9	Hustmin.	Hour Meter Heat Exchanger	Hour's / Minutes	11687.8	the thin	
PI – 3	psi	4.5	0 - 30	PI – 4	psi	4.25	0 - 30	
TI – 3	٥F	166	150 – 200	TI – 4	٩F	72	150 – 200	

#### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	1000-143	30% open	3	5.5
AS – 2	1	20 To open	2	5.25
AS – 3		70%	7.5	5
AS – 4		20%	2.75	5.25
AS – 5	2	75 70	2.25	5.25

Additional Notes.

paper and ink. Pumped 150 gallons chart ranged tote into Z-poly and I-metal SS-gallon water trom 99.8% Collected Sustem Samp Tore Post Pump 250 CAPACITY TOTE PUMP, 225 GAL PRE 3- DRUMS ON SITE, DRUMS LABELED & 150 GAL TO 75 GAL STADED FOR FUTURE DISPOSAL. SUE-CATOX K.U JECHRED. TRANSFER PUMP CHECKE. Q.K. G.H. ____ Date of Visit: 10-5-2021 Field Representative (Print and Sign) Gavin Klockeman Gronge Hoegan

## SVE System Monthly Inspection Log. Kelly Moore. Date: 11- 11- 21

## Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	Y	QIK
Control Pump (Regenerative Blower)	4	(On) Off)
Entrainment Pump (Transfer Pump)	4	(Auto Hand / Off) Primes of Working
Pressure Gauges/Flow Meters	y	
Knockout Tank (record level)	4	% full 40%
Knockout Water Tote (record level)	4	% full 60%. @ 150 gol
Dilution Valve Status	U,	100% Classed.
Recirculation Valve Status	2 V	100%, open

#### **CATOX Screen Readings**

Item	Units	Reading	Operating Range
Hour Meter	H-M	17,768	
Catox In (T1)	٥F	687	>650
Catox Out (T ₂ )	٥F	638	600 - 650
Heat Ex (T ₃ )	٥F	3:+2	300 - 400
Flow	SCFM	290	<300
LEL	%	NIA	5-15

#### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	0.001 "H20
PI – 1	"WC (vacuum)	42" 420
TI – 1	٥F	48'F
FE-2	"WC	2.4"#20

#### FID Measurements

Location	Time	PTD FIP Reading 8 th (ppm)	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC)
Western Manifold	0945	1.0 ppm			
SVE – 13	0947	OIIPPM	2	1 "HZD	0,000
SVE – 12	0949	0.7 ppm	3	15" H20	0.000
SVE – 11	0951	closed	1 = 100%. Clase	.0-	0,000
SVE - 10	0953	Only ppm	3	23"H20	0,000
SVE - 09	0955	6.3 PPM	3	8 420	0.001
Eastern manifold	0959	64.0 PPM			
SVE - 01	1003	ilised	Ussed -	- 11	
SVE – 03	1005	10.7 2001	4	AT Hap	11,000 F 0100,1
SVE - 05	1008	Closed	closed -	SH	1
SVE – 07	1011	484.7 ppm	7	31" 120	0.000"H20
SVE – 08	1014	214.4 PPM	4	32,5"H20	0,000 H20
SVE - 06	1015	closed	closed -		-1
SVE - 04	1017	Closed	closed -		
SVE - 02	1020	Closed	closed -		1
SVE Influent	0915	23.1 PPM	DEC 95%		
SVE Effluent	0912	1.0 pp 1			

George Horgon

Influent Sample ID: TNF_ (1_11_202) Influent Sample Time: 0929 - 10-20 Effluent Sample ID: <u>EFF, 1, i1, 2021</u> Effluent Sample Time: <u>0943</u>

_ Date of Visit: <u>11 - 11 - 21</u>

Field Representative (Print and Sign):_

## AS System Monthly Inspection Log, Kelly Moore. Date: 11 - 11 - 21 Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	4	O.K.
Regenerative Blower	4	(Auto) / Hand / Off)
Heat Exchanger	4	(Auto) Hand / Off)
Pressure Gauges/Flow Meters	~	0. X.
Vent Valve Status	13	open 60%

#### System Gauge Readings

Be	Before Heat Exchanger			After	After Heat Exchanger			
ltem	Units	Reading	Operating Range	Item	Units	Reading	Operating Range	
Hour Meter Sparge Blower	Hour's / Minutes	12,553.6		Hour Meter Heat Exchanger	Hour's / Minutes	12,554,5		
Pl – 3	psi	5.0 PSS	0 - 30	PI – 4	psi	4.0 PS=	0 - 30	
TI – 3	۰F	161'F	150 - 200	TI – 4	۰F	64'F	150 – 200	

#### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	0930	20% open	3.0 PSI	5
AS – 2	0930		2.5 PS2	5
AS – 3	0931		3,0 PSI	4.5
AS – 4	0931		2.75 PSI	5
AS – 5	0931	a	2.50 PSZ	5

Additional Notes. (1-11-21 @ 0900 B. Hagen & G. Mlocko Man on site <u>Au Systems operational @ our arrival</u>, all operations on <u>normal</u>. <u>Per Mr. Adament @ WOOD SUE Manifold adjustments Mode</u> <u>today SVE03 from Position 170 Position H. SVE 10 Pos 2 703, SUE-111</u> <u>Pos 3 To Pos 1, 100% closed. Changed Chart recorder paper. Ebstogl</u> <u>Collected The. November 2021 System Vapor samples, Recorded</u> <u>Systemi Dota, VOC Values @ System are low INF 23.1 ppm,</u> EFF 1.0 ppm DE @ 95%. @ 1045 Departed Site Field Representative (Print and Sign): <u>Garge Hagen</u> Date of Visit: <u>11-11-21</u>

## SVE System Monthly Inspection Log. Kelly Moore. Date: 12-08-2021

#### Visual/Audio Inspection. Located at; 5400 Airport Way South Seattle, WA

Item	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	4	0
Control Pump (Regenerative Blower)	2	(On/ Off)
Entrainment Pump (Transfer Pump)	Y	(Auto) Hand / Off) - WORKING FINE
Pressure Gauges/Flow Meters	4	U
Knockout Tank (record level)	L I	% full 50% @ 10 Gal
Knockout Water Tote (record level)	Э	% full 10% (250 GAC
Dilution Valve Status	Ч	CLOSED 100%
Recirculation Valve Status	Y	open 40%

#### CATOX Screen Readings

Item	Units	Reading	Operating Range
Hour Meter	H-M	18,339	
Catox In (T1)	٥F	728	>650
Catox Out (T ₂ )	٥F	653	600 - 650
Heat Ex (T ₃ )	٥F	391	300 - 400
Flow	SCFM	79	<300
LEL	%	NIA	5-15

#### System Gauge Readings

Item	Units	Reading
FE – 1	"WC	0.001 1/420
PI – 1	''WC (vacuum)	45 1/20
TI – 1	٥F	41'F
FE-2	"WC	0,02"120

#### **FID Measurements**

Location	Time	FID Reading	Valve Position (record notch)	Vacuum (''WC )	Differential Pressure (''WC)	
Western Manifold	1010-Hy	NIA				
SVE – 13	1	ALL WESTH	NANZFOLD WELLS	CiOSED,	N/A	
SVE - 12		- 41 CA			/	
SVE - 11		N/4 -			+	]
SVE - 10		willow				]
SVE – 09		N/A			-1	1
Eastern manifold	1140	10. OPPM		al a liter of a		
SVE - 01	Elosed -					1
SVE - 03	closed					
SVE - 05	closed -					CF
SVE - 07	1131	8.0 PPM	7	43 120	0:001 ve	17.0
SVE – 08	1132	31.189M	4	43 420	0,000"we	16.
SVE - 06	closed -					
SVE - 04	Closed -					
SVE - 02	Classed -					
SVE Influent	1112	6.0 ppm	DE 091.6	°/.		
SVE Effluent	1110	0. SPPM				
nfluent Sample ID:	nF- 12-8	-2021	Effluent Sample I Effluent Sample 1		2-8-2021	

Field Representative (Print and Sign): 6 enge dogan Date of Visit: 12-8-21

1 of 2

## AS System Monthly Inspection Log, Kelly Moore. Date: 12-3-24 Visual/Audio Inspection

ltem	Inspected (Y/N)	Condition (Cracks, leaks, non-operational gauges, etc.)
Above Ground Piping	5	0
Regenerative Blower	4	(Auto / Hand / Off)
Heat Exchanger	Y	(Auto / Hand / Off)
Pressure Gauges/Flow Meters	ų	
Vent Valve Status	Classe	

#### System Gauge Readings

Be	Before Heat Exchanger				After Heat Exchanger			
ltem	Units	Reading	Operating Range	Item	Units	Reading	Operating Range	
Hour Meter Sparge Blower	Hour's / Minutes	12,700		Hour Meter Heat Exchanger	Hour's / Minutes	12,707.		
P <b>I –</b> 3	psi	cht	0 - 30	PI – 4	psi	966	0 - 30	
TI – 3	۰F	100	150 - 200	<b>TI</b> – 4	٩F	The	150 – 200	

#### Air Flow Monitoring

Location	Time	Valve Position (record appx angle)	Pressure (psi)	Air Flow (SCFM )
AS – 1	off	off	6 Jack	off
AS – 2	10	100	100	100
AS – 3				
AS – 4				
AS – 5	d	2	1	4

Additional Notes. Changed Chart Paper SUE CATOX operational, Air sperge off C Ron Sperge Blower 1-14 To Events Exercise The curit, how VOC'S across the System Closed VEWell 100% No vois 03 To 60 000 Active UE Wells me now 748 ac led that into The Well's, Reduce To Ab" A20 NO Water in UE For 8: Collected The December 2021 Vapor samples + Date today. Field Representative (Print and Sign): 6 Hargen Date of Visit: 12-8-21



## **Appendix D**

Analytical Data, SVE Monitoring

#### 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

January 14, 2020

John Long, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Long:

Included are the results from the testing of material submitted on January 9, 2020 from the Kelly Moore, F&BI 001117 project. There are 4 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.

Colo

Michael Erdahl Project Manager

Enclosures WEI0114R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on January 9, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 001117 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
001117 -01	EFF-010920
001117 -02	INF-010920

All quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 01/14/20 Date Received: 01/09/20 Project: Kelly Moore, F&BI 001117 Date Extracted: 01/10/20 Date Analyzed: 01/10/20

#### RESULTS FROM THE ANALYSIS OF AIR SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING MODIFIED METHODS 8021B AND NWTPH-Gx

<b>Results Reported</b>	as	mg/m ³
-------------------------	----	-------------------

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 50-150)
EFF-010920 001117-01	<0.1	3.5	5.8	12	1,400	99
INF-010920 001117-02 1/5	< 0.5	<1	38	77	8,200	102
Method Blank 00-9 MB2	< 0.1	< 0.2	< 0.2	<0.6	<10	81

#### ENVIRONMENTAL CHEMISTS

Date of Report: 01/14/20 Date Received: 01/09/20 Project: Kelly Moore, F&BI 001117

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING MODIFIED EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code:	001069-04 (Dupli	cate)		
	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 20)
Benzene	mg/m ³	< 0.1	< 0.1	nm
Toluene	mg/m ³	< 0.2	< 0.2	nm
Ethylbenzene	mg/m ³	< 0.2	< 0.2	nm
Xylenes	mg/m ³	<0.6	<0.6	nm
Gasoline	mg/m ³	<10	<10	nm

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/m ³	5.0	91	70-130
Toluene	mg/m ³	5.0	88	70-130
Ethylbenzene	mg/m ³	5.0	89	70-130
Xylenes	mg/m ³	15	89	70-130
Gasoline	$mg/m^3$	100	115	86-144

#### ENVIRONMENTAL CHEMISTS

#### **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.

 ${\rm J}$  - 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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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	TPH-HCID	TPH-Diesel	TPH-Gasoline	BTEX by 8021B	VOCs by 8260C	SVOCs by 8270D	PAHs 8270D SIM	RIEX	TPH-Gas			Not	es	
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#### 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

February 19, 2020

John Long, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Long:

Included are the results from the testing of material submitted on February 14, 2020 from the Kelly Moore, F&BI 002209 project. There are 4 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.

Colo

Michael Erdahl Project Manager

Enclosures WEI0219R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on February 14, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 002209 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
002209 -01	EFF_02142020
002209 -02	INF_02142020

All quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

Date of Report: 02/19/20 Date Received: 02/14/20 Project: Kelly Moore, F&BI 002209 Date Extracted: 02/17/20 Date Analyzed: 02/17/20

#### RESULTS FROM THE ANALYSIS OF AIR SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING MODIFIED METHODS 8021B AND NWTPH-Gx

<b>Results Reported</b>	as	mg/m ³
-------------------------	----	-------------------

<u>Sample ID</u> Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate ( <u>% Recovery</u> ) (Limit 50-150)
EFF_02142020 002209-01	< 0.1	< 0.2	< 0.2	<0.6	20	86
INF_02142020 002209-02	<0.1	0.31	<0.2	2.5	180	88
Method Blank 00-373 MB	< 0.1	< 0.2	< 0.2	<0.6	<10	83

#### ENVIRONMENTAL CHEMISTS

Date of Report: 02/19/20 Date Received: 02/14/20 Project: Kelly Moore, F&BI 002209

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING MODIFIED EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code:	002209-01 (Dupli	cate)		
	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 20)
Benzene	mg/m ³	< 0.1	< 0.1	nm
Toluene	mg/m ³	< 0.2	< 0.2	nm
Ethylbenzene	mg/m ³	< 0.2	< 0.2	nm
Xylenes	mg/m ³	< 0.6	<0.6	nm
Gasoline	mg/m ³	20	20	0

Laboratory Code: Laboratory Control Sample

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/m ³	5.0	91	70-130
Toluene	mg/m ³	5.0	91	70-130
Ethylbenzene	mg/m ³	5.0	98	70-130
Xylenes	mg/m ³	15	94	70-130
Gasoline	mg/m ³	100	122	86-144

#### ENVIRONMENTAL CHEMISTS

#### **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.

 ${\rm J}$  - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

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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.

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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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#### 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 27, 2020

John Long, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Long:

Included are the results from the testing of material submitted on March 17, 2020 from the Kelly Moore, F&BI 003279 project. There are 6 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.

Color

Michael Erdahl Project Manager

Enclosures WEI0327R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on March 17, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 003279 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Wood Environment & Infrastructure Solutions
003279 -01	EFF_03172020
003279 -02	INF_03172020

All quality control requirements were acceptable.

#### ENVIRONMENTAL CHEMISTS

## Analysis For Volatile Compounds By Method TO-15

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	EFF_03172020 03/17/20 03/17/20 03/24/20 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 003279 003279-01 1/2.7 032329.D GCMS7 bat
	%	Lower	Upper	
Surrogates:	Recovery:	Limit:	Limit:	
4-Bromofluorobenz	ene 101	70	130	
	Concent	ration		
Compounds:	ug/m3	ppbv		
2-Propanol	<23	<9.4		
Benzene	<0.86	<9.4 <0.27		
Toluene	<0.80	<13		
Ethylbenzene	<1.2	<0.27		
m,p-Xylene	<2.3	< 0.54		
o-Xylene	<1.2	< 0.27		
Naphthalene	21	4.0		
Gasoline Range Or		<540		
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### ENVIRONMENTAL CHEMISTS

Client Sample ID:INF_03172020Date Received:03/17/20Date Collected:03/17/20Date Analyzed:03/24/20Matrix:AirUnits:ug/m3	Clien Projec Lab I Data Instru Opera	ct: D: File: ument:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 003279 003279-02 1/33 032330.D GCMS7 bat
%	Lower	Upper	
Surrogates: Recovery:	Limit:	Limit:	
4-Bromofluorobenzene 104	70	130	
Concer	itration		
Compounds: ug/m3	ppbv		
2-Propanol <280	<120		
Benzene <11	<3.3		
Toluene <620	<160		
Ethylbenzene 22	5.2		
m,p-Xylene 75	17		
o-Xylene 19	4.4		
Naphthalene 16	3.0		
Gasoline Range Organics 135,000	33,000		

### ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 03/23/20 Air ug/m3		ect: ID: File: rument:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 003279 00-0716 mb 032311.D GCMS7 bat
	%	Lower	Upper	
Surrogates:	Recovery:	Limit:	Limit:	
4-Bromofluorobenz	ene 105	70	130	
	Concent	ration		
Compounds:	ug/m3	ppbv		
0 D	0.0	0 5		
2-Propanol	<8.6	<3.5		
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		
Gasoline Range Or	ganics <820	<200		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 03/27/20 Date Received: 03/17/20 Project: Kelly Moore, F&BI 003279

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 003260-04 1/2.7 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
2-Propanol	ug/m3	<23	<23	nm
Benzene	ug/m3	14	14	0
Toluene	ug/m3	<51	<51	nm
Ethylbenzene	ug/m3	<1.2	<1.2	nm
m,p-Xylene	ug/m3	<2.3	<2.3	nm
o-Xylene	ug/m3	<1.2	<1.2	nm
Naphthalene	ug/m3	< 0.71	< 0.71	nm

Laboratory Code: Laboratory Control Sample

	Percent						
	Reporting	Spike	Recovery	Acceptance			
Analyte	Units	Level	LCS	Criteria			
2-Propanol	ug/m3	33	94	70-130			
Benzene	ug/m3	43	95	70-130			
Toluene	ug/m3	51	92	70-130			
Ethylbenzene	ug/m3	59	94	70-130			
m,p-Xylene	ug/m3	120	98	70-130			
o-Xylene	ug/m3	59	97	70-130			
Naphthalene	ug/m3	71	113	70-130			

#### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm d}$  - 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.

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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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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	Gewin Klockeman	JHA	3-17-2020	14:31
Seattle, WA 98119-2029	Received by: MMMM	When phan	FIBI	3-17-20	1431
Ph. (206) 285-8282	Relinquished by:	• • • • • • • • • • • • • • • • • • •			
Fax (206) 283-5044	Received by:				

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#### 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 1, 2020

Paul Stull, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Stull:

Included are the results from the testing of material submitted on April 20, 2020 from the Kelly Moore, F&BI 004205 project. There are 6 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 c: paul.stull@woodplc.com WEI0501R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on April 20, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 004205 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
004205 -01	INF_4_20_2020
004205 -02	EFF_4_20_2020

The TO-15 gasoline range concentrations were quantified using a single point calibration at 200 ppbv.

All quality control requirements were acceptable.

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	INF_4_20_2020 04/20/20 04/20/20 04/28/20 Air ug/m3	Clien Proje Lab I Data Instru Opera	ct: D: File: ument:	Wood Environment & Infrastructure Kelly Moore, F&BI 004205 004205-01 1/7.0 042732.D GCMS7 bat/MS
Surrogates: 4-Bromofluorobenz	% Recovery: ene 105	Lower Limit: 70	Upper Limit: 130	
	Concen	tration		
Compounds:	ug/m3	$\operatorname{ppbv}$		
Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Gasoline Range Org	35 <130 120 1,500 420 ganics 90,000	$ \begin{array}{r} 11 \\ <35 \\ 27 \\ 340 \\ 96 \\ 22,000 \\ \end{array} $		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	EFF_4_20_2020 04/20/20 04/20/20 04/28/20 Air ug/m3	Lab Dat Inst	ent: ject: ID: a File: crument: erator:	Wood Environment & Infrastructure Kelly Moore, F&BI 004205 004205-02 1/7.1 042731.D GCMS7 bat/MS
Surrogates: 4-Bromofluorobenz	% Recovery: ene 113	Lower Limit: 70	Upper Limit: 130	
	Concer	ntration		
Compounds:	ug/m3	ppbv		
Benzene	<2.3	< 0.71		
Toluene	<130	<35		
Ethylbenzene	<3.1	< 0.71		
m,p-Xylene	<6.2	<1.4		
o-Xylene	<3.1	< 0.71		
Gasoline Range Or	ganics <2,300	<570		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 04/27/20 Air ug/m3	Client: Project: Lab ID: Data File: Instrument: Operator:		Wood Environment & Infrastructure Kelly Moore, F&BI 004205 00-0938 mb 042711.D GCMS7 bat/MS
Surrogates: 4-Bromofluorobenz	% Recovery: ene 100	Lower Limit: 70	Upper Limit: 130	
	Concen	tration		
Compounds:	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		
Gasoline Range Or	ganics <330	<80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 05/01/20 Date Received: 04/20/20 Project: Kelly Moore, F&BI 004205

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 004280-14 1/3.3 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<1.1	<1.1	nm
Toluene	ug/m3	<62	<62	nm
Ethylbenzene	ug/m3	<1.4	<1.4	nm
m,p-Xylene	ug/m3	<2.9	<2.9	nm
o-Xylene	ug/m3	<1.4	<1.4	nm

Laboratory Code: Laboratory Control Sample

control sumple			
		Percent	
Reporting	Spike	Recovery	Acceptance
Units	Level	LCS	Criteria
ug/m3	43	88	70-130
ug/m3	51	91	70-130
ug/m3	59	92	70-130
ug/m3	120	94	70-130
ug/m3	59	91	70-130
	Reporting Units ug/m3 ug/m3 ug/m3 ug/m3	Reporting UnitsSpike Levelug/m343ug/m351ug/m359ug/m3120	Reporting UnitsSpike LevelPercent Recovery LCSug/m34388ug/m35191ug/m35992ug/m312094

#### ENVIRONMENTAL CHEMISTS

## **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.

 ${\rm J}$  - 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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Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Initial	Final Vac. ("Hg)	Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium	13 TEX By TO 15	Notes SN:3256	
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME	
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Ph. (206) 285-8282	Relinquished by:		, , , ,			į
Fax (206) 283-5044	Received by:			· · ·	. 22 oc	r
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#### 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 28, 2020

Paul Stull, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Stull:

Included are the results from the testing of material submitted on May 18, 2020 from the Kelly Moore, F&BI 005221 project. There are 6 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.

Colo

Michael Erdahl Project Manager

Enclosures WEI0528R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on May 18, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 005221 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
005221 -01	INF_5-18-2020
005221 -02	EFF_5-18-2020

The TO-15 gasoline range concentrations were quantified using a single point calibration at 100 ppbv.

All quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	INF_5-18-2020 05/18/20 05/18/20 05/21/20 Air ug/m3	Insti	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 005221 005221-01 1/14 052027.D GCMS7 bat/MS
Surrogates: 4-Bromofluorobenz	% Recovery: ene 109	Lower Limit: 70	Upper Limit: 130	
Commence day	Concen			
Compounds:	ug/m3	ppbv		
Hexane	<49	<14		
Benzene	5.9	1.8		
Toluene	<260	<70		
Ethylbenzene	< 6.1	<1.4		
m,p-Xylene	<12	<2.8		
o-Xylene	< 6.1	<1.4		
Gasoline Range Or	ganics 110,000	27,000		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	EFF_5-18-2020 05/18/20 05/18/20 05/21/20 Air ug/m3		ect: ID: File: ument:	Wood Environment & Infrastructure Kelly Moore, F&BI 005221 005221-02 1/2.8 052026.D GCMS7 bat/MS
Surrogates: 4-Bromofluorobenz	% Recovery: ene 105	Lower Limit: 70	Upper Limit: 130	
Compounds:	Concentug/m3	tration ppbv		
Hexane Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Gasoline Range Or	<9.9 <0.89 <53 <1.2 <2.4 <1.2 ganics <1,100	<2.8 <0.28 <14 <0.28 <0.56 <0.28 <280		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 05/20/20 Air ug/m3	Inst	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 005221 00-1068 mb 052011.D GCMS7 bat/MS
	%	Lower	Upper	
Surrogates:	Recovery:	Limit:	Limit:	
4-Bromofluorobenz	ene 111	70	130	
	Concen	tration		
Compounds:	ug/m3	ppbv		
Hexane	<3.5	<1		
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		
Gasoline Range Or	ganics <410	<100		
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### ENVIRONMENTAL CHEMISTS

Date of Report: 05/28/20 Date Received: 05/18/20 Project: Kelly Moore, F&BI 005221

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 005229-01 1/7.8 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Hexane	ug/m3	<27	<27	nm
Benzene	ug/m3	3.5	3.3	6
Toluene	ug/m3	<150	<150	nm
Ethylbenzene	ug/m3	5.9	6.1	3
m,p-Xylene	ug/m3	24	25	4
o-Xylene	ug/m3	7.8	8.0	3

Laboratory Code: Laboratory Control Sample

Laboratory Couct Laboratory C	Sumple		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Hexane	ug/m3	48	93	70-130
Benzene	ug/m3	43	91	70-130
Toluene	ug/m3	51	94	70-130
Ethylbenzene	ug/m3	59	95	70-130
m,p-Xylene	ug/m3	120	100	70-130
o-Xylene	ug/m3	59	96	70-130

#### ENVIRONMENTAL CHEMISTS

## **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.

 ${\rm J}$  - 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.

Report To Paul Stull Company 1900 Em Address 600 Univers City, State, ZIP Scottle	ity S e h	<u>t:Suite</u> DA 981	- 6000 61	PROJI	LERS (sig ECT NAM	nature) Za E & AD	2 /	noin	M ( Klad	PC		<u> </u>		ØSta □ RU Rush	Page TUF ndar SH_ char SAM	RNAROUN rd rges autho MPLE DIS : Clean aft	rized by: POSAL er 3 days	
Phone5039414044 Emailpoul Stull@woodplc.can																		
SAMPLE INFORMATION	1		1	1	1	- <u>i</u>			r	AN	ALYS	IS R	EQU	JEST	ED			
Sample Name INF5-18-2020	Lab ID 01	Canister	Flow Cont.	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One) IA / (SG)	Date Sampled	Initial Vac. ("Hg) 30	Field Initial Time	Final Vac. ("Hg)	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Ξ	X DIEX BY TOIS	1 5 - W	lotes 673	
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
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Seattle, WA 98119-2029	Received by: manual	Nhan Phan	FEBT	V	1/50
Ph. (206) 285-8282	Relinquished by:				
Fax (206) 283-5044	Received by:				
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#### 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

June 24, 2020

Paul Stull, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Stull:

Included are the results from the testing of material submitted on June 16, 2020 from the Kelly Moore, F&BI 006245 project. There are 6 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 c: paul.stull@woodplc.com WEI0624R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on June 16, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 006245 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
006245 -01	EFF_6-16-20
006245 - 02	INF_6-16-20

The TO-15 gasoline range concentrations were quantified using a single point calibration at 100 ppbv.

All quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	EFF_6-16-20 06/16/20 06/16/20 06/19/20 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 006245 006245-01 1/3.1 061825.D GCMS7 bat/MS
Surrogates: 4-Bromofluorobenz	% Recovery: ene 96	Lower Limit: 70	Upper Limit: 130	
	Concent	tration		
Compounds:	ug/m3	ppbv		
Hexane	<11	<3.1		
Benzene	< 0.99	< 0.31		
Toluene	<58	<15		
Ethylbenzene	<1.3	< 0.31		
m,p-Xylene	<2.7	< 0.62		
o-Xylene	<1.3	< 0.31		
Gasoline Range Org	ganics <1,300	<310		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	INF_6-16-20 06/16/20 06/16/20 06/19/20 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 006245 006245-02 1/13 061826.D GCMS7 bat/MS
Surrogates: 4-Bromofluorobenz	% Recovery: ene 101	Lower Limit: 70	Upper Limit: 130	
	Concent	tration		
Compounds:	ug/m3	ppbv		
Hexane	<46	<13		
Benzene	65	20		
Toluene	<240	<65		
Ethylbenzene	<5.6	<1.3		
m,p-Xylene	<11	<2.6		
o-Xylene	6.2	1.4		
Gasoline Range Or	ganics 170,000	42,000		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 06/18/20 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 006245 00-1286 mb 061811.D GCMS7 bat/MS
	%	Lower	Upper	
Surrogates:	Recovery:	Limit:	Limit:	
4-Bromofluorobenz	ene 93	70	130	
	Concen	tration		
Compounds:	ug/m3	$\mathbf{p}\mathbf{p}\mathbf{b}\mathbf{v}$		
Hexane	<3.5	<1		
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		
Gasoline Range Or	ganics <410	<100		
9				

### ENVIRONMENTAL CHEMISTS

Date of Report: 06/24/20 Date Received: 06/16/20 Project: Kelly Moore, F&BI 006245

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 006252-01 1/7.9 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Hexane	ug/m3	<28	<28	nm
Benzene	ug/m3	<2.5	$<\!\!2.5$	nm
Toluene	ug/m3	<150	<150	nm
Ethylbenzene	ug/m3	<3.4	<3.4	nm
m,p-Xylene	ug/m3	<6.9	<6.9	nm
o-Xylene	ug/m3	<3.4	<3.4	nm

Laboratory Code: Laboratory Control Sample

Laboratory Couc. Laboratory Co	neror sample		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Hexane	ug/m3	48	86	70-130
Benzene	ug/m3	43	83	70-130
Toluene	ug/m3	51	95	70-130
Ethylbenzene	ug/m3	59	90	70-130
m,p-Xylene	ug/m3	120	96	70-130
o-Xylene	ug/m3	59	93	70-130

#### ENVIRONMENTAL CHEMISTS

## **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.

 ${\rm J}$  - 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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Friedman & Bruya, Inc. 3012 16th Avenue West		PRINT NAME	COMPANY	DATE	TIME
Seattle, WA 98119-2029	Relinquished by:	Crawin Hockeman	SHA	6-16-20	
	Relinquished by: m/lm/lm	Nhan Phan	FEBI	6/16/20	1250
Fax (206) 283-5044	Received by:				
FORMS\COC\COCTO-15.DOC			Samples received	at <u>21°C</u>	

#### 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

July 28, 2020

Paul Stull, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Stull:

Included are the results from the testing of material submitted on July 20, 2020 from the Kelly Moore, F&BI 007315 project. There are 6 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 c: paul.stull@woodplc.com WEI0728R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on July 20, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 007315 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Wood Environment & Infrastructure Solutions
007315 -01	EFF_7-20-2020
007315 -02	INF_7-20-2020

All quality control requirements were acceptable.

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	EFF_7-20-2020 07/20/20 07/20/20 07/23/20 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 007315 007315-01 1/7.0 072236.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 97	Lower Limit: 70	Upper Limit: 130	
	Concen	tration		
Compounds:	ug/m3	ppbv		
Benzene	55	17		
Toluene	<130	<35		
Ethylbenzene	<3	< 0.7		
m,p-Xylene	6.7	1.5		
o-Xylene	<3	< 0.7		
Gasoline Range Or	ganics 260,000	64,000		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	INF_7-20-2020 07/20/20 07/20/20 07/23/20 Air ug/m3	Clien Proje Lab I Data Instr Oper	ect: ID: File: ument:	Wood Environment & Infrastructure Kelly Moore, F&BI 007315 007315-02 1/2.8 072235.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 108 Concen	Lower Limit: 70 tration	Upper Limit: 130	
Compounds:	ug/m3	$\operatorname{ppbv}$		
Benzene	< 0.89	< 0.28		
Toluene	<53	<14		
Ethylbenzene	<1.2	< 0.28		
m,p-Xylene	<2.4	< 0.56		
o-Xylene	<1.2	< 0.28		
Gasoline Range Or	ganics <1,200	<280		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 07/22/20 Air ug/m3	licable Projec licable Lab I		Wood Environment & Infrastructure Kelly Moore, F&BI 007315 00-1630 mb 072215.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 87	Lower Limit: 70	Upper Limit: 130	
	Concer	ntration		
Compounds:	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		
Gasoline Range Or	ganics <410	<100		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 07/28/20 Date Received: 07/20/20 Project: Kelly Moore, F&BI 007315

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 007225-02 1/3.2 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<1	<1	nm
Toluene	ug/m3	<60	<60	nm
Ethylbenzene	ug/m3	<1.4	<1.4	nm
m,p-Xylene	ug/m3	3.1	3.5	12
o-Xylene	ug/m3	<1.4	<1.4	nm

Laboratory Code: Laboratory Control Sample

Lasoratory couc. Lasoratory	control sample		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	78	70-130
Toluene	ug/m3	51	96	70-130
Ethylbenzene	ug/m3	59	93	70-130
m,p-Xylene	ug/m3	120	104	70-130
o-Xylene	ug/m3	59	105	70-130

#### ENVIRONMENTAL CHEMISTS

## **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.

 ${\rm J}$  - 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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Report To Paul Str	<u>)  </u>				LERS (sigi						<b>Canas</b> (55				TUF	#of RNAROUND TIM	E
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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
3012 16th Avenue West	Relinquished by:	Gavin Klockeman	AHG		
Seattle, WA 98119-2029	Received by: Mly mu	Nhaw Phan	FEBI	7/20/20	1135
Ph. (206) 285-8282	Relinquished by:				
Fax (206) 283-5044	Received by:				
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#### 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

September 4, 2020

Paul Stull, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Stull:

Included are the results from the testing of material submitted on August 27, 2020 from the Kelly Moore, F&BI 008419 project. There are 6 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.

Colo

Michael Erdahl Project Manager

Enclosures WEI0904R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on August 27, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 008419 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
008419 -01	Eff_8-27-2020
008419 -02	Inf_8-27-2020

All quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_8-27-2020 08/27/20 08/27/20 08/29/20 Air ug/m3	Lab Dat Inst	ent: ject: 1D: a File: trument: erator:	Wood Environment & Infrastructure Kelly Moore, F&BI 008419 008419-01 1/2.8 082835.D GCMS7 VM
Surrogates: 4-Bromofluorobenz	% Recovery: ene 109	Lower Limit: 70	Upper Limit: 130	
	Concer	ntration		
Compounds:	ug/m3	ppbv		
Benzene	< 0.89	< 0.28		
Toluene	<53	<14		
Ethylbenzene	<1.2	< 0.28		
m,p-Xylene	<2.4	< 0.56		
o-Xylene	<1.2	< 0.28		
Naphthalene	< 0.73	< 0.14		
Gasoline Range Or	ganics <920	<220		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_8-27-2020 08/27/20 08/27/20 08/29/20 Air ug/m3	Pro Lak Dat Ins	ent: ject: ) ID: :a File: trument: erator:	Wood Environment & Infrastructure Kelly Moore, F&BI 008419 008419-02 1/35 082836.D GCMS7 VM
Surrogates: 4-Bromofluorobenz	% Recovery: ene 125	Lower Limit: 70	Upper Limit: 130	
		ntration		
Compounds:	ug/m3	ppbv		
Benzene	120	38		
Toluene	<660	<170		
Ethylbenzene	<15	<3.5		
m,p-Xylene	110			
o-Xylene	55	13		
Naphthalene	<9.2	<1.7		
Gasoline Range Or	ganics 840,000	210,000		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 08/28/20 Air ug/m3	Clien Projec Lab I Data Instru Opera	ct: D: File: ument:	Wood Environment & Infrastructure Kelly Moore, F&BI 008419 00-1738 mb 082825.D GCMS7 VM
Surrogates: 4-Bromofluorobenz	% Recovery: ene 104	Lower Limit: 70	Upper Limit: 130	
Compounds:	Concent ug/m3	ration ppbv		
Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Naphthalene Gasoline Range Or	<0.32 <19 <0.43 <0.87 <0.43 <0.26 ganics <330	<0.1 <5 <0.1 <0.2 <0.1 <0.05 <80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 09/04/20 Date Received: 08/27/20 Project: Kelly Moore, F&BI 008419

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 008408-01 1/8 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	130	140	7
Toluene	ug/m3	<150	<150	nm
Ethylbenzene	ug/m3	29	32	10
m,p-Xylene	ug/m3	36	41	13
o-Xylene	ug/m3	13	15	14
Naphthalene	ug/m3	<2.1	<2.1	nm

Laboratory Code: Laboratory Control Sample

haberatory coue. haberatory con	iteror sample		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	98	70-130
Toluene	ug/m3	51	110	70-130
Ethylbenzene	ug/m3	59	116	70-130
m,p-Xylene	ug/m3	120	117	70-130
o-Xylene	ug/m3	59	115	70-130
Naphthalene	ug/m3	71	101	70-130

### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
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Seattle, WA 98119-2029	Received by M	5.050mm	FJB, De	8/27/20	12:304
Ph. (206) 285-8282	Relinquished by:	· · · · · · · · · · · · · · · · · · ·	<b>/</b>		/
Fax (206) 283-5044	Received by:				
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#### 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

September 29, 2020

Paul Stull, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Stull:

Included are the results from the testing of material submitted on September 21, 2020 from the Kelly Moore, F&BI 009360 project. There are 7 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.

Colo

Michael Erdahl Project Manager

Enclosures WEI0929R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on September 21, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 009360 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	<u>Wood Environment &amp; Infrastructure Solutions</u>
009360 -01	Inf_9-21-2020
009360 -02	Eff_9-21-2020

All quality control requirements were acceptable.

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_9-21-2020 09/21/20 09/21/20 09/25/20 Air ug/m3	Inst	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 009360 009360-01 1/160 092431.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 82	Lower Limit: 70	Upper Limit: 130	
Compounds:	Concen ug/m3	tration ppbv		
Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Gasoline Range Org	<51 <3,000 110 1,600 710 canics 1,400,000	<16 <800 26 380 160 340,000		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_9-21-2020 09/21/20 09/21/20 09/25/20 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 009360 009360-02 1/2.9 092430.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: me 108	Lower Limit: 70	Upper Limit: 130	
Compounds:	Concent ug/m3	tration ppbv		
-	_			
Benzene	<0.93	<0.29		
Toluene	<55	<14		
Ethylbenzene	<1.3	< 0.29		
m,p-Xylene	<2.5	< 0.58		
o-Xylene	<1.3	< 0.29		
Gasoline Range Org	anics <950	<230		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 09/24/20 Air ug/m3		ect: ID: File: ument:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 009360 00-2126 MB 092412.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 103	Lower Limit: 70	Upper Limit: 130	
Compounds:	Concent ug/m3	ration ppbv		
Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Gasoline Range Org	<0.32 <19 <0.43 <0.87 <0.43 ganics <370	<0.1 <5 <0.1 <0.2 <0.1 <80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 09/29/20 Date Received: 09/21/20 Project: Kelly Moore, F&BI 009360

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 009389-02 1/3.1 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	6.4	6.6	3
Toluene	ug/m3	$<\!\!58$	<58	nm
Ethylbenzene	ug/m3	<1.3	<1.3	nm
m,p-Xylene	ug/m3	3.0	3.4	12
o-Xylene	ug/m3	<1.3	<1.3	nm

#### ENVIRONMENTAL CHEMISTS

Date of Report: 09/29/20 Date Received: 09/21/20 Project: Kelly Moore, F&BI 009360

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Laboratory Code. Laboratory Con	lei or Sampie		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	102	70-130
Toluene	ug/m3	51	110	70-130
Ethylbenzene	ug/m3	59	118	70-130
m,p-Xylene	ug/m3	120	108	70-130
o-Xylene	ug/m3	59	108	70-130

### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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City, State, ZIP Seattle				NOTES	3:				IN	INVOICE TO						PLE DISPOSAL
Phone <u>6039414044</u> Email Paul Stul Quord plc								-								
SAMPLE INFORMATION										ANA	LYS	IS R	EQU	EST	ED	
			Flow	Reporting Level: IA=Indoor Air		Initial	Field	Final	Field	<b>FO15 Full Scan</b>	TO15 BTEXN	TO15 cVOCs	APH	Helium	ny 1013 105 ai Yex ake	
Sample Name	Lab ID	Canister ID	Cont. ID	SG=Soil Gas (Circle One)	Date Sampled	Vac. ("Hg)	Initial Time	Vac. ("Hg)	Final Time	Ϋ́Ο	T	T		1540	1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	Notes
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#### 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

November 4, 2020

Paul Stull, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Stull:

Included are the results from the testing of material submitted on October 26, 2020 from the Kelly Moore, F&BI 010440 project. There are 6 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.

Colo

Michael Erdahl Project Manager

Enclosures WEI1104R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on October 26, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 010440 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
010440 -01	Eff_10-26-2020
010440 -02	Inf_10-26-2020

All quality control requirements were acceptable.

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_10-26-2020 10/26/20 10/26/20 10/30/20 Air ug/m3	Clien Proje Lab I Data Instr Oper	ect: ID: File: ument:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 010440 010440-01 1/2.7 102931.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 99	Lower Limit: 70	Upper Limit: 130	
Compounds:	Concent ug/m3	ration ppbv		
Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Gasoline Range Org	<0.86 <51 <1.2 <2.3 <1.2 ganics <890	<0.27 <13 <0.27 <0.54 <0.27 <220		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_10-26-2020 10/26/20 10/26/20 10/30/20 Air ug/m3	Inst	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 010440 010440-02 1/35 102932.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 76	Lower Limit: 70	Upper Limit: 130	
Compounds:	Concen ug/m3	tration ppbv		
Benzene Toluene Ethylbenzene	<11 <660 <15	<3.5 <170 <3.5		
m,p-Xylene o-Xylene Gasoline Range Org	820 390 ganics 980,000	$190 \\ 89 \\ 240,000$		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 10/29/20 Air ug/m3	Inst	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 010440 00-2642 MB 102911.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 99	Lower Limit: 70	Upper Limit: 130	
	Concent	ration		
Compounds:	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		
Gasoline Range Org	ganics <330	<80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 11/04/20 Date Received: 10/26/20 Project: Kelly Moore, F&BI 010440

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 010494-01 1/3.2 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<1	<1	nm
Toluene	ug/m3	<60	<60	nm
Ethylbenzene	ug/m3	<1.4	<1.4	nm
m,p-Xylene	ug/m3	<2.8	<2.8	nm
o-Xylene	ug/m3	<1.4	<1.4	nm

Laboratory Code: Laboratory Control Sample

Laboratory coue. Laboratory co	introi sumpio		Percent	
	<b>D</b>	a .1		<b>.</b> .
	Reporting	$\operatorname{Spike}$	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	94	70-130
Toluene	ug/m3	51	107	70-130
Ethylbenzene	ug/m3	59	107	70-130
m,p-Xylene	ug/m3	120	103	70-130
o-Xylene	ug/m3	59	101	70-130

### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE TIME
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Seattle, WA 98119-2029	Received by: P. P. Ram	My yoh Phan .	PBI	10/26/20 12:51
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#### 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

November 24, 2020

Scott Adamek, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on November 18, 2020 from the Kelly Moore, F&BI 011336 project. There are 6 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.

Cale

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI1124R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on November 18, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 011336 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
011336 -01	EFF_11-18-2020
011336 -02	INF_11-18-2020

All quality control requirements were acceptable.

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	EFF_11-18-2020 11/18/20 11/18/20 11/20/20 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 011336 011336-01 1/2.9 111934.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 88	Lower Limit: 70	Upper Limit: 130	
	Concen	tration		
Compounds:	ug/m3	ppbv		
Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Gasoline Range Org	<0.93 <55 <1.3 <2.5 <1.3 ganics <950	<0.29 <14 <0.29 <0.58 <0.29 <230		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	INF_11-18-2020 11/18/20 11/18/20 11/20/20 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 011336 011336-02 1/37 111935.D GCMS7 bat
Surrogates: 4-Bromofluorobenz		Lower Limit: 70	Upper Limit: 130	
Compounds:	ug/m3	ppbv		
Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Gasoline Range Or	35 <700 <16 130 22 ganics 140,000	11 <180 <3.7 30 5.0 33,000		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 11/16/20 Air ug/m3		ect: ID: File: rument:	Wood Environment & Infrastructure Kelly Moore, F&BI 011336 00-2698 MB 111610.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 85	Lower Limit: 70	Upper Limit: 130	
Compounds:	Concen ug/m3	tration ppbv		
Benzene	< 0.32	<0.1		
Toluene Ethylbenzene	<19 <0.43	<5 <0.1		
m,p-Xylene o-Xylene Gasoline Range Org	<0.87 <0.43 ganics <330	<0.2 <0.1 <80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 11/24/20 Date Received: 11/18/20 Project: Kelly Moore, F&BI 011336

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 011335-01 1/3.3 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<1.1	<1.1	nm
Toluene	ug/m3	<62	<62	nm
Ethylbenzene	ug/m3	<1.4	<1.4	nm
m,p-Xylene	ug/m3	<2.9	<2.9	nm
o-Xylene	ug/m3	<1.4	<1.4	nm

Laboratory Code: Laboratory Control Sample

Laboratory coue. Laboratory	control sample		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	88	70-130
Toluene	ug/m3	51	99	70-130
Ethylbenzene	ug/m3	59	107	70-130
m,p-Xylene	ug/m3	120	113	70-130
o-Xylene	ug/m3	59	111	70-130

### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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- Samples received at 10 °C

#### 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

December 18, 2020

Scott Adamek, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on December 14, 2020 from the Kelly Moore, F&BI 012223 project. There are 6 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.

Cale

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI1218R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on December 14, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 012223 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
012223 -01	Eff_12-14-2020
012223 -02	Inf_12-14-2020

The TO-15 gasoline range concentrations were quantified using a single point calibration at 80 ppbv.

All quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_12-14-2020 12/14/20 12/14/20 12/16/20 Air ug/m3		ect: ID: File: ument:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 012223 012223-01 1/2.9 121528.D GCMS7 bat
Surrogates:	% Recovery:	Lower Limit:	Upper Limit:	
4-Bromofluorobenze	ene 101	70	130	
	Concent	ration		
Compounds:	ug/m3	ppbv		
Benzene	< 0.93	< 0.29		
Toluene	<55	<14		
Ethylbenzene	<1.3	< 0.29		
m,p-Xylene	<2.5	< 0.58		
o-Xylene	<1.3	< 0.29		
Gasoline Range Org	anics <950	<230		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_12-14-2020 12/14/20 12/14/20 12/16/20 Air ug/m3	Inst	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 012223 012223-02 1/37 121529.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 100	Lower Limit: 70	Upper Limit: 130	
Compounds:	Concent ug/m3			
Benzene	<12	<3.7		
Toluene	<700	<180		
Ethylbenzene	<16	<3.7		
m,p-Xylene	<32	<7.4		
o-Xylene	<16	<3.7		
Gasoline Range Org	anics 280,000	69,000		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 12/15/20 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 012223 00-2823 MB 121520.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 92	Lower Limit: 70	Upper Limit: 130	
	Concent	ration		
Compounds:	ug/m3	$\operatorname{ppbv}$		
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		
Gasoline Range Org	anics <330	<80		

### ENVIRONMENTAL CHEMISTS

Date of Report: 12/18/20 Date Received: 12/14/20 Project: Kelly Moore, F&BI 012223

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 012176-01 1/5.3 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<1.7	<1.7	nm
Toluene	ug/m3	<100	<100	nm
Ethylbenzene	ug/m3	<2.3	<2.3	nm
m,p-Xylene	ug/m3	<4.6	<4.6	nm
o-Xylene	ug/m3	<2.3	<2.3	nm

Laboratory Code: Laboratory Control Sample

Laboratory code. Laboratory	control sample		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	109	70-130
Toluene	ug/m3	51	79	70-130
Ethylbenzene	ug/m3	59	95	70-130
m,p-Xylene	ug/m3	120	100	70-130
o-Xylene	ug/m3	59	98	70-130

### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE TI	ME
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Seattle, WA 98119-2029	Received by: MM MM	Nhan phan	FEBI	12/14/20 14	10
Ph. (206) 285-8282	Relinquished by:				
Fax (206) 283-5044	Received by:				
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#### 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

January 19, 2021

Scott Adamek, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on January 11, 2021 from the Kelly Moore, F&BI 101114 project. There are 7 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.

Cale

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI0119R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on January 11, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 101114 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
101114 -01	Eff_1_11_2021
101114 -02	Inf_1_11_2021

The TO-15 gasoline range concentrations were quantified using a single point calibration at 80 ppbv.

All quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_1_11_2021 01/11/21 01/11/21 01/14/21 Air ug/m3		ect: ID: File: ument:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 101114 101114-01 1/3.0 011321.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 94	Lower Limit: 70	Upper Limit: 130	
	Concent	ration		
Compounds:	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		
Gasoline Range Org	anics <980	<240		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_1_11_2021 01/11/21 01/11/21 01/14/21 Air ug/m3	Inst	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 101114 101114-02 1/37 011322.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 94	Lower Limit: 70	Upper Limit: 130	
	Concent			
Compounds:	ug/m3	ppbv		
Benzene	<12	<3.7		
Toluene	<700	<180		
Ethylbenzene	<16	<3.7		
m,p-Xylene	<32	<7.4		
o-Xylene	<16	<3.7		
Gasoline Range Org	ganics 140,000	35,000		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 01/13/21 Air ug/m3		ect: ID: File: rument:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 101114 01-92 MB 011314.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 101	Lower Limit: 70	Upper Limit: 130	
	Concent	ration		
Compounds:	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		
Gasoline Range Org	anics <330	<80		

### ENVIRONMENTAL CHEMISTS

Date of Report: 01/19/21 Date Received: 01/11/21 Project: Kelly Moore, F&BI 101114

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 101114-02 1/37 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<12	<12	nm
Toluene	ug/m3	<700	<700	nm
Ethylbenzene	ug/m3	<16	<16	nm
m,p-Xylene	ug/m3	<32	<32	nm
o-Xylene	ug/m3	<16	<16	nm

### ENVIRONMENTAL CHEMISTS

Date of Report: 01/19/21 Date Received: 01/11/21 Project: Kelly Moore, F&BI 101114

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: Laboratory Control Sample

Laboratory code. Laboratory of	ontroi Sampie		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	95	70-130
Toluene	ug/m3	51	97	70-130
Ethylbenzene	ug/m3	59	110	70-130
m,p-Xylene	ug/m3	120	103	70-130
o-Xylene	ug/m3	<b>59</b>	105	70-130

### ENVIRONMENTAL CHEMISTS

## **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.

 ${\rm J}$  - 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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Seattle, WA 98119-2029	Received by: MUM	Annw Buch	F&B	11/21/18-418
Ph. (206) 285-8282	Relinquished by:			
Fax (206) 283-5044	Received by:			
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#### 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

February 17, 2021

Scott Adamek, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on February 9, 2021 from the Kelly Moore, F&BI 102156 project. There are 6 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.

Colo

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI0217R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on February 9, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 102156 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
102156 -01	Eff_2-9-2021
102156 -02	Inf_2-9-2021

The toluene concentration in sample Eff_2-9-2021 exceeded the calibration range of the instrument. The data were flagged accordingly.

All other quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_2-9-2021 02/09/21 02/09/21 02/11/21 Air ug/m3		ect: ID: File: ument:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 102156 102156-01 1/5.0 021120.D GCMS12 VM
Surrogates: 4-Bromofluorobenze	% Recovery: ene 95	Lower Limit: 70	Upper Limit: 130	
	Concent	ration		
Compounds:	ug/m3	ppbv		
Benzene	<1.6	< 0.5		
Toluene	<94	$<\!\!25$		
Ethylbenzene	<2.2	< 0.5		
m,p-Xylene	<4.3	<1		
o-Xylene	<2.2	< 0.5		
Gasoline Range Org	anics <1,600	<400		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_2-9-2021 02/09/21 02/09/21 02/11/21 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 102156 102156-02 1/38 021122.D GCMS12 VM
Surrogates: 4-Bromofluorobenze	% Recovery: ene 101	Lower Limit: 70	Upper Limit: 130	
Compoundor	Concent			
Compounds:	ug/m3	ppbv		
Benzene	32	9.9		
Toluene	41,000 ve 1	1,000 ve		
Ethylbenzene	310	72		
m,p-Xylene	790	180		
o-Xylene	160	37		
Gasoline Range Org	ganics 370,000	91,000		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable O2/11/21 Air ug/m3	Insti	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 102156 01-243 MB 021113.D GCMS12 VM
Surrogates: 4-Bromofluorobenze	% Recovery: ene 103	Lower Limit: 70	Upper Limit: 130	
	Concent	ration		
Compounds:	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		
Gasoline Range Org	anics <330	<80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 02/17/21 Date Received: 02/09/21 Project: Kelly Moore, F&BI 102156

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 102156-01 1/5.0 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<1.6	<1.6	nm
Toluene	ug/m3	<94	<94	nm
Ethylbenzene	ug/m3	<2.2	<2.2	nm
m,p-Xylene	ug/m3	<4.3	<4.3	nm
o-Xylene	ug/m3	<2.2	<2.2	nm

Laboratory Code: Laboratory Control Sample

Haboratory coue: Haboratory	control sample		D .	
			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	93	70-130
Toluene	ug/m3	51	109	70-130
Ethylbenzene	ug/m3	59	100	70-130
m,p-Xylene	ug/m3	120	101	70-130
o-Xylene	ug/m3	59	102	70-130

### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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Sample Name		Canister	Flow Cont. ID	Reporting Level: IA=Indoor Ai SG=Soil Gas (Circle One)	Date Sampled	1	Initial Time	Final Vac. ("Hg)	Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOC8	APH	щ	产历	Notes Dura: 6 min
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Seattle, WA 98119-2029	Received by:	Gravin Cloebernan		2-9-2021	1730
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Ph. (206) 285-8282	Relinquished by:		·····		11-20
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#### 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 19, 2021

Scott Adamek, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on March 9, 2021 from the Kelly Moore, F&BI 103161 project. There are 6 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.

Cale

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI0319R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on March 9, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 103161 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
103161 -01	Eff_3-9-2021
103161 -02	Inf_3-9-2021

The TO-15 gasoline range concentrations were quantified using a single point calibration at 80 ppbv.

The toluene concentration for sample Inf_3-9-2021 exceeded the calibration range. The data were flagged accordingly.

All other quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_3-9-2021 03/09/21 03/09/21 03/16/21 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 103161 103161-01 1/5.0 031529.D GCMS7 bat
Surrogates: 4-Bromofluorobenz		Lower Limit: 70 tration	Upper Limit: 130	
Compounds:	ug/m3	ppbv		
Benzene	<1.6	< 0.5		
Toluene	<94	<25		
Ethylbenzene	<2.2	< 0.5		
m,p-Xylene	<4.3	<1		
o-Xylene	<2.2	< 0.5		
Gasoline Range Or	ganics <1,600	<400		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_3-9-2021 03/09/21 03/09/21 03/16/21 Air ug/m3	Pro Lak Dat Ins	ent: ject: o ID: ta File: trument: erator:	Wood Environment & Infrastructure Kelly Moore, F&BI 103161 103161-02 1/41 031530.D GCMS7 bat
Surrogates: 4-Bromofluorobenz		Lower Limit: 70	Upper Limit: 130	
Compounds:	ug/m3			
Benzene	57	18		
Toluene	47,000 ve	13,000 ve		
Ethylbenzene	320	73		
m,p-Xylene	1,100	260		
o-Xylene	250	57		
Gasoline Range Or	ganics 420,000	100,000		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 03/15/21 Air ug/m3	Clien Projec Lab I Data Instru Opera	ct: D: File: ument:	Wood Environment & Infrastructure Kelly Moore, F&BI 103161 01-546 mb 031511.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 98	Lower Limit: 70	Upper Limit: 130	
	tration			
Compounds:	ug/m3	$\operatorname{ppbv}$		
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		
Gasoline Range Or	ganics <330	<80		

### ENVIRONMENTAL CHEMISTS

Date of Report: 03/19/21 Date Received: 03/09/21 Project: Kelly Moore, F&BI 103161

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 103161-01 1/5.0 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<1.6	<1.6	nm
Toluene	ug/m3	<94	<94	nm
Ethylbenzene	ug/m3	<2.2	<2.2	nm
m,p-Xylene	ug/m3	<4.3	<4.3	nm
o-Xylene	ug/m3	<2.2	<2.2	nm
Naphthalene	ug/m3	<1.3	<1.3	nm

Laboratory Code: Laboratory Control Sample

Laboratory couct Laboratory con	lei or Sampie		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	100	70-130
Toluene	ug/m3	51	101	70-130
Ethylbenzene	ug/m3	59	100	70-130
m,p-Xylene	ug/m3	120	101	70-130
o-Xylene	ug/m3	59	102	70-130
Naphthalene	ug/m3	71	103	70-130

### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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#### 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 13, 2021

Scott Adamek, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on April 6, 2021 from the Kelly Moore, F&BI 104088 project. There are 6 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.

Colo

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI0413R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on April 6, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 104088 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
104088 -01	Eff_4-6-2021
104088 -02	Inf_4-6-2021

The TO-15 gasoline range concentrations were quantified using a single point calibration at 80 ppbv.

The toluene concentration for sample Inf_4-6-2021 exceeded the calibration range. The data were flagged accordingly.

All other quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_4-6-2021 04/06/21 04/06/21 04/08/21 Air ug/m3	Inst	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 104088 104088-01 1/4.7 040729.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 94	Lower Limit: 70	Upper Limit: 130	
	Concer	itration		
Compounds:	ug/m3	ppbv		
Benzene	<1.5	< 0.47		
Toluene	<89	<23		
Ethylbenzene	<2	< 0.47		
m,p-Xylene	<4.1	< 0.94		
o-Xylene	<2	< 0.47		
Gasoline Range Org	ganics <1,600	<380		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_4-6-2021 04/06/21 04/06/21 04/08/21 Air ug/m3	Pro Lak Dat Ins	ent: ject: o ID: ta File: trument: erator:	Wood Environment & Infrastructure Kelly Moore, F&BI 104088 104088-02 1/37 040730.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 114		Upper Limit: 130	
Compoundor		ntration		
Compounds:	ug/m3	ppbv		
Benzene	20	6.2		
Toluene	32,000 ve	8,500 ve		
Ethylbenzene	110	26		
m,p-Xylene	750	170		
o-Xylene	220	50		
Gasoline Range Or	ganics 320,000	79,000		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 04/07/21 Air ug/m3	Inst	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 104088 01-796 MB 040711a.D GCMS7 bat
	%	Lower	Upper	
Surrogates:	Recovery:	Limit:	Limit:	
4-Bromofluorobenz	ene 93	70	130	
Compounds:	Concen ug/m3	tration ppbv		
2-Propanol	<8.6	<3.5		
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		
Gasoline Range Or	ganics <330	<80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 04/13/21 Date Received: 04/06/21 Project: Kelly Moore, F&BI 104088

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 104071-01 1/5.4 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	5.9	5.8	2
Toluene	ug/m3	<100	<100	nm
Ethylbenzene	ug/m3	8.9	8.8	1
m,p-Xylene	ug/m3	36	36	0
o-Xylene	ug/m3	9.7	9.8	1

Laboratory Code: Laboratory Control Sample

Laboratory Couct Laboratory	control Sample		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	96	70-130
Toluene	ug/m3	51	99	70-130
Ethylbenzene	ug/m3	59	93	70-130
m,p-Xylene	ug/m3	120	95	70-130
o-Xylene	ug/m3	59	98	70-130

#### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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#### 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, 2021

Scott Adamek, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on May 11, 2021 from the Kelly Moore, F&BI 105174 project. There are 6 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.

Colo

Michael Erdahl Project Manager

Enclosures WEI0519R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on May 11, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 105174 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
105174 -01	Eff_5-11-2021
105174 -02	Inf_5-11-2021

The TO-15 gasoline range concentrations were quantified using a single point calibration at 80 ppbv.

The toluene concentration in sample Inf_5-11-2021 exceeded the calibration range of the instrument. The data were flagged accordingly.

All quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_5-11-2021 05/11/21 05/11/21 05/14/21 Air ug/m3		ect: ID: File: ument:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 105174 105174-01 1/7.5 051330.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 97	Lower Limit: 70	Upper Limit: 130	
Compounds:	Concent ug/m3		100	
Benzene Toluene Ethylbenzene	<2.4 <140 <3.3	<0.75 <37 <0.75		
m,p-Xylene o-Xylene Gasoline Range Org	<6.5 <3.3	<1.5 <0.75 <600		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_5-11-2021 05/11/21 05/11/21 05/14/21 Air ug/m3	Inst	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 105174 105174-02 1/37 051331.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 112	Lower Limit: 70	Upper Limit: 130	
Compounds:		ntration		
Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene	21 10,000 ve 47 550 250	$6.5 \\ 2,700 ve \\ 11 \\ 130 \\ 57$		
Gasoline Range Org				

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 05/13/21 Air ug/m3	Insti	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 105174 01-1075 MB 051311.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 98	Lower Limit: 70	Upper Limit: 130	
	Concent	ration		
Compounds:	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		
Gasoline Range Org	anics <330	<80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 05/19/21 Date Received: 05/11/21 Project: Kelly Moore, F&BI 105174

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 105074-01 1/6.0 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
2-Propanol	ug/m3	<52	<52	nm
Benzene	ug/m3	13	13	0
Toluene	ug/m3	1,200	1,200	0
Ethylbenzene	ug/m3	89	88	1
m,p-Xylene	ug/m3	350	350	0
o-Xylene	ug/m3	140	140	0

Laboratory Code: Laboratory Control Sample

Laboratory Couc. Laboratory Co	sitter sample		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
2-Propanol	ug/m3	33	100	70-130
Benzene	ug/m3	43	102	70-130
Toluene	ug/m3	51	98	70-130
Ethylbenzene	ug/m3	59	99	70-130
m,p-Xylene	ug/m3	120	100	70-130
o-Xylene	ug/m3	59	100	70-130

#### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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#### 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

June 24, 2021

Scott Adamek, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on June 16, 2021 from the Kelly Moore, F&BI 106271 project. There are 6 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.

Cale

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI0624R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on June 16, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 106271 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
106271 -01	Eff_6-16-2021
106271 -02	Inf_6-16-2021

The TO-15 gasoline range concentrations were quantified using a single point calibration at 80 ppbv.

All quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_6-16-2021 06/16/21 06/16/21 06/19/21 Air ug/m3	Clien Proje Lab l Data Instr Oper	ect: ID: File: ument:	Wood Environment & Infrastructure Kelly Moore, F&BI 106271 106271-01 1/4.8 061834.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 92	Lower Limit: 70	Upper Limit: 130	
4-Dromonuorobenz			100	
	Concen	tration		
Compounds:	ug/m3	ppbv		
Benzene	<1.5	< 0.48		
Toluene	<90	<24		
Ethylbenzene	<2.1	< 0.48		
m,p-Xylene	<4.2	< 0.96		
o-Xylene	<2.1	< 0.48		
Gasoline Range Or	ganics <1,600	<380		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_6-16-2021 06/16/21 06/16/21 06/19/21 Air ug/m3	Inst	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 106271 106271-02 1/37 061835.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 120	Lower Limit: 70	Upper Limit: 130	
	Concer	ntration		
Compounds:	ug/m3	ppbv		
Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Gasoline Range Ors	<12 1,100 <16 43 35 ganics 490,000	<3.7 300 <3.7 9.9 8.0 120.000		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 06/18/21 Air ug/m3	Insti	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 106271 01-1221 MB 061819.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 93	Lower Limit: 70	Upper Limit: 130	
	Concer	tration		
Compounds:	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		
Gasoline Range Or	ganics <330	<80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 06/24/21 Date Received: 06/16/21 Project: Kelly Moore, F&BI 106271

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 106317-07 1/6.2 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<2	<2	nm
Toluene	ug/m3	<120	<120	nm
Ethylbenzene	ug/m3	<2.7	<2.7	nm
m,p-Xylene	ug/m3	<5.4	<5.4	nm
o-Xylene	ug/m3	<2.7	<2.7	nm

Laboratory Code: Laboratory Control Sample

Laboratory Couct Laboratory	control sample		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	80	70-130
Toluene	ug/m3	51	86	70-130
Ethylbenzene	ug/m3	59	75	70-130
m,p-Xylene	ug/m3	120	80	70-130
o-Xylene	ug/m3	59	81	70-130

#### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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.

Report To Scott Adamek	+ 0	hoisty 1	ostma	₼				<u> </u>						,	TUR	NAROUNI	) TIME
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City, State, ZIP <u>Seattle</u> , 5033346551 Phone <u>2063421778</u> En	ωA	98101		NOTE	<b>V</b> 1			<	IN	VOI	CE T	0	1 17	Def	ault	MPLE DISF Clean afte (Fee may a	r 3 days
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#### 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 13, 2021

Scott Adamek, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on August 5, 2021 from the Kelly Moore, F&BI 108075 project. There are 6 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.

Colo

Michael Erdahl Project Manager

Enclosures WEI0813R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on August 5, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 108075 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
108075 -01	Eff_8-5-2021
108075 - 02	Inf_8-5-2021

All quality control requirements were acceptable.

The toluene concentration in sample Inf_8-5-2021 exceeded the calibration range of the instrument. The data were flagged accordingly.

All other quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_8-5-2021 08/05/21 08/05/21 08/07/21 Air ug/m3		ect: ID: File: ument:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 108075 108075-01 1/5 080632.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 93	Lower Limit: 70	Upper Limit: 130	
	Concent	ration		
Compounds:	ug/m3	ppbv		
Benzene	<1.6	< 0.5		
Toluene	<94	<25		
Ethylbenzene	<2.2	< 0.5		
m,p-Xylene	<4.3	<1		
o-Xylene	<2.2	< 0.5		
Gasoline Range Org	anics <1,600	<400		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_8-5-2021 08/05/21 08/05/21 08/07/21 Air ug/m3	Client: Project: Lab ID: Data File Instrume Operator	ent:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 108075 108075-02 1/39 080633.D GCMS7 bat
Surrogates:	% Recovery:	Lower Limit:	Upper Limit:	
4-Bromofluorobenz		70	130	
	Concen	tration		
Compounds:	ug/m3	$\operatorname{ppbv}$		
Benzene	<12	<3.9		
Toluene	4,000 ve	1,100 ve		
Ethylbenzene	39	8.9		
m,p-Xylene	230	53		
o-Xylene	150	34		
Gasoline Range Or	ganics 1,800,000	430,000		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 08/06/21 Air ug/m3	Insti	ect:	Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 108075 01-1719 MB 080612.D GCMS7 bat
Surrogates: 4-Bromofluorobenze	% Recovery: ene 89	Lower Limit: 70	Upper Limit: 130	
	Concent	ration		
Compounds:	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		
Gasoline Range Org	anics <330	<80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 08/13/21 Date Received: 08/05/21 Project: Kelly Moore, F&BI 108075

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 108061-02 1/6.9 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	7.0	6.7	4
Toluene	ug/m3	<130	<130	nm
Ethylbenzene	ug/m3	4.3	4.2	2
m,p-Xylene	ug/m3	16	16	0
o-Xylene	ug/m3	6.0	6.0	0

Laboratory Code: Laboratory Control Sample

Lasoratory coue. Lasoratory	control sample		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	90	70-130
Toluene	ug/m3	51	98	70-130
Ethylbenzene	ug/m3	59	90	70-130
m,p-Xylene	ug/m3	120	94	70-130
o-Xylene	ug/m3	59	98	70-130

#### ENVIRONMENTAL CHEMISTS

### **Data Qualifiers & Definitions**

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d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

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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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Friedman & Bruya, Inc.	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
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Fax (206) 283-5044	Received by:				`
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#### 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

September 15, 2021

Scott Adamek, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on September 7, 2021 from the Kelly Moore, F&BI 109099 project. There are 6 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.

Colo

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI0915R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on September 7, 2020 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 109099 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
109099 -01	Eff_9-7-2021
109099 -02	Inf_9-7-2021

The TO-15 gasoline range organics concentration was determined using a single point calibration at 80 ppbv.

All quality control requirements were acceptable.

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_9-7-2021 09/07/21 09/07/21 09/09/21 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 109099 109099-01 1/5 090824.D GCMS7 bat
Surrogates: 4-Bromofluorobenz		Lower Limit: 70 tration	Upper Limit: 130	
Compounds:	ug/m3	ppbv		
Benzene	<1.6	< 0.5		
Toluene	<94	<25		
Ethylbenzene	<2.2	< 0.5		
m,p-Xylene	<4.3	<1		
o-Xylene	<2.2	< 0.5		
Gasoline Range Org	ganics <1,600	<400		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_9-7-2021 09/07/21 09/07/21 09/09/21 Air ug/m3	Lab Dat Inst	ent: ject: ) ID: :a File: trument: erator:	Wood Environment & Infrastructure Kelly Moore, F&BI 109099 109099-02 1/38 090825.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 105	Lower Limit: 70	Upper Limit: 130	
~ .		ntration		
Compounds:	ug/m3	ppbv		
Benzene Toluene	<12 <720			
Ethylbenzene	<17	<3.8		
m,p-Xylene	<33	<7.6		
o-Xylene	<17	<3.8		
Gasoline Range Or	ganics 600,000	150,000		

## ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 09/08/21 Air ug/m3	Lab Dat Inst	ent: ject: ID: a File: trument: erator:	Wood Environment & Infrastructure Kelly Moore, F&BI 109099 01-2013 MB 090811.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 99	Lower Limit: 70	Upper Limit: 130	
	Concer	ntration		
Compounds:	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		
Gasoline Range Org	ganics <330	<80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 09/15/21 Date Received: 09/07/21 Project: Kelly Moore, F&BI 109099

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 109108-02 1/8.2 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	75	74	1
Toluene	ug/m3	<150	<150	nm
Ethylbenzene	ug/m3	7.3	7.0	4
m,p-Xylene	ug/m3	33	32	3
o-Xylene	ug/m3	12	12	0

Laboratory Code: Laboratory Control Sample

Laboratory code. Laboratory	control sample		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	105	70-130
Toluene	ug/m3	51	110	70-130
Ethylbenzene	ug/m3	59	103	70-130
m,p-Xylene	ug/m3	120	107	70-130
o-Xylene	ug/m3	59	108	70-130

#### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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#### 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

July 20, 2021

Scott Adamek, Project Manager Wood Environment & Infrastructure Solutions, Inc. One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on July 13, 2021 from the Kelly Moore, F&BI 107178 project. There are 6 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 c: christy.duitman@woodplc.com WEI0720R.DOC

#### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on July 13, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Solutions Kelly Moore, F&BI 107178 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure Solutions
107178 -01	Eff_7-13-2021
107178 -02	Inf_7-13-2021

The TO-15 gasoline range concentrations were quantified using a single point calibration at 80 ppbv.

The TO-15 toluene concentration for sample Inf_7-13-2021 exceeded the calibration range. The data were flagged accordingly.

All other quality control requirements were acceptable.

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_7-13-2021 07/13/21 07/13/21 07/16/21 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 107178 107178-01 1/4.9 071530.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 93	Lower Limit: 70	Upper Limit: 130	
	Concen	tration		
Compounds:	ug/m3	ppbv		
Benzene	<1.6	< 0.49		
Toluene	<92	<24		
Ethylbenzene	<2.1	< 0.49		
m,p-Xylene	<4.3	< 0.98		
o-Xylene	<2.1	< 0.49		
Gasoline Range Org	ganics <1,600	<390		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_7-13-2021 07/13/21 07/13/21 07/16/21 Air ug/m3	Lak Dat Ins	ent: ject: ) ID: :a File: trument: erator:	Wood Environment & Infrastructure Kelly Moore, F&BI 107178 107178-02 1/38 071531.D GCMS7 bat
Surrogates: 4-Bromofluorobenz		Lower Limit: 70 ntration	Upper Limit: 130	
Compounds:	ug/m3	ppbv		
Benzene	<12	<3.8		
Toluene	42,000 ve	11,000 ve		
Ethylbenzene	290	67		
m,p-Xylene	1,800	430		
o-Xylene	820	190		
Gasoline Range Or	ganics 2,400,000	580,000		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 07/15/21 Air ug/m3	Clien Proje Lab J Data Instr Oper	ct: D: File: ument:	Wood Environment & Infrastructure Kelly Moore, F&BI 107178 01-1582 MB 071512.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 87	Lower Limit: 70	Upper Limit: 130	
	Concen	tration		
Compounds:	ug/m3	$\operatorname{ppbv}$		
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		
Gasoline Range Or	ganics <330	<80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 07/20/21 Date Received: 07/13/21 Project: Kelly Moore, F&BI 107178

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 107217-01 1/6.1 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<1.9	<1.9	nm
Toluene	ug/m3	<110	<110	nm
Ethylbenzene	ug/m3	2.7	2.6	4
m,p-Xylene	ug/m3	12	11	9
o-Xylene	ug/m3	4.7	4.7	0

Laboratory Code: Laboratory Control Sample

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	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	90	70-130
Toluene	ug/m3	51	95	70-130
Ethylbenzene	ug/m3	59	80	70-130
m,p-Xylene	ug/m3	120	88	70-130
o-Xylene	ug/m3	59	91	70-130

#### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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#### 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

October 14, 2021

Scott Adamek, Project Manager Wood Environment & Infrastructure One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on October 5, 2021 from the Kelly Moore, F&BI 110081 project. There are 6 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.

Cale

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI1014R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on October 5, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Kelly Moore, F&BI 110081 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure
110081 -01	Eff_10-5-2021
110081 -02	Inf_10-5-2021

The TO-15 gasoline range organics concentration was determined using a single point calibration at 80 ppbv.

All quality control requirements were acceptable.

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_10-5-2021 10/05/21 10/05/21 10/07/21 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 110081 110081-01 1/5.3 100628.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 87 Concen	Lower Limit: 70 tration	Upper Limit: 130	
Compounds:	ug/m3	ppbv		
Benzene	<1.7	< 0.53		
Toluene	<100	<26		
Ethylbenzene	<2.3	< 0.53		
m,p-Xylene	<4.6	<1.1		
o-Xylene	<2.3	< 0.53		
Gasoline Range Org	ganics <1,700	<420		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_10-5-2021 10/05/21 10/05/21 10/07/21 Air ug/m3		ect: ID: File: ument:	Wood Environment & Infrastructure Kelly Moore, F&BI 110081 110081-02 1/40 100629.D GCMS7 bat
Surrogates: 4-Bromofluorobenz Compounds:	% Recovery: ene 101 Concen ug/m3	Lower Limit: 70 tration ppbv	Upper Limit: 130	
Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Gasoline Range Or	<13 <750 <17 <35 <17	<pre></pre>		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 10/06/21 Air ug/m3	Clien Proje Lab I Data Instr Oper	ct: D: File: ument:	Wood Environment & Infrastructure Kelly Moore, F&BI 110081 01-2222 MB 100614.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 87	Lower Limit: 70	Upper Limit: 130	
	Concen	tration		
Compounds:	ug/m3	$\operatorname{ppbv}$		
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		
Gasoline Range Or	ganics <330	<80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 10/14/21 Date Received: 10/05/21 Project: Kelly Moore, F&BI 110081

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 110124-01 1/5.8 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<1.9	<1.9	nm
Toluene	ug/m3	<110	<110	nm
Ethylbenzene	ug/m3	80	78	3
m,p-Xylene	ug/m3	460	450	2
o-Xylene	ug/m3	150	140	7

Laboratory Code: Laboratory Control Sample

haboratory code. haboratory (	control campio		Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	91	70-130
Toluene	ug/m3	51	94	70-130
Ethylbenzene	ug/m3	59	86	70-130
m,p-Xylene	ug/m3	120	93	70-130
o-Xylene	ug/m3	59	94	70-130

#### ENVIRONMENTAL CHEMISTS

### **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.

 ${\rm J}$  - 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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SAMPLE INFORMATION									l	ANA	LYS	IS R	EQU	EST	ED	
				Reporting Level:	-		· · ·		-	JO15 Full Scan	<b>PO16 BTEXN</b>				TPH-Gas as Heraud BTCX by TOIS	· · · · · · · · · · · · · · · · · · ·
Sample Name	Lab ID	Canister ID	Flow Cont. ID	IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. ("Hg)	Field Initial Time	Final Vac: ("Hg)	Field Final Time	1015	TOIE	TO1		д ——		Notes Dira: 20 9 min
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Seattle, WA 98119-2029	Received by	James Broyg	F\$B	12/5	1219
Ph. (206) 285-8282	Relinquished by:				
Fax (206) 283-5044	Received by:		Samples received	1 at 20.0	C
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#### 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

November 22, 2021

Scott Adamek, Project Manager Wood Environment & Infrastructure One Union Square 600 University Street, Suite 600 Seattle, WA 98101

Dear Mr Adamek:

Included are the results from the testing of material submitted on November 11, 2021 from the Kelly Moore, F&BI 111213 project. There are 6 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.

Cale

Michael Erdahl Project Manager

Enclosures c: Christy Duitman WEI1122R.DOC

#### ENVIRONMENTAL CHEMISTS

### CASE NARRATIVE

This case narrative encompasses samples received on November 11, 2021 by Friedman & Bruya, Inc. from the Wood Environment & Infrastructure Kelly Moore, F&BI 111213 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Wood Environment & Infrastructure
111213 -01	Eff_11-11-2021
111213 -02	Inf_11-11-2021

The TO-15 gasoline range concentrations were quantified using a single point calibration at 80 ppbv hexane.

All quality control requirements were acceptable.

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Eff_11-11-2021 11/11/21 11/11/21 11/16/21 Air ug/m3	Instr	ect:	Wood Environment & Infrastructure Kelly Moore, F&BI 111213 111213-01 1/5.8 111533.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 88 Concen	Lower Limit: 70 tration	Upper Limit: 130	
Compounds:	ug/m3	ppbv		
Benzene	<1.9	< 0.58		
Toluene	<110	<29		
Ethylbenzene	<2.5	< 0.58		
m,p-Xylene	<5	<1.2		
o-Xylene	<2.5	< 0.58		
Gasoline Range Or	ganics <1,900	<460		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Inf_11-11-2021 11/11/21 11/11/21 11/16/21 Air ug/m3	Clien Proje Lab I Data Instr Opera	ct: D: File: ument:	Wood Environment & Infrastructure Kelly Moore, F&BI 111213 111213-02 1/44 111534.D GCMS7 bat
Surrogates: 4-Bromofluorobenz Compounds:	% Recovery: ene 100 Concen ug/m3	Lower Limit: 70 tration ppbv	Upper Limit: 130	
Benzene Toluene Ethylbenzene m,p-Xylene o-Xylene Gasoline Range Or	<14 <830 <19 <38 <19 ganics 89,000	<4.4 <220 <4.4 <8.8 <4.4 22,000		

# ENVIRONMENTAL CHEMISTS

Client Sample ID: Date Received: Date Collected: Date Analyzed: Matrix: Units:	Method Blank Not Applicable Not Applicable 11/15/21 Air ug/m3	Clien Proje Lab I Data Instru Opera	ct: D: File: ument:	Wood Environment & Infrastructure Kelly Moore, F&BI 111213 01-2575 MB 111512.D GCMS7 bat
Surrogates: 4-Bromofluorobenz	% Recovery: ene 86	Lower Limit: 70	Upper Limit: 130	
	Concen	tration		
Compounds:	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		
Gasoline Range Or	ganics <330	<80		

#### ENVIRONMENTAL CHEMISTS

Date of Report: 11/22/21 Date Received: 11/11/21 Project: Kelly Moore, F&BI 111213

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 111238-01 1/5.3 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 30)
Benzene	ug/m3	<1.7	<1.7	nm
Toluene	ug/m3	<100	<100	nm
Ethylbenzene	ug/m3	4.0	4.0	0
m,p-Xylene	ug/m3	14	14	0
o-Xylene	ug/m3	4.0	4.0	0

Laboratory Code: Laboratory Control Sample

Habbilatory Couc. Habbilatory	control sumpto		Percent	
			rercent	
	Reporting	$\operatorname{Spike}$	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	ug/m3	43	103	70-130
Toluene	ug/m3	51	110	70-130
Ethylbenzene	ug/m3	59	105	70-130
m,p-Xylene	ug/m3	120	109	70-130
o-Xylene	ug/m3	59	113	70-130

#### ENVIRONMENTAL CHEMISTS

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

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City, State, ZIP Seattle, WA 98101 NOTES: INVOICE TO SAUTLE DISPOSAL																
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SAMPLE INFORMATION										ANA	LYS	IS R	EQI	JEST	ED	
			Flow	Reporting Level: IA=Indoor Air		Initial	Field	Final	; Field	TO15 Full Scan	<b>FO15 BTEXN</b>	TO15 cVOCs	APH	Helium	Curs as Herama	
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