Second Quarter 2024
Monitoring Report
Former Johnson Oil
280 E Columbia River Highway
Clatskanie, Oregon

Prepared for:
Oregon Department of Environmental Quality
Task Order No. 066-23-18

June 18, 2024
32-24005465/Task 3

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Table of Contents

Tables

Figures

Appendices

1.0 Introduction

This Second Quarter 2024 Monitoring Report (QMR) describes the field activities and presents the results of a groundwater monitoring event completed in April 2024 at the Former Johnson Oil property and the adjacent property currently occupied by Turning Point Community Service Center (the Site; Figures 1 and 2) located at 280 East Columbia River Highway, Clatskanie, Oregon. The Site is located adjacent to the Clatskanie River in Columbia County. The monitoring event was conducted for the Oregon Department of Environmental Quality (DEQ) under Task 2 of Task Order No. 066-23-18, and this report was prepared under Task 3. The Site is listed in DEQ's Leaking Underground Storage Tank (LUST) database as LUST ID 05-87-0033.

1.1 Scope of Work

The scope of work was completed in accordance with the Supplemental Site Investigation Work Plan (Work Plan; Apex Companies, LLC [Apex], 2022). The scope of work for this monitoring event includes collection and analysis of groundwater samples from 10 existing monitoring wells.

2.0 Background

This section presents a description of the Site, its anticipated geology and hydrogeology, and previous work that has been done at the Site.

2.1 Site Location and Description

The Site is located on an approximately 0.26-acre parcel (Figures 1 and 2) near the center of the City of Clatskanie on the south bank of the Clatskanie River and is bounded to the south by the Columbia River Highway (Hwy 30). The Site includes the former service station property and the adjacent property occupied by Turning Point Community Service Center (Turning Point). The former Johnson Oil property is improved with a vacant former service station with an associated pump island (dispensers have been removed) and canopy. The Site and surrounding properties are zoned commercial, but the zoning rules allow for residential use in conjunction with commercial use. Turning Point is located adjacent to the north and west, and the property to the east is currently vacant (formerly a produce market that burned down).

The Site is located at approximately 18 feet above mean sea level, and topography is generally level but slopes steeply down to the Clatskanie River along the north side of the Site. The Site is located within the Oregon Coast Range and is underlain by unconsolidated Quaternary alluvial deposits of silt and interbedded sand lenses to a depth of approximately 50 feet below ground surface (bgs). Sandstone and siltstone of the Astoria Formation underlie the alluvial deposits (Orr, 1999). Based on boring logs associated with Site investigations, near surface geology generally consists of gravelly fill material to a depth of 1 to 5 feet bgs overlying sand.

Shallow groundwater is present beneath the Site at depths ranging from approximately 1 foot bgs on the northwestern portion of the Site to 10 feet bgs adjacent to the river and on the southwestern side of the Site. Groundwater generally flows toward the Clatskanie River with a less pronounced southwesterly component and may be tidally influenced. Some of the groundwater monitoring wells at the Site exhibit slow recovery based on data collected in 2019 through 2024.

3.0 Field Activities

3.1 Pre-Investigation Activities

Site Health and Safety Plan. A Site-specific health and safety plan (HASP) was prepared for the field activities and included in Appendix B of the Work Plan. The HASP was prepared in general accordance with the Occupational Safety and Health Administration (OSHA) and the Oregon Administrative Rules (OAR). A copy of the HASP was maintained onsite during the field activities.

Property Access. DEQ obtained access agreements with Columbia County (the Former Johnson Oil property owner) and Turning Point for access to the Site for the monitoring activities.

3.2 Groundwater Monitoring

Groundwater Levels. On April 8, 2024, groundwater levels were measured using an electronic water level indicator for monitoring wells MW-4 through MW-9 and MW-12 through MW-15. All wells were opened, and the water level was allowed to equilibrate before the measurements were taken. The depth to groundwater was measured in each well to the nearest 0.01 foot. The depth to groundwater and groundwater elevations are presented in Table 1. Water level documentation is included in Appendix A, and historical elevations are presented in Appendix C.

In general, the April 2024 groundwater elevation data suggest a significantly variable groundwater flow across the Site with primarily a southeast to south flow direction under a hydraulic gradient of approximately 0.02 feet per foot (ft/ft). The groundwater elevations and elevation contours are presented on Figure 3. The groundwater flow direction adjacent to the Clatskanie River is towards the river under a gradient of approximately 0.2 ft/ft and may be tidally influenced. The groundwater flow direction and gradients observed during the April 2024 monitoring event are consistent with previous events.

Groundwater Sampling. Samples were collected using a peristaltic pump and low-flow protocols. New tubing was used on each monitoring well. Field parameters collected during sampling included temperature, pH, conductivity, dissolved oxygen concentration (DO), and oxidation-reduction potential (ORP). Field parameters are summarized in Table 1. Groundwater monitoring documentation is included in Appendix A.

Consistent with prior monitoring events, the field parameters measured in monitoring well MW-9 are distinct from the observations in the other nine monitoring wells; the pH and conductivity values are lower and the DO and ORP values are significantly higher. (The DO and ORP measurements in the other wells consistently show an anaerobic and reducing environment while MW-9 exhibits a relatively aerobic and oxidizing environment.) The low DO and ORP observed in the other monitoring wells are consistent with expectations in the vicinity of a hydrocarbon plume influenced by microbial degradation (as the available oxygen is being used by the micro-organisms), suggesting that MW-9 is not being influenced by this process. There may also be a relationship between the high (oxidizing) ORP and the relatively low pH observed in MW-9. Furthermore, the combination of the higher DO and ORP, the unique lack of detected analytes in the laboratory sample (discussed below), and the lower groundwater elevation observed in MW-9 suggest that the well may be influenced by groundwater-surface water interaction with the adjacent Clatskanie River. However, there isn't enough data available to distinguish any specific relationship between the aquifer and the river or to compare results to the local aquifer outside of the influence of the petroleum plume. In addition, the field parameters observed in monitoring wells MW-14 and MW-15, which are approximately equidistant from the river as monitoring well MW-9, do not exhibit the same variation as the field parameters observed in MW-9, although the groundwater elevation is higher in these monitoring wells.

Although the Site wells, with the exception of MW-9, have consistently exhibited low DO concentrations, four of the wells observed in the April 2024 monitoring event had no detected DO. The low DO concentrations across the Site suggest that groundwater conditions are not conducive to significant microbial degradation of petroleum and volatile organic compound (VOC) constituents. However, each of the wells with no measurable DO (MW-8, MW-13, MW-14, and MW-15) are downgradient of MW-12. MW-12 consistently exhibits the highest concentrations of petroleum and VOCs. Although Site conditions are not conducive to significant microbial degradation, the lack of DO downgradient of MW-12 suggests that microbes are utilizing the limited amount of DO available, resulting in no detectable DO in downgradient wells.

3.3 Handling of Investigation-Derived Waste

Investigation-derived waste (IDW) consisted of purge water and decontamination water. IDW water was placed in a 55-gallon drum and temporarily stored inside the former service station building, pending characterization, disposal profiling, and removal from the Site. The container was labeled with the project name, general contents, and date. Disposable items, such as sample tubing, gloves, paper towels, etc., were placed in plastic bags after use and deposited in trash receptacles for disposal.

4.0 Chemical Analyses and Results

Groundwater samples were submitted to Pace Analytical National located in Mount Juliet, Tennessee for analysis. Sample analysis was conducted on a standard turnaround time. A copy of the analytical laboratory report is included in Appendix B along with a quality assurance/quality control (QA/QC) review of the data.

The results of the data quality review indicate that the data are of acceptable quality and are suitable for their intended purpose.

4.1 Analyses Performed

4.1.1 Groundwater

Groundwater samples were analyzed for gasoline-range total petroleum hydrocarbons (TPH-G) by Northwest Method NWTPH-Gx and for VOCs by Environmental Protection Agency Method 8260D.

4.2 Chemical Results

The analytical results and risk screening of the groundwater collected in April 2024 are summarized below. The concentrations were screened against the risk-based concentrations (RBCs) that correspond to the potentially complete exposure pathways published in *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (DEQ, updated June 2023), including: groundwater to indoor air occupational receptor (RBC_{wi}) and groundwater in excavations for the construction and excavation worker receptor (RBC_{we}). Section 4.2.2 provides a summary of potential exposure pathways.

4.2.1 Groundwater

Groundwater analytical results are presented in Table 2 and summarized on Figure 4 for the April 2024 groundwater monitoring event. Historical groundwater analytical results are presented in Appendix C.

Total Petroleum Hydrocarbons. TPH-G was detected in nine of the 10 groundwater samples collected during the April 2024 monitoring event (excepting MW-9). Detected TPH-G concentrations ranged from 84.8 micrograms per liter (µg/L; MW-8) to 120,000 µg/L (MW-12). TPH-G detections exceeded the groundwater to indoor air RBC of 520 µg/L in seven of the 10 samples. The TPH-G concentration in the sample collected from MW-12 also exceeded the RBC for groundwater in excavations for construction and excavation workers of 14,000 µg/L. The TPH-G concentration of 120,000 µg/L in the sample collected from MW-12 may indicate the presence of light non-aqueous phase liquid (LNAPL) in the vicinity of the well. (The theoretical upper limit of dissolved-phase concentration for fresh gasoline is approximately 100,000 µg/L; Interstate Technology & Regulatory Council, 2018.) The TPH-G concentration in the sample collected from monitoring well MW-12 is slightly lower than the first quarter 2024 monitoring event (by 4 percent), but still significantly exceeds concentrations observed in other monitoring wells and the concentration observed in this well in September 2023. The TPH-G concentrations detected in the samples collected from monitoring wells MW-4, MW-8, MW-13, MW-14, and MW-15 are consistent with recent monitoring events. The TPH-G concentrations detected in the samples collected from monitoring wells MW-5, MW-6, and MW-7 increased from the prior monitoring event and represent the relatively highest concentrations observed in the wells during recent monitoring events.

Volatile Organic Compounds. One or more petroleum VOCs (benzene, ethylbenzene, xylenes, and naphthalene) were detected at concentrations that exceed the RBCs in eight of the 10 groundwater samples collected in April 2024. The exceedances are as follows:

- The benzene RBC for the groundwater to indoor air pathway (12 µg/L) was exceeded in eight of the 10 groundwater samples.
- The ethylbenzene RBC for the groundwater to indoor air pathway (31 µg/L) was exceeded in five of the 10 groundwater samples.
- The benzene, ethylbenzene, and xylene concentrations in the groundwater sample collected from MW-12 were an order of magnitude higher than the other RBC exceedances for the groundwater to indoor air pathway; the benzene concentration in MW-12 also exceeded the groundwater in excavation pathway.
- The total xylene concentration in the sample collected from monitoring well MW-12 (17,500 µg/L) exceeded the RBC for the groundwater to indoor air pathway (3,300 µg/L).
- The naphthalene RBC for the groundwater to indoor air pathway (50 µg/L) was exceeded in the groundwater samples collected from monitoring wells MW-4, MW-5, and MW-12 but not in any of the other samples.

The detected benzene and ethylbenzene concentrations in samples collected from monitoring wells MW-8, MW-9, and MW-15 are relatively consistent with previous monitoring events (negligible VOCs detected). Relative to the prior monitoring event (February 2024), concentrations generally decreased in samples collected from monitoring wells MW-6, MW-7, and MW-14 and increased in samples collected from monitoring wells MW-4 and MW-13. In the sample collected from MW-12, the benzene concentration increased approximately 10 percent from the first quarter 2024 monitoring event but is over 50 percent lower than concentrations observed in the third and fourth quarter 2023 monitoring events. The ethylbenzene, naphthalene, and xylene concentrations all decreased from the previous monitoring event by approximately 25 to 30 percent.

4.2.2 Site Data Screening Summary

The observed exceedances of Site-related contaminants for each exposure pathway are summarized below.

Contaminant	Exposure Pathways	
	Groundwater Pathways	
	Vapor Intrusion	Groundwater in Excavations
TPH-G	**Com (7)**	**Ex (1)**
Benzene	**Com (8)**	**Ex (1)**
Ethylbenzene	**Com (5)**	No
Xylenes	**Com (1)**	No
Naphthalene	**Com (3)**	No

Notes: Ex = Exceeds Excavation Worker RBC
Com = Exceeds Commercial Chronic RBC
No = No exceedances of RBCs
(#) = Number of Samples Exceeding June 2023 RBC

5.0 Conclusions

Based on the second quarter 2024 groundwater monitoring event and previous events, impacts from gasoline-range hydrocarbons and petroleum-related VOCs continue to be present at the Site and extend beneath the former Johnson Oil and Turning Point buildings.

Elevated concentrations of TPH-G and VOCs (benzene, ethylbenzene, total xylenes, and naphthalene) above the commercial vapor intrusion RBCs in groundwater suggest that the impacts to indoor air could be associated with the Site groundwater contamination or from residual LNAPL that may be present in the vicinity of MW-12 (east of the Turning Point building), but additional data is needed to fully assess this relationship.

Although petroleum and VOC concentrations have shown some variability between quarterly events, the overall groundwater concentrations appear to be relatively stable over the previous year of monitoring, likely due to the low DO and reducing conditions limiting the attenuation rate of petroleum concentrations in groundwater.

However, the data may suggest some local mobility based on the increased TPH and VOC concentrations observed in monitoring well MW-12 and decreased DO observed in the monitoring wells downgradient of MW-12. The mobility may be influenced by impacts to the local hydrogeology from the underground storage tank removals and subsequent soil excavation projects, such as may be associated with higher-conductivity backfill materials. A comparison of historic groundwater elevations observed in 2018 and current conditions suggests that a groundwater mound has formed in the vicinity of the historical interim removal action measure which has in turn resulted in increased groundwater flow to the south, away from the river. Additional data is necessary to fully assess potential mobility across the Site and the subsequent influence on groundwater and vapor concentrations across the Site.

Due to funding limitations, cleanup activities over the next year (beginning July 2024) will be limited to groundwater, soil gas, and ambient air monitoring. Further evaluation of potential remedial actions at the site is being conducted and will help determine future activities.

6.0 References

Apex Companies, LLC, 2022. *Supplemental Site Investigation Work Plan, Former Johnson Oil.* December 8, 2022.

Interstate Technology & Regulatory Council (ITRC), 2018. *TPH Risk Evaluation at Petroleum-Contaminated Sites*. ITRC Risk Evaluation Team, tphrisk-1.itrcweb.org.

Oregon Department of Environmental Quality, 2003. *Risk-Based Decision Making for the Remediation of Contaminated Sites*. September 22, 2003. Updated June 2023.

Orr, Elizabeth L. and Willian N. Orr, 1999. *Geology of Oregon*. January 1, 1999.

Table 1
Groundwater Elevations and Field Parameters
Former Johnson Oil
Clatskanie, Oregon

Monitoring Well	Date	TOC Elevation (ft[1])	Depth to Groundwater (ft BTOC)	Depth to Product (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft[1])	pH	Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)
MW-4	9/21/2023	94.43	4.27	--	--	90.16	5.73	17.74	464	0.68	-115.4
	11/7/2023		0.9	--	--	93.53	6.43	15.82	585	0.23	-98.1
	2/26/2024		1.04	--	--	93.39	6.27	11.77	532	0.36	-39.9
	4/8/2024		1.30	--	--	93.13	6.75	12.64	566	1.40	-120.3
MW-5	9/21/2023	94.30	6.79	--	--	87.51	5.37	16.51	324	0.66	-98.5
	11/7/2023		2.56	--	--	91.74	6.24	15.35	417	0.18	-104
	2/26/2024		2.97	--	--	91.33	5.94	11.60	469	0.32	48.8
	4/8/2024		3.44	--	--	90.86	6.53	12.19	461	1.11	-125.3
MW-6	9/21/2023	95.57	7.68	--	--	87.89	5.64	17.73	452	0.62	-117.5
	11/7/2023		4.93	--	--	90.64	6.13	17.28	432	0.21	-78.8
	2/26/2024		4.88	--	--	90.69	5.99	12.50	469	0.58	-33.8
	4/8/2024		4.55	--	--	91.02	6.52	13.24	484	1.08	-108.4
MW-7	9/20/2023	95.04	6.20	--	--	88.84	5.35	19.00	491	0.61	-92.6
	11/7/2023		7.71	--	--	87.33	5.96	17.00	383	0.23	-32.0
	2/26/2024		8.07	--	--	86.97	5.93	13.81	578	0.77	-31.2
	4/8/2024		9.23	--	--	85.81	6.23	14.03	446	1.37	-52.5
MW-8	9/20/2023	96.22	6.80	--	--	89.42	5.44	19.53	868	0.07	-130.4
	11/7/2023		6.11	--	--	90.11	6.11	18.30	902	0.34	-127.1
	2/26/2024		5.09	--	--	91.13	6.07	12.18	953	0.75	-56.8
	4/8/2024		5.33	--	--	90.89	6.36	12.62	896	0.00	-106.3
MW-9	9/20/2023	94.54	9.09	--	--	85.45	3.71	15.44	146	3.77	256.0
	11/7/2023		5.07	--	--	89.47	4.99	14.47	52	2.19	223.0
	2/26/2024		4.90	--	--	89.64	4.43	9.82	51	4.33	256.5
	4/8/2024		6.33	--	--	88.21	4.94	10.95	62	3.96	238.4
MW-12	9/21/2023	99.06	7.50	--	--	91.56	5.33	18.73	544	0.58	-103.8
	11/7/2023		5.26	--	--	93.80	6.11	16.18	325	0.38	-67.8
	2/26/2024		4.61	--	--	94.45	5.90	11.68	355	0.27	-23.3
	4/8/2024		5.10	--	--	93.96	6.33	12.64	331	1.13	-86.8
MW-13	9/20/2023	98.28	5.67	--	--	92.61	6.03	18.42	912	0.60	-116.3
	11/7/2023		2.54	--	--	95.74	6.79	16.15	901	0.25	-65.3
	2/26/2024		2.67	--	--	95.61	6.85	9.59	352	0.56	-9.4
	4/8/2024		3.09	--	--	95.19	7.40	10.96	375	0.00	-125.2
MW-14	9/20/2023	99.28	10.00	--	--	89.28	5.69	15.44	705	0.58	-131.6
	11/7/2023		7.97	--	--	91.31	5.98	14.87	425	0.18	-90.5
	2/26/2024		8.05	--	--	91.23	5.9	11.78	335	0.65	-30.6
	4/8/2024		8.77	--	--	90.51	6.45	11.92	338	0.00	-106.8
MW-15	9/20/2023	100.32	9.67	--	--	90.65	5.2	14.18	577	0.73	-72.9
	11/7/2023		7.87	--	--	92.45	5.95	13.72	348	0.21	-59.4
	2/26/2024		8.31	--	--	92.01	5.77	9.08	320	0.54	-16.0
	4/8/2024		9.07	--	--	91.25	6.45	11.31	407	0.00	-134.6

Notes:

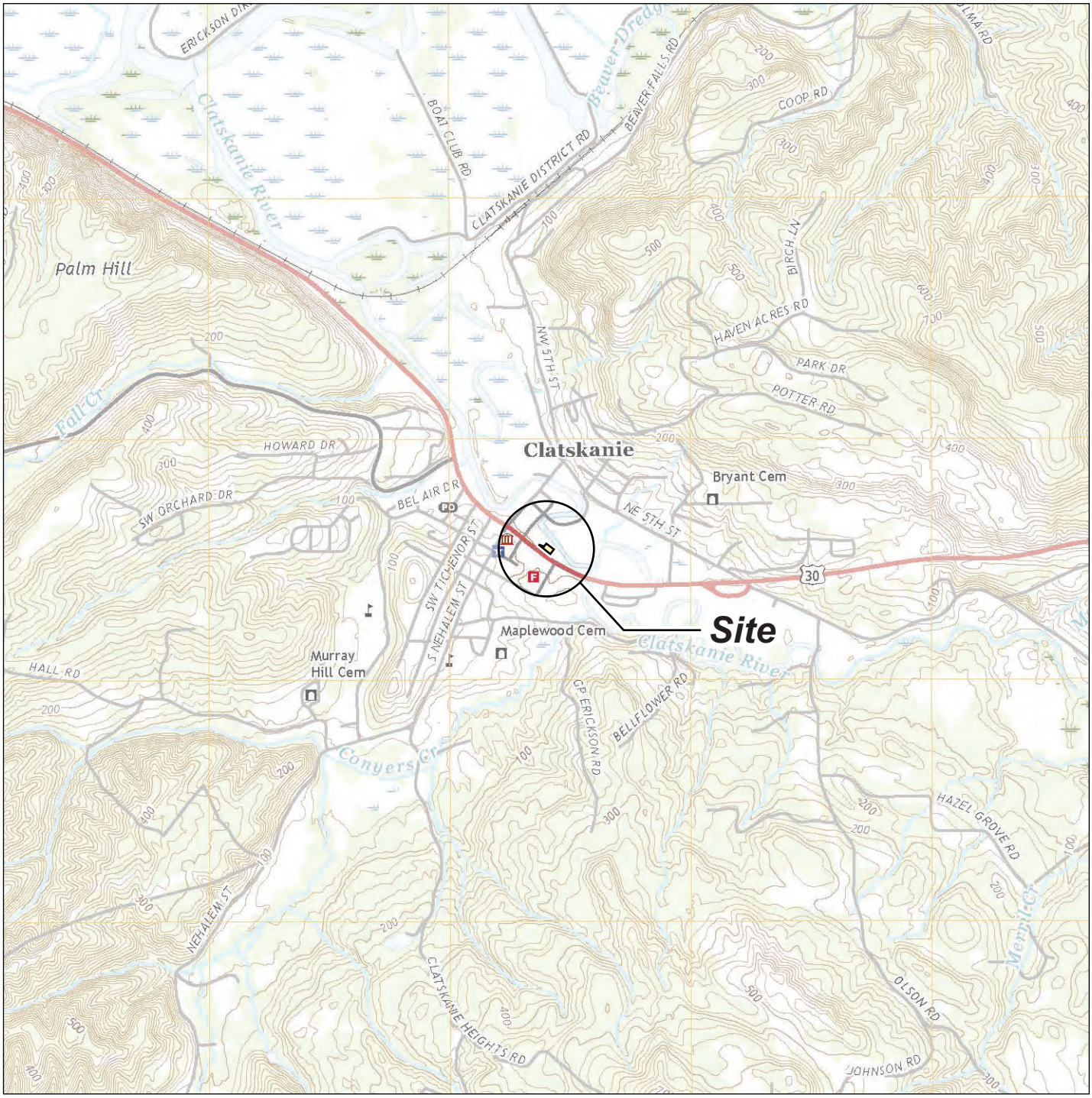
1. Elevations are relative to an assumed reference datum of 100 feet (point located at the northwest corner of a concrete pad for a metal sign along Highway 30).
2. ft = feet
3. BTOC = Below Top of Casing.
4. NS = Not surveyed.
5. °C = Degrees Celsius.
6. µS/cm = MicroSiemens per centimeter
7. mg/L = Milligrams per liter.
8. ORP (mV) = Oxidation-reduction potential (millivolts).

Table 2
Groundwater Analytical Results
Former Johnson Oil
Clatskanie, Oregon

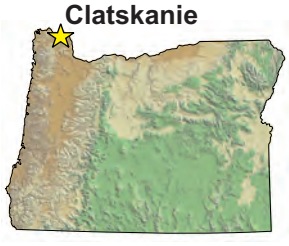
Monitoring Well Number	Sample Date	Concentrations in µg/L								
		TPH-G	Benzene	Toluene	Ethylbenzene	Total Xylenes	Methyl Tert-Butyl Ether	Naphthalene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
MW-4	9/21/2023	**4,950**	**60.8**	**1.29**	**287**	**2.69 J**	<1.00	**363**	**0.412 J**	**0.292 J**
	11/8/2023	**4,870**	**199.0**	<20.0	**354**	**9.63 J**	<20.0	**137**	<20.0	<20.0
	2/27/2024	**3,120**	**94.2**	<20.0	**104**	**7.88**	<20.0	**130**	**4.57**	<20.0
	04/09/2024	**3,450**	**117**	<20.0	**108**	<60.0	<20.0	**96.2**	**2.19**	<20.0
MW-5	9/21/2023	**3,430**	**32.0**	**2.13**	**200**	**9.57**	<1.00	**120**	**0.341 J**	**0.975 J**
	11/8/2023	**6,100**	**141**	**13.1**	**244**	**29.4 J**	<10.0	**220**	<10.0	**2.58 J**
	2/27/2024	**5,070**	**147**	**13.6**	**1,080**	**61.4**	<10.0	**331**	**24.2**	**3.07**
	04/09/2024	**7,910**	**155**	**11.1**	**970**	**51.0**	<10.0	**318**	**35.3**	**1.94**
MW-6	9/21/2023	**2,450**	**379**	**6.25**	**92.7**	41.1	<1.00	**9.88**	<1.00	**2.57**
	11/8/2023	**6,250**	**772**	**11.2**	**230**	74.3	<10.0	**28.0 J**	**6.60 J**	**5.36 J**
	2/27/2024	**4,060**	**668**	**13.1**	**215**	**55.7**	<10.0	**19.6**	**3.09**	**7.72**
	04/09/2024	**6,860**	**576**	**10.4**	**152**	**31.5**	<10.0	**28.5**	**2.52**	**3.66**
MW-7	9/21/2023	**876**	**49.6**	**1.44**	**35.6**	**99.3**	**14.6**	**2.66 J**	**18.0**	**5.3**
	11/8/2023	**1,640**	**166**	**0.981 J**	**163**	**92.2**	**12.4**	**17.1**	**22.6**	**4.7**
	2/27/2024	**1,310**	**131**	**2.19**	**123**	**236**	**17.4**	**10.3**	**19.4**	**11.8**
	04/09/2024	**2,350**	**112**	**2.42**	**87.8**	**294**	**14.9**	**4.15**	**11.8**	**14.5**
MW-8	9/20/2023	**54.5 J**	<1.00	<1.00	**0.231 J**	**1.47 J**	**0.297 J**	<5.00	<1.00	**0.137 J**
	11/7/2023	**35.5**	**0.125 J**	<1.00	**0.587 J**	**0.923 J**	<1.00	**1.33 J**	<1.00	<1.00
	2/26/2024	**52.0 B**	<1.00	<1.00	<1.00	**4.26**	**0.296**	<5.00	**0.400**	<1.00
	04/08/2024	**84.8**	<1.00	<1.00	**0.206**	**8.77**	**0.336**	<5.00	**0.83**	**0.77**
MW-9	9/20/2023	<100	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<1.00	<1.00
	11/7/2023	**55.7 J**	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<1.00	<1.00
	2/26/2024	<100	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<1.00	<1.00
	04/08/2024	<100	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<1.00	<1.00
MW-12	9/21/2023	**31,000**	**4,540**	**145**	**1,490**	**3,870**	**15.3**	**193 J**	**1,120**	**297**
	11/8/2023	**104,000**	**4,150**	**13,200**	**4,650**	**22,500**	<50.0	**288**	**2,380**	**649**
	2/27/2024	**125,000**	**1,650**	**19,300**	**4,990**	**23,400**	<100	**511**	**724**	**797**
	04/09/2024	**120,000**	**1,810**	**15,900**	**3,410**	**17,500**	<100	**340**	**533**	**603**
MW-13	9/20/2023	**3,170**	**166**	<20.0	**279**	**16.1 J**	<1.00	**14.3**	**114**	**36.5**
	11/7/2023	**271**	**2.79**	<1.00	**10.4**	**1.47 J**	<1.00	<5.00	**1.96**	**0.177 J**
	2/26/2024	**98.3 B**	**1.45**	<1.00	**7.86**	**0.329**	<1.00	<5.00	<1.00	<1.00
	04/08/2024	**238**	**35.3**	**0.501**	**6.11**	<3.00	<1.00	<5.00	<1.00	**0.381**
MW-14	9/20/2023	**4,570**	**703**	**4.08**	**46.7**	**7.73 J**	<1.01	**7.83**	<25.0	**22.4**
	11/8/2023	**3,300**	**370**	**6.99 J**	<25.0	**21.5 J**	<25.0	<125	<25.0	<25.0
	2/27/2024	**3,440**	**554**	**4.94**	**34.9**	**15.8**	<5.00	<25.0	**9.57**	**4.87**
	04/08/2024	**3,790**	**334**	**4.30**	**19.4**	**13.8**	<5.00	<25.0	**8.35**	**3.48**
MW-15	9/20/2023	**2,590**	**250**	**2.96**	**20.9**	2.98 J	**6.43**	**1.84 J**	<10.0	<10.0
.	11/7/2023	**709**	**28.7**	**0.377 J**	**14.5**	2.69 J	<1.00	**3.84 J**	**0.727 J**	**0.157 J**
	2/26/2024	**940**	**27.6**	**0.518**	**33.2**	**6.20**	<1.00	**6.10**	**10.4**	<1.00
	04/08/2024	**1,010**	**35.1**	**0.895**	**28.5**	**3.26**	<1.00	**5.31**	**11.0**	<1.00
Groundwater to Indoor	Chronic	--	650	160,000	420,000	200,000	1,600,000	83,000	--	--
Air - Commercial	Acute	520	12	150,000	31	3,300	3,200	50	2,400	1,700
Groundwater in Excavation (RBC_{we})		14,000	1,800	220,000	4,500	23,000	63,000	500	6,300	7,500

Notes:

1. Volatile organic compounds by EPA Method 8260D.
2. GRO = Gasoline range organics by NWTPH-Gx Method.
3. µg/L = Micrograms per liter.
4. Only compounds of potential interest are present in table.
5. **Bold** values indicate concentration detected above the method detection limit.
6. < = Concentration was not detected above the shown minimum reporting limit.
7. B = Analyte concentration is less than 10 times greater than a detection in the method blank and the result may be biased.
8. J = Result is an estimated value.
9. J- = Result is an estimated value and may be biased low.
10. UJ = The analyte was not detected but the reporting limit may be inaccurate or imprecise.
11. DEQ Human Health RBC = Risk-Based Concentrations from the DEQ's *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (updated June 2023).
12. Shaded values represent exceedances of applicable RBCs.



Note: Base map prepared from USGS 7.5-minute quadrangle of Clatskanie, OR, dated 2020 as provided by USGS.gov.



0 2,000 4,000

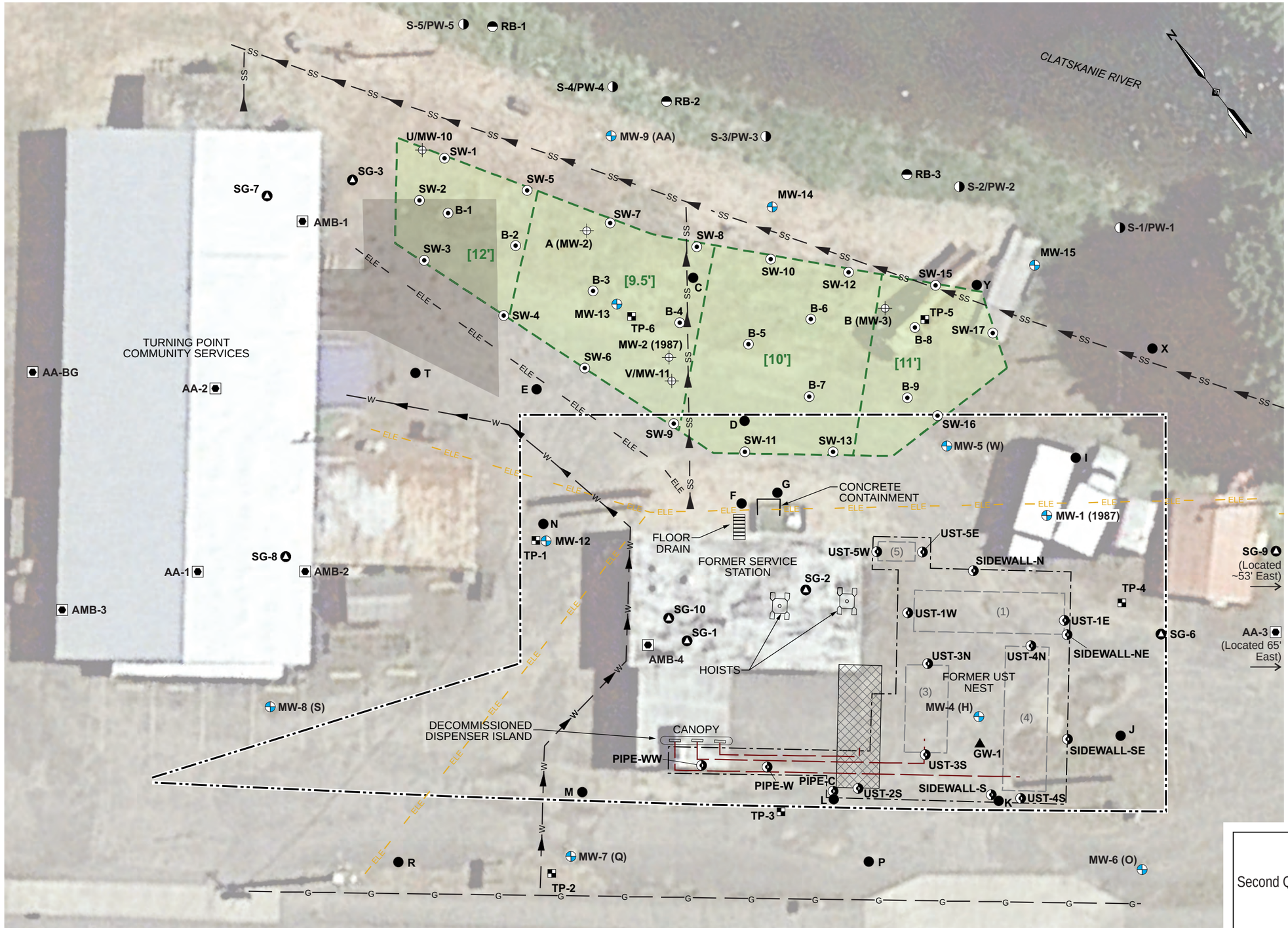
Approximate Scale in Feet

Site Location Map

Second Quarter Groundwater Monitoring - Former Johnson Oil Site
280 East Columbia River Highway
Clatskanie, Oregon

APEX Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 32-24005465	Drawn: JP	Approved: TC	Figure 1
	June 2024			

I:\Client\DEQ\Oregon\Johnson Oil\32-24005465\2Q 2024\32-24005465 01 (Site Location).des



NOTE: Base map prepared from Haley Aldrich *Extent of Groundwater Contamination Exceeding Groundwater in Excavation RBCs* (August 2022) and Google Earth Pro Imagery. Aerial dated June 18, 2021.

Legend:

- Monitoring Well (Push-Probe Designation; If Applicable)
- Ambient Air Location
- Sediment/Porewater Sample
- Excavation Confirmation Sample
- Soil Gas Sample
- Push-Probe Exploration
- Decommissioned Monitoring Well
- Grab Groundwater Sample
- Porewater Sample
- Soil Sample
- Test Pit
- Gas Line
- Overhead Electrical Line
- Underground Electrical Line
- Sanitary Sewer Line
- Water Line
- Decommissioned Product Piping
- Asphalt Concrete Pad Installed June 22, 2022
- [10'] Extent Of Excavation and [Depth in Feet]
- Excavation Limits (2008)
- Underground Storage Tank (UST) Decommissioned in Place
- (4) Removed UST and Designation
- Property Boundary

0 20 40

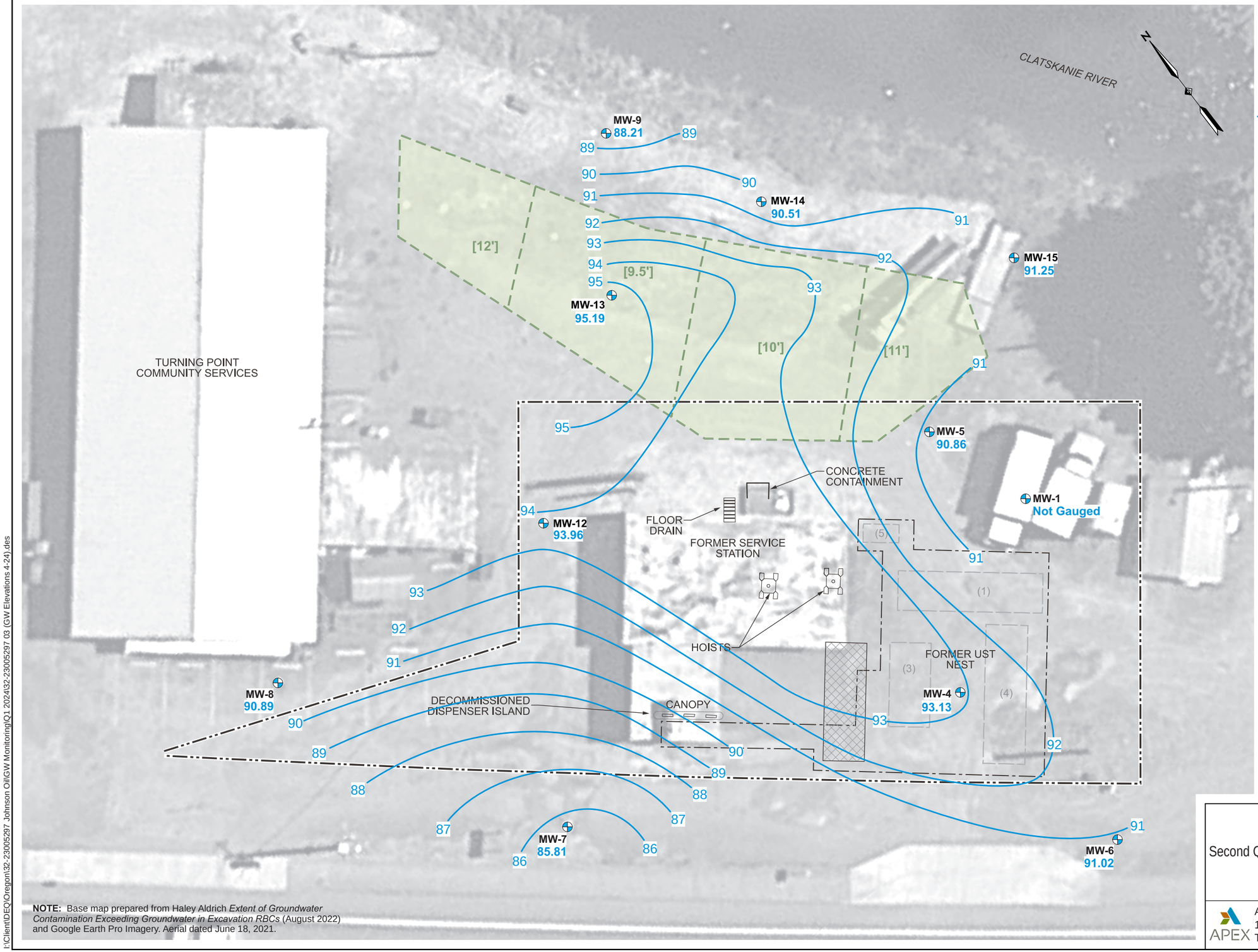
Approximate Scale in Feet

Site Plan

Second Quarter Groundwater Monitoring - Former Johnson Oil Site
280 East Columbia River Highway
Clatskanie, Oregon

Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 32-24005465	Drawn: --	Approved: TC	Figure 2
	June 2024			

I:\Client\DEQ\Oregon\Johnson Oil\32-24005465\2Q 2024\32-24005465 02 (Site Plan).des



Legend:

- Monitoring Well
- 91.25 — Groundwater Elevation in Feet Relative to Mean Sea Level
- 89 — Groundwater Elevation Contour in Feet Relative to Mean Sea Level (Dashed Where Inferred)
- [10'] — Extent of Excavation and [Depth in Feet]
- Excavation Limits (2008)
- Underground Storage Tank (UST) Decommissioned in Place
- (4) — Removed UST and Designation
- Property Boundary

0 20 40
Approximate Scale in Feet

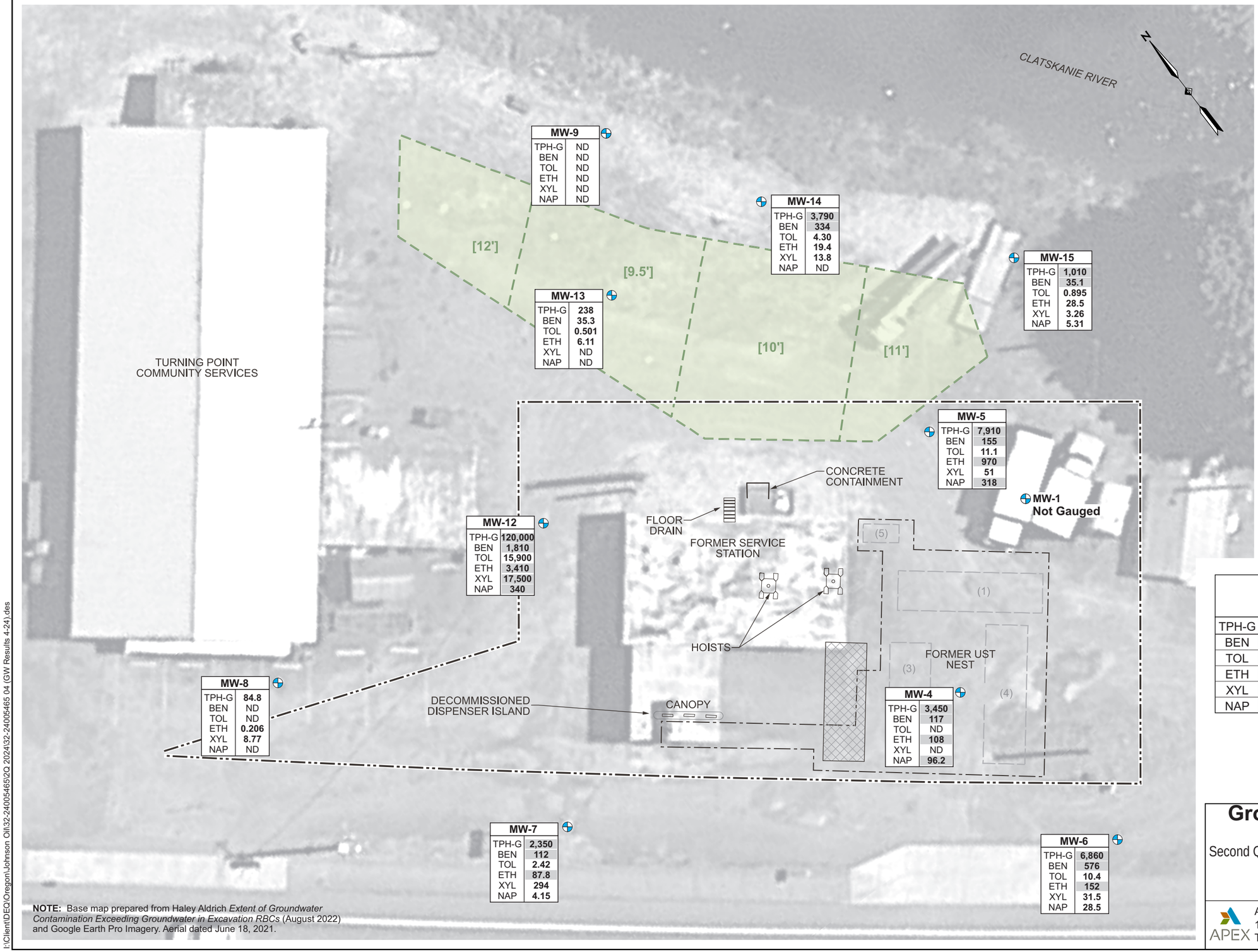
NOTE: Base map prepared from Haley Aldrich *Extent of Groundwater Contamination Exceeding Groundwater in Excavation RBCs* (August 2022) and Google Earth Pro Imagery. Aerial dated June 18, 2021.

Groundwater Elevations (April 2024)

Second Quarter Groundwater Monitoring - Former Johnson Oil Site
280 East Columbia River Highway
Clatskanie, Oregon

Apex Companies, LLC 15618 SW 72nd Avenue Tigard, Oregon 97224	Project Number: 32-24005465	Drawn: --	Approved: TC	Figure 3
	June 2024			

I:\Client\DEQ\Oregon\32-23005297 Johnson Oil\GW Monitoring\Q1 2024\32-23005297 03 (GW Elevations 4-24).des



NOTE: Base map prepared from Haley Aldrich *Extent of Groundwater Contamination Exceeding Groundwater in Excavation RBCs* (August 2022) and Google Earth Pro Imagery. Aerial dated June 18, 2021.

Legend:

- Monitoring Well
- [10'] Extent of Excavation and [Depth in Feet]
- Excavation Limits (2008)
- Underground Storage Tank (UST) Decommissioned in Place
- (4) Removed UST and Designation
- Property Boundary

MW-15	
TPH-G	1,010
BEN	35.1
TOL	0.895
ETH	28.5
XYL	3.26
NAP	5.31

Sample Identification

Concentration in Micrograms Per Cubic Meter (µg/m^3)

Analyte Sampled (See Table Below)

Highlight Exceeds Risk-Based Concentrations (RBCs) for Commercial Vapor Intrusion (RBCwi)

ND = Not Detected Above Laboratory Reporting Limit

Abbreviations		DEQ RBC for Commercial Vapor Intrusion (µg/m^3)
TPH-G	Gasoline-Range Organics	520
BEN	Benzene	12
TOL	Toluene	150,000
ETH	Ethylbenzene	31
XYL	Total Xylenes	3,300
NAP	Naphthalene	50

0 20 40

Approximate Scale in Feet

Groundwater Analytical Results (April 2024)

Second Quarter Groundwater Monitoring - Former Johnson Oil Site
280 East Columbia River Highway
Clatskanie, Oregon

APEX
Apex Companies, LLC
15618 SW 72nd Avenue
Tigard, Oregon 97224

Project Number:	Drawn:	Approved:	Figure
32-24005465	--	TC	4

June 2024

I:\Client\DEQ\Oregon\Johnson Oil\32-24005465\20 2024\32-24005465 04 (GW Results 4-24).des

Appendix A

Sampling Documentation

Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224			Job Number:	23005297
	Client:	DEQ	Date:	4/8/24
	Project:	Johnson Oil	Sampler:	Chris Weer
	Weather:	45° Cloudy	Time In/Out:	1009/1150

WATER LEVEL DATA

Well I.D.	Time	Depth to Free Product (feet)	Depth to Water (feet)	Depth to Well Bottom (feet)	Product Thickness (feet)	Water Column Height (feet)	Notes/Other Remarks
	1057		1.30				
MW-4	~~1041~~	-	~~5.33~~	20	-	~~17.67~~	Visible Sheen
MW-5	10'50	-	3.44	20	-		
MW-6	1052	-	4.55	20	-		
MW-7	1055	-	9.23	20	-		ODOR
MW-8	1041	-	5.33	15	-		
MW-9	1044	-	6.33	15	-		
MW-12	1059	-	5.10	15	-		odor
MW-13	1047	-	3.01	17	-		
MW-14	1048	-	8.77	20	-		
MW-15	1045	-	9.07	20	-		

APEX

Apex Companies, LLC
15618 SW 72nd Ave.
Portland, OR 97224

Well I.D.	MW-4	Job Number:	23005297
Client:	DEQ	Date:	4/9/2024
Project:	Johnson Oil	Sampler:	Chris Weer
Weather:	52° drizzle	Time In/Out:	1200 / 1225

WELL DATA

Well Depth:	20 feet	Well Diameter:	2 inch	Water Height	
Depth to Water:	1.30 feet	Screened Interval:		x Multiplier	
Water Column Length:	18.70 feet	Depth to Free Product:	n/a	x Casing Volumes	
Purge Volume:		Free Product Thickness:	n/a	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:	Pump Intake Depth:
Sampling Method:	Tubing Type:

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1204			1.29	0.30	6.71	12.62	569	2.02	-118.9		C
1207			1.29	0.30	6.74	12.60	568	1.43	-121.5		C
1210			1.30	0.25	6.75	12.58	567	1.39	-121.2		C
1213			1.30	0.25	6.75	12.64	566	1.40	-120.3		C

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-4	Sampling Flow Rate	0.20	Analytical Laboratory:	Pace
Sample Time:	1217	Final Depth to Water:	1.29 feet	Did Well Dewater?	NO

# Containers/Type		Preservative	Analysis/Method	Field Filtered		Filter Size	MS/MSD	Duplicate ID
3	VOA	HCl	VOC	yes	no	No Filter		
3	VOA	HCl	NWTPH-Gx	yes	no	No Filter		
				yes	no			
				yes	no			
				yes	no			
				yes	no			

COMMENTS

Visible sheen at top of water column

Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-5	Job Number:	23005297
	Client:	DEQ	Date:	4/9/2024
	Project:	Johnson Oil	Sampler:	Chris Weer
	Weather:	48° Cloudy	Time In/Out:	930 / 952

WELL DATA

Well Depth:	20	feet	Well Diameter:	2 inch	Water Height		
Depth to Water:	3.04	feet	Screened Interval:		x Multiplier		
Water Column Length:	16.96	feet	Depth to Free Product:	n/a	x Casing Volumes		
Purge Volume:			Free Product Thickness:	n/a	= Purge Volume		
Water Height Multipliers (gal)	1-inch = 0.041		2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters		

PURGING DATA

Purge Method:			Pump Intake Depth:							Comments
Sampling Method:			Tubing Type:							
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
935			4.84	0.30	6.50	12.35	466	1.06	-123.2		C
938			5.82	0.25	6.53	12.32	462	1.46	-124.8		C
941			6.43	0.25	6.53	12.19	461	1.11	-125.3		C

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-5	Sampling Flow Rate	0.20	Analytical Laboratory:	Pace	
Sample Time:	946	Final Depth to Water:	6.27 feet	Did Well Dewater?	ND	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 VOA	HCl	VOC	yes **no**	No Filter		
3 VOA	HCl	NWTPH-Gx	yes **no**	No Filter		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-6	Job Number:	23005297
	Client:	DEQ	Date:	4/9/2024
	Project:	Johnson Oil	Sampler:	Chris Weer
	Weather:	49° mostly cloudy	Time In/Out:	957/1040

WELL DATA

Well Depth:	20 feet	Well Diameter:	2 inch	Water Height	
Depth to Water:	4.66 feet	Screened Interval:		x Multiplier	
Water Column Length:	15.34 feet	Depth to Free Product:	n/a	x Casing Volumes	
Purge Volume:		Free Product Thickness:	n/a	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:					Pump Intake Depth:						Comments
Sampling Method:					Tubing Type:						
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1005			5.74	0.25	6.49	13.31	483	7.15	-113.0		C odor
1008			6.65	0.25	6.50	13.34	488	3.05	-112.6		C odor
1011			7.76	0.25	6.51	13.23	488	2.79	-111.7		C odor
1014			8.58	0.25	6.51	13.24	482	7.26	-110.6		C odor
1017			9.49	0.25	6.52	13.16	487	1.44	-111.1		C odor
1020			10.17	0.25	6.51	13.25	486	0.93	-110.8		C odor
1023			10.95	0.25	6.52	13.18	485	1.00	-109.7		C odor
1026			11.62	0.25	6.52	13.24	484	1.08	-108.4		C odor

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-6	Sampling Flow Rate	0.20	Analytical Laboratory:	Pace	
Sample Time:	1031	Final Depth to Water:	11.85 feet	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 VOA	HCl	VOC	yes **no**	No Filter		
3 VOA	HCl	NWTPH-Gx	yes **no**	No Filter		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-7	Job Number:	23005297
	Client:	DEQ	Date:	4/9/2024
	Project:	Johnson Oil	Sampler:	Chris Weer
	Weather:	51° mostly cloudy	Time In/Out:	1120/1150

WELL DATA

Well Depth:	20	feet	Well Diameter:	2 inch	Water Height		
Depth to Water:	5.85	feet	Screened Interval:		x Multiplier		
Water Column Length:	14.15	feet	Depth to Free Product:	n/a	x Casing Volumes		
Purge Volume:			Free Product Thickness:	n/a	= Purge Volume		
Water Height Multipliers (gal)	1-inch = 0.041		2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters		

PURGING DATA

Purge Method:			Pump Intake Depth:							Comments
Sampling Method:			Tubing Type:							
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1130			7.76	0.30	6.21	14.25	445	1.14	-51.2		AC
1133			8.50	0.25	6.22	14.14	445	1.22	-52.3		AC
1136			9.23	0.25	6.23	14.03	446	1.37	-52.5		AC

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-7	Sampling Flow Rate	0.25	Analytical Laboratory:	Pace	
Sample Time:	1141	Final Depth to Water:	9.63 feet	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 VOA	HCl	VOC	yes **no**	No Filter		
3 VOA	HCl	NWTPH-Gx	yes **no**	No Filter		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Rx

filmy

Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-8	Job Number:	23005297
	Client:	DEQ	Date:	4/8/2024
	Project:	Johnson Oil	Sampler:	Chris Weer
	Weather:	46° Drizzle	Time In/Out:	1120 / 1145

WELL DATA

Well Depth:	15	feet	Well Diameter:	2 inch		Water Height	
Depth to Water:	5.33	feet	Screened Interval:			x Multiplier	
Water Column Length:	14.67	feet	Depth to Free Product:	n/a		x Casing Volumes	
Purge Volume:			Free Product Thickness:	n/a		= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041		2-inch = 0.162	4-inch = 0.653		1 gallon = 3.785 liters	

PURGING DATA

Purge Method:			Pump Intake Depth:							Comments
Sampling Method:			Tubing Type:							
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1130			6.76	0.30	6.36	12.68	899	0.00	-102.3		C
1133			7.21	0.25	6.36	12.66	898	0.00	-104.0		C
1136			7.57	0.25	6.36	12.62	896	0.00	-106.3		C

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-8	Sampling Flow Rate	0.25	Analytical Laboratory:	Pace	
Sample Time:	1140	Final Depth to Water:	7.11 feet	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 VOA	HCl	VOC	yes (no)	No Filter		
3 VOA	HCl	NWTPH-Gx	yes (no)	No Filter		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

APEX

Apex Companies, LLC
15618 SW 72nd Ave.
Portland, OR 97224

Well I.D.	MW-9	Job Number:	23005297
Client:	DEQ	Date:	4/8/2024
Project:	Johnson Oil	Sampler:	Chris Weer
Weather:	47° Cloudy	Time In/Out:	1155/1235

WELL DATA

Well Depth:	~~15.39~~ feet 15	Well Diameter:	2 inch	Water Height	
Depth to Water:	~~4.81~~ feet 6.54	Screened Interval:		x Multiplier	
Water Column Length:	8.46 feet	Depth to Free Product:	n/a	x Casing Volumes	
Purge Volume:		Free Product Thickness:	n/a	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:					Pump Intake Depth:						Comments	
Sampling Method:					Tubing Type:							
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)		Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV		+/-10%	<-- Stabilization Criteria
1208			8.05	0.25	5.14	11.00	64	4.31	~~169.3~~			Cl
1211			8.97	0.25	5.04	10.90	63	4.25	190.6			SC
1214			9.80	0.25	5.00	10.98	63	4.19	207.7			AC
1217			10.62	0.25	4.98	10.98	63	4.16	220.9			C
1220			11.28	0.25	4.96	11.00	63	4.06	231.1			C
1223			12.11	0.25	4.94	10.95	62	3.96	238.4			C

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-9	Sampling Flow Rate	0.25	Analytical Laboratory:	Pace		
Sample Time:	1229	Final Depth to Water:	12.47 feet	Did Well Dewater?	NO		
# Containers/Type	Preservative	Analysis/Method	Field Filtered		Filter Size	MS/MSD	Duplicate ID
3 VOA	HCl	VOC	yes (no)		No Filter		
3 VOA	HCl	NWTPH-Gx	yes (no)		No Filter		
			yes	no			
			yes	no			
			yes	no			
			yes	no			

COMMENTS

APEX

Apex Companies, LLC
15618 SW 72nd Ave.
Portland, OR 97224

Well I.D.	MW-13	Job Number:	23005297
Client:	DEQ	Date:	4/8/2024
Project:	Johnson Oil	Sampler:	Chris Weer
Weather:	48° Cloudy	Time In/Out:	1320 / 1350

WELL DATA

Well Depth:	17' feet	Well Diameter:	2 inch	Water Height	
Depth to Water:	3.07 feet	Screened Interval:		x Multiplier	
Water Column Length:	13.93 feet	Depth to Free Product:	n/a	x Casing Volumes	
Purge Volume:		Free Product Thickness:	n/a	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:					Pump Intake Depth:						Comments	
Sampling Method:					Tubing Type:							
Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)		Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV		+/-10%	<-- Stabilization Criteria
1330			3.09	0.25	7.34	11.09	375	0.00	-124.8			C
1333			3.10	0.25	7.39	10.98	375	0.00	-124.8			C
1336			3.12	0.25	7.40	10.96	375	0.00	-125.2			C
1339												

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-13	Sampling Flow Rate	0.20		Analytical Laboratory:	Pace	
Sample Time:	1342	Final Depth to Water:	3.10 feet		Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered		Filter Size	MS/MSD	Duplicate ID
3 VOA	HCl	VOC	yes	no	No Filter		
3 VOA	HCl	NWTPH-Gx	yes	no	No Filter		
			yes	no			
			yes	no			
			yes	no			
			yes	no			

COMMENTS

Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-12	Job Number:	23005297
	Client:	DEQ	Date:	4/9/2024
	Project:	Johnson Oil	Sampler:	Chris Weer
	Weather:	53° drizzle	Time In/Out:	1230/1252

WELL DATA

Well Depth:	15 feet	Well Diameter:	2 inch	Water Height	
Depth to Water:	5.11 feet	Screened Interval:		x Multiplier	
Water Column Length:	9.89 feet	Depth to Free Product:	n/a	x Casing Volumes	
Purge Volume:		Free Product Thickness:	n/a	= Purge Volume	
Water Height Multipliers (gal)	1-inch = 0.041	2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters	

PURGING DATA

Purge Method:		Pump Intake Depth:		Comments
Sampling Method:		Tubing Type:		

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1235			5.64	0.25	6.29	12.94	332	1.10	-86.4		C
1238			5.77	0.25	6.33	12.64	331	1.17	-87.0		C
1241			5.87	0.25	6.33	12.64	331	1.13	-86.8		C

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-12	Sampling Flow Rate	0.20	Analytical Laboratory:	Pace	
Sample Time:	1246	Final Depth to Water:	5.84 feet	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 VOA	HCl	VOC	yes (no)	No Filter		
3 VOA	HCl	NWTPH-Gx	yes (no)	No Filter		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-14	Job Number:	23005297
	Client:	DEQ	Date:	4/8/2024
	Project:	Johnson Oil	Sampler:	Chris Weer
	Weather:	48° drizzle	Time In/Out:	1355 / 1430

WELL DATA

Well Depth:	20	feet	Well Diameter:	2 inch	Water Height		
Depth to Water:	8.83	feet	Screened Interval:		x Multiplier		
Water Column Length:	11.17	feet	Depth to Free Product:	n/a	x Casing Volumes		
Purge Volume:			Free Product Thickness:	n/a	= Purge Volume		
Water Height Multipliers (gal)	1-inch = 0.041		2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters		

PURGING DATA

Purge Method:			Pump Intake Depth:							Comments
Sampling Method:			Tubing Type:							

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
				<0.25	+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1405			9.95	0.25	6.47	11.96	339	0.00	-102.4		C odor
1408			10.50	0.25	6.46	11.95	337	0.00	-105.6		C odor
1411			10.54	0.25	6.45	11.92	338	0.00	-106.8		C odor

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-14, DUP	Sampling Flow Rate	0.25	Analytical Laboratory:	Pace	
Sample Time:	1416, 1424	Final Depth to Water:	10.36 feet	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
6 VOA	HCl	VOC	yes (no)	No Filter		DUP
6 VOA	HCl	NWTPH-Gx	yes (no)	No Filter		DUP
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

DUPLICATE, filmy

Apex Companies, LLC 15618 SW 72nd Ave. Portland, OR 97224	Well I.D.	MW-15	Job Number:	23005297
	Client:	DEQ	Date:	4/8/2024
	Project:	Johnson Oil	Sampler:	Chris Weer
	Weather:	47° Cloudy	Time In/Out:	1247 / 1315

WELL DATA

Well Depth:	20	feet	Well Diameter:	2 inch	Water Height		
Depth to Water:	9.21	feet	Screened Interval:		x Multiplier		
Water Column Length:	10.79	feet	Depth to Free Product:	n/a	x Casing Volumes		
Purge Volume:			Free Product Thickness:	n/a	= Purge Volume		
Water Height Multipliers (gal)	1-inch = 0.041		2-inch = 0.162	4-inch = 0.653	1 gallon = 3.785 liters		

PURGING DATA

Purge Method:		Pump Intake Depth:		Comments
Sampling Method:		Tubing Type:		

Time	Volume Purged (liters)	Cumulative Volume Purged (liters)	DTW (btc)	Purge Rate (L/min)	pH	Temp (°C)	Cond (µS/cm)	DO (ppm)	ORP (mV)	Turbidity (NTUs)	Clarity/Color Other Remarks
					+/-0.1	+/-0.5° C	+/-5%	+/- 0.5 ppm	+/-20mV	+/-10%	<-- Stabilization Criteria
1257			10.15'	0.25	6.39	11.33°	410	0.00	-122.6		~~AC~~ C, brown, odor
1300			10.22	0.25	6.43	11.36	409	0.00	-131.5		C odor
1303			10.19	0.25	6.45	11.31	407	0.00	-134.6		C odor

Clarity: VC = very cloudy, Cl = Cloudy, SC = slightly cloudy, AC = almost clear, C = clear

SAMPLING DATA

Sample ID:	MW-15	Sampling Flow Rate	0.25	Analytical Laboratory:	Pace	
Sample Time:	1308	Final Depth to Water:	9.36 feet	Did Well Dewater?	NO	
# Containers/Type	Preservative	Analysis/Method	Field Filtered	Filter Size	MS/MSD	Duplicate ID
3 VOA	HCl	VOC	yes **no**	No Filter		
3 VOA	HCl	NWTPH-Gx	yes **no**	No Filter		
			yes no			
			yes no			
			yes no			
			yes no			

COMMENTS

Appendix B

Laboratory Analytical Reports and Data Quality Review

Appendix B – QA/QC Review

This appendix documents the results of a quality assurance/quality control (QA/QC) review of the analytical data for the second quarter 2024 monitoring event at the former Johnson Oil Site in Clatskanie, Oregon. The groundwater samples were submitted to Pace Analytical Services, LLC (Pace) in Mt. Juliet, Tennessee under their Price Agreement with the Oregon Department of Environmental Quality (DEQ). A copy of the analytical laboratory report is included in this appendix.

Laboratory Report	Date Reported
L1724244	April 10, 2024

1.0 Analytical Methods

Chemical analyses of groundwater samples included in this QA/QC Review consisted of the following:

- Total petroleum hydrocarbons as gasoline (TPH-Gx) by Northwest Method NWTPH-Gx; and
- Volatile organic compounds (VOCs) by U.S. Environmental Protection Agency (EPA) Method 8260D.

2.0 Data Validation

The QA/QC review included examination and validation of the laboratory data packages for the following:

- Analytical preparation and quantitation methods;
- Analytical method holding times;
- Sample handling;
- Chain of custody procedures;
- Detection and reporting limits;
- Method blank detections;
- Laboratory control samples, matrix spikes, and surrogates to assess accuracy; and
- Laboratory control sample duplicates and matrix spike duplicates.

The QA/QC review did not include a review of raw data.

This QA/QC review documents the relationship between analytical findings and data quality objectives based on precision and accuracy. It also summarizes possible error or bias and the effect on data quality and usability.

The laboratory QC samples provided in data packages were used to evaluate laboratory contamination or background interferences, sample preparation efficiency and instrumentation performance. The QC samples

provided by the analytical laboratory include method blanks, laboratory control samples (LCS/LCSD), and matrix spikes (MS/MSD). Surrogates are also required for VOC and TPH-Gx analysis to assess sample preparation efficiency and matrix interferences.

2.1 Data Qualifiers

Any data that is found to have possible bias or error was qualified and flagged. The following are definitions of qualifiers used in this data quality report and data tables.

B	Same analyte present in the method blank at concentrations greater than the reporting limit.
J	Result is an estimated value.
J-	Result is an estimated value and may be biased low.

3.0 Data Quality Assurance Review

The general QA objectives for this project were to develop and implement procedures for obtaining, evaluating, and confirming the usability of data of a specified quality. To collect such information, analytical data must have an appropriate degree of accuracy and reproducibility, samples collected must be representative of actual field conditions, and samples must be collected and analyzed using unbroken chain of custody procedures.

Reporting limits and analytical results were compared to cleanup and screening levels for each parameter in the matrix of concern. Precision, accuracy, completeness, and comparability parameters used to indicate data quality are discussed below.

3.1 Reporting Limits

Reporting limits are the lowest concentration an instrument is capable of accurately detecting an analyte. Reporting limits are determined by the laboratory and are based on instrumentation capabilities, the matrix of field samples, sample preparation procedures, and EPA suggested reporting limits.

The reporting limits were consistent with method standards and were generally below applicable screening level values. Several analytes were identified by the laboratory at concentrations that were between the laboratory minimum reporting limit (MRL) and the method detection limit (MDL). These concentrations are estimated values and have been 'J' flagged accordingly.

3.2 Holding Times and Sample Receipt

The holding time is the minimum amount of time the sample can be stored before analytes start to degrade and are not representative of initial sampling concentrations. Holding times are defined by analytical methods and samples were analyzed within the method specified holding time.

The integrity of the groundwater samples received was documented by the Pace Analytical *Sample Receipt Checklist* or *Cooler Receipt Form,* which ensures that samples are representative of the field and were not compromised during shipment.

The chain of custody followed an unbroken procedure and was relinquished by the Apex Companies sampler and received by the analytical laboratory as indicated by signatures. The sample ID, collection time and requested analyses were all clearly and properly filled in by the Apex Companies sampler.

3.3 Method Blanks

A method – or laboratory – blank is a sample prepared in the laboratory along with the actual samples and analyzed for the same parameters at the same time. It is used to assess if detected compounds may have been the result of contamination or background levels in the laboratory.

Groundwater. Carbon disulfide was detected in the method blank of analytical batch WG2265457 at a concentration of 0.269 ug/L. Carbon disulfide was detected in two of the wells, and the results are J and B-flagged accordingly, however the detections have likely had significant contributions from laboratory contamination and carbon disulfide is not a constituent of concern identified for the Site.

3.4 Accuracy

Accuracy is assessed through the comparison of analytes of known concentration to concentrations determined analytically. A percent recovery is calculated from the analytical concentration to the known concentration of analyte, which must be within control limits established by methods. If the percent recovery is outside of control limits, then data might be compromised. The analytical laboratory will provide quality control samples and surrogates to help determine the accuracy of the data provided. These quality control samples and surrogates are discussed below.

3.4.1 Laboratory Control Samples

Laboratory control samples (LCS) and laboratory control duplicate samples (LCSD) were analyzed by the laboratory to assess the analytical methods. One set of LCS and LCSDs were analyzed per analytical batch. The samples were prepared from an analyte-free matrix that is then spiked with known levels of constituents of interest (COI; i.e. a standard). The concentrations were measured, and the results compared to the known

spiked levels. This comparison is expressed as a percent recovery. Recovery of target analytes were within acceptable limits.

3.4.2 Matrix Samples

A matrix spike QC sample is used to assess the performance of the analytical method by determining potential matrix interferences. Matrix spike (MS) and matrix spike duplicate (MSD) analyses are performed on one environmental sample per analytical batch. A matrix spike sample uses an environmental sample that is spiked with known concentrations of analytes of interest. The matrix spike is then prepared and analyzed with the same analytical procedures as environmental samples in the analytical batch. The resulting concentration of the matrix spike is then compared to the known – or true – values added to the non-spiked environmental sample concentration. This comparison is expressed as a percent recovery. No matrix samples (MS/MSD) were included in this laboratory data set.

3.4.3 Surrogates

Surrogates are organic compounds that are similar in chemical composition to the analytes of interest but are not likely to be found in the environment. They are spiked into environmental and batch QC samples prior to sample preparation and analysis. Surrogate recoveries for environmental samples are used to evaluate matrix interference and sample preparation and analysis efficiency on a sample-specific basis. Surrogates were recovered within control limits.

3.5 Precision

Precision is measured by how close concentrations of duplicate analyses are to each other. These duplicate analyses are of separate aliquots of the same sample that are prepared or analyzed at the same (or similar) time. Precision in the field ensures that samples taken are representative of field concentrations. Field precision is demonstrated by field duplicates. Analytical precision is measured by the laboratory through duplicate analysis of samples and quality control samples. Precision is estimated by the relative percent difference (RPD) between the original analysis and the duplicate analysis.

3.5.1 Laboratory Control Samples

LCSD analyte concentrations were compared to LCS analyte concentrations to assess the precision of the analytical method. This comparison can be expressed by the relative percent difference (RPD) between the LCS and LCSD samples. RPD values for LCS/LCSDs were within control limits.

3.5.2 Field Duplicate

A field duplicate is a second field sample collected from a selected sample location. Field duplicate samples serve as a check on laboratory precision, sampling quality, and potential variability of the sample matrix. The

field duplicate is analyzed and compared to the original sample to assess precision. This comparison can be expressed by the RPD between the original and duplicate samples. Field duplicate samples are only controlled if the reported result is greater than 5 times the reporting limit. The field duplicate sample for groundwater was collected from well MW-14 and RPD values were within the +/-30 percent control limit.

4.0 Conclusion

In conclusion, the QA objectives have been met and the data are of sufficient quality for use in this project.

ANALYTICAL REPORT

April 16, 2024

Oregon Dept. of Env. Quality - ODEQ

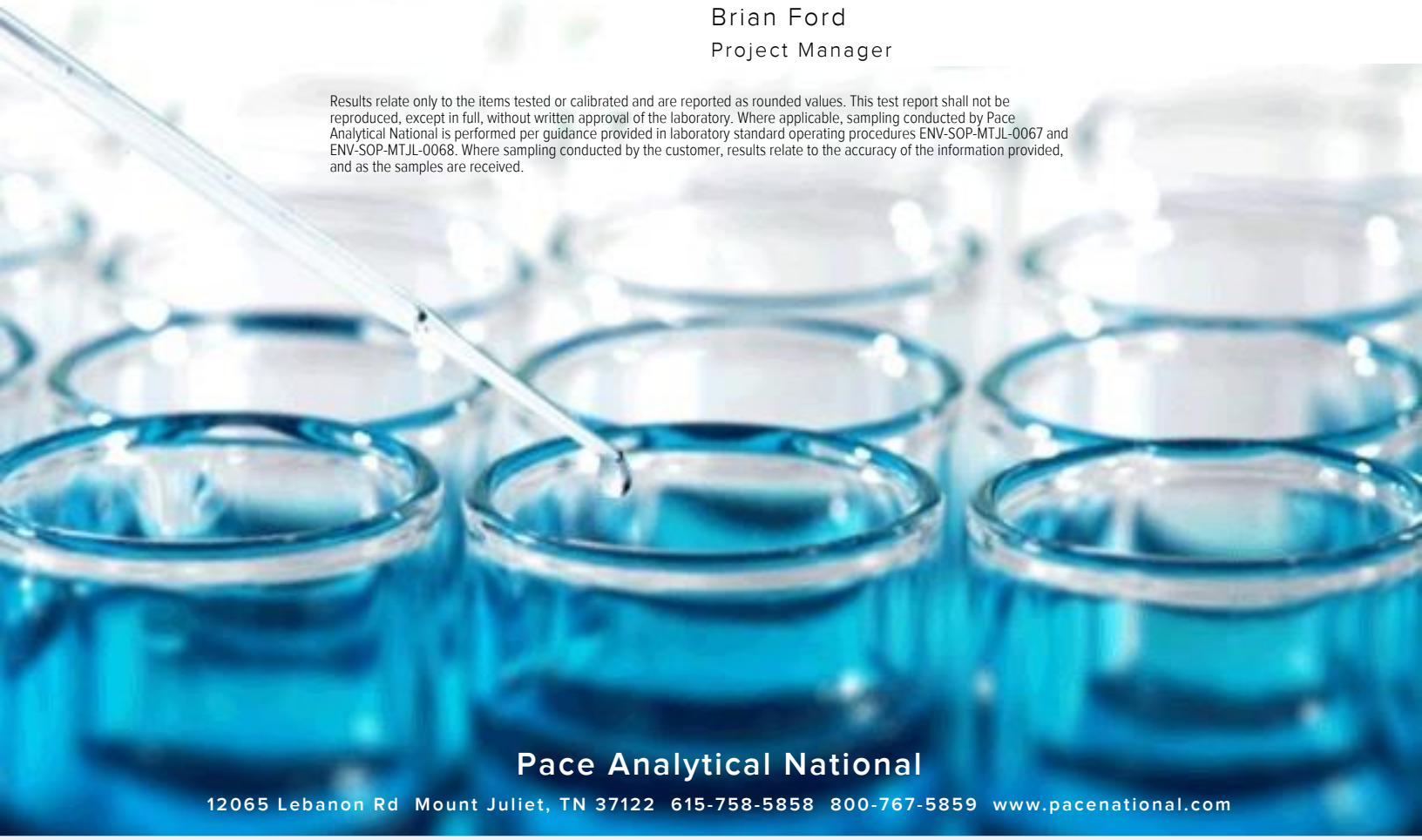
Sample Delivery Group:	L1724244
Samples Received:	04/10/2024
Project Number:	23005297
Description:	Johnson Oil
Report To:	Kara Master

Entire Report Reviewed By:

Brian Ford

Project Manager

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



Pace Analytical National

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

TABLE OF CONTENTS

MW-4 L1724244-01 GW

Collected by	Collected date/time	Received date/time
	04/09/24 12:17	04/10/24 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2266842	1	04/15/24 08:44	04/15/24 08:44	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2266470	20	04/13/24 18:50	04/13/24 18:50	JAH	Mt. Juliet, TN

MW-5 L1724244-02 GW

Collected by	Collected date/time	Received date/time
	04/09/24 09:46	04/10/24 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2266842	1	04/15/24 09:07	04/15/24 09:07	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2266470	10	04/13/24 19:10	04/13/24 19:10	JAH	Mt. Juliet, TN

MW-6 L1724244-03 GW

Collected by	Collected date/time	Received date/time
	04/09/24 10:31	04/10/24 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2266842	1	04/15/24 09:30	04/15/24 09:30	NCD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2266470	10	04/13/24 19:31	04/13/24 19:31	JAH	Mt. Juliet, TN

MW-7 L1724244-04 GW

Collected by	Collected date/time	Received date/time
	04/09/24 11:41	04/10/24 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2267156	1	04/15/24 14:27	04/15/24 14:27	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2265770	1	04/12/24 15:25	04/12/24 15:25	ACG	Mt. Juliet, TN

MW-8 L1724244-05 GW

Collected by	Collected date/time	Received date/time
	04/08/24 11:40	04/10/24 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2267156	1	04/15/24 14:49	04/15/24 14:49	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2265770	1	04/12/24 15:50	04/12/24 15:50	ACG	Mt. Juliet, TN

MW-9 L1724244-06 GW

Collected by	Collected date/time	Received date/time
	04/08/24 12:29	04/10/24 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2267156	1	04/15/24 15:11	04/15/24 15:11	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2265770	1	04/12/24 16:14	04/12/24 16:14	ACG	Mt. Juliet, TN

MW-12 L1724244-07 GW

Collected by	Collected date/time	Received date/time
	04/09/24 13:42	04/10/24 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2267156	100	04/15/24 17:20	04/15/24 17:20	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2266470	100	04/13/24 19:51	04/13/24 19:51	JAH	Mt. Juliet, TN

MW-13 L1724244-08 GW

Collected by	Collected date/time	Received date/time
	04/08/24 12:46	04/10/24 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2267156	1	04/15/24 15:32	04/15/24 15:32	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2265770	1	04/12/24 16:39	04/12/24 16:39	ACG	Mt. Juliet, TN

MW-14 L1724244-09 GW

Collected by	Collected date/time	Received date/time
	04/08/24 14:16	04/10/24 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2267156	1	04/15/24 15:54	04/15/24 15:54	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2266470	5	04/13/24 20:12	04/13/24 20:12	JAH	Mt. Juliet, TN

MW-15 L1724244-10 GW

Collected by	Collected date/time	Received date/time
	04/08/24 13:08	04/10/24 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2267156	1	04/15/24 16:15	04/15/24 16:15	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2265457	1	04/12/24 18:05	04/12/24 18:05	DYW	Mt. Juliet, TN

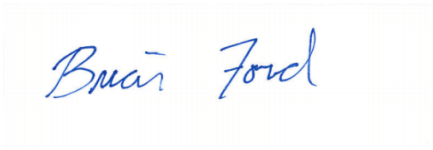
DUP L1724244-11 GW

Collected by	Collected date/time	Received date/time
	04/08/24 14:24	04/10/24 09:15

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method NWTPHGX	WG2267156	1	04/15/24 16:37	04/15/24 16:37	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260D	WG2265457	20	04/12/24 18:26	04/12/24 18:26	DYW	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	3450		31.6	100	1	04/15/2024 08:44	WG2266842
(S) a,a,a-Trifluorotoluene(FID)	*96.7*			*78.0-120*		*04/15/2024 08:44*	WG2266842

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	C3	226	1000	20	04/13/2024 18:50	WG2266470
Acrolein	U		50.8	1000	20	04/13/2024 18:50	WG2266470
Acrylonitrile	U		13.4	200	20	04/13/2024 18:50	WG2266470
Benzene	117		1.88	20.0	20	04/13/2024 18:50	WG2266470
Bromobenzene	U		2.36	20.0	20	04/13/2024 18:50	WG2266470
Bromodichloromethane	U		2.72	20.0	20	04/13/2024 18:50	WG2266470
Bromoform	U	C3	2.58	20.0	20	04/13/2024 18:50	WG2266470
Bromomethane	U		12.1	100	20	04/13/2024 18:50	WG2266470
n-Butylbenzene	18.5	J	3.14	20.0	20	04/13/2024 18:50	WG2266470
sec-Butylbenzene	14.2	J	2.50	20.0	20	04/13/2024 18:50	WG2266470
tert-Butylbenzene	U		2.54	20.0	20	04/13/2024 18:50	WG2266470
Carbon disulfide	U		1.92	20.0	20	04/13/2024 18:50	WG2266470
Carbon tetrachloride	U		2.56	20.0	20	04/13/2024 18:50	WG2266470
Chlorobenzene	U		2.32	20.0	20	04/13/2024 18:50	WG2266470
Chlorodibromomethane	U		2.80	20.0	20	04/13/2024 18:50	WG2266470
Chloroethane	U		3.84	100	20	04/13/2024 18:50	WG2266470
Chloroform	U		2.22	100	20	04/13/2024 18:50	WG2266470
Chloromethane	U		19.2	50.0	20	04/13/2024 18:50	WG2266470
2-Chlorotoluene	U		2.12	20.0	20	04/13/2024 18:50	WG2266470
4-Chlorotoluene	U		2.28	20.0	20	04/13/2024 18:50	WG2266470
1,2-Dibromo-3-Chloropropane	U	C3	5.52	100	20	04/13/2024 18:50	WG2266470
1,2-Dibromoethane	U		2.52	20.0	20	04/13/2024 18:50	WG2266470
Dibromomethane	U		2.44	20.0	20	04/13/2024 18:50	WG2266470
1,2-Dichlorobenzene	U		2.14	20.0	20	04/13/2024 18:50	WG2266470
1,3-Dichlorobenzene	U		2.20	20.0	20	04/13/2024 18:50	WG2266470
1,4-Dichlorobenzene	U		2.40	20.0	20	04/13/2024 18:50	WG2266470
Dichlorodifluoromethane	U		7.48	100	20	04/13/2024 18:50	WG2266470
1,1-Dichloroethane	U		2.00	20.0	20	04/13/2024 18:50	WG2266470
1,2-Dichloroethane	U		1.64	20.0	20	04/13/2024 18:50	WG2266470
1,1-Dichloroethene	U		3.76	20.0	20	04/13/2024 18:50	WG2266470
cis-1,2-Dichloroethene	U		2.52	20.0	20	04/13/2024 18:50	WG2266470
trans-1,2-Dichloroethene	U		2.98	20.0	20	04/13/2024 18:50	WG2266470
1,2-Dichloropropane	U		2.98	20.0	20	04/13/2024 18:50	WG2266470
1,1-Dichloropropene	U		2.84	20.0	20	04/13/2024 18:50	WG2266470
1,3-Dichloropropane	U		2.20	20.0	20	04/13/2024 18:50	WG2266470
cis-1,3-Dichloropropene	U		2.22	20.0	20	04/13/2024 18:50	WG2266470
trans-1,3-Dichloropropene	U		2.36	20.0	20	04/13/2024 18:50	WG2266470
2,2-Dichloropropane	U		3.22	20.0	20	04/13/2024 18:50	WG2266470
Di-isopropyl ether	U		2.10	20.0	20	04/13/2024 18:50	WG2266470
Ethylbenzene	108		2.74	20.0	20	04/13/2024 18:50	WG2266470
Hexachloro-1,3-butadiene	U	C3	6.74	20.0	20	04/13/2024 18:50	WG2266470
Isopropylbenzene	36.8	C3	2.10	20.0	20	04/13/2024 18:50	WG2266470
p-Isopropyltoluene	U		2.40	20.0	20	04/13/2024 18:50	WG2266470
2-Butanone (MEK)	U		23.8	200	20	04/13/2024 18:50	WG2266470
Methylene Chloride	U		8.60	100	20	04/13/2024 18:50	WG2266470
4-Methyl-2-pentanone (MIBK)	U		9.56	200	20	04/13/2024 18:50	WG2266470
Methyl tert-butyl ether	U		2.02	20.0	20	04/13/2024 18:50	WG2266470
Naphthalene	96.2	C3 J	20.0	100	20	04/13/2024 18:50	WG2266470

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	221		1.99	20.0	20	04/13/2024 18:50	WG2266470
Styrene	U		2.36	20.0	20	04/13/2024 18:50	WG2266470
1,1,1,2-Tetrachloroethane	U	C3	2.94	20.0	20	04/13/2024 18:50	WG2266470
1,1,2,2-Tetrachloroethane	U		2.66	20.0	20	04/13/2024 18:50	WG2266470
1,1,2-Trichlorotrifluoroethane	U		3.60	20.0	20	04/13/2024 18:50	WG2266470
Tetrachloroethene	U		6.00	20.0	20	04/13/2024 18:50	WG2266470
Toluene	U		5.56	20.0	20	04/13/2024 18:50	WG2266470
1,2,3-Trichlorobenzene	U	C3	4.60	20.0	20	04/13/2024 18:50	WG2266470
1,2,4-Trichlorobenzene	U	C3	9.62	20.0	20	04/13/2024 18:50	WG2266470
1,1,1-Trichloroethane	U		2.98	20.0	20	04/13/2024 18:50	WG2266470
1,1,2-Trichloroethane	U		3.16	20.0	20	04/13/2024 18:50	WG2266470
Trichloroethene	U	C3	3.80	20.0	20	04/13/2024 18:50	WG2266470
Trichlorofluoromethane	U		3.20	100	20	04/13/2024 18:50	WG2266470
1,2,3-Trichloropropane	U		4.74	50.0	20	04/13/2024 18:50	WG2266470
1,2,4-Trimethylbenzene	U		6.44	20.0	20	04/13/2024 18:50	WG2266470
1,2,3-Trimethylbenzene	2.19	J	2.08	20.0	20	04/13/2024 18:50	WG2266470
1,3,5-Trimethylbenzene	U		2.08	20.0	20	04/13/2024 18:50	WG2266470
Vinyl chloride	U		4.68	20.0	20	04/13/2024 18:50	WG2266470
Xylenes, Total	U		3.48	60.0	20	04/13/2024 18:50	WG2266470
(S) Toluene-d8	*102*			*80.0-120*		*04/13/2024 18:50*	WG2266470
(S) 4-Bromofluorobenzene	*85.9*			*77.0-126*		*04/13/2024 18:50*	WG2266470
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*04/13/2024 18:50*	WG2266470

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	7910		31.6	100	1	04/15/2024 09:07	WG2266842
(S) a,a,a-Trifluorotoluene(FID)	*105*			*78.0-120*		*04/15/2024 09:07*	WG2266842

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	C3	113	500	10	04/13/2024 19:10	WG2266470
Acrolein	U		25.4	500	10	04/13/2024 19:10	WG2266470
Acrylonitrile	U		6.71	100	10	04/13/2024 19:10	WG2266470
Benzene	155		0.941	10.0	10	04/13/2024 19:10	WG2266470
Bromobenzene	U		1.18	10.0	10	04/13/2024 19:10	WG2266470
Bromodichloromethane	U		1.36	10.0	10	04/13/2024 19:10	WG2266470
Bromoform	U	C3	1.29	10.0	10	04/13/2024 19:10	WG2266470
Bromomethane	U		6.05	50.0	10	04/13/2024 19:10	WG2266470
n-Butylbenzene	16.9		1.57	10.0	10	04/13/2024 19:10	WG2266470
sec-Butylbenzene	12.0		1.25	10.0	10	04/13/2024 19:10	WG2266470
tert-Butylbenzene	U		1.27	10.0	10	04/13/2024 19:10	WG2266470
Carbon disulfide	U		0.962	10.0	10	04/13/2024 19:10	WG2266470
Carbon tetrachloride	U		1.28	10.0	10	04/13/2024 19:10	WG2266470
Chlorobenzene	U		1.16	10.0	10	04/13/2024 19:10	WG2266470
Chlorodibromomethane	U		1.40	10.0	10	04/13/2024 19:10	WG2266470
Chloroethane	U		1.92	50.0	10	04/13/2024 19:10	WG2266470
Chloroform	U		1.11	50.0	10	04/13/2024 19:10	WG2266470
Chloromethane	U		9.60	25.0	10	04/13/2024 19:10	WG2266470
2-Chlorotoluene	U		1.06	10.0	10	04/13/2024 19:10	WG2266470
4-Chlorotoluene	U		1.14	10.0	10	04/13/2024 19:10	WG2266470
1,2-Dibromo-3-Chloropropane	U	C3	2.76	50.0	10	04/13/2024 19:10	WG2266470
1,2-Dibromoethane	U		1.26	10.0	10	04/13/2024 19:10	WG2266470
Dibromomethane	U		1.22	10.0	10	04/13/2024 19:10	WG2266470
1,2-Dichlorobenzene	U		1.07	10.0	10	04/13/2024 19:10	WG2266470
1,3-Dichlorobenzene	U		1.10	10.0	10	04/13/2024 19:10	WG2266470
1,4-Dichlorobenzene	U		1.20	10.0	10	04/13/2024 19:10	WG2266470
Dichlorodifluoromethane	U		3.74	50.0	10	04/13/2024 19:10	WG2266470
1,1-Dichloroethane	U		1.00	10.0	10	04/13/2024 19:10	WG2266470
1,2-Dichloroethane	U		0.819	10.0	10	04/13/2024 19:10	WG2266470
1,1-Dichloroethene	U		1.88	10.0	10	04/13/2024 19:10	WG2266470
cis-1,2-Dichloroethene	U		1.26	10.0	10	04/13/2024 19:10	WG2266470
trans-1,2-Dichloroethene	U		1.49	10.0	10	04/13/2024 19:10	WG2266470
1,2-Dichloropropane	U		1.49	10.0	10	04/13/2024 19:10	WG2266470
1,1-Dichloropropene	U		1.42	10.0	10	04/13/2024 19:10	WG2266470
1,3-Dichloropropane	U		1.10	10.0	10	04/13/2024 19:10	WG2266470
cis-1,3-Dichloropropene	U		1.11	10.0	10	04/13/2024 19:10	WG2266470
trans-1,3-Dichloropropene	U		1.18	10.0	10	04/13/2024 19:10	WG2266470
2,2-Dichloropropane	U		1.61	10.0	10	04/13/2024 19:10	WG2266470
Di-isopropyl ether	U		1.05	10.0	10	04/13/2024 19:10	WG2266470
Ethylbenzene	970		1.37	10.0	10	04/13/2024 19:10	WG2266470
Hexachloro-1,3-butadiene	U	C3	3.37	10.0	10	04/13/2024 19:10	WG2266470
Isopropylbenzene	78.8	C3	1.05	10.0	10	04/13/2024 19:10	WG2266470
p-Isopropyltoluene	U		1.20	10.0	10	04/13/2024 19:10	WG2266470
2-Butanone (MEK)	U		11.9	100	10	04/13/2024 19:10	WG2266470
Methylene Chloride	U		4.30	50.0	10	04/13/2024 19:10	WG2266470
4-Methyl-2-pentanone (MIBK)	U		4.78	100	10	04/13/2024 19:10	WG2266470
Methyl tert-butyl ether	U		1.01	10.0	10	04/13/2024 19:10	WG2266470
Naphthalene	318	C3	10.0	50.0	10	04/13/2024 19:10	WG2266470

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	446		0.993	10.0	10	04/13/2024 19:10	WG2266470
Styrene	U		1.18	10.0	10	04/13/2024 19:10	WG2266470
1,1,1,2-Tetrachloroethane	U	C3	1.47	10.0	10	04/13/2024 19:10	WG2266470
1,1,2,2-Tetrachloroethane	U		1.33	10.0	10	04/13/2024 19:10	WG2266470
1,1,2-Trichlorotrifluoroethane	U		1.80	10.0	10	04/13/2024 19:10	WG2266470
Tetrachloroethene	U		3.00	10.0	10	04/13/2024 19:10	WG2266470
Toluene	11.1		2.78	10.0	10	04/13/2024 19:10	WG2266470
1,2,3-Trichlorobenzene	U	C3	2.30	10.0	10	04/13/2024 19:10	WG2266470
1,2,4-Trichlorobenzene	U	C3	4.81	10.0	10	04/13/2024 19:10	WG2266470
1,1,1-Trichloroethane	U		1.49	10.0	10	04/13/2024 19:10	WG2266470
1,1,2-Trichloroethane	U		1.58	10.0	10	04/13/2024 19:10	WG2266470
Trichloroethene	U	C3	1.90	10.0	10	04/13/2024 19:10	WG2266470
Trichlorofluoromethane	U		1.60	50.0	10	04/13/2024 19:10	WG2266470
1,2,3-Trichloropropane	U		2.37	25.0	10	04/13/2024 19:10	WG2266470
1,2,4-Trimethylbenzene	4.05	J	3.22	10.0	10	04/13/2024 19:10	WG2266470
1,2,3-Trimethylbenzene	35.3		1.04	10.0	10	04/13/2024 19:10	WG2266470
1,3,5-Trimethylbenzene	1.94	J	1.04	10.0	10	04/13/2024 19:10	WG2266470
Vinyl chloride	U		2.34	10.0	10	04/13/2024 19:10	WG2266470
Xylenes, Total	51.0		1.74	30.0	10	04/13/2024 19:10	WG2266470
(S) Toluene-d8	*98.0*			*80.0-120*		*04/13/2024 19:10*	WG2266470
(S) 4-Bromofluorobenzene	*88.8*			*77.0-126*		*04/13/2024 19:10*	WG2266470
(S) 1,2-Dichloroethane-d4	*105*			*70.0-130*		*04/13/2024 19:10*	WG2266470

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	6860		31.6	100	1	04/15/2024 09:30	WG2266842
(S) a,a,a-Trifluorotoluene(FID)	*93.8*			*78.0-120*		*04/15/2024 09:30*	WG2266842

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	C3	113	500	10	04/13/2024 19:31	WG2266470
Acrolein	U		25.4	500	10	04/13/2024 19:31	WG2266470
Acrylonitrile	U		6.71	100	10	04/13/2024 19:31	WG2266470
Benzene	576		0.941	10.0	10	04/13/2024 19:31	WG2266470
Bromobenzene	U		1.18	10.0	10	04/13/2024 19:31	WG2266470
Bromodichloromethane	U		1.36	10.0	10	04/13/2024 19:31	WG2266470
Bromoform	U	C3	1.29	10.0	10	04/13/2024 19:31	WG2266470
Bromomethane	U		6.05	50.0	10	04/13/2024 19:31	WG2266470
n-Butylbenzene	19.7		1.57	10.0	10	04/13/2024 19:31	WG2266470
sec-Butylbenzene	15.5		1.25	10.0	10	04/13/2024 19:31	WG2266470
tert-Butylbenzene	U		1.27	10.0	10	04/13/2024 19:31	WG2266470
Carbon disulfide	U		0.962	10.0	10	04/13/2024 19:31	WG2266470
Carbon tetrachloride	U		1.28	10.0	10	04/13/2024 19:31	WG2266470
Chlorobenzene	U		1.16	10.0	10	04/13/2024 19:31	WG2266470
Chlorodibromomethane	U		1.40	10.0	10	04/13/2024 19:31	WG2266470
Chloroethane	U		1.92	50.0	10	04/13/2024 19:31	WG2266470
Chloroform	U		1.11	50.0	10	04/13/2024 19:31	WG2266470
Chloromethane	U		9.60	25.0	10	04/13/2024 19:31	WG2266470
2-Chlorotoluene	U		1.06	10.0	10	04/13/2024 19:31	WG2266470
4-Chlorotoluene	U		1.14	10.0	10	04/13/2024 19:31	WG2266470
1,2-Dibromo-3-Chloropropane	U	C3	2.76	50.0	10	04/13/2024 19:31	WG2266470
1,2-Dibromoethane	U		1.26	10.0	10	04/13/2024 19:31	WG2266470
Dibromomethane	U		1.22	10.0	10	04/13/2024 19:31	WG2266470
1,2-Dichlorobenzene	U		1.07	10.0	10	04/13/2024 19:31	WG2266470
1,3-Dichlorobenzene	U		1.10	10.0	10	04/13/2024 19:31	WG2266470
1,4-Dichlorobenzene	U		1.20	10.0	10	04/13/2024 19:31	WG2266470
Dichlorodifluoromethane	U		3.74	50.0	10	04/13/2024 19:31	WG2266470
1,1-Dichloroethane	U		1.00	10.0	10	04/13/2024 19:31	WG2266470
1,2-Dichloroethane	U		0.819	10.0	10	04/13/2024 19:31	WG2266470
1,1-Dichloroethene	U		1.88	10.0	10	04/13/2024 19:31	WG2266470
cis-1,2-Dichloroethene	U		1.26	10.0	10	04/13/2024 19:31	WG2266470
trans-1,2-Dichloroethene	U		1.49	10.0	10	04/13/2024 19:31	WG2266470
1,2-Dichloropropane	U		1.49	10.0	10	04/13/2024 19:31	WG2266470
1,1-Dichloropropene	U		1.42	10.0	10	04/13/2024 19:31	WG2266470
1,3-Dichloropropane	U		1.10	10.0	10	04/13/2024 19:31	WG2266470
cis-1,3-Dichloropropene	U		1.11	10.0	10	04/13/2024 19:31	WG2266470
trans-1,3-Dichloropropene	U		1.18	10.0	10	04/13/2024 19:31	WG2266470
2,2-Dichloropropane	U		1.61	10.0	10	04/13/2024 19:31	WG2266470
Di-isopropyl ether	U		1.05	10.0	10	04/13/2024 19:31	WG2266470
Ethylbenzene	152		1.37	10.0	10	04/13/2024 19:31	WG2266470
Hexachloro-1,3-butadiene	U	C3	3.37	10.0	10	04/13/2024 19:31	WG2266470
Isopropylbenzene	104	C3	1.05	10.0	10	04/13/2024 19:31	WG2266470
p-Isopropyltoluene	U		1.20	10.0	10	04/13/2024 19:31	WG2266470
2-Butanone (MEK)	U		11.9	100	10	04/13/2024 19:31	WG2266470
Methylene Chloride	U		4.30	50.0	10	04/13/2024 19:31	WG2266470
4-Methyl-2-pentanone (MIBK)	U		4.78	100	10	04/13/2024 19:31	WG2266470
Methyl tert-butyl ether	U		1.01	10.0	10	04/13/2024 19:31	WG2266470
Naphthalene	28.5	C3 J	10.0	50.0	10	04/13/2024 19:31	WG2266470

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	521		0.993	10.0	10	04/13/2024 19:31	WG2266470
Styrene	U		1.18	10.0	10	04/13/2024 19:31	WG2266470
1,1,1,2-Tetrachloroethane	U	C3	1.47	10.0	10	04/13/2024 19:31	WG2266470
1,1,2,2-Tetrachloroethane	U		1.33	10.0	10	04/13/2024 19:31	WG2266470
1,1,2-Trichlorotrifluoroethane	U		1.80	10.0	10	04/13/2024 19:31	WG2266470
Tetrachloroethene	U		3.00	10.0	10	04/13/2024 19:31	WG2266470
Toluene	10.4		2.78	10.0	10	04/13/2024 19:31	WG2266470
1,2,3-Trichlorobenzene	U	C3	2.30	10.0	10	04/13/2024 19:31	WG2266470
1,2,4-Trichlorobenzene	U	C3	4.81	10.0	10	04/13/2024 19:31	WG2266470
1,1,1-Trichloroethane	U		1.49	10.0	10	04/13/2024 19:31	WG2266470
1,1,2-Trichloroethane	U		1.58	10.0	10	04/13/2024 19:31	WG2266470
Trichloroethene	U	C3	1.90	10.0	10	04/13/2024 19:31	WG2266470
Trichlorofluoromethane	U		1.60	50.0	10	04/13/2024 19:31	WG2266470
1,2,3-Trichloropropane	U		2.37	25.0	10	04/13/2024 19:31	WG2266470
1,2,4-Trimethylbenzene	5.17	J	3.22	10.0	10	04/13/2024 19:31	WG2266470
1,2,3-Trimethylbenzene	2.52	J	1.04	10.0	10	04/13/2024 19:31	WG2266470
1,3,5-Trimethylbenzene	3.66	J	1.04	10.0	10	04/13/2024 19:31	WG2266470
Vinyl chloride	U		2.34	10.0	10	04/13/2024 19:31	WG2266470
Xylenes, Total	31.5		1.74	30.0	10	04/13/2024 19:31	WG2266470
(S) Toluene-d8	*102*			*80.0-120*		*04/13/2024 19:31*	WG2266470
(S) 4-Bromofluorobenzene	*91.5*			*77.0-126*		*04/13/2024 19:31*	WG2266470
(S) 1,2-Dichloroethane-d4	*99.1*			*70.0-130*		*04/13/2024 19:31*	WG2266470

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	2350		31.6	100	1	04/15/2024 14:27	WG2267156
(S) a,a,a-Trifluorotoluene(FID)	*97.3*			*78.0-120*		*04/15/2024 14:27*	WG2267156

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	04/12/2024 15:25	WG2265770
Acrolein	U		2.54	50.0	1	04/12/2024 15:25	WG2265770
Acrylonitrile	U		0.671	10.0	1	04/12/2024 15:25	WG2265770
Benzene	112		0.0941	1.00	1	04/12/2024 15:25	WG2265770
Bromobenzene	U		0.118	1.00	1	04/12/2024 15:25	WG2265770
Bromodichloromethane	U		0.136	1.00	1	04/12/2024 15:25	WG2265770
Bromoform	U		0.129	1.00	1	04/12/2024 15:25	WG2265770
Bromomethane	U		0.605	5.00	1	04/12/2024 15:25	WG2265770
n-Butylbenzene	U		0.157	1.00	1	04/12/2024 15:25	WG2265770
sec-Butylbenzene	0.984	J	0.125	1.00	1	04/12/2024 15:25	WG2265770
tert-Butylbenzene	0.168	J	0.127	1.00	1	04/12/2024 15:25	WG2265770
Carbon disulfide	0.223	J	0.0962	1.00	1	04/12/2024 15:25	WG2265770
Carbon tetrachloride	U		0.128	1.00	1	04/12/2024 15:25	WG2265770
Chlorobenzene	U		0.116	1.00	1	04/12/2024 15:25	WG2265770
Chlorodibromomethane	U		0.140	1.00	1	04/12/2024 15:25	WG2265770
Chloroethane	U		0.192	5.00	1	04/12/2024 15:25	WG2265770
Chloroform	U		0.111	5.00	1	04/12/2024 15:25	WG2265770
Chloromethane	U		0.960	2.50	1	04/12/2024 15:25	WG2265770
2-Chlorotoluene	U		0.106	1.00	1	04/12/2024 15:25	WG2265770
4-Chlorotoluene	U		0.114	1.00	1	04/12/2024 15:25	WG2265770
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/12/2024 15:25	WG2265770
1,2-Dibromoethane	U		0.126	1.00	1	04/12/2024 15:25	WG2265770
Dibromomethane	U		0.122	1.00	1	04/12/2024 15:25	WG2265770
1,2-Dichlorobenzene	U		0.107	1.00	1	04/12/2024 15:25	WG2265770
1,3-Dichlorobenzene	U		0.110	1.00	1	04/12/2024 15:25	WG2265770
1,4-Dichlorobenzene	U		0.120	1.00	1	04/12/2024 15:25	WG2265770
Dichlorodifluoromethane	U		0.374	5.00	1	04/12/2024 15:25	WG2265770
1,1-Dichloroethane	U		0.100	1.00	1	04/12/2024 15:25	WG2265770
1,2-Dichloroethane	U		0.0819	1.00	1	04/12/2024 15:25	WG2265770
1,1-Dichloroethene	U		0.188	1.00	1	04/12/2024 15:25	WG2265770
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/12/2024 15:25	WG2265770
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/12/2024 15:25	WG2265770
1,2-Dichloropropane	U		0.149	1.00	1	04/12/2024 15:25	WG2265770
1,1-Dichloropropene	U		0.142	1.00	1	04/12/2024 15:25	WG2265770
1,3-Dichloropropane	U		0.110	1.00	1	04/12/2024 15:25	WG2265770
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/12/2024 15:25	WG2265770
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/12/2024 15:25	WG2265770
2,2-Dichloropropane	U		0.161	1.00	1	04/12/2024 15:25	WG2265770
Di-isopropyl ether	U		0.105	1.00	1	04/12/2024 15:25	WG2265770
Ethylbenzene	87.8		0.137	1.00	1	04/12/2024 15:25	WG2265770
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/12/2024 15:25	WG2265770
Isopropylbenzene	8.83		0.105	1.00	1	04/12/2024 15:25	WG2265770
p-Isopropyltoluene	0.728	J	0.120	1.00	1	04/12/2024 15:25	WG2265770
2-Butanone (MEK)	U		1.19	10.0	1	04/12/2024 15:25	WG2265770
Methylene Chloride	U		0.430	5.00	1	04/12/2024 15:25	WG2265770
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	04/12/2024 15:25	WG2265770
Methyl tert-butyl ether	14.9		0.101	1.00	1	04/12/2024 15:25	WG2265770
Naphthalene	4.15	J	1.00	5.00	1	04/12/2024 15:25	WG2265770

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	14.4		0.0993	1.00	1	04/12/2024 15:25	WG2265770
Styrene	U	C3	0.118	1.00	1	04/12/2024 15:25	WG2265770
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/12/2024 15:25	WG2265770
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/12/2024 15:25	WG2265770
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/12/2024 15:25	WG2265770
Tetrachloroethene	U		0.300	1.00	1	04/12/2024 15:25	WG2265770
Toluene	2.42		0.278	1.00	1	04/12/2024 15:25	WG2265770
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/12/2024 15:25	WG2265770
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/12/2024 15:25	WG2265770
1,1,1-Trichloroethane	U		0.149	1.00	1	04/12/2024 15:25	WG2265770
1,1,2-Trichloroethane	U		0.158	1.00	1	04/12/2024 15:25	WG2265770
Trichloroethene	U		0.190	1.00	1	04/12/2024 15:25	WG2265770
Trichlorofluoromethane	U		0.160	5.00	1	04/12/2024 15:25	WG2265770
1,2,3-Trichloropropane	U		0.237	2.50	1	04/12/2024 15:25	WG2265770
1,2,4-Trimethylbenzene	39.7		0.322	1.00	1	04/12/2024 15:25	WG2265770
1,2,3-Trimethylbenzene	11.8		0.104	1.00	1	04/12/2024 15:25	WG2265770
1,3,5-Trimethylbenzene	14.5		0.104	1.00	1	04/12/2024 15:25	WG2265770
Vinyl chloride	U		0.234	1.00	1	04/12/2024 15:25	WG2265770
Xylenes, Total	294		0.174	3.00	1	04/12/2024 15:25	WG2265770
(S) Toluene-d8	*108*			*80.0-120*		*04/12/2024 15:25*	WG2265770
(S) 4-Bromofluorobenzene	*112*			*77.0-126*		*04/12/2024 15:25*	WG2265770
(S) 1,2-Dichloroethane-d4	*101*			*70.0-130*		*04/12/2024 15:25*	WG2265770

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	84.8	J	31.6	100	1	04/15/2024 14:49	WG2267156
(S) a,a,a-Trifluorotoluene(FID)	*102*			*78.0-120*		*04/15/2024 14:49*	WG2267156

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	04/12/2024 15:50	WG2265770
Acrolein	U		2.54	50.0	1	04/12/2024 15:50	WG2265770
Acrylonitrile	U		0.671	10.0	1	04/12/2024 15:50	WG2265770
Benzene	U		0.0941	1.00	1	04/12/2024 15:50	WG2265770
Bromobenzene	U		0.118	1.00	1	04/12/2024 15:50	WG2265770
Bromodichloromethane	U		0.136	1.00	1	04/12/2024 15:50	WG2265770
Bromoform	U		0.129	1.00	1	04/12/2024 15:50	WG2265770
Bromomethane	U		0.605	5.00	1	04/12/2024 15:50	WG2265770
n-Butylbenzene	U		0.157	1.00	1	04/12/2024 15:50	WG2265770
sec-Butylbenzene	U		0.125	1.00	1	04/12/2024 15:50	WG2265770
tert-Butylbenzene	U		0.127	1.00	1	04/12/2024 15:50	WG2265770
Carbon disulfide	U		0.0962	1.00	1	04/12/2024 15:50	WG2265770
Carbon tetrachloride	U		0.128	1.00	1	04/12/2024 15:50	WG2265770
Chlorobenzene	U		0.116	1.00	1	04/12/2024 15:50	WG2265770
Chlorodibromomethane	U		0.140	1.00	1	04/12/2024 15:50	WG2265770
Chloroethane	U		0.192	5.00	1	04/12/2024 15:50	WG2265770
Chloroform	U		0.111	5.00	1	04/12/2024 15:50	WG2265770
Chloromethane	U		0.960	2.50	1	04/12/2024 15:50	WG2265770
2-Chlorotoluene	U		0.106	1.00	1	04/12/2024 15:50	WG2265770
4-Chlorotoluene	U		0.114	1.00	1	04/12/2024 15:50	WG2265770
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/12/2024 15:50	WG2265770
1,2-Dibromoethane	U		0.126	1.00	1	04/12/2024 15:50	WG2265770
Dibromomethane	U		0.122	1.00	1	04/12/2024 15:50	WG2265770
1,2-Dichlorobenzene	U		0.107	1.00	1	04/12/2024 15:50	WG2265770
1,3-Dichlorobenzene	U		0.110	1.00	1	04/12/2024 15:50	WG2265770
1,4-Dichlorobenzene	U		0.120	1.00	1	04/12/2024 15:50	WG2265770
Dichlorodifluoromethane	U		0.374	5.00	1	04/12/2024 15:50	WG2265770
1,1-Dichloroethane	U		0.100	1.00	1	04/12/2024 15:50	WG2265770
1,2-Dichloroethane	U		0.0819	1.00	1	04/12/2024 15:50	WG2265770
1,1-Dichloroethene	U		0.188	1.00	1	04/12/2024 15:50	WG2265770
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/12/2024 15:50	WG2265770
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/12/2024 15:50	WG2265770
1,2-Dichloropropane	U		0.149	1.00	1	04/12/2024 15:50	WG2265770
1,1-Dichloropropene	U		0.142	1.00	1	04/12/2024 15:50	WG2265770
1,3-Dichloropropane	U		0.110	1.00	1	04/12/2024 15:50	WG2265770
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/12/2024 15:50	WG2265770
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/12/2024 15:50	WG2265770
2,2-Dichloropropane	U		0.161	1.00	1	04/12/2024 15:50	WG2265770
Di-isopropyl ether	U		0.105	1.00	1	04/12/2024 15:50	WG2265770
Ethylbenzene	0.206	J	0.137	1.00	1	04/12/2024 15:50	WG2265770
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/12/2024 15:50	WG2265770
Isopropylbenzene	0.336	J	0.105	1.00	1	04/12/2024 15:50	WG2265770
p-Isopropyltoluene	U		0.120	1.00	1	04/12/2024 15:50	WG2265770
2-Butanone (MEK)	U		1.19	10.0	1	04/12/2024 15:50	WG2265770
Methylene Chloride	U		0.430	5.00	1	04/12/2024 15:50	WG2265770
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	04/12/2024 15:50	WG2265770
Methyl tert-butyl ether	0.336	J	0.101	1.00	1	04/12/2024 15:50	WG2265770
Naphthalene	U		1.00	5.00	1	04/12/2024 15:50	WG2265770

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	0.407	J	0.0993	1.00	1	04/12/2024 15:50	WG2265770
Styrene	U	C3	0.118	1.00	1	04/12/2024 15:50	WG2265770
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/12/2024 15:50	WG2265770
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/12/2024 15:50	WG2265770
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/12/2024 15:50	WG2265770
Tetrachloroethene	U		0.300	1.00	1	04/12/2024 15:50	WG2265770
Toluene	U		0.278	1.00	1	04/12/2024 15:50	WG2265770
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/12/2024 15:50	WG2265770
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/12/2024 15:50	WG2265770
1,1,1-Trichloroethane	U		0.149	1.00	1	04/12/2024 15:50	WG2265770
1,1,2-Trichloroethane	U		0.158	1.00	1	04/12/2024 15:50	WG2265770
Trichloroethene	U		0.190	1.00	1	04/12/2024 15:50	WG2265770
Trichlorofluoromethane	U		0.160	5.00	1	04/12/2024 15:50	WG2265770
1,2,3-Trichloropropane	U		0.237	2.50	1	04/12/2024 15:50	WG2265770
1,2,4-Trimethylbenzene	3.00		0.322	1.00	1	04/12/2024 15:50	WG2265770
1,2,3-Trimethylbenzene	0.827	J	0.104	1.00	1	04/12/2024 15:50	WG2265770
1,3,5-Trimethylbenzene	0.772	J	0.104	1.00	1	04/12/2024 15:50	WG2265770
Vinyl chloride	U		0.234	1.00	1	04/12/2024 15:50	WG2265770
Xylenes, Total	8.77		0.174	3.00	1	04/12/2024 15:50	WG2265770
(S) Toluene-d8	*111*			*80.0-120*		*04/12/2024 15:50*	WG2265770
(S) 4-Bromofluorobenzene	*115*			*77.0-126*		*04/12/2024 15:50*	WG2265770
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*04/12/2024 15:50*	WG2265770

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	U		31.6	100	1	04/15/2024 15:11	WG2267156
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*		*04/15/2024 15:11*	WG2267156

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	04/12/2024 16:14	WG2265770
Acrolein	U		2.54	50.0	1	04/12/2024 16:14	WG2265770
Acrylonitrile	U		0.671	10.0	1	04/12/2024 16:14	WG2265770
Benzene	U		0.0941	1.00	1	04/12/2024 16:14	WG2265770
Bromobenzene	U		0.118	1.00	1	04/12/2024 16:14	WG2265770
Bromodichloromethane	U		0.136	1.00	1	04/12/2024 16:14	WG2265770
Bromoform	U		0.129	1.00	1	04/12/2024 16:14	WG2265770
Bromomethane	U		0.605	5.00	1	04/12/2024 16:14	WG2265770
n-Butylbenzene	U		0.157	1.00	1	04/12/2024 16:14	WG2265770
sec-Butylbenzene	U		0.125	1.00	1	04/12/2024 16:14	WG2265770
tert-Butylbenzene	U		0.127	1.00	1	04/12/2024 16:14	WG2265770
Carbon disulfide	U		0.0962	1.00	1	04/12/2024 16:14	WG2265770
Carbon tetrachloride	U		0.128	1.00	1	04/12/2024 16:14	WG2265770
Chlorobenzene	U		0.116	1.00	1	04/12/2024 16:14	WG2265770
Chlorodibromomethane	U		0.140	1.00	1	04/12/2024 16:14	WG2265770
Chloroethane	U		0.192	5.00	1	04/12/2024 16:14	WG2265770
Chloroform	U		0.111	5.00	1	04/12/2024 16:14	WG2265770
Chloromethane	U		0.960	2.50	1	04/12/2024 16:14	WG2265770
2-Chlorotoluene	U		0.106	1.00	1	04/12/2024 16:14	WG2265770
4-Chlorotoluene	U		0.114	1.00	1	04/12/2024 16:14	WG2265770
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/12/2024 16:14	WG2265770
1,2-Dibromoethane	U		0.126	1.00	1	04/12/2024 16:14	WG2265770
Dibromomethane	U		0.122	1.00	1	04/12/2024 16:14	WG2265770
1,2-Dichlorobenzene	U		0.107	1.00	1	04/12/2024 16:14	WG2265770
1,3-Dichlorobenzene	U		0.110	1.00	1	04/12/2024 16:14	WG2265770
1,4-Dichlorobenzene	U		0.120	1.00	1	04/12/2024 16:14	WG2265770
Dichlorodifluoromethane	U		0.374	5.00	1	04/12/2024 16:14	WG2265770
1,1-Dichloroethane	U		0.100	1.00	1	04/12/2024 16:14	WG2265770
1,2-Dichloroethane	U		0.0819	1.00	1	04/12/2024 16:14	WG2265770
1,1-Dichloroethene	U		0.188	1.00	1	04/12/2024 16:14	WG2265770
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/12/2024 16:14	WG2265770
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/12/2024 16:14	WG2265770
1,2-Dichloropropane	U		0.149	1.00	1	04/12/2024 16:14	WG2265770
1,1-Dichloropropene	U		0.142	1.00	1	04/12/2024 16:14	WG2265770
1,3-Dichloropropane	U		0.110	1.00	1	04/12/2024 16:14	WG2265770
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/12/2024 16:14	WG2265770
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/12/2024 16:14	WG2265770
2,2-Dichloropropane	U		0.161	1.00	1	04/12/2024 16:14	WG2265770
Di-isopropyl ether	U		0.105	1.00	1	04/12/2024 16:14	WG2265770
Ethylbenzene	U		0.137	1.00	1	04/12/2024 16:14	WG2265770
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/12/2024 16:14	WG2265770
Isopropylbenzene	U		0.105	1.00	1	04/12/2024 16:14	WG2265770
p-Isopropyltoluene	U		0.120	1.00	1	04/12/2024 16:14	WG2265770
2-Butanone (MEK)	U		1.19	10.0	1	04/12/2024 16:14	WG2265770
Methylene Chloride	U		0.430	5.00	1	04/12/2024 16:14	WG2265770
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	04/12/2024 16:14	WG2265770
Methyl tert-butyl ether	U		0.101	1.00	1	04/12/2024 16:14	WG2265770
Naphthalene	U		1.00	5.00	1	04/12/2024 16:14	WG2265770

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	U		0.0993	1.00	1	04/12/2024 16:14	WG2265770
Styrene	U	C3	0.118	1.00	1	04/12/2024 16:14	WG2265770
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/12/2024 16:14	WG2265770
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/12/2024 16:14	WG2265770
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/12/2024 16:14	WG2265770
Tetrachloroethene	U		0.300	1.00	1	04/12/2024 16:14	WG2265770
Toluene	U		0.278	1.00	1	04/12/2024 16:14	WG2265770
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/12/2024 16:14	WG2265770
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/12/2024 16:14	WG2265770
1,1,1-Trichloroethane	U		0.149	1.00	1	04/12/2024 16:14	WG2265770
1,1,2-Trichloroethane	U		0.158	1.00	1	04/12/2024 16:14	WG2265770
Trichloroethene	U		0.190	1.00	1	04/12/2024 16:14	WG2265770
Trichlorofluoromethane	U		0.160	5.00	1	04/12/2024 16:14	WG2265770
1,2,3-Trichloropropane	U		0.237	2.50	1	04/12/2024 16:14	WG2265770
1,2,4-Trimethylbenzene	U		0.322	1.00	1	04/12/2024 16:14	WG2265770
1,2,3-Trimethylbenzene	U		0.104	1.00	1	04/12/2024 16:14	WG2265770
1,3,5-Trimethylbenzene	U		0.104	1.00	1	04/12/2024 16:14	WG2265770
Vinyl chloride	U		0.234	1.00	1	04/12/2024 16:14	WG2265770
Xylenes, Total	U		0.174	3.00	1	04/12/2024 16:14	WG2265770
(S) Toluene-d8	*115*			*80.0-120*		*04/12/2024 16:14*	WG2265770
(S) 4-Bromofluorobenzene	*118*			*77.0-126*		*04/12/2024 16:14*	WG2265770
(S) 1,2-Dichloroethane-d4	*107*			*70.0-130*		*04/12/2024 16:14*	WG2265770

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	120000		3160	10000	100	04/15/2024 17:20	WG2267156
(S) a,a,a-Trifluorotoluene(FID)	*102*			*78.0-120*		*04/15/2024 17:20*	WG2267156

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	C3	1130	5000	100	04/13/2024 19:51	WG2266470
Acrolein	U		254	5000	100	04/13/2024 19:51	WG2266470
Acrylonitrile	U		67.1	1000	100	04/13/2024 19:51	WG2266470
Benzene	1810		9.41	100	100	04/13/2024 19:51	WG2266470
Bromobenzene	U		11.8	100	100	04/13/2024 19:51	WG2266470
Bromodichloromethane	U		13.6	100	100	04/13/2024 19:51	WG2266470
Bromoform	U	C3	12.9	100	100	04/13/2024 19:51	WG2266470
Bromomethane	U		60.5	500	100	04/13/2024 19:51	WG2266470
n-Butylbenzene	U		15.7	100	100	04/13/2024 19:51	WG2266470
sec-Butylbenzene	15.9	J	12.5	100	100	04/13/2024 19:51	WG2266470
tert-Butylbenzene	U		12.7	100	100	04/13/2024 19:51	WG2266470
Carbon disulfide	U		9.62	100	100	04/13/2024 19:51	WG2266470
Carbon tetrachloride	U		12.8	100	100	04/13/2024 19:51	WG2266470
Chlorobenzene	U		11.6	100	100	04/13/2024 19:51	WG2266470
Chlorodibromomethane	U		14.0	100	100	04/13/2024 19:51	WG2266470
Chloroethane	U		19.2	500	100	04/13/2024 19:51	WG2266470
Chloroform	U		11.1	500	100	04/13/2024 19:51	WG2266470
Chloromethane	U		96.0	250	100	04/13/2024 19:51	WG2266470
2-Chlorotoluene	U		10.6	100	100	04/13/2024 19:51	WG2266470
4-Chlorotoluene	U		11.4	100	100	04/13/2024 19:51	WG2266470
1,2-Dibromo-3-Chloropropane	U	C3	27.6	500	100	04/13/2024 19:51	WG2266470
1,2-Dibromoethane	U		12.6	100	100	04/13/2024 19:51	WG2266470
Dibromomethane	U		12.2	100	100	04/13/2024 19:51	WG2266470
1,2-Dichlorobenzene	U		10.7	100	100	04/13/2024 19:51	WG2266470
1,3-Dichlorobenzene	U		11.0	100	100	04/13/2024 19:51	WG2266470
1,4-Dichlorobenzene	U		12.0	100	100	04/13/2024 19:51	WG2266470
Dichlorodifluoromethane	U		37.4	500	100	04/13/2024 19:51	WG2266470
1,1-Dichloroethane	U		10.0	100	100	04/13/2024 19:51	WG2266470
1,2-Dichloroethane	U		8.19	100	100	04/13/2024 19:51	WG2266470
1,1-Dichloroethene	U		18.8	100	100	04/13/2024 19:51	WG2266470
cis-1,2-Dichloroethene	U		12.6	100	100	04/13/2024 19:51	WG2266470
trans-1,2-Dichloroethene	U		14.9	100	100	04/13/2024 19:51	WG2266470
1,2-Dichloropropane	U		14.9	100	100	04/13/2024 19:51	WG2266470
1,1-Dichloropropene	U		14.2	100	100	04/13/2024 19:51	WG2266470
1,3-Dichloropropane	U		11.0	100	100	04/13/2024 19:51	WG2266470
cis-1,3-Dichloropropene	U		11.1	100	100	04/13/2024 19:51	WG2266470
trans-1,3-Dichloropropene	U		11.8	100	100	04/13/2024 19:51	WG2266470
2,2-Dichloropropane	U		16.1	100	100	04/13/2024 19:51	WG2266470
Di-isopropyl ether	U		10.5	100	100	04/13/2024 19:51	WG2266470
Ethylbenzene	3410		13.7	100	100	04/13/2024 19:51	WG2266470
Hexachloro-1,3-butadiene	U	C3	33.7	100	100	04/13/2024 19:51	WG2266470
Isopropylbenzene	79.9	C3 J	10.5	100	100	04/13/2024 19:51	WG2266470
p-Isopropyltoluene	U		12.0	100	100	04/13/2024 19:51	WG2266470
2-Butanone (MEK)	U		119	1000	100	04/13/2024 19:51	WG2266470
Methylene Chloride	U		43.0	500	100	04/13/2024 19:51	WG2266470
4-Methyl-2-pentanone (MIBK)	U		47.8	1000	100	04/13/2024 19:51	WG2266470
Methyl tert-butyl ether	U		10.1	100	100	04/13/2024 19:51	WG2266470
Naphthalene	340	C3 J	100	500	100	04/13/2024 19:51	WG2266470

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	360		9.93	100	100	04/13/2024 19:51	WG2266470
Styrene	U		11.8	100	100	04/13/2024 19:51	WG2266470
1,1,1,2-Tetrachloroethane	U	C3	14.7	100	100	04/13/2024 19:51	WG2266470
1,1,2,2-Tetrachloroethane	U		13.3	100	100	04/13/2024 19:51	WG2266470
1,1,2-Trichlorotrifluoroethane	U		18.0	100	100	04/13/2024 19:51	WG2266470
Tetrachloroethene	U		30.0	100	100	04/13/2024 19:51	WG2266470
Toluene	15900		27.8	100	100	04/13/2024 19:51	WG2266470
1,2,3-Trichlorobenzene	U	C3	23.0	100	100	04/13/2024 19:51	WG2266470
1,2,4-Trichlorobenzene	U	C3	48.1	100	100	04/13/2024 19:51	WG2266470
1,1,1-Trichloroethane	U		14.9	100	100	04/13/2024 19:51	WG2266470
1,1,2-Trichloroethane	U		15.8	100	100	04/13/2024 19:51	WG2266470
Trichloroethene	U	C3	19.0	100	100	04/13/2024 19:51	WG2266470
Trichlorofluoromethane	U		16.0	500	100	04/13/2024 19:51	WG2266470
1,2,3-Trichloropropane	U		23.7	250	100	04/13/2024 19:51	WG2266470
1,2,4-Trimethylbenzene	2330		32.2	100	100	04/13/2024 19:51	WG2266470
1,2,3-Trimethylbenzene	533		10.4	100	100	04/13/2024 19:51	WG2266470
1,3,5-Trimethylbenzene	603		10.4	100	100	04/13/2024 19:51	WG2266470
Vinyl chloride	U		23.4	100	100	04/13/2024 19:51	WG2266470
Xylenes, Total	17500		17.4	300	100	04/13/2024 19:51	WG2266470
(S) Toluene-d8	*99.8*			*80.0-120*		*04/13/2024 19:51*	WG2266470
(S) 4-Bromofluorobenzene	*90.1*			*77.0-126*		*04/13/2024 19:51*	WG2266470
(S) 1,2-Dichloroethane-d4	*103*			*70.0-130*		*04/13/2024 19:51*	WG2266470

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	238		31.6	100	1	04/15/2024 15:32	WG2267156
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*		*04/15/2024 15:32*	WG2267156

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	04/12/2024 16:39	WG2265770
Acrolein	U		2.54	50.0	1	04/12/2024 16:39	WG2265770
Acrylonitrile	U		0.671	10.0	1	04/12/2024 16:39	WG2265770
Benzene	35.3		0.0941	1.00	1	04/12/2024 16:39	WG2265770
Bromobenzene	U		0.118	1.00	1	04/12/2024 16:39	WG2265770
Bromodichloromethane	U		0.136	1.00	1	04/12/2024 16:39	WG2265770
Bromoform	U		0.129	1.00	1	04/12/2024 16:39	WG2265770
Bromomethane	U		0.605	5.00	1	04/12/2024 16:39	WG2265770
n-Butylbenzene	2.12		0.157	1.00	1	04/12/2024 16:39	WG2265770
sec-Butylbenzene	0.339	J	0.125	1.00	1	04/12/2024 16:39	WG2265770
tert-Butylbenzene	U		0.127	1.00	1	04/12/2024 16:39	WG2265770
Carbon disulfide	U		0.0962	1.00	1	04/12/2024 16:39	WG2265770
Carbon tetrachloride	U		0.128	1.00	1	04/12/2024 16:39	WG2265770
Chlorobenzene	U		0.116	1.00	1	04/12/2024 16:39	WG2265770
Chlorodibromomethane	U		0.140	1.00	1	04/12/2024 16:39	WG2265770
Chloroethane	U		0.192	5.00	1	04/12/2024 16:39	WG2265770
Chloroform	U		0.111	5.00	1	04/12/2024 16:39	WG2265770
Chloromethane	U		0.960	2.50	1	04/12/2024 16:39	WG2265770
2-Chlorotoluene	U		0.106	1.00	1	04/12/2024 16:39	WG2265770
4-Chlorotoluene	U		0.114	1.00	1	04/12/2024 16:39	WG2265770
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/12/2024 16:39	WG2265770
1,2-Dibromoethane	U		0.126	1.00	1	04/12/2024 16:39	WG2265770
Dibromomethane	U		0.122	1.00	1	04/12/2024 16:39	WG2265770
1,2-Dichlorobenzene	U		0.107	1.00	1	04/12/2024 16:39	WG2265770
1,3-Dichlorobenzene	U		0.110	1.00	1	04/12/2024 16:39	WG2265770
1,4-Dichlorobenzene	U		0.120	1.00	1	04/12/2024 16:39	WG2265770
Dichlorodifluoromethane	U		0.374	5.00	1	04/12/2024 16:39	WG2265770
1,1-Dichloroethane	U		0.100	1.00	1	04/12/2024 16:39	WG2265770
1,2-Dichloroethane	U		0.0819	1.00	1	04/12/2024 16:39	WG2265770
1,1-Dichloroethene	U		0.188	1.00	1	04/12/2024 16:39	WG2265770
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/12/2024 16:39	WG2265770
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/12/2024 16:39	WG2265770
1,2-Dichloropropane	U		0.149	1.00	1	04/12/2024 16:39	WG2265770
1,1-Dichloropropene	U		0.142	1.00	1	04/12/2024 16:39	WG2265770
1,3-Dichloropropane	U		0.110	1.00	1	04/12/2024 16:39	WG2265770
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/12/2024 16:39	WG2265770
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/12/2024 16:39	WG2265770
2,2-Dichloropropane	U		0.161	1.00	1	04/12/2024 16:39	WG2265770
Di-isopropyl ether	U		0.105	1.00	1	04/12/2024 16:39	WG2265770
Ethylbenzene	6.11		0.137	1.00	1	04/12/2024 16:39	WG2265770
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/12/2024 16:39	WG2265770
Isopropylbenzene	0.563	J	0.105	1.00	1	04/12/2024 16:39	WG2265770
p-Isopropyltoluene	0.371	J	0.120	1.00	1	04/12/2024 16:39	WG2265770
2-Butanone (MEK)	U		1.19	10.0	1	04/12/2024 16:39	WG2265770
Methylene Chloride	U		0.430	5.00	1	04/12/2024 16:39	WG2265770
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0	1	04/12/2024 16:39	WG2265770
Methyl tert-butyl ether	U		0.101	1.00	1	04/12/2024 16:39	WG2265770
Naphthalene	U		1.00	5.00	1	04/12/2024 16:39	WG2265770

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	0.996	J	0.0993	1.00	1	04/12/2024 16:39	WG2265770
Styrene	U	C3	0.118	1.00	1	04/12/2024 16:39	WG2265770
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/12/2024 16:39	WG2265770
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/12/2024 16:39	WG2265770
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/12/2024 16:39	WG2265770
Tetrachloroethene	U		0.300	1.00	1	04/12/2024 16:39	WG2265770
Toluene	0.501	J	0.278	1.00	1	04/12/2024 16:39	WG2265770
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/12/2024 16:39	WG2265770
1,2,4-Trichlorobenzene	U		0.481	1.00	1	04/12/2024 16:39	WG2265770
1,1,1-Trichloroethane	U		0.149	1.00	1	04/12/2024 16:39	WG2265770
1,1,2-Trichloroethane	U		0.158	1.00	1	04/12/2024 16:39	WG2265770
Trichloroethene	U		0.190	1.00	1	04/12/2024 16:39	WG2265770
Trichlorofluoromethane	U		0.160	5.00	1	04/12/2024 16:39	WG2265770
1,2,3-Trichloropropane	U		0.237	2.50	1	04/12/2024 16:39	WG2265770
1,2,4-Trimethylbenzene	0.846	J	0.322	1.00	1	04/12/2024 16:39	WG2265770
1,2,3-Trimethylbenzene	U		0.104	1.00	1	04/12/2024 16:39	WG2265770
1,3,5-Trimethylbenzene	0.381	J	0.104	1.00	1	04/12/2024 16:39	WG2265770
Vinyl chloride	U		0.234	1.00	1	04/12/2024 16:39	WG2265770
Xylenes, Total	U		0.174	3.00	1	04/12/2024 16:39	WG2265770
(S) Toluene-d8	*110*			*80.0-120*		*04/12/2024 16:39*	WG2265770
(S) 4-Bromofluorobenzene	*108*			*77.0-126*		*04/12/2024 16:39*	WG2265770
(S) 1,2-Dichloroethane-d4	*104*			*70.0-130*		*04/12/2024 16:39*	WG2265770

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	3790		31.6	100	1	04/15/2024 15:54	WG2267156
(S) a,a,a-Trifluorotoluene(FID)	*103*			*78.0-120*		*04/15/2024 15:54*	WG2267156

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	C3	56.5	250	5	04/13/2024 20:12	WG2266470
Acrolein	U		12.7	250	5	04/13/2024 20:12	WG2266470
Acrylonitrile	U		3.36	50.0	5	04/13/2024 20:12	WG2266470
Benzene	334		0.471	5.00	5	04/13/2024 20:12	WG2266470
Bromobenzene	U		0.590	5.00	5	04/13/2024 20:12	WG2266470
Bromodichloromethane	U		0.680	5.00	5	04/13/2024 20:12	WG2266470
Bromoform	U	C3	0.645	5.00	5	04/13/2024 20:12	WG2266470
Bromomethane	U		3.03	25.0	5	04/13/2024 20:12	WG2266470
n-Butylbenzene	2.99	J	0.785	5.00	5	04/13/2024 20:12	WG2266470
sec-Butylbenzene	3.42	J	0.625	5.00	5	04/13/2024 20:12	WG2266470
tert-Butylbenzene	U		0.635	5.00	5	04/13/2024 20:12	WG2266470
Carbon disulfide	U		0.481	5.00	5	04/13/2024 20:12	WG2266470
Carbon tetrachloride	U		0.640	5.00	5	04/13/2024 20:12	WG2266470
Chlorobenzene	U		0.580	5.00	5	04/13/2024 20:12	WG2266470
Chlorodibromomethane	U		0.700	5.00	5	04/13/2024 20:12	WG2266470
Chloroethane	U		0.960	25.0	5	04/13/2024 20:12	WG2266470
Chloroform	U		0.555	25.0	5	04/13/2024 20:12	WG2266470
Chloromethane	U		4.80	12.5	5	04/13/2024 20:12	WG2266470
2-Chlorotoluene	U		0.530	5.00	5	04/13/2024 20:12	WG2266470
4-Chlorotoluene	U		0.570	5.00	5	04/13/2024 20:12	WG2266470
1,2-Dibromo-3-Chloropropane	U	C3	1.38	25.0	5	04/13/2024 20:12	WG2266470
1,2-Dibromoethane	U		0.630	5.00	5	04/13/2024 20:12	WG2266470
Dibromomethane	U		0.610	5.00	5	04/13/2024 20:12	WG2266470
1,2-Dichlorobenzene	U		0.535	5.00	5	04/13/2024 20:12	WG2266470
1,3-Dichlorobenzene	U		0.550	5.00	5	04/13/2024 20:12	WG2266470
1,4-Dichlorobenzene	U		0.600	5.00	5	04/13/2024 20:12	WG2266470
Dichlorodifluoromethane	U		1.87	25.0	5	04/13/2024 20:12	WG2266470
1,1-Dichloroethane	U		0.500	5.00	5	04/13/2024 20:12	WG2266470
1,2-Dichloroethane	U		0.409	5.00	5	04/13/2024 20:12	WG2266470
1,1-Dichloroethene	U		0.940	5.00	5	04/13/2024 20:12	WG2266470
cis-1,2-Dichloroethene	U		0.630	5.00	5	04/13/2024 20:12	WG2266470
trans-1,2-Dichloroethene	U		0.745	5.00	5	04/13/2024 20:12	WG2266470
1,2-Dichloropropane	U		0.745	5.00	5	04/13/2024 20:12	WG2266470
1,1-Dichloropropene	U		0.710	5.00	5	04/13/2024 20:12	WG2266470
1,3-Dichloropropane	U		0.550	5.00	5	04/13/2024 20:12	WG2266470
cis-1,3-Dichloropropene	U		0.555	5.00	5	04/13/2024 20:12	WG2266470
trans-1,3-Dichloropropene	U		0.590	5.00	5	04/13/2024 20:12	WG2266470
2,2-Dichloropropane	U		0.805	5.00	5	04/13/2024 20:12	WG2266470
Di-isopropyl ether	U		0.525	5.00	5	04/13/2024 20:12	WG2266470
Ethylbenzene	19.4		0.685	5.00	5	04/13/2024 20:12	WG2266470
Hexachloro-1,3-butadiene	U	C3	1.69	5.00	5	04/13/2024 20:12	WG2266470
Isopropylbenzene	11.2	C3	0.525	5.00	5	04/13/2024 20:12	WG2266470
p-Isopropyltoluene	0.809	J	0.600	5.00	5	04/13/2024 20:12	WG2266470
2-Butanone (MEK)	U		5.95	50.0	5	04/13/2024 20:12	WG2266470
Methylene Chloride	U		2.15	25.0	5	04/13/2024 20:12	WG2266470
4-Methyl-2-pentanone (MIBK)	U		2.39	50.0	5	04/13/2024 20:12	WG2266470
Methyl tert-butyl ether	U		0.505	5.00	5	04/13/2024 20:12	WG2266470
Naphthalene	U	C3	5.00	25.0	5	04/13/2024 20:12	WG2266470

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	59.9		0.497	5.00	5	04/13/2024 20:12	WG2266470
Styrene	U		0.590	5.00	5	04/13/2024 20:12	WG2266470
1,1,1,2-Tetrachloroethane	U	C3	0.735	5.00	5	04/13/2024 20:12	WG2266470
1,1,2,2-Tetrachloroethane	U		0.665	5.00	5	04/13/2024 20:12	WG2266470
1,1,2-Trichlorotrifluoroethane	U		0.900	5.00	5	04/13/2024 20:12	WG2266470
Tetrachloroethene	U		1.50	5.00	5	04/13/2024 20:12	WG2266470
Toluene	4.30	J	1.39	5.00	5	04/13/2024 20:12	WG2266470
1,2,3-Trichlorobenzene	U	C3	1.15	5.00	5	04/13/2024 20:12	WG2266470
1,2,4-Trichlorobenzene	U	C3	2.41	5.00	5	04/13/2024 20:12	WG2266470
1,1,1-Trichloroethane	U		0.745	5.00	5	04/13/2024 20:12	WG2266470
1,1,2-Trichloroethane	U		0.790	5.00	5	04/13/2024 20:12	WG2266470
Trichloroethene	U	C3	0.950	5.00	5	04/13/2024 20:12	WG2266470
Trichlorofluoromethane	U		0.800	25.0	5	04/13/2024 20:12	WG2266470
1,2,3-Trichloropropane	U		1.19	12.5	5	04/13/2024 20:12	WG2266470
1,2,4-Trimethylbenzene	3.82	J	1.61	5.00	5	04/13/2024 20:12	WG2266470
1,2,3-Trimethylbenzene	8.35		0.520	5.00	5	04/13/2024 20:12	WG2266470
1,3,5-Trimethylbenzene	3.48	J	0.520	5.00	5	04/13/2024 20:12	WG2266470
Vinyl chloride	U		1.17	5.00	5	04/13/2024 20:12	WG2266470
Xylenes, Total	13.8	J	0.870	15.0	5	04/13/2024 20:12	WG2266470
(S) Toluene-d8	*103*			*80.0-120*		*04/13/2024 20:12*	WG2266470
(S) 4-Bromofluorobenzene	*89.5*			*77.0-126*		*04/13/2024 20:12*	WG2266470
(S) 1,2-Dichloroethane-d4	*100*			*70.0-130*		*04/13/2024 20:12*	WG2266470

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	1010		31.6	100	1	04/15/2024 16:15	WG2267156
(S) a,a,a-Trifluorotoluene(FID)	*96.8*			*78.0-120*		*04/15/2024 16:15*	WG2267156

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	C3	11.3	50.0	1	04/12/2024 18:05	WG2265457
Acrolein	U		2.54	50.0	1	04/12/2024 18:05	WG2265457
Acrylonitrile	U	C3	0.671	10.0	1	04/12/2024 18:05	WG2265457
Benzene	35.1		0.0941	1.00	1	04/12/2024 18:05	WG2265457
Bromobenzene	U		0.118	1.00	1	04/12/2024 18:05	WG2265457
Bromodichloromethane	U		0.136	1.00	1	04/12/2024 18:05	WG2265457
Bromoform	U		0.129	1.00	1	04/12/2024 18:05	WG2265457
Bromomethane	U	C3	0.605	5.00	1	04/12/2024 18:05	WG2265457
n-Butylbenzene	3.70		0.157	1.00	1	04/12/2024 18:05	WG2265457
sec-Butylbenzene	4.22		0.125	1.00	1	04/12/2024 18:05	WG2265457
tert-Butylbenzene	U		0.127	1.00	1	04/12/2024 18:05	WG2265457
Carbon disulfide	0.237	B J	0.0962	1.00	1	04/12/2024 18:05	WG2265457
Carbon tetrachloride	U		0.128	1.00	1	04/12/2024 18:05	WG2265457
Chlorobenzene	U		0.116	1.00	1	04/12/2024 18:05	WG2265457
Chlorodibromomethane	U		0.140	1.00	1	04/12/2024 18:05	WG2265457
Chloroethane	U		0.192	5.00	1	04/12/2024 18:05	WG2265457
Chloroform	U		0.111	5.00	1	04/12/2024 18:05	WG2265457
Chloromethane	U		0.960	2.50	1	04/12/2024 18:05	WG2265457
2-Chlorotoluene	U		0.106	1.00	1	04/12/2024 18:05	WG2265457
4-Chlorotoluene	U		0.114	1.00	1	04/12/2024 18:05	WG2265457
1,2-Dibromo-3-Chloropropane	U		0.276	5.00	1	04/12/2024 18:05	WG2265457
1,2-Dibromoethane	U		0.126	1.00	1	04/12/2024 18:05	WG2265457
Dibromomethane	U		0.122	1.00	1	04/12/2024 18:05	WG2265457
1,2-Dichlorobenzene	U		0.107	1.00	1	04/12/2024 18:05	WG2265457
1,3-Dichlorobenzene	U		0.110	1.00	1	04/12/2024 18:05	WG2265457
1,4-Dichlorobenzene	U		0.120	1.00	1	04/12/2024 18:05	WG2265457
Dichlorodifluoromethane	U		0.374	5.00	1	04/12/2024 18:05	WG2265457
1,1-Dichloroethane	U		0.100	1.00	1	04/12/2024 18:05	WG2265457
1,2-Dichloroethane	U		0.0819	1.00	1	04/12/2024 18:05	WG2265457
1,1-Dichloroethene	U		0.188	1.00	1	04/12/2024 18:05	WG2265457
cis-1,2-Dichloroethene	U		0.126	1.00	1	04/12/2024 18:05	WG2265457
trans-1,2-Dichloroethene	U		0.149	1.00	1	04/12/2024 18:05	WG2265457
1,2-Dichloropropane	U		0.149	1.00	1	04/12/2024 18:05	WG2265457
1,1-Dichloropropene	U		0.142	1.00	1	04/12/2024 18:05	WG2265457
1,3-Dichloropropane	U		0.110	1.00	1	04/12/2024 18:05	WG2265457
cis-1,3-Dichloropropene	U		0.111	1.00	1	04/12/2024 18:05	WG2265457
trans-1,3-Dichloropropene	U		0.118	1.00	1	04/12/2024 18:05	WG2265457
2,2-Dichloropropane	U		0.161	1.00	1	04/12/2024 18:05	WG2265457
Di-isopropyl ether	U		0.105	1.00	1	04/12/2024 18:05	WG2265457
Ethylbenzene	28.5		0.137	1.00	1	04/12/2024 18:05	WG2265457
Hexachloro-1,3-butadiene	U		0.337	1.00	1	04/12/2024 18:05	WG2265457
Isopropylbenzene	18.2		0.105	1.00	1	04/12/2024 18:05	WG2265457
p-Isopropyltoluene	0.140	J	0.120	1.00	1	04/12/2024 18:05	WG2265457
2-Butanone (MEK)	24.1	C3	1.19	10.0	1	04/12/2024 18:05	WG2265457
Methylene Chloride	U		0.430	5.00	1	04/12/2024 18:05	WG2265457
4-Methyl-2-pentanone (MIBK)	U	C3	0.478	10.0	1	04/12/2024 18:05	WG2265457
Methyl tert-butyl ether	U		0.101	1.00	1	04/12/2024 18:05	WG2265457
Naphthalene	5.31	C3	1.00	5.00	1	04/12/2024 18:05	WG2265457

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	50.2		0.0993	1.00	1	04/12/2024 18:05	WG2265457
Styrene	U		0.118	1.00	1	04/12/2024 18:05	WG2265457
1,1,1,2-Tetrachloroethane	U		0.147	1.00	1	04/12/2024 18:05	WG2265457
1,1,2,2-Tetrachloroethane	U		0.133	1.00	1	04/12/2024 18:05	WG2265457
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00	1	04/12/2024 18:05	WG2265457
Tetrachloroethene	U		0.300	1.00	1	04/12/2024 18:05	WG2265457
Toluene	0.895	J	0.278	1.00	1	04/12/2024 18:05	WG2265457
1,2,3-Trichlorobenzene	U		0.230	1.00	1	04/12/2024 18:05	WG2265457
1,2,4-Trichlorobenzene	U	C3	0.481	1.00	1	04/12/2024 18:05	WG2265457
1,1,1-Trichloroethane	U		0.149	1.00	1	04/12/2024 18:05	WG2265457
1,1,2-Trichloroethane	U		0.158	1.00	1	04/12/2024 18:05	WG2265457
Trichloroethene	U		0.190	1.00	1	04/12/2024 18:05	WG2265457
Trichlorofluoromethane	U		0.160	5.00	1	04/12/2024 18:05	WG2265457
1,2,3-Trichloropropane	U		0.237	2.50	1	04/12/2024 18:05	WG2265457
1,2,4-Trimethylbenzene	0.745	J	0.322	1.00	1	04/12/2024 18:05	WG2265457
1,2,3-Trimethylbenzene	11.0		0.104	1.00	1	04/12/2024 18:05	WG2265457
1,3,5-Trimethylbenzene	U		0.104	1.00	1	04/12/2024 18:05	WG2265457
Vinyl chloride	U		0.234	1.00	1	04/12/2024 18:05	WG2265457
Xylenes, Total	3.26		0.174	3.00	1	04/12/2024 18:05	WG2265457
(S) Toluene-d8	*105*			*80.0-120*		*04/12/2024 18:05*	WG2265457
(S) 4-Bromofluorobenzene	*97.7*			*77.0-126*		*04/12/2024 18:05*	WG2265457
(S) 1,2-Dichloroethane-d4	*85.6*			*70.0-130*		*04/12/2024 18:05*	WG2265457

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	3360		31.6	100	1	04/15/2024 16:37	WG2267156
(S) a,a,a-Trifluorotoluene(FID)	*101*			*78.0-120*		*04/15/2024 16:37*	WG2267156

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	C3	226	1000	20	04/12/2024 18:26	WG2265457
Acrolein	U		50.8	1000	20	04/12/2024 18:26	WG2265457
Acrylonitrile	U	C3	13.4	200	20	04/12/2024 18:26	WG2265457
Benzene	273		1.88	20.0	20	04/12/2024 18:26	WG2265457
Bromobenzene	U		2.36	20.0	20	04/12/2024 18:26	WG2265457
Bromodichloromethane	U		2.72	20.0	20	04/12/2024 18:26	WG2265457
Bromoform	U		2.58	20.0	20	04/12/2024 18:26	WG2265457
Bromomethane	U	C3	12.1	100	20	04/12/2024 18:26	WG2265457
n-Butylbenzene	U		3.14	20.0	20	04/12/2024 18:26	WG2265457
sec-Butylbenzene	3.28	J	2.50	20.0	20	04/12/2024 18:26	WG2265457
tert-Butylbenzene	U		2.54	20.0	20	04/12/2024 18:26	WG2265457
Carbon disulfide	4.61	B J	1.92	20.0	20	04/12/2024 18:26	WG2265457
Carbon tetrachloride	U		2.56	20.0	20	04/12/2024 18:26	WG2265457
Chlorobenzene	U		2.32	20.0	20	04/12/2024 18:26	WG2265457
Chlorodibromomethane	U		2.80	20.0	20	04/12/2024 18:26	WG2265457
Chloroethane	U		3.84	100	20	04/12/2024 18:26	WG2265457
Chloroform	U		2.22	100	20	04/12/2024 18:26	WG2265457
Chloromethane	U		19.2	50.0	20	04/12/2024 18:26	WG2265457
2-Chlorotoluene	U		2.12	20.0	20	04/12/2024 18:26	WG2265457
4-Chlorotoluene	U		2.28	20.0	20	04/12/2024 18:26	WG2265457
1,2-Dibromo-3-Chloropropane	U		5.52	100	20	04/12/2024 18:26	WG2265457
1,2-Dibromoethane	U		2.52	20.0	20	04/12/2024 18:26	WG2265457
Dibromomethane	U		2.44	20.0	20	04/12/2024 18:26	WG2265457
1,2-Dichlorobenzene	U		2.14	20.0	20	04/12/2024 18:26	WG2265457
1,3-Dichlorobenzene	U		2.20	20.0	20	04/12/2024 18:26	WG2265457
1,4-Dichlorobenzene	U		2.40	20.0	20	04/12/2024 18:26	WG2265457
Dichlorodifluoromethane	U		7.48	100	20	04/12/2024 18:26	WG2265457
1,1-Dichloroethane	U		2.00	20.0	20	04/12/2024 18:26	WG2265457
1,2-Dichloroethane	U		1.64	20.0	20	04/12/2024 18:26	WG2265457
1,1-Dichloroethene	U		3.76	20.0	20	04/12/2024 18:26	WG2265457
cis-1,2-Dichloroethene	U		2.52	20.0	20	04/12/2024 18:26	WG2265457
trans-1,2-Dichloroethene	U		2.98	20.0	20	04/12/2024 18:26	WG2265457
1,2-Dichloropropane	U		2.98	20.0	20	04/12/2024 18:26	WG2265457
1,1-Dichloropropene	U		2.84	20.0	20	04/12/2024 18:26	WG2265457
1,3-Dichloropropane	U		2.20	20.0	20	04/12/2024 18:26	WG2265457
cis-1,3-Dichloropropene	U		2.22	20.0	20	04/12/2024 18:26	WG2265457
trans-1,3-Dichloropropene	U		2.36	20.0	20	04/12/2024 18:26	WG2265457
2,2-Dichloropropane	U		3.22	20.0	20	04/12/2024 18:26	WG2265457
Di-isopropyl ether	U		2.10	20.0	20	04/12/2024 18:26	WG2265457
Ethylbenzene	19.2	J	2.74	20.0	20	04/12/2024 18:26	WG2265457
Hexachloro-1,3-butadiene	U		6.74	20.0	20	04/12/2024 18:26	WG2265457
Isopropylbenzene	12.3	J	2.10	20.0	20	04/12/2024 18:26	WG2265457
p-Isopropyltoluene	U		2.40	20.0	20	04/12/2024 18:26	WG2265457
2-Butanone (MEK)	35.3	C3 J	23.8	200	20	04/12/2024 18:26	WG2265457
Methylene Chloride	U		8.60	100	20	04/12/2024 18:26	WG2265457
4-Methyl-2-pentanone (MIBK)	U	C3	9.56	200	20	04/12/2024 18:26	WG2265457
Methyl tert-butyl ether	U		2.02	20.0	20	04/12/2024 18:26	WG2265457
Naphthalene	20.3	C3 J	20.0	100	20	04/12/2024 18:26	WG2265457

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

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis	Batch
	ug/l		ug/l	ug/l		date / time	
n-Propylbenzene	42.0		1.99	20.0	20	04/12/2024 18:26	WG2265457
Styrene	U		2.36	20.0	20	04/12/2024 18:26	WG2265457
1,1,1,2-Tetrachloroethane	U		2.94	20.0	20	04/12/2024 18:26	WG2265457
1,1,2,2-Tetrachloroethane	U		2.66	20.0	20	04/12/2024 18:26	WG2265457
1,1,2-Trichlorotrifluoroethane	U		3.60	20.0	20	04/12/2024 18:26	WG2265457
Tetrachloroethene	U		6.00	20.0	20	04/12/2024 18:26	WG2265457
Toluene	U		5.56	20.0	20	04/12/2024 18:26	WG2265457
1,2,3-Trichlorobenzene	U		4.60	20.0	20	04/12/2024 18:26	WG2265457
1,2,4-Trichlorobenzene	U	C3	9.62	20.0	20	04/12/2024 18:26	WG2265457
1,1,1-Trichloroethane	U		2.98	20.0	20	04/12/2024 18:26	WG2265457
1,1,2-Trichloroethane	U		3.16	20.0	20	04/12/2024 18:26	WG2265457
Trichloroethene	U		3.80	20.0	20	04/12/2024 18:26	WG2265457
Trichlorofluoromethane	U		3.20	100	20	04/12/2024 18:26	WG2265457
1,2,3-Trichloropropane	U		4.74	50.0	20	04/12/2024 18:26	WG2265457
1,2,4-Trimethylbenzene	U		6.44	20.0	20	04/12/2024 18:26	WG2265457
1,2,3-Trimethylbenzene	8.74	J	2.08	20.0	20	04/12/2024 18:26	WG2265457
1,3,5-Trimethylbenzene	3.05	J	2.08	20.0	20	04/12/2024 18:26	WG2265457
Vinyl chloride	U		4.68	20.0	20	04/12/2024 18:26	WG2265457
Xylenes, Total	11.7	J	3.48	60.0	20	04/12/2024 18:26	WG2265457
(S) Toluene-d8	*109*			*80.0-120*		*04/12/2024 18:26*	WG2265457
(S) 4-Bromofluorobenzene	*95.3*			*77.0-126*		*04/12/2024 18:26*	WG2265457
(S) 1,2-Dichloroethane-d4	*84.2*			*70.0-130*		*04/12/2024 18:26*	WG2265457

Method Blank (MB)

(MB) R4057996-2 04/15/24 01:03

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)	*96.7*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R4057996-1 04/14/24 23:30

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5000	4660	93.2	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*94.1*	*78.0-120*	

Method Blank (MB)

(MB) R4058061-2 04/15/24 11:52

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)	*102*			*78.0-120*

Laboratory Control Sample (LCS)

(LCS) R4058061-1 04/15/24 10:24

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Gasoline Range Organics-NWTPH	5000	5310	106	70.0-124	
(S) a,a,a-Trifluorotoluene(FID)			*99.6*	*78.0-120*	

Method Blank (MB)

(MB) R4057678-2 04/12/24 10:20

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 disulfide	0.269	J	0.0962	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

Method Blank (MB)

(MB) R4057678-2 04/12/24 10:20

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.337	1.00
Isopropylbenzene	U		0.105	1.00
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	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
1,2,4-Trimethylbenzene	U		0.322	1.00
1,2,3-Trimethylbenzene	U		0.104	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	*106*			*80.0-120*
(S) 4-Bromofluorobenzene	*92.1*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*86.4*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R4057678-1 04/12/24 09:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	16.2	64.8	19.0-160	
Acrolein	25.0	22.8	91.2	10.0-160	
Acrylonitrile	25.0	18.3	73.2	55.0-149	

Laboratory Control Sample (LCS)

(LCS) R4057678-1 04/12/24 09:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.70	94.0	70.0-123	
Bromobenzene	5.00	4.67	93.4	73.0-121	
Bromodichloromethane	5.00	4.78	95.6	75.0-120	
Bromoform	5.00	4.37	87.4	68.0-132	
Bromomethane	5.00	2.06	41.2	10.0-160	
n-Butylbenzene	5.00	5.12	102	73.0-125	
sec-Butylbenzene	5.00	4.91	98.2	75.0-125	
tert-Butylbenzene	5.00	5.27	105	76.0-124	
Carbon disulfide	5.00	4.46	89.2	61.0-128	
Carbon tetrachloride	5.00	5.08	102	68.0-126	
Chlorobenzene	5.00	5.95	119	80.0-121	
Chlorodibromomethane	5.00	5.10	102	77.0-125	
Chloroethane	5.00	4.04	80.8	47.0-150	
Chloroform	5.00	4.74	94.8	73.0-120	
Chloromethane	5.00	5.72	114	41.0-142	
2-Chlorotoluene	5.00	5.12	102	76.0-123	
4-Chlorotoluene	5.00	5.14	103	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	4.29	85.8	58.0-134	
1,2-Dibromoethane	5.00	5.27	105	80.0-122	
Dibromomethane	5.00	4.94	98.8	80.0-120	
1,2-Dichlorobenzene	5.00	5.39	108	79.0-121	
1,3-Dichlorobenzene	5.00	5.56	111	79.0-120	
1,4-Dichlorobenzene	5.00	5.41	108	79.0-120	
Dichlorodifluoromethane	5.00	4.29	85.8	51.0-149	
1,1-Dichloroethane	5.00	4.76	95.2	70.0-126	
1,2-Dichloroethane	5.00	4.26	85.2	70.0-128	
1,1-Dichloroethene	5.00	4.75	95.0	71.0-124	
cis-1,2-Dichloroethene	5.00	5.51	110	73.0-120	
trans-1,2-Dichloroethene	5.00	5.16	103	73.0-120	
1,2-Dichloropropane	5.00	4.80	96.0	77.0-125	
1,1-Dichloropropene	5.00	4.75	95.0	74.0-126	
1,3-Dichloropropane	5.00	5.17	103	80.0-120	
cis-1,3-Dichloropropene	5.00	4.48	89.6	80.0-123	
trans-1,3-Dichloropropene	5.00	4.73	94.6	78.0-124	
2,2-Dichloropropane	5.00	4.27	85.4	58.0-130	
Di-isopropyl ether	5.00	4.40	88.0	58.0-138	
Ethylbenzene	5.00	5.58	112	79.0-123	
Hexachloro-1,3-butadiene	5.00	4.46	89.2	54.0-138	
Isopropylbenzene	5.00	5.43	109	76.0-127	
p-Isopropyltoluene	5.00	5.21	104	76.0-125	

Laboratory Control Sample (LCS)

(LCS) R4057678-1 04/12/24 09:18

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2-Butanone (MEK)	25.0	18.1	72.4	44.0-160	
Methylene Chloride	5.00	4.49	89.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	19.0	76.0	68.0-142	
Methyl tert-butyl ether	5.00	4.49	89.8	68.0-125	
Naphthalene	5.00	3.76	75.2	54.0-135	
n-Propylbenzene	5.00	4.94	98.8	77.0-124	
Styrene	5.00	5.11	102	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	5.75	115	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	4.49	89.8	65.0-130	
1,1,2-Trichlorotrifluoroethane	5.00	4.50	90.0	69.0-132	
Tetrachloroethene	5.00	5.78	116	72.0-132	
Toluene	5.00	5.39	108	79.0-120	
1,2,3-Trichlorobenzene	5.00	4.74	94.8	50.0-138	
1,2,4-Trichlorobenzene	5.00	3.99	79.8	57.0-137	
1,1,1-Trichloroethane	5.00	4.93	98.6	73.0-124	
1,1,2-Trichloroethane	5.00	5.31	106	80.0-120	
Trichloroethene	5.00	5.66	113	78.0-124	
Trichlorofluoromethane	5.00	5.10	102	59.0-147	
1,2,3-Trichloropropane	5.00	5.36	107	73.0-130	
1,2,4-Trimethylbenzene	5.00	5.08	102	76.0-121	
1,2,3-Trimethylbenzene	5.00	5.04	101	77.0-120	
1,3,5-Trimethylbenzene	5.00	4.98	99.6	76.0-122	
Vinyl chloride	5.00	4.04	80.8	67.0-131	
Xylenes, Total	15.0	16.0	107	79.0-123	
(S) Toluene-d8			*104*	*80.0-120*	
(S) 4-Bromofluorobenzene			*96.2*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*87.4*	*70.0-130*	

Method Blank (MB)

(MB) R4057741-3 04/12/24 10:49

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 disulfide	U		0.0962	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

Method Blank (MB)

(MB) R4057741-3 04/12/24 10:49

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.337	1.00
Isopropylbenzene	U		0.105	1.00
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	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
1,2,4-Trimethylbenzene	U		0.322	1.00
1,2,3-Trimethylbenzene	U		0.104	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	*114*			*80.0-120*
(S) 4-Bromofluorobenzene	*115*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*102*			*70.0-130*

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

(LCS) R4057741-1 04/12/24 09:36 • (LCSD) R4057741-2 04/12/24 10:00

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	25.0	27.3	26.1	109	104	19.0-160			4.49	27
Acrolein	25.0	26.0	28.4	104	114	10.0-160			8.82	26
Acrylonitrile	25.0	28.0	26.4	112	106	55.0-149			5.88	20

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

(LCS) R4057741-1 04/12/24 09:36 • (LCSD) R4057741-2 04/12/24 10:00

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	5.48	5.39	110	108	70.0-123			1.66	20
Bromobenzene	5.00	4.25	4.64	85.0	92.8	73.0-121			8.77	20
Bromodichloromethane	5.00	5.07	4.93	101	98.6	75.0-120			2.80	20
Bromoform	5.00	4.37	4.56	87.4	91.2	68.0-132			4.26	20
Bromomethane	5.00	6.49	6.55	130	131	10.0-160			0.920	25
n-Butylbenzene	5.00	4.45	4.55	89.0	91.0	73.0-125			2.22	20
sec-Butylbenzene	5.00	4.63	4.80	92.6	96.0	75.0-125			3.61	20
tert-Butylbenzene	5.00	4.55	4.89	91.0	97.8	76.0-124			7.20	20
Carbon disulfide	5.00	5.34	5.49	107	110	61.0-128			2.77	20
Carbon tetrachloride	5.00	5.09	5.16	102	103	68.0-126			1.37	20
Chlorobenzene	5.00	4.79	4.91	95.8	98.2	80.0-121			2.47	20
Chlorodibromomethane	5.00	4.76	4.69	95.2	93.8	77.0-125			1.48	20
Chloroethane	5.00	5.30	5.38	106	108	47.0-150			1.50	20
Chloroform	5.00	5.31	5.32	106	106	73.0-120			0.188	20
Chloromethane	5.00	5.96	5.82	119	116	41.0-142			2.38	20
2-Chlorotoluene	5.00	4.27	4.70	85.4	94.0	76.0-123			9.59	20
4-Chlorotoluene	5.00	4.10	4.39	82.0	87.8	75.0-122			6.83	20
1,2-Dibromo-3-Chloropropane	5.00	4.40	4.33	88.0	86.6	58.0-134			1.60	20
1,2-Dibromoethane	5.00	4.96	4.92	99.2	98.4	80.0-122			0.810	20
Dibromomethane	5.00	5.02	5.18	100	104	80.0-120			3.14	20
1,2-Dichlorobenzene	5.00	4.92	5.10	98.4	102	79.0-121			3.59	20
1,3-Dichlorobenzene	5.00	4.52	4.88	90.4	97.6	79.0-120			7.66	20
1,4-Dichlorobenzene	5.00	4.30	4.63	86.0	92.6	79.0-120			7.39	20
Dichlorodifluoromethane	5.00	6.26	6.81	125	136	51.0-149			8.42	20
1,1-Dichloroethane	5.00	5.53	5.53	111	111	70.0-126			0.000	20
1,2-Dichloroethane	5.00	5.00	4.96	100	99.2	70.0-128			0.803	20
1,1-Dichloroethene	5.00	5.21	5.51	104	110	71.0-124			5.60	20
cis-1,2-Dichloroethene	5.00	4.90	5.35	98.0	107	73.0-120			8.78	20
trans-1,2-Dichloroethene	5.00	5.20	5.42	104	108	73.0-120			4.14	20
1,2-Dichloropropane	5.00	4.88	4.95	97.6	99.0	77.0-125			1.42	20
1,1-Dichloropropene	5.00	5.40	5.70	108	114	74.0-126			5.41	20
1,3-Dichloropropane	5.00	4.84	4.78	96.8	95.6	80.0-120			1.25	20
cis-1,3-Dichloropropene	5.00	5.09	4.99	102	99.8	80.0-123			1.98	20
trans-1,3-Dichloropropene	5.00	4.87	4.84	97.4	96.8	78.0-124			0.618	20
2,2-Dichloropropane	5.00	5.45	5.44	109	109	58.0-130			0.184	20
Di-isopropyl ether	5.00	5.92	6.01	118	120	58.0-138			1.51	20
Ethylbenzene	5.00	4.88	5.12	97.6	102	79.0-123			4.80	20
Hexachloro-1,3-butadiene	5.00	5.04	5.34	101	107	54.0-138			5.78	20
Isopropylbenzene	5.00	4.92	5.38	98.4	108	76.0-127			8.93	20
p-Isopropyltoluene	5.00	4.72	5.08	94.4	102	76.0-125			7.35	20

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

(LCS) R4057741-1 04/12/24 09:36 • (LCSD) R4057741-2 04/12/24 10:00

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 %
2-Butanone (MEK)	25.0	23.2	23.4	92.8	93.6	44.0-160			0.858	20
Methylene Chloride	5.00	5.34	5.54	107	111	67.0-120			3.68	20
4-Methyl-2-pentanone (MIBK)	25.0	28.5	28.0	114	112	68.0-142			1.77	20
Methyl tert-butyl ether	5.00	5.23	5.18	105	104	68.0-125			0.961	20
Naphthalene	5.00	4.01	4.25	80.2	85.0	54.0-135			5.81	20
n-Propylbenzene	5.00	4.64	5.19	92.8	104	77.0-124			11.2	20
Styrene	5.00	3.97	4.11	79.4	82.2	73.0-130			3.47	20
1,1,1,2-Tetrachloroethane	5.00	4.85	4.68	97.0	93.6	75.0-125			3.57	20
1,1,2,2-Tetrachloroethane	5.00	4.91	4.93	98.2	98.6	65.0-130			0.406	20
1,1,2-Trichlorotrifluoroethane	5.00	5.13	5.51	103	110	69.0-132			7.14	20
Tetrachloroethene	5.00	5.31	5.54	106	111	72.0-132			4.24	20
Toluene	5.00	4.93	5.00	98.6	100	79.0-120			1.41	20
1,2,3-Trichlorobenzene	5.00	4.96	5.05	99.2	101	50.0-138			1.80	20
1,2,4-Trichlorobenzene	5.00	4.58	4.90	91.6	98.0	57.0-137			6.75	20
1,1,1-Trichloroethane	5.00	5.33	5.61	107	112	73.0-124			5.12	20
1,1,2-Trichloroethane	5.00	5.18	4.92	104	98.4	80.0-120			5.15	20
Trichloroethene	5.00	5.24	5.18	105	104	78.0-124			1.15	20
Trichlorofluoromethane	5.00	5.24	5.68	105	114	59.0-147			8.06	20
1,2,3-Trichloropropane	5.00	4.62	4.87	92.4	97.4	73.0-130			5.27	20
1,2,4-Trimethylbenzene	5.00	4.38	4.70	87.6	94.0	76.0-121			7.05	20
1,2,3-Trimethylbenzene	5.00	4.74	4.84	94.8	96.8	77.0-120			2.09	20
1,3,5-Trimethylbenzene	5.00	4.90	5.34	98.0	107	76.0-122			8.59	20
Vinyl chloride	5.00	6.18	6.20	124	124	67.0-131			0.323	20
Xylenes, Total	15.0	14.7	15.2	98.0	101	79.0-123			3.34	20
(S) Toluene-d8				*109*	*107*	*80.0-120*				
(S) 4-Bromofluorobenzene				*105*	*106*	*77.0-126*				
(S) 1,2-Dichloroethane-d4				*106*	*103*	*70.0-130*				

Method Blank (MB)

(MB) R4058086-2 04/13/24 11:38

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 disulfide	U		0.0962	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

Method Blank (MB)

(MB) R4058086-2 04/13/24 11:38

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Hexachloro-1,3-butadiene	U		0.337	1.00
Isopropylbenzene	U		0.105	1.00
p-Isopropyltoluene	U		0.120	1.00
2-Butanone (MEK)	U		1.19	10.0
Methylene Chloride	U		0.430	5.00
4-Methyl-2-pentanone (MIBK)	U		0.478	10.0
Methyl tert-butyl ether	U		0.101	1.00
Naphthalene	U		1.00	5.00
n-Propylbenzene	U		0.0993	1.00
Styrene	U		0.118	1.00
1,1,1,2-Tetrachloroethane	U		0.147	1.00
1,1,2,2-Tetrachloroethane	U		0.133	1.00
1,1,2-Trichlorotrifluoroethane	U		0.180	1.00
Tetrachloroethene	U		0.300	1.00
Toluene	U		0.278	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
1,2,4-Trimethylbenzene	U		0.322	1.00
1,2,3-Trimethylbenzene	U		0.104	1.00
1,3,5-Trimethylbenzene	U		0.104	1.00
Vinyl chloride	U		0.234	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	*103*			*80.0-120*
(S) 4-Bromofluorobenzene	*87.1*			*77.0-126*
(S) 1,2-Dichloroethane-d4	*106*			*70.0-130*

Laboratory Control Sample (LCS)

(LCS) R4058086-1 04/13/24 10:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acetone	25.0	17.4	69.6	19.0-160	
Acrolein	25.0	25.6	102	10.0-160	
Acrylonitrile	25.0	24.4	97.6	55.0-149	

Laboratory Control Sample (LCS)

(LCS) R4058086-1 04/13/24 10:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	5.00	4.94	98.8	70.0-123	
Bromobenzene	5.00	5.46	109	73.0-121	
Bromodichloromethane	5.00	4.56	91.2	75.0-120	
Bromoform	5.00	3.67	73.4	68.0-132	
Bromomethane	5.00	5.83	117	10.0-160	
n-Butylbenzene	5.00	4.02	80.4	73.0-125	
sec-Butylbenzene	5.00	4.84	96.8	75.0-125	
tert-Butylbenzene	5.00	4.61	92.2	76.0-124	
Carbon disulfide	5.00	4.79	95.8	61.0-128	
Carbon tetrachloride	5.00	4.19	83.8	68.0-126	
Chlorobenzene	5.00	4.47	89.4	80.0-121	
Chlorodibromomethane	5.00	4.16	83.2	77.0-125	
Chloroethane	5.00	6.67	133	47.0-150	
Chloroform	5.00	4.85	97.0	73.0-120	
Chloromethane	5.00	6.00	120	41.0-142	
2-Chlorotoluene	5.00	5.30	106	76.0-123	
4-Chlorotoluene	5.00	5.07	101	75.0-122	
1,2-Dibromo-3-Chloropropane	5.00	3.46	69.2	58.0-134	
1,2-Dibromoethane	5.00	4.17	83.4	80.0-122	
Dibromomethane	5.00	4.63	92.6	80.0-120	
1,2-Dichlorobenzene	5.00	4.61	92.2	79.0-121	
1,3-Dichlorobenzene	5.00	4.72	94.4	79.0-120	
1,4-Dichlorobenzene	5.00	4.73	94.6	79.0-120	
Dichlorodifluoromethane	5.00	6.26	125	51.0-149	
1,1-Dichloroethane	5.00	5.22	104	70.0-126	
1,2-Dichloroethane	5.00	4.68	93.6	70.0-128	
1,1-Dichloroethene	5.00	4.53	90.6	71.0-124	
cis-1,2-Dichloroethene	5.00	4.76	95.2	73.0-120	
trans-1,2-Dichloroethene	5.00	4.82	96.4	73.0-120	
1,2-Dichloropropane	5.00	5.17	103	77.0-125	
1,1-Dichloropropene	5.00	4.59	91.8	74.0-126	
1,3-Dichloropropane	5.00	4.63	92.6	80.0-120	
cis-1,3-Dichloropropene	5.00	4.44	88.8	80.0-123	
trans-1,3-Dichloropropene	5.00	4.62	92.4	78.0-124	
2,2-Dichloropropane	5.00	5.53	111	58.0-130	
Di-isopropyl ether	5.00	5.17	103	58.0-138	
Ethylbenzene	5.00	4.20	84.0	79.0-123	
Hexachloro-1,3-butadiene	5.00	3.22	64.4	54.0-138	
Isopropylbenzene	5.00	3.94	78.8	76.0-127	
p-Isopropyltoluene	5.00	4.47	89.4	76.0-125	

Laboratory Control Sample (LCS)

(LCS) R4058086-1 04/13/24 10:56

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
2-Butanone (MEK)	25.0	23.5	94.0	44.0-160	
Methylene Chloride	5.00	4.74	94.8	67.0-120	
4-Methyl-2-pentanone (MIBK)	25.0	25.5	102	68.0-142	
Methyl tert-butyl ether	5.00	4.42	88.4	68.0-125	
Naphthalene	5.00	2.81	56.2	54.0-135	
n-Propylbenzene	5.00	5.28	106	77.0-124	
Styrene	5.00	4.12	82.4	73.0-130	
1,1,1,2-Tetrachloroethane	5.00	3.95	79.0	75.0-125	
1,1,2,2-Tetrachloroethane	5.00	5.84	117	65.0-130	
1,1,2-Trichlorotrifluoroethane	5.00	4.62	92.4	69.0-132	
Tetrachloroethene	5.00	4.16	83.2	72.0-132	
Toluene	5.00	4.78	95.6	79.0-120	
1,2,3-Trichlorobenzene	5.00	2.96	59.2	50.0-138	
1,2,4-Trichlorobenzene	5.00	2.99	59.8	57.0-137	
1,1,1-Trichloroethane	5.00	4.62	92.4	73.0-124	
1,1,2-Trichloroethane	5.00	4.69	93.8	80.0-120	
Trichloroethene	5.00	3.90	78.0	78.0-124	
Trichlorofluoromethane	5.00	4.59	91.8	59.0-147	
1,2,3-Trichloropropane	5.00	5.02	100	73.0-130	
1,2,4-Trimethylbenzene	5.00	4.67	93.4	76.0-121	
1,2,3-Trimethylbenzene	5.00	4.75	95.0	77.0-120	
1,3,5-Trimethylbenzene	5.00	4.91	98.2	76.0-122	
Vinyl chloride	5.00	5.79	116	67.0-131	
Xylenes, Total	15.0	12.5	83.3	79.0-123	
(S) Toluene-d8			*101*	*80.0-120*	
(S) 4-Bromofluorobenzene			*90.6*	*77.0-126*	
(S) 1,2-Dichloroethane-d4			*105*	*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.

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.

Agency, Authorized Purchaser or Agent: Oregon DEQ	Contract Laboratory Name: Pace National	Lab Selection Criteria:	Turn Around Time:
Send Lab Report To: Kara Master Address: Department of Environmental Quality 700 NE Multnomah St, Suite 600 Portland, OR 97232 E-mail: Kara.E.MASTER@deq.oregon.gov	Lab Batch #: Invoice To: ODEQ/Business Office Address: 700 NE Multnomah Street, Suite 600 Portland, OR. 97232 Tel. #: (800) 452-4011	☐ Proximity (if TAT < 48 hrs) ☐ Prior work on same project ☒ Cost (for anticipated analyses) ☐ Other labs disqualified or unable to perform requested services ☐ Emergency work	☒ 10 days (std.) ☐ 5 days ☐ 72 hours ☐ 48 hours ☐ 24 hours ☐ Other

Project Name: **Johnson Oil**
Project #: **23005297**

L1724244

F240

Sample ID#	Collection Date/Time	Matrix	Number of Containers	Sample Preservative: HCl	HCl								
				Requested Analyses: NWTPH-Gx	VOCs – EPA 8260B								
MW-4	4/9/24/1217	GW	6	X	X								-01
MW-5	4/9/24/946	GW	6	X	X								-02
MW-6	4/9/24/1031	GW	6	X	X								-03
MW-7	4/9/24/1141	GW	6	X	X								-04
MW-8	4/8/24/1140	GW	6	X	X								-05
MW-9	4/8/24/1229	GW	6	X	X								-06
MW-12	4/9/24/1342	GW	6	X	X								-07
MW-13	4/8/24/1246	GW	6	X	X								-08
MW-14	4/8/24/1416	GW	6	X	X								-09
MW-15	4/8/24/1308	GW	6	X	X								-10
Dup	4/8/24/1424	GW	6	X	X								-11

Notes: Report Results to: MStevens@apexcos.com;carmen.owens@apexcos.com; Kara.E.MASTER@deq.oregon.gov

Relinquished By:	Christine Weer	Agency/Agent:	Apex Companies	Received By:	Holly Williams	Agency:	Pace
Signature:		Time & Date:	4/9/24 15:30	Signature:		Time & Date:	4/10/24 915
Relinquished By:		Agency/Agent:		Received By:		Agency/Agent:	
Signature:		Time & Date:		Signature:		Time & Date:	

THIS PURCHASE IS SUBMITTED PURSUANT TO STATE OF OREGON SOLICITATION #**102-1098-07** AND PRICE AGREEMENT # **8903**. THE PRICE AGREEMENT INCLUDING CONTRACT TERMS AND CONDITIONS AND SPECIAL CONTRACT TERMS AND CONDITIONS (T'S &C'S) CONTAINED IN THE PRICE AGREEMENT ARE HEREBY INCORPORATED BY REFERENCE AND SHALL APPLY TO THIS PURCHASE AND SHALL TAKE PRECEDENCE OVER ALL OTHER CONFLICTING T'S AND C'S, EXPRESS OR IMPLIED.

4.2+0.1=4.3 DPAT

7359 4593 2092 2 TB
66 vials

Sample Receipt Checklist

COC Seal Present/Intact:	Y N	If Applicable	
COC Signed/Accurate:	Y N	VOA Zero Headspace:	Y N
Bottles arrive intact:	Y N	Pres. Correct/Check:	Y N
Correct bottles used:	Y N		
Sufficient volume sent:	Y N		
RA Screen <0.5 mR/hr:	Y N		

Appendix C

Historical Data

Table C-1
Groundwater Elevations and Field Parameters
Former Johnson Oil
Clatskanie, Oregon

Monitoring Well	Date	TOC Elevation (ft[1])	Depth to Groundwater (ft BTOC)	Depth to Product (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft[1])	pH	Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)
MW-4	5/10/2018	94.43	1.12	--	--	93.31	6.71	13.57	290	0.27	-67.4
	6/13/2018		1.30	--	--	93.13	--	--	--	--	--
	5/23/2019		0.97	--	--	93.46	6.44	13.34	283	--	-84.7
	7/10/2023		2.43	--	--	92.00	--	--	--	--	--
	9/16/2019		2.61	--	--	91.82	--	--	--	--	--
	10/17/2019		1.38	--	--	93.05	--	--	--	--	--
	3/29/2023		1.00	--	--	93.43	7.14	11.90	466	0.17	-136.1
	5/22/2023		1.77	--	--	92.66	6.92	13.50	460	0.28	-106.6
	9/21/2023		4.27	--	--	90.16	5.73	17.74	464	0.68	-115.4
	11/7/2023		0.9	--	--	93.53	6.43	15.82	585	0.23	-98.1
	2/26/2024		1.04	--	--	93.39	6.27	11.77	532	0.36	-39.9
	4/8/2024		1.30	--	--	93.13	6.75	12.64	566	1.40	-120.3
MW-5	5/23/2019	94.30	4.65	--	--	89.65	6.06	13.70	189	--	30.6
	7/10/2019		4.86	--	--	89.44	--	--	--	--	--
	9/16/2019		5.79	--	--	88.51	--	--	--	--	--
	10/17/2019		4.59	--	--	89.71	--	--	--	--	--
	3/29/2023		3.76	--	--	90.54	6.92	11.50	448	0.50	-137.5
	5/22/2023		3.94	--	--	90.36	6.64	13.00	339	0.80	-120.7
	9/21/2023		6.79	--	--	87.51	5.37	16.51	324	0.66	-98.5
	11/7/2023		2.56	--	--	91.74	6.24	15.35	417	0.18	-104
	2/26/2024		2.97	--	--	91.33	5.94	11.60	469	0.32	48.8
	4/8/2024		3.04	--	--	91.26	6.53	12.19	461	1.11	-125.3
MW-6	5/23/2019	95.57	4.57	--	--	91.00	5.95	13.76	181.000	--	3.00
	7/10/2019		6.55	--	--	89.02	--	--	--	--	--
	9/16/2019		7.31	--	--	88.26	--	--	--	--	--
	10/17/2019		7.48	--	--	88.09	--	--	--	--	--
	3/29/2023		4.61	--	--	90.96	6.94	12.30	576	0.30	-118.6
	5/22/2023		6.66	--	--	88.91	6.62	13.50	479	0.28	-84.8
	9/21/2023		7.68	--	--	87.89	5.64	17.73	452	0.62	-117.5
	11/7/2023		4.93	--	--	90.64	6.13	17.28	432	0.21	-78.8
	2/26/2024		4.88	--	--	90.69	5.99	12.50	469	0.58	-33.8
	4/8/2024		4.66	--	--	90.91	6.52	13.24	484	1.08	-108.4
MW-7	3/23/2019	95.04	8.02	--	--	87.02	5.64	15.12	644	2.65	45.8
	7/10/2019		6.23	--	--	88.81	--	--	--	--	--
	9/16/2019		7.33	--	--	87.71	--	--	--	--	--
	10/17/2019		10.39	--	--	84.65	--	--	--	--	--
	3/29/2023		5.37	--	--	89.67	6.79	13.60	673	0.07	-111.0
	5/22/2023		10.62	--	--	84.42	6.53	14.80	708	1.28	-73.2
	9/20/2023		6.20	--	--	88.84	5.35	19.00	491	0.61	-92.6
	11/7/2023		7.71	--	--	87.33	5.96	17.00	383	0.23	-32.0
	2/26/2024		8.07	--	--	86.97	5.93	13.81	578	0.77	-31.2
	4/8/2024		5.85	--	--	89.19	6.23	14.03	45	1.37	-52.5
MW-8	5/24/2019	96.22	5.43	--	--	90.79	6.25	14.55	886	--	-72.4
	7/10/2019		6.01	--	--	90.21	--	--	--	--	--
	9/16/2019		6.32	--	--	89.90	--	--	--	--	--
	10/17/2019		6.43	--	--	89.79	--	--	--	--	--
	3/29/2023		5.17	--	--	91.05	6.65	12.30	946	0.68	-99.6
	5/22/2023		5.74	--	--	90.48	6.41	14.20	827	0.23	-76.0
	9/20/2023		6.80	--	--	89.42	5.44	19.53	868	0.07	-130.4
	11/7/2023		6.11	--	--	90.11	6.11	18.30	902	0.34	-127.1
	2/26/2024		5.09	--	--	91.13	6.07	12.18	953	0.75	-56.8
	4/8/2024		5.33	--	--	90.89	6.36	12.62	896	0.00	-106.3

Please see notes at end of table.

Table C-1
Groundwater Elevations and Field Parameters
Former Johnson Oil
Clatskanie, Oregon

Monitoring Well	Date	TOC Elevation (ft[1])	Depth to Groundwater (ft BTOC)	Depth to Product (ft BTOC)	Product Thickness (ft)	Groundwater Elevation (ft[1])	pH	Temperature (°C)	Conductivity (µS/cm)	Dissolved Oxygen (mg/L)	ORP (mV)
MW-9	5/23/2019	94.54	10.41	--	--	84.13	4.62	12.90	610	2.88	34.1
	7/10/2019		10.28	--	--	84.26	--	--	--	--	--
	9/16/2019		8.21	--	--	86.33	--	--	--	--	--
	10/17/2019		4.68	--	--	89.86	--	--	--	--	--
	9/20/2023		9.09	--	--	85.45	3.71	15.44	146	3.77	256.0
	11/7/2023		5.07	--	--	89.47	4.99	14.47	52	2.19	223.0
MW-9	2/26/2024		4.90	--	--	89.64	4.43	9.82	51	4.33	256.5
	4/8/2024		6.54	--	--	88.00	4.94	10.95	62	3.96	238.4
MW-12	3/29/2023	99.06	4.41	--	--	94.65	6.51	11.80	389	1.36	71.5
	5/22/2023		4.78	--	--	94.28	6.47	13.20	371	0.32	-59.1
	9/21/2023		7.50	--	--	91.56	5.33	18.73	544	0.58	-103.8
	11/7/2023		5.26	--	--	93.80	6.11	16.18	325	0.38	-67.8
	2/26/2024		4.61	--	--	94.45	5.90	11.68	355	0.27	-23.3
	4/8/2024		5.11	--	--	93.17	6.33	12.64	331	1.13	86.8
MW-13	3/29/2023	98.28	2.75	--	--	95.53	7.95	10.60	670	0.00	-103.2
	5/22/2023		3.40	--	--	94.88	7.27	12.70	541	0.42	-87.9
	9/20/2023		5.67	--	--	92.61	6.03	18.42	912	0.60	-116.3
	11/7/2023		2.54	--	--	95.74	6.79	16.15	901	0.25	-65.3
	2/26/2024		2.67	--	--	95.61	6.85	9.59	352	0.56	-9.4
	4/8/2024		3.07	--	--	95.21	7.4	10.96	375	0.00	-125.2
MW-14	3/29/2023	99.28	7.95	--	--	91.33	6.51	11.40	507	0.08	-31.6
	5/22/2023		6.83	--	--	92.45	6.58	12.00	594	0.46	-38.6
	9/20/2023		10.00	--	--	89.28	5.69	15.44	705	0.58	-131.6
	11/7/2023		7.97	--	--	91.31	5.98	14.87	425	0.18	-90.5
	2/26/2024		8.05	--	--	91.23	5.9	11.78	335	0.65	-30.6
	4/8/2024		8.83	--	--	90.45	6.45	11.92	338	0.00	-106.8
MW-15	3/29/2023	100.32	8.30	--	--	92.02	6.46	11.90	699	4.83	51.6
	5/22/2023		6.78	--	--	93.54	6.63	12.00	445	0.30	-86.7
	9/20/2023		9.67	--	--	90.65	5.2	14.18	577	0.73	-72.9
	11/7/2023		7.87	--	--	92.45	5.95	13.72	348	0.21	-59.4
	2/26/2024		8.31	--	--	92.01	5.77	9.08	320	0.54	-16.0
	4/8/2024		9.21	--	--	90.07	6.45	11.31	407	0.00	-134.6

Notes:

1. Elevations are relative to an assumed reference datum of 100 feet (point located at the northwest corner of a concrete pad for a metal sign along Highway 30).
2. ft = feet
3. BTOC = Below Top of Casing.
4. NS = Not surveyed.
5. °C = Degrees Celsius.
6. µS/cm = MicroSiemens per centimeter
7. mg/L = Milligrams per liter.
8. ORP (mV) = Oxidation-reduction potential (millivolts).

Table C-2
Groundwater Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Monitoring Well Number	Sample Date	Concentrations in µg/L								
		TPH-G	Benzene	Toluene	Ethylbenzene	Total Xylenes	Methyl tert-butyl ether	Naphthalene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
MW-4	5/10/2018	14,400	18.5	10.9 J	619	1,720	<0.367	283 J	1,190	404
	5/23/2019	7,340	117	2.07	436	43.2	<0.0367	284	58.3	22.9
	3/29/2023	5,720	84.5	1.83	196	3.43	<0.101	213	1.05	0.934 J
	5/22/2023	4,660	87.6	<10.0	188	<30.0	<10.0	117 J-	<10.0	<10.0
	9/21/2023	4,950	60.8	1.29	287	2.69 J	<1.00	363	0.412 J	0.292 J
	11/8/2023	4,870	199.0	<20.0	354	9.63 J	<20.0	137	<20.0	<20.0
	2/27/2024	3,120	94.2	<20.0	104	7.88	<20.0	130	4.57	<20.0
	04/09/2024	3,450	117	<20.0	108	<60.0	<20.0	96.2	2.19	<20.0
MW-5	5/23/2019	3,590	46.2	5.82	428	45.8	<0.367	151	48.6	22.7
	3/30/2023	6,270	68.4	4.24	380	14.3	<0.101	178	0.561 J	1.99
	5/23/2023	4,790	56.3	3.2 J	208	7.81 J	<10.0	54.9 J-	<10.0	<10.0
	9/21/2023	3,430	32.0	2.13	200	9.57	<1.00	120	0.341 J	0.975 J
	11/8/2023	6,100	141	13.1	244	29.4 J	<10.0	220	<10.0	2.58 J
	2/27/2024	5,070	147	13.6	1,080	61.4	<10.0	331	24.2	3.07
	04/09/2024	7,910	155	11.1	970	51.0	<10.0	318	35.3	1.94
MW-6	5/23/2019	28,100	1,690	1,500	2,250	4,180	<18.4	241 J	809	206
	3/29/2023	1,490	609	8.50	240	194	<0.101	45.1	42.9	10.3
	5/22/2023	4,720	665	14.2 J	297	88.9 J	<50.0	<250 UJ	<50.0	11.1 J
	9/21/2023	2,450	379	6.25	92.7	41.1	<1.00	9.88	<1.00	2.57
	11/8/2023	6,250	772	11.2	230	74.3	<10.0	28.0 J	6.60 J	5.36 J
	2/27/2024	4,060	668	13.1	215	55.7	<10.0	19.6	3.09	7.72
	04/09/2024	6,860	576	10.4	152	31.5	<10.0	28.5	2.52	3.66
MW-7	5/23/2019	5,610	524	<8.24	396	1,020	45.7	37.4 J	269	49.3
	3/29/2023	42.7 J	96.6	1.93	70.5	138	24.3	12.8	28.2	7.53
	5/22/2023	4,910	518	4.15	410	411	36.9	71.5 J-	148	39.0
	9/21/2023	876	49.6	1.44	35.6	99.3	14.6	2.66 J	18.0	5.3
	11/8/2023	1,640	166	0.981 J	163	92.2	12.4	17.1	22.6	4.7
	2/27/2024	1,310	131	2.19	123	236	17.4	10.3	19.4	11.8
	04/09/2024	2,350	112	2.42	87.8	294	14.9	4.15	11.8	14.5

Please see notes at end of table.

Table C-2
Groundwater Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Monitoring Well Number	Sample Date	Concentrations in µg/L								
		TPH-G	Benzene	Toluene	Ethylbenzene	Total Xylenes	Methyl tert-butyl ether	Naphthalene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
MW-8	5/24/2019	**88.0**	**2.16**	<0.412	<0.384	**26.0**	<0.367	<1.00	**4.53**	**1.43**
	3/29/2023	**4,550**	<0.0941	<0.278	<0.137	**3.21**	**0.331 J**	<1.00	**0.486 J**	**0.258 J**
	5/22/2023	**189 J+**	<1.00	<1.00	<1.00	**11.5**	**0.273 J**	<5.00 UJ	**3.64**	**1.15**
	9/20/2023	**54.5 J**	<1.00	<1.00	**0.231 J**	**1.47 J**	**0.297 J**	<5.00	<1.00	**0.137 J**
	11/7/2023	**35.5**	**0.125 J**	<1.00	**0.587 J**	**0.923 J**	<1.00	**1.33 J**	<1.00	<1.00
	2/26/2024	**52.0 B**	<1.00	<1.00	<1.00	**4.26**	**0.296**	<5.00	**0.400**	<1.00
	04/08/2024	**84.8**	<1.00	<1.00	**0.206**	**8.77**	**0.336**	<5.00	**0.83**	**0.77**
MW-9	5/23/2019	**3,760**	**1,320**	**15.0**	**40.7**	**563.0**	<0.376	**3.31 J**	**141**	**44.3**
	9/20/2023	<100	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<1.00	<1.00
	11/7/2023	**55.7 J**	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<1.00	<1.00
	2/26/2024	**<100**	**<1.00**	**<1.00**	**<1.00**	**<3.00**	**<1.00**	**<5.00**	**<1.00**	**<1.00**
	04/08/2024	<100	<1.00	<1.00	<1.00	<3.00	<1.00	<5.00	<1.00	<1.00
MW-12	3/30/2023	**49,600**	**1,510**	**12,600**	**2,720**	**11,800**	<2.02	**508**	**1,980**	**519**
	5/23/2023	**82,400**	**2,930**	**13,600**	**3,090**	**14,300**	<500	<2,500 UJ	**1,910**	**621**
	9/21/2023	**31,000**	**4,540**	**145**	**1,490**	**3,870**	**15.3**	**193 J**	**1,120**	**297**
	11/8/2023	**104,000**	**4,150**	**13,200**	**4,650**	**22,500**	<50.0	**288**	**2,380**	**649**
	2/27/2024	**125,000**	**1,650**	**19,300**	**4,990**	**23,400**	<100	**511**	**724**	**797**
	04/09/2024	**120,000**	**1,810**	**15,900**	**3,410**	**17,500**	<100	**340**	**533**	**603**
MW-13	3/30/2023	**2,300**	**59.7**	**5.48**	**217**	**264**	<0.101	**53.5**	**205**	**117**
	5/23/2023	**2,550**	**123**	<10.0	**226**	**50.2**	<10.0	**18.8 J-**	**46.3**	**57.1**
	9/20/2023	**3,170**	**166**	<20.0	**279**	**16.1 J**	<1.00	**14.3**	**114**	**36.5**
	11/7/2023	**271**	**2.79**	<1.00	**10.4**	**1.47 J**	<1.00	<5.00	**1.96**	**0.177 J**
	2/26/2024	**98.3 B**	**1.45**	<1.00	**7.86**	**0.329**	<1.00	<5.00	<1.00	<1.00
	04/08/2024	**238**	**35.3**	**0.501**	**6.11**	<3.00	<1.00	<5.00	<1.00	**0.381**
MW-14	3/30/2023	**4,190**	**107**	**1.64**	**58.7**	**18.1**	<0.101	**15.3**	**9.54**	**1.68**
	5/23/2023	**6,080**	**1,230**	**8.69**	**34.6**	**15.6**	<1.00	**6.45 J-**	**38.0**	**23.8**
	9/20/2023	**4,570**	**703**	**4.08**	**46.7**	**7.73 J**	<1.01	**7.83**	<25.0	**22.4**
	11/8/2023	**3,300**	**370**	**6.99 J**	<25.0	**21.5 J**	<25.0	<125	<25.0	<25.0
	2/27/2024	**3,440**	**554**	**4.94**	**34.9**	**15.8**	<5.00	<25.0	**9.57**	**4.87**
	04/08/2024	**3,790**	**334**	**4.30**	**19.4**	**13.8**	<5.00	<25.0	**8.35**	**3.48**

Please see notes at end of table.

Table C-2
Groundwater Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Monitoring Well Number	Sample Date	Concentrations in µg/L								
		TPH-G	Benzene	Toluene	Ethylbenzene	Total Xylenes	Methyl tert-butyl ether	Naphthalene	1,2,4-Trimethyl-benzene	1,3,5-Trimethyl-benzene
MW-15	3/30/2023	**2,160**	**990**	**16.6**	**35.6**	**19.8**	**10.6**	**3.80 J**	**8.70**	**10.2**
	5/23/2023	**2,340**	**92.8**	<10.0	**45.1**	**11.2 J**	<10.0	<50 UJ	<10.0	<10.0
	9/20/2023	**2,590**	**250**	**2.96**	**20.9**	**2.98 J**	**6.43**	**1.84 J**	<10.0	<10.0
.	11/7/2023	**709**	**28.7**	**0.377 J**	**14.5**	**2.69 J**	<1.00	**3.84 J**	**0.727 J**	**0.157 J**
	2/26/2024	**940**	**27.6**	**0.518**	**33.2**	**6.20**	<1.00	**6.10**	**10.4**	<1.00
	04/08/2024	**1,010**	**35.1**	**0.895**	**28.5**	**3.26**	<1.00	**5.31**	**11.0**	<1.00
Groundwater to Indoor	Chronic	--	650	160,000	420,000	200,000	1,600,000	83,000	--	--
Air - Commercial	Acute	520	12	150,000	31	3,300	3,200	50	2,400	1,700
Groundwater in Excavation (RBC_{we})		14,000	1,800	220,000	4,500	23,000	63,000	500	6,300	7,500

Notes:

1. Volatile organic compounds by EPA Method 8260D.
2. GRO = Gasoline range organics by NWTPH-Gx Method.
3. µg/L = Micrograms per liter.
4. Only compounds of potential interest are present in table.
5. **Bold** values indicate concentration detected above the method detection limit.
6. < = Concentration was not detected above the shown minimum reporting limit.
7. B = Analyte concentration is less than 10 times greater than a detection in the method blank and the result may be biased.
8. J = Result is an estimated value.
9. J- = Result is an estimated value and may be biased low.
10. UJ = The analyte was not detected but the reporting limit may be inaccurate or imprecise.
11. DEQ Human Health RBC = Risk-Based Concentrations from the DEQ's *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (updated June 2023).
12. Shaded values represent exceedances of applicable RBCs:

Table C-3
Soil Vapor Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Sample Location	Former Produce Market	Former Service Station Building						Turning Point Building								Outdoor Samples		RBC_{sv} - Commercial	
Sample ID	SG-9	SG 1	SG 2	SG-10				SG-7				SG-8				SG 3	SG 6		
Date	5/23/2019	5/9/2018	5/10/2018	5/23/2019	4/4/2023	11/7/2023	2/26/2024	5/23/2019	4/4/2023	11/7/2023	2/26/2024	5/23/2019	4/4/2023	11/7/2023	2/26/2024	5/10/2018	5/10/2018	Chronic	Acute
Volatile Organic Compounds (VOCs) by EPA Method TO-15 in µg/m^3																			
Acetone	**38.3**	**27.6**	**9.98 J**	**212**	<2.97	**20.5**	**9.08**	**1,360**	<2.97	**8.72**	**32.1**	**73.7**	**14.1**	**11.9**	**3.26**	**1,180**	**5,680**	--	6,300,000
Allyl Chloride	--	--	--	--	<0.626	<0.626	<0.626	--	<0.626	<0.626	<0.626	--	<0.626	<0.626	<0.626	--	--	68	--
Benzene	**3.26**	<1.28	<1.28 J	**2.24**	<0.639	**0.684**	*<63.9*	<12.5	<0.639	<0.639	<0.639	<1.28	**0.684**	<0.639	<0.639	**11,400**	**33.8**	52	2,900
Benzyl Chloride	--	--	--	--	<1.04	<1.04	<1.04	--	<1.04	<1.04	<1.04	--	<1.04	<1.04	<1.04	--	--	8.3	24,000
Bromodichloromethane	--	--	--	--	<1.34	<1.34	<134	--	<1.34	<1.34	<1.34	--	<1.34	<1.34	<1.34	--	--	11	--
Bromoform	--	--	--	--	<6.21	<6.21	<6.21	--	<6.21	<6.21	<6.21	--	<6.21	<6.21	<6.21	--	--	370	--
Bromomethane	--	--	--	--	<0.776	<0.776	<0.776	--	<0.776	<0.776	<0.776	--	<0.776	<0.776	<0.776	--	--	730	400,000
1,3-Butadiene	--	--	--	--	<4.43	<4.43	<4.43	--	<4.43	<4.43	<4.43	--	<4.43	<4.43	<4.43	--	--	14	67,000
Carbon Disulfide	<1.24	**3.1**	**2.8**	**3.46**	<0.622	**0.890**	<0.622	<12.4	<0.622	<0.622	**3.70**	<1.24	**4.17**	<0.622	<0.622	**25.7**	**7.77**	100,000	630,000
Carbon Tetrachloride	--	--	--	--	<1.26	<1.26	<1.26	--	<1.26	<1.26	<1.26	--	<1.26	<1.26	<1.26	--	--	68	190,000
Chlorobenzene	--	--	--	--	<0.924	<0.924	<92.4	--	<0.924	<0.924	<0.924	--	<0.924	<0.924	<0.924	--	--	7,300	--
Chloroethane	--	--	--	--	**2.85**	<0.528	<0.528	--	<0.528	<0.528	**1.01**	--	<0.528	<0.528	<0.528	--	--	580,000	4,000,000
Chloroform	--	--	--	--	<0.973	<0.973	<0.973	--	<0.973	<0.973	<0.973	--	<0.973	<0.973	<0.973	--	--	18	50,000
Chloromethane	--	--	--	--	**3.53**	**0.554**	<0.413	--	<0.413	**0.591**	**3.74**	--	<0.413	**1.06**	<0.413	--	--	13,000	100,000
2-Chlorotoluene	--	--	--	--	<1.03	<1.03	<1.03	--	<1.03	<1.03	<1.03	--	<1.03	<1.03	<1.03	--	--	--	--
Cyclohexane	<1.38	<1.38	<1.38	<1.38	**1.69**	**8.16**	**1,540**	<13.8	<0.689	<0.689	<0.689	<1.38	<0.689	<0.689	<0.689	<1.38	5,390	880,000	--
Chlorodibromomethane	--	--	--	--	<1.70	<1.70	<170	--	<1.70	<1.70	<1.70	--	<1.70	<1.70	<1.70	--	--	--	--
1,2-Dibromoethane	<3.08	*<3.08*	*<3.08*	*<3.08*	*<1.54*	*<1.54*	*<154*	*<30.8*	*<1.54*	*<1.54*	*<1.54*	*<3.08*	*<1.54*	*<1.54*	*<1.54*	*<3.08*	*<3.08*	0.68	--
1,2-Dichlorobenzene	--	--	--	--	<1.20	<1.20	<1.20	--	<1.20	<1.20	<1.20	--	<1.20	<1.20	<1.20	--	--	29,000	--
1,3-Dichlorobenzene	--	--	--	--	<1.20	<1.20	<1.20	--	<1.20	<1.20	<1.20	--	<1.20	<1.20	<1.20	--	--	--	--
1,4-Dichlorobenzene	--	--	--	--	<1.20	<1.20	<1.20	--	<1.20	<1.20	<1.20	--	<1.20	<1.20	<1.20	--	--	37	1,200,000
1,2-Dichloroethane	<1.62	<1.62	<1.62	<1.62	<0.810	<0.810	*<81.0*	<16.2	<0.810	<0.810	<0.810	<1.62	<0.810	<0.810	<0.810	<1.62	<1.62	16	--
1,1-Dichloroethane	--	--	--	--	<0.802	<0.802	<0.802	--	<0.802	<0.802	<0.802	--	<0.802	<0.802	<0.802	--	--	260	--
1,1-Dichloroethene	--	--	--	--	<0.793	<0.793	<0.793	--	<0.793	<0.793	<0.793	--	<0.793	<0.793	<0.793	--	--	29,000	20,000
cis-1,2-Dichloroethene	--	--	--	--	**2.14**	<0.793	<0.793	--	<0.793	<0.793	<0.793	--	<0.793	<0.793	<0.793	--	--	5,800	--
trans-1,2-Dichloroethene	--	--	--	--	<0.793	<0.793	<0.793	--	<0.793	<0.793	<0.793	--	<0.793	<0.793	<0.793	--	--	5,800	80,000
1,2-Dichloropropane	--	--	--	--	<0.924	<0.924	<92.4	--	<0.924	<0.924	<0.924	--	<0.924	<0.924	<0.924	--	--	110	23,000
cis-1,3-Dichloropropene	--	--	--	--	<0.908	<0.908	<90.8	--	<0.908	<0.908	<0.908	--	<0.908	<0.908	<0.908	--	--	100	3,700
trans-1,3-Dichloropropene	--	--	--	--	<0.908	<0.908	<90.8	--	<0.908	<0.908	<0.908	--	<0.908	<0.908	<0.908	--	--	100	3,700
Dichlorodifluoromethane	--	2.12	<1.98	--	--	--	--	--	--	--	--	--	--	--	--	<1.98	<1.98	--	--
1,4-Dioxane	<1.44	--	--	<1.44	<0.721	<0.721	*<227*	<14.4	<0.721	<0.721	<2.27	**3.52**	<0.721	<0.721	<2.27	--	--	82	730,000
Ethanol	**98.9**	**70.5**	**17.9 J**	**259**	<4.71	**58.6**	**7.94**	**1,380**	**35.3**	**14.9**	**78.6**	**43.7**	**54.3**	**31.1**	**4.98 B**	**22.5**	**23.3**	--	--
Ethylbenzene	**17.5**	**4.84**	<1.73	<1.73	<0.867	<0.867	<0.867	**45.1**	**2.37**	**2.44**	**1.03**	<1.73	**5.20**	<0.867	<0.867	**320**	**4.52**	160	2,200,000
4-Ethyltoluene	**10.4**	**3.7**	<1.96	<1.96	<0.982	<0.982	<0.982	**516**	<0.982	**6.43**	**4.61**	**3.75**	<0.982	<0.982	<0.982	**43.5**	**2.2**	--	--
Trichlorofluoromethane	**3.49**	<2.25	<2.25	<3.07	**1.20**	<1.12	**1.20**	<22.5	<1.12	**1.48**	**1.61**	**3.46**	<1.12	**1.17**	**1.46**	**2.26**	<2.25	--	--
Dichlorodifluoromethane	**2.45**	--	--	**2.08**	**2.84**	**1.99**	**1.41**	<34.0	<0.989	**1.70**	**1.16**	**2.27**	**2.11**	**2.06**	**1.36**	--	--	15,000	--
1,1,2-Trichlorotrifluoroethane	--	--	--	--	<1.53	<1.53	<1.53	--	<1.53	<1.53	<1.53	--	<1.53	<1.53	<1.53	--	--	730,000	--
1,2-Dichlorotetrafluoroethane	--	--	--	--	<1.40	<1.40	<1.40	--	<1.40	<1.40	<1.40	--	<1.40	<1.40	<1.40	--	--	--	--

Please see notes at end of table.

Table C-3
Soil Vapor Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Sample Location	Former Produce Market	Former Service Station Building						Turning Point Building								Outdoor Samples		RBC_{sv} - Commercial	
Sample ID	SG-9	SG 1	SG 2	SG-10				SG-7				SG-8				SG 3	SG 6		
Date	5/23/2019	5/9/2018	5/10/2018	5/23/2019	4/4/2023	11/7/2023	2/26/2024	5/23/2019	4/4/2023	11/7/2023	2/26/2024	5/23/2019	4/4/2023	11/7/2023	2/26/2024	5/10/2018	5/10/2018	Chronic	Acute
Volatile Organic Compounds (VOCs) by EPA Method TO-15 in µg/m^3																			
Heptane	**7.86**	**10.6**	<1.64	<1.64	**8.51**	**2.57**	**2,090**	<16.4	<0.818	<0.818	**0.830**	<1.64	<0.818	<0.818	<0.818	<1.64	**409**	58,000	--
Hexachloro-1,3-butadiene	--	--	--	--	<6.73	<6.73	<6.73	--	<6.73	<6.73	<6.73	--	<6.73	<6.73	<6.73	--	--	19	--
n-Hexane	**3.32**	**4.32**	<1.41	**1.58**	**15.7**	<2.22	**2,240**	<14.1	<2.22	<2.22	<2.22	<1.41	<2.22	<2.22	<2.22	**40,100**	**3,020**	100,000	--
Isopropylbenzene	<1.97	<1.97	<1.97	<1.97	<0.983	<0.983	<0.983	**60.6**	**3.24**	**4.09**	<0.983	<1.97	<0.983	<0.983	<0.983	**18.5**	**4.34**	58,000	--
Methylene Chloride	**3.99**	**3.51**	<1.39	**2.89**	<0.694	**5.17**	<0.694	<13.9	<0.694	**1.50**	<0.694	**1.43**	<0.694	**3.09**	<0.694	<1.39	<1.39	41,000	210,000
Methyl Butyl Ketone	--	--	--	--	<5.11	<5.11	<511	--	<5.11	<5.11	<5.11	--	<5.11	<5.11	<5.11	--	--	4,400	--
2-Butanone (MEK)	<7.73	<7.37	<7.37	**20.6**	<3.69	**12.7**	<3.69	**403**	<3.69	<3.69	**3.98**	**16.1**	**9.94**	<3.69	<3.69	<7.37	<7.37	730,000	500,000
4-Methyl-2-pentanone (MIBK)	--	--	--	--	<5.12	<5.12	<512	--	<5.12	<5.12	<5.12	--	<5.12	<5.12	<5.12	--	--	440,000	--
Methyl Methacrylate	--	--	--	--	<0.819	<0.819	<81.9	--	<0.819	<0.819	<0.819	--	<0.819	<0.819	<0.819	--	--	100,000	--
Methyl Tert Butyl Ether (MTBE)	<1.44	<1.44	<1.44	<1.44	<0.721	<0.721	<0.721	<14.4	<0.721	<0.721	<0.721	<1.44	<0.721	<0.721	<0.721	<1.44	<1.44	1,600	800,000
Naphthalene	<6.60	<6.60	<6.60	<6.60	<3.30	<3.30	<3.30	**146**	<3.30	**9.32**	**71.2**	<6.60	<3.30	<3.30	<3.30	<6.60	<6.60	12	20,000
2-Propanol	**11.9**	**8.29**	<6.15	**19.4**	<3.07	**49.9**	**5.19**	**263**	<3.07	**4.99**	**17.3**	**102**	**7.25**	**9.78**	**3.22**	<6.15	<6.15	29,000	320,000
Propene	<1.38	<1.38	**4.22**	**2.71**	<2.15	<2.15	<2.15	<13.8	<2.15	<2.15	<2.15	**1.43**	<2.15	<2.15	<2.15	**422**	**2,090**	440,000	--
n-Propylbenzene	**2.36**	<1.96	<1.96	<1.96	<0.982	<0.982	<0.982	**134**	**6.97**	**8.2**	<0.982	<1.96	<0.982	<0.982	<0.982	<1.96	<1.96	150,000	--
Styrene	<1.70	<1.70	<1.70	<1.70	<0.851	<0.851	<0.851	<17.0	<0.851	<0.851	<0.851	<1.70	<0.851	<0.851	<0.851	**15**	<1.70	150,000	2,100,000
1,1,2,2-Tetrachloroethane	--	--	--	--	<1.37	<1.37	<1.37	--	<1.37	<1.37	<1.37	--	<1.37	<1.37	<1.37	--	--	7.1	--
Tetrachloroethylene	<2.72	**5.69**	**4.55**	**3.14**	<1.36	<1.36	<136	<27.2	<1.36	**2.96**	**1.84**	**5.31**	**6.22**	<1.36	<1.36	<2.72	<2.72	1,600	4,000
Tetrahydrofuran	<1.18	<1.18	<1.18	<1.18	<0.590	**1.30**	<0.590	<11.8	<0.590	<0.590	<0.590	**3.88**	<0.590	<0.590	<0.590	<1.18	<1.18	290,000	--
Toluene	**75.6**	**15.8**	**4.69 J**	**6.13**	<1.88	**6.55**	<188	**25.6**	**4.44**	**3.35**	<1.88	**3.04**	**10.1**	**3.09**	<1.88	**1,060**	**21**	730,000	770,000
1,2,4-Trichlorobenzene	--	--	--	--	<4.66	<4.66	<4.66	--	<4.66	<4.66	<4.66	--	<4.66	<4.66	<4.66	--	--	290	--
1,1,1-Trichloroethane	--	--	--	--	<1.09	<1.09	<1.09	--	<1.09	<1.09	<1.09	--	<1.09	<1.09	<1.09	--	--	730,000	1,100,000
1,1,2-Trichloroethane	--	--	--	--	<1.09	<1.09	<109	--	<1.09	<1.09	<1.09	--	<1.09	<1.09	<1.09	--	--	26	--
Trichloroethylene	--	--	--	--	**163**	<1.07	*<107*	--	<1.07	<1.07	<1.07	--	<1.07	<1.07	**1.78**	--	--	100	210
1,2,4-Trimethylbenzene	**8.58**	**15.3**	**2.5**	<1.96	<0.982	<0.982	<0.982	**844**	**49.1**	**52.5**	**51.5**	**6.77**	**1.13**	<0.982	<0.982	**10.5**	**4.3**	8,800	--
1,3,5-Trimethylbenzene	**3.31**	**4.87**	<1.96	<1.96	<0.982	<0.982	<0.982	**320**	**23.9**	**25.9**	**19.3**	<1.96	<0.982	<0.982	<0.982	**7.23**	<1.96	8,800	--
2,2,4-Trimethylpentane	**14.5**	--	--	<1.87	<0.934	<0.934	**2,210**	<18.7	**1.45**	<1.07	<0.934	<1.87	<0.934	<0.934	<0.934	--	--	--	--
Vinyl Chloride	--	--	--	--	**1.85**	<0.511	<0.511	--	<0.511	<0.511	<0.511	--	<0.511	<0.511	<0.511	--	--	93	130,000
Vinyl Bromide	--	--	--	--	<0.875	<0.875	<0.875	--	<0.875	<0.875	<0.875	--	<0.875	<0.875	<0.875	--	--	27	--
Vinyl Acetate	<1.41	<1.41	<1.41	<1.41	<0.704	<0.704	<2.22	<14.1	<0.704	<0.704	<2.22	<1.41	<0.704	<0.704	<2.22	<1.41	**18.9**	29,000	20,000
m&p-Xylene	--	--	--	--	<1.73	**1.82**	<1.73	--	**12.0**	**12.1**	**6.07**	--	**10.0**	<1.73	<1.73	--	--	--	--
o-Xylene	--	--	--	--	<0.867	<0.867	<0.867	--	**9.93**	**10.6**	**4.73**	--	**2.11**	<0.867	<0.867	--	--	15,000	--
Total Xylenes	**89.4**	**23.85**	**7.32**	**3.81**	--	--	--	**377**	--	--	--	**7.67**	--	--	--	**1,470**	**41.7**	15,000	870,000
TPH (GC/MS) Low Fraction	**953**	**2,300**	**479**	<413	<826	**1,160**	<82,600	**39,200**	**1,300 J+**	**1,400**	**967**	**531**	<826	<826	<826	**358,000**	**256,000**	--	--

Notes:

1. µg/m^3 = Micrograms per cubic meter.
2. **Bold** values indicate concentration detected above the minimum reporting limit.
3. Shaded values indicate concentrations detected above one or more applicable RBC.
4. *Italicized* values indicate a reporting limit above the applicable RBC
5. < = Concentration was not detected above the shown minimum reporting limit.
6. -- = Not available.
7. RBCsv = Soil Vapor Risk-Based Concentrations from the DEQ's *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (updated June 2023).

Table C-4
Ambient Air Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Sample Location	Produce Market	Service Station		Turning Point Building						Outdoor Samples			RBC_{air} - Commercial	
Sample ID	AA-3	AMB-4 (FS)		AA-1	AA-2	AMB-1 (TP)		AMB-2 (TP)		AA-BG	AMB-3 (OD)			
Date	6/13/2018	11/13/2023	2/26/2024	6/13/2018	6/13/2018	11/13/2023	2/26/2024	11/13/2023	2/26/2024	6/13/2018	11/13/2023	2/26/2024	Chronic	Acute
Volatile Organic Compounds (VOCs) by EPA Method TO-17 Passive RAD145 in µg/m³														
Acetone	**4.66**	--	--	**32**	**23.4**	--	--	--	--	<2.97	--	--	--	--
Benzene	**0.281**	**0.79**	--	**1.29**	**0.663**	**2.1**	**1.0**	**1.8**	**1.2**	**0.157**	**1.1**	**0.67**	1.6	87
2 Butanone (MEK)	<3.69	--	--	**4.82**	**3.95**	--	--	--	--	<3.69	--	--	--	--
Carbon tetrachloride	**0.522**	--	--	**0.499**	**0.5**	--	--	--	--	**0.48**	--	--	--	--
Chloroethane	<0.106	--	--	**0.256**	<0.106	--	--	--	--	<0.107	--	--	--	--
Chloromethane	**1.24**	--	--	**2.54**	**1.28**	--	--	--	--	**1.16**	--	--	--	--
Cyclohexane	--	**0.076**	--	--	--	**0.91**	**0.72**	**0.73**	**0.67**	--	**0.19**	**0.86**	26,000	--
1,2 Dibromoethane (EDB)	<0.154	--	--	<0.154	<0.154	--	--	--	--	<0.154	--	--	--	--
1,2 Dichloroethane (EDC)	**0.113**	--	--	**0.292**	**0.118**	--	--	--	--	**0.097**	--	--	--	--
Dichlorodifluoromethane	**2.13**	--	--	**1.99**	**2.43**	--	--	--	--	**1.97**	--	--	--	--
Ethanol	**8.1**	--	--	**172**	**136**	--	--	--	--	**1.84**	--	--	--	--
Ethylbenzene	**1.14**	**0.16**	--	**2.96**	**2.6**	**2.8**	**1.00**	**2.7**	**1.1**	<0.130	**0.2**	**0.12**	4.9	66,000
4 Ethyltoluene	<0.982	--	--	**1.27**	<0.982	--	--	--	--	<0.982	--	--	--	--
Heptane	<0.818	--	--	**1.42**	**0.858**	--	--	--	--	<0.818	--	--	--	--
n Hexane	<0.705	--	--	**1.18**	**1.1**	--	--	--	--	<0.705	--	--	--	--
Isopropylbenzene	<0.983	--	--	<0.983	<0.983	--	--	--	--	<0.983	--	--	--	--
Methyl tert butyl ether	<0.721	--	--	<0.721	<0.721	--	--	--	--	<0.721	--	--	--	--
Methylene Chloride	**1.67**	--	--	**1.38**	**1.9**	--	--	--	--	<0.694	--	--	--	--
Naphthalene	<3.3	--	--	<3.3	<3.3	--	--	--	--	<3.3	--	--	--	--
2 Propanol	<3.07	--	--	**8.56**	**4.55**	--	--	--	--	<3.07	--	--	--	--
n Propylbenzene	<0.982	--	--	<0.982	<0.982	--	--	--	--	<0.982	--	--	--	--
Styrene	<0.851	**0.19**	--	**0.87**	<0.851	**0.62**	**0.36**	**0.66**	**0.52**	<0.851	**0.25**	**0.085**	4,400	63,000
Tetrachloroethene	<0.136	**1.000**	--	**0.29**	**0.175**	**0.079**	**0.053**	**0.095**	**0.056**	<0.136	**0.065**	**0.044**	47	120
Tetrahydrofuran	<0.590	--	--	**4.02**	**3.58**	--	--	--	--	<0.590	--	--	--	--
Toluene	**1.52**	**0.81**	--	**8.56**	**6.85**	**18 E**	**6.7 E**	**18 E**	**>6.3 S**	<0.753	**0.90**	**0.64**	22,000	23,000
1,1,1 Trichloroethane	<0.109	<0.058	--	**0.672**	**0.503**	<0.058	<0.05	<0.058	<0.05	<0.109	<0.058	<0.05	3	6.3
Trichloroethylene	--	**0.042**	--	--	--	<0.021	<0.018	<0.021	<0.018	--	<0.021	<0.018	3	6.3
Trichlorofluoromethane	**1.44**	--	--	**2.73**	**2.26**	--	--	--	--	**1.30**	--	--	--	--
1,2,4 Trimethylbenzene	<0.982	--	--	**1.6**	**1.5**	--	--	--	--	<0.982	--	--	--	--
1,3,5 Trimethylbenzene	<0.982	--	--	<0.982	<0.982	--	--	--	--	<0.982	--	--	--	--
2,2,4 Trimethylpentane	<0.934	--	--	**1.12**	**1.25**	--	--	--	--	<0.934	--	--	--	--

Please see notes at end of table.

Table C-4
Ambient Air Analytical Results
Former Johnson Oil
Clatskanie, Oregon

Sample Location	Produce Market	Service Station		Turning Point Building						Outdoor Samples			RBC_{air} - Commercial	
Sample ID	AA-3	AMB-4 (FS)		AA-1	AA-2	AMB-1 (TP)		AMB-2 (TP)		AA-BG	AMB-3 (OD)			
Date	6/13/2018	11/13/2023	2/26/2024	6/13/2018	6/13/2018	11/13/2023	2/26/2024	11/13/2023	2/26/2024	6/13/2018	11/13/2023	2/26/2024	Chronic	Acute
Volatile Organic Compounds (VOCs) by EPA Method TO-17 Passive RAD145 in µg/m^3														
Vinyl Acetate	<0.070	--	--	**0.143**	**0.167**	--	--	--	--	<0.070	--	--	--	--
m&p-Xylene	--	**0.5**	--	--	--	**11 E**	**3.8 E**	**3.600**	**3.900**	--	**0.55**	**0.34**	880	--
o-Xylene	--	**0.19**	--	--	--	**3.6**	**1.4**	**0.66**	**1.5**	--	**0.22**	**0.14**	440	--
Total Xylenes	**2.09**	--	--	**14.31**	**14.36**	--	--	--	--	<1.73	--	--	--	--
TPH-Low Fraction	<207	--	--	<207	<207	--	--	--	--	<207	--	--	--	--

Notes:

1. µg/m^3 = Micrograms per cubic meter.
2. Bold values indicate concentration detected above the minimum reporting limit.
3. Shaded values indicate concentrations detected above one or more applicable RBC.
4. -- = Not available.
5. E = Estimated concentration that may be biased high.
6. S = Saturated Peak; data reported as estimated
7. RBCair = Ambient Air Risk-Based Concentrations from the DEQ's *Risk-Based Decision Making for the Remediation of Petroleum-Contaminated Sites* (updated June 2023).
8. TP = Turning Point building, OD = outdoor, FS = former station building