ANNUAL REPORT – 2021

Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon
DEQ LUST File No. 04-18-0818
DEQ ECSI No. 6381

For
Oregon Department of Environmental Quality
March 18, 2022

Project: BigBeams-1-04-05

DRAFT

March 18, 2022

Oregon Department of Environmental Quality
700 NE Multnomah Street, Suite 600
Portland, OR 97232

Attention: Sarah Greenfield

Annual Report – 2021
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On behalf of Blue Jump Suit LLC and AHI Cannery LLC, NV5 is pleased to submit this annual report, as required by DEQ as part of the PPA Scope of Work, for the Former Astoria Warehousing site located at 70 West Marine Drive in Astoria, Oregon (subject property). This annual report summarizes groundwater, sub-slab vapor, and indoor air sampling conducted at the subject property in 2021. This annual report also documents monitoring well gauging and free product removal, riverbank observations, and operation of the SVE system at the subject property.

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Please call if you have questions concerning this submittal.

Sincerely,

NV5

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ACRONYMS AND ABBREVIATIONS

AST	aboveground storage tank
BGS	below ground surface
BS	blank spike
BSD	blank spike duplicate
BTOC	below top of casing
cfm	cubic feet per minute
CMMP	Contaminated Media Management Plan
COC	chemical of concern or contaminant of concern
DEQ	Oregon Department of Environmental Quality
ECSI	Environmental Cleanup Site Information
EPA	U.S. Environmental Protection Agency
HDPE	high density polyethylene
Hz	hertz
I.D.	identification
IDW	investigation-derived waste
inHg	inches of mercury
iow	inches of water
IRM	Interim Remedial Measure
LUST	Leaking Underground Storage Tank
mg/L	milligrams per liter
mL/min	milliliters per minute
MS	matrix spike
MSD	matrix spike duplicate
MSL	mean sea level
MTBE	methyl tertiary butyl ether
mV	millivolts
NOAA	National Oceanic and Atmospheric Administration
NAVD	North American Vertical Datum
NC	not calculated
ND	not detected
NE	not established
ng/sample	nanograms per sample
NM	not measured
not detected	compound not detected at a concentration equal to or greater than the laboratory method reporting limit or reporting detection limit
NTU	nephelometric turbidity unit
ORP	oxidation reduction potential
PCE	tetrachloroethene
PFA	perfluoroalkoxy
PID	photoionization detector
PPA	Prospective Purchaser Agreement
ppm	parts per million
QC	quality control
RAO	remedial action objective

RBC	risk-based concentration
RBDM	*Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites*
RPD	relative percent difference
SVE	soil vapor extraction
TCE	trichloroethene
TMB	trimethylbenzene
µg/L	micrograms per liter
µg/m^3	micrograms per cubic meter
µS/cm	microSiemens per centimeter
VFD	variable frequency drive
VOC	volatile organic compound

1.0 INTRODUCTION

This annual report summarizes groundwater, sub-slab vapor, and indoor air sampling conducted at the Former Astoria Warehousing site located at 70 West Marine Drive in Astoria, Oregon, (subject property) in 2021. This annual report also documents monitoring well gauging and free product removal, riverbank observations, and the operation of an SVE system at the subject property in 2021. Groundwater, sub-slab vapor, and indoor air sampling and SVE operation were conducted in general accordance with the DEQ-approved IRM (GeoDesign, Inc., 2020a). The subject property is shown relative to surrounding physical features on Figure 1. The layout of the subject property is shown on Figures 2 and 3. Acronyms and abbreviations used herein are defined above, immediately following the Table of Contents.

2.0 BACKGROUND

Background information for the subject property is described in the documents listed in the "References" section at the end of this report.

Blue Jump Suit LLC and AHI Cannery LLC, on behalf of Fort George Brewery, entered into a PPA with DEQ in October 2019. The Covid-19 pandemic and subsequent emergency declarations resulted in severe adverse impacts to personnel, project schedule, and budget for the project. As a result, the scope of work presented in the original PPA was amended by DEQ to allow greater flexibility in the work performed and timeframe for its completion. The PPA amendment was transacted on May 28, 2020, and included the following general elements:

- Short-Term Measures
  - Sealing of the concrete slab of the northern and eastern portions of the former can manufacturing warehouse and the former shop building.
  - Quarterly gauging of monitoring wells and removal of free product (greater than 0.02 foot).
  - Annual indoor air sampling using a passive diffusion-type air sampler.
  - Semi-annual groundwater monitoring of the eight monitoring wells for one year following approval of the original scope of work (October 2019). Annual groundwater monitoring of the eight monitoring wells after the first year.
- Long-Term Measures
  - Implementation of an active remedy within five years of the PPA amendment. Continued operation of the SVE system until performance metrics are achieved.
  - If necessary, prepare a Remedial Action Plan presenting a final design for the long-term active remediation technologies.
  - If necessary, enter into an Easement and Equitable Servitude.
  - Implement the DEQ-approved CMMP (GeoDesign, 2020b) during earthwork conducted at the subject property.

A description of the concrete floor slab sealing activities and the installation, startup, and initial operation of the SVE system, as well as other monitoring activities conducted in 2020 is presented in our 2020 Annual Report (GeoDesign, Inc., 2021). This report builds upon the

tabulated summary information presented in the 2020 Annual Report and reflects the following monitoring schedule for the second year following approval of the original scope of work in conjunction with implementation of the active remedy:

- Annual groundwater monitoring
- Annual indoor air sampling
- Annual sub-slab vapor monitoring and sampling
- Semi-annual SVE effluent sampling and sub-slab vacuum pressure measurements
- Routine SVE system performance monitoring and observation/documentation of riverbank conditions

3.0 SUBJECT PROPERTY ACTIVITIES

Activities conducted at the subject property in 2021 included quarterly groundwater monitoring well gauging and free product removal (as necessary), riverbank and stormwater outfall inspections, indoor air sampling, sub-slab vapor sampling, groundwater sampling, and operation of the SVE system. These activities are discussed in the following sections. A description of field procedures is presented in Appendix A.

3.1 MONITORING WELL GAUGING AND FREE PRODUCT REMOVAL

NV5 gauged monitoring wells MW-1 through MW-8 and (pilot) air sparging wells (PAS-1 and OAS-1 through OAS-4) in January, February, and March 2021 (first quarter); April and May 2021 (second quarter); August 2021 (third quarter); and January 2022 (fourth quarter).[1] Groundwater elevation measurements and free product measurements are presented in Table 1. The presence of free product was previously detected intermittently in monitoring well MW-8 and observation wells OAS-2 and OAS-3; however, free product was not detected in any wells during the 2021 and January 2022 monitoring events.

An absorbent sock was previously installed in monitoring well MW-8 to capture potential free product based on the observed presence of free product in April and August 2021 . The absorbent sock has been changed each quarter and has been observed to have a heavy petroleum-like odor and staining. Free product was not observed in monitoring well MW-8 or any other monitoring/observation wells in 2021. This indicates that the presence of free product has diminished since initiation of the SVE system.

Based on these results, monitoring well gauging and assessment of the presence/absence of free product will continue on a quarterly basis in 2022.

3.2 RIVERBANK INSPECTIONS

In January and February 2021, NV5 completed monthly inspections of the riverbank adjacent to the subject property at relatively low tides for evidence of groundwater seeps or petroleum-like sheens. On March 2, 2021, on-site personnel observed sheens that appeared to originate from a storm pipe outfall as shown on Figures 2 and 3; NV5 subsequently notified DEQ of the sheen

[1] The monitoring event scheduled for December 2021 (fourth quarter) was delayed until early January 2022 due to severe winter weather conditions that prevented mobilization to the subject property.

originating from the stormwater pipe outfall. The storm line origin of this sheen was a new development not originally contemplated in developing a riverbank inspection schedule. Based on the uncertainties around the source, NV5 initiated more rigorous inspections of the storm line and riverbank in response to DEQ's request. An investigation into the storm line was initiated at this time (including efforts from NV5, DEQ, on-site personnel, and representatives of the former Wild Willies site across West Marine Drive), but the investigation did not identify a source of sheen in the storm line. In the summer of 2021, Maul Foster & Alongi assumed responsibility on behalf of DEQ for monitoring conditions specifically related to potential sheens or releases from storm line outfall. NV5 understands that the investigation into the source of sheen in the stormwater outfall pipe and the potential migration of contaminants in stormwater and/or groundwater in connection with this utility are ongoing.

In addition to the focused inspection of the storm line outfall, general riverbank inspections were conducted from the top of the bank, generally within ±one hour of low tide if possible. Riverbank inspections were conducted by walking the top of the shoreline along the subject property, allowing for visual observations of the slope of the riverbank, which generally consists of riprap. The pier on the northwestern portion of the subject property has concrete walls along the bank of the river and the small bay located to the east has a sandy shoreline on the south end along West Marine Drive.

A summary of the riverbank inspections, including relatively frequent inspections associated with the apparent sheen originating from the storm line outfall, is presented in Table 2. In general, the observation of sheens along the riverbank (particularly in proximity to the stormwater outfall pipe location) were more frequent during the 2021 inspections relative to prior events and appear to have increased in frequency beginning in the spring of 2021. However, a review of water level data (see Section 3.6.3) does not indicate that groundwater mounding is the cause of increased sheen frequency. Photographs of the riverbank and storm line outfall are presented in Appendix B.

3.3 INDOOR AIR MONITORING

On August 12, 2021, NV5 deployed eight air samplers at the subject property in general accordance with the DEQ-approved revised IRM (GeoDesign, Inc. 2020a). Each air sampler consisted of a Radiello 130 passive air sampler and was deployed for approximately 14 days. Each sample was collected at the approximate same location of the previous indoor air samples collected in 2019 and 2020 for comparison purposes. Seven air samples were collected inside the subject property structure and one background air sample was collected from the exterior of the subject property. The sampling locations are shown on Figure 4.

Each sample was collected at approximate breathing level in areas of high occupancy and/or areas where previous vapor samples indicated elevated concentrations of COCs. The background air sample was collected from the exterior of the subject property at approximately 15 feet above the ground surface. The start and end times, initial and final barometric pressures, and initial and final ambient temperatures were measured at each sample location and are presented in the table below.

Summary of Indoor Air Sampling – 2021

Sample I.D.	Location Description	Date	Start/End Time	Initial/Final Barometric Pressure (inHg)	Initial/Final Ambient Temperature (degrees Fahrenheit)
Indoor-1	Office Area	8/12/21 through 8/26/21	0928/0825	29.91/30.09	~67
Indoor-2	Office Area		0920/0821		
Indoor-3	Warehouse		0910/0814		~60
Indoor-4	Warehouse		0915/0817		
Indoor-5	Shop Area		0850/0806		
Indoor-6	Warehouse		0919/0802		
Indoor-7	Warehouse		0907/0810		
Background	Exterior		0845/0800		

3.3.1 Air Analytical Results

The eight air samples were submitted to Eurofins Air Toxics, LLC of Folsom, California, for analysis of VOCs by EPA Method TO-17. Analytical results were compared to DEQ *Inhalation* RBCs for an occupational receptor. A comparison of the indoor air sample chemical analytical results to applicable regulatory criteria is discussed below and shown in Table 3. Previous indoor air analytical results are also summarized in Table 3. The chemical analytical program details, laboratory report, and chain-of-custody documentation are presented in Appendix C.

Up to eight VOCs with DEQ-established screening levels were detected in the seven indoor air samples (Indoor-1 through Indoor-7). Chloroform was detected in six of the seven indoor air samples at concentrations slightly exceeding the DEQ *Inhalation* RBC for an occupational receptor. However, chloroform is not a petroleum-related COC at the subject property and its detection is attributed to other processes or materials in the subject property structure. Petroleum-related VOCs were not detected in the August 2021 indoor air samples at concentrations greater than the DEQ *Inhalation* RBCs for an occupational receptor. Overall, petroleum-related VOCs were detected at similar concentrations as the previous sampling events conducted in 2019 and 2020. Previous and current detected concentrations of benzene and ethylbenzene are shown on Figure 4.

Benzene, carbon tetrachloride, ethylbenzene, toluene, and xylenes were also detected in the background sample (Background) collected from the exterior of the subject property in August 2021.

3.4 GROUNDWATER MONITORING

NV5 sampled monitoring wells MW-1 through MW-8 on August 11, 2021, and January 4 and 5, 2022, in general accordance with the sampling methodology outlined in the revised IRM (GeoDesign, Inc. 2020a). Each well was purged in general accordance with the EPA-recommended low-flow purging and sampling procedure (EPA, 2017a).

All sampling equipment used in the collection of groundwater samples was decontaminated prior to use. Decontamination was performed on all reusable sample processing equipment that came into contact with sampling media and the wells. Decontamination was performed prior to sampling each location using the following procedures:

1. Rinsed with tap water and scrubbed with a scrub brush until free of large particles
2. Washed with phosphate-free (Alconox™) detergent solution
3. Rinsed with tap water
4. Rinsed with distilled water

Each monitoring well was accessed and depth to groundwater was measured using a decontaminated Solinst® interface meter once the groundwater level equilibrated. Each well was purged using a peristaltic pump connected to new, expendable HDPE and silicon tubing. Groundwater quality parameters were measured using a YSI 556 multiparameter system until the following groundwater parameters stabilized (three consecutive readings):

- pH: ±0.1 unit
- Conductivity: ±3 percent
- Temperature: ±3 percent
- Dissolved oxygen: ±10 percent (or three readings less than 0.5 mg/L)
- ORP: ±10 mV
- Turbidity: ±10 percent (or three readings less than 5 NTUs)

Once the field parameters stabilized, a groundwater sample was collected from each well into laboratory-prepared containers in order of volatility, with the containers for VOC analysis filled first.

A summary of field parameters is presented in Table 4.[2] Groundwater samples were collected into laboratory-provided jars and placed immediately on ice. Standard chain-of-custody protocols were followed during transportation of samples to the laboratory.

3.4.1 Groundwater Measurements

NV5 collected depth to groundwater measurements from each well using an oil/water interface probe prior to sampling. The depth to groundwater measurements and groundwater elevations are summarized in Table 1. Free product was not observed in any of the wells during the August 2021 or January 2022 sampling events. The calculated groundwater elevation data indicates that shallow groundwater beneath the subject property generally flows north, which is consistent with previous findings. However, groundwater appears to have northwestern and northeastern components toward the shoreline at times, which may be affected by tidal influences. Groundwater contour maps using the elevation data collected in August 2021 and January 2022 are shown on Figures 5 and 6, respectively.

[2] Several groundwater parameters measured during the January 2022 groundwater monitoring event indicate a possible malfunction of the YSI field meter and are therefore not necessarily considered representative of actual groundwater parameters. Parameters measured during this event were evaluated as relative values in the field to assess stabilization prior to sample collection only.

3.4.2 Groundwater Analytical Results

Groundwater samples collected during the August 2021 and January 2022 sampling events were submitted to Pace Analytical of Mount Juliet, Tennessee, for analysis of gasoline-range hydrocarbons by Method NWTPH-Gx and RBDM VOCs by EPA Method 8260D. A comparison of the groundwater sample chemical analytical results to applicable regulatory criteria is discussed below and is shown in Table 5. Previous groundwater analytical results are also summarized in Table 5. The chemical analytical program details, laboratory report, and chain-of-custody documentation are presented in Appendix C.

3.4.2.1 August 2021 Groundwater Analytical Results

Naphthalene was detected in the groundwater sample collected from monitoring well MW-1 at a concentration of 505 µg/L. Gasoline-range hydrocarbons were detected in the groundwater sample collected from monitoring well MW-8 at a concentration of 15,700 µg/L. These detected concentrations were greater than the corresponding DEQ *Groundwater in Excavation* RBCs for a construction/excavation worker receptor, but less than the DEQ *Volatilization to Outdoor Air* and *Vapor Intrusion into Building*s RBCs for occupational receptors. Groundwater concentrations exceeding the DEQ *Groundwater in Excavation* RBCs are being addressed by implementing the DEQ-approved CMMP prepared for the subject property.

COCs were otherwise either not detected or were detected at concentrations less than applicable DEQ RBCs in the August 2021 groundwater samples.

3.4.2.2 January 2022 Groundwater Analytical Results

Gasoline-range hydrocarbons were detected in the groundwater samples collected from monitoring wells MW-4 and MW-8 at concentrations of 21,200 µg/L and 17,200 µg/L, respectively. In addition, benzene was detected in the groundwater sample collected from monitoring well MW-8 at a concentration of 2,750 µg/L. These detected concentrations were greater than the corresponding DEQ *Groundwater in Excavation* RBCs for a construction/ excavation worker receptor, but less than the DEQ *Volatilization to Outdoor Air* and *Vapor Intrusion into Buildings* RBCs for occupational receptors. Groundwater concentrations exceeding the DEQ *Groundwater in Excavation* RBCs are being addressed by implementing the DEQ-approved CMMP prepared for the subject property.

COCs were otherwise either not detected or were detected at concentrations less than applicable DEQ RBCs in the January 2022 groundwater samples.

3.5 SUB-SLAB VAPOR MONITORING

NV5 collected sub-slab vapor samples from the four previously installed Vapor Pins® (VP-1 through VP-4) on August 11, 2021, in general accordance with the DEQ-approved revised IRM (GeoDesign, Inc., 2020a) and DEQ's *Guidance for Assessing and Remediating Vapor Intrusion in Buildings,* dated March 25, 2010. The sub-slab vapor samples were collected at least 24 hours following temporary shut-down of the SVE system. The sub-slab sample locations are shown on Figure 2. The sample collection start and end times, initial and final summa canister vacuum pressures, barometric pressures, and ambient temperatures were measured at each sub-slab vapor sample location and are presented in the table below.

Summary of Sub-Slab Vapor Sampling – 2021

Sample I.D.	Date	Start/End Time	Initial/Final Vacuum (inHg)	Barometric Pressure (inHg)	Ambient Temperature (degrees Fahrenheit)
VP-1	8/11/21	2103/2108	28/7	29.97	~80s
VP-2		2100/2105	29/7		~80s
VP-3		2052/2057	28.5/7		~80s
VP-4		2111/2115	29/8		~80s

All sampling equipment used in the collection of sub-slab vapor samples was decontaminated prior to use. Decontamination was performed on all reusable sample processing equipment that came into contact with sampling media, including fittings, valves, and tools. Decontamination was performed prior to sampling each location using the following procedures:

1. Washed with phosphate-free (Alconox™) detergent solution
2. Rinsed with tap water
3. Rinsed with distilled water
4. Dried with a heat gun

Cloths saturated with isopropyl alcohol (2-propanol) were placed around the ground penetration and sampling train fittings as a leak-check system. 2-propanol was detected at a maximum concentration of 6.59 µg/m^3 in sub-slab vapor sample VP-1. Based on the ambient temperature and barometric pressure at the time of sampling, and assuming 20 percent contribution of 2-propanol to the surrounding atmosphere, the maximum detection represents less than 0.000012 percent leakage contribution. The DEQ *Guidance for Assessing and Remediating Vapor Intrusion in Buildings,* dated March 25, 2010, states that less than a 5 percent contribution from ambient air indicates the sampling trains were sufficiently airtight.

3.5.1 Sub-Slab Vapor Analytical Results

The four sub-slab vapor samples (VP-1 through VP-4) collected in August 2021 were submitted to Eurofins Air Toxics, LLC of Folsom, California, for analysis for gasoline-range hydrocarbons and VOCs by EPA Method TO-15. A comparison of the sub-slab vapor sample chemical analytical results to applicable regulatory criteria is discussed below and is shown in Table 6. Previous sub-slab vapor analytical results are also summarized in Table 6. The chemical analytical program details, laboratory report, and chain-of-custody documentation are presented in Appendix C.

Gasoline-range hydrocarbons were detected in sub-slab vapor samples VP-1, VP-3, and VP-4 at concentrations ranging from 2,610 µg/m^3 to 24,400 µg/m^3. These detected concentrations are substantially less than the DEQ *Vapor Intrusion into Buildings* RBC for an occupational receptor. Gasoline-range hydrocarbons were not detected above the laboratory method reporting limit in sub-slab vapor sample VP-2.

Several petroleum-related VOCs were detected in sub-slab vapor samples VP-1 through VP-4 collected in August 2021. Each of the detected concentrations of VOCs was substantially less than the corresponding DEQ *Vapor Intrusion into Buildings* RBCs for an occupational receptor.

3.6 SVE SYSTEM OPERATIONS AND EFFLUENT SAMPLING

A description of the SVE system components, installation, and startup is summarized in the Revised IRM (GeoDesign, 2020a) and the 2020 Annual Report (GeoDesign, 2021) . The SVE system was designed to (1) remediate impacted vadose-zone soil identified beneath the former shop building, the eastern portion of the former can manufacturing warehouse, and the east parking lot; (2) remediate vapors identified beneath the eastern portion of the subject property at concentrations greater than applicable DEQ RBCs; and (3) allow active and/or passive removal of accumulated sub-slab vapors in the future, if necessary. The locations of the SVE wells are shown on Figures 2 and 3.

3.6.1 SVE System Operations and Monitoring

During calendar year 2021, NV5 conducted routine SVE system monitoring activities in general accordance with the quarterly schedule established in the IRM (GeoDesign, 2020a). Tables 7 through 9 summarize SVE system operations and performance monitoring results from the 2021 monitoring events and include the results of prior events recorded following system startup.

SVE system monitoring events included the following:

- Completed a visual inspection of the system and its components for damage and wear in accordance with equipment manufacturer's recommendations.
- Checked condensate levels in the moisture knockout vessel and removed accumulated condensate as necessary.
- Recorded operating pressures/vacuums, temperatures, and flow rates to evaluate if the system is operating within the design criteria.
- Performed necessary system adjustments.
- Collected field meter readings (PID[3], flow rate, vacuums, etc.).
- Recorded operational parameters for vapor effluent treatment equipment.
- Recorded vacuum response measurements from selected observation points.
- Collected pre-treatment effluent samples (see Section 3.6.2).
- Evaluated groundwater elevation data for potential mounding associated with SVE system operation (see Section 3.6.3).
- Recorded other pertinent information concerning the system operations and maintenance.

During each SVE system monitoring event, we collected system measurements, including flow rates and vacuums for the overall system and each SVE well, exhaust temperature, stack temperature, fresh air dilution, and pre-treatment PID readings. SVE system measurements, conditions and notes regarding operation are presented in Table 7.

In 2021, the SVE system generally operated with an exhaust temperature of approximately 1,400 degrees Fahrenheit and a stack temperature of approximately 1,650 degrees Fahrenheit.

[3] PID readings could not be collected from the SVE wells because the PID pump cannot overcome the applied vacuum.

The overall system vacuum ranged from approximately -2.5 to -6.0 inHg. The applied vacuum measured at each SVE well ranged from approximately -49 to -67 iow. The measured flow rate from each SVE well ranged from approximately 92 to 332 cfm, with the highest flow rates originating from SVE-1. To date, the average flow rate of the overall system since initial stabilization is 585 cfm. Vacuum and flow rate measurements for each of the SVE wells is presented in Table 7.

Induced vacuum measurements were recorded during monitoring events at each of the SVE observation points (OSVE-1 through OSVE-4) and Vapor Pins® VP-1 through VP-4. In 2021, the vacuum measurements from the SVE observations points in the former shop building (OSVE-1 through OSVE-4) ranged from -6.0 to -14.4 iow. The induced vacuum measurements collected from the sub-slab Vapor Pins® ranged as follows:

- Induced vacuum at Vapor Pin® VP-1 ranged from 0.00 to -0.004 iow
- Induced vacuum at Vapor Pin® VP-2 ranged from 0.00 to -0.11 iow
- Induced vacuum at Vapor Pin® VP-3 ranged from -5.84 to -7.37 iow
- Induced vacuum at Vapor Pin® VP-4 ranged from -0.093 to -0.9 iow

Vacuum response data is presented in Table 8.

Based on EPA guidance, induced negative pressures of -0.1 iow or greater are considered to be actively remediating soil (EPA, 2017b). In 2021, an average negative pressure of -0.10 iow or greater was measured in each of the SVE observation well (OSVE-1 through OSVE-4) and in Vapor Pins® VP-3 and VP-4. Based on these observations, the radius of remedial influence of the system experienced in 2021 is estimated at approximately 100 feet as shown on Figure 2.

In early December 2021, the SVE system encountered a significant operational issue associated with the gas solenoid valve. The gas solenoid valve provides the only mechanism to supply natural gas to the oxidizer unit in order to sustain requisite temperatures for system operation. NV5 attempted to operate the system without the natural gas makeup component; however, the influent contaminant vapor concentrations have diminished (since system startup) to the point that the oxidizer unit cannot operate solely on the extracted contaminant mass. In consultation with Stratus Corporation, it was determined that a replacement valve would take up to six months to replace due to supply chain constraints. Since that time, the SVE system is frequently cycled (which results in the blower running for several minutes until auto-shutdown) to periodically purge the subsurface. As a result, the 2021 fourth quarter monitoring event did not include the collection of SVE system operational parameters or induced vacuum measurements. Visual inspections of the system and general comments on the system operation in 2021 and previous events are summarized in Table 9.[4]

In regard to the unanticipated solenoid valve issue described above, NV5 considered alternative measures to re-initiate the SVE system operation. However, based on our assessment of remedial progress achieved to date, we are proposing to leave the SVE system in the idle

[4] Table 9 includes date entries into February 2022 reflecting continued periodic blower cycling, which is ongoing.

condition (with continued frequent blower cycling to purge the subsurface) to support a pilot shutdown study. Details regarding the pilot shutdown approach are further discussed in Section 5.0

3.6.2 Effluent Samples

In the course of SVE system monitoring in 2021, five pre-treatment effluent samples [PRE(011521), PRE(030121), PRE(040121), PRE(050421), and PRE(081021)] were collected to further evaluate concentration trends and associated remedial efficacy of the SVE system. The pre-treatment samples were collected from a sampling port located between the knockout pot and the thermal oxidizer. The pre-treatment effluent samples were submitted to Pace Analytical of Mount Juliet, Tennessee, for analysis of gasoline-range hydrocarbons and VOCs by EPA Method TO-15. The effluent results are discussed below and are shown in Table 10. The chemical analytical program details, laboratory report, and chain-of-custody documentation are presented in Appendix C.

Gasoline-range hydrocarbons were detected during the January, March, April, May, and August 2021 effluent sampling events at concentrations of 351,000 µg/m^3, 1,200,000 µg/m^3, 781,000 µg/m^3, 189,000 µg/m^3, and 512,000 µg/m^3, respectively.

Twenty-one VOCs were also detected in the pre-treatment effluent samples collected in 2021 and, in general, appear to follow the same trend as preceding sampling events. Notably, benzene concentrations in the 2021 pre-treated effluent sampling results reflect a sharp reduction since SVE system activation.

Estimated contaminant mass of gasoline and benzene removed by the SVE system was calculated using the (pre-treated) effluent analytical results and the average total flow rate calculated for the SVE system (581 cfm). Through August 10, 2021, approximately 7,262 pounds of gasoline and approximately 29.9 pounds of benzene have been removed by the SVE system. In comparison to the preceding effluent sampling results, the 2021 effluent sampling data reflects a substantial decrease in contaminant mass removal rates since system activation in December 2020. A summary of the calculation for contaminant mass removal is presented in Table 11. Figure 7 shows the trends in contaminant mass removal rates through August 2021.

Post-treatment effluent samples were also collected during the 2021 effluent sampling events, and the corresponding results are summarized in Table 10. The post-treatment effluent sample results indicate treatment efficiencies ranging from 99.43 to 99.93 percent (for the 2021 samples) based on the gasoline-range hydrocarbon results.

3.6.3 Groundwater Measurements

Solinst® Levelogger dataloggers (transducers) are installed in monitoring wells MW-1 through MW-7 to monitor groundwater levels at ten-minute intervals. Charts depicting water levels measured by the transducers (before and after SVE system startup) are presented in Appendix D. Based on our review of the transducer data, it does not appear that SVE system operation results in any significant groundwater mounding.

4.0 WORK PLAN DEVIATIONS

NV5 made the following deviations from the scopes of work presented in the DEQ-approved revised IRM (GeoDesign, Inc., 2020a):

- Beginning in March 2021, scope items related to the riverbank observations were substantially augmented in response to a stormwater outfall pipe that appears to be a source of sheen entering the bay immediately east of the subject property. Specifically, NV5 and Fort George staff exerted considerable effort to observe and document the conditions at the request of DEQ.
- In early December 2021, the SVE system encountered a significant operational issue associated with the gas solenoid valve. NV5 attempted to operate the system without the natural gas makeup component; however, the influent contaminant vapor concentrations have diminished (since system startup) to the point that the oxidizer unit cannot operate solely on the extracted contaminant mass. In consultation with Stratus Corporation, it was determined that a replacement valve would take up to six months to replace due to supply chain constraints. Since that time, the SVE system is frequently cycled (which results in the blower running for several minutes until auto-shutdown) to periodically purge the subsurface. As a result, the 2021 fourth quarter monitoring event did not include the collection of SVE system operational parameters or induced vacuum measurements.

5.0 CONCLUSIONS AND RECOMMENDATIONS

Activities conducted at the subject property in 2021 and the first week of 2022 are summarized as follows:

- Indoor air sample results from the August 2021 sampling event are consistent with previous findings. Benzene and ethylbenzene were generally lower than the preceding sampling events, and COCs were not detected in air samples at concentrations greater than DEQ RBCs for an occupational receptor. Chloroform was detected in six of the seven indoor air samples at concentrations slightly exceeding the respective DEQ RBC; however, the presence of chloroform is not associated with subsurface impacts.
- COCs were not detected in any of the August 2021 sub-slab vapor samples at concentrations greater than the DEQ *Vapor Intrusion into Buildings* or *Volatilization to Outdoor Air* RBCs for an occupational receptor. Notably, the concentrations of gasoline-range hydrocarbons, benzene, and ethylbenzene in samples VP-3 and VP-4 were drastically reduced relative to the preceding sampling event in December 2020, which we attribute to the operation of the SVE system. The August 2021 sampling event marks the first event where COCs were not detected in sub-slab vapor samples at concentrations exceeding applicable DEQ RBCs.
- Groundwater monitoring results from the August 2021 and January 2022 sampling events show differing trends as follows:
  - COC concentrations in monitoring wells MW-3, MW-4, MW-5, and MW-7 show consistent trends relative to prior sampling events. Except for gasoline-range hydrocarbons in the groundwater sample collected from MW-4 in January 2022, COCs were not detected in these wells at concentrations exceeding the DEQ *Groundwater in Excavation* RBC, which is addressed by implementing the DEQ-approved CMMP.

  - COC concentrations in monitoring wells MW-1, MW-2, and MW-6 show a significant reduction relative to prior sampling events trends, and COCs were not detected in these wells at concentrations exceeding the DEQ *Groundwater in Excavation* RBC. The significant reduction in COC concentrations in these monitoring wells is likely associated with their proximity to the SVE extraction well locations.
  - COC concentrations in monitoring well MW-8 show a slight increase relative to prior sampling events trends. Gasoline-range hydrocarbons and/or benzene were detected in this monitoring well at concentrations slightly exceeding DEQ *Groundwater in Excavation* RBCs, which is addressed by implementing the DEQ-approved CMMP. Trends in COC concentrations in this monitoring well will be further evaluated following subsequent sampling events in 2022.
- Historically, free product has been sporadically observed in monitoring well MW-8 and observation wells OAS-2 and OAS-3. However, free product was not observed during the August 2021 or January 2022 monitoring events. It appears that the volume of free product at the subject property is limited, and the most recent observations indicate that free product has diminished during operation of the SVE system.
- Groundwater seeps and petroleum-like sheens were periodically observed during riverbank inspections conducted in 2021. In the spring of 2021, sheens originating from within and around a stormwater pipe outfall were observed. Because this source of sheen was a new development, the project team initiated more rigorous inspections of the storm line and riverbank in response to DEQ's request. The resulting investigation did not identify a source of sheen in the storm line to date; however, an evaluation of the potential migration of contaminants in stormwater and/or groundwater in connection with this utility are ongoing.
- The SVE system operated continuously in 2021, through approximately December 1, 2021. In regard to and efficacy of the SVE system operation, we conclude the following:
  - Vacuum response data collected from SVE observation wells and sub-slab Vapor Pins® indicate excellent vacuum influence propagated by the SVE system, and the radius of influence achieving at least -0.1 iow is estimated at 100 feet or greater during the 2021 operational period.
  - The most recent sub-slab vapor and groundwater sampling results support the conclusion that operation of the SVE system has had a dramatic and positive effect on residually impacted media beneath the targeted area of the subject property.
  - As of August 10, 2021, approximately 7,262 pounds of gasoline and 29.9 pounds of benzene have been removed by the SVE system. Additional contaminant mass was removed between August and December 2021; however, pre-treated effluent samples were not collected in the fourth quarter of 2021 as described herein. The revised IRM set a goal to remove approximately 50 percent of the estimated mass of gasoline and benzene in the vadose zone, which was calculated to be approximately 440 pounds of gasoline and 2.2 pounds of benzene. The calculated mass removal of the system is significantly greater than these design goals. It appears (1) the estimated mass of contaminants in the vadose zone was either underestimated; (2) the SVE system is also effectively stripping contaminants present on the water table, specifically free product previously measured beneath the former shop building; and/or (3) the SVE system is creating a pressure/concentration gradient that is accelerating the volatilization of petroleum carbons from the free or dissolved phase to the vapor phase. This may

account for the high mass removal volumes observed. Regardless, the SVE system appears to be significantly more effective at reducing contaminant mass at the subject property than originally anticipated.

- The SVE system encountered a significant operational issue associated with the gas solenoid valve in early December 2021. Since that time, the SVE system is frequently cycled (which results in the blower running for several minutes until auto-shutdown) to periodically purge the subsurface. As a result, the 2021 fourth quarter monitoring event did not include the collection of SVE system operational parameters or induced vacuum measurements. NV5 considered alternative measures to re-initiate the SVE system operation. However, based on our assessment of remedial progress achieved in comparison to the RAOs, we propose a pilot shutdown study to assess potential rebound. Details regarding the pilot shutdown approach will be provided to DEQ under separate cover that will generally include: (1) establishing acceptable rebound metrics; (2) quarterly sub-slab vapor sampling; (3) quarterly monitoring well gauging to monitor the effects of SVE system cessation; and (4) a contingency plan to address unacceptable rebound levels, if encountered.

In general accordance with the objectives and schedule established in the IRM, NV5 recommends the following activities in 2022:

- Continued quarterly riverbank observations, further evaluation of the source of sheens observed in the stormwater pipe outfall, and continued inspection of the stormwater outfall following significant precipitation events
- Continued quarterly well gauging and annual groundwater monitoring tentatively scheduled for the summer of 2022.
- Continued annual indoor air monitoring tentatively scheduled for the summer of 2022.
- Execution of a SVE pilot shutdown study to assess potential rebound conditions within the context of the project RAOs. Upon DEQ's concurrence with the concept, NV5 will prepare and submit a work plan detailing the scope and schedule for associated data collection efforts.

6.0 LIMITATIONS

This report has been prepared for Blue Jump Suit LLC and AHI Cannery LLC. This report is not intended for use by others except for regulatory authorities with jurisdiction over the subject property, and the information contained herein is not applicable to other sites. Reliance by other parties must be approved by NV5, in accordance with our standard contractual process for third-party reliance. Our interpretations of subject property conditions are based on data from select air, groundwater, and sub-slab vapor samples collected from this limited area. The results of the analyses only indicate the presence or absence of those chemical constituents analyzed in those discrete sample locations at the time of the investigation. It is always possible that contamination could exist between the widely spaced exploration locations. Analytical data from the laboratory samples should only be considered as indicators of subject property conditions and not a guarantee of the absence of subsurface impact in areas not sampled. The conclusions presented in this report are based on our observations made during field investigations and chemical analytical data. The findings of this assessment should be considered as a professional opinion based on our evaluation of select and limited data.

Our services have been executed in accordance with the generally accepted practices in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood.

♦ ♦ ♦

We appreciate the opportunity to provide this annual report. Please call if you have questions or if we can provide additional information.

Sincerely,

NV5

Erik A. Hedberg, P.E.
Associate Engineer

Mike F. Coenen, P.E.
Principal Engineer

REFERENCES

EPA, 2017a. *Low Stress (Low Flow) Purging and Sampling Procedure for the Collection of Groundwater Samples from Monitoring Wells*, revised September 19, 2017.

EPA, 2017b. *How to Evaluate Alternative Cleanup Technologies for Underground Storage Tank Sites, A Guide for Corrective Action Plan Reviewers*, Land and Emergency Management, EPA 510-B-17-003, dated October 2017.

GeoDesign, Inc, 2020a. *Revised Interim Remedial Measure Work Plan; Former Astoria Warehousing Site; 70 West Marine Drive; Astoria, Oregon; DEQ LUST File No. 04-18-0818; DEQ ECSI No. 6381*, dated October 29, 2020.

GeoDesign, Inc., 2020b. *Contaminated Media Management Plan; Former Astoria Warehousing Site; 70 West Marine Drive; Astoria, Oregon; DEQ LUST File No. 04-18-0818,* dated March 6, 2020.

GeoDesign, Inc, 2021. *Annual Report – 2020; Former Astoria Warehousing Site; 70 West Marine Drive; Astoria, Oregon; DEQ LUST File No. 04-18-0818; DEQ ECSI No. 6381*, dated March 22, 2021.

FIGURES

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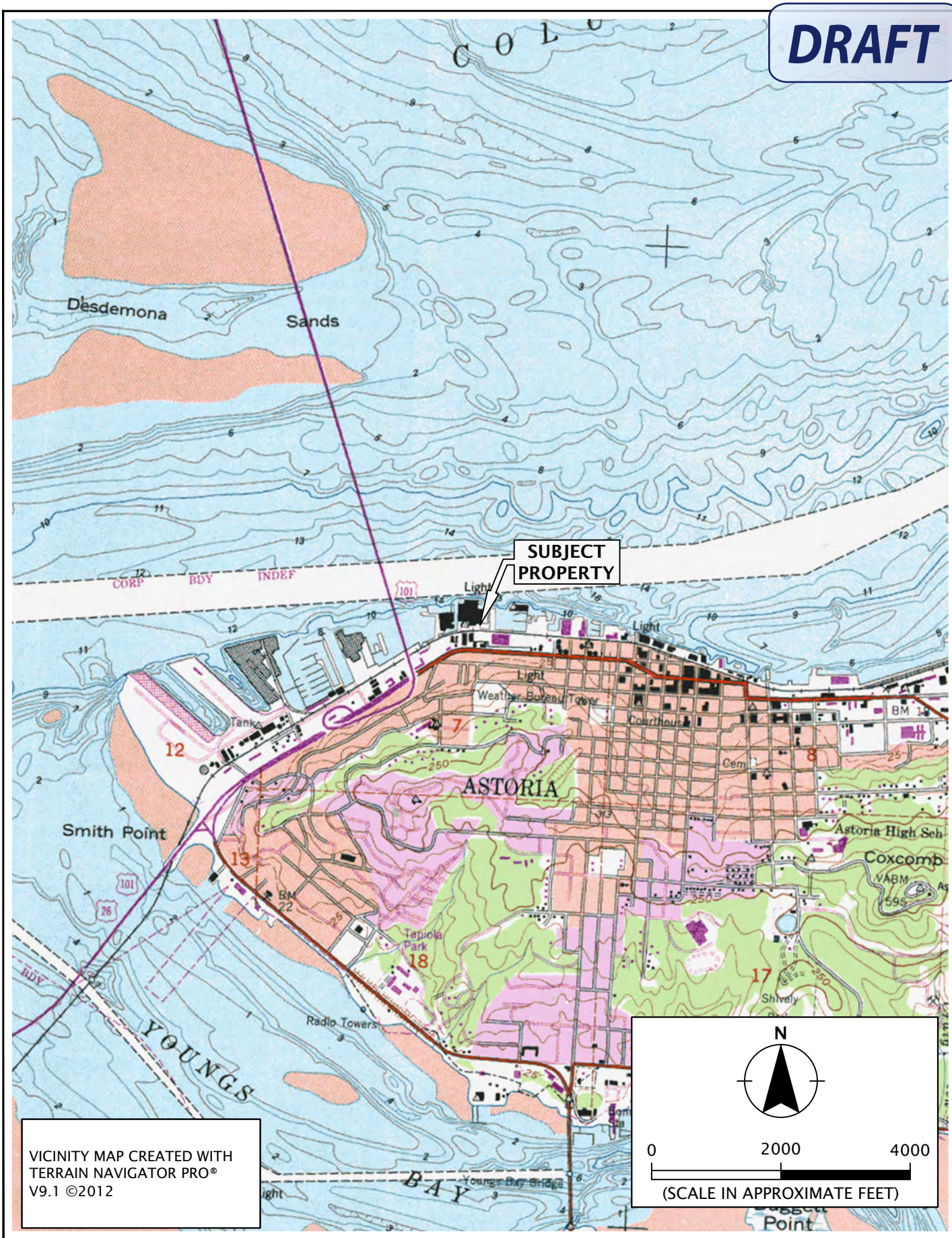

VICINITY MAP CREATED WITH TERRAIN NAVIGATOR PRO® V9.1 ©2012

NV5	BIGBEAMS-1-04-05	**VICINITY MAP**
	MARCH 2022	FORMER ASTORIA WAREHOUSING SITE ASTORIA, OR
		FIGURE 1

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File Name: J:\A-D\BigBeams\bigbeams-1\bigbeams-1-04\bigbeams-1-04-05- monitoring\Figures\CAD\Annual Report 2022\BigBeams-1-04-05-VM01.dwg | Layout: FIGURE 1

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LEGEND:

- SUBJECT PROPERTY BOUNDARY
- SVE-1 SVE WELL
- MW-6 MONITORING WELL (GEODESIGN, 2019)
- SV-1 SUB-SLAB VAPOR SAMPLE (GEODESIGN, 2019)
- VP-1 VAPOR PIN (PNG, 2018)
- MW-1/SG-1 MONITORING WELL/SOIL GAS SAMPLE (PNG, 2018)
- ESTIMATED RADIUS OF INFLUENCE

COLUMBIA RIVER

SV-8

WAREHOUSE 4

SV-7

TROLLEY TRACKS

DETAIL - SEE FIGURE 3

SV-6

WAREHOUSE 3

SV-5

SV-4

WAREHOUSE 2

SV-3

SV-2

SV-1

WAREHOUSE 1

NW NATURAL

MW-8

MW-4/SG-4

VP-1

VP-2

FORMER CAN MANUFACTURING WAREHOUSE

MW-5/SG-5

VP-4

MW-7

MW-6

MW-2/SG-2

VP-3

SVE-1

SHOP

SVE-2

MW-1/SG-1

SVE-3

MW-3/SG-3

VACANT

WEST MARINE DRIVE

PIG 'N PANCAKE

ATOMIC MOTEL

ASTORIA WARRENTON AREA CHAMBER OF COMMERCE

SHELL MINI MART FOOD STORE (LUST FILE NO. 04-94-0225)

TLC FEDERAL CREDIT UNION

WILD WILLIE'S (LUST FILE NO. 04-91-0338)

ASTORIA RIVERSHORE HOTEL

N

0 100 200

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO JULY 16, 2019

SITE PLAN

FIGURE 2

FORMER ASTORIA WAREHOUSING SITE
ASTORIA, OR

BIGBEAMS-1-04-05

MARCH 2022

NV5

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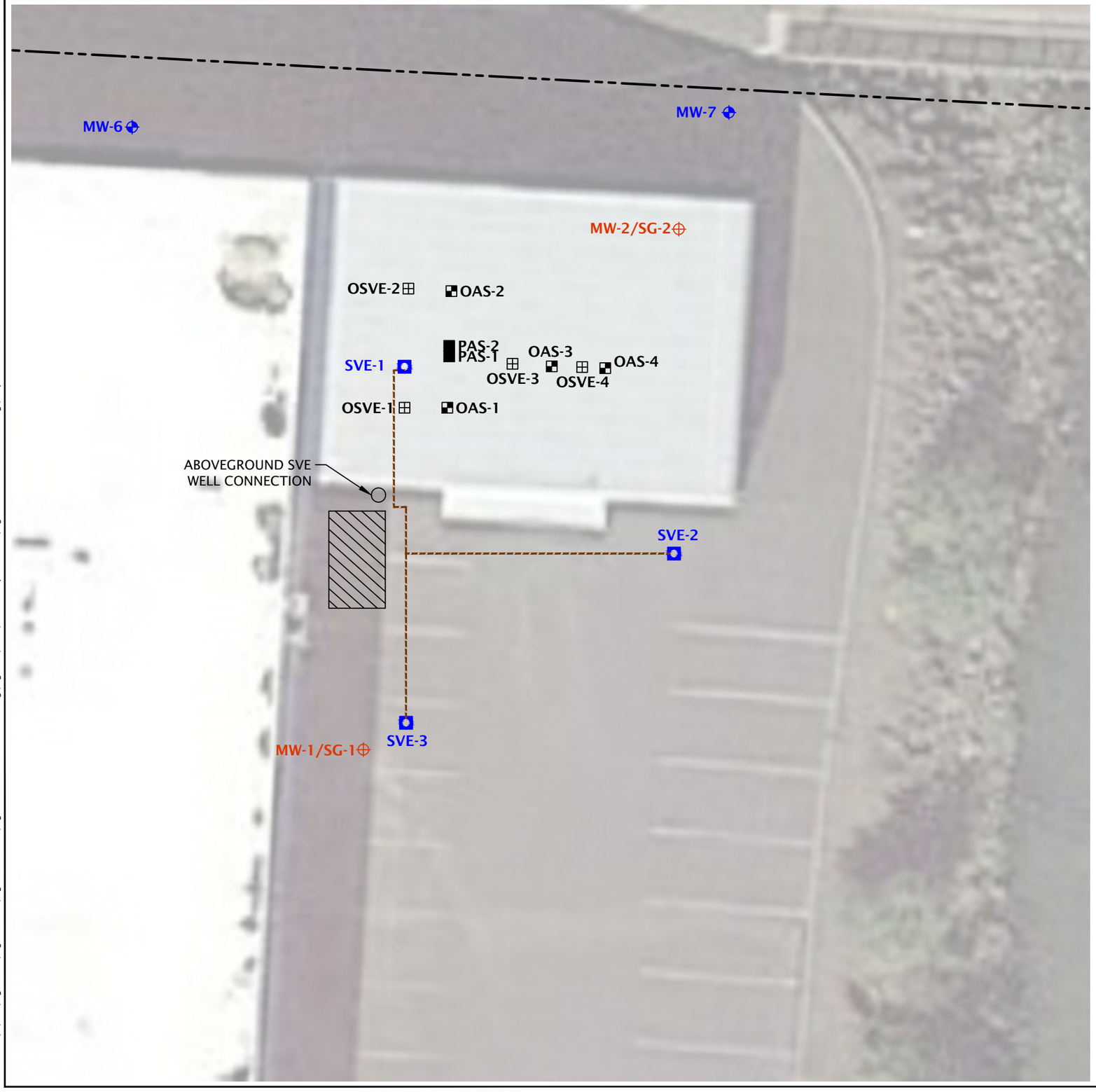

LEGEND:

- SUBJECT PROPERTY BOUNDARY
- PIPING TRENCH
- SYSTEM ENCLOSURE
- SVE-1 SOIL VAPOR EXTRACTION WELL
- MW-7 MONITORING WELL (GEODESIGN, 2019)
- MW-1/SG-1 MONITORING WELL/SOIL GAS SAMPLE (PNG, 2018)
- OAS-1 AIR SPARGING OBSERVATION WELL (GEODESIGN, 2019)
- PAS-1 AIR SPARGING PILOT WELL (GEODESIGN, 2019)
- OSVE-1 SOIL VAPOR EXTRACTION OBSERVATION WELL (GEODESIGN, 2019)

NOTE:
1. SVE-1 WAS PREVIOUSLY LABELED PSVE-1.

N

0 15 30

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO JULY 16, 2019

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SITE PLAN - DETAIL

FIGURE 3

FORMER ASTORIA WAREHOUSING SITE
ASTORIA, OR

BIGBEAMS-1-04-05

MARCH 2022

NV5

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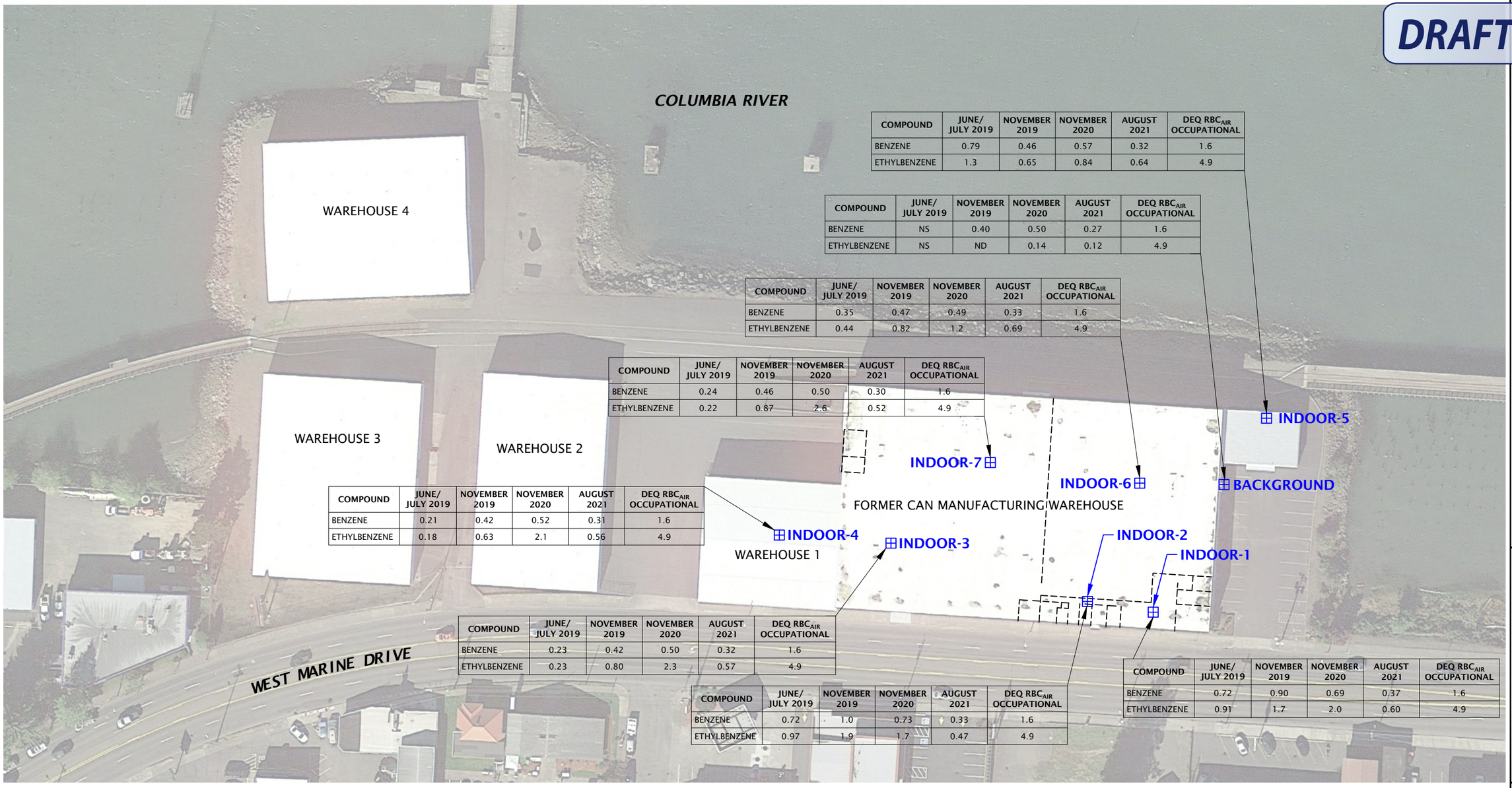
AIR SAMPLE LOCATIONS

FIGURE 4

FORMER ASTORIA WAREHOUSING SITE
ASTORIA, OR

BIGBEAMS-1-04-05

MARCH 2022



COMPOUND	JUNE/ JULY 2019	NOVEMBER 2019	NOVEMBER 2020	AUGUST 2021	DEQ RBC_{AIR} OCCUPATIONAL
BENZENE	0.79	0.46	0.57	0.32	1.6
ETHYLBENZENE	1.3	0.65	0.84	0.64	4.9

COMPOUND	JUNE/ JULY 2019	NOVEMBER 2019	NOVEMBER 2020	AUGUST 2021	DEQ RBC_{AIR} OCCUPATIONAL
BENZENE	NS	0.40	0.50	0.27	1.6
ETHYLBENZENE	NS	ND	0.14	0.12	4.9

COMPOUND	JUNE/ JULY 2019	NOVEMBER 2019	NOVEMBER 2020	AUGUST 2021	DEQ RBC_{AIR} OCCUPATIONAL
BENZENE	0.35	0.47	0.49	0.33	1.6
ETHYLBENZENE	0.44	0.82	1.2	0.69	4.9

COMPOUND	JUNE/ JULY 2019	NOVEMBER 2019	NOVEMBER 2020	AUGUST 2021	DEQ RBC_{AIR} OCCUPATIONAL
BENZENE	0.24	0.46	0.50	0.30	1.6
ETHYLBENZENE	0.22	0.87	2.6	0.52	4.9

COMPOUND	JUNE/ JULY 2019	NOVEMBER 2019	NOVEMBER 2020	AUGUST 2021	DEQ RBC_{AIR} OCCUPATIONAL
BENZENE	0.21	0.42	0.52	0.31	1.6
ETHYLBENZENE	0.18	0.63	2.1	0.56	4.9

COMPOUND	JUNE/ JULY 2019	NOVEMBER 2019	NOVEMBER 2020	AUGUST 2021	DEQ RBC_{AIR} OCCUPATIONAL
BENZENE	0.23	0.42	0.50	0.32	1.6
ETHYLBENZENE	0.23	0.80	2.3	0.57	4.9

COMPOUND	JUNE/ JULY 2019	NOVEMBER 2019	NOVEMBER 2020	AUGUST 2021	DEQ RBC_{AIR} OCCUPATIONAL
BENZENE	0.72	1.0	0.73	0.33	1.6
ETHYLBENZENE	0.97	1.9	1.7	0.47	4.9

COMPOUND	JUNE/ JULY 2019	NOVEMBER 2019	NOVEMBER 2020	AUGUST 2021	DEQ RBC_{AIR} OCCUPATIONAL
BENZENE	0.72	0.90	0.69	0.37	1.6
ETHYLBENZENE	0.91	1.7	2.0	0.60	4.9

LEGEND:

INDOOR-1 ⊞ RADIELLO SAMPLE

ND NOT DETECTED

NS NOT SAMPLED

NOTE:

VALUES REPORTED IN µg/m³

N

0 80 160

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO®, JUNE 18, 2019

NV5

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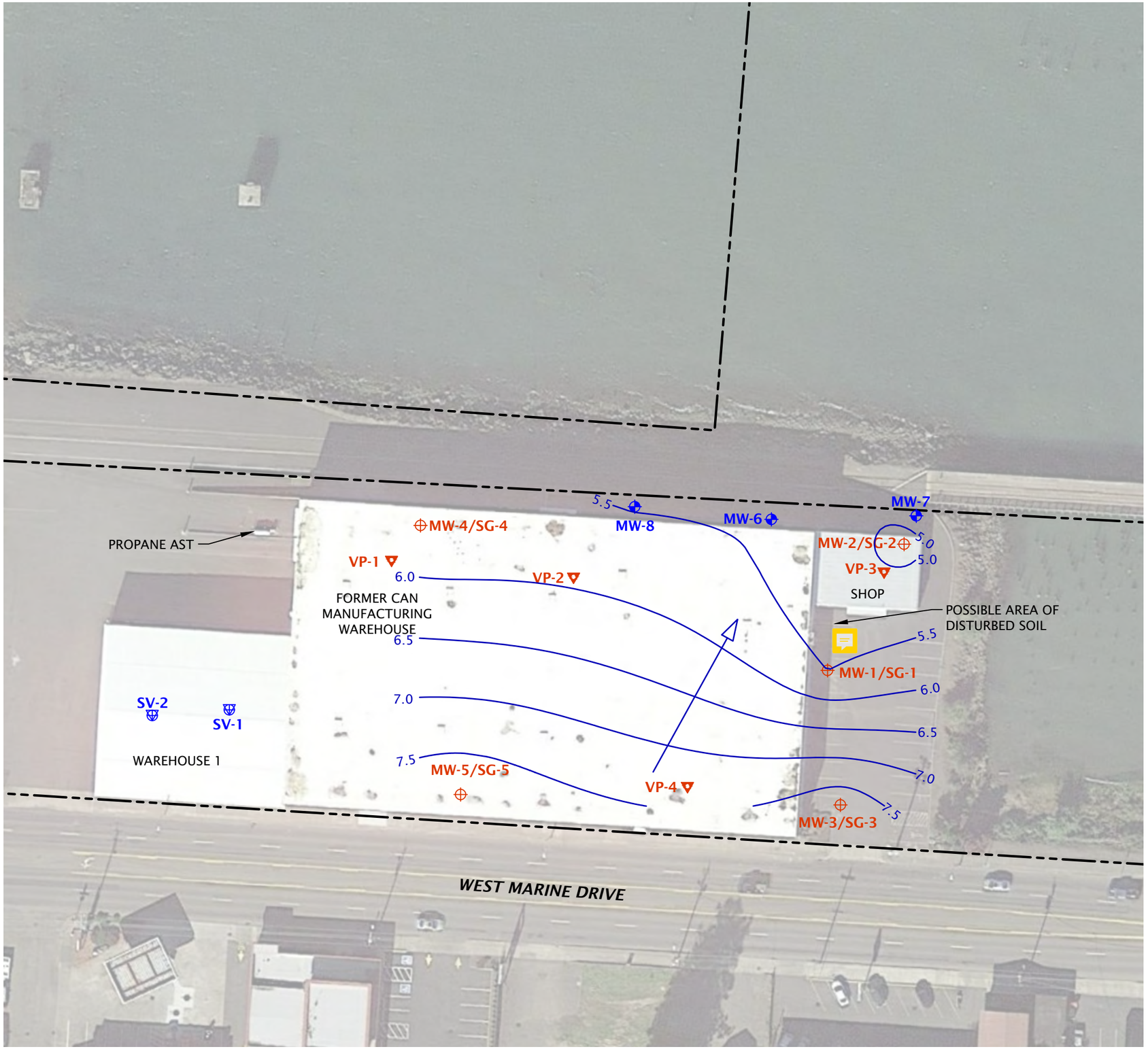

LEGEND:

- SUBJECT PROPERTY BOUNDARY
- MW-6 — MONITORING WELL (GEODESIGN, 2019)
- SV-1 — SUB-SLAB VAPOR SAMPLE (GEODESIGN, 2019)
- VP-1 — VAPOR PIN (PNG, 2018)
- MW-1/SG-1 — MONITORING WELL/SOIL GAS SAMPLE (PNG, 2018)
- 5.0 — GROUNDWATER ELEVATION CONTOUR AS MEASURED ON AUGUST 10, 2021 (0.5-FOOT CONTOUR INTERVAL) NAVD88 DATUM
- GROUNDWATER FLOW DIRECTION

N

0 60 120

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO JULY 16, 2019

GROUNDWATER CONTOUR MAP - AUGUST 2021

FIGURE 5

FORMER ASTORIA WAREHOUSING SITE
ASTORIA, OR

BIGBEAMS-1-04-05

MARCH 2022

NV5

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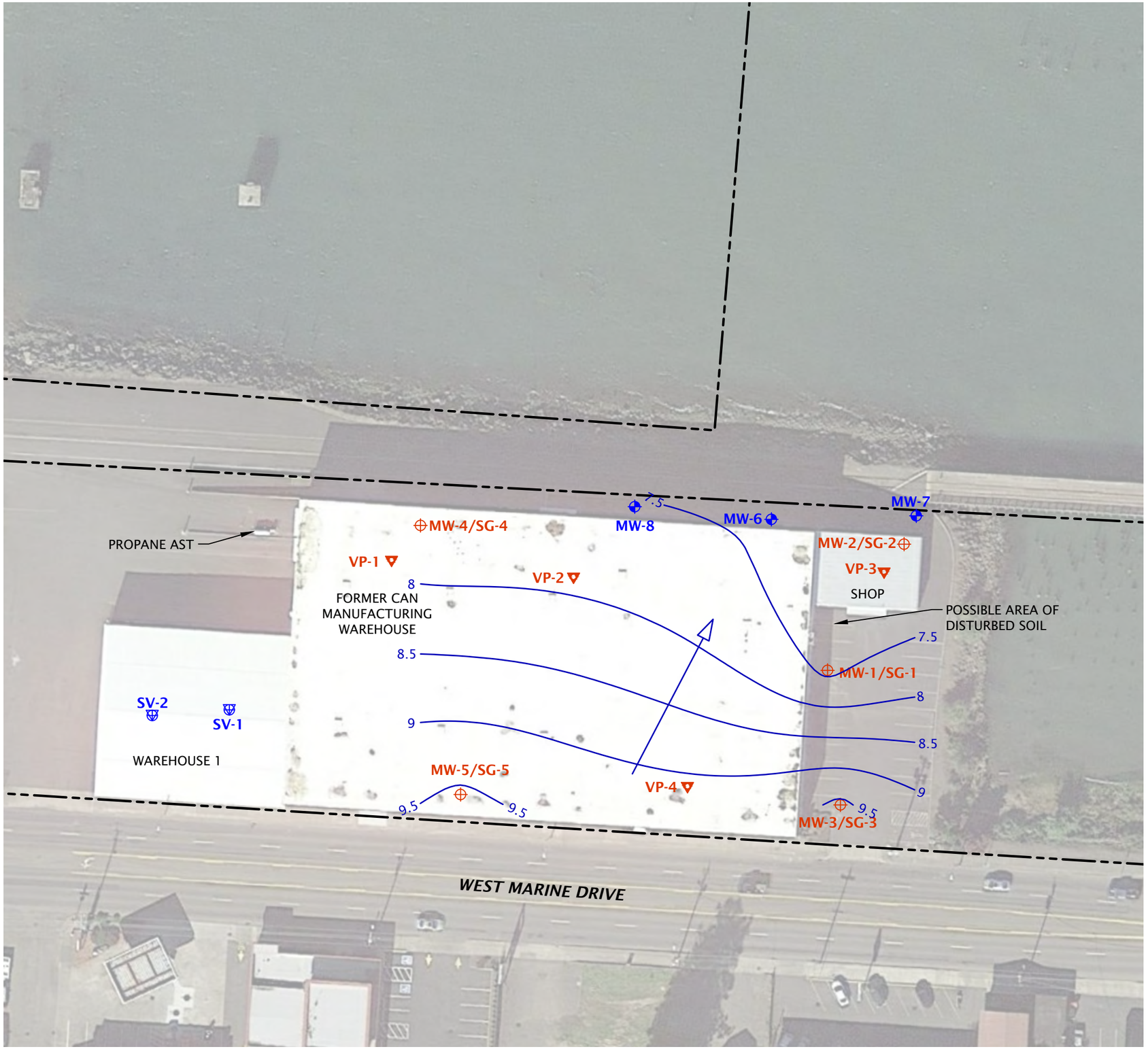

LEGEND:

- SUBJECT PROPERTY BOUNDARY
- MW-6 — MONITORING WELL (GEODESIGN, 2019)
- SV-1 — SUB-SLAB VAPOR SAMPLE (GEODESIGN, 2019)
- VP-1 — VAPOR PIN (PNG, 2018)
- MW-1/SG-1 — MONITORING WELL/SOIL GAS SAMPLE (PNG, 2018)
- 7.5 — GROUNDWATER ELEVATION CONTOUR AS MEASURED ON JANUARY 4, 2022 (0.5-FOOT CONTOUR INTERVAL) NAVD88 DATUM
- GROUNDWATER FLOW DIRECTION

N

0 60 120

(SCALE IN FEET)

SITE PLAN BASED ON AERIAL PHOTOGRAPH OBTAINED FROM GOOGLE EARTH PRO JULY 16, 2019

GROUNDWATER CONTOUR MAP - JANUARY 2022

FIGURE 6

FORMER ASTORIA WAREHOUSING SITE
ASTORIA, OR

BIGBEAMS-1-04-05

MARCH 2022

NV5

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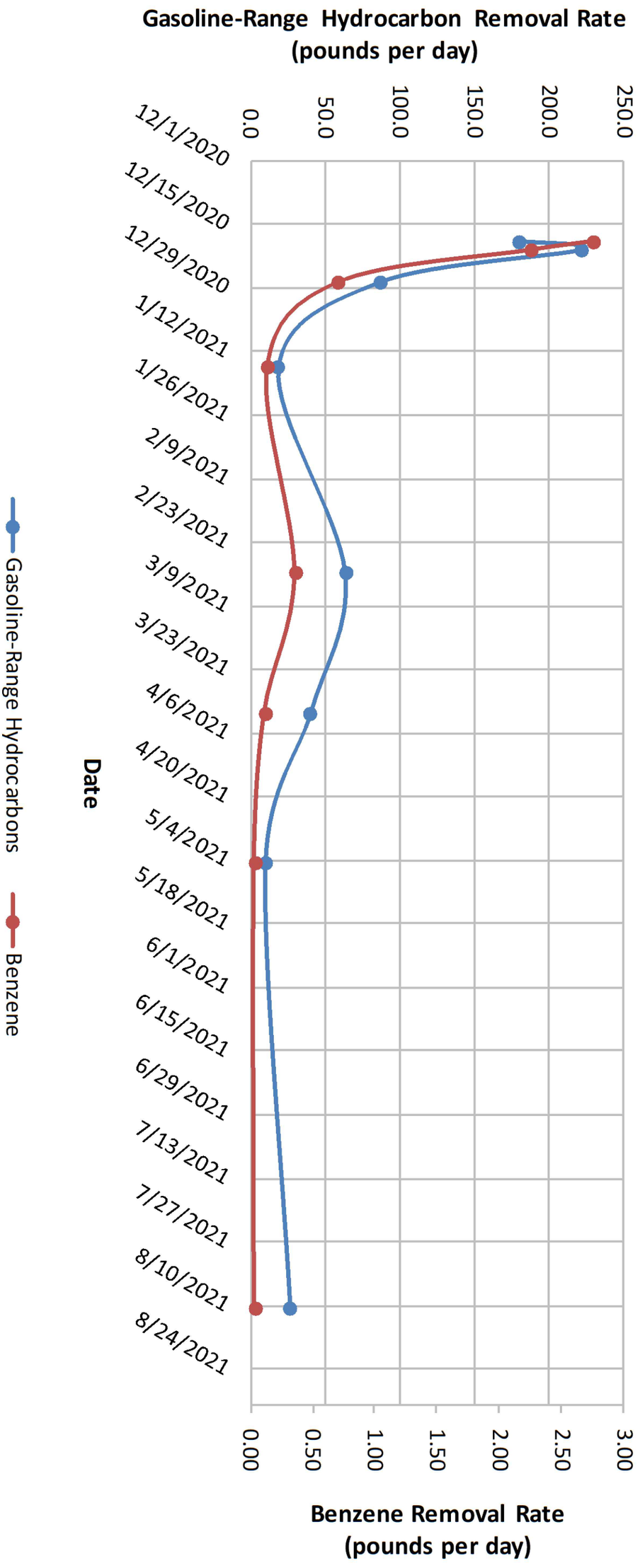

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NV5	BIGBEAMS-1-04-05	CONTAMINANT MASS REMOVAL RATES	
	MARCH 2022	FORMER ASTORIA WAREHOUSING SITE ASTORIA, OR	FIGURE 7

TABLES

TABLE 1
Summary of Groundwater Elevation Data
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Monitoring Well I.D.	Top of Casing Elevation (feet MSL)	Stickup (feet)	Well Depth (feet BGS)	Screened Interval (feet BGS)	Date Measured	Depth to Water (BTOC)	Groundwater Elevation (feet MSL)	Free Product (thickness in feet)
MW-1	16.45	-0.35	19.2	4 -19	10/03/18	10.91	5.54	NM
					06/28/19	11.31	5.14	NM
					11/15/19	10.83	5.62	No
					12/07/19	10.84	5.61	NM
					12/16/19	10.34	6.11	No
					02/19/20	10.21	6.24	No
					02/19/20	10.20	6.25	No
					04/20/20	11.04	5.41	No
					04/28/20	10.44	6.01	No
					06/10/20	10.29	6.16	No
					06/25/20	10.50	5.95	No
					08/25/20	10.81	5.64	No
					08/26/20	10.94	5.51	No
					12/17/20	9.94	6.51	No
					12/18/20	10.00	6.45	No
					12/18/20	9.86	6.59	No
					12/18/20	9.90	6.55	No
					12/18/20	9.85	6.60	No
					01/15/21	8.94	7.51	No
					02/11/21	10.05	6.40	No
					03/02/21	9.46	6.99	No
					04/01/21	8.94	7.51	No
					05/04/21	10.90	5.55	No
					08/10/21	10.95	5.50	No
					08/11/21	10.89	5.56	No
					01/04/22	9.05	7.40	No
MW-2	17.78	-0.55	19.0	4 -19	10/03/18	12.38	5.40	NM
					06/28/19	13.01	4.77	NM
					11/15/19	12.25	5.53	No
					12/07/19	12.41	5.37	NM
					12/16/19	12.12	5.66	No
					02/19/20	12.07	5.71	No
					02/19/20	12.06	5.72	No
					04/20/20	12.82	4.96	No
					04/28/20	12.40	5.38	No
					04/28/20	12.55	5.23	No
					06/10/20	12.15	5.63	No
					06/25/20	12.11	5.67	No
					08/25/20	12.60	5.18	No
					08/26/20	12.54	5.24	No
					12/17/20	11.21	6.57	No
					12/18/20	11.78	6.00	No
					12/18/20	11.21	6.57	No
					12/18/20	11.15	6.63	No
					12/18/20	11.11	6.67	No
					01/15/21	10.70	7.08	No
					02/11/21	11.49	6.29	No
					03/02/21	11.57	6.21	No
					04/01/21	12.45	5.33	No
					05/04/21	12.82	4.96	No
					08/10/21	12.91	4.87	No
					08/11/21	12.28	5.50	No
					01/04/22	10.75	7.03	No

TABLE 1
Summary of Groundwater Elevation Data
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Monitoring Well I.D.	Top of Casing Elevation (feet MSL)	Stickup (feet)	Well Depth (feet BGS)	Screened Interval (feet BGS)	Date Measured	Depth to Water (BTOC)	Groundwater Elevation (feet MSL)	Free Product (thickness in feet)
MW-3	16.70	-0.33	18.6	4 -19	10/03/18	8.79	7.91	NM
					06/28/19	8.67	8.03	NM
					11/15/19	8.21	8.49	No
					12/07/19	8.22	8.48	NM
					12/16/19	7.87	8.83	No
					02/19/20	7.56	9.14	No
					02/19/20	7.50	9.20	No
					04/20/20	8.10	8.60	No
					04/28/20	8.14	8.56	No
					06/10/20	8.18	8.52	No
					06/25/20	8.20	8.50	No
					08/25/20	8.76	7.94	No
					08/26/20	8.78	7.92	No
					12/17/20	7.61	9.09	No
					12/18/20	7.62	9.08	No
					12/18/20	7.65	9.05	No
					12/18/20	7.60	9.10	No
					12/18/20	7.60	9.10	No
					01/15/21	7.21	9.49	No
					02/11/21	7.54	9.16	No
					03/02/21	7.49	9.21	No
					04/01/21	7.78	8.92	No
					05/04/21	8.28	8.42	No
					08/10/21	8.87	7.83	No
					08/11/21	8.85	7.85	No
					01/04/22	7.10	9.60	No
MW-4	17.70	-0.35	18.8	4 -19	10/03/18	12.08	5.62	NM
					06/28/19	12.32	5.38	NM
					11/15/19	11.84	5.86	No
					12/07/19	11.90	5.80	NM
					12/16/19	11.53	6.17	No
					02/19/20	11.00	6.70	No
					02/19/20	10.99	6.71	No
					04/20/20	11.93	5.77	No
					04/28/20	11.81	5.89	No
					06/10/20	11.44	6.26	No
					06/25/20	11.70	6.00	No
					08/25/20	11.95	5.75	No
					08/26/20	12.00	5.70	No
					12/17/20	11.11	6.59	No
					12/18/20	12.17	5.53	No
					12/18/20	11.06	6.64	No
					12/18/20	10.97	6.73	No
					12/18/20	10.90	6.80	No
					01/15/21	10.09	7.61	No
					02/11/21	10.81	6.89	No
					03/02/21	8.68	9.02	No
					04/01/21	11.45	6.25	No
					05/04/21	11.85	5.85	No
					08/10/21	12.10	5.60	No
					08/11/21	12.10	5.60	No
					01/04/22	10.10	7.60	No

TABLE 1
Summary of Groundwater Elevation Data
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Monitoring Well I.D.	Top of Casing Elevation (feet MSL)	Stickup (feet)	Well Depth (feet BGS)	Screened Interval (feet BGS)	Date Measured	Depth to Water (BTOC)	Groundwater Elevation (feet MSL)	Free Product (thickness in feet)
MW-5	17.97	-0.35	19.2	4 -19	10/03/18	10.24	7.73	NM
					06/28/19	9.79	8.18	NM
					11/15/19	9.54	8.43	No
					12/07/19	9.05	8.92	NM
					12/16/19	9.40	8.57	No
					02/19/20	8.50	9.47	No
					02/19/20	8.48	9.49	No
					04/20/20	9.24	8.73	No
					04/28/20	9.31	8.66	No
					06/10/20	Inaccessible		NA
					06/25/20	9.46	8.51	No
					08/25/20	10.10	7.87	No
					08/26/20	10.00	7.97	No
					12/17/20	9.10	8.87	No
					12/18/20	9.08	8.89	No
					12/18/20	9.10	8.87	No
					12/18/20	9.06	8.91	No
					12/18/20	9.04	8.93	No
					01/15/21	8.26	9.71	No
					02/11/21	8.62	9.35	No
					03/02/21	11.05	6.92	No
					04/01/21	8.26	9.71	No
					05/04/21	9.39	8.58	No
					08/10/21	10.08	7.89	No
					08/11/21	10.06	7.91	No
					01/04/22	8.40	9.57	No
MW-6	17.14	-0.25	25.5	5-25	12/07/19	11.49	5.65	NM
					12/16/19	11.11	6.03	No
					02/19/20	11.00	6.14	No
					04/20/20	11.90	5.24	No
					04/28/20	11.60	5.54	No
					06/10/20	11.09	6.05	No
					06/25/20	11.50	5.64	No
					08/25/20	12.70	4.44	No
					08/26/20	11.70	5.44	No
					12/17/20	10.58	6.56	No
					12/18/20	10.73	6.41	No
					12/18/20	10.45	6.69	No
					12/18/20	10.45	6.69	No
					12/18/20	10.41	6.73	No
					01/15/21	9.64	7.50	No
					02/11/21	10.72	6.42	No
					03/02/21	10.91	6.23	No
					04/01/21	11.37	5.77	No
					05/04/21	11.75	5.39	No
					08/10/21	11.71	5.43	No
					08/11/21	11.65	5.49	No
					01/04/22	9.70	7.44	No

TABLE 1
Summary of Groundwater Elevation Data
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Monitoring Well I.D.	Top of Casing Elevation (feet MSL)	Stickup (feet)	Well Depth (feet BGS)	Screened Interval (feet BGS)	Date Measured	Depth to Water (BTOC)	Groundwater Elevation (feet MSL)	Free Product (thickness in feet)
MW-7	16.41	-0.25	25.3	5-25	12/07/19	10.20	6.21	NM
					12/16/19	10.99	5.42	No
					02/19/20	10.62	5.79	No
					02/19/20	10.60	5.81	No
					04/20/20	11.49	4.92	No
					04/28/20	11.58	4.83	No
					06/10/20	11.07	5.34	No
					06/25/20	11.59	4.82	No
					08/25/20	12.59	3.82	No
					08/26/20	11.20	5.21	No
					12/17/20	10.35	6.06	No
					12/18/20	10.61	5.80	No
					12/18/20	9.64	6.77	No
					12/18/20	9.41	7.00	No
					01/15/21	8.90	7.51	No
					02/11/21	9.89	6.52	No
					03/02/21	8.92	7.49	No
					04/01/21	11.23	5.18	No
					05/04/21	11.74	4.67	No
					08/10/21	11.28	5.13	No
					08/11/21	10.80	5.61	No
					01/04/22	9.30	7.11	No
MW-8	16.62	-0.31	25.3	5-25	12/07/19	10.99	5.63	NM
					12/16/19	10.51	6.11	No
					02/19/20	10.25	6.37	No
					02/01/20	10.20	6.42	No
					04/20/20	11.19	5.43	No
					04/28/20	10.95	5.67	**0.02**
					04/28/20	11.03	5.59	No
					06/10/20	10.40	6.22	No
					06/25/20	10.45	6.17	No
					08/25/20	11.25	5.37	**0.20**
					08/26/20	11.15	5.47	No
					12/17/20	10.25	6.37	No
					12/18/20	10.14	6.48	No
					12/18/20	10.21	6.41	No
					12/18/20	9.88	6.74	No
					12/18/20	9.86	6.76	No
					01/15/21	8.94	7.68	No
					02/11/21	10.10	6.52	No
					03/02/21	10.31	6.31	No
					04/01/21	11.85	4.77	No
					05/04/21	11.18	5.44	No
					08/10/21	11.15	5.47	No
					01/04/22	9.10	7.52	No

TABLE 1
Summary of Groundwater Elevation Data
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Monitoring Well I.D.	Top of Casing Elevation (feet MSL)	Stickup (feet)	Well Depth (feet BGS)	Screened Interval (feet BGS)	Date Measured	Depth to Water (BTOC)	Groundwater Elevation (feet MSL)	Free Product (thickness in feet)
PAS-2	NM	NM	18.0	16-17	04/20/20	12.66	NM	No
					04/28/20	12.33		No
					06/10/20	12.33		No
					06/29/20	12.51		No
					08/25/20	12.33		No
					08/26/20	12.51		No
					12/17/20	11.29		No
					12/18/20	11.50		No
					12/18/20	11.47		No
					01/15/21	10.89		No
					02/11/21	11.86		No
					03/02/21	11.65		No
					04/01/21	12.35		No
					05/04/21	12.62		No
					08/10/21	12.55		No
					01/04/22	10.56		No
OAS-1	NM	NM	19.3	10-20	12/11/19	12.35	NM	No
					04/20/20	12.68		No
					04/28/20	12.40		No
					04/28/20	12.50		No
					06/10/20	11.95		No
					06/29/20	12.57		No
					08/25/20	15.50		No
					08/26/20	12.57		No
					12/17/20	11.23		No
					12/18/20	11.71		No
					12/18/20	11.55		No
					12/18/20	11.50		No
					01/15/21	10.91		No
					02/11/21	11.87		No
					03/02/21	11.68		No
					04/01/21	12.31		No
					05/04/21	12.59		No
					08/10/21	12.55		No
					01/04/22	10.61		No
OAS-2	NM	NM	19.6	10-20	12/11/19	12.31	NM	No
					04/20/20	12.60		**0.21**
					04/28/20	12.35		No
					04/28/20	12.46		No
					06/10/20	11.94		No
					06/29/20	12.51		No
					08/25/20	12.62		No
					08/26/20	12.18		No
					12/17/20	11.14		No
					12/18/20	11.68		No
					12/18/20	11.48		No
					12/18/20	11.49		No
					01/15/21	10.89		No
					02/11/21	11.86		No
					03/02/21	11.68		No
					04/01/21	12.30		No
					05/04/21	12.59		No
					08/10/21	12.47		No
					01/04/22	10.53		No

TABLE 1
Summary of Groundwater Elevation Data
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Monitoring Well I.D.	Top of Casing Elevation (feet MSL)	Stickup (feet)	Well Depth (feet BGS)	Screened Interval (feet BGS)	Date Measured	Depth to Water (BTOC)	Groundwater Elevation (feet MSL)	Free Product (thickness in feet)
OAS-3	NM	NM	19.4	10-20	12/11/19	12.50	NM	No
					04/20/20	12.47		**0.71**
					04/28/20	12.46		**0.49**
					04/28/20	12.61		No
					06/10/20	12.24		No
					06/29/20	12.65		**0.21**
					08/25/20	12.62		No
					08/26/20	12.78		No
					12/17/20	11.45		**0.25**
					12/18/20	11.90		No
					12/18/20	11.76		No
					12/18/20	11.61		No
					12/18/20	11.55		No
					01/15/21	10.96		No
					02/11/21	12.00		No
					03/02/21	11.80		No
					04/01/21	12.50		No
					05/04/21	12.75		No
					08/10/21	12.63		No
					01/04/22	10.70		No
OAS-4	NM	NM	19.6	10-20	12/11/19	12.53	NM	No
					04/20/20	12.80		No
					04/28/20	12.60		No
					04/28/20	12.71		No
					06/10/20	12.03		No
					06/29/20	12.70		No
					08/25/20	12.68		No
					08/26/20	12.18		No
					12/17/20	11.28		No
					12/18/20	11.95		No
					12/18/20	11.61		No
					12/18/20	11.60		No
					01/15/21	11.00		No
					02/11/21	12.05		No
					03/02/21	11.92		No
					04/01/21	12.65		No
					05/04/21	12.89		No
					08/10/21	12.70		No
					01/04/22	10.56		No

Notes:
Vertical datum is NAVD88.
NM: not measured

TABLE 2
Riverbank Observations
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Date	Time	Station Water Level During Inspection[1]	Weather	Groundwater Seep Evaluation		Storm Pipe Outfall		Remarks
				Seeps Present?	Sheen?	Flow Present?	Sheen?	
2019 - 2020 Observations								
12/06/19	11:00	2.28	Sunny	No	No	--	--	
02/19/20	12:20	3.16	Sunny	No	No	--	--	
04/20/20	13:30	1.20	Sunny	No	No	--	--	
08/26/20	10:00	0.38	Sunny	No	No	--	--	
12/18/20	9:30	4.81	Rainy	No	No	--	--	
2021 Observations								
01/15/21	11:30	8.89	Foggy/Overcast	No	No	--	--	
02/17/21	17:00	3.24	Partly Sunny	No	No	--	--	
03/01/21	18:00	1.46	Sunny	No	No	--	--	
03/02/21	16:45	1.20	Sunny	No	No	--	--	
04/01/21	9:30	7.89	Sunny	Yes	Yes	--	--	
04/09/21	8:51	7.20	Sunny	At Storm Pipe	Yes	Yes	Yes	Changed sorbent pads
04/12/21	8:20	7.40	Sunny	At Storm Pipe	Yes	Yes	Yes	Changed sorbent pads
04/13/21	8:00	6.64	Sunny	At Storm Pipe	Yes	Yes	Yes	Increase in sheen
04/14/21	8:03	6.30	Sunny	At Storm Pipe	Yes	Yes	Yes	Decrease in sheen
04/15/21	8:05	6.08	Sunny	At Storm Pipe	Yes	Yes	Yes	Changed sorbent pads
04/16/21	8:04	5.40	Sunny	At Storm Pipe	Yes	Yes	Yes	Changed sorbent pads
04/19/21	9:04	4.60	Overcast	At Storm Pipe	Yes	Yes	Yes	
04/20/21	9:53	4.29	Sunny	At Storm Pipe	Yes	Yes	Yes	
04/21/21	10:56	3.75	Cloudy	At Storm Pipe	Yes	Yes	Yes	
04/22/21	12:30	3.45	Overcast	At Storm Pipe	Yes	Yes	Yes	
04/23/21	13:37	2.75	Overcast	At Storm Pipe	Yes	Yes	Yes	Changed sorbent pads
04/24/21	12:30	1.38	Rainy	At Storm Pipe	Yes	Yes	Yes	High flow from pipe
04/25/21	13:30	1.03	Overcast	At Storm Pipe	Yes	Yes	Yes	Changed sorbent pads
04/26/21	14:50	0.10	Cloudy	At Storm Pipe	Yes	Yes	Yes	
04/27/21	11:46	5.25	Cloudy	At Storm Pipe	Yes	Yes	Yes	
04/28/21	15:15	-0.30	Cloudy	At Storm Pipe	Yes	Yes	Yes	Changed sorbent pads
04/29/21	9:14	9.64	Sunny	At Storm Pipe	Yes	Yes	Yes	High flow from pipe
04/30/21	8:20	6.99	Rainy	At Storm Pipe	Yes	Yes	Yes	Changed sorbent pads
05/03/21	12:56	7.49	Rainy	Yes	Yes	Yes	Yes	Changed sorbent pads
05/04/21	11:54	4.81	Cloudy	--	--	Yes	Yes	
05/04/21	15:00	6.93	Partly Sunny	Yes	Yes	No	--	
05/05/21	8:00	4.42		No	--	No	--	
05/06/21	15:15	5.50	Rainy	At Storm Pipe	Yes	Yes	Yes	
05/07/21	16:57	5.87	Cloudy	At Storm Pipe	Yes	Yes	Yes	
05/10/21	12:51	1.54	Sunny	At Storm Pipe	Yes	Yes	Yes	Dye visible. Changed sorbent pads
05/11/21	14:30	-0.06	Sunny	No	--	No	--	
05/12/21	14:25	0.46	Sunny	No	--	No	--	
05/13/21	15:22	-0.18	Sunny	No	--	No	--	
05/14/21	10:00	8.40	Cloudy	No	--	No	--	
05/17/21	13:00	7.06	Cloudy	No	--	No	--	
05/18/21	12:25	7.39	Cloudy	No	--	No	--	
05/19/21	11:20	5.68	Cloudy	No	--	No	--	
05/20/21	11:45	4.46	Cloudy	No	--	No	--	
05/21/21	12:10	2.97	Cloudy	No	--	No	--	
05/24/21	16:10	2.76	Cloudy	Yes	Yes	Yes	Yes	Changed sorbent pads
05/25/21	16:05	0.45	Cloudy	No	--	No	--	
05/26/21	16:30	-0.68	Cloudy	No	--	No	--	
05/27/21	15:50	-0.76	Cloudy	At Storm Pipe	Yes	Yes	Yes	
05/28/21	15:00	0.99	Sunny	At Storm Pipe	Yes	Yes	Yes	Changed sorbent pads
05/31/21	10:00	6.36	Cloudy	No	--	No	--	
08/11/21	7:28	4.98	Sunny	No	--	No	--	
08/11/21	10:30	8.63	Sunny	Yes	Yes	--	--	
08/12/21	9:30	7.14	Sunny	Yes	Yes	No	--	
08/17/21	7:29	3.17	Cloudy	No	--	No	--	
08/24/21	7:29	6.31	Cloudy	No	--	No	--	
08/26/21	10:00	7.20	Partly Sunny	Yes	Yes	No	--	
08/31/21	7:28	2.46	Cloudy	--	--	Yes	Yes	
09/07/21	7:29	7.79	Sunny	No	--	No	--	
09/14/21	7:30	0.37	Sunny	No	--	No	--	
09/21/21	7:29	7.28	Sunny	No	--	No	--	
09/28/21	7:28	1.40	Rainy	At Storm Pipe	Yes	Yes	Yes	High flow from pipe
10/05/21	7:28	8.62	Rainy	At Storm Pipe	Yes	Yes	Yes	High flow from pipe
10/12/21	7:28	-0.82	Cloudy	No	--	No	--	
10/19/21	7:28	7.97	Partly Sunny	No	--	No	--	
10/26/21	7:29	2.07	Rainy	At Storm Pipe	Yes	Yes	Yes	High flow from pipe
11/02/21	7:30	7.68	Cloudy	No	--	No	--	Outlet plugged
11/09/21	7:29	0.43	Rainy	No	--	Yes	No	
11/16/21	7:29	7.80	Partly Sunny	At Storm Pipe	Yes	No	--	
11/23/21	7:30	2.02	Rainy	No	--	Yes	No	High flow from pipe
11/30/21	7:30	5.11	Rainy	No	--	Yes	No	
12/07/21	7:30	1.55	Rainy	No	--	Yes	No	
12/14/21	7:30	7.02	Cloudy	No	--	No	--	
12/21/21	7:30	3.68	Cloudy	Yes	No	Yes	No	
12/28/21	7:31	3.36	Cloudy	No	--	No	--	

Notes:
1. Water levels obtained from NOAA observatoin station 9439040 in Astoria, Oregon, using NAVD88 Datum (feet).
Storm pipe outfall observations conducted by For George staff
DEQ's contractor assumed responsibility of maintaining the sorbet boom at the storm pipe outfall in September 2021.

TABLE 3
Summary of Air Sample Chemical Analytical Results
VOCs
Former Astoria Warehousing Site
Astoria, Oregon

Sample I.D.	Sample Exposure Dates	VOCs[1] EPA Method TO-17 (µg/m³)																
		Benzene	Bromomethane	Carbon Tetrachloride	Chloroform	1,4-Dichlorobenzene	1,2-Dichloroethane	Ethylbenzene	Freon 113	Methylene Chloride (Dichloromethane)	Styrene	PCE	Toluene	TCE	1,2,4-TMB	1,3,5-TMB	m,p-xylene	o-xylene
Indoor-1	6/29/19 to 7/13/19	**0.72**	**0.36***	ND	ND	**0.069**	ND	**0.91**	**0.3***	**4.8***	**0.69**	**0.073**	**0.63**	0.046 U	**1.5**	**0.38***	**2.8**	**0.67**
	11/6/19 to 11/15/19	**0.90**	–	**0.23**	**0.19**	0.15 U	0.10 U	**1.7**	–	–	0.13 U	0.13 U	**2.5**	0.11 U	–	–	**5.7**	**1.6**
	11/18/20 to 12/02/20	**0.69**	–	**0.47**	**0.28**	0.10 U	**0.082**	**2.0**	–	–	**0.17**	0.087 U	**26**	0.074 U	–	–	**8.1**	**2.5**
	8/12/21 to 8/26/21	**0.37**	–	**0.34**	**0.86**	0.098 U	0.065 U	**0.60**	–	–	**0.20**	0.084 U	**1.2**	0.072 U	–	–	**2.3**	**0.86**
Indoor-2	6/29/19 to 7/13/19	**0.72**	ND	ND	ND	ND	ND	**0.97**	ND	ND	**0.65**	**0.074**	**0.61**	0.046 U	**1.1**	ND	**2.4**	**0.64**
	11/6/19 to 11/15/19	**1.0**	–	**0.24**	**0.24**	0.15 U	0.10 U	**1.9**	–	–	0.13 U	0.13 U	**2.7**	0.11 U	–	–	**6.2**	**1.7**
	11/18/20 to 12/02/20	**0.73**	–	**0.51**	**0.27**	0.10 U	**0.082**	**1.7**	–	–	**0.15**	0.087 U	**24**	0.074 U	–	–	**6.8**	**2.1**
	8/12/21 to 8/26/21	**0.33 J**	–	**0.29 J**	**0.73 J**	0.098 U	0.065 U	**0.47 J**	–	–	**0.17 J**	0.084 U	**1.2 J**	0.072 U	–	–	**1.7 J**	**0.64 J**
Indoor-3	6/29/19 to 7/13/19	**0.23**	ND	**0.4***	ND	ND	ND	**0.23**	ND	ND	**0.17**	**0.063**	**1.2**	0.046 U	**0.58**	ND	**1.5**	**0.35**
	11/6/19 to 11/15/19	**0.42**	–	**0.24**	0.10 U	0.15 U	0.10 U	**0.80**	–	–	0.13 U	0.13 U	**1.3**	0.11 U	–	–	**2.8**	**0.84**
	11/18/20 to 12/02/20	**0.50**	–	**0.24**	0.071 U	0.10 U	0.069 U	**2.3**	–	–	0.087 U	**0.092**	**56**	**0.096**	–	–	**8.8**	**2.6**
	8/12/21 to 8/26/21	**0.32**	–	**0.22**	**0.65**	0.098 U	0.064 U	**0.57**	–	–	**0.20**	0.084 U	**1.2**	0.072 U	–	–	**2.2**	**0.77**
Indoor-4	6/29/19 to 7/13/19	**0.21**	ND	**0.49***	ND	ND	ND	**0.18**	ND	ND	**0.14**	**0.054**	**1.1**	0.046 U	**0.45**	ND	**1.3**	**0.28**
	11/6/19 to 11/15/19	**0.42**	–	**0.25**	0.10 U	0.15 U	0.10 U	**0.63**	–	–	0.13 U	0.13 U	**1.2**	0.11 U	–	–	**2.2**	**0.67**
	11/18/20 to 12/02/20	**0.52**	–	**0.26**	0.071 U	0.10 U	0.069 U	**2.1**	–	–	0.087 U	**0.091**	**67**	**0.11**	–	–	**7.6**	**2.3**
	8/12/21 to 8/26/21	**0.31**	–	**0.17**	**0.44**	0.098 U	0.065 U	**0.56**	–	–	**0.20**	0.084 U	**1.3**	0.072 U	–	–	**2.2**	**0.76**
Indoor-5	6/29/19 to 7/13/19	**0.79**	ND	**0.43***	ND	ND	ND	**1.3**	**0.29***	ND	**0.23**	**0.098**	**2.5**	0.046 U	**1.4**	ND	**3.8**	**1.8**
	11/6/19 to 11/15/19	**0.46**	–	**0.20**	0.10 U	0.15 U	0.10 U	**0.65**	–	–	0.13 U	0.13 U	**1.4**	0.11 U	–	–	**2.3**	**0.69**
	11/18/20 to 12/02/20	**0.57**	–	**0.27**	0.071 U	0.10 U	0.069 U	**0.84**	–	–	0.087 U	0.090 U	**26**	0.077 U	–	–	**3.1**	**0.94**
	8/12/21 to 8/26/21	**0.32**	–	**0.27**	**0.61**	0.097 U	0.064 U	**0.64**	–	–	**0.22**	0.084 U	**1.5**	0.072 U	–	–	**2.6**	**0.88**
Indoor-6	6/29/19 to 7/13/19	**0.35**	ND	**0.38***	ND	ND	ND	**0.44**	ND	ND	**0.23**	**0.11**	**1.6**	0.046 U	**1.1**	ND	**2.2**	**0.69**
	11/6/19 to 11/15/19	**0.47**	–	**0.23**	0.10 U	0.15 U	0.10 U	**0.82**	–	–	0.13 U	0.13 U	**1.5**	0.11 U	–	–	**2.9**	**0.88**
	11/18/20 to 12/02/20	**0.49**	–	**0.25**	0.071 U	0.10 U	0.069 U	**1.2**	–	–	0.087 U	0.090 U	**35**	0.077 U	–	–	**4.5**	**1.4**
	8/12/21 to 8/26/21	**0.33**	–	**0.21**	**0.63**	0.098 U	0.065 U	**0.69**	–	–	**0.22**	0.084 U	**1.3**	0.072 U	–	–	**2.8**	**1.0**
Indoor-7	6/29/19 to 7/13/19	**0.24**	ND	**0.48***	ND	ND	ND	**0.22**	**0.27***	ND	**0.14**	**0.058**	**0.96**	0.046 U	**0.44**	**1***	**1.2**	**0.32**
	11/6/19 to 11/15/19	**0.46**	–	**0.26**	0.10 U	0.15 U	0.10 U	**0.87**	–	–	0.13 U	0.13 U	**1.5**	0.11 U	–	–	**3.1**	**0.92**
	11/18/20 to 12/02/20	**0.50**	–	**0.24**	0.071 U	0.10 U	0.069 U	**2.6**	–	–	**0.089**	**0.12**	**60**	0.077 U	–	–	**10**	**3.0**
	8/12/21 to 8/26/21	**0.30**	–	**0.22**	**0.62**	0.098 U	0.065 U	**0.52**	–	–	**0.16**	ND	**1.1**	0.072 U	–	–	**2.0**	**0.68**
Background	11/6/19 to 11/15/19	**0.40**	–	**0.26**	0.10 U	0.15 U	0.10 U	0.11 U	–	–	0.13 U	0.13 U	**0.49**	0.11 U	–	–	**0.27**	0.12 U
	11/18/20 to 12/02/20	**0.50**	–	**0.32**	0.071 U	0.10 U	0.069 U	**0.14**	–	–	0.087 U	0.090 U	**1.5**	0.077 U	–	–	**0.41**	**0.14**
	8/12/21 to 8/26/21	**0.27**	–	**0.20**	0.066 U	0.097 U	0.064 U	**0.12**	–	–	0.081 U	0.084 U	**0.45**	0.072 U	–	–	**0.45**	**0.15**
DEQ Generic RBCs[2]																		
Inhalation																		
Occupational		1.6	22	2.0	0.53	1.1	0.47	4.9	130,000	1,200	4,400	47	22,000	2.9	260	260	440	

TABLE 3
Summary of Air Sample Chemical Analytical Results
VOCs
Former Astoria Warehousing Site
Astoria, Oregon

Notes:
1. Only VOCs detected with regulatory screening values are listed. For a complete listing of VOCs, refer to the laboratory report in Appendix C.
2. DEQ Generic RBCs dated May 2018
J: The identification of the analyte is acceptable; the reported value is an estimate.
ND: not detected
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs.
--: not analyzed
*: Laboratory reported concentration as ng/sample because they do not have an uptake rate. Values shown were calculated by assuming an uptake rate of 1 percent.

TABLE 4
Summary of Groundwater Parameters in Monitoring Well Samples
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Sample I.D.	Sample Date	Temperature (°F)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Ferrous Iron (mg/L)
MW-1	10/03/18	61.7	0.19	6.42	-74.9	673	0.44	--
	11/15/19	60.8	0.30	6.54	-99.9	505	4.99	28.8
	06/25/20	59.1	0.86	6.44	-55.9	628	2.22	--
	08/11/21	63.2	0.18	6.58	-145.4	1,091	3.11	--
	01/04/22 [1]	60.4	2.80	5.40	-95.0	1,900	--	--
MW-2	10/03/18	60.2	0.23	6.55	-124.5	791	0.51	--
	11/15/19	59.5	0.41	6.61	-118.1	670	0.10	64.6
	06/25/20	58.8	0.36	6.56	-73.1	664	2.12	--
	08/11/21	64.3	0.15	6.51	-128.4	1,208	1.98	--
	01/05/22 [1]	62.2	1.68	6.14	-131.1	1,760	--	--
MW-3	10/03/18	60.7	0.29	6.75	-49.5	427	0.28	--
	11/15/19	60.5	0.90	6.76	-81.5	444	7.54	13.1
	06/25/20	58.3	0.37	6.60	-38.6	380	5.45	--
	08/11/21	62.1	0.28	6.73	-101.9	924	1.85	--
	01/04/22 [1]	57.9	3.10	6.20	-75.0	1,158	--	--
MW-4	10/03/18	57.5	0.28	7.13	-62.0	362	0.30	--
	11/15/19	57.3	0.41	6.55	-110.5	440	0.53	53.8
	06/25/20	56.9	0.62	6.47	-56.6	488	8.72	--
	08/11/21	58.7	0.21	6.48	-121.4	831	4.67	--
	01/05/22 [1]	57.1	2.29	5.67	-74.4	906	--	--

TABLE 4
Summary of Groundwater Parameters in Monitoring Well Samples
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Sample I.D.	Sample Date	Temperature (°F)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Ferrous Iron (mg/L)
MW-5	10/03/18	60.7	0.26	6.99	-54.1	304	0.24	--
	11/15/19	60.6	0.34	6.55	-84.7	354	0.86	26.9
	06/25/20	58.8	0.17	6.56	-58.8	268	3.50	--
	08/11/21	61.4	0.39	6.51	-95.1	548	3.02	--
	01/04/22 [1]	47.0	18.60	5.30	-26.5	12	--	--
MW-6	12/07/19	57.0	0.38	6.55	-87.6	607	2.71	--
	06/25/20	58.0	0.16	6.56	-82.6	652	4.72	--
	08/11/21	61.0	0.21	6.50	-119.6	1,084	2.07	--
	01/04/22 [1]	58.5	2.10	5.10	-23.4	1,997	--	--
MW-7	12/07/19	58.6	0.24	6.72	-105.2	672	2.29	--
	06/25/20	62.5	0.13	6.59	-99.8	691	9.58	--
	08/11/21	62.1	0.28	6.53	-134.6	1,329	1.47	--
	01/04/22 [1]	57.6	1.29	5.00	-57.8	4,740	--	--
MW-8	12/07/19	56.2	0.52	6.57	-86.2	587	3.67	--
	06/25/20	57.1	0.20	6.44	-72.5	535	3.79	--
	08/11/21	59.5	0.14	6.4	-123.2	926	2.52	--
	01/04/22 [1]	58.0	4.00	4.80	-19.5	2,020	--	--
PAS-2	12/07/19	59.9	0.38	6.86	-109.0	577	0.77	--

TABLE 4
Summary of Groundwater Parameters in Monitoring Well Samples
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Sample I.D.	Sample Date	Temperature (°F)	Dissolved Oxygen (mg/L)	pH	ORP (mV)	Specific Conductivity (µS/cm)	Turbidity (NTU)	Ferrous Iron (mg/L)

Notes:
1. Groundwater parameters measured during the January 2022 groundwater monitoring event indicate a possible malfunction of the YSI field meter and are therefore not necessarily considered representative of actual groundwater parameters. Parameters measured during this event were evaluated as relative values in the field to assess stabilization prior to sample collection only.

–: not analyzed

TABLE 5
Summary of Monitoring Well Groundwater Sample Chemical Analytical Results
Gasoline-Range Hydrocarbons and RBDM VOCs
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Monitoring Well	Sample Date	Gasoline-Range Hydrocarbons Method NWTPH-Gx (µg/L)	RBDM VOCs EPA Method 8260B/8260D (µg/L)																		
			Benzene	n-Butylbenzene	sec-Butylbenzene	tert-Butylbenzene	1,2-Dibromoethane	1,2-Dichloroethane	cis-1,2-Dichloroethene	Ethylbenzene	Isopropylbenzene	P-Isopropyltoluene	MTBE	Naphthalene	n-Propylbenzene	Toluene	1,2,3-TMB	1,2,4-TMB	1,3,5-TMB	Total Xylenes
MW-1	10/03/18	**19,900**	**1,000**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	--	**1,090**	**98.4**	**7.60**	**11.5**	**397**	**83.1**	**25.1**	--	**54.5**	**40.6**	**196**
	11/15/19	**6,280**	**292**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	--	**529**	**25.3**	5.00 U	**5.06**	**174**	**73.9**	**6.36**	--	**5.82**	5.00 U	**29.1**
	06/25/20	**12,100**	**854**	--	--	--	1.26 U	0.819 U	--	**1,720**	**83.8**	--	**9.69** J	**546**	**203**	**20.1**	--	**6.97** J	**8.90** J	**64.7**
	08/11/21	**12,700**	**663**	--	--	--	10.0 U	10.0 U	--	**1,780**	**74.1**	--	**7.40** J	**505**	**247**	**15.3**	--	10.0 U	**6.37** J	**37.5**
	01/04/22	**2,710**	**37.4**	**4.39**	**3.49**	**0.567** J	1.00 U	1.00 U	1.00 U	**116**	**20.4**	**1.17**	**3.37** C3	**51.0**	**60.8**	**2.15**	**40.4**	**0.396** J	**0.914** J	**7.19**
MW-2	10/03/18	**34,500**	**2,320**	5.00 U	5.00 U	5.00 U	5.00 U	5.00 U	--	**1,690**	**89.6**	**21.7**	**26.0**	**465**	**277**	**52.3**	--	**1,650**	**370**	**3,180**
	11/15/19	**7,000**	**416**	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	--	**290**	**36.3**	10.0 U	**14.1**	**80.7**	**72.0**	**11.1**	--	**207**	**49.6**	**335**
	06/25/20	**6,160**	**625**	--	--	--	0.126 U	0.0819 U	--	**375**	**61.5**	--	**13.4**	**70.8**	**103**	**9.56**	--	**72.4**	**51.2**	**347**
	08/11/21	**2,580**	**119**	--	--	--	10.0 U	10.0 U	--	**12.0**	**37.1**	--	**12.0**	**33.1** J	**68.3**	**4.81** J	--	10 U	**10.9**	**15.1** J
	01/04/22	**2,720**	**134**	**4.36**	**3.92**	1.00 U	1.00 U	1.00 U	1.00 U	**53.5**	**32.8**	**0.640** J	**7.53** C3	**17.5**	**76.6**	**7.58**	**16.8**	**14.6**	**15.8**	**40.9**
MW-3	10/03/18	**148** B, J	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	--	0.500 U	0.500 U	0.500 U	**1.30**	2.50 U	0.500 U	0.500 U		0.500 U	0.500 U	1.50 U
	11/15/19	**370**	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	--	1.00 U	**4.19**	1.00 U	**6.68**	5.00 U	**1.23**	1.00 U		1.00 U	1.00 U	3.00 U
	06/25/20	**634** B	0.09 U	--	--	--	0.126 U	**0.0930** J	--	**13.9**	**21.3**	--	**2.47**	**3.10** J	**25.9**	**0.643** J		**0.742** J	**1.67**	**2.99** J
	08/11/21	**603**	1.00 U	--	--	--	1.00 U	1.00 U	--	1.00 U	**11.4**	--	**9.01**	5.00 U	**17.6**	**0.716** U		1.00 U	**0.256** J	**1.60** J
	01/04/22	**224**	**0.218** J	1.00 U	1.00 U	1.00 U	1.00 U	1.00 U	**0.364** J	**0.311** J	**0.308** J	1.00 U	**1.15** C3	**1.77** J, B	**0.550** J	1.00 U	**0.360** J	1.00 U	**0.212** J	**0.662** J
MW-4	10/03/18	**6,080**	**133**	0.500 U	0.500 U	0.500 U	0.500 U	0.500 U	--	**168**	**18.7**	**3.99**	**6.45**	**33.0**	**65.0**	**82.1**	--	**167**	**56.1**	**757**
	11/15/19	**10,600**	**561**	25.0 U	25.0 U	25.0 U	25.0 U	25.0 U	--	**493**	**30.5**	25.0 U	25.0 U	**133**	**80.3**	**90.0**	--	**456**	**113**	**1,660**
	06/25/20	**17,000**	**1,060**	--	--	--	2.52 U	1.64 U	--	**1,190**	**44.3**	--	**2.66** J	**247**	**102**	**138**	--	**660**	**179**	**3,420**
	08/11/21	**10,500**	**634**	--	--	--	20.0 U	20.0 U	--	**991**	**51.2**	--	**2.82** J	**306**	**150**	**40.1**	--	**569**	**90.8**	**1,220**
	01/04/22	**21,200**	**289**	**4.09** J	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	**206**	**27.1**	**11.2**	**3.70** C3, J	**179**	**74.5**	**43.8**	**381**	**805**	**238**	**3,880**
MW-5	10/03/18	**6,010**	**167**	0.500 U	**14.3**	0.500 U	0.500 U	0.500 U	--	**88.2**	**49.0**	**2.25**	0.500 U	**14.9**	**184**	**9.37**	--	**16.0**	**5.84**	**16.0**
	11/15/19	**3,420**	**83.5**	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	--	**48.2**	**23.8**	10.0 U	10.0 U	50.0 U	**79.8**	10.0	--	**10.4**	10.0 U	30.0 U
	06/25/20	**3,150**	**38.3**	--	--	--	0.126 U	0.0819 U	--	**90.6**	**31.6**	--	0.101 U	**29.2**	**76.4**	**7.79**	--	**5.86**	**3.37**	**13.0**
	08/11/21	**4,870**	**55.8**	--	--	--	1.00 U	1.00 U	--	**170**	**53.0**	--	1.00 U	**51.5**	**197**	**9.94**	--	**1.15**	**2.13**	**16.5**
	01/04/22	**1,800**	**3.52**	**11.8**	**12.8**	0.308 J	1.00 U	1.00 U	1.00 U	**2.40**	**12.1**	**1.16**	**9.40** C3	**1.19** J, B	**52.6**	**0.685** J	**0.873** J	1.00 U	**0.615** J	**2.07** J
MW-6	12/07/19	**23,700**	**796**	10.0 U	10.0 U	10.0 U	10.0 U	10.0 U	--	**1,980**	**129**	**18.0**	**12.8**	**268**	**345**	**71.7**	--	**926**	**273**	**2,390**
	06/25/20	**72,200**	**681**	--	--	--	0.6 U	0.4 U	--	**459**	**78.8**	--	**16.8**	**102**	**171**	**37.5**	--	**258**	**94.5**	**582**
	08/11/21	**4,340**	**380**	--	--	--	5.00 U	5.00 U	--	**71.4**	**26.7**	--	**16.0**	**30.2**	**72.6**	**32.0**	--	**38.6**	**20.7**	**55.6**
	01/04/22	**1,670**	**169**	**1.65**	**1.51**	1.00 U	1.00 U	1.00 U	1.00 U	**26.0**	**11.1**	**0.466** J	**7.85** C3	**8.96** B	**31.5**	**8.31**	**23.8**	**12.2**	**9.66**	**21.4**
MW-7	12/07/19	**5,920**	**151**	1.00 U	**7.96**	1.00 U	1.00 U	1.00 U	--	**216**	**59.7**	**5.34**	**9.97**	**113**	**168**	**12.6**	--	**67.7**	**63.4**	**185**
	06/25/20	**7,610**	**556**	--	--	--	0.630 U	0.409 U	--	**586**	**102**	--	**15.2**	**355**	**217**	**15.4**	--	**11.6**	**96.8**	**207**
	08/11/21	**5,180**	**170**	--	--	--	5.00 U	5.00 U	--	**102**	**95.9**	--	**13.2**	**47.8**	**227**	**16.8**	--	5.00 U	**16.1**	**24.5**
	01/04/22	**3,060**	**178**	**5.43**	**5.71**	**0.552** J	1.00 U	1.00 U	1.00 U	**70.3**	**42.8**	**0.755** J	**2.75** C3	**9.7** B	**202**	**6.26**	**23.0**	**0.437** J	**3.00**	**12.8**
MW-8	12/07/19	**8,290**	**1,520**	1.00 U	**8.68**	1.00 U	1.00 U	1.00 U	--	**263**	**80.6**	**6.17**	**8.35**	**95.5**	**199**	**35.1**	--	**249**	**86.8**	**530**
	06/25/20	**2,840**	**2,330**	--	--	--	3.15 U	2.05 U	--	**1,900**	**131**	--	**6.24** J	**381**	**297**	**91.4**	--	**1,310**	**441**	**5,020**
	08/11/21	**15,700**	**1,560**	--	--	--	25.0 U	25.0 U	--	**408**	**77.5**	--	**6.73** J	**214**	**225**	**42.2**	--	**1,000**	**313**	**1,560**
	01/04/22	**17,200**	**2,750**	**10.5**	**7.92**	1.00 U	1.00 U	1.00 U	1.00 U	**408**	**64.0**	**15.5**	**7.41** C3	**163**	**326**	**30.0**	**444**	**1,320**	**196**	**1,620**
PAS-2	12/07/19	**8,160**	**102**	**124**	**7.07**	**1.22**	1.00 U	1.00 U	--	**122**	**109**	1.00 U	**10.4**	**13.9**	**163**	**16.0**	--	10.0 U	**28.8**	**49.0**
DEQ Generic RBCs[1]																				
Volatilization to Outdoor Air																				
Occupational		>S	14,000	NE	NE	NE	790	9,000	>S	43,000	>S	NE	1,500,000	16,000	NE	>S	NE	>S	>S	>S
Vapor Intrusion into Buildings																				
Occupational		>S	2,800	NE	NE	NE	590	3,900	>S	8,200	>S	NE	870,000	11,000	NE	>S	NE	>S	>S	>S
Groundwater in Excavation																				
Construction/Excavation Worker		14,000	1,800	NE	NE	NE	27	630	18,000	4,500	51,000	NE	63,000	500	NE	220,000	NE	6,300	7,500	23,000

Notes:
1. DEQ Generic RBCs dated May 2018
B: The same analyte is found in the associated blank.
C3: The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
J: The result is an estimated quantity.
NE: not established
>S: This groundwater RBC exceeds the solubility limit. Refer to Appendix D of DEQ's RBDM guidance document for the corresponding value of S. Groundwater concentrations in excess of S indicate that free product may be present.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs.
--: not analyzed

TABLE 6
Summary of Sub-Slab Vapor Sample Chemical Analytical Results
Gasoline-Range Hydrocarbons and VOCs
Former Astoria Warehousing Site
Astoria, Oregon

Sample I.D.	Sample Date	Gasoline-Range Hydrocarbons EPA Method TO-03/15 (µg/m³)	VOCs[1] EPA Method TO-15 (µg/m³)										
			Benzene	Ethylbenzene	iso-Propylbenzene	Naphthalene	2-Propanol	Styrene	Toluene	1,2,4-TMB	1,3,5-TMB	m,p-Xylene	o-Xylene
VP-1	09/24/18	**18,000**	**79**	**360**	**30**	**43**	17 U	6.4 U	**6.4**	**690**	**150**	**640**	
	06/28/19	32,000 U	2.3 U	2.3 U	2.3 U	2.3 U	9.4 U	2.4 U	**4.9**	2.4 U	2.4 U	4.9 U	2.4 U
	12/17/20	500 U	3.9 U	5.3 U	6.0 U	–	**56**	5.2 U	4.6 U	6.0 U	6.0 U	5.3 U	5.3 U
	08/11/21	**2,610**	0.639 U	0.867 U	0.983 U	3.30 U	**6.59**	0.851 U	1.88 U	**4.06**	**1.12**	**1.78**	0.867 U
VP-2	09/24/18	**27,000**	**100**	**510**	**43**	**130**	17 U	6.0 U	**6.4**	**1,300**	**260**	**893**	
	06/28/19	33,000 U	2.4 U	2.4 U	2.4 U	2.3 U	**14**	2.4 U	**3.9**	2.4 U	2.4 U	5.0 U	2.4 U
	12/17/20	480 U	3.7 U	5.0 U	5.7 U	–	11 U	5.0 U	4.4 U	5.7 U	5.7 U	5.0 U	5.0 U
	08/11/21	826 U	0.639 U	0.867 U	0.983 U	3.30 U	**5.97**	0.851 U	1.88 U	**2.80**	**1.01**	1.73 U	0.867 U
VP-3	09/24/18	**61,000,000**	**650,000**	**210,000**	7,500 U	32,000 U	3.9 U	1.3 U	**5,800** CN, J	**20,000**	**11,000**	**267,000**	
	06/28/19	**58,000,000**	**530,000**	**67,000**	9,500 U	9,100 U	38,000 U	9,500 U	9,500 U	**13,000**	9,500 U	**120,000**	9,500 U
	12/17/20	**57,000,000**	**470,000**	**210,000**	**5,900**	--	6,400 U	2,800 U	**2,700**	**62,000**	**25,000**	**240,000**	**4,400**
	08/11/21	**24,400**	**130**	**67.6**	**10.2**	3.30 U	3.07 U	0.851 U	**3.44**	**395**	**154**	**156**	**6.46**
VP-4	09/24/18	**4,900,000**	**1,800**	**1,600**	380 U	1,600 U	750 U	320 U	290 U	**920**	**470**	**1,400**	
	06/28/19	**1,200,000**	130 U	130 U	130	130 U	520 U	130 U	130 U	130 U	130 U	270 U	130 U
	12/17/20	**6,100,000**	830 U	1,100 U	1,300 U	--	2,600 U	1,100 U	980 U	1,300 U	1,300 U	1,100 U	1,100 U
	08/11/21	**6,570**	**1.70**	0.867 U	0.983 U	3.3 U	**6.00**	0.851 U	1.88 U	**6.48**	**1.84**	1.73 U	0.867 U
DEQ Generic RBCs[2]													
Vapor Intrusion into Buildings													
Occupational		1,700,000	1,600	4,900	1,800,000	360	NE	4,400,000	21,900,000	260,000	260,000	440,000	

Notes:
1. Only VOCs detected with regulatory screening values are listed. For a complete listing of VOCs, refer to the laboratory report in Appendix C.
2. DEQ Generic RBCs dated May 2018
CN: High concentration of VOCs required an off-line dilution using a Tedlar bag. Toluene is a common contaminant in Tedlar bags and a CN-flag was applied to indicate a high bias.
J: The result is an estimated quantity.
NE: not established
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.
Shading indicates analyte detection at a concentration greater than DEQ RBCs.
--: not analyzed

TABLE 7
SVE System Measurements
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Date	Time	Overall System							SVE-1		SVE-2		SVE-3	
		Total System Flow Rate[1] (cfm)	VFD (Hz/ percentage)	Vacuum (inHg)	Exhaust Temperature (°F)	Stack Temperature (°F)	Fresh Air Dilution (percent)	Pre-Treatment PID Measurement (ppm)	Flow Rate (cfm)	Vacuum (iow)	Flow Rate (cfm)	Vacuum (iow)	Flow Rate (cfm)	Vacuum (iow)
12/18/20	14:20	368	60/100	--	1,450	1,641	50	560	140	-24	148	-24	80	-24
	16:15	291	60/100	--	1,443	1,646	37	--	112	-30	109	-30	70	-30
	17:53	350	60/100	--	--	--	30	590	132	-38	136	-38	82	-38
12/19/20	9:20	571	60/100	--	1,447	1,643	7	640	228	-58	223	-60	120	-59
12/20/20	13:00	648	60/100	--	1,436	1,651	0	491	311	-62	205	-64	132	-63
12/21/20	8:30	587	60/100	--	1,432	1,653	0	544	259	-60	190	-63	138	-62
12/22/20	8:35	561	60/100	-6.5	1,424	1,647	0	492	285	-60	172	-62	104	-61
12/23/20	8:15	557	60/100	-5.5	1,423	1,648	0	502	275	-60	170	-62	112	-61
12/24/20	8:10	614	60/100	-6.0	1,424	1,649	0	518	303	-59	206	-61	105	-60
12/01/20	17:30	588	60/100	-6.5	1,414	1,650	0	491	280	-58	200	-61	108	-60
12/27/20	17:15	557	60/100	-6.0	1,409	1,647	0	458	262	-59	170	-61	125	-60
12/28/20	8:15	585	60/100	-6.0	1,409	1,647	0	460	280	-58	195	-60	110	-59
12/29/20	8:30	595	60/100	-5.5	1,407	1,647	0	453	280	-58	206	-60	109	-59
12/30/20	8:15	553	60/100	-6.0	1,404	1,646	0	454	270	-58	170	-61	113	-59
01/07/21	8:15	581	60/100	-5.5	1,400	1,648	0	343	270	-62	196	-62	115	-64
01/14/21	9:35	616	47/78	-2.5	1,351	1,628	0	283	306	-64	215	-64	95	-62
02/11/21	13:45	491	50/84	-3.0	1,421	1,656	0	437	200	-50	187	-50	104	-50
03/01/21	15:30	568	50/84	-5.0	1,426	1,652	0	459	264	-49	213	-52	92	-50
04/01/21	9:45	482	60/100	-6.0	1,389	1,641	0	151	228	-62	136	-64	118	-66
05/04/21	14:30	555	60/100	-5.0	1,391	1,643	0	399	280	-64	167	-65	108	-67
08/10/21	16:00	645	60/100	-5.0	1,385	1,645	0	350	332	-59	203	-60	110	-62
08/26/21	9:30	577	60/100	-5.0	1,376	1,645	0	150	281	-58	192	-60	104	-59
Average (excluding 12/18/20)		585	--	-5	1,409	1,647	--	440	273	-59	190	-61	112	-60

Notes:
1. Total system flow rate calculated as the sum of individual SVE leg flow rates.
--: not measured or calculated

TABLE 8
Vacuum Response Data
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Date	Time	Vacuum Pressure (iow)							
		OSVE-1	OSVE-2	OSVE-3	OSVE-4	VP-1	VP-2	VP-3	VP-4
12/18/20	BASELINE	-0.013	-0.014	-0.022	-0.015	-0.001	-0.001	-0.008	0.000
12/18/20	14:44	-5.74	-4.49	-4.532	-3.79	NM	NM	NM	NM
	16:10	-6.52	-5.05	-5.15	-4.23	-0.02	-0.03	-3.82	NM
	17:50	-6.15	-7.86	-6.27	-5.28	NM	NM	-4.65	NM
12/19/20	9:30	-12.03	-9.24	-9.31	-7.55	NM	NM	-7.11	NM
12/20/20	13:00	-12.95	-9.87	-9.75	-7.82	NM	NM	-7.27	NM
12/21/20	8:25	-13.05	-9.75	-9.55	-7.58	NM	-0.13	-9.16	NM
12/22/20	8:20	-13.00	-9.87	-9.70	-7.63	NM	-0.11	-7.15	NM
12/23/20	8:25	-13.20	-9.71	-9.56	-7.84	NM	-0.12	-6.96	NM
12/24/20	8:25	-12.96	-9.41	-9.20	-7.22	NM	-0.08	-6.78	NM
12/01/20	17:45	-13.17	-9.44	-9.30	-7.26	NM	-0.09	-6.82	NM
12/27/20	17:40	-13.27	-9.49	-9.32	-7.30	NM	-0.10	-6.80	NM
12/28/20	8:25	-13.20	-9.42	-9.27	-7.20	NM	-0.10	-6.75	NM
12/29/20	8:45	-13.08	-9.25	-9.17	-7.14	NM	-0.11	-6.71	NM
12/30/20	8:30	-13.22	-9.36	-9.26	-7.22	NM	-0.12	-6.80	NM
01/07/21	8:30	-13.62	-9.97	-9.70	-7.66	NM	-0.11	-7.13	NM
01/14/21	9:45	-13.91	-10.23	-10.02	-7.85	NM	-0.09	-7.33	NM
02/11/21	13:50	-11.46	-8.54	-8.21	-6.51	NM	NM	NM	NM
03/01/21	16:45	-11.93	-9.05	-8.46	-6.44	0.00	0.00	-6.21	-0.10
04/01/21	14:30	-14.44	-11.30	-10.09	-7.71	0.00	-0.014	-7.37	NM
05/04/21	13:30	-14.19	-11.21	-9.84	-7.27	0.004	-0.006	-7.23	NM
08/10/21	17:45	-12.79	-9.90	-8.53	-6.24	-0.004	-0.01	-6.14	-0.9
08/26/21	8:45	-12.74	-9.77	-8.48	-6.01	-0.003	-0.01	-5.84	-0.093
Average (excluding 12/18/20)		-13.13	-9.62	-9.47	-7.48	NC	-0.08	-7.04	NC

Notes:
NC: not calculated
NM: not measured

TABLE 9
SVE System Condition
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Date	System Operation	Comments
12/18/20	Normal	None
12/19/20	Normal	None
12/20/20	Normal	None
12/21/20	Normal	None
12/22/20	Normal	None
12/23/20	Normal	None
12/24/20	Normal	None
12/01/20	Normal	None
12/27/20	Normal	None
12/28/20	Normal	None
12/29/20	Normal	None
12/30/20	Normal	None
01/07/21	Normal	None
01/14/21	Normal	Significant water in knockout pot from recent storm event. Water drained.
02/11/21	Normal	System turned back on after alarms.
03/01/21	Normal	VFD turned to 100% after taking measurments
04/01/21	Normal	Drained ~ 30 gallons water from knockout pot
05/04/21	Normal	None
08/10/21	Normal	None; System turned off to perform annual monitoring
08/11/21	Normal	System Restarted @ 2135 after sub-slab sampling
08/26/21	Normal	None
12/01/21	System Off	Approximtate Date of Solenoid Gas Valve Malfunction
12/13/21	Cycle	Cycle system - Ran for two hours
12/14/21	Cycle	Cycle system - Ran for several minutes
01/11/22	Cycle	Cycle system - Ran for several minutes
01/13/22	Cycle	Cycle system - Ran for several minutes
01/21/22	Cycle	Cycle system - Ran for several minutes
01/25/22	Cycle	Cycle system - Ran for several minutes
01/28/22	Cycle	Cycle system - Ran for several minutes
02/01/22	Cycle	Cycle system - Ran for several minutes
02/04/22	Cycle	Cycle system - Ran for several minutes
02/07/22	Cycle	Cycle system - Ran for several minutes

Notes:
Periodic blower cycling is ongoing following the 02/07/22 date entry.

TABLE 10
Summary of Effluent Vapor Sample Chemical Analytical Results
Gasoline-Range Hydrocarbons and VOCs
Former Astoria Warehousing Site
Astoria, Oregon

Sample I.D.	Sample Date	Gasoline-Range Hydrocarbons EPA Method TO-15 (µg/m³)	VOCs[1] EPA Method TO-15 (µg/m³)																										
			Acetone	Benzene	2-Butanone (MEK)	Carbon Disulfide	Chloromethane	Cyclohexane	Dichlorodifluoromethane	Trichlorofluoromethane	1,4-Dioxane	Ethanol	Ethylbenzene	4-Ethyltoluene	Heptane	n-Hexane	iso-Propylbenzene	Methylene Chloride (Dichloromethane)	Naphthalene	2-Propanol	Propene	Toluene	TCE	1,2,4-TMB	1,3,5-TMB	2,2,4-Trimethylpentane	m,p-Xylene	o-Xylene
Pre-Treatment Samples																													
PRE(121820)	12/18/20	**3,410,000**	**585**	**52,400**	295 U	49.8 U	33.0	**95,000**	79.1 U	89.9 U	57.7 U	**1,960**	**34,500**	**5,550**	**131,000**	**338,000**	**1,650**	55.6 U	264 U	**1,740**	**72.7**	**866**	85.7 U	**11,300**	**3,570**	**182,000**	**38,600**	**2,040**
PRE(122020)	12/20/20	**4,210,000**	**554**	**42,800**	295 U	49.8 U	33.0	**66,100**	79.1 U	89.9 U	63.4 U	**871**	**70,200**	**15,600**	**126,000**	**184,000**	**4,250**	55.6 U	264 U	**1,210**	**90.2** B	**1,440**	85.7 U	**30,200**	**7,850**	**144,000**	**78,500**	**4,510**
PRE(122720)	12/27/20	**1,650,000**	**366**	**13,400**	295 U	49.8 U	33.0	**17,900**	79.1 U	89.9 U	57.7 U	**338**	**30,300**	**10,500**	**60,500**	**77,900**	**2,600**	55.6 U	264 U	**1,050**	**55.8** B	**738**	85.7 U	**18,700**	**5,600**	**71,900**	**33,900**	**2,870**
PRE(011521)	01/15/21	**351,000**	**30.9**	**2,640**	3.69 U	0.622 U	0.413 U	**6,890**	**2.54**	**1.42**	0.721 U	**36.6**	**7,020**	**1,920**	**13,100**	**14,700**	**484** J4	0.694 U	**161**	**17.9**	**7.30**	**321**	1.07 U	**3,690**	**1,220**	**16,800**	**11,100**	**1,020**
PRE(030121)	03/01/21	**1,200,000**	**70.8**	**6,800**	73.7 U	12.4 U	8.26 U	**17,200**	34.0 U	22.5 U	14.4 U	**132**	**24,700**	**6,920**	**40,000**	**30,400**	**1610**	13.9 U	**165**	61.5 U	**14.8** B	**561**	21.4 U	**11,600**	**5,060**	**53,700**	**33,400**	**2,940**
PRE(040121)	04/01/21	**781,000**	**35.9**	**2,230**	36.9 U	6.22 U	4.13 U	**9,090**	9.89 U	11.2 U	14.4 U	**315**	**19,400**	**5,740**	**22,500**	**18,700**	**1880**	6.94 U	**505**	30.7 U	6.89 U	**273**	21.4 U	**13,800**	**4,380**	9.34 U	**26,000**	**2,700**
PRE(050421)	05/04/21	**189,000**	59.4 U	**645**	73.7 U	12.4 U	8.26 U	**3,110**	19.8 U	22.5 U	14.4 U	**180**	**3,920**	**1,020**	**5,560**	**6,200**	**273**	13.9 U	66.0 U	61.5 U	43.0 U	**65.2**	21.4 U	**1,950**	**692**	**8,880**	**5,590**	**398**
PRE(081021)	08/10/21	**512,000**	**20.7**	**629**	3.69 U	0.622 U	**0.651**	**4,920**	**2.12**	**1.19**	0.721 U	**677**	**9,060**	**134**	**5,930**	**8,710**	**1,070**	0.694 U	3.30 U	**27.8**	**6.72**	**123**	1.07 U	**30.9**	**153**	**14,200**	**16,200**	**1,460**
Post-Treatment Sample																													
POST(011521)	01/15/21	**851**	**11.5**	0.639 U	3.69 U	**1.62**	0.413 U	0.689 U	0.989 U	1.12 U	0.721 U	1.190 U	0.867 U	**1.65**	0.818 U	2.22 U	0.983 U	**7.15**	3.30 U	3.07 U	0.689 U	**3.35**	1.07 U	**1.90**	0.982 U	0.934 U	**2.86**	**1.39**
POST(030121)	03/01/21	826 U	**67.0**	**1.09**	**10.4**	0.622 U	**0.789**	0.689 U	**1.62**	1.12 U	14.4 U	**192** E	**2.74**	**1.65**	0.818 U	2.22 U	0.983 U	**0.924**	3.30 U	**248** E	0.689 U	**7.68**	21.4 U	**14.5**	**5.10**	**4.18**	**20.0**	**5.25**
POST(040121)	04/01/21	826 U	**17.5**	**9.97**	3.69 U	0.622 U	0.528 U	**2.69**	**1.17**	1.12 U	0.721 U	**439** E, J3	**1.43**	0.982 U	**1.54**	**7.62**	0.983 U	**3.23**	3.30 U	**21.6**	0.689 U	**11.6**	1.07 U	**1.10**	0.982 U	**2.60**	**2.72**	0.867 U
POST(050421)	05/04/21	**901**	**26.9**	**0.872**	**5.16**	0.622 U	**1.48**	**2.21**	**1.47**	1.12 U	**0.912**	**46.4**	**4.09**	**2.35**	**4.21**	**5.82**	0.983 U	**5.73**	3.30 U	**17.5**	2.15 U	**2.11**	**1.36**	**3.93**	**1.30**	**68.2**	**7.07**	**1.52**
POST(081021)	08/10/21	**2,900**	**22.7**	0.639 U	3.69 U	0.622 U	0.413 U	0.689 U	0.989 U	1.12 U	0.721 U	**17.2**	**49.0**	**21.3**	**30.7**	**36.0**	0.983 U	0.694 U	3.30 U	**12.3**	2.15 U	1.88 U	1.07 U	**49.6**	**15.0**	**67.3**	**96.2**	**10.1**

Notes:
1. Only VOCs detected are listed. For a complete listing of VOCs, refer to the laboratory report in Appendix C.
2. DEQ Generic RBCs dated May 2018

B: The same analyte is found in the associated blank.
E: The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J3: The associated batch QC was outside the established QC range for precision.
J4: The associated batch QC was outside the established quality control range for accuracy.
U: Not detected. Reporting or detection limit shown.
Bolding indicates analyte detection.

TABLE 11
Estimation of Contaminant Mass Removal
Former Astoria Warehousing Site
70 West Marine Drive
Astoria, Oregon

Sample I.D.	Sample Date and Time	Interval Run Duration (minutes)	Total Run Duration (minutes)	Total Average Flow Rate (cfm)	Vapor Discharge Samples (µg/m³)		Contaminant Mass Removed for Interval (pounds)		Contaminant Mass Removal Rate for Interval (pounds per day)	
					Gasoline-Range Hydrocarbons	Benzene	Gasoline-Range Hydrocarbons	Benzene	Gasoline-Range Hydrocarbons	Benzene
PRE(121820)	12/18/20 15:09	189	189	586	3,410,000	52,400	23.6	0.36	179.5	2.76
PRE(122020)	12/20/20 13:32	2,783	2,972	586	4,210,000	42,800	428.4	4.36	221.7	2.25
PRE(122720)	12/27/20 17:22	10,310	13,282	586	1,650,000	13,400	622.0	5.05	86.9	0.71
PRE(011521)	1/15/21 12:44	27,082	40,364	586	351,000	2,640	347.6	2.61	18.5	0.14
PRE(030121)	3/1/21 16:24	39,100	79,464	586	1,200,000	6,800	1715.6	9.72	63.2	0.36
PRE(040121)	4/1/21 12:00	44,376	123,840	572	781,000	2,230	1237.0	3.53	40.1	0.11
PRE(050421)	5/4/21 14:29	47,639	171,509	571	189,000	645	320.8	1.09	9.7	0.03
PRE(0810421)	8/10/21 16:40	139,716	311,195	575	512,000	629	2566.6	3.15	26.5	0.03
						Totals	***7,262***	***29.89***		

APPENDIX A

APPENDIX A

FIELD PROCEDURES

GROUNDWATER SAMPLING

Groundwater sampling was performed at monitoring wells MW-1 through MW-8 as follows:

- The well was opened by removing the steel cover and removing the locking cap. Well monument conditions were noted on the field log. The opened well was allowed to equilibrate for approximately five minutes.
- A depth-to-water measurement was collected and recorded on the field form. Measurements were collected using a decontaminated water level indicator with 0.01-foot graduations. The depth-to-water measurement was subtracted from the surveyed measuring point elevation to calculate groundwater elevation.
- The well was gently purged prior to sample collection using a peristaltic pump. The pump flow setting was selected to minimize drawdown in the well. Field parameters were recorded using a multi-parameter meter and flow cell every three to five minutes. Field parameters included temperature, dissolved oxygen, pH, electrical conductivity, and ORP. Stabilization using field parameter data was achieved in accordance with EPA guidance (EPA, 2017a).
- After stabilization, groundwater samples were collected and transferred into labeled, laboratory-prepared sample containers. Groundwater samples were placed into the appropriate containers for each respective analysis.
- Groundwater samples were placed in iced coolers for transport to the analytical laboratory. Groundwater sample information was recorded on the field log and COC forms.

INDOOR AIR SAMPLING

Indoor air samples Indoor-1 through Indoor-7 and a background ambient air sample were collected between August 12 and August 26, 2021. Each air sample consisted of a Radiello 130 passive air sampler and was deployed for 14 days. Each sample was collected at the approximate breathing level in areas of potential high occupancy and/or areas where previous vapor samples indicated high concentrations of COCs. The locations of the indoor air samples are shown on Figure 4. The start and end times, initial and final barometric pressures, and initial and final ambient temperatures were measured at each indoor air sample location.

SUB-SLAB VAPOR SAMPLING

Sub-slab vapor samples were collected from Vapor Pins® VP-1 through VP-4 as shown on Figure 2. Each sub-slab vapor sample was collected as follows:

- Accessed the Vapor Pins® previously installed at the subject property.
- Connected the laboratory-provided summa canister to the Vapor Pins® using new, expendable PFA tubing. New, expendable silicon tubing was used to secure the PFA tubing to the Vapor Pin®, ensuring the smallest amount of silicon tubing was used and that the PFA tubing was touching the Vapor Pin®.
- Each sampling point was allowed to equilibrate for at least 30 minutes prior to sampling.
- Vacuum-tested the sampling manifold by briefly introducing a vacuum to the closed sampling train (via purge canister) and checked for pressure losses.

- Installed a leak-check system in general accordance with DEQ's *Guidance for Assessing and Remediating Vapor Intrusion in Buildings,* dated March 25, 2010, at each sub-slab vapor sample location. Specifically, each leak-check system consisted of wrapping a cloth saturated with isopropyl alcohol (2-propanol) around the connection, fittings, and slab penetration.
- Purged at least 2 to 3 volumes of dead air from the sampling train and tubing using a calibrated hand-held PID prior to collecting each sample.
- Collected field measurements of the ambient air and vapor at each sampling location (from the purge line), including total VOCs (using a PID).
- Collected soil gas samples into laboratory-prepared, 1-liter summa canisters fitted with 0.7-micron filters and flow control devices (200 mL/min or less).
- Measured and recorded the initial and final vacuum pressures, ambient temperature, and barometric pressure of each of the summa canisters.
- Submitted each sub-slab vapor sample for chemical analysis of gasoline-range hydrocarbons by EPA Method TO-03/15 and VOCs by Method TO-15. Included the leak detection compound (2-propanol) in the analyte list to evaluate possible leaks and/or short-circuiting of the sampling equipment. Based on a review of the sub-slab vapor sample analytical results, the sampling equipment was sufficiently leak-free for purposes of this assessment.
- Maintained a field data sheet for each sub-slab vapor sample.

DECONTAMINATION

All sampling equipment used in the collection of samples was decontaminated prior to use. Decontamination was performed on all sample re-usable processing equipment that came into contact with sampling media. Decontamination was performed prior to sampling each location using the following procedures:

1. Rinsed with tap water and scrubbed with a scrub brush until free of large particles (e.g., sediment or soil).
2. Washed with phosphate-free (Alconox™) detergent solution.
3. Rinsed with tap water.
4. Rinsed with distilled water.

IDW MANAGEMENT

IDW generated from groundwater sampling (purged groundwater) was placed into 55-gallon drums and temporarily stored onsite for future characterization and disposal.

APPENDIX B

APPENDIX B

SUBJECT PROPERTY PHOTOGRAPHS

DRAFT

BOOM INSTALLED AT STORMWATER OUTFALL PIPE. PHOTOGRAPH TAKEN MARCH 2, 2021, FACING NORTHWEST.

BOOM INSTALLED AT STORMWATER OUTFALL PIPE. PHOTOGRAPH TAKEN MARCH 2, 2021, FACING SOUTH.

NV5	BIGBEAMS-1-04-05	**SUBJECT PROPERTY PHOTOGRAPHS**	
	MARCH 2022	FORMER ASTORIA WAREHOUSING SITE ASTORIA, OR	**FIGURE B-1**

DRAFT

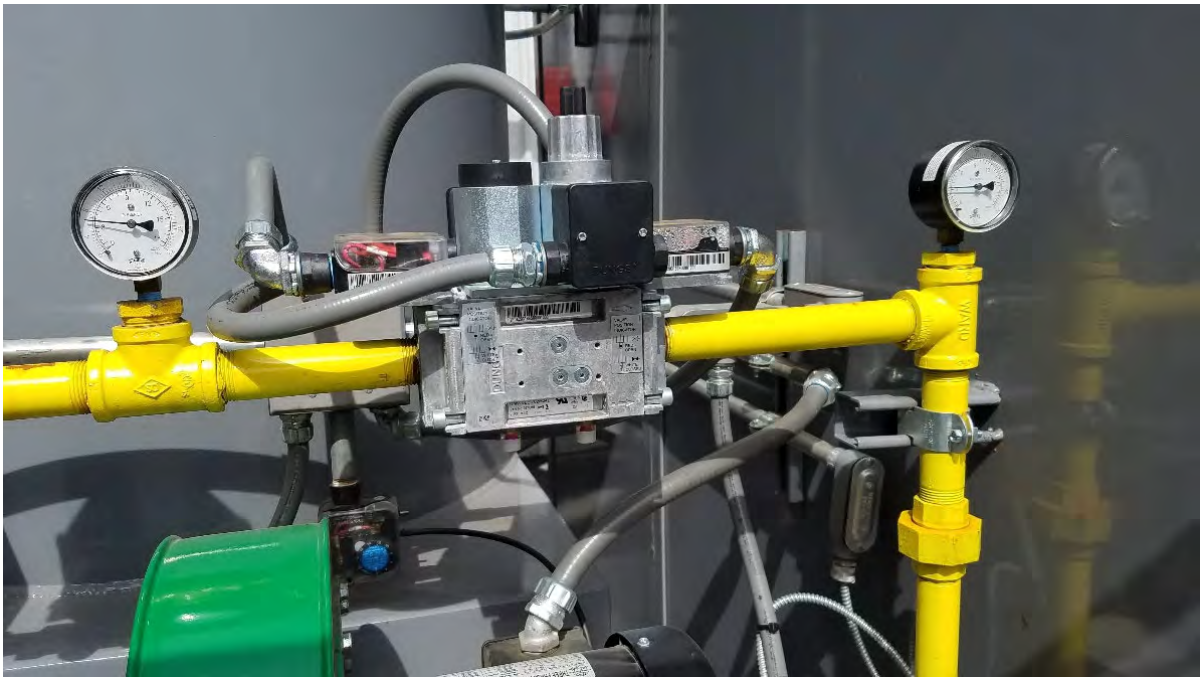
SHEEN OBSERVED IN STORMWATER PIPE EFFLUENT. PHOTOGRAPH TAKEN MARCH 2, 2021.

SHEEN OBSERVED IN STORMWATER PIPE EFFLUENT. PHOTOGRAPH TAKEN MARCH 2, 2021.

NV5	BIGBEAMS-1-04-05	**SUBJECT PROPERTY PHOTOGRAPHS**	
	MARCH 2022	FORMER ASTORIA WAREHOUSING SITE ASTORIA, OR	**FIGURE B-2**

DRAFT

TYPICAL GROUNDWATER SEEP/SHEEN. PHOTOGRAPH TAKEN APRIL 1, 2021, EAST OF SUBJECT PROPERTY SHOP LOCATION.



GAS SOLENOID VALVE ON SVE SYSTEM.

BigBeams-1-04-05-FB1_B6-SPH.docx Print Date: 3/17/22

NV5	BIGBEAMS-1-04-05	**SUBJECT PROPERTY PHOTOGRAPHS**	
	MARCH 2022	FORMER ASTORIA WAREHOUSING SITE ASTORIA, OR	**FIGURE B-3**

DRAFT

SORBENT SOCK INSTALLED IN MONITORING WELL MW-8. PHOTOGRAPH TAKEN MAY 4, 2021.

SUB-SLAB VAPOR SAMPLING. PHOTOGRAPH TAKEN AUGUST 11, 2021.

NV5	BIGBEAMS-1-04-05	**SUBJECT PROPERTY PHOTOGRAPHS**	
	MARCH 2022	FORMER ASTORIA WAREHOUSING SITE ASTORIA, OR	**FIGURE B-4**

DRAFT

INDOOR AIR SAMPLING. PHOTOGRAPH TAKEN AUGUST 2, 2021.

SVE SYSTEM CONTROL PANEL. PHOTOGRAPH TAKEN AUGUST 26, 2021.

N|V|5	BIGBEAMS-1-04-05	**SUBJECT PROPERTY PHOTOGRAPHS**	
	MARCH 2022	FORMER ASTORIA WAREHOUSING SITE ASTORIA, OR	**FIGURE B-5**

Subject_Property_Photos-portrait_landscape.docx Print Date: 3/17/22

DRAFT

TYPICAL GROUNDWATER SEEP/SHEEN. PHOTOGRAPH TAKEN AUGUST 26, 2021, NORTHEAST OF SUBJECT PROPERTY SHOP LOCATION.

RIVERBANK CONDITIONS EAST OF SUBJECT PROPERTY LOCATION. PHOTOGRAPH TAKEN JANUARY 5, 2022, FACING NORTH.

NV5	BIGBEAMS-1-04-05	**SUBJECT PROPERTY PHOTOGRAPHS**	
	MARCH 2022	FORMER ASTORIA WAREHOUSING SITE ASTORIA, OR	**FIGURE B-6**

APPENDIX C

APPENDIX C

CHEMICAL ANALYTICAL PROGRAM

GENERAL

Chain-of-custody procedures were followed during handling and transport of the air, groundwater, and sub-slab vapor samples to the analytical laboratory. The laboratory holds the samples in cold storage pending extraction and/or analysis. The analytical results, analytical methods reference, and laboratory QC records are included in this appendix. The analytical results also are summarized in the tables of this report.

REVIEW OF ANALYTICAL DATA

The analytical laboratories used for this project maintain an internal quality assurance programs consisting of a combination of the following:

Blanks: Blanks are laboratory-prepared water samples that are free of contaminants. The blanks are carried through the analysis procedure along with the field samples to document that contaminants were not introduced to the samples during sample handling and analysis.

Surrogate Recoveries: Surrogates are organic compounds that are similar in nature to the analytes of concern but are not normally found in nature. The surrogates are added to QC and field samples prior to analysis. The percent recovery of the surrogate is calculated to demonstrate acceptable method performance.

Duplicates: Duplicates are obtained by splitting a sample into two parts. The two separate parts are carried through the analyses. The analytical results are then compared by calculating the RPD between the samples.

MS/MSD Recoveries: An MS sample is a sample that has been split into a second portion. The MSD is obtained by further splitting the MS sample. A known concentration of the analyte of interest is added to the MS and MSD samples. The analytical results for both samples are then compared for RPD and percent recovery to demonstrate acceptable method performance.

BS/BSD Recoveries: BS and BSD samples are obtained and analyzed in the same procedure as the MS/MSD samples; however, the laboratory blank sample is used to obtain the BS/BSD samples. The percent recovery and RPD of the known concentration of analyte of interest added to the BS/BSD sample is calculated after chemical analyses to demonstrate acceptable method performance.

SUMMARY OF ANALYTICAL DATA REVIEW

NV5 reviewed the attached analytical data reports for data quality exceptions and deviations from acceptable method performance criteria. Based on our review of the analytical reports, the analytical data appear acceptable for their intended use.

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9/10/2021
Mr. Steven Vandecoevering
NV5, Inc. Company
9450 SW Commerce Circle
Suite 300
Wilsonville OR 97070

Project Name: Former Astoria Warehousing
Project #: BigBeams-1-04-05
Workorder #: 2108629

Dear Mr. Steven Vandecoevering

The following report includes the data for the above referenced project for sample(s) received on 8/27/2021 at Eurofins Air Toxics LLC.

The data and associated QC analyzed by Passive S.E. RAD130/SKC are compliant with the project requirements or laboratory criteria with the exception of the deviations noted in the attached case narrative.

Thank you for choosing Eurofins Air Toxics LLC. for your air analysis needs. Eurofins Air Toxics Inc. is committed to providing accurate data of the highest quality. Please feel free to contact the Project Manager: Monica Tran at 916-985-1000 if you have any questions regarding the data in this report.

Regards,

Monica Tran

Project Manager

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WORK ORDER #: 2108629

Work Order Summary

CLIENT:	Mr. Steven Vandecoevering NV5, Inc. Company 9450 SW Commerce Circle Suite 300 Wilsonville, OR 97070	**BILL TO:**	Mr. Steven Vandecoevering NV5, Inc. Company 9450 SW Commerce Circle Suite 300 Wilsonville, OR 97070
PHONE:	503-968-8787	**P.O. #**	BigBeams-1-04
FAX:		**PROJECT #**	BigBeams-1-04-05 Former Astoria Warehousing
DATE RECEIVED:	08/27/2021	**CONTACT:**	Monica Tran
DATE COMPLETED:	09/10/2021		

FRACTION #	NAME	TEST
01A	Indoor-1	Passive S.E. RAD130/SKC
02A	Indoor-2	Passive S.E. RAD130/SKC
03A	Indoor-3	Passive S.E. RAD130/SKC
04A	Indoor-4	Passive S.E. RAD130/SKC
05A	Indoor-5	Passive S.E. RAD130/SKC
06A	Indoor-6	Passive S.E. RAD130/SKC
07A	Indoor-7	Passive S.E. RAD130/SKC
08A	Background	Passive S.E. RAD130/SKC
09A	Lab Blank	Passive S.E. RAD130/SKC
10A	CCV	Passive S.E. RAD130/SKC
11A	LCS	Passive S.E. RAD130/SKC
11AA	LCSD	Passive S.E. RAD130/SKC

CERTIFIED BY: Heidi Hayes DATE: 09/10/21

Technical Director

Certification numbers: AZ Licensure AZ0775, FL NELAP – E87680, LA NELAP – 02089, NH NELAP - 209220, NJ NELAP - CA016, NY NELAP - 11291, TX NELAP - T104704434-20-16, UT NELAP – CA009332020-12, VA NELAP - 10615, WA NELAP - C935
Name of Accreditation Body: NELAP/ORELAP (Oregon Environmental Laboratory Accreditation Program)
Accreditation number: CA300005-014, Effective date: 10/18/2020, Expiration date: 10/17/2021.
Eurofins Air Toxics, LLC certifies that the test results contained in this report meet all requirements of the NELAC standards

180 BLUE RAVINE ROAD, SUITE B FOLSOM, CA - 95630
(916) 985-1000 . (800) 985-5955 . FAX (916) 351-8279

LABORATORY NARRATIVE
RAD130 Passive SE by Mod EPA TO-17
NV5, Inc. Company
Workorder# 2108629

Eight Radiello 130 (Solvent) samples were received on August 27, 2021. The laboratory analyzed the charcoal sorbent bed of the passive sampler following modified method EPA TO-17. The VOCs were chemically extracted using carbon disulfide and an aliquot of the extract was injected into a GC/MS for identification and quantification of volatile organic compounds (VOCs).

The mass of each target compound adsorbed by the sampler was converted to units of concentration using the sample deployment time and the sampling rate for each VOC. If sampling rates were calculated by the lab or the manufacturer, the concentration result has been flagged as an estimated value. Results are not corrected for desorption efficiency.

The reference method used for this procedure is EPA TO-17, which describes the collection of VOCs in ambient air using sorbents and analysis by GC/MS. Because TO-17 describes active sample collection using a pump and thermal desorption as the preparation step, several modifications are required. Modifications to TO-17 are listed in the table below:

Requirement	***TO-17***	***ATL Modifications***
Sample Collection	Pump pulls measured air volume through sorbent tube	VOCs in air adsorbed onto sorbent bed passively through diffusion
Sample Preparation	Thermal extraction	Solvent extraction
Sorbent tube conditioning	Condition newly packed tubes prior to use	Charcoal-based sorbent is a single use media and conditioning is conducted by vendor.
Instrumentation	Thermal desorption introduction system	Liquid injection introduction system
Internal Standard	Gas-phase internal standard introduced on the tube or focusing trap during analysis	Liquid-phase internal standard introduced on the tube at the time of extraction
Media and sample storage	<4 deg C, 30 days	Media shelf life is determined by vendor; sample hold-time is 6 months for the RAD130 and WMS. Sample preservation requirements are storage in a cool, solvent-free refrigerator and optional use of ice during shipping.
Internal Standard Recovery	+/-40% of daily CCV area	-50% to +100% of daily CCV area

Receiving Notes

There were no receiving discrepancies.

Analytical Notes

The glass stoppered storage vial containing the charcoal cartridge for sample Indoor-2 was found to be chipped upon inspection at the time of sample extraction. The chip in the base of the storage vial may

have allowed the ingress of air during transport to the laboratory and sample storage. The client was notified and detected results were qualified with a J flag to indicate estimated concentration.

The uptake rates were corrected based on average field temperatures if provided. In the absence of field temperatures, the uptake rates determined at 25 deg C were used.

To calculate ug/m3 concentrations in the Lab Blank, a sampling duration of 20116 minutes was applied. The assumed temperature used for the uptake rate is listed on the data page. If the field temperatures were provided, the rate was adjusted in the same manner as the field samples.

Definition of Data Qualifying Flags

Ten qualifiers may have been used on the data analysis sheets and indicate as follows:

B - Compound present in laboratory blank greater than reporting limit (background subtraction not performed).

J - Estimated value.

E - Exceeds instrument calibration range.

S - Saturated peak.

Q - Exceeds quality control limits.

U - Compound analyzed for but not detected above the reporting limit.

UJ- Non-detected compound associated with low bias in the CCV

N - The identification is based on presumptive evidence.

C - Estimated concentration due to calculated sampling rate

CN - See case narrative explanation.

File extensions may have been used on the data analysis sheets and indicates as follows:

a-File was requantified

b-File was quantified by a second column and detector

r1-File was requantified for the purpose of reissue

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Summary of Detected Compounds
VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: Indoor-1

Lab ID#: 2108629-01A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	270	130
Hexane	0.10	0.075	0.64	0.48
Ethyl Acetate	0.40	0.26	63	40
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	21	13
Chloroform	0.10	0.066	1.3	0.86
Cyclohexane	0.10	0.092	0.24	0.22
Carbon Tetrachloride	0.10	0.074	0.46	0.34
Benzene	0.40	0.25	0.59	0.37
Heptane	0.10	0.086	0.34	0.29
4-Methyl-2-pentanone	0.20	0.15	0.89	0.66
Toluene	0.10	0.067	1.8	1.2
Ethyl Benzene	0.10	0.073	0.83	0.60
m,p-Xylene	0.10	0.071	3.3	2.3
o-Xylene	0.10	0.076	1.1	0.86
Styrene	0.10	0.082	0.25	0.20

Client Sample ID: Indoor-2

Lab ID#: 2108629-02A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	260 J	130 J
Hexane	0.10	0.075	0.57 J	0.43 J
Ethyl Acetate	0.40	0.26	52 J	33 J
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	20 J	12 J
Chloroform	0.10	0.066	1.1 J	0.73 J
Cyclohexane	0.10	0.092	0.21 J	0.20 J
Carbon Tetrachloride	0.10	0.074	0.40 J	0.29 J
Benzene	0.40	0.25	0.52 J	0.33 J
Heptane	0.10	0.086	0.31 J	0.27 J
4-Methyl-2-pentanone	0.20	0.15	0.74 J	0.55 J
Toluene	0.10	0.067	1.7 J	1.2 J
Ethyl Benzene	0.10	0.073	0.65 J	0.47 J
m,p-Xylene	0.10	0.071	2.4 J	1.7 J

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Summary of Detected Compounds
VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: Indoor-2

Lab ID#: 2108629-02A

o-Xylene	0.10	0.076	0.84 J	0.64 J
Styrene	0.10	0.082	0.21 J	0.17 J

Client Sample ID: Indoor-3

Lab ID#: 2108629-03A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	200	98
Hexane	0.10	0.075	0.56	0.42
Ethyl Acetate	0.40	0.26	58	37
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	16	10
Chloroform	0.10	0.066	0.98	0.65
Cyclohexane	0.10	0.092	0.18	0.16
Carbon Tetrachloride	0.10	0.074	0.29	0.22
Benzene	0.40	0.25	0.51	0.32
Heptane	0.10	0.086	0.34	0.29
4-Methyl-2-pentanone	0.20	0.15	1.0	0.77
Toluene	0.10	0.067	1.8	1.2
Ethyl Benzene	0.10	0.073	0.78	0.57
m,p-Xylene	0.10	0.071	3.1	2.2
o-Xylene	0.10	0.076	1.0	0.77
Styrene	0.10	0.082	0.24	0.20

Client Sample ID: Indoor-4

Lab ID#: 2108629-04A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	130	64
Hexane	0.10	0.075	0.53	0.40
Ethyl Acetate	0.40	0.26	52	33
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	15	9.2
Chloroform	0.10	0.066	0.66	0.44
Cyclohexane	0.10	0.092	0.13	0.12
Carbon Tetrachloride	0.10	0.074	0.22	0.17

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Summary of Detected Compounds
VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: Indoor-4

Lab ID#: 2108629-04A

Benzene	0.40	0.25	0.49	0.31
Heptane	0.10	0.086	0.35	0.30
4-Methyl-2-pentanone	0.20	0.15	1.0	0.74
Toluene	0.10	0.067	1.9	1.3
Ethyl Benzene	0.10	0.073	0.76	0.56
m,p-Xylene	0.10	0.071	3.1	2.2
o-Xylene	0.10	0.076	0.99	0.76
Styrene	0.10	0.082	0.24	0.20
Propylbenzene	0.10	0.087	0.10	0.090

Client Sample ID: Indoor-5

Lab ID#: 2108629-05A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	260	130
Hexane	0.10	0.075	0.48	0.36
Ethyl Acetate	0.40	0.25	99	63
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	13	8.4
Chloroform	0.10	0.066	0.92	0.61
Cyclohexane	0.10	0.092	0.21	0.19
Carbon Tetrachloride	0.10	0.074	0.37	0.27
Benzene	0.40	0.25	0.52	0.32
Heptane	0.10	0.086	0.34	0.29
4-Methyl-2-pentanone	0.20	0.15	1.4	1.1
Toluene	0.10	0.067	2.2	1.5
Ethyl Benzene	0.10	0.073	0.88	0.64
m,p-Xylene	0.10	0.071	3.6	2.6
o-Xylene	0.10	0.076	1.1	0.88
Styrene	0.10	0.081	0.26	0.22
Propylbenzene	0.10	0.087	0.11	0.095

Client Sample ID: Indoor-6

Lab ID#: 2108629-06A

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Summary of Detected Compounds
VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: Indoor-6

Lab ID#: 2108629-06A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	330	160
Hexane	0.10	0.075	0.60	0.45
Ethyl Acetate	0.40	0.26	100	64
2-Butanone (Methyl Ethyl Ketone)	0.20	0.13	20	13
Chloroform	0.10	0.066	0.95	0.63
Cyclohexane	0.10	0.092	0.17	0.16
Carbon Tetrachloride	0.10	0.074	0.29	0.21
Benzene	0.40	0.25	0.53	0.33
Heptane	0.10	0.086	0.34	0.30
4-Methyl-2-pentanone	0.20	0.15	1.6	1.2
Toluene	0.10	0.067	2.0	1.3
Ethyl Benzene	0.10	0.073	0.94	0.69
m,p-Xylene	0.10	0.071	4.0	2.8
o-Xylene	0.10	0.077	1.3	1.0
Styrene	0.10	0.082	0.27	0.22
Propylbenzene	0.10	0.087	0.14	0.12

Client Sample ID: Indoor-7

Lab ID#: 2108629-07A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	170	84
Hexane	0.10	0.075	0.52	0.40
Ethyl Acetate	0.40	0.26	60	38
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	14	8.7
Chloroform	0.10	0.066	0.94	0.62
Cyclohexane	0.10	0.092	0.16	0.15
Carbon Tetrachloride	0.10	0.074	0.30	0.22
Benzene	0.40	0.25	0.49	0.30
Heptane	0.10	0.086	0.30	0.26
4-Methyl-2-pentanone	0.20	0.15	0.94	0.70
Toluene	0.10	0.067	1.7	1.1
Ethyl Benzene	0.10	0.073	0.71	0.52

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Summary of Detected Compounds
VOCS BY PASSIVE SAMPLER - GC/MS

Client Sample ID: Indoor-7

Lab ID#: 2108629-07A

m,p-Xylene	0.10	0.071	2.8	2.0
o-Xylene	0.10	0.076	0.89	0.68
Styrene	0.10	0.082	0.20	0.16

Client Sample ID: Background

Lab ID#: 2108629-08A

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	8.4	4.1
Hexane	0.10	0.075	0.20	0.15
Ethyl Acetate	0.40	0.25	5.0	3.2
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	1.2	0.77
Cyclohexane	0.10	0.092	0.14	0.12
Carbon Tetrachloride	0.10	0.074	0.27	0.20
Benzene	0.40	0.25	0.44	0.27
Heptane	0.10	0.086	0.13	0.11
Toluene	0.10	0.067	0.67	0.45
Ethyl Benzene	0.10	0.073	0.17	0.12
m,p-Xylene	0.10	0.071	0.63	0.45
o-Xylene	0.10	0.076	0.20	0.15

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Client Sample ID: Indoor-1

Lab ID#: 2108629-01A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090813sim**	**Date of Collection: 8/26/21 8:25:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 02:47 PM**
		Date of Extraction: 9/8/21

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	270	130
Methyl tert-butyl ether	0.10	0.076	Not Detected	Not Detected
Hexane	0.10	0.075	0.64	0.48
Ethyl Acetate	0.40	0.26	63	40
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	21	13
Chloroform	0.10	0.066	1.3	0.86
1,1,1-Trichloroethane	0.10	0.080	Not Detected	Not Detected
Cyclohexane	0.10	0.092	0.24	0.22
Carbon Tetrachloride	0.10	0.074	0.46	0.34
Benzene	0.40	0.25	0.59	0.37
1,2-Dichloroethane	0.10	0.065	Not Detected	Not Detected
Heptane	0.10	0.086	0.34	0.29
Trichloroethene	0.10	0.072	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	0.15	0.89	0.66
Toluene	0.10	0.067	1.8	1.2
Tetrachloroethene	0.10	0.084	Not Detected	Not Detected
Chlorobenzene	0.10	0.073	Not Detected	Not Detected
Ethyl Benzene	0.10	0.073	0.83	0.60
m,p-Xylene	0.10	0.071	3.3	2.3
o-Xylene	0.10	0.076	1.1	0.86
Styrene	0.10	0.082	0.25	0.20
Propylbenzene	0.10	0.087	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	0.098	Not Detected	Not Detected
Naphthalene	0.10	0.20	Not Detected	Not Detected

Temperature = 77.0F , duration time = 20097 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130

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Client Sample ID: Indoor-2

Lab ID#: 2108629-02A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090814sim**	**Date of Collection: 8/26/21 8:21:00 AM**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 03:13 PM**	
		Date of Extraction: 9/8/21	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	260 J	130 J
Methyl tert-butyl ether	0.10	0.076	Not Detected	Not Detected
Hexane	0.10	0.075	0.57 J	0.43 J
Ethyl Acetate	0.40	0.26	52 J	33 J
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	20 J	12 J
Chloroform	0.10	0.066	1.1 J	0.73 J
1,1,1-Trichloroethane	0.10	0.080	Not Detected	Not Detected
Cyclohexane	0.10	0.092	0.21 J	0.20 J
Carbon Tetrachloride	0.10	0.074	0.40 J	0.29 J
Benzene	0.40	0.25	0.52 J	0.33 J
1,2-Dichloroethane	0.10	0.065	Not Detected	Not Detected
Heptane	0.10	0.086	0.31 J	0.27 J
Trichloroethene	0.10	0.072	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	0.15	0.74 J	0.55 J
Toluene	0.10	0.067	1.7 J	1.2 J
Tetrachloroethene	0.10	0.084	Not Detected	Not Detected
Chlorobenzene	0.10	0.073	Not Detected	Not Detected
Ethyl Benzene	0.10	0.073	0.65 J	0.47 J
m,p-Xylene	0.10	0.071	2.4 J	1.7 J
o-Xylene	0.10	0.076	0.84 J	0.64 J
Styrene	0.10	0.082	0.21 J	0.17 J
Propylbenzene	0.10	0.087	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	0.098	Not Detected	Not Detected
Naphthalene	0.10	0.20	Not Detected	Not Detected

J = Estimated value.

Temperature = 77.0F , duration time = 20101 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	94	70-130

eurofins | Air Toxics

Client Sample ID: Indoor-3

Lab ID#: 2108629-03A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090815sim**	**Date of Collection: 8/26/21 8:14:00 AM**
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 03:39 PM**
		Date of Extraction: 9/8/21

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	200	98
Methyl tert-butyl ether	0.10	0.076	Not Detected	Not Detected
Hexane	0.10	0.075	0.56	0.42
Ethyl Acetate	0.40	0.26	58	37
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	16	10
Chloroform	0.10	0.066	0.98	0.65
1,1,1-Trichloroethane	0.10	0.080	Not Detected	Not Detected
Cyclohexane	0.10	0.092	0.18	0.16
Carbon Tetrachloride	0.10	0.074	0.29	0.22
Benzene	0.40	0.25	0.51	0.32
1,2-Dichloroethane	0.10	0.064	Not Detected	Not Detected
Heptane	0.10	0.086	0.34	0.29
Trichloroethene	0.10	0.072	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	0.15	1.0	0.77
Toluene	0.10	0.067	1.8	1.2
Tetrachloroethene	0.10	0.084	Not Detected	Not Detected
Chlorobenzene	0.10	0.073	Not Detected	Not Detected
Ethyl Benzene	0.10	0.073	0.78	0.57
m,p-Xylene	0.10	0.071	3.1	2.2
o-Xylene	0.10	0.076	1.0	0.77
Styrene	0.10	0.082	0.24	0.20
Propylbenzene	0.10	0.087	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	0.098	Not Detected	Not Detected
Naphthalene	0.10	0.20	Not Detected	Not Detected

Temperature = 77.0F , duration time = 20104 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130

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Client Sample ID: Indoor-4

Lab ID#: 2108629-04A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090816sim**	**Date of Collection: 8/26/21 8:17:00 AM**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 04:05 PM**	
		Date of Extraction: 9/8/21	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	130	64
Methyl tert-butyl ether	0.10	0.076	Not Detected	Not Detected
Hexane	0.10	0.075	0.53	0.40
Ethyl Acetate	0.40	0.26	52	33
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	15	9.2
Chloroform	0.10	0.066	0.66	0.44
1,1,1-Trichloroethane	0.10	0.080	Not Detected	Not Detected
Cyclohexane	0.10	0.092	0.13	0.12
Carbon Tetrachloride	0.10	0.074	0.22	0.17
Benzene	0.40	0.25	0.49	0.31
1,2-Dichloroethane	0.10	0.065	Not Detected	Not Detected
Heptane	0.10	0.086	0.35	0.30
Trichloroethene	0.10	0.072	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	0.15	1.0	0.74
Toluene	0.10	0.067	1.9	1.3
Tetrachloroethene	0.10	0.084	Not Detected	Not Detected
Chlorobenzene	0.10	0.073	Not Detected	Not Detected
Ethyl Benzene	0.10	0.073	0.76	0.56
m,p-Xylene	0.10	0.071	3.1	2.2
o-Xylene	0.10	0.076	0.99	0.76
Styrene	0.10	0.082	0.24	0.20
Propylbenzene	0.10	0.087	0.10	0.090
1,4-Dichlorobenzene	0.10	0.098	Not Detected	Not Detected
Naphthalene	0.10	0.20	Not Detected	Not Detected

Temperature = 77.0F , duration time = 20102 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130

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Client Sample ID: Indoor-5

Lab ID#: 2108629-05A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090817sim**	**Date of Collection: 8/26/21 8:06:00 AM**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 04:31 PM**	
		Date of Extraction: 9/8/21	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	260	130
Methyl tert-butyl ether	0.10	0.076	Not Detected	Not Detected
Hexane	0.10	0.075	0.48	0.36
Ethyl Acetate	0.40	0.25	99	63
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	13	8.4
Chloroform	0.10	0.066	0.92	0.61
1,1,1-Trichloroethane	0.10	0.080	Not Detected	Not Detected
Cyclohexane	0.10	0.092	0.21	0.19
Carbon Tetrachloride	0.10	0.074	0.37	0.27
Benzene	0.40	0.25	0.52	0.32
1,2-Dichloroethane	0.10	0.064	Not Detected	Not Detected
Heptane	0.10	0.086	0.34	0.29
Trichloroethene	0.10	0.072	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	0.15	1.4	1.1
Toluene	0.10	0.067	2.2	1.5
Tetrachloroethene	0.10	0.084	Not Detected	Not Detected
Chlorobenzene	0.10	0.073	Not Detected	Not Detected
Ethyl Benzene	0.10	0.073	0.88	0.64
m,p-Xylene	0.10	0.071	3.6	2.6
o-Xylene	0.10	0.076	1.1	0.88
Styrene	0.10	0.081	0.26	0.22
Propylbenzene	0.10	0.087	0.11	0.095
1,4-Dichlorobenzene	0.10	0.097	Not Detected	Not Detected
Naphthalene	0.10	0.20	Not Detected	Not Detected

Temperature = 77.0F , duration time = 20116 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130

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Client Sample ID: Indoor-6

Lab ID#: 2108629-06A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090818sim**	**Date of Collection: 8/26/21 8:02:00 AM**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 04:57 PM**	
		Date of Extraction: 9/8/21	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	330	160
Methyl tert-butyl ether	0.10	0.077	Not Detected	Not Detected
Hexane	0.10	0.075	0.60	0.45
Ethyl Acetate	0.40	0.26	100	64
2-Butanone (Methyl Ethyl Ketone)	0.20	0.13	20	13
Chloroform	0.10	0.066	0.95	0.63
1,1,1-Trichloroethane	0.10	0.080	Not Detected	Not Detected
Cyclohexane	0.10	0.092	0.17	0.16
Carbon Tetrachloride	0.10	0.074	0.29	0.21
Benzene	0.40	0.25	0.53	0.33
1,2-Dichloroethane	0.10	0.065	Not Detected	Not Detected
Heptane	0.10	0.086	0.34	0.30
Trichloroethene	0.10	0.072	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	0.15	1.6	1.2
Toluene	0.10	0.067	2.0	1.3
Tetrachloroethene	0.10	0.084	Not Detected	Not Detected
Chlorobenzene	0.10	0.073	Not Detected	Not Detected
Ethyl Benzene	0.10	0.073	0.94	0.69
m,p-Xylene	0.10	0.071	4.0	2.8
o-Xylene	0.10	0.077	1.3	1.0
Styrene	0.10	0.082	0.27	0.22
Propylbenzene	0.10	0.087	0.14	0.12
1,4-Dichlorobenzene	0.10	0.098	Not Detected	Not Detected
Naphthalene	0.10	0.20	Not Detected	Not Detected

Temperature = 77.0F , duration time = 20083 minutes.
Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	97	70-130

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Client Sample ID: Indoor-7

Lab ID#: 2108629-07A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090819sim**	**Date of Collection: 8/26/21 8:10:00 AM**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 05:23 PM**	
		Date of Extraction: 9/8/21	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	170	84
Methyl tert-butyl ether	0.10	0.076	Not Detected	Not Detected
Hexane	0.10	0.075	0.52	0.40
Ethyl Acetate	0.40	0.26	60	38
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	14	8.7
Chloroform	0.10	0.066	0.94	0.62
1,1,1-Trichloroethane	0.10	0.080	Not Detected	Not Detected
Cyclohexane	0.10	0.092	0.16	0.15
Carbon Tetrachloride	0.10	0.074	0.30	0.22
Benzene	0.40	0.25	0.49	0.30
1,2-Dichloroethane	0.10	0.065	Not Detected	Not Detected
Heptane	0.10	0.086	0.30	0.26
Trichloroethene	0.10	0.072	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	0.15	0.94	0.70
Toluene	0.10	0.067	1.7	1.1
Tetrachloroethene	0.10	0.084	Not Detected	Not Detected
Chlorobenzene	0.10	0.073	Not Detected	Not Detected
Ethyl Benzene	0.10	0.073	0.71	0.52
m,p-Xylene	0.10	0.071	2.8	2.0
o-Xylene	0.10	0.076	0.89	0.68
Styrene	0.10	0.082	0.20	0.16
Propylbenzene	0.10	0.087	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	0.098	Not Detected	Not Detected
Naphthalene	0.10	0.20	Not Detected	Not Detected

Temperature = 77.0F , duration time = 20103 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	95	70-130

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Client Sample ID: Background

Lab ID#: 2108629-08A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090820sim**	**Date of Collection: 8/26/21 8:00:00 AM**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 05:49 PM**	
		Date of Extraction: 9/8/21	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	8.4	4.1
Methyl tert-butyl ether	0.10	0.076	Not Detected	Not Detected
Hexane	0.10	0.075	0.20	0.15
Ethyl Acetate	0.40	0.25	5.0	3.2
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	1.2	0.77
Chloroform	0.10	0.066	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	0.080	Not Detected	Not Detected
Cyclohexane	0.10	0.092	0.14	0.12
Carbon Tetrachloride	0.10	0.074	0.27	0.20
Benzene	0.40	0.25	0.44	0.27
1,2-Dichloroethane	0.10	0.064	Not Detected	Not Detected
Heptane	0.10	0.086	0.13	0.11
Trichloroethene	0.10	0.072	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	0.15	Not Detected	Not Detected
Toluene	0.10	0.067	0.67	0.45
Tetrachloroethene	0.10	0.084	Not Detected	Not Detected
Chlorobenzene	0.10	0.073	Not Detected	Not Detected
Ethyl Benzene	0.10	0.073	0.17	0.12
m,p-Xylene	0.10	0.071	0.63	0.45
o-Xylene	0.10	0.076	0.20	0.15
Styrene	0.10	0.081	Not Detected	Not Detected
Propylbenzene	0.10	0.087	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	0.097	Not Detected	Not Detected
Naphthalene	0.10	0.20	Not Detected	Not Detected

Temperature = 77.0F , duration time = 20115 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130

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Client Sample ID: Lab Blank

Lab ID#: 2108629-09A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090806sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 11:38 AM**	
		Date of Extraction: 9/8/21	

Compound	Rpt. Limit (ug)	Rpt. Limit (ug/m3)	Amount (ug)	Amount (ug/m3)
Ethanol	1.0	0.49	Not Detected	Not Detected
Methyl tert-butyl ether	0.10	0.076	Not Detected	Not Detected
Hexane	0.10	0.075	Not Detected	Not Detected
Ethyl Acetate	0.40	0.25	Not Detected	Not Detected
2-Butanone (Methyl Ethyl Ketone)	0.20	0.12	Not Detected	Not Detected
Chloroform	0.10	0.066	Not Detected	Not Detected
1,1,1-Trichloroethane	0.10	0.080	Not Detected	Not Detected
Cyclohexane	0.10	0.092	Not Detected	Not Detected
Carbon Tetrachloride	0.10	0.074	Not Detected	Not Detected
Benzene	0.40	0.25	Not Detected	Not Detected
1,2-Dichloroethane	0.10	0.064	Not Detected	Not Detected
Heptane	0.10	0.086	Not Detected	Not Detected
Trichloroethene	0.10	0.072	Not Detected	Not Detected
4-Methyl-2-pentanone	0.20	0.15	Not Detected	Not Detected
Toluene	0.10	0.067	Not Detected	Not Detected
Tetrachloroethene	0.10	0.084	Not Detected	Not Detected
Chlorobenzene	0.10	0.073	Not Detected	Not Detected
Ethyl Benzene	0.10	0.073	Not Detected	Not Detected
m,p-Xylene	0.10	0.071	Not Detected	Not Detected
o-Xylene	0.10	0.076	Not Detected	Not Detected
Styrene	0.10	0.081	Not Detected	Not Detected
Propylbenzene	0.10	0.087	Not Detected	Not Detected
1,4-Dichlorobenzene	0.10	0.097	Not Detected	Not Detected
Naphthalene	0.10	0.20	Not Detected	Not Detected

Temperature = 77.0F , duration time = 20116 minutes.

Container Type: Radiello 130 (Solvent)

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130

eurofins | Air Toxics

Client Sample ID: CCV

Lab ID#: 2108629-10A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090802sim**	**Date of Collection: NA**
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 09:46 AM**
		Date of Extraction: NA

Compound	%Recovery
Ethanol	97
Methyl tert-butyl ether	93
Hexane	89
Ethyl Acetate	85
2-Butanone (Methyl Ethyl Ketone)	89
Chloroform	88
1,1,1-Trichloroethane	88
Cyclohexane	93
Carbon Tetrachloride	86
Benzene	91
1,2-Dichloroethane	90
Heptane	94
Trichloroethene	89
4-Methyl-2-pentanone	91
Toluene	95
Tetrachloroethene	88
Chlorobenzene	96
Ethyl Benzene	94
m,p-Xylene	97
o-Xylene	96
Styrene	97
Propylbenzene	102
1,4-Dichlorobenzene	95
Naphthalene	99

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	98	70-130

eurofins | Air Toxics

Client Sample ID: LCS

Lab ID#: 2108629-11A

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090805sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 11:13 AM**	
		Date of Extraction: 9/8/21	

Compound	%Recovery	Method Limits
Ethanol	64	50-130
Methyl tert-butyl ether	95	70-130
Hexane	93	70-130
Ethyl Acetate	86	70-130
2-Butanone (Methyl Ethyl Ketone)	84	70-130
Chloroform	89	70-130
1,1,1-Trichloroethane	84	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	83	70-130
Benzene	84	70-130
1,2-Dichloroethane	83	70-130
Heptane	92	70-130
Trichloroethene	85	70-130
4-Methyl-2-pentanone	85	70-130
Toluene	90	70-130
Tetrachloroethene	85	70-130
Chlorobenzene	87	70-130
Ethyl Benzene	94	70-130
m,p-Xylene	92	70-130
o-Xylene	91	70-130
Styrene	68	20-100
Propylbenzene	102	70-130
1,4-Dichlorobenzene	79	50-110
Naphthalene	25	5-80

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130

eurofins | Air Toxics

Client Sample ID: LCSD

Lab ID#: 2108629-11AA

VOCS BY PASSIVE SAMPLER - GC/MS

File Name:	**18090804sim**	**Date of Collection: NA**	
Dil. Factor:	**1.00**	**Date of Analysis: 9/8/21 10:47 AM**	
		Date of Extraction: 9/8/21	

Compound	%Recovery	Method Limits
Ethanol	61	50-130
Methyl tert-butyl ether	92	70-130
Hexane	91	70-130
Ethyl Acetate	84	70-130
2-Butanone (Methyl Ethyl Ketone)	81	70-130
Chloroform	87	70-130
1,1,1-Trichloroethane	83	70-130
Cyclohexane	92	70-130
Carbon Tetrachloride	82	70-130
Benzene	85	70-130
1,2-Dichloroethane	83	70-130
Heptane	93	70-130
Trichloroethene	86	70-130
4-Methyl-2-pentanone	84	70-130
Toluene	90	70-130
Tetrachloroethene	85	70-130
Chlorobenzene	87	70-130
Ethyl Benzene	93	70-130
m,p-Xylene	91	70-130
o-Xylene	90	70-130
Styrene	67	20-100
Propylbenzene	100	70-130
1,4-Dichlorobenzene	79	50-110
Naphthalene	24	5-80

Container Type: NA - Not Applicable

Surrogates	%Recovery	Method Limits
Toluene-d8	96	70-130

ANALYTICAL REPORT

August 25, 2021

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

NV5 - Wilsonville, OR

Sample Delivery Group:	L1390653
Samples Received:	08/13/2021
Project Number:	BIGBEAMS-1-04-05
Description:	Former Astoria Warehousing

Report To:

Kyle Haggart
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By:

Brian Ford
Project Manager

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

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MW-1(081121) L1390653-01 GW

Collected by: Tim Hainley | Collected date/time: 08/11/21 09:05 | Received date/time: 08/13/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1723426	5	08/15/21 19:19	08/15/21 19:19	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1727168	10	08/21/21 20:05	08/21/21 20:05	ACG	Mt. Juliet, TN

MW-2(081121) L1390653-02 GW

Collected by: Tim Hainley | Collected date/time: 08/11/21 15:05 | Received date/time: 08/13/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1723426	1	08/15/21 12:45	08/15/21 12:45	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1727168	10	08/21/21 20:25	08/21/21 20:25	ACG	Mt. Juliet, TN

MW-3(081121) L1390653-03 GW

Collected by: Tim Hainley | Collected date/time: 08/11/21 07:47 | Received date/time: 08/13/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1723426	1	08/15/21 13:31	08/15/21 13:31	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1727168	1	08/21/21 17:22	08/21/21 17:22	ACG	Mt. Juliet, TN

MW-4(081121) L1390653-04 GW

Collected by: Tim Hainley | Collected date/time: 08/11/21 13:50 | Received date/time: 08/13/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1723426	10	08/15/21 19:41	08/15/21 19:41	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1727168	20	08/21/21 20:46	08/21/21 20:46	ACG	Mt. Juliet, TN

MW-5(081121) L1390653-05 GW

Collected by: Tim Hainley | Collected date/time: 08/11/21 12:50 | Received date/time: 08/13/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1723426	1	08/15/21 13:52	08/15/21 13:52	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1727168	1	08/21/21 17:43	08/21/21 17:43	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1728300	10	08/24/21 16:54	08/24/21 16:54	JHH	Mt. Juliet, TN

MW-6(081121) L1390653-06 GW

Collected by: Tim Hainley | Collected date/time: 08/11/21 11:00 | Received date/time: 08/13/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1726736	1	08/20/21 13:35	08/20/21 13:35	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1727168	5	08/21/21 21:06	08/21/21 21:06	ACG	Mt. Juliet, TN

MW-7(081121) L1390653-07 GW

Collected by: Tim Hainley | Collected date/time: 08/11/21 10:15 | Received date/time: 08/13/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1723426	1	08/15/21 14:14	08/15/21 14:14	NCC	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1727168	5	08/21/21 21:26	08/21/21 21:26	ACG	Mt. Juliet, TN

MW-8(081121) L1390653-08 GW

Collected by: Tim Hainley
Collected date/time: 08/11/21 15:40
Received date/time: 08/13/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1726736	10	08/20/21 13:56	08/20/21 13:56	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1727168	25	08/21/21 21:47	08/21/21 21:47	ACG	Mt. Juliet, TN

CASE NARRATIVE

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

Brian Ford
Project Manager

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	12700		158	500	5	08/15/2021 19:19	WG1723426
(S) a,a,a-Trifluorotoluene(FID)	*118*			*78.0-120*		*08/15/2021 19:19*	WG1723426

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	663		0.941	10.0	10	08/21/2021 20:05	WG1727168
Ethylbenzene	1780		1.37	10.0	10	08/21/2021 20:05	WG1727168
Toluene	15.3		2.78	10.0	10	08/21/2021 20:05	WG1727168
Xylenes, Total	37.5		1.74	30.0	10	08/21/2021 20:05	WG1727168
Methyl tert-butyl ether	7.40	J	1.01	10.0	10	08/21/2021 20:05	WG1727168
Naphthalene	505		10.0	50.0	10	08/21/2021 20:05	WG1727168
1,2-Dibromoethane	U		1.26	10.0	10	08/21/2021 20:05	WG1727168
1,2-Dichloroethane	U		0.819	10.0	10	08/21/2021 20:05	WG1727168
Isopropylbenzene	74.1		1.05	10.0	10	08/21/2021 20:05	WG1727168
n-Propylbenzene	247		0.993	10.0	10	08/21/2021 20:05	WG1727168
1,2,4-Trimethylbenzene	U		3.22	10.0	10	08/21/2021 20:05	WG1727168
1,3,5-Trimethylbenzene	6.37	J	1.04	10.0	10	08/21/2021 20:05	WG1727168
(S) Toluene-d8	*104*			*80.0-120*		*08/21/2021 20:05*	WG1727168
(S) 4-Bromofluorobenzene	*99.7*			*77.0-126*		*08/21/2021 20:05*	WG1727168
(S) 1,2-Dichloroethane-d4	*90.3*			*70.0-130*		*08/21/2021 20:05*	WG1727168

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2580		31.6	100	1	08/15/2021 12:45	WG1723426
(S) a,a,a-Trifluorotoluene(FID)	*124*	J1		*78.0-120*		*08/15/2021 12:45*	WG1723426

Sample Narrative:

L1390653-02 WG1723426: Surrogate failure due to matrix interference.

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	119		0.941	10.0	10	08/21/2021 20:25	WG1727168
Ethylbenzene	12.0		1.37	10.0	10	08/21/2021 20:25	WG1727168
Toluene	4.81	J	2.78	10.0	10	08/21/2021 20:25	WG1727168
Xylenes, Total	15.1	J	1.74	30.0	10	08/21/2021 20:25	WG1727168
Methyl tert-butyl ether	12.0		1.01	10.0	10	08/21/2021 20:25	WG1727168
Naphthalene	33.1	J	10.0	50.0	10	08/21/2021 20:25	WG1727168
1,2-Dibromoethane	U		1.26	10.0	10	08/21/2021 20:25	WG1727168
1,2-Dichloroethane	U		0.819	10.0	10	08/21/2021 20:25	WG1727168
Isopropylbenzene	37.1		1.05	10.0	10	08/21/2021 20:25	WG1727168
n-Propylbenzene	68.3		0.993	10.0	10	08/21/2021 20:25	WG1727168
1,2,4-Trimethylbenzene	U		3.22	10.0	10	08/21/2021 20:25	WG1727168
1,3,5-Trimethylbenzene	10.9		1.04	10.0	10	08/21/2021 20:25	WG1727168
(S) Toluene-d8	*103*			*80.0-120*		*08/21/2021 20:25*	WG1727168
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*08/21/2021 20:25*	WG1727168
(S) 1,2-Dichloroethane-d4	*94.7*			*70.0-130*		*08/21/2021 20:25*	WG1727168

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	603		31.6	100	1	08/15/2021 13:31	WG1723426
(S) a,a,a-Trifluorotoluene(FID)	*117*			*78.0-120*		*08/15/2021 13:31*	WG1723426

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	U		0.0941	1.00	1	08/21/2021 17:22	WG1727168
Ethylbenzene	U		0.137	1.00	1	08/21/2021 17:22	WG1727168
Toluene	0.716	J	0.278	1.00	1	08/21/2021 17:22	WG1727168
Xylenes, Total	1.60	J	0.174	3.00	1	08/21/2021 17:22	WG1727168
Methyl tert-butyl ether	9.01		0.101	1.00	1	08/21/2021 17:22	WG1727168
Naphthalene	U		1.00	5.00	1	08/21/2021 17:22	WG1727168
1,2-Dibromoethane	U		0.126	1.00	1	08/21/2021 17:22	WG1727168
1,2-Dichloroethane	U		0.0819	1.00	1	08/21/2021 17:22	WG1727168
Isopropylbenzene	11.4		0.105	1.00	1	08/21/2021 17:22	WG1727168
n-Propylbenzene	17.6		0.0993	1.00	1	08/21/2021 17:22	WG1727168
1,2,4-Trimethylbenzene	U		0.322	1.00	1	08/21/2021 17:22	WG1727168
1,3,5-Trimethylbenzene	0.256	J	0.104	1.00	1	08/21/2021 17:22	WG1727168
(S) Toluene-d8	*105*			*80.0-120*		*08/21/2021 17:22*	WG1727168
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*08/21/2021 17:22*	WG1727168
(S) 1,2-Dichloroethane-d4	*93.1*			*70.0-130*		*08/21/2021 17:22*	WG1727168

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	10500		316	1000	10	08/15/2021 19:41	WG1723426
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*		*08/15/2021 19:41*	WG1723426

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	634		1.88	20.0	20	08/21/2021 20:46	WG1727168
Ethylbenzene	991		2.74	20.0	20	08/21/2021 20:46	WG1727168
Toluene	40.1		5.56	20.0	20	08/21/2021 20:46	WG1727168
Xylenes, Total	1220		3.48	60.0	20	08/21/2021 20:46	WG1727168
Methyl tert-butyl ether	2.82	J	2.02	20.0	20	08/21/2021 20:46	WG1727168
Naphthalene	306		20.0	100	20	08/21/2021 20:46	WG1727168
1,2-Dibromoethane	U		2.52	20.0	20	08/21/2021 20:46	WG1727168
1,2-Dichloroethane	U		1.64	20.0	20	08/21/2021 20:46	WG1727168
Isopropylbenzene	51.2		2.10	20.0	20	08/21/2021 20:46	WG1727168
n-Propylbenzene	150		1.99	20.0	20	08/21/2021 20:46	WG1727168
1,2,4-Trimethylbenzene	569		6.44	20.0	20	08/21/2021 20:46	WG1727168
1,3,5-Trimethylbenzene	90.8		2.08	20.0	20	08/21/2021 20:46	WG1727168
(S) Toluene-d8	*102*			*80.0-120*		*08/21/2021 20:46*	WG1727168
(S) 4-Bromofluorobenzene	*98.2*			*77.0-126*		*08/21/2021 20:46*	WG1727168
(S) 1,2-Dichloroethane-d4	*91.1*			*70.0-130*		*08/21/2021 20:46*	WG1727168

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	4870		31.6	100	1	08/15/2021 13:52	WG1723426
(S) a,a,a-Trifluorotoluene(FID)	*130*	J1		*78.0-120*		*08/15/2021 13:52*	WG1723426

Sample Narrative:

L1390653-05 WG1723426: Surrogate failure due to matrix interference.

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	55.8		0.0941	1.00	1	08/21/2021 17:43	WG1727168
Ethylbenzene	170		1.37	10.0	10	08/24/2021 16:54	WG1728300
Toluene	9.94		0.278	1.00	1	08/21/2021 17:43	WG1727168
Xylenes, Total	16.5		0.174	3.00	1	08/21/2021 17:43	WG1727168
Methyl tert-butyl ether	U		0.101	1.00	1	08/21/2021 17:43	WG1727168
Naphthalene	51.5		1.00	5.00	1	08/21/2021 17:43	WG1727168
1,2-Dibromoethane	U		0.126	1.00	1	08/21/2021 17:43	WG1727168
1,2-Dichloroethane	U		0.0819	1.00	1	08/21/2021 17:43	WG1727168
Isopropylbenzene	53.0		0.105	1.00	1	08/21/2021 17:43	WG1727168
n-Propylbenzene	197		0.0993	1.00	1	08/21/2021 17:43	WG1727168
1,2,4-Trimethylbenzene	1.15		0.322	1.00	1	08/21/2021 17:43	WG1727168
1,3,5-Trimethylbenzene	2.13		0.104	1.00	1	08/21/2021 17:43	WG1727168
(S) Toluene-d8	*95.4*			*80.0-120*		*08/21/2021 17:43*	WG1727168
(S) Toluene-d8	*109*			*80.0-120*		*08/24/2021 16:54*	WG1728300
(S) 4-Bromofluorobenzene	*95.5*			*77.0-126*		*08/21/2021 17:43*	WG1727168
(S) 4-Bromofluorobenzene	*108*			*77.0-126*		*08/24/2021 16:54*	WG1728300
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*08/21/2021 17:43*	WG1727168
(S) 1,2-Dichloroethane-d4	*120*			*70.0-130*		*08/24/2021 16:54*	WG1728300

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	4340		31.6	100	1	08/20/2021 13:35	WG1726736
(S) a,a,a-Trifluorotoluene(FID)	*108*			*78.0-120*		*08/20/2021 13:35*	WG1726736

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Benzene	380		0.471	5.00	5	08/21/2021 21:06	WG1727168
Ethylbenzene	71.4		0.685	5.00	5	08/21/2021 21:06	WG1727168
Toluene	32.0		1.39	5.00	5	08/21/2021 21:06	WG1727168
Xylenes, Total	55.6		0.870	15.0	5	08/21/2021 21:06	WG1727168
Methyl tert-butyl ether	16.0		0.505	5.00	5	08/21/2021 21:06	WG1727168
Naphthalene	30.2		5.00	25.0	5	08/21/2021 21:06	WG1727168
1,2-Dibromoethane	U		0.630	5.00	5	08/21/2021 21:06	WG1727168
1,2-Dichloroethane	U		0.409	5.00	5	08/21/2021 21:06	WG1727168
Isopropylbenzene	26.7		0.525	5.00	5	08/21/2021 21:06	WG1727168
n-Propylbenzene	72.6		0.497	5.00	5	08/21/2021 21:06	WG1727168
1,2,4-Trimethylbenzene	38.6		1.61	5.00	5	08/21/2021 21:06	WG1727168
1,3,5-Trimethylbenzene	20.7		0.520	5.00	5	08/21/2021 21:06	WG1727168
(S) Toluene-d8	*108*			*80.0-120*		*08/21/2021 21:06*	WG1727168
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*08/21/2021 21:06*	WG1727168
(S) 1,2-Dichloroethane-d4	*90.1*			*70.0-130*		*08/21/2021 21:06*	WG1727168

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	5180		31.6	100	1	08/15/2021 14:14	WG1723426
(S) a,a,a-Trifluorotoluene(FID)	*132*	J1		*78.0-120*		*08/15/2021 14:14*	WG1723426

Sample Narrative:

L1390653-07 WG1723426: Surrogate failure due to matrix interference.

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	170		0.471	5.00	5	08/21/2021 21:26	WG1727168
Ethylbenzene	102		0.685	5.00	5	08/21/2021 21:26	WG1727168
Toluene	16.8		1.39	5.00	5	08/21/2021 21:26	WG1727168
Xylenes, Total	24.5		0.870	15.0	5	08/21/2021 21:26	WG1727168
Methyl tert-butyl ether	13.2		0.505	5.00	5	08/21/2021 21:26	WG1727168
Naphthalene	47.8		5.00	25.0	5	08/21/2021 21:26	WG1727168
1,2-Dibromoethane	U		0.630	5.00	5	08/21/2021 21:26	WG1727168
1,2-Dichloroethane	U		0.409	5.00	5	08/21/2021 21:26	WG1727168
Isopropylbenzene	95.9		0.525	5.00	5	08/21/2021 21:26	WG1727168
n-Propylbenzene	227		0.497	5.00	5	08/21/2021 21:26	WG1727168
1,2,4-Trimethylbenzene	U		1.61	5.00	5	08/21/2021 21:26	WG1727168
1,3,5-Trimethylbenzene	16.1		0.520	5.00	5	08/21/2021 21:26	WG1727168
(S) Toluene-d8	*103*			*80.0-120*		*08/21/2021 21:26*	WG1727168
(S) 4-Bromofluorobenzene	*102*			*77.0-126*		*08/21/2021 21:26*	WG1727168
(S) 1,2-Dichloroethane-d4	*90.8*			*70.0-130*		*08/21/2021 21:26*	WG1727168

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	15700		316	1000	10	08/20/2021 13:56	WG1726736
(S) a,a,a-Trifluorotoluene(FID)	*93.5*			*78.0-120*		*08/20/2021 13:56*	WG1726736

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	1560		2.35	25.0	25	08/21/2021 21:47	WG1727168
Ethylbenzene	408		3.43	25.0	25	08/21/2021 21:47	WG1727168
Toluene	42.2		6.95	25.0	25	08/21/2021 21:47	WG1727168
Xylenes, Total	1560		4.35	75.0	25	08/21/2021 21:47	WG1727168
Methyl tert-butyl ether	6.73	J	2.53	25.0	25	08/21/2021 21:47	WG1727168
Naphthalene	214		25.0	125	25	08/21/2021 21:47	WG1727168
1,2-Dibromoethane	U		3.15	25.0	25	08/21/2021 21:47	WG1727168
1,2-Dichloroethane	U		2.05	25.0	25	08/21/2021 21:47	WG1727168
Isopropylbenzene	77.5		2.63	25.0	25	08/21/2021 21:47	WG1727168
n-Propylbenzene	225		2.48	25.0	25	08/21/2021 21:47	WG1727168
1,2,4-Trimethylbenzene	1000		8.05	25.0	25	08/21/2021 21:47	WG1727168
1,3,5-Trimethylbenzene	313		2.60	25.0	25	08/21/2021 21:47	WG1727168
(S) Toluene-d8	*104*			*80.0-120*		*08/21/2021 21:47*	WG1727168
(S) 4-Bromofluorobenzene	*103*			*77.0-126*		*08/21/2021 21:47*	WG1727168
(S) 1,2-Dichloroethane-d4	*91.7*			*70.0-130*		*08/21/2021 21:47*	WG1727168

Method Blank (MB)

(MB) R3694399-2 08/15/21 12:03

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	47.2	J	31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*111*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3694399-1 08/15/21 11:19

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	4790	87.1	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*119*	*78.0-120*	

Method Blank (MB)

(MB) R3694506-2 08/20/21 08:59

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*95.0*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3694506-1 08/20/21 08:06

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	6060	110	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*106*	*78.0-120*	

Method Blank (MB)

(MB) R3695569-4 08/21/21 11:04

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
1,2-Dibromoethane	U		0.126	1.00
1,2-Dichloroethane	U		0.0819	1.00
Ethylbenzene	U		0.137	1.00
Isopropylbenzene	U		0.105	1.00
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Toluene	U		0.278	1.00
1,2,4-Trimethylbenzene	U		0.322	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*101*			*80.0-120*
(S) 4-Bromofluorobenzene	*88.7*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*99.2*			*70.0-130*

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

(LCS) R3695569-1 08/21/21 09:43 • (LCSD) R3695569-2 08/21/21 10:03

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.70	4.80	94.0	96.0	70.0-123			2.11	20
1,2-Dibromoethane	5.00	5.30	5.26	106	105	80.0-122			0.758	20
1,2-Dichloroethane	5.00	5.01	4.87	100	97.4	70.0-128			2.83	20
Ethylbenzene	5.00	5.32	5.66	106	113	79.0-123			6.19	20
Isopropylbenzene	5.00	4.83	4.88	96.6	97.6	76.0-127			1.03	20
Methyl tert-butyl ether	5.00	4.64	4.31	92.8	86.2	68.0-125			7.37	20
Naphthalene	5.00	4.64	5.19	92.8	104	54.0-135			11.2	20
n-Propylbenzene	5.00	4.43	4.79	88.6	95.8	77.0-124			7.81	20
Toluene	5.00	4.94	5.03	98.8	101	79.0-120			1.81	20
1,2,4-Trimethylbenzene	5.00	4.39	4.91	87.8	98.2	76.0-121			11.2	20
1,3,5-Trimethylbenzene	5.00	4.41	4.86	88.2	97.2	76.0-122			9.71	20
Xylenes, Total	15.0	15.1	15.3	101	102	79.0-123			1.32	20
(S) Toluene-d8				*102*	*101*	*80.0-120*				
(S) 4-Bromofluorobenzene				*95.9*	*91.9*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*100*	*94.7*	*70.0-130*				

Method Blank (MB)

(MB) R3696146-3 08/24/21 10:50

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Ethylbenzene	U		0.137	1.00
(S) Toluene-d8	*108*			*80.0-120*
(S) 4-Bromofluorobenzene	*108*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*119*			*70.0-130*

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

(LCS) R3696146-1 08/24/21 09:53 • (LCSD) R3696146-2 08/24/21 10:12

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	5.00	4.79	5.10	95.8	102	79.0-123			6.27	20
(S) Toluene-d8				*107*	*107*	*80.0-120*				
(S) 4-Bromofluorobenzene				*107*	*107*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*120*	*103*	*70.0-130*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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

Company Name/Address:
NV5 - Wilsonville, OR

9450 SW Commerce Circle
Ste. 300
Wilsonville. OR 97070

Billing Information:
Accounts Payable
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Pres Chk

Report to:
Kyle Haggart

Email To:
Kyle.Haggart@nv5.com;timj.hainley@nv5.com

Project Description:
Former Astoria Warehousing

City/State Collected: Astoria, OR

Please Circle: (PT) MT CT ET

Phone: **503-968-8787**

Client Project #
BigBeams-1-04 -05

Lab Project #
GEODESPOR-BIGB104

Collected by (print):
Tim Hainley

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NWTPHDX NOSGT 100ml Amb-HCl	NWTPHGX 40mlAmb HCl	VOCs 8260D 40mlAmb-HCl RBDM								Remarks	Sample # (lab only)
MW-1(08 1121)		GW		8/11/21	905	6		X	X									-01
MW-2(081121)		GW		"	1505	6		X	X									02
MW-3(081121)		GW		"	747	6		X	X									03
MW-4 (081121)		GW		"	1350	6		X	X									04
MW-5(081121)		GW		"	1250	6		X	X									05
MW-6(081121)		GW		"	1100	6		X	X									06
MW-7(081121)		GW		"	1015	6		X	X									07
MW-8(081121)		GW		"	1540	6		X	X									08
		GW																
		GW																

Chain of Custody Page 1 of 1

Pace Analytical®

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

SDG # L1361663
J084

Acctnum: **GEODESPOR**
Template: **T192859**
Prelogin: **P865643**
PM: **110 - Brian Ford**
PB:

Shipped Via:

15
35

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

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

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 5163 7713 0740

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	8/12/21	1615			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: 4.3 °C Bottles Received: 48	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: 8/13/21 Time: 900	Hold: / Condition: NCF / OK
			T. Robertson		

ANALYTICAL REPORT

January 14, 2022

NV5 - Wilsonville, OR

Sample Delivery Group:	L1449513
Samples Received:	01/10/2022
Project Number:	BigBeams-1-04-05
Description:	Astoria Warehousing

Report To: Erik Hedberg
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By: Brian Ford

Brian Ford
Project Manager

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

TABLE OF CONTENTS

MW1(010422) L1449513-01 GW

Collected by: ADD,EAH | Collected date/time: 01/04/22 12:15 | Received date/time: 01/10/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1800677	1	01/11/22 23:10	01/11/22 23:10	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1800696	1	01/12/22 02:45	01/12/22 02:45	BMB	Mt. Juliet, TN

MW2(010522) L1449513-02 GW

Collected by: ADD,EAH | Collected date/time: 01/05/22 08:45 | Received date/time: 01/10/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1800677	1	01/11/22 23:33	01/11/22 23:33	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1800696	1	01/12/22 03:06	01/12/22 03:06	BMB	Mt. Juliet, TN

MW3(010422) L1449513-03 GW

Collected by: ADD,EAH | Collected date/time: 01/04/22 11:15 | Received date/time: 01/10/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1800677	1	01/11/22 23:57	01/11/22 23:57	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1800696	1	01/12/22 03:26	01/12/22 03:26	BMB	Mt. Juliet, TN

MW4(010522) L1449513-04 GW

Collected by: ADD,EAH | Collected date/time: 01/05/22 10:00 | Received date/time: 01/10/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1800677	10	01/12/22 05:47	01/12/22 05:47	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1800696	10	01/12/22 05:30	01/12/22 05:30	BMB	Mt. Juliet, TN

MW5(010422) L1449513-05 GW

Collected by: ADD,EAH | Collected date/time: 01/04/22 16:25 | Received date/time: 01/10/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1800677	1	01/12/22 00:20	01/12/22 00:20	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1800696	1	01/12/22 03:47	01/12/22 03:47	BMB	Mt. Juliet, TN

MW6(010422) L1449513-06 GW

Collected by: ADD,EAH | Collected date/time: 01/04/22 14:20 | Received date/time: 01/10/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1800677	1	01/12/22 00:43	01/12/22 00:43	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1800696	1	01/12/22 04:07	01/12/22 04:07	BMB	Mt. Juliet, TN

MW7(010422) L1449513-07 GW

Collected by: ADD,EAH | Collected date/time: 01/04/22 13:20 | Received date/time: 01/10/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1800677	1	01/12/22 01:07	01/12/22 01:07	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1800696	1	01/12/22 04:28	01/12/22 04:28	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1800771	10	01/12/22 13:52	01/12/22 13:52	ADM	Mt. Juliet, TN

SAMPLE SUMMARY

MW8(010422) L1449513-08 GW

Collected by: ADD,EAH
Collected date/time: 01/04/22 15:25
Received date/time: 01/10/22 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG1800834	5	01/13/22 13:49	01/13/22 13:49	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1800696	1	01/12/22 04:48	01/12/22 04:48	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG1800771	50	01/12/22 14:11	01/12/22 14:11	ADM	Mt. Juliet, TN

CASE NARRATIVE

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

Brian Ford
Project Manager

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2710		31.6	100	1	01/11/2022 23:10	WG1800677
(S) a,a,a-Trifluorotoluene(FID)	*98.8*			*78.0-120*		*01/11/2022 23:10*	WG1800677

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	50.0	1	01/12/2022 02:45	WG1800696
Acrolein	U	J4	2.54	50.0	1	01/12/2022 02:45	WG1800696
Acrylonitrile	U		0.671	10.0	1	01/12/2022 02:45	WG1800696
Benzene	37.4		0.0941	1.00	1	01/12/2022 02:45	WG1800696
Bromobenzene	U		0.118	1.00	1	01/12/2022 02:45	WG1800696
Bromodichloromethane	U		0.136	1.00	1	01/12/2022 02:45	WG1800696
Bromoform	U		0.129	1.00	1	01/12/2022 02:45	WG1800696
Bromomethane	U		0.605	5.00	1	01/12/2022 02:45	WG1800696
n-Butylbenzene	4.39		0.157	1.00	1	01/12/2022 02:45	WG1800696
sec-Butylbenzene	3.49		0.125	1.00	1	01/12/2022 02:45	WG1800696
tert-Butylbenzene	0.567	J	0.127	1.00	1	01/12/2022 02:45	WG1800696
Carbon tetrachloride	U		0.128	1.00	1	01/12/2022 02:45	WG1800696
Chlorobenzene	U		0.116	1.00	1	01/12/2022 02:45	WG1800696
Chlorodibromomethane	U		0.140	1.00	1	01/12/2022 02:45	WG1800696
Chloroethane	U		0.192	5.00	1	01/12/2022 02:45	WG1800696
Chloroform	U		0.111	5.00	1	01/12/2022 02:45	WG1800696
Chloromethane	U		0.960	2.50	1	01/12/2022 02:45	WG1800696
2-Chlorotoluene	U		0.106	1.00	1	01/12/2022 02:45	WG1800696
4-Chlorotoluene	U		0.114	1.00	1	01/12/2022 02:45	WG1800696
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	01/12/2022 02:45	WG1800696
1,2-Dibromoethane	U		0.126	1.00	1	01/12/2022 02:45	WG1800696
Dibromomethane	U		0.122	1.00	1	01/12/2022 02:45	WG1800696
1,2-Dichlorobenzene	U		0.107	1.00	1	01/12/2022 02:45	WG1800696
1,3-Dichlorobenzene	U		0.110	1.00	1	01/12/2022 02:45	WG1800696
1,4-Dichlorobenzene	U		0.120	1.00	1	01/12/2022 02:45	WG1800696
Dichlorodifluoromethane	U		0.374	5.00	1	01/12/2022 02:45	WG1800696
1,1-Dichloroethane	U		0.100	1.00	1	01/12/2022 02:45	WG1800696
1,2-Dichloroethane	U		0.0819	1.00	1	01/12/2022 02:45	WG1800696
1,1-Dichloroethene	U		0.188	1.00	1	01/12/2022 02:45	WG1800696
cis-1,2-Dichloroethene	U		0.126	1.00	1	01/12/2022 02:45	WG1800696
trans-1,2-Dichloroethene	U		0.149	1.00	1	01/12/2022 02:45	WG1800696
1,2-Dichloropropane	U		0.149	1.00	1	01/12/2022 02:45	WG1800696
1,1-Dichloropropene	U		0.142	1.00	1	01/12/2022 02:45	WG1800696
1,3-Dichloropropane	U		0.110	1.00	1	01/12/2022 02:45	WG1800696
cis-1,3-Dichloropropene	U		0.111	1.00	1	01/12/2022 02:45	WG1800696
trans-1,3-Dichloropropene	U		0.118	1.00	1	01/12/2022 02:45	WG1800696
2,2-Dichloropropane	U		0.161	1.00	1	01/12/2022 02:45	WG1800696
Di-isopropyl ether	U		0.105	1.00	1	01/12/2022 02:45	WG1800696
Ethylbenzene	116		0.137	1.00	1	01/12/2022 02:45	WG1800696
Hexachloro-1,3-butadiene	U		0.337	1.00	1	01/12/2022 02:45	WG1800696
Isopropylbenzene	20.4		0.105	1.00	1	01/12/2022 02:45	WG1800696
p-Isopropyltoluene	1.17		0.120	1.00	1	01/12/2022 02:45	WG1800696
2-Butanone (MEK)	U		1.19	10.0	1	01/12/2022 02:45	WG1800696
Methylene Chloride	U		0.430	5.00	1	01/12/2022 02:45	WG1800696
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	01/12/2022 02:45	WG1800696
Methyl tert-butyl ether	3.37	C3	0.101	1.00	1	01/12/2022 02:45	WG1800696
Naphthalene	51.0		1.00	5.00	1	01/12/2022 02:45	WG1800696
n-Propylbenzene	60.8		0.0993	1.00	1	01/12/2022 02:45	WG1800696

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Styrene	U		0.118	1.00	1	01/12/2022 02:45	WG1800696
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	01/12/2022 02:45	WG1800696
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	01/12/2022 02:45	WG1800696
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	01/12/2022 02:45	WG1800696
Tetrachloroethene	U		0.300	1.00	1	01/12/2022 02:45	WG1800696
Toluene	2.15		0.278	1.00	1	01/12/2022 02:45	WG1800696
1,2,3-Trichlorobenzene	U		0.230	1.00	1	01/12/2022 02:45	WG1800696
1,2,4-Trichlorobenzene	U		0.481	1.00	1	01/12/2022 02:45	WG1800696
1,1,1-Trichloroethane	U		0.149	1.00	1	01/12/2022 02:45	WG1800696
1,1,2-Trichloroethane	U		0.158	1.00	1	01/12/2022 02:45	WG1800696
Trichloroethene	U		0.190	1.00	1	01/12/2022 02:45	WG1800696
Trichlorofluoromethane	U		0.160	5.00	1	01/12/2022 02:45	WG1800696
1,2,3-Trichloropropane	U		0.237	2.50	1	01/12/2022 02:45	WG1800696
1,2,4-Trimethylbenzene	0.396	J	0.322	1.00	1	01/12/2022 02:45	WG1800696
1,2,3-Trimethylbenzene	40.4		0.104	1.00	1	01/12/2022 02:45	WG1800696
1,3,5-Trimethylbenzene	0.914	J	0.104	1.00	1	01/12/2022 02:45	WG1800696
Vinyl chloride	U		0.234	1.00	1	01/12/2022 02:45	WG1800696
Xylenes, Total	7.19		0.174	3.00	1	01/12/2022 02:45	WG1800696
(S) Toluene-d8	*93.8*			*80.0-120*		*01/12/2022 02:45*	WG1800696
(S) 4-Bromofluorobenzene	*93.7*			*77.0-126*		*01/12/2022 02:45*	WG1800696
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*		*01/12/2022 02:45*	WG1800696

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	2720		31.6	100	1	01/11/2022 23:33	WG1800677
(S) a,a,a-Trifluorotoluene(FID)	*89.2*			*78.0-120*		*01/11/2022 23:33*	WG1800677

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	50.0	1	01/12/2022 03:06	WG1800696
Acrolein	U	J4	2.54	50.0	1	01/12/2022 03:06	WG1800696
Acrylonitrile	U		0.671	10.0	1	01/12/2022 03:06	WG1800696
Benzene	134		0.0941	1.00	1	01/12/2022 03:06	WG1800696
Bromobenzene	U		0.118	1.00	1	01/12/2022 03:06	WG1800696
Bromodichloromethane	U		0.136	1.00	1	01/12/2022 03:06	WG1800696
Bromoform	U		0.129	1.00	1	01/12/2022 03:06	WG1800696
Bromomethane	U		0.605	5.00	1	01/12/2022 03:06	WG1800696
n-Butylbenzene	4.36		0.157	1.00	1	01/12/2022 03:06	WG1800696
sec-Butylbenzene	3.92		0.125	1.00	1	01/12/2022 03:06	WG1800696
tert-Butylbenzene	U		0.127	1.00	1	01/12/2022 03:06	WG1800696
Carbon tetrachloride	U		0.128	1.00	1	01/12/2022 03:06	WG1800696
Chlorobenzene	U		0.116	1.00	1	01/12/2022 03:06	WG1800696
Chlorodibromomethane	U		0.140	1.00	1	01/12/2022 03:06	WG1800696
Chloroethane	U		0.192	5.00	1	01/12/2022 03:06	WG1800696
Chloroform	U		0.111	5.00	1	01/12/2022 03:06	WG1800696
Chloromethane	U		0.960	2.50	1	01/12/2022 03:06	WG1800696
2-Chlorotoluene	U		0.106	1.00	1	01/12/2022 03:06	WG1800696
4-Chlorotoluene	U		0.114	1.00	1	01/12/2022 03:06	WG1800696
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	01/12/2022 03:06	WG1800696
1,2-Dibromoethane	U		0.126	1.00	1	01/12/2022 03:06	WG1800696
Dibromomethane	U		0.122	1.00	1	01/12/2022 03:06	WG1800696
1,2-Dichlorobenzene	U		0.107	1.00	1	01/12/2022 03:06	WG1800696
1,3-Dichlorobenzene	U		0.110	1.00	1	01/12/2022 03:06	WG1800696
1,4-Dichlorobenzene	U		0.120	1.00	1	01/12/2022 03:06	WG1800696
Dichlorodifluoromethane	U		0.374	5.00	1	01/12/2022 03:06	WG1800696
1,1-Dichloroethane	U		0.100	1.00	1	01/12/2022 03:06	WG1800696
1,2-Dichloroethane	U		0.0819	1.00	1	01/12/2022 03:06	WG1800696
1,1-Dichloroethene	U		0.188	1.00	1	01/12/2022 03:06	WG1800696
cis-1,2-Dichloroethene	U		0.126	1.00	1	01/12/2022 03:06	WG1800696
trans-1,2-Dichloroethene	U		0.149	1.00	1	01/12/2022 03:06	WG1800696
1,2-Dichloropropane	U		0.149	1.00	1	01/12/2022 03:06	WG1800696
1,1-Dichloropropene	U		0.142	1.00	1	01/12/2022 03:06	WG1800696
1,3-Dichloropropane	U		0.110	1.00	1	01/12/2022 03:06	WG1800696
cis-1,3-Dichloropropene	U		0.111	1.00	1	01/12/2022 03:06	WG1800696
trans-1,3-Dichloropropene	U		0.118	1.00	1	01/12/2022 03:06	WG1800696
2,2-Dichloropropane	U		0.161	1.00	1	01/12/2022 03:06	WG1800696
Di-isopropyl ether	U		0.105	1.00	1	01/12/2022 03:06	WG1800696
Ethylbenzene	53.5		0.137	1.00	1	01/12/2022 03:06	WG1800696
Hexachloro-1,3-butadiene	U		0.337	1.00	1	01/12/2022 03:06	WG1800696
Isopropylbenzene	32.8		0.105	1.00	1	01/12/2022 03:06	WG1800696
p-Isopropyltoluene	0.640	J	0.120	1.00	1	01/12/2022 03:06	WG1800696
2-Butanone (MEK)	U		1.19	10.0	1	01/12/2022 03:06	WG1800696
Methylene Chloride	U		0.430	5.00	1	01/12/2022 03:06	WG1800696
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	01/12/2022 03:06	WG1800696
Methyl tert-butyl ether	7.53	C3	0.101	1.00	1	01/12/2022 03:06	WG1800696
Naphthalene	17.5		1.00	5.00	1	01/12/2022 03:06	WG1800696
n-Propylbenzene	76.6		0.0993	1.00	1	01/12/2022 03:06	WG1800696

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Styrene	U		0.118	1.00	1	01/12/2022 03:06	WG1800696
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	01/12/2022 03:06	WG1800696
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	01/12/2022 03:06	WG1800696
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	01/12/2022 03:06	WG1800696
Tetrachloroethene	U		0.300	1.00	1	01/12/2022 03:06	WG1800696
Toluene	7.58		0.278	1.00	1	01/12/2022 03:06	WG1800696
1,2,3-Trichlorobenzene	U		0.230	1.00	1	01/12/2022 03:06	WG1800696
1,2,4-Trichlorobenzene	U		0.481	1.00	1	01/12/2022 03:06	WG1800696
1,1,1-Trichloroethane	U		0.149	1.00	1	01/12/2022 03:06	WG1800696
1,1,2-Trichloroethane	U		0.158	1.00	1	01/12/2022 03:06	WG1800696
Trichloroethene	U		0.190	1.00	1	01/12/2022 03:06	WG1800696
Trichlorofluoromethane	U		0.160	5.00	1	01/12/2022 03:06	WG1800696
1,2,3-Trichloropropane	U		0.237	2.50	1	01/12/2022 03:06	WG1800696
1,2,4-Trimethylbenzene	14.6		0.322	1.00	1	01/12/2022 03:06	WG1800696
1,2,3-Trimethylbenzene	16.8		0.104	1.00	1	01/12/2022 03:06	WG1800696
1,3,5-Trimethylbenzene	15.8		0.104	1.00	1	01/12/2022 03:06	WG1800696
Vinyl chloride	U		0.234	1.00	1	01/12/2022 03:06	WG1800696
Xylenes, Total	40.9		0.174	3.00	1	01/12/2022 03:06	WG1800696
(S) Toluene-d8	*94.2*			*80.0-120*		*01/12/2022 03:06*	WG1800696
(S) 4-Bromofluorobenzene	*96.4*			*77.0-126*		*01/12/2022 03:06*	WG1800696
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*		*01/12/2022 03:06*	WG1800696

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	224		31.6	100	1	01/11/2022 23:57	WG1800677
(S) a,a,a-Trifluorotoluene(FID)	*98.6*			*78.0-120*		*01/11/2022 23:57*	WG1800677

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	50.0	1	01/12/2022 03:26	WG1800696
Acrolein	U	J4	2.54	50.0	1	01/12/2022 03:26	WG1800696
Acrylonitrile	U		0.671	10.0	1	01/12/2022 03:26	WG1800696
Benzene	0.218	J	0.0941	1.00	1	01/12/2022 03:26	WG1800696
Bromobenzene	U		0.118	1.00	1	01/12/2022 03:26	WG1800696
Bromodichloromethane	U		0.136	1.00	1	01/12/2022 03:26	WG1800696
Bromoform	U		0.129	1.00	1	01/12/2022 03:26	WG1800696
Bromomethane	U		0.605	5.00	1	01/12/2022 03:26	WG1800696
n-Butylbenzene	U		0.157	1.00	1	01/12/2022 03:26	WG1800696
sec-Butylbenzene	U		0.125	1.00	1	01/12/2022 03:26	WG1800696
tert-Butylbenzene	U		0.127	1.00	1	01/12/2022 03:26	WG1800696
Carbon tetrachloride	U		0.128	1.00	1	01/12/2022 03:26	WG1800696
Chlorobenzene	U		0.116	1.00	1	01/12/2022 03:26	WG1800696
Chlorodibromomethane	U		0.140	1.00	1	01/12/2022 03:26	WG1800696
Chloroethane	U		0.192	5.00	1	01/12/2022 03:26	WG1800696
Chloroform	U		0.111	5.00	1	01/12/2022 03:26	WG1800696
Chloromethane	U		0.960	2.50	1	01/12/2022 03:26	WG1800696
2-Chlorotoluene	U		0.106	1.00	1	01/12/2022 03:26	WG1800696
4-Chlorotoluene	U		0.114	1.00	1	01/12/2022 03:26	WG1800696
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	01/12/2022 03:26	WG1800696
1,2-Dibromoethane	U		0.126	1.00	1	01/12/2022 03:26	WG1800696
Dibromomethane	U		0.122	1.00	1	01/12/2022 03:26	WG1800696
1,2-Dichlorobenzene	U		0.107	1.00	1	01/12/2022 03:26	WG1800696
1,3-Dichlorobenzene	U		0.110	1.00	1	01/12/2022 03:26	WG1800696
1,4-Dichlorobenzene	U		0.120	1.00	1	01/12/2022 03:26	WG1800696
Dichlorodifluoromethane	U		0.374	5.00	1	01/12/2022 03:26	WG1800696
1,1-Dichloroethane	U		0.100	1.00	1	01/12/2022 03:26	WG1800696
1,2-Dichloroethane	U		0.0819	1.00	1	01/12/2022 03:26	WG1800696
1,1-Dichloroethene	U		0.188	1.00	1	01/12/2022 03:26	WG1800696
cis-1,2-Dichloroethene	0.364	J	0.126	1.00	1	01/12/2022 03:26	WG1800696
trans-1,2-Dichloroethene	U		0.149	1.00	1	01/12/2022 03:26	WG1800696
1,2-Dichloropropane	U		0.149	1.00	1	01/12/2022 03:26	WG1800696
1,1-Dichloropropene	U		0.142	1.00	1	01/12/2022 03:26	WG1800696
1,3-Dichloropropane	U		0.110	1.00	1	01/12/2022 03:26	WG1800696
cis-1,3-Dichloropropene	U		0.111	1.00	1	01/12/2022 03:26	WG1800696
trans-1,3-Dichloropropene	U		0.118	1.00	1	01/12/2022 03:26	WG1800696
2,2-Dichloropropane	U		0.161	1.00	1	01/12/2022 03:26	WG1800696
Di-isopropyl ether	U		0.105	1.00	1	01/12/2022 03:26	WG1800696
Ethylbenzene	0.311	J	0.137	1.00	1	01/12/2022 03:26	WG1800696
Hexachloro-1,3-butadiene	U		0.337	1.00	1	01/12/2022 03:26	WG1800696
Isopropylbenzene	0.308	J	0.105	1.00	1	01/12/2022 03:26	WG1800696
p-Isopropyltoluene	U		0.120	1.00	1	01/12/2022 03:26	WG1800696
2-Butanone (MEK)	U		1.19	10.0	1	01/12/2022 03:26	WG1800696
Methylene Chloride	U		0.430	5.00	1	01/12/2022 03:26	WG1800696
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	01/12/2022 03:26	WG1800696
Methyl tert-butyl ether	1.15	C3	0.101	1.00	1	01/12/2022 03:26	WG1800696
Naphthalene	1.77	B J	1.00	5.00	1	01/12/2022 03:26	WG1800696
n-Propylbenzene	0.550	J	0.0993	1.00	1	01/12/2022 03:26	WG1800696

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Styrene	U		0.118	1.00	1	01/12/2022 03:26	WG1800696
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	01/12/2022 03:26	WG1800696
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	01/12/2022 03:26	WG1800696
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	01/12/2022 03:26	WG1800696
Tetrachloroethene	U		0.300	1.00	1	01/12/2022 03:26	WG1800696
Toluene	U		0.278	1.00	1	01/12/2022 03:26	WG1800696
1,2,3-Trichlorobenzene	U		0.230	1.00	1	01/12/2022 03:26	WG1800696
1,2,4-Trichlorobenzene	U		0.481	1.00	1	01/12/2022 03:26	WG1800696
1,1,1-Trichloroethane	U		0.149	1.00	1	01/12/2022 03:26	WG1800696
1,1,2-Trichloroethane	U		0.158	1.00	1	01/12/2022 03:26	WG1800696
Trichloroethene	U		0.190	1.00	1	01/12/2022 03:26	WG1800696
Trichlorofluoromethane	U		0.160	5.00	1	01/12/2022 03:26	WG1800696
1,2,3-Trichloropropane	U		0.237	2.50	1	01/12/2022 03:26	WG1800696
1,2,4-Trimethylbenzene	U		0.322	1.00	1	01/12/2022 03:26	WG1800696
1,2,3-Trimethylbenzene	0.360	J	0.104	1.00	1	01/12/2022 03:26	WG1800696
1,3,5-Trimethylbenzene	0.212	J	0.104	1.00	1	01/12/2022 03:26	WG1800696
Vinyl chloride	U		0.234	1.00	1	01/12/2022 03:26	WG1800696
Xylenes, Total	0.662	J	0.174	3.00	1	01/12/2022 03:26	WG1800696
(S) Toluene-d8	*96.5*			*80.0-120*		*01/12/2022 03:26*	WG1800696
(S) 4-Bromofluorobenzene	*91.8*			*77.0-126*		*01/12/2022 03:26*	WG1800696
(S) 1,2-Dichloroethane-d4	*99.5*			*70.0-130*		*01/12/2022 03:26*	WG1800696

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	21200		316	1000	10	01/12/2022 05:47	WG1800677
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*		*01/12/2022 05:47*	WG1800677

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		113	500	10	01/12/2022 05:30	WG1800696
Acrolein	U	J4	25.4	500	10	01/12/2022 05:30	WG1800696
Acrylonitrile	U		6.71	100	10	01/12/2022 05:30	WG1800696
Benzene	289		0.941	10.0	10	01/12/2022 05:30	WG1800696
Bromobenzene	U		1.18	10.0	10	01/12/2022 05:30	WG1800696
Bromodichloromethane	U		1.36	10.0	10	01/12/2022 05:30	WG1800696
Bromoform	U		1.29	10.0	10	01/12/2022 05:30	WG1800696
Bromomethane	U		6.05	50.0	10	01/12/2022 05:30	WG1800696
n-Butylbenzene	4.09	J	1.57	10.0	10	01/12/2022 05:30	WG1800696
sec-Butylbenzene	U		1.25	10.0	10	01/12/2022 05:30	WG1800696
tert-Butylbenzene	U		1.27	10.0	10	01/12/2022 05:30	WG1800696
Carbon tetrachloride	U		1.28	10.0	10	01/12/2022 05:30	WG1800696
Chlorobenzene	U		1.16	10.0	10	01/12/2022 05:30	WG1800696
Chlorodibromomethane	U		1.40	10.0	10	01/12/2022 05:30	WG1800696
Chloroethane	U		1.92	50.0	10	01/12/2022 05:30	WG1800696
Chloroform	U		1.11	50.0	10	01/12/2022 05:30	WG1800696
Chloromethane	U		9.60	25.0	10	01/12/2022 05:30	WG1800696
2-Chlorotoluene	U		1.06	10.0	10	01/12/2022 05:30	WG1800696
4-Chlorotoluene	U		1.14	10.0	10	01/12/2022 05:30	WG1800696
1,2-Dibromo-3-Chloropropane	U		2.76	50.0	10	01/12/2022 05:30	WG1800696
1,2-Dibromoethane	U		1.26	10.0	10	01/12/2022 05:30	WG1800696
Dibromomethane	U		1.22	10.0	10	01/12/2022 05:30	WG1800696
1,2-Dichlorobenzene	U		1.07	10.0	10	01/12/2022 05:30	WG1800696
1,3-Dichlorobenzene	U		1.10	10.0	10	01/12/2022 05:30	WG1800696
1,4-Dichlorobenzene	U		1.20	10.0	10	01/12/2022 05:30	WG1800696
Dichlorodifluoromethane	U		3.74	50.0	10	01/12/2022 05:30	WG1800696
1,1-Dichloroethane	U		1.00	10.0	10	01/12/2022 05:30	WG1800696
1,2-Dichloroethane	U		0.819	10.0	10	01/12/2022 05:30	WG1800696
1,1-Dichloroethene	U		1.88	10.0	10	01/12/2022 05:30	WG1800696
cis-1,2-Dichloroethene	U		1.26	10.0	10	01/12/2022 05:30	WG1800696
trans-1,2-Dichloroethene	U		1.49	10.0	10	01/12/2022 05:30	WG1800696
1,2-Dichloropropane	U		1.49	10.0	10	01/12/2022 05:30	WG1800696
1,1-Dichloropropene	U		1.42	10.0	10	01/12/2022 05:30	WG1800696
1,3-Dichloropropane	U		1.10	10.0	10	01/12/2022 05:30	WG1800696
cis-1,3-Dichloropropene	U		1.11	10.0	10	01/12/2022 05:30	WG1800696
trans-1,3-Dichloropropene	U		1.18	10.0	10	01/12/2022 05:30	WG1800696
2,2-Dichloropropane	U		1.61	10.0	10	01/12/2022 05:30	WG1800696
Di-isopropyl ether	U		1.05	10.0	10	01/12/2022 05:30	WG1800696
Ethylbenzene	206		1.37	10.0	10	01/12/2022 05:30	WG1800696
Hexachloro-1,3-butadiene	U		3.37	10.0	10	01/12/2022 05:30	WG1800696
Isopropylbenzene	27.1		1.05	10.0	10	01/12/2022 05:30	WG1800696
p-Isopropyltoluene	11.2		1.20	10.0	10	01/12/2022 05:30	WG1800696
2-Butanone (MEK)	U		11.9	100	10	01/12/2022 05:30	WG1800696
Methylene Chloride	U		4.30	50.0	10	01/12/2022 05:30	WG1800696
4-Methyl-2-pentanone (MIBK)	U		4.78	100	10	01/12/2022 05:30	WG1800696
Methyl tert-butyl ether	3.70	C3 J	1.01	10.0	10	01/12/2022 05:30	WG1800696
Naphthalene	179		10.0	50.0	10	01/12/2022 05:30	WG1800696
n-Propylbenzene	74.5		0.993	10.0	10	01/12/2022 05:30	WG1800696

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Styrene	U		1.18	10.0	10	01/12/2022 05:30	WG1800696
1,1,1,2-Tetrachloroethane	U		1.47	10.0	10	01/12/2022 05:30	WG1800696
1,1,2,2-Tetrachloroethane	U		1.33	10.0	10	01/12/2022 05:30	WG1800696
1,1,2-Trichlorotrifluoroethane	U		1.80	10.0	10	01/12/2022 05:30	WG1800696
Tetrachloroethene	U		3.00	10.0	10	01/12/2022 05:30	WG1800696
Toluene	43.8		2.78	10.0	10	01/12/2022 05:30	WG1800696
1,2,3-Trichlorobenzene	U		2.30	10.0	10	01/12/2022 05:30	WG1800696
1,2,4-Trichlorobenzene	U		4.81	10.0	10	01/12/2022 05:30	WG1800696
1,1,1-Trichloroethane	U		1.49	10.0	10	01/12/2022 05:30	WG1800696
1,1,2-Trichloroethane	U		1.58	10.0	10	01/12/2022 05:30	WG1800696
Trichloroethene	U		1.90	10.0	10	01/12/2022 05:30	WG1800696
Trichlorofluoromethane	U		1.60	50.0	10	01/12/2022 05:30	WG1800696
1,2,3-Trichloropropane	U		2.37	25.0	10	01/12/2022 05:30	WG1800696
1,2,4-Trimethylbenzene	805		3.22	10.0	10	01/12/2022 05:30	WG1800696
1,2,3-Trimethylbenzene	381		1.04	10.0	10	01/12/2022 05:30	WG1800696
1,3,5-Trimethylbenzene	238		1.04	10.0	10	01/12/2022 05:30	WG1800696
Vinyl chloride	U		2.34	10.0	10	01/12/2022 05:30	WG1800696
Xylenes, Total	3880		1.74	30.0	10	01/12/2022 05:30	WG1800696
(S) Toluene-d8	*100*			*80.0-120*		*01/12/2022 05:30*	WG1800696
(S) 4-Bromofluorobenzene	*96.8*			*77.0-126*		*01/12/2022 05:30*	WG1800696
(S) 1,2-Dichloroethane-d4	*96.6*			*70.0-130*		*01/12/2022 05:30*	WG1800696

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Gasoline Range Organics-NWTPH	1800		31.6	100	1	01/12/2022 00:20	WG1800677
(S) a,a,a-Trifluorotoluene(FID)	*84.3*			*78.0-120*		*01/12/2022 00:20*	WG1800677

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Acetone	U		11.3	50.0	1	01/12/2022 03:47	WG1800696
Acrolein	U	J4	2.54	50.0	1	01/12/2022 03:47	WG1800696
Acrylonitrile	U		0.671	10.0	1	01/12/2022 03:47	WG1800696
Benzene	3.52		0.0941	1.00	1	01/12/2022 03:47	WG1800696
Bromobenzene	U		0.118	1.00	1	01/12/2022 03:47	WG1800696
Bromodichloromethane	U		0.136	1.00	1	01/12/2022 03:47	WG1800696
Bromoform	U		0.129	1.00	1	01/12/2022 03:47	WG1800696
Bromomethane	U		0.605	5.00	1	01/12/2022 03:47	WG1800696
n-Butylbenzene	11.8		0.157	1.00	1	01/12/2022 03:47	WG1800696
sec-Butylbenzene	12.8		0.125	1.00	1	01/12/2022 03:47	WG1800696
tert-Butylbenzene	0.308	J	0.127	1.00	1	01/12/2022 03:47	WG1800696
Carbon tetrachloride	U		0.128	1.00	1	01/12/2022 03:47	WG1800696
Chlorobenzene	U		0.116	1.00	1	01/12/2022 03:47	WG1800696
Chlorodibromomethane	U		0.140	1.00	1	01/12/2022 03:47	WG1800696
Chloroethane	U		0.192	5.00	1	01/12/2022 03:47	WG1800696
Chloroform	U		0.111	5.00	1	01/12/2022 03:47	WG1800696
Chloromethane	U		0.960	2.50	1	01/12/2022 03:47	WG1800696
2-Chlorotoluene	U		0.106	1.00	1	01/12/2022 03:47	WG1800696
4-Chlorotoluene	U		0.114	1.00	1	01/12/2022 03:47	WG1800696
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	01/12/2022 03:47	WG1800696
1,2-Dibromoethane	U		0.126	1.00	1	01/12/2022 03:47	WG1800696
Dibromomethane	U		0.122	1.00	1	01/12/2022 03:47	WG1800696
1,2-Dichlorobenzene	U		0.107	1.00	1	01/12/2022 03:47	WG1800696
1,3-Dichlorobenzene	U		0.110	1.00	1	01/12/2022 03:47	WG1800696
1,4-Dichlorobenzene	U		0.120	1.00	1	01/12/2022 03:47	WG1800696
Dichlorodifluoromethane	U		0.374	5.00	1	01/12/2022 03:47	WG1800696
1,1-Dichloroethane	U		0.100	1.00	1	01/12/2022 03:47	WG1800696
1,2-Dichloroethane	U		0.0819	1.00	1	01/12/2022 03:47	WG1800696
1,1-Dichloroethene	U		0.188	1.00	1	01/12/2022 03:47	WG1800696
cis-1,2-Dichloroethene	U		0.126	1.00	1	01/12/2022 03:47	WG1800696
trans-1,2-Dichloroethene	U		0.149	1.00	1	01/12/2022 03:47	WG1800696
1,2-Dichloropropane	U		0.149	1.00	1	01/12/2022 03:47	WG1800696
1,1-Dichloropropene	U		0.142	1.00	1	01/12/2022 03:47	WG1800696
1,3-Dichloropropane	U		0.110	1.00	1	01/12/2022 03:47	WG1800696
cis-1,3-Dichloropropene	U		0.111	1.00	1	01/12/2022 03:47	WG1800696
trans-1,3-Dichloropropene	U		0.118	1.00	1	01/12/2022 03:47	WG1800696
2,2-Dichloropropane	U		0.161	1.00	1	01/12/2022 03:47	WG1800696
Di-isopropyl ether	U		0.105	1.00	1	01/12/2022 03:47	WG1800696
Ethylbenzene	2.40		0.137	1.00	1	01/12/2022 03:47	WG1800696
Hexachloro-1,3-butadiene	U		0.337	1.00	1	01/12/2022 03:47	WG1800696
Isopropylbenzene	12.1		0.105	1.00	1	01/12/2022 03:47	WG1800696
p-Isopropyltoluene	1.16		0.120	1.00	1	01/12/2022 03:47	WG1800696
2-Butanone (MEK)	U		1.19	10.0	1	01/12/2022 03:47	WG1800696
Methylene Chloride	U		0.430	5.00	1	01/12/2022 03:47	WG1800696
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	01/12/2022 03:47	WG1800696
Methyl tert-butyl ether	9.40	C3	0.101	1.00	1	01/12/2022 03:47	WG1800696
Naphthalene	1.19	B J	1.00	5.00	1	01/12/2022 03:47	WG1800696
n-Propylbenzene	52.6		0.0993	1.00	1	01/12/2022 03:47	WG1800696

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Styrene	U		0.118	1.00	1	01/12/2022 03:47	WG1800696
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	01/12/2022 03:47	WG1800696
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	01/12/2022 03:47	WG1800696
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	01/12/2022 03:47	WG1800696
Tetrachloroethene	U		0.300	1.00	1	01/12/2022 03:47	WG1800696
Toluene	0.685	J	0.278	1.00	1	01/12/2022 03:47	WG1800696
1,2,3-Trichlorobenzene	U		0.230	1.00	1	01/12/2022 03:47	WG1800696
1,2,4-Trichlorobenzene	U		0.481	1.00	1	01/12/2022 03:47	WG1800696
1,1,1-Trichloroethane	U		0.149	1.00	1	01/12/2022 03:47	WG1800696
1,1,2-Trichloroethane	U		0.158	1.00	1	01/12/2022 03:47	WG1800696
Trichloroethene	U		0.190	1.00	1	01/12/2022 03:47	WG1800696
Trichlorofluoromethane	U		0.160	5.00	1	01/12/2022 03:47	WG1800696
1,2,3-Trichloropropane	U		0.237	2.50	1	01/12/2022 03:47	WG1800696
1,2,4-Trimethylbenzene	U		0.322	1.00	1	01/12/2022 03:47	WG1800696
1,2,3-Trimethylbenzene	0.873	J	0.104	1.00	1	01/12/2022 03:47	WG1800696
1,3,5-Trimethylbenzene	0.615	J	0.104	1.00	1	01/12/2022 03:47	WG1800696
Vinyl chloride	U		0.234	1.00	1	01/12/2022 03:47	WG1800696
Xylenes, Total	2.07	J	0.174	3.00	1	01/12/2022 03:47	WG1800696
(S) Toluene-d8	*88.9*			*80.0-120*		*01/12/2022 03:47*	WG1800696
(S) 4-Bromofluorobenzene	*90.5*			*77.0-126*		*01/12/2022 03:47*	WG1800696
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*01/12/2022 03:47*	WG1800696

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	1670		31.6	100	1	01/12/2022 00:43	WG1800677
(S) a,a,a-Trifluorotoluene(FID)	*90.8*			*78.0-120*		*01/12/2022 00:43*	WG1800677

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	50.0	1	01/12/2022 04:07	WG1800696
Acrolein	U	J4	2.54	50.0	1	01/12/2022 04:07	WG1800696
Acrylonitrile	U		0.671	10.0	1	01/12/2022 04:07	WG1800696
Benzene	169		0.0941	1.00	1	01/12/2022 04:07	WG1800696
Bromobenzene	U		0.118	1.00	1	01/12/2022 04:07	WG1800696
Bromodichloromethane	U		0.136	1.00	1	01/12/2022 04:07	WG1800696
Bromoform	U		0.129	1.00	1	01/12/2022 04:07	WG1800696
Bromomethane	U		0.605	5.00	1	01/12/2022 04:07	WG1800696
n-Butylbenzene	1.65		0.157	1.00	1	01/12/2022 04:07	WG1800696
sec-Butylbenzene	1.51		0.125	1.00	1	01/12/2022 04:07	WG1800696
tert-Butylbenzene	U		0.127	1.00	1	01/12/2022 04:07	WG1800696
Carbon tetrachloride	U		0.128	1.00	1	01/12/2022 04:07	WG1800696
Chlorobenzene	U		0.116	1.00	1	01/12/2022 04:07	WG1800696
Chlorodibromomethane	U		0.140	1.00	1	01/12/2022 04:07	WG1800696
Chloroethane	U		0.192	5.00	1	01/12/2022 04:07	WG1800696
Chloroform	U		0.111	5.00	1	01/12/2022 04:07	WG1800696
Chloromethane	U		0.960	2.50	1	01/12/2022 04:07	WG1800696
2-Chlorotoluene	U		0.106	1.00	1	01/12/2022 04:07	WG1800696
4-Chlorotoluene	U		0.114	1.00	1	01/12/2022 04:07	WG1800696
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	01/12/2022 04:07	WG1800696
1,2-Dibromoethane	U		0.126	1.00	1	01/12/2022 04:07	WG1800696
Dibromomethane	U		0.122	1.00	1	01/12/2022 04:07	WG1800696
1,2-Dichlorobenzene	U		0.107	1.00	1	01/12/2022 04:07	WG1800696
1,3-Dichlorobenzene	U		0.110	1.00	1	01/12/2022 04:07	WG1800696
1,4-Dichlorobenzene	U		0.120	1.00	1	01/12/2022 04:07	WG1800696
Dichlorodifluoromethane	U		0.374	5.00	1	01/12/2022 04:07	WG1800696
1,1-Dichloroethane	U		0.100	1.00	1	01/12/2022 04:07	WG1800696
1,2-Dichloroethane	U		0.0819	1.00	1	01/12/2022 04:07	WG1800696
1,1-Dichloroethene	U		0.188	1.00	1	01/12/2022 04:07	WG1800696
cis-1,2-Dichloroethene	U		0.126	1.00	1	01/12/2022 04:07	WG1800696
trans-1,2-Dichloroethene	U		0.149	1.00	1	01/12/2022 04:07	WG1800696
1,2-Dichloropropane	U		0.149	1.00	1	01/12/2022 04:07	WG1800696
1,1-Dichloropropene	U		0.142	1.00	1	01/12/2022 04:07	WG1800696
1,3-Dichloropropane	U		0.110	1.00	1	01/12/2022 04:07	WG1800696
cis-1,3-Dichloropropene	U		0.111	1.00	1	01/12/2022 04:07	WG1800696
trans-1,3-Dichloropropene	U		0.118	1.00	1	01/12/2022 04:07	WG1800696
2,2-Dichloropropane	U		0.161	1.00	1	01/12/2022 04:07	WG1800696
Di-isopropyl ether	U		0.105	1.00	1	01/12/2022 04:07	WG1800696
Ethylbenzene	26.0		0.137	1.00	1	01/12/2022 04:07	WG1800696
Hexachloro-1,3-butadiene	U		0.337	1.00	1	01/12/2022 04:07	WG1800696
Isopropylbenzene	11.1		0.105	1.00	1	01/12/2022 04:07	WG1800696
p-Isopropyltoluene	0.466	J	0.120	1.00	1	01/12/2022 04:07	WG1800696
2-Butanone (MEK)	U		1.19	10.0	1	01/12/2022 04:07	WG1800696
Methylene Chloride	U		0.430	5.00	1	01/12/2022 04:07	WG1800696
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	01/12/2022 04:07	WG1800696
Methyl tert-butyl ether	7.85	C3	0.101	1.00	1	01/12/2022 04:07	WG1800696
Naphthalene	8.96	B	1.00	5.00	1	01/12/2022 04:07	WG1800696
n-Propylbenzene	31.5		0.0993	1.00	1	01/12/2022 04:07	WG1800696

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Styrene	U		0.118	1.00	1	01/12/2022 04:07	WG1800696
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	01/12/2022 04:07	WG1800696
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	01/12/2022 04:07	WG1800696
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	01/12/2022 04:07	WG1800696
Tetrachloroethene	U		0.300	1.00	1	01/12/2022 04:07	WG1800696
Toluene	8.31		0.278	1.00	1	01/12/2022 04:07	WG1800696
1,2,3-Trichlorobenzene	U		0.230	1.00	1	01/12/2022 04:07	WG1800696
1,2,4-Trichlorobenzene	U		0.481	1.00	1	01/12/2022 04:07	WG1800696
1,1,1-Trichloroethane	U		0.149	1.00	1	01/12/2022 04:07	WG1800696
1,1,2-Trichloroethane	U		0.158	1.00	1	01/12/2022 04:07	WG1800696
Trichloroethene	U		0.190	1.00	1	01/12/2022 04:07	WG1800696
Trichlorofluoromethane	U		0.160	5.00	1	01/12/2022 04:07	WG1800696
1,2,3-Trichloropropane	U		0.237	2.50	1	01/12/2022 04:07	WG1800696
1,2,4-Trimethylbenzene	12.2		0.322	1.00	1	01/12/2022 04:07	WG1800696
1,2,3-Trimethylbenzene	23.8		0.104	1.00	1	01/12/2022 04:07	WG1800696
1,3,5-Trimethylbenzene	9.66		0.104	1.00	1	01/12/2022 04:07	WG1800696
Vinyl chloride	U		0.234	1.00	1	01/12/2022 04:07	WG1800696
Xylenes, Total	21.4		0.174	3.00	1	01/12/2022 04:07	WG1800696
(S) Toluene-d8	*102*			*80.0-120*		*01/12/2022 04:07*	WG1800696
(S) 4-Bromofluorobenzene	*96.1*			*77.0-126*		*01/12/2022 04:07*	WG1800696
(S) 1,2-Dichloroethane-d4	*95.1*			*70.0-130*		*01/12/2022 04:07*	WG1800696

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	3060		31.6	100	1	01/12/2022 01:07	WG1800677
(S) a,a,a-Trifluorotoluene(FID)	*84.4*			*78.0-120*		*01/12/2022 01:07*	WG1800677

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	50.0	1	01/12/2022 04:28	WG1800696
Acrolein	U	J4	2.54	50.0	1	01/12/2022 04:28	WG1800696
Acrylonitrile	U		0.671	10.0	1	01/12/2022 04:28	WG1800696
Benzene	178		0.0941	1.00	1	01/12/2022 04:28	WG1800696
Bromobenzene	U		0.118	1.00	1	01/12/2022 04:28	WG1800696
Bromodichloromethane	U		0.136	1.00	1	01/12/2022 04:28	WG1800696
Bromoform	U		0.129	1.00	1	01/12/2022 04:28	WG1800696
Bromomethane	U		0.605	5.00	1	01/12/2022 04:28	WG1800696
n-Butylbenzene	5.43		0.157	1.00	1	01/12/2022 04:28	WG1800696
sec-Butylbenzene	5.71		0.125	1.00	1	01/12/2022 04:28	WG1800696
tert-Butylbenzene	0.552	J	0.127	1.00	1	01/12/2022 04:28	WG1800696
Carbon tetrachloride	U		0.128	1.00	1	01/12/2022 04:28	WG1800696
Chlorobenzene	U		0.116	1.00	1	01/12/2022 04:28	WG1800696
Chlorodibromomethane	U		0.140	1.00	1	01/12/2022 04:28	WG1800696
Chloroethane	U		0.192	5.00	1	01/12/2022 04:28	WG1800696
Chloroform	U		0.111	5.00	1	01/12/2022 04:28	WG1800696
Chloromethane	U		0.960	2.50	1	01/12/2022 04:28	WG1800696
2-Chlorotoluene	U		0.106	1.00	1	01/12/2022 04:28	WG1800696
4-Chlorotoluene	U		0.114	1.00	1	01/12/2022 04:28	WG1800696
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	01/12/2022 04:28	WG1800696
1,2-Dibromoethane	U		0.126	1.00	1	01/12/2022 04:28	WG1800696
Dibromomethane	U		0.122	1.00	1	01/12/2022 04:28	WG1800696
1,2-Dichlorobenzene	U		0.107	1.00	1	01/12/2022 04:28	WG1800696
1,3-Dichlorobenzene	U		0.110	1.00	1	01/12/2022 04:28	WG1800696
1,4-Dichlorobenzene	U		0.120	1.00	1	01/12/2022 04:28	WG1800696
Dichlorodifluoromethane	U		0.374	5.00	1	01/12/2022 04:28	WG1800696
1,1-Dichloroethane	U		0.100	1.00	1	01/12/2022 04:28	WG1800696
1,2-Dichloroethane	U		0.0819	1.00	1	01/12/2022 04:28	WG1800696
1,1-Dichloroethene	U		0.188	1.00	1	01/12/2022 04:28	WG1800696
cis-1,2-Dichloroethene	U		0.126	1.00	1	01/12/2022 04:28	WG1800696
trans-1,2-Dichloroethene	U		0.149	1.00	1	01/12/2022 04:28	WG1800696
1,2-Dichloropropane	U		0.149	1.00	1	01/12/2022 04:28	WG1800696
1,1-Dichloropropene	U		0.142	1.00	1	01/12/2022 04:28	WG1800696
1,3-Dichloropropane	U		0.110	1.00	1	01/12/2022 04:28	WG1800696
cis-1,3-Dichloropropene	U		0.111	1.00	1	01/12/2022 04:28	WG1800696
trans-1,3-Dichloropropene	U		0.118	1.00	1	01/12/2022 04:28	WG1800696
2,2-Dichloropropane	U		0.161	1.00	1	01/12/2022 04:28	WG1800696
Di-isopropyl ether	U		0.105	1.00	1	01/12/2022 04:28	WG1800696
Ethylbenzene	70.3		0.137	1.00	1	01/12/2022 04:28	WG1800696
Hexachloro-1,3-butadiene	U		0.337	1.00	1	01/12/2022 04:28	WG1800696
Isopropylbenzene	42.8		0.105	1.00	1	01/12/2022 04:28	WG1800696
p-Isopropyltoluene	0.755	J	0.120	1.00	1	01/12/2022 04:28	WG1800696
2-Butanone (MEK)	U		1.19	10.0	1	01/12/2022 04:28	WG1800696
Methylene Chloride	U		0.430	5.00	1	01/12/2022 04:28	WG1800696
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	01/12/2022 04:28	WG1800696
Methyl tert-butyl ether	2.75	C3	0.101	1.00	1	01/12/2022 04:28	WG1800696
Naphthalene	9.68	B	1.00	5.00	1	01/12/2022 04:28	WG1800696
n-Propylbenzene	202		0.993	10.0	10	01/12/2022 13:52	WG1800771

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Styrene	U		0.118	1.00	1	01/12/2022 04:28	WG1800696
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	01/12/2022 04:28	WG1800696
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	01/12/2022 04:28	WG1800696
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	01/12/2022 04:28	WG1800696
Tetrachloroethene	U		0.300	1.00	1	01/12/2022 04:28	WG1800696
Toluene	6.26		0.278	1.00	1	01/12/2022 04:28	WG1800696
1,2,3-Trichlorobenzene	U		0.230	1.00	1	01/12/2022 04:28	WG1800696
1,2,4-Trichlorobenzene	U		0.481	1.00	1	01/12/2022 04:28	WG1800696
1,1,1-Trichloroethane	U		0.149	1.00	1	01/12/2022 04:28	WG1800696
1,1,2-Trichloroethane	U		0.158	1.00	1	01/12/2022 04:28	WG1800696
Trichloroethene	U		0.190	1.00	1	01/12/2022 04:28	WG1800696
Trichlorofluoromethane	U		0.160	5.00	1	01/12/2022 04:28	WG1800696
1,2,3-Trichloropropane	U		0.237	2.50	1	01/12/2022 04:28	WG1800696
1,2,4-Trimethylbenzene	0.437	J	0.322	1.00	1	01/12/2022 04:28	WG1800696
1,2,3-Trimethylbenzene	23.0		0.104	1.00	1	01/12/2022 04:28	WG1800696
1,3,5-Trimethylbenzene	3.00		0.104	1.00	1	01/12/2022 04:28	WG1800696
Vinyl chloride	U		0.234	1.00	1	01/12/2022 04:28	WG1800696
Xylenes, Total	12.8		0.174	3.00	1	01/12/2022 04:28	WG1800696
(S) Toluene-d8	*94.0*			*80.0-120*		*01/12/2022 04:28*	WG1800696
(S) Toluene-d8	*109*			*80.0-120*		*01/12/2022 13:52*	WG1800771
(S) 4-Bromofluorobenzene	*95.3*			*77.0-126*		*01/12/2022 04:28*	WG1800696
(S) 4-Bromofluorobenzene	*96.1*			*77.0-126*		*01/12/2022 13:52*	WG1800771
(S) 1,2-Dichloroethane-d4	*98.4*			*70.0-130*		*01/12/2022 04:28*	WG1800696
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*01/12/2022 13:52*	WG1800771

Volatile Organic Compounds (GC) by Method NWTPHGX

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Gasoline Range Organics-NWTPH	17200		158	500	5	01/13/2022 13:49	WG1800834
(S) a,a,a-Trifluorotoluene(FID)	*93.9*			*78.0-120*		*01/13/2022 13:49*	WG1800834

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

Analyte	Result ug/l	Qualifier	MDL ug/l	RDL ug/l	Dilution	Analysis date / time	Batch
Acetone	U		11.3	50.0	1	01/12/2022 04:48	WG1800696
Acrolein	U	J4	2.54	50.0	1	01/12/2022 04:48	WG1800696
Acrylonitrile	U		0.671	10.0	1	01/12/2022 04:48	WG1800696
Benzene	2750		4.71	50.0	50	01/12/2022 14:11	WG1800771
Bromobenzene	U		0.118	1.00	1	01/12/2022 04:48	WG1800696
Bromodichloromethane	U		0.136	1.00	1	01/12/2022 04:48	WG1800696
Bromoform	U		0.129	1.00	1	01/12/2022 04:48	WG1800696
Bromomethane	U		0.605	5.00	1	01/12/2022 04:48	WG1800696
n-Butylbenzene	10.5		0.157	1.00	1	01/12/2022 04:48	WG1800696
sec-Butylbenzene	7.92		0.125	1.00	1	01/12/2022 04:48	WG1800696
tert-Butylbenzene	U		0.127	1.00	1	01/12/2022 04:48	WG1800696
Carbon tetrachloride	U		0.128	1.00	1	01/12/2022 04:48	WG1800696
Chlorobenzene	U		0.116	1.00	1	01/12/2022 04:48	WG1800696
Chlorodibromomethane	U		0.140	1.00	1	01/12/2022 04:48	WG1800696
Chloroethane	U		0.192	5.00	1	01/12/2022 04:48	WG1800696
Chloroform	U		0.111	5.00	1	01/12/2022 04:48	WG1800696
Chloromethane	U		0.960	2.50	1	01/12/2022 04:48	WG1800696
2-Chlorotoluene	U		0.106	1.00	1	01/12/2022 04:48	WG1800696
4-Chlorotoluene	U		0.114	1.00	1	01/12/2022 04:48	WG1800696
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	01/12/2022 04:48	WG1800696
1,2-Dibromoethane	U		0.126	1.00	1	01/12/2022 04:48	WG1800696
Dibromomethane	U		0.122	1.00	1	01/12/2022 04:48	WG1800696
1,2-Dichlorobenzene	U		0.107	1.00	1	01/12/2022 04:48	WG1800696
1,3-Dichlorobenzene	U		0.110	1.00	1	01/12/2022 04:48	WG1800696
1,4-Dichlorobenzene	U		0.120	1.00	1	01/12/2022 04:48	WG1800696
Dichlorodifluoromethane	U		0.374	5.00	1	01/12/2022 04:48	WG1800696
1,1-Dichloroethane	U		0.100	1.00	1	01/12/2022 04:48	WG1800696
1,2-Dichloroethane	U		0.0819	1.00	1	01/12/2022 04:48	WG1800696
1,1-Dichloroethene	U		0.188	1.00	1	01/12/2022 04:48	WG1800696
cis-1,2-Dichloroethene	U		0.126	1.00	1	01/12/2022 04:48	WG1800696
trans-1,2-Dichloroethene	U		0.149	1.00	1	01/12/2022 04:48	WG1800696
1,2-Dichloropropane	U		0.149	1.00	1	01/12/2022 04:48	WG1800696
1,1-Dichloropropene	U		0.142	1.00	1	01/12/2022 04:48	WG1800696
1,3-Dichloropropane	U		0.110	1.00	1	01/12/2022 04:48	WG1800696
cis-1,3-Dichloropropene	U		0.111	1.00	1	01/12/2022 04:48	WG1800696
trans-1,3-Dichloropropene	U		0.118	1.00	1	01/12/2022 04:48	WG1800696
2,2-Dichloropropane	U		0.161	1.00	1	01/12/2022 04:48	WG1800696
Di-isopropyl ether	U		0.105	1.00	1	01/12/2022 04:48	WG1800696
Ethylbenzene	408		6.85	50.0	50	01/12/2022 14:11	WG1800771
Hexachloro-1,3-butadiene	U		0.337	1.00	1	01/12/2022 04:48	WG1800696
Isopropylbenzene	64.0		0.105	1.00	1	01/12/2022 04:48	WG1800696
p-Isopropyltoluene	15.5		0.120	1.00	1	01/12/2022 04:48	WG1800696
2-Butanone (MEK)	U		1.19	10.0	1	01/12/2022 04:48	WG1800696
Methylene Chloride	U		0.430	5.00	1	01/12/2022 04:48	WG1800696
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	01/12/2022 04:48	WG1800696
Methyl tert-butyl ether	7.41	C3	0.101	1.00	1	01/12/2022 04:48	WG1800696
Naphthalene	163		1.00	5.00	1	01/12/2022 04:48	WG1800696
n-Propylbenzene	326		4.97	50.0	50	01/12/2022 14:11	WG1800771

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
Styrene	U		0.118	1.00	1	01/12/2022 04:48	WG1800696
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	01/12/2022 04:48	WG1800696
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	01/12/2022 04:48	WG1800696
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	01/12/2022 04:48	WG1800696
Tetrachloroethene	U		0.300	1.00	1	01/12/2022 04:48	WG1800696
Toluene	30.0		0.278	1.00	1	01/12/2022 04:48	WG1800696
1,2,3-Trichlorobenzene	U		0.230	1.00	1	01/12/2022 04:48	WG1800696
1,2,4-Trichlorobenzene	U		0.481	1.00	1	01/12/2022 04:48	WG1800696
1,1,1-Trichloroethane	U		0.149	1.00	1	01/12/2022 04:48	WG1800696
1,1,2-Trichloroethane	U		0.158	1.00	1	01/12/2022 04:48	WG1800696
Trichloroethene	U		0.190	1.00	1	01/12/2022 04:48	WG1800696
Trichlorofluoromethane	U		0.160	5.00	1	01/12/2022 04:48	WG1800696
1,2,3-Trichloropropane	U		0.237	2.50	1	01/12/2022 04:48	WG1800696
1,2,4-Trimethylbenzene	1320		16.1	50.0	50	01/12/2022 14:11	WG1800771
1,2,3-Trimethylbenzene	444		5.20	50.0	50	01/12/2022 14:11	WG1800771
1,3,5-Trimethylbenzene	196		0.104	1.00	1	01/12/2022 04:48	WG1800696
Vinyl chloride	U		0.234	1.00	1	01/12/2022 04:48	WG1800696
Xylenes, Total	1620		8.70	150	50	01/12/2022 14:11	WG1800771
(S) Toluene-d8	*94.6*			*80.0-120*		*01/12/2022 04:48*	WG1800696
(S) Toluene-d8	*109*			*80.0-120*		*01/12/2022 14:11*	WG1800771
(S) 4-Bromofluorobenzene	*101*			*77.0-126*		*01/12/2022 04:48*	WG1800696
(S) 4-Bromofluorobenzene	*92.8*			*77.0-126*		*01/12/2022 14:11*	WG1800771
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*		*01/12/2022 04:48*	WG1800696
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*01/12/2022 14:11*	WG1800771

Method Blank (MB)

(MB) R3749109-2 01/11/22 20:19

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*108*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3749109-1 01/11/22 19:17

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5360	97.5	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*103*	*78.0-120*	

Method Blank (MB)

(MB) R3749879-2 01/13/22 12:52

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Gasoline Range Organics-NWTPH	U		31.6	100
(S) a,a,a-Trifluorotoluene(FID)	*109*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R3749879-1 01/13/22 11:57

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5500	5070	92.2	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*99.5*	*78.0-120*	

Method Blank (MB)

(MB) R3749070-3 01/11/22 22:28

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

Method Blank (MB)

(MB) R3749070-3 01/11/22 22:28

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Isopropylbenzene	U		0.105	1.00
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	1.05	J	1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
1,2,3-Trichlorobenzene	U		0.230	1.00
1,2,4-Trichlorobenzene	U		0.481	1.00
1,1,1-Trichloroethane	U		0.149	1.00
1,1,2-Trichloroethane	U		0.158	1.00
Trichloroethene	U		0.190	1.00
Trichlorofluoromethane	U		0.160	5.00
1,2,3-Trichloropropane	U		0.237	2.50
1,2,3-Trimethylbenzene	U		0.104	1.00
1,2,4-Trimethylbenzene	U		0.322	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Vinyl chloride	U		0.234	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*99.9*			*80.0-120*
(S) 4-Bromofluorobenzene	*97.9*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*92.9*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3749070-1 01/11/22 21:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	27.9	112	19.0-160	
Acrolein	25.0	99.0	396	10.0-160	J4
Acrylonitrile	25.0	24.6	98.4	55.0-149	
Benzene	5.00	4.60	92.0	70.0-123	

Laboratory Control Sample (LCS)

(LCS) R3749070-1 01/11/22 21:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromobenzene	5.00	4.40	88.0	73.0-121	
Bromodichloromethane	5.00	5.18	104	75.0-120	
Bromoform	5.00	5.85	117	68.0-132	
Bromomethane	5.00	5.15	103	10.0-160	
n-Butylbenzene	5.00	4.96	99.2	73.0-125	
sec-Butylbenzene	5.00	4.49	89.8	75.0-125	
tert-Butylbenzene	5.00	4.75	95.0	76.0-124	
Carbon tetrachloride	5.00	4.28	85.6	68.0-126	
Chlorobenzene	5.00	4.95	99.0	80.0-121	
Chlorodibromomethane	5.00	5.19	104	77.0-125	
Chloroethane	5.00	6.19	124	47.0-150	
Chloroform	5.00	4.96	99.2	73.0-120	
Chloromethane	5.00	4.90	98.0	41.0-142	
2-Chlorotoluene	5.00	4.56	91.2	76.0-123	
4-Chlorotoluene	5.00	4.90	98.0	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	5.23	105	58.0-134	
1,2-Dibromoethane	5.00	4.99	99.8	80.0-122	
Dibromomethane	5.00	5.16	103	80.0-120	
1,2-Dichlorobenzene	5.00	4.85	97.0	79.0-121	
1,3-Dichlorobenzene	5.00	4.70	94.0	79.0-120	
1,4-Dichlorobenzene	5.00	5.12	102	79.0-120	
Dichlorodifluoromethane	5.00	4.66	93.2	51.0-149	
1,1-Dichloroethane	5.00	4.36	87.2	70.0-126	
1,2-Dichloroethane	5.00	5.30	106	70.0-128	
1,1-Dichloroethene	5.00	4.23	84.6	71.0-124	
cis-1,2-Dichloroethene	5.00	4.62	92.4	73.0-120	
trans-1,2-Dichloroethene	5.00	4.24	84.8	73.0-120	
1,2-Dichloropropane	5.00	4.88	97.6	77.0-125	
1,1-Dichloropropene	5.00	4.83	96.6	74.0-126	
1,3-Dichloropropane	5.00	4.64	92.8	80.0-120	
cis-1,3-Dichloropropene	5.00	5.56	111	80.0-123	
trans-1,3-Dichloropropene	5.00	5.12	102	78.0-124	
2,2-Dichloropropane	5.00	4.27	85.4	58.0-130	
Di-isopropyl ether	5.00	4.41	88.2	58.0-138	
Ethylbenzene	5.00	4.61	92.2	79.0-123	
Hexachloro-1,3-butadiene	5.00	5.34	107	54.0-138	
Isopropylbenzene	5.00	4.50	90.0	76.0-127	
p-Isopropyltoluene	5.00	4.79	95.8	76.0-125	
2-Butanone (MEK)	25.0	24.3	97.2	44.0-160	
Methylene Chloride	5.00	4.01	80.2	67.0-120	

Laboratory Control Sample (LCS)

(LCS) R3749070-1 01/11/22 21:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
4-Methyl-2-pentanone (MIBK)	25.0	24.0	96.0	68.0-142	
Methyl tert-butyl ether	5.00	3.86	77.2	68.0-125	
Naphthalene	5.00	5.23	105	54.0-135	
n-Propylbenzene	5.00	4.64	92.8	77.0-124	
Styrene	5.00	4.52	90.4	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	4.77	95.4	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	5.86	117	65.0-130	
Tetrachloroethene	5.00	5.21	104	72.0-132	
Toluene	5.00	4.73	94.6	79.0-120	
1,1,2-Trichlorotrifluoroethane	5.00	4.87	97.4	69.0-132	
1,2,3-Trichlorobenzene	5.00	4.32	86.4	50.0-138	
1,2,4-Trichlorobenzene	5.00	4.48	89.6	57.0-137	
1,1,1-Trichloroethane	5.00	4.71	94.2	73.0-124	
1,1,2-Trichloroethane	5.00	5.12	102	80.0-120	
Trichloroethene	5.00	4.97	99.4	78.0-124	
Trichlorofluoromethane	5.00	6.12	122	59.0-147	
1,2,3-Trichloropropane	5.00	5.15	103	73.0-130	
1,2,3-Trimethylbenzene	5.00	4.52	90.4	77.0-120	
1,2,4-Trimethylbenzene	5.00	5.02	100	76.0-121	
1,3,5-Trimethylbenzene	5.00	4.47	89.4	76.0-122	
Vinyl chloride	5.00	4.17	83.4	67.0-131	
Xylenes, Total	15.0	14.5	96.7	79.0-123	
(S) Toluene-d8			*92.1*	*80.0-120*	
(S) 4-Bromofluorobenzene			*95.7*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*99.7*	*70.0-130*	

Method Blank (MB)

(MB) R3749281-3 01/12/22 10:43

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Ethylbenzene	U		0.137	1.00
n-Propylbenzene	U		0.0993	1.00
1,2,3-Trimethylbenzene	U		0.104	1.00
1,2,4-Trimethylbenzene	U		0.322	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*112*			*80.0-120*
(S) 4-Bromofluorobenzene	*95.1*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*112*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R3749281-1 01/12/22 09:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.84	96.8	70.0-123	
Ethylbenzene	5.00	4.65	93.0	79.0-123	
n-Propylbenzene	5.00	5.69	114	77.0-124	
1,2,3-Trimethylbenzene	5.00	5.22	104	77.0-120	
1,2,4-Trimethylbenzene	5.00	5.38	108	76.0-121	
Xylenes, Total	15.0	13.6	90.7	79.0-123	
(S) Toluene-d8			*113*	*80.0-120*	
(S) 4-Bromofluorobenzene			*97.4*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*103*	*70.0-130*	

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
C3	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Method sensitivity check is acceptable.
J	The identification of the analyte is acceptable; the reported value is an estimate.
J4	The associated batch QC was outside the established quality control range for accuracy.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

Company Name/Address:
NV5 - Wilsonville, OR

9450 SW Commerce Circle
Ste. 300
Wilsonville. OR 97070

Billing Information:
Accounts Payable
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Pres Chk

Report to: Erik Hedberg

Email To: Erik.Hedberg@nv5.com;Krysta.Krippaehne@nv5

Project Description: ASTORIA WAREHOUSING

City/State Collected: ASTORIA, OR

Please Circle: PT MT CT ET

Phone: 503-968-8787

Client Project # BigBeams-1-04-05

Lab Project # GEODESPOR-BIGB10405

Collected by (print): ADD, EAH

Site/Facility ID # –

P.O. #

Collected by (signature):

Immediately Packed on Ice N ___ Y X

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote # –

Date Results Needed (STD. TAT)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NWTPHGX 40mlAmb HCl	VOCs 8260D 40mlAmb-HCl	Analysis / Container / Preservative								Remarks	Sample # (lab only)
MW1(010422)	G	GW	–	1/4/22	1215	6	X	X										-01
MW2(010522)		GW	–	1/5/22	0845		X	X										-02
MW3(010422)		GW	–	1/4/22	1115		X	X										-03
MW4(010522)		GW	–	1/5/22	1000		X	X										-04
MW5(010422)		GW	–	1/4/22	1625		X	X										-05
MW6(010422)		GW	–	1/4/22	1420		X	X										-06
MW7(010422)		GW	–	1/4/22	1320		X	X										-07
MW8(010422)	↓	GW	–	1/4/22	1525	↓	X	X										-08
		GW																
		GW																

Chain of Custody Page 1 of 1

Pace Analytical®

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

SDG # L1445573

E245

Acctnum: GEODESPOR
Template: T200762
Prelogin: P893234
PM: 110 - Brian Ford
PB:
Shipped Via:

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via: __ UPS __ FedEx __ Courier _____

Tracking # 5016 1230 9999

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	If preservation required by Login: Date/Time
	1/6/22	1000		NS5A2 2	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
				2.8+.0=2.8 48+2+3	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK
				1/10/2022 9:30	

Pace Analytical®
National Center for Testing & Innovation

ANALYTICAL REPORT

January 26, 2021

Revised Report

NV5 - Wilsonville, OR

Sample Delivery Group:	L1307895
Samples Received:	01/19/2021
Project Number:	BIG BEAMS-1-04
Description:	

Report To: Kyle Haggart
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By:

Kelly Mercer
Project Manager

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

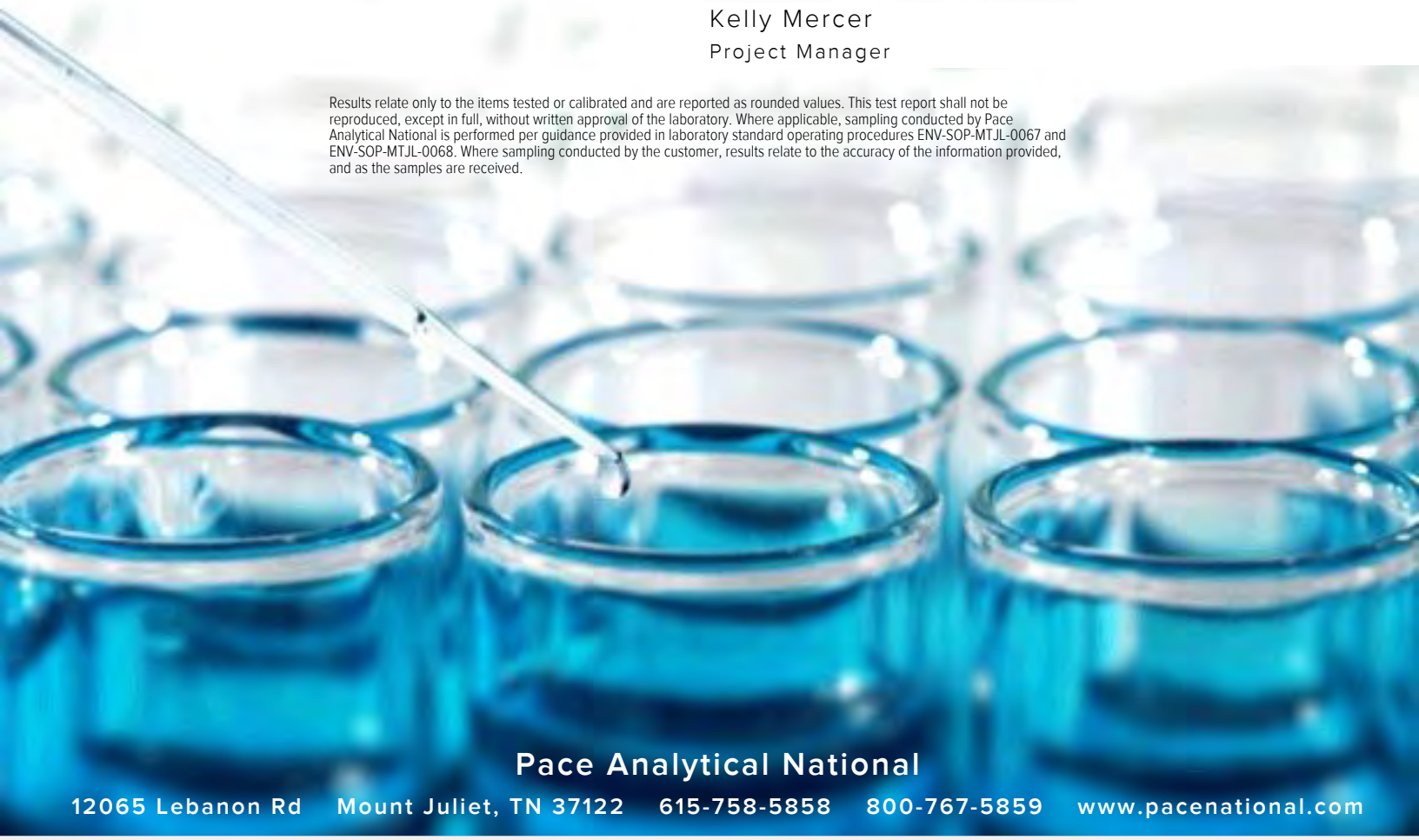

TABLE OF CONTENTS

POST(011521) L1307895-01 Air

Collected by: Tim Hainley
Collected date/time: 01/15/21 12:44
Received date/time: 01/19/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1607810	1	01/19/21 18:46	01/19/21 18:46	CAW	Mt. Juliet, TN

PRE(011521) L1307895-02 Air

Collected by: Tim Hainley
Collected date/time: 01/15/21 13:05
Received date/time: 01/19/21 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1607810	1	01/19/21 19:33	01/19/21 19:33	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1608551	50	01/20/21 17:34	01/20/21 17:34	CAW	Mt. Juliet, TN

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

Kelly Mercer
Project Manager

Report Revision History

Level II Report - Version 1: 01/21/21 18:30

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	4.85	11.5		1	WG1607810
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1607810
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1607810
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1607810
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1607810
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1607810
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1607810
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1607810
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.522	1.62		1	WG1607810
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1607810
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1607810
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1607810
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1607810
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1607810
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1607810
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1607810
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1607810
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1607810
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1607810
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1607810
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1607810
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1607810
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1607810
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1607810
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1607810
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1607810
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1607810
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1607810
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1607810
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1607810
Ethanol	64-17-5	46.10	0.630	1.19	ND	ND		1	WG1607810
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1607810
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.337	1.65		1	WG1607810
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1607810
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	ND	ND		1	WG1607810
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1607810
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1607810
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1607810
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1607810
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1607810
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1607810
Methylene Chloride	75-09-2	84.90	0.200	0.694	2.06	7.15		1	WG1607810
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1607810
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1607810
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1607810
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1607810
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1607810
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1607810
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1607810
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1607810
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1607810
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1607810
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1607810
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1607810
Toluene	108-88-3	92.10	0.500	1.88	0.890	3.35		1	WG1607810
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1607810

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1607810
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1607810
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1607810
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.387	1.90		1	WG1607810
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1607810
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1607810
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1607810
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1607810
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1607810
m&p-Xylene	1330-20-7	106	0.400	1.73	0.660	2.86		1	WG1607810
o-Xylene	95-47-6	106	0.200	0.867	0.321	1.39		1	WG1607810
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	206	851		1	WG1607810
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1607810

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	13.0	30.9		1	WG1607810
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1607810
Benzene	71-43-2	78.10	10.0	31.9	825	2640		50	WG1608551
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1607810
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1607810
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1607810
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1607810
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1607810
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1607810
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1607810
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1607810
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1607810
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1607810
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1607810
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1607810
Cyclohexane	110-82-7	84.20	10.0	34.4	2000	6890		50	WG1608551
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1607810
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1607810
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1607810
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1607810
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1607810
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1607810
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1607810
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1607810
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1607810
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1607810
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1607810
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1607810
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1607810
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1607810
Ethanol	64-17-5	46.10	0.630	1.19	19.4	36.6		1	WG1607810
Ethylbenzene	100-41-4	106	10.0	43.4	1620	7020		50	WG1608551
4-Ethyltoluene	622-96-8	120	10.0	49.1	391	1920		50	WG1608551
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.252	1.42		1	WG1607810
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.513	2.54		1	WG1607810
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1607810
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1607810
Heptane	142-82-5	100	10.0	40.9	3200	13100		50	WG1608551
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1607810
n-Hexane	110-54-3	86.20	31.5	111	4160	14700		50	WG1608551
Isopropylbenzene	98-82-8	120.20	10.0	49.2	98.5	484	J4	50	WG1608551
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1607810
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1607810
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1607810
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1607810
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1607810
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1607810
Naphthalene	91-20-3	128	0.630	3.30	30.8	161		1	WG1607810
2-Propanol	67-63-0	60.10	1.25	3.07	7.28	17.9		1	WG1607810
Propene	115-07-1	42.10	0.400	0.689	4.24	7.30		1	WG1607810
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1607810
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1607810
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1607810
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1607810
Toluene	108-88-3	92.10	25.0	94.2	85.3	321		50	WG1608551
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1607810

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1607810
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1607810
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1607810
1,2,4-Trimethylbenzene	95-63-6	120	10.0	49.1	751	3690		50	WG1608551
1,3,5-Trimethylbenzene	108-67-8	120	10.0	49.1	248	1220		50	WG1608551
2,2,4-Trimethylpentane	540-84-1	114.22	10.0	46.7	3590	16800		50	WG1608551
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1607810
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1607810
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1607810
m&p-Xylene	1330-20-7	106	20.0	86.7	2560	11100		50	WG1608551
o-Xylene	95-47-6	106	10.0	43.4	235	1020		50	WG1608551
TPH (GC/MS) Low Fraction	8006-61-9	101	10000	41300	85000	351000		50	WG1608551
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*176*		J1		WG1607810
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*101*				WG1608551

Method Blank (MB)

(MB) R3614005-3 01/19/21 11:06

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200

Method Blank (MB)

(MB) R3614005-3 01/19/21 11:06

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	0.214	J	0.0932	0.400
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.500
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
Ethanol	U		0.265	0.630
TPH (GC/MS) Low Fraction	U		39.7	200
(S) 1,4-Bromofluorobenzene	*96.7*			*60.0-140*

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

(LCS) R3614005-1 01/19/21 08:59 • (LCSD) R3614005-2 01/19/21 09:40

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.02	4.03	107	107	55.0-148			0.248	25
Propene	3.75	3.96	3.78	106	101	64.0-144			4.65	25
Dichlorodifluoromethane	3.75	4.32	4.34	115	116	64.0-139			0.462	25
1,2-Dichlorotetrafluoroethane	3.75	4.28	4.18	114	111	70.0-130			2.36	25

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

(LCS) R3614005-1 01/19/21 08:59 • (LCSD) R3614005-2 01/19/21 09:40

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloromethane	3.75	4.17	4.05	111	108	70.0-130			2.92	25
Vinyl chloride	3.75	4.21	4.04	112	108	70.0-130			4.12	25
1,3-Butadiene	3.75	4.19	4.03	112	107	70.0-130			3.89	25
Bromomethane	3.75	4.24	3.52	113	93.9	70.0-130			18.6	25
Chloroethane	3.75	4.03	3.80	107	101	70.0-130			5.87	25
Trichlorofluoromethane	3.75	3.89	4.41	104	118	70.0-130			12.5	25
1,1,2-Trichlorotrifluoroethane	3.75	4.40	4.29	117	114	70.0-130			2.53	25
1,1-Dichloroethene	3.75	4.34	4.18	116	111	70.0-130			3.76	25
1,1-Dichloroethane	3.75	4.16	4.14	111	110	70.0-130			0.482	25
Acetone	3.75	3.96	3.91	106	104	70.0-130			1.27	25
2-Propanol	3.75	4.20	4.01	112	107	70.0-139			4.63	25
Carbon disulfide	3.75	4.17	4.00	111	107	70.0-130			4.16	25
Methylene Chloride	3.75	3.81	3.72	102	99.2	70.0-130			2.39	25
MTBE	3.75	4.56	4.43	122	118	70.0-130			2.89	25
trans-1,2-Dichloroethene	3.75	4.19	4.18	112	111	70.0-130			0.239	25
n-Hexane	3.75	4.37	4.30	117	115	70.0-130			1.61	25
Vinyl acetate	3.75	4.21	4.35	112	116	70.0-130			3.27	25
Methyl Ethyl Ketone	3.75	4.42	4.23	118	113	70.0-130			4.39	25
cis-1,2-Dichloroethene	3.75	4.30	4.21	115	112	70.0-130			2.12	25
Chloroform	3.75	4.20	4.18	112	111	70.0-130			0.477	25
Cyclohexane	3.75	4.51	4.46	120	119	70.0-130			1.11	25
1,1,1-Trichloroethane	3.75	4.32	4.24	115	113	70.0-130			1.87	25
Carbon tetrachloride	3.75	4.35	4.29	116	114	70.0-130			1.39	25
Benzene	3.75	4.19	4.11	112	110	70.0-130			1.93	25
1,2-Dichloroethane	3.75	4.20	4.12	112	110	70.0-130			1.92	25
Heptane	3.75	4.36	4.15	116	111	70.0-130			4.94	25
Trichloroethylene	3.75	4.40	4.29	117	114	70.0-130			2.53	25
1,2-Dichloropropane	3.75	4.08	4.00	109	107	70.0-130			1.98	25
1,4-Dioxane	3.75	4.61	4.48	123	119	70.0-140			2.86	25
Bromodichloromethane	3.75	4.22	4.14	113	110	70.0-130			1.91	25
cis-1,3-Dichloropropene	3.75	4.44	4.39	118	117	70.0-130			1.13	25
4-Methyl-2-pentanone (MIBK)	3.75	4.32	4.26	115	114	70.0-139			1.40	25
Toluene	3.75	4.52	4.39	121	117	70.0-130			2.92	25
trans-1,3-Dichloropropene	3.75	4.53	4.31	121	115	70.0-130			4.98	25
1,1,2-Trichloroethane	3.75	4.41	4.15	118	111	70.0-130			6.07	25
Tetrachloroethylene	3.75	4.55	4.45	121	119	70.0-130			2.22	25
Methyl Butyl Ketone	3.75	4.46	4.30	119	115	70.0-149			3.65	25
Dibromochloromethane	3.75	4.33	4.19	115	112	70.0-130			3.29	25
1,2-Dibromoethane	3.75	4.50	4.38	120	117	70.0-130			2.70	25
Chlorobenzene	3.75	4.37	4.26	117	114	70.0-130			2.55	25

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

(LCS) R3614005-1 01/19/21 08:59 • (LCSD) R3614005-2 01/19/21 09:40

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	3.75	4.29	4.22	114	113	70.0-130			1.65	25
m&p-Xylene	7.50	9.00	8.94	120	119	70.0-130			0.669	25
o-Xylene	3.75	4.50	4.42	120	118	70.0-130			1.79	25
Styrene	3.75	4.69	4.70	125	125	70.0-130			0.213	25
Bromoform	3.75	4.20	4.25	112	113	70.0-130			1.18	25
1,1,2,2-Tetrachloroethane	3.75	4.07	4.08	109	109	70.0-130			0.245	25
4-Ethyltoluene	3.75	4.63	4.47	123	119	70.0-130			3.52	25
1,3,5-Trimethylbenzene	3.75	4.58	4.63	122	123	70.0-130			1.09	25
1,2,4-Trimethylbenzene	3.75	4.77	4.69	127	125	70.0-130			1.69	25
1,3-Dichlorobenzene	3.75	4.45	4.32	119	115	70.0-130			2.96	25
1,4-Dichlorobenzene	3.75	4.47	4.35	119	116	70.0-130			2.72	25
Benzyl Chloride	3.75	4.50	4.21	120	112	70.0-152			6.66	25
1,2-Dichlorobenzene	3.75	4.43	4.34	118	116	70.0-130			2.05	25
1,2,4-Trichlorobenzene	3.75	4.35	4.00	116	107	70.0-160			8.38	25
Hexachloro-1,3-butadiene	3.75	4.52	4.49	121	120	70.0-151			0.666	25
Naphthalene	3.75	4.38	4.24	117	113	70.0-159			3.25	25
TPH (GC/MS) Low Fraction	203	237	232	117	114	70.0-130			2.13	25
Allyl Chloride	3.75	4.22	4.52	113	121	70.0-130			6.86	25
2-Chlorotoluene	3.75	4.41	4.37	118	117	70.0-130			0.911	25
Methyl Methacrylate	3.75	4.21	4.13	112	110	70.0-130			1.92	25
Tetrahydrofuran	3.75	4.15	4.06	111	108	70.0-137			2.19	25
2,2,4-Trimethylpentane	3.75	4.44	4.30	118	115	70.0-130			3.20	25
Vinyl Bromide	3.75	3.66	4.20	97.6	112	70.0-130			13.7	25
Isopropylbenzene	3.75	4.59	4.61	122	123	70.0-130			0.435	25
(S) 1,4-Bromofluorobenzene				*98.5*	*101*	*60.0-140*				

Method Blank (MB)

(MB) R3614761-3 01/20/21 10:07

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0715	0.200
Cyclohexane	U		0.0753	0.200
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Heptane	U		0.104	0.200
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200
Toluene	U		0.0870	0.500
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
TPH (GC/MS) Low Fraction	U		39.7	200
(S) 1,4-Bromofluorobenzene	*98.6*			*60.0-140*

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

(LCS) R3614761-1 01/20/21 08:46 • (LCSD) R3614761-2 01/20/21 09:27

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
n-Hexane	3.75	4.30	4.29	115	114	70.0-130			0.233	25
Cyclohexane	3.75	4.69	4.80	125	128	70.0-130			2.32	25
Benzene	3.75	3.95	4.13	105	110	70.0-130			4.46	25
Heptane	3.75	3.96	4.09	106	109	70.0-130			3.23	25
Toluene	3.75	4.50	4.57	120	122	70.0-130			1.54	25
Ethylbenzene	3.75	4.27	4.35	114	116	70.0-130			1.86	25
m&p-Xylene	7.50	9.18	9.19	122	123	70.0-130			0.109	25
o-Xylene	3.75	4.74	4.86	126	130	70.0-130			2.50	25
4-Ethyltoluene	3.75	4.70	4.77	125	127	70.0-130			1.48	25
1,3,5-Trimethylbenzene	3.75	4.68	4.70	125	125	70.0-130			0.426	25
1,2,4-Trimethylbenzene	3.75	4.86	4.83	130	129	70.0-130			0.619	25
TPH (GC/MS) Low Fraction	203	231	235	114	116	70.0-130			1.72	25
2,2,4-Trimethylpentane	3.75	4.48	4.46	119	119	70.0-130			0.447	25
Isopropylbenzene	3.75	4.81	5.00	128	133	70.0-130		J4	3.87	25
(S) 1,4-Bromofluorobenzene				*101*	*100*	*60.0-140*				

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J4	The associated batch QC was outside the established quality control range for accuracy.

Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.
* Not all certifications held by the laboratory are applicable to the results reported in the attached report.
* Accreditation is only applicable to the test methods specified on each scope of accreditation held by Pace National.

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN, 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO00356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

Pace Analytical National 1313 Point Mallard Parkway SE Suite B Decatur, AL, 35601

Alabama	40160
ANSI National Accreditation Board	L2239

Pace Analytical National 660 Bercut Dr. Ste. C Sacramento, CA, 95811

California	2961	Oregon	CA300002
Minnesota	006-999-465	Washington	C926
North Dakota	R-214		

Pace Analytical National 6000 South Eastern Avenue Ste 9A Las Vegas, NV, 89119

Nevada	NV009412021-1

Pace Analytical National 1606 E. Brazos Street Suite D Victoria, TX, 77901

Texas	T104704328-20-18

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

GeoDesign Inc. - Wilsonville, OR

9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Billing Information:
Accounts Payable
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Pres Chk

Report to: Kyle Haggart

Email To: khaggart@geodesigninc.com

Project Description:

City/State Collected: Astoria, OR

Please Circle: (PT) MT CT ET

Phone: 503-968-8787

Client Project # BigBeams-1-04

Lab Project # GEODESPOR-~~HAGGART~~ Hainly

Collected by (print): Tim Hainley

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N X Y ___

Rush? (Lab MUST be Notified)
___ Same Day ___ Five Day
___ Next Day X 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NWTPHDX NOSGT 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH15ml/Syr	PAHs 8270E-SIM 8ozClr-NoPres	RCRA8 Metals 6020 8ozClr-NoPres	VOCs 8260D 40mlAmb/MeOH15ml/Syr	TO-15				Remarks	Sample # (lab only)
POST(011520)		~~SS~~ GW	—	1/15/20	1244	1						X					-01
PRE(011520)		~~SS~~ GW	—	1/15/20	1305	1						X					02
		SS															
		SS															
		SS															
		SS															
		SS															
		SS															
		SS															
		SS															

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 141117522797

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

Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	1/18/21	1400		
Relinquished by: (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received: AMB 2+1Unused
				If preservation required by Login: Date/Time
Relinquished by: (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time: 1/19/21 0845
			Josh Yanyusky	Hold: Condition: NCF / OK

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # 1307895

Table # M028

Acctnum: GEODESPOR

Template: T177547

Prelogin: P809084

PM: 110 - Brian Ford

PB: KW 11-10-20

Shipped Via:

AMENDED COC - samples were collected in 2021; not 2020. please update sample ID's as shown here - incorrect dates originally on COC -

Scanned with CamScanner

GeoDesign Inc. - Wilsonville, OR

9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Billing Information:
Accounts Payable
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Pres Chk

Report to: Kyle Haggart

Email To: khaggart@geodesigninc.com

Project Description:

City/State Collected: Astoria, OR

Please Circle: (PT) MT CT ET

Phone: 503-968-8787

Client Project # BigBeams-1-04

Lab Project # GEODESPOR-~~HAGGART~~ Hainly

Collected by (print): Tim Hainly

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N X Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Analysis / Container / Preservative

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	NWTPHDX NOSGT 8ozClr-NoPres	NWTPHGX 40mlAmb/MeOH15ml/Syr	PAHs 8270E-SIM 8ozClr-NoPres	RCRA8 Metals 6020 8ozClr-NoPres	VOCs 8260D 40mlAmb/MeOH15ml/Syr	TO-15				Remarks	Sample # (lab only)
POST(011521)		SS		1/15/21	1244	1						X					
POST(011521)		SS		1/15/21	1305	1						X					
		SS															
		SS															
		SS															
		SS															
		SS															
		SS															
		SS															
		SS															

Chain of Custody Page 1 of 1

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National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG #

Table #

Acctnum: GEODESPOR
Template: T177547
Prelogin: P809084
PM: 110 - Brian Ford
PB: RW 11-10-20

Shipped Via:

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / OK

ANALYTICAL REPORT

March 10, 2021

NV5 - Wilsonville, OR

Sample Delivery Group:	L1322233
Samples Received:	03/03/2021
Project Number:	BIGBEAMS-1-04-05
Description:	Former Astoria Warehousing

Report To:

Kyle Haggart
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By:

Brian Ford
Project Manager

TABLE OF CONTENTS

PRE(030121) L1322233-01 Air

Collected by: Tim Hainley
Collected date/time: 03/01/21 16:24
Received date/time: 03/03/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1630057	20	03/06/21 01:25	03/06/21 01:25	FKG	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1632302	500	03/10/21 14:59	03/10/21 14:59	CAW	Mt. Juliet, TN

POST(030121) L1322233-02 Air

Collected by: Tim Hainley
Collected date/time: 03/01/21 16:35
Received date/time: 03/03/21 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1630057	1	03/06/21 00:46	03/06/21 00:46	FKG	Mt. Juliet, TN

CASE NARRATIVE

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

Brian Ford
Project Manager

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	25.0	59.4	29.8	70.8		20	WG1630057
Allyl chloride	107-05-1	76.53	4.00	12.5	ND	ND		20	WG1630057
Benzene	71-43-2	78.10	100	319	2130	6800		500	WG1632302
Benzyl Chloride	100-44-7	127	4.00	20.8	ND	ND		20	WG1630057
Bromodichloromethane	75-27-4	164	4.00	26.8	ND	ND		20	WG1630057
Bromoform	75-25-2	253	12.0	124	ND	ND		20	WG1630057
Bromomethane	74-83-9	94.90	4.00	15.5	ND	ND		20	WG1630057
1,3-Butadiene	106-99-0	54.10	40.0	88.5	ND	ND		20	WG1630057
Carbon disulfide	75-15-0	76.10	4.00	12.4	ND	ND		20	WG1630057
Carbon tetrachloride	56-23-5	154	4.00	25.2	ND	ND		20	WG1630057
Chlorobenzene	108-90-7	113	4.00	18.5	ND	ND		20	WG1630057
Chloroethane	75-00-3	64.50	4.00	10.6	ND	ND		20	WG1630057
Chloroform	67-66-3	119	4.00	19.5	ND	ND		20	WG1630057
Chloromethane	74-87-3	50.50	4.00	8.26	ND	ND		20	WG1630057
2-Chlorotoluene	95-49-8	126	4.00	20.6	ND	ND		20	WG1630057
Cyclohexane	110-82-7	84.20	100	344	5000	17200		500	WG1632302
Dibromochloromethane	124-48-1	208	4.00	34.0	ND	ND		20	WG1630057
1,2-Dibromoethane	106-93-4	188	4.00	30.8	ND	ND		20	WG1630057
1,2-Dichlorobenzene	95-50-1	147	4.00	24.0	ND	ND		20	WG1630057
1,3-Dichlorobenzene	541-73-1	147	4.00	24.0	ND	ND		20	WG1630057
1,4-Dichlorobenzene	106-46-7	147	4.00	24.0	ND	ND		20	WG1630057
1,2-Dichloroethane	107-06-2	99	4.00	16.2	ND	ND		20	WG1630057
1,1-Dichloroethane	75-34-3	98	4.00	16.0	ND	ND		20	WG1630057
1,1-Dichloroethene	75-35-4	96.90	4.00	15.9	ND	ND		20	WG1630057
cis-1,2-Dichloroethene	156-59-2	96.90	4.00	15.9	ND	ND		20	WG1630057
trans-1,2-Dichloroethene	156-60-5	96.90	4.00	15.9	ND	ND		20	WG1630057
1,2-Dichloropropane	78-87-5	113	4.00	18.5	ND	ND		20	WG1630057
cis-1,3-Dichloropropene	10061-01-5	111	4.00	18.2	ND	ND		20	WG1630057
trans-1,3-Dichloropropene	10061-02-6	111	4.00	18.2	ND	ND		20	WG1630057
1,4-Dioxane	123-91-1	88.10	4.00	14.4	ND	ND		20	WG1630057
Ethanol	64-17-5	46.10	12.6	23.8	70.1	132		20	WG1630057
Ethylbenzene	100-41-4	106	100	434	5690	24700		500	WG1632302
4-Ethyltoluene	622-96-8	120	4.00	19.6	1410	6920		20	WG1630057
Trichlorofluoromethane	75-69-4	137.40	4.00	22.5	ND	ND		20	WG1630057
Dichlorodifluoromethane	75-71-8	120.92	4.00	19.8	ND	ND		20	WG1630057
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	4.00	30.7	ND	ND		20	WG1630057
1,2-Dichlorotetrafluoroethane	76-14-2	171	4.00	28.0	ND	ND		20	WG1630057
Heptane	142-82-5	100	100	409	9780	40000		500	WG1632302
Hexachloro-1,3-butadiene	87-68-3	261	12.6	135	ND	ND		20	WG1630057
n-Hexane	110-54-3	86.20	315	1110	8620	30400		500	WG1632302
Isopropylbenzene	98-82-8	120.20	4.00	19.7	328	1610		20	WG1630057
Methylene Chloride	75-09-2	84.90	4.00	13.9	ND	ND		20	WG1630057
Methyl Butyl Ketone	591-78-6	100	25.0	102	ND	ND		20	WG1630057
2-Butanone (MEK)	78-93-3	72.10	25.0	73.7	ND	ND		20	WG1630057
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	25.0	102	ND	ND		20	WG1630057
Methyl methacrylate	80-62-6	100.12	4.00	16.4	ND	ND		20	WG1630057
MTBE	1634-04-4	88.10	4.00	14.4	ND	ND		20	WG1630057
Naphthalene	91-20-3	128	12.6	66.0	31.6	165		20	WG1630057
2-Propanol	67-63-0	60.10	25.0	61.5	ND	ND		20	WG1630057
Propene	115-07-1	42.10	8.00	13.8	8.59	14.8	B	20	WG1630057
Styrene	100-42-5	104	4.00	17.0	ND	ND		20	WG1630057
1,1,2,2-Tetrachloroethane	79-34-5	168	4.00	27.5	ND	ND		20	WG1630057
Tetrachloroethylene	127-18-4	166	4.00	27.2	ND	ND		20	WG1630057
Tetrahydrofuran	109-99-9	72.10	4.00	11.8	ND	ND		20	WG1630057
Toluene	108-88-3	92.10	10.0	37.7	149	561		20	WG1630057
1,2,4-Trichlorobenzene	120-82-1	181	12.6	93.3	ND	ND		20	WG1630057

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	4.00	21.8	ND	ND		20	WG1630057
1,1,2-Trichloroethane	79-00-5	133	4.00	21.8	ND	ND		20	WG1630057
Trichloroethylene	79-01-6	131	4.00	21.4	ND	ND		20	WG1630057
1,2,4-Trimethylbenzene	95-63-6	120	100	491	2360	11600		500	WG1632302
1,3,5-Trimethylbenzene	108-67-8	120	4.00	19.6	1030	5060		20	WG1630057
2,2,4-Trimethylpentane	540-84-1	114.22	100	467	11500	53700		500	WG1632302
Vinyl chloride	75-01-4	62.50	4.00	10.2	ND	ND		20	WG1630057
Vinyl Bromide	593-60-2	106.95	4.00	17.5	ND	ND		20	WG1630057
Vinyl acetate	108-05-4	86.10	4.00	14.1	ND	ND		20	WG1630057
m&p-Xylene	1330-20-7	106	200	867	7700	33400		500	WG1632302
o-Xylene	95-47-6	106	4.00	17.3	677	2940		20	WG1630057
TPH (GC/MS) Low Fraction	8006-61-9	101	100000	413000	291000	1200000		500	WG1632302
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*113*				WG1630057
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*98.3*				WG1632302

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	28.2	67.0		1	WG1630057
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1630057
Benzene	71-43-2	78.10	0.200	0.639	0.341	1.09		1	WG1630057
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1630057
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1630057
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1630057
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1630057
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1630057
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1630057
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1630057
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1630057
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1630057
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1630057
Chloromethane	74-87-3	50.50	0.200	0.413	0.382	0.789		1	WG1630057
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1630057
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1630057
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1630057
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1630057
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1630057
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1630057
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1630057
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1630057
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1630057
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1630057
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1630057
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1630057
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1630057
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1630057
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1630057
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1630057
Ethanol	64-17-5	46.10	0.630	1.19	102	192	E	1	WG1630057
Ethylbenzene	100-41-4	106	0.200	0.867	0.632	2.74		1	WG1630057
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.336	1.65		1	WG1630057
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1630057
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.328	1.62		1	WG1630057
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1630057
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1630057
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1630057
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1630057
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1630057
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1630057
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.266	0.924		1	WG1630057
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1630057
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	3.54	10.4		1	WG1630057
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1630057
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1630057
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1630057
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1630057
2-Propanol	67-63-0	60.10	1.25	3.07	101	248	E	1	WG1630057
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1630057
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1630057
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1630057
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1630057
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1630057
Toluene	108-88-3	92.10	0.500	1.88	2.04	7.68		1	WG1630057
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1630057

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1630057
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1630057
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1630057
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	2.96	14.5		1	WG1630057
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	1.04	5.10		1	WG1630057
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.894	4.18		1	WG1630057
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1630057
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1630057
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1630057
m&p-Xylene	1330-20-7	106	0.400	1.73	4.61	20.0		1	WG1630057
o-Xylene	95-47-6	106	0.200	0.867	1.21	5.25		1	WG1630057
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	ND	ND		1	WG1630057
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*98.1*				WG1630057

Method Blank (MB)

(MB) R3627820-3 03/05/21 11:03

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200

Method Blank (MB)

(MB) R3627820-3 03/05/21 11:03

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	0.0946	J	0.0932	0.400
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.500
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
Ethanol	U		0.265	0.630
TPH (GC/MS) Low Fraction	U		39.7	200
(S) 1,4-Bromofluorobenzene	*97.5*			*60.0-140*

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

(LCS) R3627820-1 03/05/21 09:39 • (LCSD) R3627820-2 03/05/21 10:21

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.15	4.07	111	109	55.0-148			1.95	25
Propene	3.75	3.95	4.01	105	107	64.0-144			1.51	25
Dichlorodifluoromethane	3.75	4.50	4.50	120	120	64.0-139			0.000	25
1,2-Dichlorotetrafluoroethane	3.75	4.33	4.39	115	117	70.0-130			1.38	25

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

(LCS) R3627820-1 03/05/21 09:39 • (LCSD) R3627820-2 03/05/21 10:21

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloromethane	3.75	4.30	4.31	115	115	70.0-130			0.232	25
Vinyl chloride	3.75	4.18	4.20	111	112	70.0-130			0.477	25
1,3-Butadiene	3.75	3.97	3.88	106	103	70.0-130			2.29	25
Bromomethane	3.75	4.35	4.33	116	115	70.0-130			0.461	25
Chloroethane	3.75	4.35	4.30	116	115	70.0-130			1.16	25
Trichlorofluoromethane	3.75	4.30	4.30	115	115	70.0-130			0.000	25
1,1,2-Trichlorotrifluoroethane	3.75	4.31	4.29	115	114	70.0-130			0.465	25
1,1-Dichloroethene	3.75	4.24	4.22	113	113	70.0-130			0.473	25
1,1-Dichloroethane	3.75	4.26	4.22	114	113	70.0-130			0.943	25
Acetone	3.75	4.32	4.32	115	115	70.0-130			0.000	25
2-Propanol	3.75	4.36	4.36	116	116	70.0-139			0.000	25
Carbon disulfide	3.75	4.24	4.20	113	112	70.0-130			0.948	25
Methylene Chloride	3.75	4.14	4.15	110	111	70.0-130			0.241	25
MTBE	3.75	4.27	4.27	114	114	70.0-130			0.000	25
trans-1,2-Dichloroethene	3.75	4.27	4.21	114	112	70.0-130			1.42	25
n-Hexane	3.75	4.21	4.16	112	111	70.0-130			1.19	25
Vinyl acetate	3.75	4.17	4.10	111	109	70.0-130			1.69	25
Methyl Ethyl Ketone	3.75	4.44	4.50	118	120	70.0-130			1.34	25
cis-1,2-Dichloroethene	3.75	4.24	4.27	113	114	70.0-130			0.705	25
Chloroform	3.75	4.21	4.19	112	112	70.0-130			0.476	25
Cyclohexane	3.75	4.33	4.28	115	114	70.0-130			1.16	25
1,1,1-Trichloroethane	3.75	4.27	4.27	114	114	70.0-130			0.000	25
Carbon tetrachloride	3.75	4.24	4.23	113	113	70.0-130			0.236	25
Benzene	3.75	4.29	4.25	114	113	70.0-130			0.937	25
1,2-Dichloroethane	3.75	4.20	4.19	112	112	70.0-130			0.238	25
Heptane	3.75	3.90	3.83	104	102	70.0-130			1.81	25
Trichloroethylene	3.75	4.23	4.22	113	113	70.0-130			0.237	25
1,2-Dichloropropane	3.75	4.16	4.15	111	111	70.0-130			0.241	25
1,4-Dioxane	3.75	4.21	4.17	112	111	70.0-140			0.955	25
Bromodichloromethane	3.75	4.25	4.26	113	114	70.0-130			0.235	25
cis-1,3-Dichloropropene	3.75	4.27	4.22	114	113	70.0-130			1.18	25
4-Methyl-2-pentanone (MIBK)	3.75	4.46	4.45	119	119	70.0-139			0.224	25
Toluene	3.75	4.28	4.25	114	113	70.0-130			0.703	25
trans-1,3-Dichloropropene	3.75	4.28	4.30	114	115	70.0-130			0.466	25
1,1,2-Trichloroethane	3.75	4.30	4.27	115	114	70.0-130			0.700	25
Tetrachloroethylene	3.75	4.26	4.24	114	113	70.0-130			0.471	25
Methyl Butyl Ketone	3.75	4.53	4.53	121	121	70.0-149			0.000	25
Dibromochloromethane	3.75	4.25	4.24	113	113	70.0-130			0.236	25
1,2-Dibromoethane	3.75	4.31	4.32	115	115	70.0-130			0.232	25
Chlorobenzene	3.75	4.32	4.29	115	114	70.0-130			0.697	25

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

(LCS) R3627820-1 03/05/21 09:39 • (LCSD) R3627820-2 03/05/21 10:21

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	3.75	4.36	4.36	116	116	70.0-130			0.000	25
m&p-Xylene	7.50	8.72	8.63	116	115	70.0-130			1.04	25
o-Xylene	3.75	4.21	4.21	112	112	70.0-130			0.000	25
Styrene	3.75	4.36	4.33	116	115	70.0-130			0.690	25
Bromoform	3.75	4.28	4.30	114	115	70.0-130			0.466	25
1,1,2,2-Tetrachloroethane	3.75	4.29	4.28	114	114	70.0-130			0.233	25
4-Ethyltoluene	3.75	4.36	4.33	116	115	70.0-130			0.690	25
1,3,5-Trimethylbenzene	3.75	4.46	4.41	119	118	70.0-130			1.13	25
1,2,4-Trimethylbenzene	3.75	4.37	4.35	117	116	70.0-130			0.459	25
1,3-Dichlorobenzene	3.75	4.49	4.48	120	119	70.0-130			0.223	25
1,4-Dichlorobenzene	3.75	4.53	4.52	121	121	70.0-130			0.221	25
Benzyl Chloride	3.75	4.61	4.57	123	122	70.0-152			0.871	25
1,2-Dichlorobenzene	3.75	4.45	4.48	119	119	70.0-130			0.672	25
1,2,4-Trichlorobenzene	3.75	4.56	4.54	122	121	70.0-160			0.440	25
Hexachloro-1,3-butadiene	3.75	4.58	4.59	122	122	70.0-151			0.218	25
Naphthalene	3.75	4.49	4.51	120	120	70.0-159			0.444	25
TPH (GC/MS) Low Fraction	203	244	243	120	120	70.0-130			0.411	25
Allyl Chloride	3.75	4.32	4.31	115	115	70.0-130			0.232	25
2-Chlorotoluene	3.75	4.28	4.26	114	114	70.0-130			0.468	25
Methyl Methacrylate	3.75	4.40	4.37	117	117	70.0-130			0.684	25
Tetrahydrofuran	3.75	4.27	4.28	114	114	70.0-137			0.234	25
2,2,4-Trimethylpentane	3.75	4.18	4.18	111	111	70.0-130			0.000	25
Vinyl Bromide	3.75	4.31	4.30	115	115	70.0-130			0.232	25
Isopropylbenzene	3.75	4.28	4.26	114	114	70.0-130			0.468	25
(S) 1,4-Bromofluorobenzene				*99.1*	*99.2*	*60.0-140*				

Method Blank (MB)

(MB) R3629353-3 03/10/21 09:56

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0715	0.200
Cyclohexane	U		0.0753	0.200
Ethylbenzene	U		0.0835	0.200
Heptane	U		0.104	0.200
n-Hexane	U		0.206	0.630
1,2,4-Trimethylbenzene	U		0.0764	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
m&p-Xylene	U		0.135	0.400
TPH (GC/MS) Low Fraction	U		39.7	200
(S) 1,4-Bromofluorobenzene	*95.7*			*60.0-140*

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

(LCS) R3629353-1 03/10/21 08:33 • (LCSD) R3629353-2 03/10/21 09:15

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
n-Hexane	3.75	4.10	4.12	109	110	70.0-130			0.487	25
Cyclohexane	3.75	4.32	4.38	115	117	70.0-130			1.38	25
Benzene	3.75	4.30	4.33	115	115	70.0-130			0.695	25
Heptane	3.75	3.84	3.76	102	100	70.0-130			2.11	25
Ethylbenzene	3.75	4.46	4.43	119	118	70.0-130			0.675	25
m&p-Xylene	7.50	8.93	8.91	119	119	70.0-130			0.224	25
1,2,4-Trimethylbenzene	3.75	4.55	4.56	121	122	70.0-130			0.220	25
TPH (GC/MS) Low Fraction	203	250	251	123	124	70.0-130			0.399	25
2,2,4-Trimethylpentane	3.75	4.10	4.08	109	109	70.0-130			0.489	25
(S) 1,4-Bromofluorobenzene				*97.7*	*98.0*	*60.0-140*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

Company Name/Address:
NV5 - Wilsonville, OR

9450 SW Commerce Circle
Ste. 300
Wilsonville. OR 97070

Billing Information:
Accounts Payable
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Pres Chk

Report to:
Kyle Haggart

Email To: **Kyle.Haggart@nv5.com**

Project Description: Former Astoria Warehousing

City/State Collected: Astoria. OR

Please Circle: (PT) MT CT ET

Phone: **503-968-8787**

Client Project # BisBeams-1-04-05

Lab Project # **GEODESPOR-HAGGART**

Collected by (print): Tim Hainley

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N X Y ___

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day X 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	TO-15 VOCs Summa Gx, Full List VOCs									Remarks	Sample # (lab only)
PRE(030121)		Air		3/1/21	1624	1	X										-01
POST(030121)		Air		3/1/21	1635	1	X										-02
		Air															

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Road Mt Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # L1322233

Table # M041

Acctnum: GEODESPOR

Template: T182090

Prelogin: P827871

PM: 110 - Brian Ford

PB: CSL 02/24/21

Shipped Via: FedEx Ground

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 934816022097

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes (No) HCL / MeoH TBR	If preservation required by Login: Date/Time
	3/2/21	1045			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	
	3/2/21	1330		AMB 2+2 Unused	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: / Condition: NCF / (OK)
			Josh Grugusky	3/3/21 09:15	

ANALYTICAL REPORT

April 09, 2021

NV5 - Wilsonville, OR

Sample Delivery Group:	L1334068
Samples Received:	04/03/2021
Project Number:	BigBeams-1-02
Description:	Former Astoria Warehousing

Report To: Kyle Haggart
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By: Brian Ford

Brian Ford
Project Manager

TABLE OF CONTENTS

PRE(040121) L1334068-01 Air

Collected by: Tim Hainley
Collected date/time: 04/01/21 12:00
Received date/time: 04/03/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1647042	10	04/07/21 23:29	04/07/21 23:29	FKG	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1647837	200	04/08/21 13:27	04/08/21 13:27	MBF	Mt. Juliet, TN

POST(040121) L1334068-02 Air

Collected by: Tim Hainley
Collected date/time: 04/01/21 11:50
Received date/time: 04/03/21 09:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1648661	1	04/09/21 16:36	04/09/21 16:36	CEP	Mt. Juliet, TN

CASE NARRATIVE

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

Brian Ford
Project Manager

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	12.5	29.7	15.1	35.9		10	WG1647042
Allyl chloride	107-05-1	76.53	2.00	6.26	ND	ND		10	WG1647042
Benzene	71-43-2	78.10	2.00	6.39	697	2230		10	WG1647042
Benzyl Chloride	100-44-7	127	2.00	10.4	ND	ND		10	WG1647042
Bromodichloromethane	75-27-4	164	2.00	13.4	ND	ND		10	WG1647042
Bromoform	75-25-2	253	6.00	62.1	ND	ND		10	WG1647042
Bromomethane	74-83-9	94.90	2.00	7.76	ND	ND		10	WG1647042
1,3-Butadiene	106-99-0	54.10	20.0	44.3	ND	ND		10	WG1647042
Carbon disulfide	75-15-0	76.10	2.00	6.22	ND	ND		10	WG1647042
Carbon tetrachloride	56-23-5	154	2.00	12.6	ND	ND		10	WG1647042
Chlorobenzene	108-90-7	113	2.00	9.24	ND	ND		10	WG1647042
Chloroethane	75-00-3	64.50	2.00	5.28	ND	ND		10	WG1647042
Chloroform	67-66-3	119	2.00	9.73	ND	ND		10	WG1647042
Chloromethane	74-87-3	50.50	2.00	4.13	ND	ND		10	WG1647042
2-Chlorotoluene	95-49-8	126	2.00	10.3	ND	ND		10	WG1647042
Cyclohexane	110-82-7	84.20	40.0	138	2640	9090		200	WG1647837
Dibromochloromethane	124-48-1	208	2.00	17.0	ND	ND		10	WG1647042
1,2-Dibromoethane	106-93-4	188	2.00	15.4	ND	ND		10	WG1647042
1,2-Dichlorobenzene	95-50-1	147	2.00	12.0	ND	ND		10	WG1647042
1,3-Dichlorobenzene	541-73-1	147	2.00	12.0	ND	ND		10	WG1647042
1,4-Dichlorobenzene	106-46-7	147	2.00	12.0	ND	ND		10	WG1647042
1,2-Dichloroethane	107-06-2	99	2.00	8.10	ND	ND		10	WG1647042
1,1-Dichloroethane	75-34-3	98	2.00	8.02	ND	ND		10	WG1647042
1,1-Dichloroethene	75-35-4	96.90	2.00	7.93	ND	ND		10	WG1647042
cis-1,2-Dichloroethene	156-59-2	96.90	2.00	7.93	ND	ND		10	WG1647042
trans-1,2-Dichloroethene	156-60-5	96.90	2.00	7.93	ND	ND		10	WG1647042
1,2-Dichloropropane	78-87-5	113	2.00	9.24	ND	ND		10	WG1647042
cis-1,3-Dichloropropene	10061-01-5	111	2.00	9.08	ND	ND		10	WG1647042
trans-1,3-Dichloropropene	10061-02-6	111	2.00	9.08	ND	ND		10	WG1647042
1,4-Dioxane	123-91-1	88.10	2.00	7.21	ND	ND		10	WG1647042
Ethanol	64-17-5	46.10	6.30	11.9	167	315		10	WG1647042
Ethylbenzene	100-41-4	106	40.0	173	4470	19400		200	WG1647837
4-Ethyltoluene	622-96-8	120	40.0	196	1170	5740		200	WG1647837
Trichlorofluoromethane	75-69-4	137.40	2.00	11.2	ND	ND		10	WG1647042
Dichlorodifluoromethane	75-71-8	120.92	2.00	9.89	ND	ND		10	WG1647042
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	2.00	15.3	ND	ND		10	WG1647042
1,2-Dichlorotetrafluoroethane	76-14-2	171	2.00	14.0	ND	ND		10	WG1647042
Heptane	142-82-5	100	40.0	164	5500	22500		200	WG1647837
Hexachloro-1,3-butadiene	87-68-3	261	6.30	67.3	ND	ND		10	WG1647042
n-Hexane	110-54-3	86.20	126	444	5300	18700		200	WG1647837
Isopropylbenzene	98-82-8	120.20	2.00	9.83	383	1880		10	WG1647042
Methylene Chloride	75-09-2	84.90	2.00	6.94	ND	ND		10	WG1647042
Methyl Butyl Ketone	591-78-6	100	12.5	51.1	ND	ND		10	WG1647042
2-Butanone (MEK)	78-93-3	72.10	12.5	36.9	ND	ND		10	WG1647042
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	12.5	51.2	ND	ND		10	WG1647042
Methyl methacrylate	80-62-6	100.12	2.00	8.19	ND	ND		10	WG1647042
MTBE	1634-04-4	88.10	2.00	7.21	ND	ND		10	WG1647042
Naphthalene	91-20-3	128	6.30	33.0	96.5	505		10	WG1647042
2-Propanol	67-63-0	60.10	12.5	30.7	ND	ND		10	WG1647042
Propene	115-07-1	42.10	4.00	6.89	ND	ND		10	WG1647042
Styrene	100-42-5	104	2.00	8.51	ND	ND		10	WG1647042
1,1,2,2-Tetrachloroethane	79-34-5	168	2.00	13.7	ND	ND		10	WG1647042
Tetrachloroethylene	127-18-4	166	2.00	13.6	ND	ND		10	WG1647042
Tetrahydrofuran	109-99-9	72.10	2.00	5.90	ND	ND		10	WG1647042
Toluene	108-88-3	92.10	5.00	18.8	72.6	273		10	WG1647042
1,2,4-Trichlorobenzene	120-82-1	181	6.30	46.6	ND	ND		10	WG1647042

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	2.00	10.9	ND	ND		10	WG1647042
1,1,2-Trichloroethane	79-00-5	133	2.00	10.9	ND	ND		10	WG1647042
Trichloroethylene	79-01-6	131	2.00	10.7	ND	ND		10	WG1647042
1,2,4-Trimethylbenzene	95-63-6	120	40.0	196	2810	13800		200	WG1647837
1,3,5-Trimethylbenzene	108-67-8	120	40.0	196	893	4380		200	WG1647837
2,2,4-Trimethylpentane	540-84-1	114.22	2.00	9.34	ND	ND		10	WG1647042
Vinyl chloride	75-01-4	62.50	2.00	5.11	ND	ND		10	WG1647042
Vinyl Bromide	593-60-2	106.95	2.00	8.75	ND	ND		10	WG1647042
Vinyl acetate	108-05-4	86.10	2.00	7.04	ND	ND		10	WG1647042
m&p-Xylene	1330-20-7	106	80.0	347	6000	26000		200	WG1647837
o-Xylene	95-47-6	106	2.00	8.67	622	2700		10	WG1647042
TPH (GC/MS) Low Fraction	8006-61-9	101	40000	165000	189000	781000		200	WG1647837
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*124*				WG1647042
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.2*				WG1647837

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	7.37	17.5		1	WG1648661
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1648661
Benzene	71-43-2	78.10	0.200	0.639	3.12	9.97		1	WG1648661
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1648661
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1648661
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1648661
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1648661
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1648661
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1648661
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1648661
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1648661
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND	J3	1	WG1648661
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1648661
Chloromethane	74-87-3	50.50	0.200	0.413	0.288	0.595		1	WG1648661
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1648661
Cyclohexane	110-82-7	84.20	0.200	0.689	0.782	2.69		1	WG1648661
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1648661
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1648661
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1648661
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1648661
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1648661
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1648661
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1648661
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1648661
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1648661
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1648661
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1648661
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1648661
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1648661
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1648661
Ethanol	64-17-5	46.10	0.630	1.19	233	439	E J3	1	WG1648661
Ethylbenzene	100-41-4	106	0.200	0.867	0.330	1.43		1	WG1648661
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1648661
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1648661
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.236	1.17		1	WG1648661
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1648661
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1648661
Heptane	142-82-5	100	0.200	0.818	0.377	1.54		1	WG1648661
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1648661
n-Hexane	110-54-3	86.20	0.630	2.22	2.16	7.62		1	WG1648661
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1648661
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.930	3.23		1	WG1648661
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1648661
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1648661
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1648661
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1648661
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1648661
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1648661
2-Propanol	67-63-0	60.10	1.25	3.07	8.78	21.6		1	WG1648661
Propene	115-07-1	42.10	0.400	0.689	ND	ND		1	WG1648661
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1648661
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1648661
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1648661
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1648661
Toluene	108-88-3	92.10	0.500	1.88	3.08	11.6		1	WG1648661
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1648661

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1648661
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1648661
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1648661
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.224	1.10		1	WG1648661
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	ND	ND		1	WG1648661
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	0.557	2.60		1	WG1648661
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1648661
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1648661
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1648661
m&p-Xylene	1330-20-7	106	0.400	1.73	0.628	2.72		1	WG1648661
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1648661
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	ND	ND		1	WG1648661
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.7*				WG1648661

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

Method Blank (MB)

(MB) R3639432-3 04/07/21 10:03

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
Isopropylbenzene	U		0.0777	0.200
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200

Method Blank (MB)

(MB) R3639432-3 04/07/21 10:03

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	U		0.0932	0.400
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.500
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
o-Xylene	U		0.0828	0.200
Ethanol	U		0.265	0.630
(S) 1,4-Bromofluorobenzene	*99.5*			*60.0-140*

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

(LCS) R3639432-1 04/07/21 08:42 • (LCSD) R3639432-2 04/07/21 09:24

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	3.57	3.58	95.2	95.5	55.0-148			0.280	25
Propene	3.75	3.77	3.85	101	103	64.0-144			2.10	25
Dichlorodifluoromethane	3.75	4.19	3.73	112	99.5	64.0-139			11.6	25
1,2-Dichlorotetrafluoroethane	3.75	3.96	4.01	106	107	70.0-130			1.25	25
Chloromethane	3.75	3.88	3.84	103	102	70.0-130			1.04	25
Vinyl chloride	3.75	4.11	4.17	110	111	70.0-130			1.45	25
1,3-Butadiene	3.75	3.93	3.98	105	106	70.0-130			1.26	25
Bromomethane	3.75	4.02	4.14	107	110	70.0-130			2.94	25
Chloroethane	3.75	3.96	4.13	106	110	70.0-130			4.20	25
Trichlorofluoromethane	3.75	3.93	4.05	105	108	70.0-130			3.01	25
1,1,2-Trichlorotrifluoroethane	3.75	3.94	4.01	105	107	70.0-130			1.76	25
1,1-Dichloroethene	3.75	3.91	3.97	104	106	70.0-130			1.52	25
1,1-Dichloroethane	3.75	3.93	3.96	105	106	70.0-130			0.760	25

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

(LCS) R3639432-1 04/07/21 08:42 • (LCSD) R3639432-2 04/07/21 09:24

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	3.75	3.83	3.88	102	103	70.0-130			1.30	25
2-Propanol	3.75	3.86	3.95	103	105	70.0-139			2.30	25
Carbon disulfide	3.75	3.95	4.00	105	107	70.0-130			1.26	25
Methylene Chloride	3.75	3.80	3.85	101	103	70.0-130			1.31	25
MTBE	3.75	3.99	4.06	106	108	70.0-130			1.74	25
trans-1,2-Dichloroethene	3.75	3.91	3.96	104	106	70.0-130			1.27	25
Vinyl acetate	3.75	4.00	3.76	107	100	70.0-130			6.19	25
Methyl Ethyl Ketone	3.75	4.02	3.99	107	106	70.0-130			0.749	25
cis-1,2-Dichloroethene	3.75	3.90	3.98	104	106	70.0-130			2.03	25
Chloroform	3.75	3.96	4.02	106	107	70.0-130			1.50	25
1,1,1-Trichloroethane	3.75	3.98	4.06	106	108	70.0-130			1.99	25
Carbon tetrachloride	3.75	3.99	4.01	106	107	70.0-130			0.500	25
Benzene	3.75	3.93	4.03	105	107	70.0-130			2.51	25
1,2-Dichloroethane	3.75	3.96	4.04	106	108	70.0-130			2.00	25
Trichloroethylene	3.75	3.92	3.95	105	105	70.0-130			0.762	25
1,2-Dichloropropane	3.75	3.87	3.95	103	105	70.0-130			2.05	25
1,4-Dioxane	3.75	3.87	3.92	103	105	70.0-140			1.28	25
Bromodichloromethane	3.75	3.93	3.98	105	106	70.0-130			1.26	25
cis-1,3-Dichloropropene	3.75	3.91	3.99	104	106	70.0-130			2.03	25
4-Methyl-2-pentanone (MIBK)	3.75	3.88	3.95	103	105	70.0-139			1.79	25
Toluene	3.75	3.96	4.07	106	109	70.0-130			2.74	25
trans-1,3-Dichloropropene	3.75	3.90	3.99	104	106	70.0-130			2.28	25
1,1,2-Trichloroethane	3.75	3.91	3.97	104	106	70.0-130			1.52	25
Tetrachloroethylene	3.75	3.92	3.98	105	106	70.0-130			1.52	25
Methyl Butyl Ketone	3.75	3.90	3.93	104	105	70.0-149			0.766	25
Dibromochloromethane	3.75	3.93	4.02	105	107	70.0-130			2.26	25
1,2-Dibromoethane	3.75	3.87	3.99	103	106	70.0-130			3.05	25
Chlorobenzene	3.75	3.92	4.02	105	107	70.0-130			2.52	25
o-Xylene	3.75	4.07	4.10	109	109	70.0-130			0.734	25
Styrene	3.75	4.16	4.19	111	112	70.0-130			0.719	25
Bromoform	3.75	3.88	3.91	103	104	70.0-130			0.770	25
1,1,2,2-Tetrachloroethane	3.75	3.90	3.96	104	106	70.0-130			1.53	25
1,3-Dichlorobenzene	3.75	3.99	4.02	106	107	70.0-130			0.749	25
1,4-Dichlorobenzene	3.75	4.10	4.05	109	108	70.0-130			1.23	25
Benzyl Chloride	3.75	4.01	4.11	107	110	70.0-152			2.46	25
1,2-Dichlorobenzene	3.75	4.00	4.04	107	108	70.0-130			0.995	25
1,2,4-Trichlorobenzene	3.75	3.84	4.05	102	108	70.0-160			5.32	25
Hexachloro-1,3-butadiene	3.75	3.97	4.05	106	108	70.0-151			2.00	25
Naphthalene	3.75	4.12	4.23	110	113	70.0-159			2.63	25
Allyl Chloride	3.75	3.78	4.00	101	107	70.0-130			5.66	25

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

(LCS) R3639432-1 04/07/21 08:42 • (LCSD) R3639432-2 04/07/21 09:24

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2-Chlorotoluene	3.75	4.09	4.12	109	110	70.0-130			0.731	25
Methyl Methacrylate	3.75	3.79	3.93	101	105	70.0-130			3.63	25
Tetrahydrofuran	3.75	3.87	3.90	103	104	70.0-137			0.772	25
2,2,4-Trimethylpentane	3.75	3.97	4.02	106	107	70.0-130			1.25	25
Vinyl Bromide	3.75	4.01	4.15	107	111	70.0-130			3.43	25
Isopropylbenzene	3.75	4.19	4.20	112	112	70.0-130			0.238	25
(S) 1,4-Bromofluorobenzene				*97.9*	*97.4*	*60.0-140*				

Method Blank (MB)

(MB) R3639541-3 04/08/21 10:29

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Cyclohexane	U		0.0753	0.200
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Heptane	U		0.104	0.200
n-Hexane	U		0.206	0.630
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
m&p-Xylene	U		0.135	0.400
TPH (GC/MS) Low Fraction	U		39.7	200
(S) 1,4-Bromofluorobenzene	*98.8*			*60.0-140*

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

(LCS) R3639541-1 04/08/21 09:07 • (LCSD) R3639541-2 04/08/21 09:49

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
n-Hexane	3.75	4.04	4.06	108	108	70.0-130			0.494	25
Cyclohexane	3.75	4.02	4.10	107	109	70.0-130			1.97	25
Heptane	3.75	4.10	4.00	109	107	70.0-130			2.47	25
Ethylbenzene	3.75	3.91	3.94	104	105	70.0-130			0.764	25
m&p-Xylene	7.50	7.98	7.98	106	106	70.0-130			0.000	25
4-Ethyltoluene	3.75	3.90	3.95	104	105	70.0-130			1.27	25
1,3,5-Trimethylbenzene	3.75	3.98	3.93	106	105	70.0-130			1.26	25
1,2,4-Trimethylbenzene	3.75	3.98	3.96	106	106	70.0-130			0.504	25
TPH (GC/MS) Low Fraction	203	221	220	109	108	70.0-130			0.454	25
(S) 1,4-Bromofluorobenzene				*99.3*	*98.6*	*60.0-140*				

Method Blank (MB)

(MB) R3640166-3 04/09/21 10:19

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	0.0733	J	0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200

Method Blank (MB)

(MB) R3640166-3 04/09/21 10:19

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	0.157	J	0.0932	0.400
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.500
1,2,4-Trichlorobenzene	0.159	J	0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
Ethanol	U		0.265	0.630
TPH (GC/MS) Low Fraction	U		39.7	200
(S) 1,4-Bromofluorobenzene	*91.8*			*60.0-140*

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

(LCS) R3640166-1 04/09/21 09:04 • (LCSD) R3640166-2 04/09/21 09:42

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	2.28	3.38	60.8	90.1	55.0-148		J3	38.9	25
Propene	3.75	3.08	3.14	82.1	83.7	64.0-144			1.93	25
Dichlorodifluoromethane	3.75	3.71	3.65	98.9	97.3	64.0-139			1.63	25
1,2-Dichlorotetrafluoroethane	3.75	3.66	3.64	97.6	97.1	70.0-130			0.548	25

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

(LCS) R3640166-1 04/09/21 09:04 • (LCSD) R3640166-2 04/09/21 09:42

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloromethane	3.75	3.30	3.47	88.0	92.5	70.0-130			5.02	25
Vinyl chloride	3.75	3.20	3.60	85.3	96.0	70.0-130			11.8	25
1,3-Butadiene	3.75	2.94	3.10	78.4	82.7	70.0-130			5.30	25
Bromomethane	3.75	3.00	3.70	80.0	98.7	70.0-130			20.9	25
Chloroethane	3.75	2.74	3.69	73.1	98.4	70.0-130		J3	29.5	25
Trichlorofluoromethane	3.75	2.96	3.48	78.9	92.8	70.0-130			16.1	25
1,1,2-Trichlorotrifluoroethane	3.75	3.65	3.83	97.3	102	70.0-130			4.81	25
1,1-Dichloroethene	3.75	3.55	3.63	94.7	96.8	70.0-130			2.23	25
1,1-Dichloroethane	3.75	3.58	3.63	95.5	96.8	70.0-130			1.39	25
Acetone	3.75	3.09	3.31	82.4	88.3	70.0-130			6.88	25
2-Propanol	3.75	3.38	3.58	90.1	95.5	70.0-139			5.75	25
Carbon disulfide	3.75	3.56	3.61	94.9	96.3	70.0-130			1.39	25
Methylene Chloride	3.75	3.36	3.51	89.6	93.6	70.0-130			4.37	25
MTBE	3.75	3.89	4.07	104	109	70.0-130			4.52	25
trans-1,2-Dichloroethene	3.75	3.62	3.77	96.5	101	70.0-130			4.06	25
n-Hexane	3.75	4.00	4.07	107	109	70.0-130			1.73	25
Vinyl acetate	3.75	3.50	3.72	93.3	99.2	70.0-130			6.09	25
Methyl Ethyl Ketone	3.75	3.81	3.97	102	106	70.0-130			4.11	25
cis-1,2-Dichloroethene	3.75	3.56	3.61	94.9	96.3	70.0-130			1.39	25
Chloroform	3.75	3.55	3.66	94.7	97.6	70.0-130			3.05	25
Cyclohexane	3.75	4.12	4.20	110	112	70.0-130			1.92	25
1,1,1-Trichloroethane	3.75	3.60	3.69	96.0	98.4	70.0-130			2.47	25
Carbon tetrachloride	3.75	3.65	3.72	97.3	99.2	70.0-130			1.90	25
Benzene	3.75	3.71	3.80	98.9	101	70.0-130			2.40	25
1,2-Dichloroethane	3.75	3.40	3.49	90.7	93.1	70.0-130			2.61	25
Heptane	3.75	3.80	3.95	101	105	70.0-130			3.87	25
Trichloroethylene	3.75	3.74	3.82	99.7	102	70.0-130			2.12	25
1,2-Dichloropropane	3.75	3.56	3.72	94.9	99.2	70.0-130			4.40	25
1,4-Dioxane	3.75	3.62	3.64	96.5	97.1	70.0-140			0.551	25
Bromodichloromethane	3.75	3.56	3.60	94.9	96.0	70.0-130			1.12	25
cis-1,3-Dichloropropene	3.75	3.72	3.83	99.2	102	70.0-130			2.91	25
4-Methyl-2-pentanone (MIBK)	3.75	3.47	3.55	92.5	94.7	70.0-139			2.28	25
Toluene	3.75	3.94	4.04	105	108	70.0-130			2.51	25
trans-1,3-Dichloropropene	3.75	3.75	3.89	100	104	70.0-130			3.66	25
1,1,2-Trichloroethane	3.75	3.64	3.70	97.1	98.7	70.0-130			1.63	25
Tetrachloroethylene	3.75	3.97	3.96	106	106	70.0-130			0.252	25
Methyl Butyl Ketone	3.75	3.46	3.45	92.3	92.0	70.0-149			0.289	25
Dibromochloromethane	3.75	3.75	3.85	100	103	70.0-130			2.63	25
1,2-Dibromoethane	3.75	3.80	3.84	101	102	70.0-130			1.05	25
Chlorobenzene	3.75	3.76	3.88	100	103	70.0-130			3.14	25

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

(LCS) R3640166-1 04/09/21 09:04 • (LCSD) R3640166-2 04/09/21 09:42

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	3.75	4.00	4.00	107	107	70.0-130			0.000	25
m&p-Xylene	7.50	8.23	8.34	110	111	70.0-130			1.33	25
o-Xylene	3.75	4.13	4.14	110	110	70.0-130			0.242	25
Styrene	3.75	4.27	4.33	114	115	70.0-130			1.40	25
Bromoform	3.75	3.92	3.94	105	105	70.0-130			0.509	25
1,1,2,2-Tetrachloroethane	3.75	3.60	3.66	96.0	97.6	70.0-130			1.65	25
4-Ethyltoluene	3.75	4.09	4.13	109	110	70.0-130			0.973	25
1,3,5-Trimethylbenzene	3.75	4.07	4.16	109	111	70.0-130			2.19	25
1,2,4-Trimethylbenzene	3.75	4.12	4.20	110	112	70.0-130			1.92	25
1,3-Dichlorobenzene	3.75	3.93	3.96	105	106	70.0-130			0.760	25
1,4-Dichlorobenzene	3.75	3.93	3.98	105	106	70.0-130			1.26	25
Benzyl Chloride	3.75	3.72	3.84	99.2	102	70.0-152			3.17	25
1,2-Dichlorobenzene	3.75	4.02	4.01	107	107	70.0-130			0.249	25
1,2,4-Trichlorobenzene	3.75	3.87	3.85	103	103	70.0-160			0.518	25
Hexachloro-1,3-butadiene	3.75	3.85	3.76	103	100	70.0-151			2.37	25
Naphthalene	3.75	3.78	3.81	101	102	70.0-159			0.791	25
TPH (GC/MS) Low Fraction	203	202	205	99.5	101	70.0-130			1.47	25
Allyl Chloride	3.75	3.49	3.63	93.1	96.8	70.0-130			3.93	25
2-Chlorotoluene	3.75	3.82	3.90	102	104	70.0-130			2.07	25
Methyl Methacrylate	3.75	3.71	4.02	98.9	107	70.0-130			8.02	25
Tetrahydrofuran	3.75	3.68	3.94	98.1	105	70.0-137			6.82	25
2,2,4-Trimethylpentane	3.75	3.88	4.10	103	109	70.0-130			5.51	25
Vinyl Bromide	3.75	3.07	3.77	81.9	101	70.0-130			20.5	25
Isopropylbenzene	3.75	4.16	4.21	111	112	70.0-130			1.19	25
(S) 1,4-Bromofluorobenzene				*98.1*	*97.8*	*60.0-140*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

Company Name/Address:
NV5 - Wilsonville, OR

9450 SW Commerce Circle
Ste. 300
Wilsonville. OR 97070

Billing Information:
Accounts Payable
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Pres Chk

Report to:
Kyle Haggart

Email To:
Kyle.Haggart@nv5.com;TimJ.Hainley@nv5.com

Project Description:
Former Astoria Warehousing

City/State Collected: Astoria, OR

Please Circle: (PT) MT CT ET

Phone: **503-968-8787**

Client Project #
BigBeams-1-02

Lab Project #
GEODESPOR-BIG102

Collected by (print):
Tim Hainley

Collected by (signature):

Immediately Packed on Ice N X Y ___

Site/Facility ID #

P.O. #

Quote #

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed: 4/11/21

No. of Cntrs

Analysis / Container / Preservative

Sample ID	Summa ID	Comp/Grab	Matrix *	~~Depth~~	Date	Time	No. of Cntrs	VOCs TO-15 Summa	Remarks	Sample # (lab only)
PRE(040121)	005726		Air	007045	4/1/21	1200	1	X		-01
POST(040121)	005234		Air	010156	4/1/21	1150		X		-02
			Air							

Chain of Custody Page 1 of 1

Pace Analytical®
National Center for Testing & Innovation

12065 Lebanon Road Mt Juliet, TN 37122
Phone: 615-758-5858 Alt: 800-767-5859
Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf

SDG # 1334068

Table M064

Acctnum: **GEODESPOR**
Template: **T183952**
Prelogin: **P835560**
PM: **110 - Brian Ford**
PB: CSG 03/23/21
Shipped Via: **FedEx Saver**

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

Remarks:

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 446614654927

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / No HCL / MeoH TBR
	4/2/21	1400		
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:
FedEx	4/2/21	1430		AMB 2+1 Unused
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:
			Josh Grigsby	4/3/21 9:45

If preservation required by Login: Date/Time

Hold:

Condition: NCF / OK

ANALYTICAL REPORT

May 12, 2021

NV5 - Wilsonville, OR

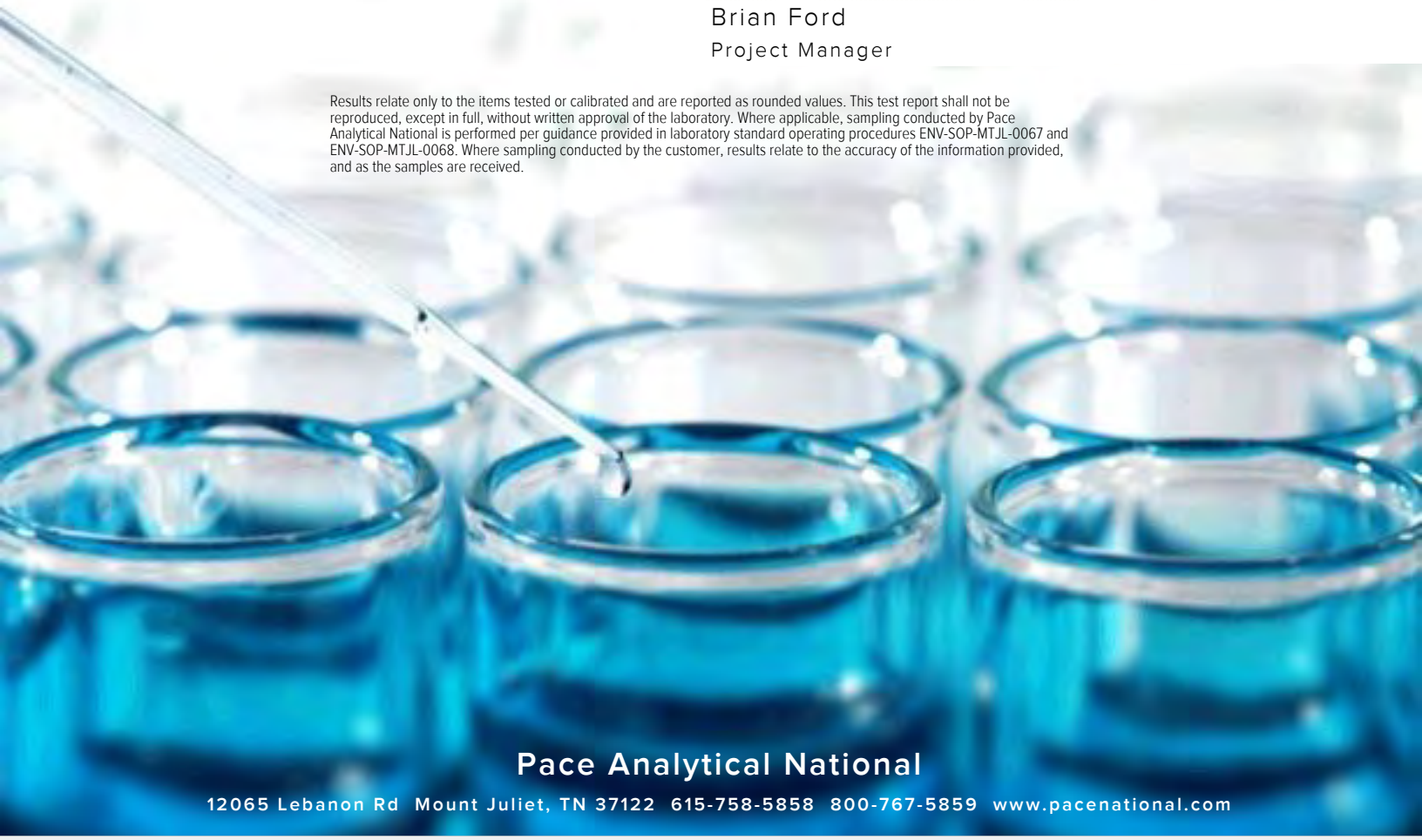
Sample Delivery Group:	L1349157
Samples Received:	05/06/2021
Project Number:	BIGBEAMS-1-04-05
Description:	Former Astoria Warehousing

Report To:

Kyle Haggart
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By:

Brian Ford
Project Manager



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SAMPLE SUMMARY

PRE(050421) L1349157-01 Air

Collected by: Tim Hainley
Collected date/time: 05/04/21 14:29
Received date/time: 05/06/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1667642	20	05/10/21 12:50	05/10/21 12:50	MBF	Mt. Juliet, TN

POST(050421) L1349157-02 Air

Collected by: Tim Hainley
Collected date/time: 05/04/21 14:40
Received date/time: 05/06/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1667642	1	05/10/21 12:10	05/10/21 12:10	MBF	Mt. Juliet, TN

CASE NARRATIVE

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

Brian Ford
Project Manager

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	25.0	59.4	ND	ND		20	WG1667642
Allyl chloride	107-05-1	76.53	4.00	12.5	ND	ND		20	WG1667642
Benzene	71-43-2	78.10	4.00	12.8	202	645		20	WG1667642
Benzyl Chloride	100-44-7	127	4.00	20.8	ND	ND	J4	20	WG1667642
Bromodichloromethane	75-27-4	164	4.00	26.8	ND	ND		20	WG1667642
Bromoform	75-25-2	253	12.0	124	ND	ND		20	WG1667642
Bromomethane	74-83-9	94.90	4.00	15.5	ND	ND		20	WG1667642
1,3-Butadiene	106-99-0	54.10	40.0	88.5	ND	ND		20	WG1667642
Carbon disulfide	75-15-0	76.10	4.00	12.4	ND	ND		20	WG1667642
Carbon tetrachloride	56-23-5	154	4.00	25.2	ND	ND		20	WG1667642
Chlorobenzene	108-90-7	113	4.00	18.5	ND	ND		20	WG1667642
Chloroethane	75-00-3	64.50	4.00	10.6	ND	ND		20	WG1667642
Chloroform	67-66-3	119	4.00	19.5	ND	ND		20	WG1667642
Chloromethane	74-87-3	50.50	4.00	8.26	ND	ND		20	WG1667642
2-Chlorotoluene	95-49-8	126	4.00	20.6	ND	ND		20	WG1667642
Cyclohexane	110-82-7	84.20	4.00	13.8	904	3110		20	WG1667642
Dibromochloromethane	124-48-1	208	4.00	34.0	ND	ND		20	WG1667642
1,2-Dibromoethane	106-93-4	188	4.00	30.8	ND	ND		20	WG1667642
1,2-Dichlorobenzene	95-50-1	147	4.00	24.0	ND	ND		20	WG1667642
1,3-Dichlorobenzene	541-73-1	147	4.00	24.0	ND	ND		20	WG1667642
1,4-Dichlorobenzene	106-46-7	147	4.00	24.0	ND	ND		20	WG1667642
1,2-Dichloroethane	107-06-2	99	4.00	16.2	ND	ND		20	WG1667642
1,1-Dichloroethane	75-34-3	98	4.00	16.0	ND	ND		20	WG1667642
1,1-Dichloroethene	75-35-4	96.90	4.00	15.9	ND	ND		20	WG1667642
cis-1,2-Dichloroethene	156-59-2	96.90	4.00	15.9	ND	ND		20	WG1667642
trans-1,2-Dichloroethene	156-60-5	96.90	4.00	15.9	ND	ND		20	WG1667642
1,2-Dichloropropane	78-87-5	113	4.00	18.5	ND	ND		20	WG1667642
cis-1,3-Dichloropropene	10061-01-5	111	4.00	18.2	ND	ND		20	WG1667642
trans-1,3-Dichloropropene	10061-02-6	111	4.00	18.2	ND	ND		20	WG1667642
1,4-Dioxane	123-91-1	88.10	4.00	14.4	ND	ND		20	WG1667642
Ethanol	64-17-5	46.10	25.0	47.1	95.6	180		20	WG1667642
Ethylbenzene	100-41-4	106	4.00	17.3	904	3920		20	WG1667642
4-Ethyltoluene	622-96-8	120	4.00	19.6	207	1020		20	WG1667642
Trichlorofluoromethane	75-69-4	137.40	4.00	22.5	ND	ND		20	WG1667642
Dichlorodifluoromethane	75-71-8	120.92	4.00	19.8	ND	ND		20	WG1667642
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	4.00	30.7	ND	ND		20	WG1667642
1,2-Dichlorotetrafluoroethane	76-14-2	171	4.00	28.0	ND	ND		20	WG1667642
Heptane	142-82-5	100	4.00	16.4	1360	5560		20	WG1667642
Hexachloro-1,3-butadiene	87-68-3	261	12.6	135	ND	ND		20	WG1667642
n-Hexane	110-54-3	86.20	12.6	44.4	1760	6200		20	WG1667642
Isopropylbenzene	98-82-8	120.20	4.00	19.7	55.6	273		20	WG1667642
Methylene Chloride	75-09-2	84.90	4.00	13.9	ND	ND		20	WG1667642
Methyl Butyl Ketone	591-78-6	100	25.0	102	ND	ND		20	WG1667642
2-Butanone (MEK)	78-93-3	72.10	25.0	73.7	ND	ND		20	WG1667642
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	25.0	102	ND	ND		20	WG1667642
Methyl methacrylate	80-62-6	100.12	4.00	16.4	ND	ND		20	WG1667642
MTBE	1634-04-4	88.10	4.00	14.4	ND	ND		20	WG1667642
Naphthalene	91-20-3	128	12.6	66.0	ND	ND		20	WG1667642
2-Propanol	67-63-0	60.10	25.0	61.5	ND	ND		20	WG1667642
Propene	115-07-1	42.10	25.0	43.0	ND	ND		20	WG1667642
Styrene	100-42-5	104	4.00	17.0	ND	ND		20	WG1667642
1,1,2,2-Tetrachloroethane	79-34-5	168	4.00	27.5	ND	ND		20	WG1667642
Tetrachloroethylene	127-18-4	166	4.00	27.2	ND	ND		20	WG1667642
Tetrahydrofuran	109-99-9	72.10	4.00	11.8	ND	ND		20	WG1667642
Toluene	108-88-3	92.10	10.0	37.7	17.3	65.2		20	WG1667642
1,2,4-Trichlorobenzene	120-82-1	181	12.6	93.3	ND	ND		20	WG1667642

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	4.00	21.8	ND	ND		20	WG1667642
1,1,2-Trichloroethane	79-00-5	133	4.00	21.8	ND	ND		20	WG1667642
Trichloroethylene	79-01-6	131	4.00	21.4	ND	ND		20	WG1667642
1,2,4-Trimethylbenzene	95-63-6	120	4.00	19.6	397	1950		20	WG1667642
1,3,5-Trimethylbenzene	108-67-8	120	4.00	19.6	141	692		20	WG1667642
2,2,4-Trimethylpentane	540-84-1	114.22	4.00	18.7	1900	8880		20	WG1667642
Vinyl chloride	75-01-4	62.50	4.00	10.2	ND	ND		20	WG1667642
Vinyl Bromide	593-60-2	106.95	4.00	17.5	ND	ND		20	WG1667642
Vinyl acetate	108-05-4	86.10	4.00	14.1	ND	ND		20	WG1667642
m&p-Xylene	1330-20-7	106	8.00	34.7	1290	5590		20	WG1667642
o-Xylene	95-47-6	106	4.00	17.3	91.7	398		20	WG1667642
TPH (GC/MS) Low Fraction	8006-61-9	101	4000	16500	45700	189000		20	WG1667642
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*95.0*				WG1667642

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	11.3	26.9		1	WG1667642
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1667642
Benzene	71-43-2	78.10	0.200	0.639	0.273	0.872		1	WG1667642
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND	J4	1	WG1667642
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1667642
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1667642
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1667642
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1667642
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1667642
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1667642
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1667642
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1667642
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1667642
Chloromethane	74-87-3	50.50	0.200	0.413	0.717	1.48		1	WG1667642
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1667642
Cyclohexane	110-82-7	84.20	0.200	0.689	0.641	2.21		1	WG1667642
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1667642
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1667642
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1667642
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1667642
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1667642
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1667642
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1667642
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1667642
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1667642
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1667642
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1667642
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1667642
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1667642
1,4-Dioxane	123-91-1	88.10	0.200	0.721	0.253	0.912		1	WG1667642
Ethanol	64-17-5	46.10	1.25	2.36	24.6	46.4		1	WG1667642
Ethylbenzene	100-41-4	106	0.200	0.867	0.943	4.09		1	WG1667642
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.478	2.35		1	WG1667642
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1667642
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.297	1.47		1	WG1667642
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1667642
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1667642
Heptane	142-82-5	100	0.200	0.818	1.03	4.21		1	WG1667642
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1667642
n-Hexane	110-54-3	86.20	0.630	2.22	1.65	5.82		1	WG1667642
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1667642
Methylene Chloride	75-09-2	84.90	0.200	0.694	1.65	5.73		1	WG1667642
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1667642
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	1.75	5.16		1	WG1667642
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1667642
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1667642
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1667642
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1667642
2-Propanol	67-63-0	60.10	1.25	3.07	7.13	17.5		1	WG1667642
Propene	115-07-1	42.10	1.25	2.15	ND	ND		1	WG1667642
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1667642
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1667642
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1667642
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1667642
Toluene	108-88-3	92.10	0.500	1.88	0.561	2.11		1	WG1667642
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1667642

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1667642
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1667642
Trichloroethylene	79-01-6	131	0.200	1.07	0.253	1.36		1	WG1667642
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.801	3.93		1	WG1667642
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.264	1.30		1	WG1667642
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	14.6	68.2		1	WG1667642
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1667642
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1667642
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1667642
m&p-Xylene	1330-20-7	106	0.400	1.73	1.63	7.07		1	WG1667642
o-Xylene	95-47-6	106	0.200	0.867	0.350	1.52		1	WG1667642
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	218	901		1	WG1667642
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1667642

Method Blank (MB)

(MB) R3652840-3 05/10/21 09:08

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200

Method Blank (MB)

(MB) R3652840-3 05/10/21 09:08

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	0.416	J	0.0932	1.25
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.500
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
Ethanol	U		0.265	1.25
TPH (GC/MS) Low Fraction	U		39.7	200
(S) 1,4-Bromofluorobenzene	*95.9*			*60.0-140*

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

(LCS) R3652840-1 05/10/21 07:48 • (LCSD) R3652840-2 05/10/21 08:28

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.09	3.96	109	106	55.0-148			3.23	25
Propene	3.75	4.30	4.37	115	117	64.0-144			1.61	25
Dichlorodifluoromethane	3.75	4.52	4.48	121	119	64.0-139			0.889	25
1,2-Dichlorotetrafluoroethane	3.75	4.54	4.47	121	119	70.0-130			1.55	25

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

(LCS) R3652840-1 05/10/21 07:48 • (LCSD) R3652840-2 05/10/21 08:28

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloromethane	3.75	4.50	4.38	120	117	70.0-130			2.70	25
Vinyl chloride	3.75	4.39	4.45	117	119	70.0-130			1.36	25
1,3-Butadiene	3.75	4.12	4.24	110	113	70.0-130			2.87	25
Bromomethane	3.75	4.34	4.26	116	114	70.0-130			1.86	25
Chloroethane	3.75	4.29	4.27	114	114	70.0-130			0.467	25
Trichlorofluoromethane	3.75	4.49	4.46	120	119	70.0-130			0.670	25
1,1,2-Trichlorotrifluoroethane	3.75	4.47	4.34	119	116	70.0-130			2.95	25
1,1-Dichloroethene	3.75	4.44	4.45	118	119	70.0-130			0.225	25
1,1-Dichloroethane	3.75	4.38	4.30	117	115	70.0-130			1.84	25
Acetone	3.75	4.38	4.31	117	115	70.0-130			1.61	25
2-Propanol	3.75	4.56	4.55	122	121	70.0-139			0.220	25
Carbon disulfide	3.75	4.44	4.43	118	118	70.0-130			0.225	25
Methylene Chloride	3.75	4.41	4.40	118	117	70.0-130			0.227	25
MTBE	3.75	4.58	4.53	122	121	70.0-130			1.10	25
trans-1,2-Dichloroethene	3.75	4.46	4.46	119	119	70.0-130			0.000	25
n-Hexane	3.75	4.50	4.41	120	118	70.0-130			2.02	25
Vinyl acetate	3.75	4.07	4.01	109	107	70.0-130			1.49	25
Methyl Ethyl Ketone	3.75	4.59	4.60	122	123	70.0-130			0.218	25
cis-1,2-Dichloroethene	3.75	4.41	4.50	118	120	70.0-130			2.02	25
Chloroform	3.75	4.45	4.44	119	118	70.0-130			0.225	25
Cyclohexane	3.75	4.69	4.62	125	123	70.0-130			1.50	25
1,1,1-Trichloroethane	3.75	4.51	4.47	120	119	70.0-130			0.891	25
Carbon tetrachloride	3.75	4.44	4.35	118	116	70.0-130			2.05	25
Benzene	3.75	4.40	4.40	117	117	70.0-130			0.000	25
1,2-Dichloroethane	3.75	4.30	4.37	115	117	70.0-130			1.61	25
Heptane	3.75	4.49	4.68	120	125	70.0-130			4.14	25
Trichloroethylene	3.75	4.34	4.37	116	117	70.0-130			0.689	25
1,2-Dichloropropane	3.75	4.36	4.44	116	118	70.0-130			1.82	25
1,4-Dioxane	3.75	4.46	4.42	119	118	70.0-140			0.901	25
Bromodichloromethane	3.75	4.28	4.36	114	116	70.0-130			1.85	25
cis-1,3-Dichloropropene	3.75	4.39	4.41	117	118	70.0-130			0.455	25
4-Methyl-2-pentanone (MIBK)	3.75	4.83	4.92	129	131	70.0-139			1.85	25
Toluene	3.75	4.43	4.44	118	118	70.0-130			0.225	25
trans-1,3-Dichloropropene	3.75	4.25	4.32	113	115	70.0-130			1.63	25
1,1,2-Trichloroethane	3.75	4.22	4.32	113	115	70.0-130			2.34	25
Tetrachloroethylene	3.75	4.29	4.38	114	117	70.0-130			2.08	25
Methyl Butyl Ketone	3.75	4.75	4.78	127	127	70.0-149			0.630	25
Dibromochloromethane	3.75	4.38	4.42	117	118	70.0-130			0.909	25
1,2-Dibromoethane	3.75	4.40	4.42	117	118	70.0-130			0.454	25
Chlorobenzene	3.75	4.37	4.51	117	120	70.0-130			3.15	25

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

(LCS) R3652840-1 05/10/21 07:48 • (LCSD) R3652840-2 05/10/21 08:28

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	3.75	4.32	4.37	115	117	70.0-130			1.15	25
m&p-Xylene	7.50	8.88	9.10	118	121	70.0-130			2.45	25
o-Xylene	3.75	4.39	4.46	117	119	70.0-130			1.58	25
Styrene	3.75	4.63	4.66	123	124	70.0-130			0.646	25
Bromoform	3.75	4.47	4.54	119	121	70.0-130			1.55	25
1,1,2,2-Tetrachloroethane	3.75	4.17	4.37	111	117	70.0-130			4.68	25
4-Ethyltoluene	3.75	4.54	4.73	121	126	70.0-130			4.10	25
1,3,5-Trimethylbenzene	3.75	4.44	4.70	118	125	70.0-130			5.69	25
1,2,4-Trimethylbenzene	3.75	4.38	4.61	117	123	70.0-130			5.12	25
1,3-Dichlorobenzene	3.75	4.24	4.47	113	119	70.0-130			5.28	25
1,4-Dichlorobenzene	3.75	4.36	4.57	116	122	70.0-130			4.70	25
Benzyl Chloride	3.75	5.51	5.95	147	159	70.0-152		J4	7.68	25
1,2-Dichlorobenzene	3.75	4.28	4.47	114	119	70.0-130			4.34	25
1,2,4-Trichlorobenzene	3.75	4.19	4.48	112	119	70.0-160			6.69	25
Hexachloro-1,3-butadiene	3.75	4.17	4.29	111	114	70.0-151			2.84	25
Naphthalene	3.75	4.68	4.96	125	132	70.0-159			5.81	25
TPH (GC/MS) Low Fraction	203	239	242	118	119	70.0-130			1.25	25
Allyl Chloride	3.75	4.26	4.15	114	111	70.0-130			2.62	25
2-Chlorotoluene	3.75	4.29	4.47	114	119	70.0-130			4.11	25
Methyl Methacrylate	3.75	4.39	4.47	117	119	70.0-130			1.81	25
Tetrahydrofuran	3.75	4.52	4.59	121	122	70.0-137			1.54	25
2,2,4-Trimethylpentane	3.75	4.59	4.62	122	123	70.0-130			0.651	25
Vinyl Bromide	3.75	4.44	4.56	118	122	70.0-130			2.67	25
Isopropylbenzene	3.75	4.42	4.52	118	121	70.0-130			2.24	25
(S) 1,4-Bromofluorobenzene				*96.8*	*101*	*60.0-140*				

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

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J4	The associated batch QC was outside the established quality control range for accuracy.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

~~GeoDesign Inc.~~ - Wilsonville, OR NV5

9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Billing Information:
Accounts Payable
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070
Tim.J.Hainly@NV5.com

Pres Chk

Report to: Tim Hainley

Email To: Kyle.Haggart@NV5.com
~~thainley@geodesigninc.com,khaggart@geodesi~~

Project Description: Former Astoria Warehousing

City/State Collected: Astoria, OR

Please Circle: (PT) MT CT ET

Phone: 503-968-8787

Client Project # BigBeams-1-04-05

Lab Project # GEODESPOR-HAINLEY

Collected by (print): Tim Hainley

Site/Facility ID #

P.O. #

Collected by (signature):

Quote #

Immediately Packed on Ice N X Y

Rush? (Lab MUST Be Notified)
___ Same Day ___ Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Date Results Needed

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	VOCs TO-15 Summa	Remarks	Sample # (lab only)
PRE(050421)		Air		5/4/21	1429	1	X		-01
POST(050421		Air		5/4/21	1440	1	X		-02
		Air							
		Air							
		Air							
		Air							
		Air							
		Air							
		Air							
		Air							

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical® National Center for Testing & Innovation

12065 Lebanon Rd
Mount Juliet, TN 37122
Phone: 615-758-5858
Phone: 800-767-5859
Fax: 615-758-5859

SDG # L1349157

Table M223

Acctnum: GEODESPOR

Template: T180150

Prelogin: P820771

PM: 110 - Brian Ford

PB: KS 01/08/21

Shipped Via: FedEX Ground

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

Remarks:

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking # 936249482530

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

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
	5/5/21	1200	
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)
			Josh Dranjusky

Trip Blank Received: Yes (No) HCL / MeoH TBR

Temp: °C Bottles Received: AMB 2+2 Unused

Date: 5/6/21 Time: 0930

If preservation required by Login: Date/Time

Hold:

Condition: NCF / (OK)

ANALYTICAL REPORT

August 19, 2021

Revised Report

NV5 - Wilsonville, OR

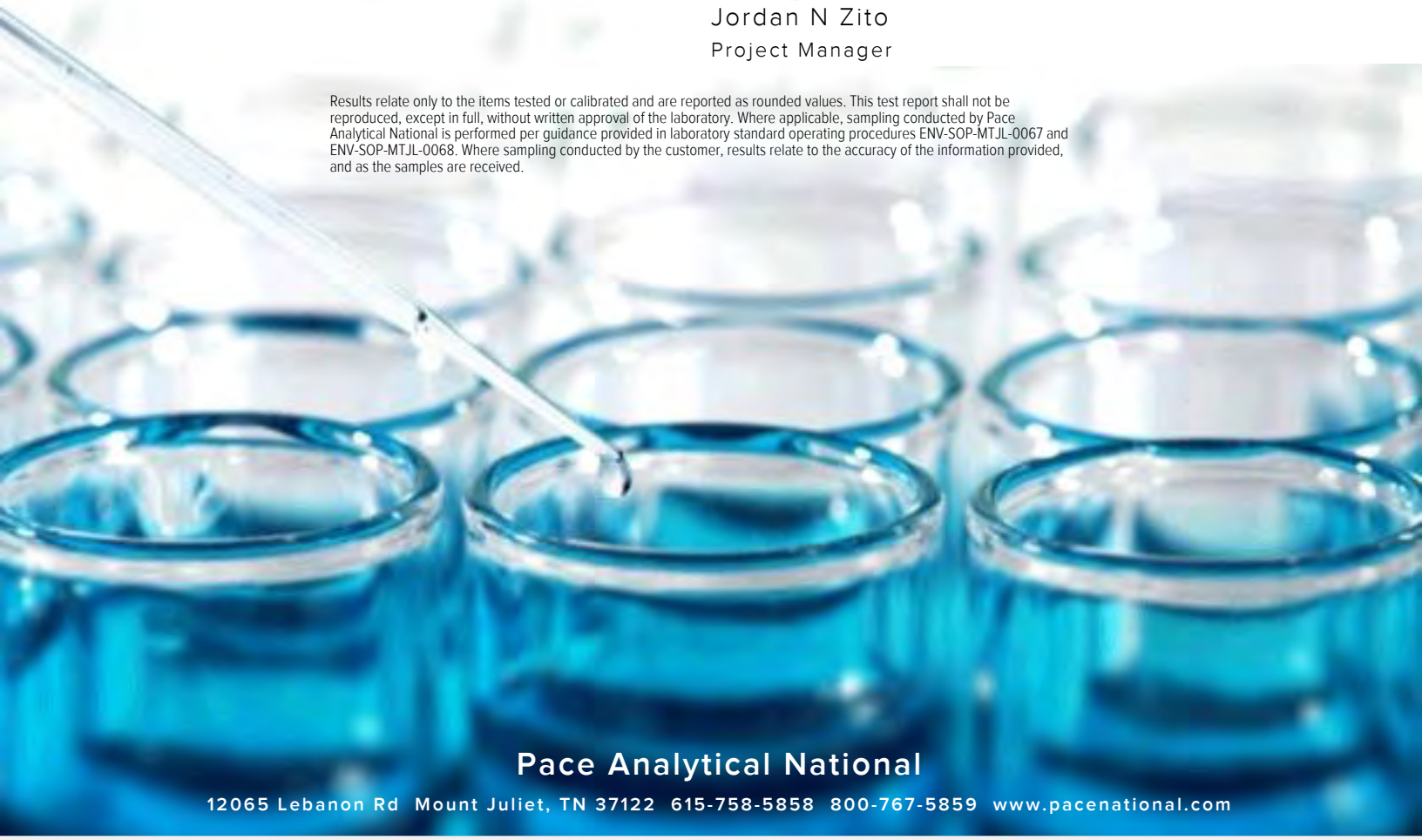
Sample Delivery Group:	L1390743
Samples Received:	08/14/2021
Project Number:	BIGBEAMS-1-04-05
Description:	Former Astoria Warehousing

Report To:

Tim Hainley
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Entire Report Reviewed By:

Jordan N Zito
Project Manager



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

TABLE OF CONTENTS

PRE(081021) L1390743-01 Air

Collected by: Tim Hainley | Collected date/time: 08/10/21 16:40 | Received date/time: 08/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1723535	1	08/15/21 19:38	08/15/21 19:38	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1723972	100	08/16/21 16:00	08/16/21 16:00	CEP	Mt. Juliet, TN

POST(081021) L1390743-02 Air

Collected by: Tim Hainley | Collected date/time: 08/10/21 17:00 | Received date/time: 08/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1723535	1	08/15/21 20:21	08/15/21 20:21	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1723972	1	08/16/21 13:15	08/16/21 13:15	CEP	Mt. Juliet, TN

VP-1(081121) L1390743-03 Air

Collected by: Tim Hainley | Collected date/time: 08/11/21 21:03 | Received date/time: 08/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1723535	1	08/15/21 21:05	08/15/21 21:05	CAW	Mt. Juliet, TN

VP-2(081121) L1390743-04 Air

Collected by: Tim Hainley | Collected date/time: 08/11/21 21:00 | Received date/time: 08/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1723535	1	08/15/21 21:47	08/15/21 21:47	CAW	Mt. Juliet, TN

VP-3(081121) L1390743-05 Air

Collected by: Tim Hainley | Collected date/time: 08/11/21 20:52 | Received date/time: 08/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1723535	1	08/15/21 22:30	08/15/21 22:30	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1723972	10	08/16/21 16:41	08/16/21 16:41	CEP	Mt. Juliet, TN

VP-4(081121) L1390743-06 Air

Collected by: Tim Hainley | Collected date/time: 08/11/21 21:11 | Received date/time: 08/14/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (MS) by Method TO-15	WG1723535	1	08/15/21 23:12	08/15/21 23:12	CAW	Mt. Juliet, TN
Volatile Organic Compounds (MS) by Method TO-15	WG1723972	10	08/16/21 17:23	08/16/21 17:23	CEP	Mt. Juliet, TN

CASE NARRATIVE

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

Jordan N Zito
Project Manager

Report Revision History

Level II Report - Version 1: 08/18/21 09:24

Project Narrative

Report Revised to correct project name

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	8.72	20.7		1	WG1723535
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1723535
Benzene	71-43-2	78.10	20.0	63.9	197	629		100	WG1723972
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1723535
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1723535
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1723535
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1723535
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1723535
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1723535
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1723535
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1723535
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1723535
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1723535
Chloromethane	74-87-3	50.50	0.200	0.413	0.315	0.651		1	WG1723535
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1723535
Cyclohexane	110-82-7	84.20	20.0	68.9	1430	4920		100	WG1723972
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1723535
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1723535
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1723535
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1723535
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1723535
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1723535
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1723535
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1723535
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1723535
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1723535
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1723535
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1723535
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1723535
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1723535
Ethanol	64-17-5	46.10	125	236	359	677		100	WG1723972
Ethylbenzene	100-41-4	106	20.0	86.7	2090	9060		100	WG1723972
4-Ethyltoluene	622-96-8	120	0.200	0.982	27.4	134		1	WG1723535
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.211	1.19		1	WG1723535
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.428	2.12		1	WG1723535
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1723535
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1723535
Heptane	142-82-5	100	20.0	81.8	1450	5930		100	WG1723972
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1723535
n-Hexane	110-54-3	86.20	63.0	222	2470	8710		100	WG1723972
Isopropylbenzene	98-82-8	120.20	20.0	98.3	217	1070		100	WG1723972
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1723535
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1723535
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1723535
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1723535
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1723535
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1723535
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1723535
2-Propanol	67-63-0	60.10	1.25	3.07	11.3	27.8		1	WG1723535
Propene	115-07-1	42.10	1.25	2.15	3.90	6.72		1	WG1723535
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1723535
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1723535
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1723535
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1723535
Toluene	108-88-3	92.10	0.500	1.88	32.7	123		1	WG1723535
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1723535

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1723535
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1723535
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1723535
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	6.29	30.9		1	WG1723535
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	31.2	153		1	WG1723535
2,2,4-Trimethylpentane	540-84-1	114.22	20.0	93.4	3050	14200		100	WG1723972
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1723535
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1723535
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1723535
m&p-Xylene	1330-20-7	106	40.0	173	3740	16200		100	WG1723972
o-Xylene	95-47-6	106	20.0	86.7	336	1460		100	WG1723972
TPH (GC/MS) Low Fraction	8006-61-9	101	20000	82600	124000	512000		100	WG1723972
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*102*				WG1723535
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*95.9*				WG1723972

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

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	9.57	22.7		1	WG1723535
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1723535
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1723535
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1723535
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1723535
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1723535
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1723535
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1723535
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1723535
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1723535
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1723535
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1723535
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1723535
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1723535
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1723535
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1723535
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1723535
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1723535
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1723535
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1723535
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1723535
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1723535
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1723535
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1723535
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1723535
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1723535
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1723535
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1723535
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1723535
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1723535
Ethanol	64-17-5	46.10	1.25	2.36	9.12	17.2		1	WG1723535
Ethylbenzene	100-41-4	106	0.200	0.867	11.3	49.0		1	WG1723972
4-Ethyltoluene	622-96-8	120	0.200	0.982	4.33	21.3		1	WG1723535
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1723535
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	ND	ND		1	WG1723535
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1723535
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1723535
Heptane	142-82-5	100	0.200	0.818	7.51	30.7		1	WG1723972
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1723535
n-Hexane	110-54-3	86.20	0.630	2.22	10.2	36.0		1	WG1723535
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1723535
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1723535
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1723535
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1723535
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1723535
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1723535
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1723535
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1723535
2-Propanol	67-63-0	60.10	1.25	3.07	4.99	12.3		1	WG1723535
Propene	115-07-1	42.10	1.25	2.15	ND	ND		1	WG1723535
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1723535
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1723535
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1723535
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1723535
Toluene	108-88-3	92.10	0.500	1.88	ND	ND		1	WG1723535
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1723535

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1723535
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1723535
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1723535
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	10.1	49.6		1	WG1723535
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	3.05	15.0		1	WG1723535
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	14.4	67.3		1	WG1723972
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1723535
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1723535
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1723535
m&p-Xylene	1330-20-7	106	0.400	1.73	22.2	96.2		1	WG1723972
o-Xylene	95-47-6	106	0.200	0.867	2.32	10.1		1	WG1723972
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	702	2900		1	WG1723972
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*101*				WG1723535
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*99.2*				WG1723972

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	10.1	24.0		1	WG1723535
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1723535
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1723535
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1723535
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1723535
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1723535
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1723535
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1723535
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.587	1.83		1	WG1723535
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1723535
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1723535
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1723535
Chloroform	67-66-3	119	0.200	0.973	0.247	1.20		1	WG1723535
Chloromethane	74-87-3	50.50	0.200	0.413	ND	ND		1	WG1723535
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1723535
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1723535
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1723535
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1723535
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1723535
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1723535
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1723535
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1723535
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1723535
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1723535
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1723535
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1723535
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1723535
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1723535
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1723535
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1723535
Ethanol	64-17-5	46.10	1.25	2.36	8.15	15.4		1	WG1723535
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1723535
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.273	1.34		1	WG1723535
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1723535
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.320	1.58		1	WG1723535
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1723535
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1723535
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1723535
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1723535
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1723535
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1723535
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1723535
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1723535
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1723535
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1723535
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1723535
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1723535
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1723535
2-Propanol	67-63-0	60.10	1.25	3.07	2.68	6.59		1	WG1723535
Propene	115-07-1	42.10	1.25	2.15	ND	ND		1	WG1723535
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1723535
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1723535
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1723535
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1723535
Toluene	108-88-3	92.10	0.500	1.88	ND	ND		1	WG1723535
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1723535

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1723535
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1723535
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1723535
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.827	4.06		1	WG1723535
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.229	1.12		1	WG1723535
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1723535
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1723535
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1723535
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1723535
m&p-Xylene	1330-20-7	106	0.400	1.73	0.411	1.78		1	WG1723535
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1723535
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	631	2610		1	WG1723535
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*95.7*				WG1723535

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	4.14	9.84		1	WG1723535
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1723535
Benzene	71-43-2	78.10	0.200	0.639	ND	ND		1	WG1723535
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1723535
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1723535
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1723535
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1723535
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1723535
Carbon disulfide	75-15-0	76.10	0.200	0.622	ND	ND		1	WG1723535
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1723535
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1723535
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1723535
Chloroform	67-66-3	119	0.200	0.973	0.616	3.00		1	WG1723535
Chloromethane	74-87-3	50.50	0.200	0.413	0.210	0.434		1	WG1723535
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1723535
Cyclohexane	110-82-7	84.20	0.200	0.689	ND	ND		1	WG1723535
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1723535
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1723535
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1723535
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1723535
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1723535
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1723535
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1723535
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1723535
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1723535
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1723535
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1723535
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1723535
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1723535
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1723535
Ethanol	64-17-5	46.10	1.25	2.36	16.3	30.7		1	WG1723535
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1723535
4-Ethyltoluene	622-96-8	120	0.200	0.982	ND	ND		1	WG1723535
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.219	1.23		1	WG1723535
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.364	1.80		1	WG1723535
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1723535
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1723535
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1723535
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1723535
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1723535
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1723535
Methylene Chloride	75-09-2	84.90	0.200	0.694	0.371	1.29		1	WG1723535
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1723535
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1723535
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1723535
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1723535
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1723535
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1723535
2-Propanol	67-63-0	60.10	1.25	3.07	2.43	5.97		1	WG1723535
Propene	115-07-1	42.10	1.25	2.15	ND	ND		1	WG1723535
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1723535
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1723535
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.381	2.59		1	WG1723535
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1723535
Toluene	108-88-3	92.10	0.500	1.88	ND	ND		1	WG1723535
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1723535

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1723535
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1723535
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1723535
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	0.571	2.80		1	WG1723535
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.205	1.01		1	WG1723535
2,2,4-Trimethylpentane	540-84-1	114.22	0.200	0.934	ND	ND		1	WG1723535
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1723535
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1723535
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1723535
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1723535
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1723535
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	ND	ND		1	WG1723535
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.6*				WG1723535

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	12.9	30.7		1	WG1723535
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1723535
Benzene	71-43-2	78.10	0.200	0.639	40.6	130		1	WG1723535
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1723535
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1723535
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1723535
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1723535
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1723535
Carbon disulfide	75-15-0	76.10	0.200	0.622	9.32	29.0		1	WG1723535
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1723535
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1723535
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1723535
Chloroform	67-66-3	119	0.200	0.973	ND	ND		1	WG1723535
Chloromethane	74-87-3	50.50	0.200	0.413	0.720	1.49		1	WG1723535
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1723535
Cyclohexane	110-82-7	84.20	0.200	0.689	40.6	140		1	WG1723535
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1723535
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1723535
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1723535
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1723535
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1723535
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1723535
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1723535
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1723535
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1723535
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1723535
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1723535
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1723535
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1723535
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1723535
Ethanol	64-17-5	46.10	1.25	2.36	14.1	26.6		1	WG1723535
Ethylbenzene	100-41-4	106	0.200	0.867	15.6	67.6		1	WG1723535
4-Ethyltoluene	622-96-8	120	0.200	0.982	20.6	101		1	WG1723535
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	ND	ND		1	WG1723535
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.399	1.97		1	WG1723535
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1723535
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1723535
Heptane	142-82-5	100	0.200	0.818	55.5	227		1	WG1723535
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1723535
n-Hexane	110-54-3	86.20	0.630	2.22	67.8	239		1	WG1723535
Isopropylbenzene	98-82-8	120.20	0.200	0.983	2.08	10.2		1	WG1723535
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1723535
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1723535
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	6.78	20.0		1	WG1723535
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1723535
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1723535
MTBE	1634-04-4	88.10	0.200	0.721	ND	ND		1	WG1723535
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1723535
2-Propanol	67-63-0	60.10	1.25	3.07	ND	ND		1	WG1723535
Propene	115-07-1	42.10	1.25	2.15	46.5	80.1		1	WG1723535
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1723535
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1723535
Tetrachloroethylene	127-18-4	166	0.200	1.36	ND	ND		1	WG1723535
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1723535
Toluene	108-88-3	92.10	0.500	1.88	0.913	3.44		1	WG1723535
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1723535

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1723535
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1723535
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1723535
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	80.5	395		1	WG1723535
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	31.4	154		1	WG1723535
2,2,4-Trimethylpentane	540-84-1	114.22	2.00	9.34	261	1220		10	WG1723972
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1723535
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1723535
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1723535
m&p-Xylene	1330-20-7	106	0.400	1.73	35.9	156		1	WG1723535
o-Xylene	95-47-6	106	0.200	0.867	1.49	6.46		1	WG1723535
TPH (GC/MS) Low Fraction	8006-61-9	101	2000	8260	5900	24400		10	WG1723972
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*110*				WG1723535
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*95.3*				WG1723972

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
Acetone	67-64-1	58.10	1.25	2.97	14.9	35.4		1	WG1723535
Allyl chloride	107-05-1	76.53	0.200	0.626	ND	ND		1	WG1723535
Benzene	71-43-2	78.10	0.200	0.639	0.531	1.70		1	WG1723535
Benzyl Chloride	100-44-7	127	0.200	1.04	ND	ND		1	WG1723535
Bromodichloromethane	75-27-4	164	0.200	1.34	ND	ND		1	WG1723535
Bromoform	75-25-2	253	0.600	6.21	ND	ND		1	WG1723535
Bromomethane	74-83-9	94.90	0.200	0.776	ND	ND		1	WG1723535
1,3-Butadiene	106-99-0	54.10	2.00	4.43	ND	ND		1	WG1723535
Carbon disulfide	75-15-0	76.10	0.200	0.622	0.214	0.666		1	WG1723535
Carbon tetrachloride	56-23-5	154	0.200	1.26	ND	ND		1	WG1723535
Chlorobenzene	108-90-7	113	0.200	0.924	ND	ND		1	WG1723535
Chloroethane	75-00-3	64.50	0.200	0.528	ND	ND		1	WG1723535
Chloroform	67-66-3	119	0.200	0.973	0.876	4.26		1	WG1723535
Chloromethane	74-87-3	50.50	0.200	0.413	0.222	0.459		1	WG1723535
2-Chlorotoluene	95-49-8	126	0.200	1.03	ND	ND		1	WG1723535
Cyclohexane	110-82-7	84.20	0.200	0.689	2.66	9.16		1	WG1723535
Dibromochloromethane	124-48-1	208	0.200	1.70	ND	ND		1	WG1723535
1,2-Dibromoethane	106-93-4	188	0.200	1.54	ND	ND		1	WG1723535
1,2-Dichlorobenzene	95-50-1	147	0.200	1.20	ND	ND		1	WG1723535
1,3-Dichlorobenzene	541-73-1	147	0.200	1.20	ND	ND		1	WG1723535
1,4-Dichlorobenzene	106-46-7	147	0.200	1.20	ND	ND		1	WG1723535
1,2-Dichloroethane	107-06-2	99	0.200	0.810	ND	ND		1	WG1723535
1,1-Dichloroethane	75-34-3	98	0.200	0.802	ND	ND		1	WG1723535
1,1-Dichloroethene	75-35-4	96.90	0.200	0.793	ND	ND		1	WG1723535
cis-1,2-Dichloroethene	156-59-2	96.90	0.200	0.793	ND	ND		1	WG1723535
trans-1,2-Dichloroethene	156-60-5	96.90	0.200	0.793	ND	ND		1	WG1723535
1,2-Dichloropropane	78-87-5	113	0.200	0.924	ND	ND		1	WG1723535
cis-1,3-Dichloropropene	10061-01-5	111	0.200	0.908	ND	ND		1	WG1723535
trans-1,3-Dichloropropene	10061-02-6	111	0.200	0.908	ND	ND		1	WG1723535
1,4-Dioxane	123-91-1	88.10	0.200	0.721	ND	ND		1	WG1723535
Ethanol	64-17-5	46.10	1.25	2.36	16.3	30.7		1	WG1723535
Ethylbenzene	100-41-4	106	0.200	0.867	ND	ND		1	WG1723535
4-Ethyltoluene	622-96-8	120	0.200	0.982	0.415	2.04		1	WG1723535
Trichlorofluoromethane	75-69-4	137.40	0.200	1.12	0.243	1.37		1	WG1723535
Dichlorodifluoromethane	75-71-8	120.92	0.200	0.989	0.349	1.73		1	WG1723535
1,1,2-Trichlorotrifluoroethane	76-13-1	187.40	0.200	1.53	ND	ND		1	WG1723535
1,2-Dichlorotetrafluoroethane	76-14-2	171	0.200	1.40	ND	ND		1	WG1723535
Heptane	142-82-5	100	0.200	0.818	ND	ND		1	WG1723535
Hexachloro-1,3-butadiene	87-68-3	261	0.630	6.73	ND	ND		1	WG1723535
n-Hexane	110-54-3	86.20	0.630	2.22	ND	ND		1	WG1723535
Isopropylbenzene	98-82-8	120.20	0.200	0.983	ND	ND		1	WG1723535
Methylene Chloride	75-09-2	84.90	0.200	0.694	ND	ND		1	WG1723535
Methyl Butyl Ketone	591-78-6	100	1.25	5.11	ND	ND		1	WG1723535
2-Butanone (MEK)	78-93-3	72.10	1.25	3.69	ND	ND		1	WG1723535
4-Methyl-2-pentanone (MIBK)	108-10-1	100.10	1.25	5.12	ND	ND		1	WG1723535
Methyl methacrylate	80-62-6	100.12	0.200	0.819	ND	ND		1	WG1723535
MTBE	1634-04-4	88.10	0.200	0.721	2.29	8.25		1	WG1723535
Naphthalene	91-20-3	128	0.630	3.30	ND	ND		1	WG1723535
2-Propanol	67-63-0	60.10	1.25	3.07	2.44	6.00		1	WG1723535
Propene	115-07-1	42.10	1.25	2.15	ND	ND		1	WG1723535
Styrene	100-42-5	104	0.200	0.851	ND	ND		1	WG1723535
1,1,2,2-Tetrachloroethane	79-34-5	168	0.200	1.37	ND	ND		1	WG1723535
Tetrachloroethylene	127-18-4	166	0.200	1.36	0.321	2.18		1	WG1723535
Tetrahydrofuran	109-99-9	72.10	0.200	0.590	ND	ND		1	WG1723535
Toluene	108-88-3	92.10	0.500	1.88	ND	ND		1	WG1723535
1,2,4-Trichlorobenzene	120-82-1	181	0.630	4.66	ND	ND		1	WG1723535

Volatile Organic Compounds (MS) by Method TO-15

Analyte	CAS #	Mol. Wt.	RDL1 ppbv	RDL2 ug/m3	Result ppbv	Result ug/m3	Qualifier	Dilution	Batch
1,1,1-Trichloroethane	71-55-6	133	0.200	1.09	ND	ND		1	WG1723535
1,1,2-Trichloroethane	79-00-5	133	0.200	1.09	ND	ND		1	WG1723535
Trichloroethylene	79-01-6	131	0.200	1.07	ND	ND		1	WG1723535
1,2,4-Trimethylbenzene	95-63-6	120	0.200	0.982	1.32	6.48		1	WG1723535
1,3,5-Trimethylbenzene	108-67-8	120	0.200	0.982	0.375	1.84		1	WG1723535
2,2,4-Trimethylpentane	540-84-1	114.22	2.00	9.34	157	733		10	WG1723972
Vinyl chloride	75-01-4	62.50	0.200	0.511	ND	ND		1	WG1723535
Vinyl Bromide	593-60-2	106.95	0.200	0.875	ND	ND		1	WG1723535
Vinyl acetate	108-05-4	86.10	0.200	0.704	ND	ND		1	WG1723535
m&p-Xylene	1330-20-7	106	0.400	1.73	ND	ND		1	WG1723535
o-Xylene	95-47-6	106	0.200	0.867	ND	ND		1	WG1723535
TPH (GC/MS) Low Fraction	8006-61-9	101	200	826	1590	6570		1	WG1723535
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*104*				WG1723535
(S) 1,4-Bromofluorobenzene	*460-00-4*	*175*	*60.0-140*		*96.3*				WG1723972

Method Blank (MB)

(MB) R3692343-3 08/15/21 12:22

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Acetone	U		0.584	1.25
Allyl Chloride	U		0.114	0.200
Benzene	U		0.0715	0.200
Benzyl Chloride	U		0.0598	0.200
Bromodichloromethane	U		0.0702	0.200
Bromoform	U		0.0732	0.600
Bromomethane	U		0.0982	0.200
1,3-Butadiene	U		0.104	2.00
Carbon disulfide	U		0.102	0.200
Carbon tetrachloride	U		0.0732	0.200
Chlorobenzene	U		0.0832	0.200
Chloroethane	U		0.0996	0.200
Chloroform	U		0.0717	0.200
Chloromethane	U		0.103	0.200
2-Chlorotoluene	U		0.0828	0.200
Cyclohexane	U		0.0753	0.200
Dibromochloromethane	U		0.0727	0.200
1,2-Dibromoethane	U		0.0721	0.200
1,2-Dichlorobenzene	U		0.128	0.200
1,3-Dichlorobenzene	U		0.182	0.200
1,4-Dichlorobenzene	U		0.0557	0.200
1,2-Dichloroethane	U		0.0700	0.200
1,1-Dichloroethane	U		0.0723	0.200
1,1-Dichloroethene	U		0.0762	0.200
cis-1,2-Dichloroethene	U		0.0784	0.200
trans-1,2-Dichloroethene	U		0.0673	0.200
1,2-Dichloropropane	U		0.0760	0.200
cis-1,3-Dichloropropene	U		0.0689	0.200
trans-1,3-Dichloropropene	U		0.0728	0.200
1,4-Dioxane	U		0.0833	0.200
Ethylbenzene	U		0.0835	0.200
4-Ethyltoluene	U		0.0783	0.200
Trichlorofluoromethane	U		0.0819	0.200
Dichlorodifluoromethane	U		0.137	0.200
1,1,2-Trichlorotrifluoroethane	U		0.0793	0.200
1,2-Dichlorotetrafluoroethane	U		0.0890	0.200
Heptane	U		0.104	0.200
Hexachloro-1,3-butadiene	U		0.105	0.630
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200

Method Blank (MB)

(MB) R3692343-3 08/15/21 12:22

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Methylene Chloride	U		0.0979	0.200
Methyl Butyl Ketone	U		0.133	1.25
2-Butanone (MEK)	U		0.0814	1.25
4-Methyl-2-pentanone (MIBK)	U		0.0765	1.25
Methyl Methacrylate	U		0.0876	0.200
MTBE	U		0.0647	0.200
Naphthalene	U		0.350	0.630
2-Propanol	U		0.264	1.25
Propene	0.147	J	0.0932	1.25
Styrene	U		0.0788	0.200
1,1,2,2-Tetrachloroethane	U		0.0743	0.200
Tetrachloroethylene	U		0.0814	0.200
Tetrahydrofuran	U		0.0734	0.200
Toluene	U		0.0870	0.500
1,2,4-Trichlorobenzene	U		0.148	0.630
1,1,1-Trichloroethane	U		0.0736	0.200
1,1,2-Trichloroethane	U		0.0775	0.200
Trichloroethylene	U		0.0680	0.200
1,2,4-Trimethylbenzene	U		0.0764	0.200
1,3,5-Trimethylbenzene	U		0.0779	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
Vinyl chloride	U		0.0949	0.200
Vinyl Bromide	U		0.0852	0.200
Vinyl acetate	U		0.116	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
Ethanol	U		0.265	1.25
TPH (GC/MS) Low Fraction	U		39.7	200
(S) 1,4-Bromofluorobenzene	*96.4*			*60.0-140*

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

(LCS) R3692343-1 08/15/21 08:16 • (LCSD) R3692343-2 08/15/21 08:58

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.04	3.81	108	102	55.0-148			5.86	25
Propene	3.75	4.29	4.04	114	108	64.0-144			6.00	25
Dichlorodifluoromethane	3.75	3.65	3.58	97.3	95.5	64.0-139			1.94	25
1,2-Dichlorotetrafluoroethane	3.75	3.73	3.59	99.5	95.7	70.0-130			3.83	25

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

(LCS) R3692343-1 08/15/21 08:16 • (LCSD) R3692343-2 08/15/21 08:58

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloromethane	3.75	3.96	3.78	106	101	70.0-130			4.65	25
Vinyl chloride	3.75	3.92	3.86	105	103	70.0-130			1.54	25
1,3-Butadiene	3.75	3.99	3.76	106	100	70.0-130			5.94	25
Bromomethane	3.75	3.88	3.68	103	98.1	70.0-130			5.29	25
Chloroethane	3.75	4.04	3.97	108	106	70.0-130			1.75	25
Trichlorofluoromethane	3.75	3.54	3.41	94.4	90.9	70.0-130			3.74	25
1,1,2-Trichlorotrifluoroethane	3.75	3.68	3.51	98.1	93.6	70.0-130			4.73	25
1,1-Dichloroethene	3.75	3.76	3.59	100	95.7	70.0-130			4.63	25
1,1-Dichloroethane	3.75	3.74	3.66	99.7	97.6	70.0-130			2.16	25
Acetone	3.75	3.74	3.62	99.7	96.5	70.0-130			3.26	25
2-Propanol	3.75	3.92	3.78	105	101	70.0-139			3.64	25
Carbon disulfide	3.75	3.78	3.62	101	96.5	70.0-130			4.32	25
Methylene Chloride	3.75	3.84	3.64	102	97.1	70.0-130			5.35	25
MTBE	3.75	3.66	3.53	97.6	94.1	70.0-130			3.62	25
trans-1,2-Dichloroethene	3.75	3.83	3.63	102	96.8	70.0-130			5.36	25
n-Hexane	3.75	3.92	3.68	105	98.1	70.0-130			6.32	25
Vinyl acetate	3.75	4.35	4.30	116	115	70.0-130			1.16	25
Methyl Ethyl Ketone	3.75	4.21	4.15	112	111	70.0-130			1.44	25
cis-1,2-Dichloroethene	3.75	3.84	3.72	102	99.2	70.0-130			3.17	25
Chloroform	3.75	3.64	3.53	97.1	94.1	70.0-130			3.07	25
Cyclohexane	3.75	3.80	3.70	101	98.7	70.0-130			2.67	25
1,1,1-Trichloroethane	3.75	3.55	3.43	94.7	91.5	70.0-130			3.44	25
Carbon tetrachloride	3.75	3.50	3.40	93.3	90.7	70.0-130			2.90	25
Benzene	3.75	3.85	3.71	103	98.9	70.0-130			3.70	25
1,2-Dichloroethane	3.75	3.51	3.45	93.6	92.0	70.0-130			1.72	25
Heptane	3.75	3.98	3.83	106	102	70.0-130			3.84	25
Trichloroethylene	3.75	3.70	3.59	98.7	95.7	70.0-130			3.02	25
1,2-Dichloropropane	3.75	3.91	3.75	104	100	70.0-130			4.18	25
1,4-Dioxane	3.75	3.72	3.66	99.2	97.6	70.0-140			1.63	25
Bromodichloromethane	3.75	3.60	3.49	96.0	93.1	70.0-130			3.10	25
cis-1,3-Dichloropropene	3.75	3.72	3.58	99.2	95.5	70.0-130			3.84	25
4-Methyl-2-pentanone (MIBK)	3.75	4.01	3.85	107	103	70.0-139			4.07	25
Toluene	3.75	3.71	3.58	98.9	95.5	70.0-130			3.57	25
trans-1,3-Dichloropropene	3.75	3.77	3.65	101	97.3	70.0-130			3.23	25
1,1,2-Trichloroethane	3.75	3.67	3.51	97.9	93.6	70.0-130			4.46	25
Tetrachloroethylene	3.75	3.54	3.43	94.4	91.5	70.0-130			3.16	25
Methyl Butyl Ketone	3.75	4.09	3.95	109	105	70.0-149			3.48	25
Dibromochloromethane	3.75	3.55	3.47	94.7	92.5	70.0-130			2.28	25
1,2-Dibromoethane	3.75	3.66	3.58	97.6	95.5	70.0-130			2.21	25
Chlorobenzene	3.75	3.61	3.50	96.3	93.3	70.0-130			3.09	25

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

(LCS) R3692343-1 08/15/21 08:16 • (LCSD) R3692343-2 08/15/21 08:58

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	3.75	3.79	3.68	101	98.1	70.0-130			2.95	25
m&p-Xylene	7.50	7.45	7.25	99.3	96.7	70.0-130			2.72	25
o-Xylene	3.75	3.71	3.57	98.9	95.2	70.0-130			3.85	25
Styrene	3.75	3.80	3.66	101	97.6	70.0-130			3.75	25
Bromoform	3.75	3.62	3.51	96.5	93.6	70.0-130			3.09	25
1,1,2,2-Tetrachloroethane	3.75	3.79	3.67	101	97.9	70.0-130			3.22	25
4-Ethyltoluene	3.75	3.83	3.62	102	96.5	70.0-130			5.64	25
1,3,5-Trimethylbenzene	3.75	3.61	3.63	96.3	96.8	70.0-130			0.552	25
1,2,4-Trimethylbenzene	3.75	3.69	3.60	98.4	96.0	70.0-130			2.47	25
1,3-Dichlorobenzene	3.75	3.74	3.65	99.7	97.3	70.0-130			2.44	25
1,4-Dichlorobenzene	3.75	3.80	3.72	101	99.2	70.0-130			2.13	25
Benzyl Chloride	3.75	3.84	3.72	102	99.2	70.0-152			3.17	25
1,2-Dichlorobenzene	3.75	3.70	3.62	98.7	96.5	70.0-130			2.19	25
1,2,4-Trichlorobenzene	3.75	3.91	3.78	104	101	70.0-160			3.38	25
Hexachloro-1,3-butadiene	3.75	3.64	3.56	97.1	94.9	70.0-151			2.22	25
Naphthalene	3.75	4.08	3.92	109	105	70.0-159			4.00	25
TPH (GC/MS) Low Fraction	203	220	213	108	105	70.0-130			3.23	25
Allyl Chloride	3.75	3.85	3.67	103	97.9	70.0-130			4.79	25
2-Chlorotoluene	3.75	3.66	3.54	97.6	94.4	70.0-130			3.33	25
Methyl Methacrylate	3.75	4.03	3.76	107	100	70.0-130			6.93	25
Tetrahydrofuran	3.75	4.19	3.95	112	105	70.0-137			5.90	25
2,2,4-Trimethylpentane	3.75	3.96	3.81	106	102	70.0-130			3.86	25
Vinyl Bromide	3.75	3.74	3.61	99.7	96.3	70.0-130			3.54	25
Isopropylbenzene	3.75	3.74	3.62	99.7	96.5	70.0-130			3.26	25
(S) 1,4-Bromofluorobenzene				*98.1*	*97.8*	*60.0-140*				

Method Blank (MB)

(MB) R3692733-3 08/16/21 10:18

Analyte	MB Result ppbv	MB Qualifier	MB MDL ppbv	MB RDL ppbv
Benzene	U		0.0715	0.200
Cyclohexane	U		0.0753	0.200
Ethylbenzene	U		0.0835	0.200
Heptane	U		0.104	0.200
n-Hexane	U		0.206	0.630
Isopropylbenzene	U		0.0777	0.200
2,2,4-Trimethylpentane	U		0.133	0.200
m&p-Xylene	U		0.135	0.400
o-Xylene	U		0.0828	0.200
Ethanol	U		0.265	1.25
TPH (GC/MS) Low Fraction	U		39.7	200
(S) 1,4-Bromofluorobenzene	*93.0*			*60.0-140*

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

(LCS) R3692733-1 08/16/21 08:53 • (LCSD) R3692733-2 08/16/21 09:36

Analyte	Spike Amount ppbv	LCS Result ppbv	LCSD Result ppbv	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Ethanol	3.75	4.08	3.92	109	105	55.0-148			4.00	25
n-Hexane	3.75	4.05	3.93	108	105	70.0-130			3.01	25
Cyclohexane	3.75	3.92	3.77	105	101	70.0-130			3.90	25
Benzene	3.75	3.82	3.73	102	99.5	70.0-130			2.38	25
Heptane	3.75	3.42	3.32	91.2	88.5	70.0-130			2.97	25
Ethylbenzene	3.75	3.86	3.79	103	101	70.0-130			1.83	25
m&p-Xylene	7.50	7.77	7.76	104	103	70.0-130			0.129	25
o-Xylene	3.75	3.78	3.81	101	102	70.0-130			0.791	25
TPH (GC/MS) Low Fraction	203	209	207	103	102	70.0-130			0.962	25
2,2,4-Trimethylpentane	3.75	4.12	3.98	110	106	70.0-130			3.46	25
Isopropylbenzene	3.75	3.93	3.93	105	105	70.0-130			0.000	25
(S) 1,4-Bromofluorobenzene				*93.1*	*94.0*	*60.0-140*				

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico [1]	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina [1]	DW21704
Georgia	NELAP	North Carolina [3]	41
Georgia [1]	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LAO000356
Kentucky [1 6]	KY90010	South Carolina	84004002
Kentucky [2]	16	South Dakota	n/a
Louisiana	AI30792	Tennessee [1 4]	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas [5]	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
A2LA – ISO 17025	1461.01	AIHA-LAP,LLC EMLAP	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

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

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

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

Company Name/Address:
NV5 - Wilsonville, OR

9450 SW Commerce Circle
Ste. 300
Wilsonville. OR 97070

Billing Information:
Accounts Payable
9450 SW Commerce Circle
Ste. 300
Wilsonville, OR 97070

Pres Chk

Report to: ~~Kyle Haggart~~ Tim Hainley

Email To: ~~Kyle.Haggart@nv5.com~~ Tim.Hainley@NV5.com

Project Description: Former Astoria warehousing

City/State Collected: Astoria, OR

Please Circle: (PT) MT CT ET

Phone: **503-968-8787**

Client Project # BisBeams-1-04-05

Lab Project # **GEODESPOR** ~~HAGGART~~

Collected by (print): Tim Hainley

Site/Facility ID #

P.O. #

Collected by (signature):

Immediately Packed on Ice N X Y ___

Rush? (Lab MUST Be Notified)
___ Same Day X Five Day
___ Next Day ___ 5 Day (Rad Only)
___ Two Day ___ 10 Day (Rad Only)
___ Three Day

Quote #

Date Results Needed

Sample ID	~~Canister~~ Comp/~~Grab~~	Matrix *	~~Flow~~ Depth ~~Controller~~	Date	Time	No. of Cntrs	TO-15 VOCs Summa Gas-Range + VOCs										Remarks	Sample # (lab only)
PRE(081021)	~~20622~~ ~~6243~~	Air	~~006771~~	8/10/21	1640	1	X											-01
POST(081021)	6243	Air	006771	8/10/21	1700	1	X											-02
VP-1 (081121)	020271	Air	009586	8/11/21	2103	1	X											-03
VP-2 (081121)	10730	Air	660660	8/11/21	2100	1	X											-04
VP-3 (081121)	020314	Air	010367	8/11/21	2052	1	X											-05
VP-4 (081121)	20834	Air	007444	8/11/21	2111	1	X											-06

Analysis / Container / Preservative

Chain of Custody Page 1 of 1

Pace Analytical®

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

SDG # L1390743
Table G086
Acctnum: **GEODESPOR**
Template: **T192297**
Prelogin: **P864055**
PM: **110 - Brian Ford**
PB: CSL 08/03/21
Shipped Via: **FedEX Ground**

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

Remarks: FED Ex 9517 5761 0869
5217 3308 1706

pH _____ Temp _____
Flow _____ Other _____

Samples returned via:
__ UPS __ FedEx __ Courier _____

Tracking #

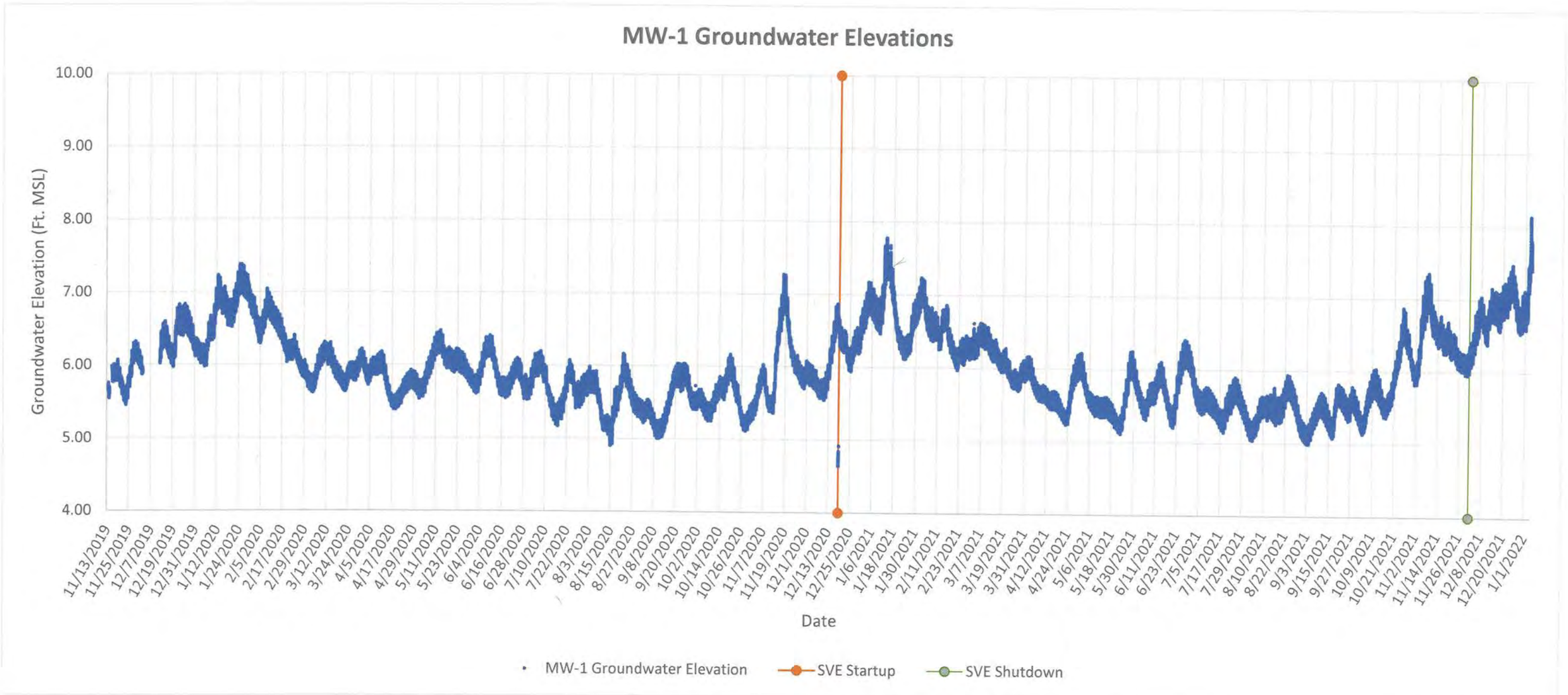
Sample Receipt Checklist
COC Seal Present/Intact: __NP __Y __N
COC Signed/Accurate: ✓Y __N
Bottles arrive intact: ✓Y __N
Correct bottles used: ✓Y __N
Sufficient volume sent: ✓Y __N
If Applicable
VOA Zero Headspace: __Y __N
Preservation Correct/Checked: __Y __N
RAD Screen <0.5 mR/hr: ✓Y __N

Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Trip Blank Received: Yes / (No) HCL / MeoH TBR	
	8/13/21	1400			
Relinquished by : (Signature)	Date:	Time:	Received by: (Signature)	Temp: °C Bottles Received:	If preservation required by Login: Date/Time
				Bnb 6	
Relinquished by : (Signature)	Date:	Time:	Received for lab by: (Signature)	Date: Time:	Hold: Condition: NCF / (OK)
			B. Barlas	8-14-21 0900	

APPENDIX D

APPENDIX D

WATER LEVEL SUMMARY CHARTS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Groundwater Elevation (Ft. MSL)
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9.00
8.00
7.00
6.00
5.00
4.00
11/13/2019
11/25/2019
12/7/2019
12/19/2019
12/31/2019
1/12/2020
1/24/2020
2/5/2020
2/17/2020
2/29/2020
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9/8/2020
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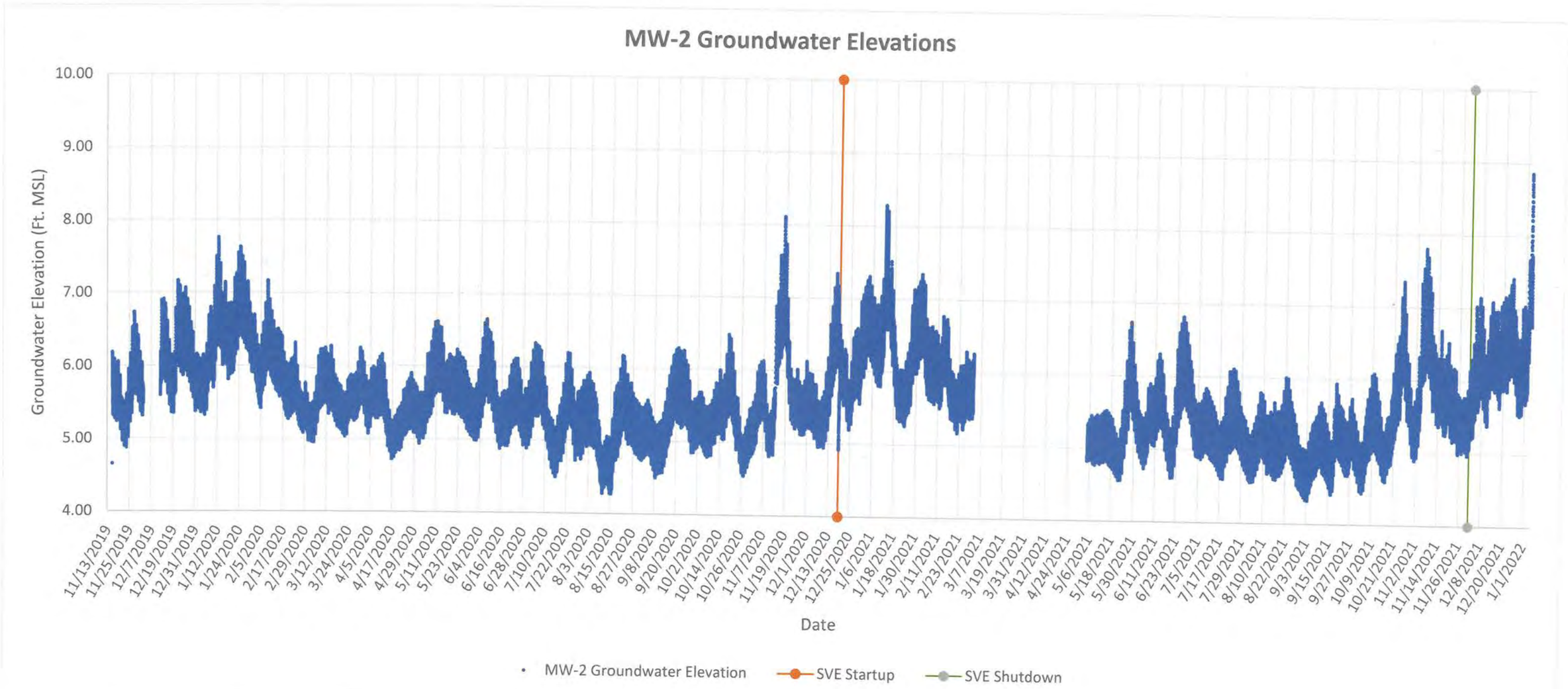
9/3/2021
9/15/2021
9/27/2021
10/9/2021
10/21/2021
11/2/2021
11/14/2021
11/26/2021
12/8/2021
12/20/2021
1/1/2022
Date
MW-1 Groundwater Elevation
SVE Startup
SVE Shutdown


MW-2 Groundwater Elevations
Groundwater Elevation (Ft. MSL)
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9.00
8.00
7.00
6.00
5.00
4.00
11/13/2019
11/25/2019
12/7/2019
12/19/2019
12/31/2019
1/12/2020
1/24/2020
2/5/2020
2/17/2020
2/29/2020
3/12/2020
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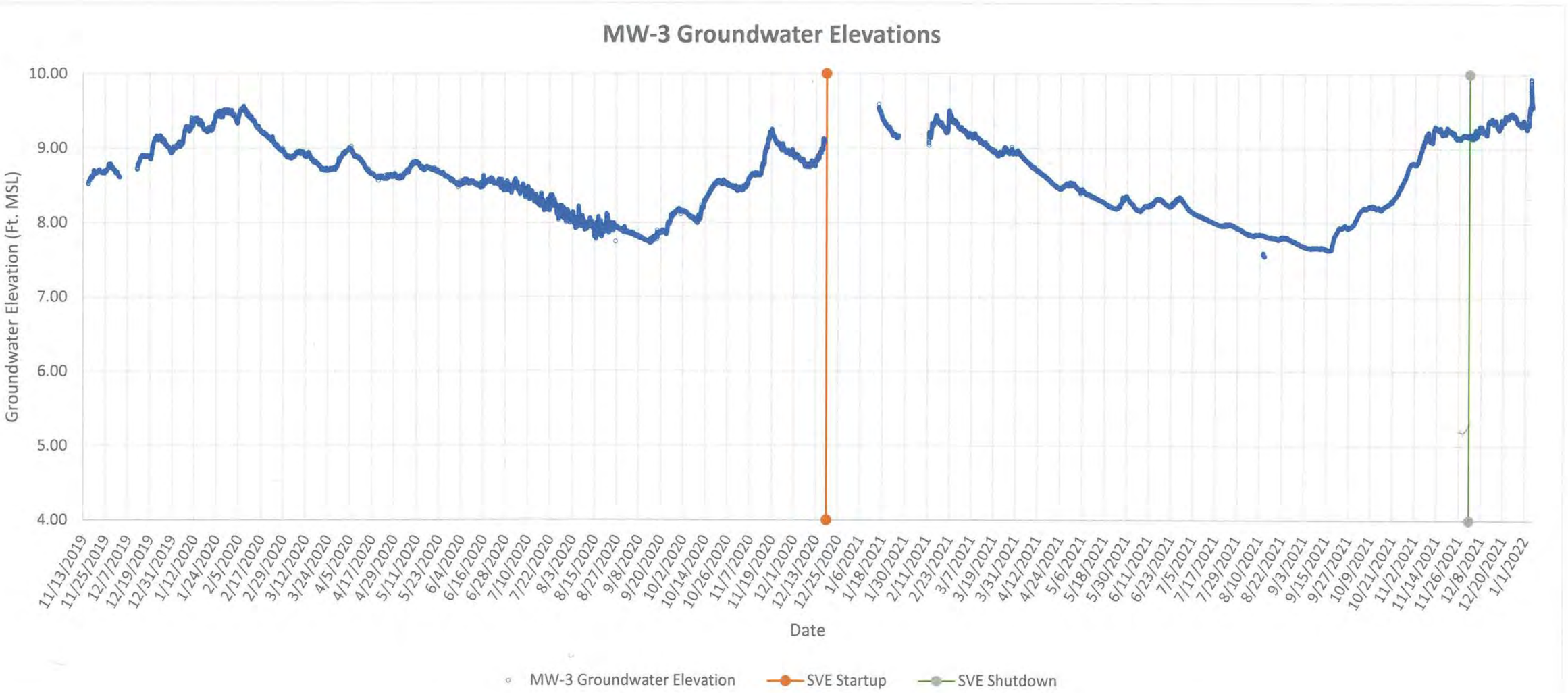
11/2/2021
11/14/2021
11/26/2021
12/8/2021
12/20/2021
1/1/2022
Date
MW-2 Groundwater Elevation
SVE Startup
SVE Shutdown


MW-3 Groundwater Elevations
Groundwater Elevation (Ft. MSL)
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9.00
8.00
7.00
6.00
5.00
4.00
11/13/2019
11/25/2019
12/7/2019
12/19/2019
12/31/2019
1/12/2020
1/24/2020
2/5/2020
2/17/2020
2/29/2020
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3/24/2020
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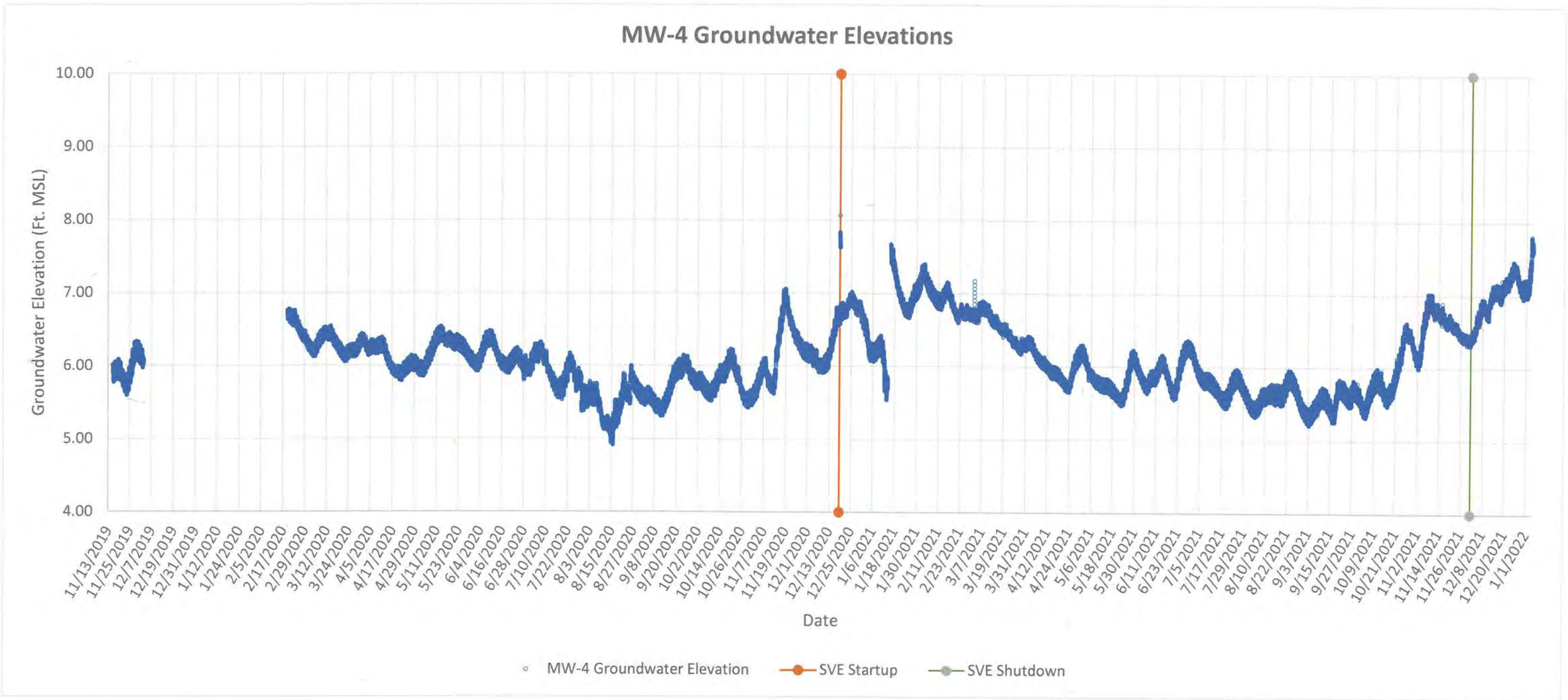
10/21/2021
11/2/2021
11/14/2021
11/26/2021
12/8/2021
12/20/2021
1/1/2022
Date
MW-3 Groundwater Elevation
SVE Startup
SVE Shutdown


MW-4 Groundwater Elevations
Groundwater Elevation (Ft. MSL)
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8.00
7.00
6.00
5.00
4.00
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11/25/2019
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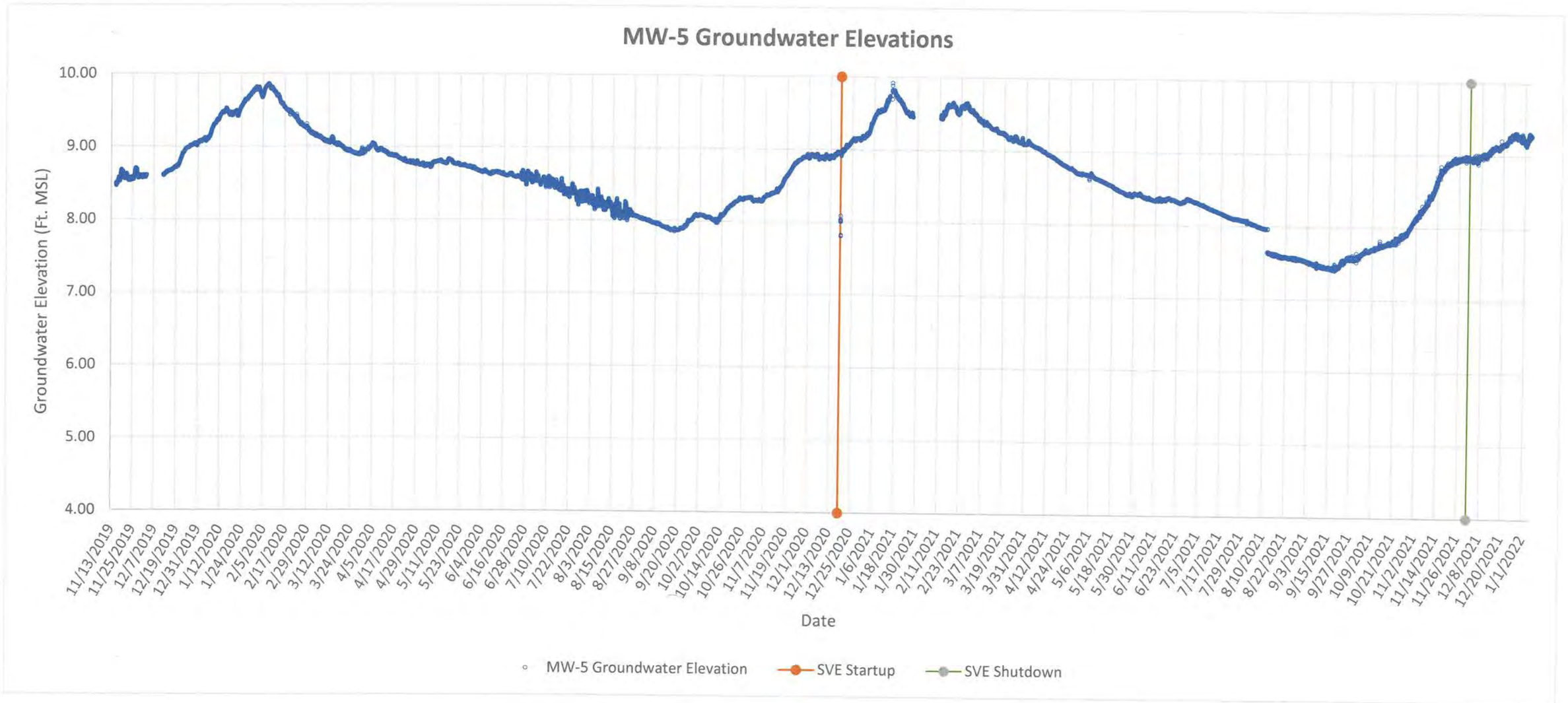
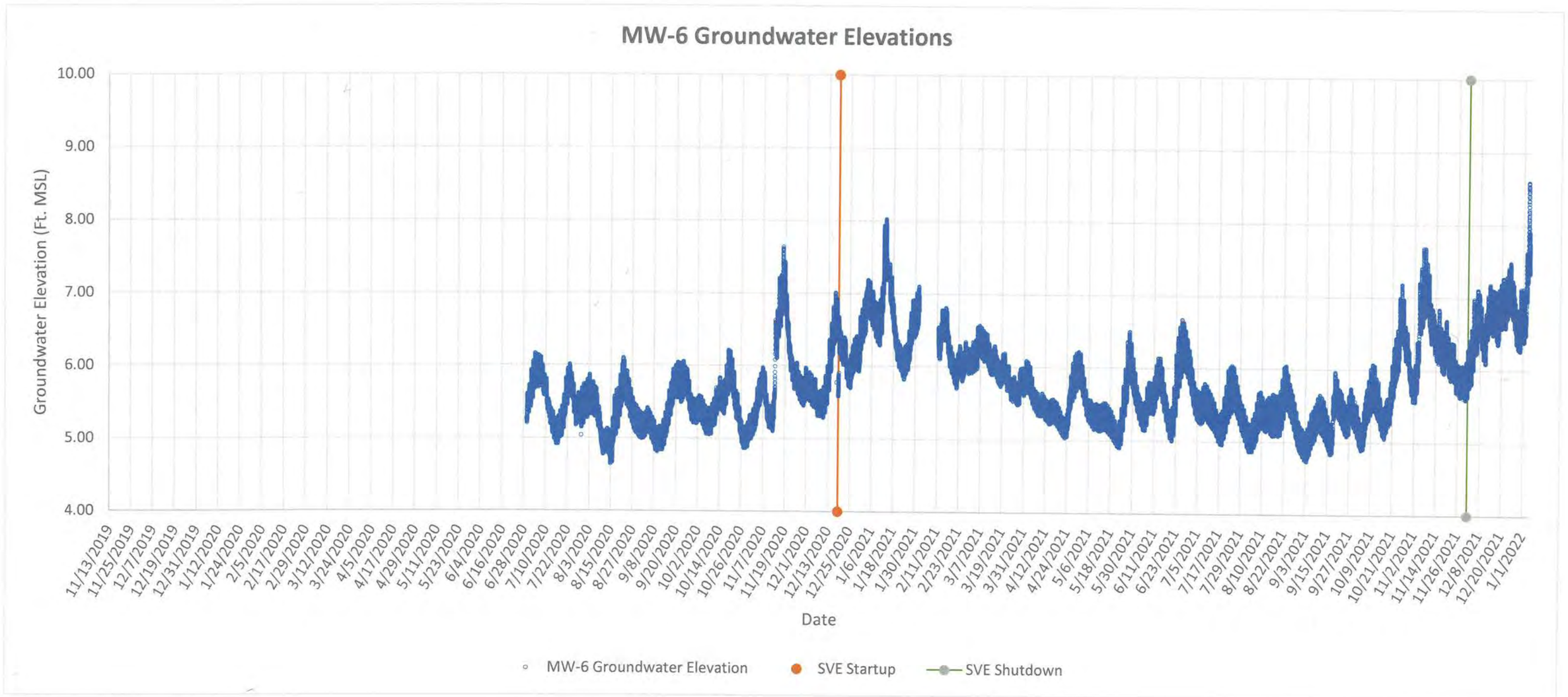
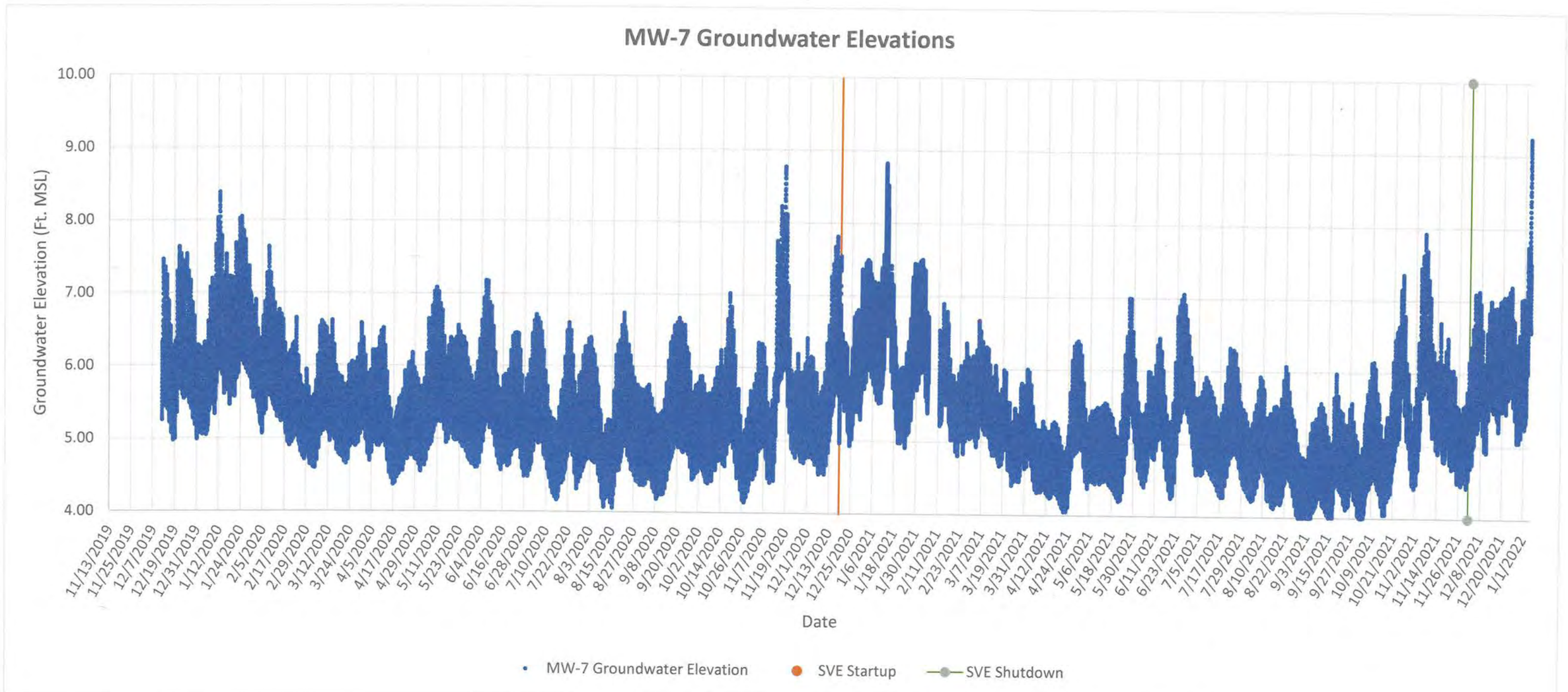
3/19/2021
3/31/2021
4/12/2021
4/24/2021
5/6/2021
5/18/2021
5/30/2021
6/11/2021
6/23/2021
7/5/2021
7/17/2021
7/29/2021
8/10/2021
8/22/2021
9/3/2021
9/15/2021
9/27/2021
10/9/2021
10/21/2021
11/2/2021
11/14/2021
11/26/2021
12/8/2021
12/20/2021
1/1/2022
Date
MW-4 Groundwater Elevation
SVE Startup
SVE Shutdown


MW-5 Groundwater Elevations
Groundwater Elevation (Ft. MSL)
10.00
9.00
8.00
7.00
6.00
5.00
4.00
11/13/2019
11/25/2019
12/7/2019
12/19/2019
12/31/2019
1/12/2020
1/24/2020
2/5/2020
2/17/2020
2/29/2020
3/12/2020
3/24/2020
4/5/2020
4/17/2020
4/29/2020
5/11/2020
5/23/2020
6/4/2020
6/16/2020
6/28/2020
7/10/2020
7/22/2020
8/3/2020
8/15/2020
8/27/2020
9/8/2020
9/20/2020
10/2/2020
10/14/2020
10/26/2020
11/7/2020
11/19/2020
12/1/2020
12/13/2020
12/25/2020
1/6/2021
1/18/2021
1/30/2021
2/11/2021
2/23/2021
3/7/2021
3/19/2021
3/31/2021
4/12/2021
4/24/2021
5/6/2021
5/18/2021
5/30/2021
6/11/2021
6/23/2021
7/5/2021
7/17/2021
7/29/2021
8/10/2021
8/22/2021
9/3/2021
9/15/2021
9/27/2021
10/9/2021
10/21/2021
11/2/2021
11/14/2021
11/26/2021
12/8/2021
12/20/2021
1/1/2022
Date
MW-5 Groundwater Elevation
SVE Startup
SVE Shutdown


MW-6 Groundwater Elevations
Groundwater Elevation (Ft. MSL)
10.00
9.00
8.00
7.00
6.00
5.00
4.00
11/13/2019
11/25/2019
12/7/2019
12/19/2019
12/31/2019
1/12/2020
1/24/2020
2/5/2020
2/17/2020
2/29/2020
3/12/2020
3/24/2020
4/5/2020
4/17/2020
4/29/2020
5/11/2020
5/23/2020
6/4/2020
6/16/2020
6/28/2020
7/10/2020
7/22/2020
8/3/2020
8/15/2020
8/27/2020
9/8/2020
9/20/2020
10/2/2020
10/14/2020
10/26/2020
11/7/2020
11/19/2020
12/1/2020
12/13/2020
12/25/2020
1/6/2021
1/18/2021
1/30/2021
2/11/2021
2/23/2021
3/7/2021
3/19/2021
3/31/2021
4/12/2021
4/24/2021
5/6/2021
5/18/2021
5/30/2021
6/11/2021
6/23/2021
7/5/2021
7/17/2021
7/29/2021
8/10/2021
8/22/2021
9/3/2021
9/15/2021
9/27/2021
10/9/2021
10/21/2021
11/2/2021
11/14/2021
11/26/2021
12/8/2021
12/20/2021
1/1/2022
Date
MW-6 Groundwater Elevation
SVE Startup
SVE Shutdown


MW-7 Groundwater Elevations
Groundwater Elevation (Ft. MSL)
10.00
9.00
8.00
7.00
6.00
5.00
4.00
11/13/2019
11/25/2019
12/7/2019
12/19/2019
12/31/2019
1/12/2020
1/24/2020
2/5/2020
2/17/2020
2/29/2020
3/12/2020
3/24/2020
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4/17/2020
4/29/2020
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6/4/2020
6/16/2020
6/28/2020
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7/22/2020
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9/8/2020
9/20/2020
10/2/2020
10/14/2020
10/26/2020
11/7/2020
11/19/2020
12/1/2020
12/13/2020
12/25/2020
1/6/2021
1/18/2021
1/30/2021
2/11/2021
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5/30/2021
6/11/2021
6/23/2021
7/5/2021
7/17/2021
7/29/2021
8/10/2021
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9/3/2021
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10/9/2021
10/21/2021
11/2/2021
11/14/2021
11/26/2021
12/8/2021
12/20/2021
1/1/2022
Date
MW-7 Groundwater Elevation
SVE Startup
SVE Shutdown