

# GROUNDWATER MONITORING REPORT

CIRCLE K STORE #2706042  
10171 U.S. HIGHWAY 12  
NACHES, WASHINGTON 98937

SAMPLING DATE: July 27, 2021

PREPARED FOR:



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BLAES PROJECT #202-06042-10

AUGUST 12, 2021

This *Groundwater Monitoring Report* has been prepared by Blaes Environmental Management, Inc. for the exclusive use of Circle K Stores Inc. as it pertains to Circle K Store #2706042 located at 10171 U.S. Highway 12 in Naches, Washington. Our professional services have been performed using that degree of care and skill ordinarily exercised under similar circumstances by other geologists, engineers, and environmental consultants practicing in this field. No other warranty, express or implied, is made as to the professional advice in this report. *Any use of or reliance on this report by a third party shall be at such a party's sole risk.*

Blaes Environmental Management, Inc. can offer no assurances and assumes no responsibility for site conditions or activities outside the scope of the inquiry requested by Circle K Stores Inc. as outlined in this document. It should be understood by all parties that Blaes Environmental Management, Inc. has relied on the accuracy of documents, oral information, and other materials, services, and information provided by Circle K Stores Inc., subcontractors, and other associated parties. Any subsequent modification, revision or verification of this report must be provided in writing by Blaes Environmental Management, Inc.

All work associated with this project will be performed under the supervision of a State of Washington Licensed Geologist/Hydrogeologist.

Prepared By:  
Blaes Environmental Management, Inc.



Daniel M. Blaes, L.G.  
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Washington Geologist/Hydrogeologist #2158

Blaes Project #202-06042-10

August 12, 2021



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## **1.0 INTRODUCTION**

This groundwater monitoring report was prepared by Blaes Environmental Management, Inc. (Blaes Environmental), on behalf of Circle K Stores Inc. (Circle K) for Circle K Store #2706042 located at 10171 U.S. Highway 12 in Naches, Washington (Figure 1). This periodic groundwater monitoring program was conducted following a detection of petroleum hydrocarbon constituents in 2013 near the intersection of Naches Avenue and Highway 12 (associated with a past release at the site) and following ongoing soil and groundwater remediation efforts at the property. This is the third event that was conducted following the installation of an additional groundwater monitoring well (MW-9) on the property located across Highway 12 south of the Circle K site.

In July 2021, Blaes Environmental conducted another groundwater monitoring event at the site using one onsite groundwater monitoring well (MW-3) and the offsite groundwater monitoring well (MW-9) for this event. The sampling event involved: (1) measuring the depth to groundwater in the two wells to be sampled and four additional wells on site (six wells); (2) purging and collecting a groundwater sample from wells MW-3 and MW-9 and (3) analyzing the groundwater samples at an analytical laboratory for petroleum constituents.

The data from this sampling event was compared to the data from the past groundwater sampling events as a continued evaluation of the effectiveness of the air sparge injection events conducted during the summers of 2017 and 2018 and the summer of 2019. The following sections of this report include the description of the procedures and findings of the July 2021 groundwater monitoring event.

## **2.0 BACKGROUND INFORMATION**

This section presents information regarding the site and provides a summary of the site background. The information was obtained from public records, the project files of Blaes Environmental, and the records of Circle K.

### **2.1 SITE LOCATION AND LAND USE**

The property is located on the northwest corner of the intersection of Naches Avenue and Highway 12 in Naches, Washington. The property is within Section 4, Township 14 North, Range 17 East of the Naches Washington U.S. Geological Survey 7 ½ -minute Topographic Quadrangle. The property consists of a concrete and asphalt-paved lot with one existing single-story building (the Circle K Store) and three product dispensers. The site features are shown on the Site Plan in Figure 2. Global Positioning System (GPS) readings locate the site at approximately latitude 46 degrees, 43 minutes, 43.32 seconds North and longitude 210 degrees, 42 minutes, 01.73 seconds West as measured on Google Earth 2013.

The area surrounding the site consists of a mixture of commercial businesses and residential development. Commercial businesses are located southeast, west, and east-southeast of the site. Residential development is located south (across Highway 12), immediately north, and east (across the Naches Avenue), of the site.

### **2.2 SITE PHYSIOGRAPHY**

The property lies at an elevation of approximately 1468 feet above Mean Sea Level (Google Earth 2013). Natural surface drainage in the area is towards the south-southwest towards the Naches River (U.S. Geological Survey 7 ½ -minute Topographic Quadrangle). On-site drainage is predominantly away from the building, towards the storm drains, to the north and east and east to Naches Avenue.

### **2.3 SITE LITHOLOGY AND DEPTH TO GROUNDWATER**

The soil types in the immediate vicinity consists of Naches River Deposits. These deposits are composed of brown sandy loam with approximately 80 percent gravel, cobbles, and boulders up to approximately two feet (2) in diameter. The highly coarse soils extend to a depth of at least 25 feet below the ground surface. The soils in the lower part of the zone contain some clay.

Groundwater was encountered within the tank pit at approximately 11 feet below the ground surface in 1992 and logs of wells in the area also show the water level to be between 9 and 13 feet below the ground surface depending on the season of year. Groundwater was encountered at a depth of approximately 9 to 11 feet below the ground surface within the wells sampled during this investigation. Groundwater flow is predominantly toward the south at the site.

## 2.4 SENSITIVE RECEPTORS

The Naches River is approximately 1,500 feet south of the site and the open irrigation ditch (trending approximately north-south) is approximately 75 feet east of the site. There are no additional surface water bodies or wetlands within one-mile of the site. Residences are located directly north of the site, across Naches Avenue to the east, and across U.S. Highway 12 to the south of the site.

The Naches Valley Middle School is located approximately 1,287 feet east-northeast of the site. The Naches Valley Intermediate School is located approximately 1,689 feet east-northeast of the site. The Naches Valley High School is located approximately 2,914 feet north-northwest of the site.

## 2.5 PREVIOUS INVESTIGATIONS

### 2.5.1 Limited Site Check: 1992

Previous investigations conducted at the site included a limited site check and sampling program in 1992 at the former Naches Chevron Facility. The investigation indicated gasoline range organics (GRO) in soil and GRO and lead in groundwater, adjacent to the former supreme unleaded gasoline UST, in excess of WDOE "Method A Clean-Up Levels". An Interim Status Report was prepared and submitted to the WDOE by Sage Earth Sciences, Inc. in October 1992. After the leak had been repaired the excavation was reportedly left open for approximately 15 months and then backfilled around the existing USTs.

### 2.5.2 UST Removal: 1998

In 1994 the three existing USTs were removed and replaced with fiberglass USTs. Subsequent soil and groundwater sampling during the tank removal revealed GRO in the groundwater beneath the site. Concentrations of soluble lead were not found in the soil sample collected at the site. The groundwater sample was not analyzed for soluble lead during this program. A UST Closure Site Assessment & Interim Remediation Report was prepared and submitted to the WDOE by White Shield, Inc. in March 1994.

### 2.5.3 WDOE Correspondence 1998-2001

In October 1998 the property owner, Mr. Mike Abhold, contacted WDOE indicating that he “believes that natural attenuation mechanisms have cleaned the residual groundwater at this site” and he wanted input from WDOE. WDOE responded to Mr. Abhold indicating that “groundwater samples to confirm natural attenuation and a site cleanup report” would be required. In 2001 the UST file was reviewed by Mr. Brian T. Deeken with WDOE and it was determined that there had been no change of status at the site since 1998. Based on this file review, Mr. John Mefford, L.G. the current WDOE manager for this site contacted Circle K (following the purchase of the site from Sun Pacific Energy) asking for the current site status.

### 2.5.4 Site Characterization Activities

Circle K contracted Blaes Environmental to conduct a program to determine if groundwater beneath the site had been impacted by petroleum hydrocarbons. The program included drilling and installation of four groundwater monitoring wells and collection and analyses of groundwater samples and the preparation of the October 2013 Site Characterization Report documenting the activities. Cascade Drilling of Woodinville, Washington was contracted to drill the soil borings for the four wells using a hollow-stem auger drilling rig. The boreholes were drilled on July 22 and 23, 2013 to depths ranging from approximately 14 feet below the ground surface (MW-3) to approximately 15’ below the ground surface (MW-1) before large cobbles triggered auger refusal.

A total of five soil samples (one from wells MW-2, MW-3, and MW-1 and two from MW-1) were collected during the site characterization program and delivered by Blaes Environmental, under proper chain-of-custody record, to Test America in Seattle, Washington. Soil samples from the soil borings were analyzed for NWTPH-GX (GRO), NWTPH-DX (DRO), and for VOCs including Benzene, Toluene, Ethylbenzene, & Total Xylenes (BTEX), fuel oxygenates including methyl-tert butyl ether (MTBE), and ethylene dibromide (EDB) according to EPA Method 8260. Laboratory analytical results indicated concentrations of m-Xylenes & p-Xylenes (3.4 ug/Kg) and 1,2,4-Trimethylbenzene above laboratory reporting limits in the soil sample collected from the boring at MW-3 near the intersection. No other detectable concentrations of GRO, DRO, BTEX, VOC, or EDB were found in any other soil sample.

### 2.5.5 Groundwater Monitoring and Sampling

On August 18, 2013 Blaes Environmental conducted a groundwater monitoring and sampling event within the newly installed wells. The groundwater monitoring and sampling event consisted of three

tasks: 1) measuring the depth to groundwater in the wells; 2) purging water from each well using a low-flow device and collecting a groundwater sample; and 3) analyzing the groundwater samples at a State of Washington certified analytical laboratory. A copy of the report entitled *Site Characterization Report*, prepared by Blaes Environmental, dated October 31, 2013, is on file with WDOE.

On August 8, 2014, Blaes Environmental conducted a groundwater monitoring and sampling event within the four groundwater monitoring wells at the site (MW-1, MW-2, MW-3, and MW-4). The groundwater monitoring and sampling event consisted of three tasks: 1) measuring the depth to groundwater in the wells; 2) purging water from each well using low-flow pump and collecting a groundwater sample from each well; and 3) analyzing the groundwater samples at a State of Washington certified analytical laboratory. A copy of the report entitled *Groundwater Monitoring Report*, prepared by Blaes Environmental, dated August 25, 2014, is on file with WDOE.

On December 10, 2014, Blaes Environmental conducted a groundwater monitoring and sampling event within the four groundwater monitoring wells at the site (MW-1, MW-2, MW-3, and MW-4). The groundwater monitoring and sampling event consisted of three tasks: 1) measuring the depth to groundwater in the wells; 2) purging water from each well using low-flow pump and collecting a groundwater sample from each well; and 3) analyzing the groundwater samples at a State of Washington certified analytical laboratory. A copy of the report entitled *Groundwater Monitoring Report*, prepared by Blaes Environmental, dated December 31, 2014, is on file with WDOE.

On May 28, 2015, Blaes Environmental conducted another groundwater monitoring and sampling event within the four groundwater monitoring wells at the site (MW-1, MW-2, MW-3, and MW-4). The groundwater monitoring and sampling event consisted of three tasks: 1) measuring the depth to groundwater in the wells; 2) grabbing a groundwater sample from each well without purging; and 3) analyzing the groundwater samples at a State of Washington certified analytical laboratory. A copy of the report entitled *Groundwater Monitoring Report*, prepared by Blaes Environmental, dated June 8, 2015, is on file with WDOE.

On November 12, 2015, Blaes Environmental conducted a groundwater monitoring and sampling event within the four groundwater monitoring wells at the site (MW-1, MW-2, MW-3, and MW-4). The groundwater monitoring and sampling event consisted of three tasks: (1) measuring the depth to groundwater in the wells, and (2) analyzing the groundwater samples at a State of Washington certified

analytical laboratory. A copy of the report entitled *Groundwater Monitoring Report*, prepared by Blaes Environmental, dated December 21, 2015, is on file with WDOE.

#### 2.5.6 Additional Groundwater Monitoring and Remediation Well Installation

In June 2016, Blaes Environmental, in conjunction with Cascade Drilling of Federal Way, Washington installed four additional groundwater monitoring wells and 11 air sparge remediation wells at the site. The objective of the additional monitoring wells was to further understand the lateral distribution of petroleum hydrocarbon concentrations under the property. The objective of the air sparge wells was to provide a remediation mechanism to start reducing the volatile hydrocarbon constituents at the site.

The four new groundwater monitoring wells (MW-5, MW-6, MW-7, and MW-8) were each drilled to a depth of approximately 25 feet below the ground surface using a sonic drilling rig. Each 2-inch diameter PVC monitoring well was screened from approximately 5 feet to 25 feet below the ground surface. The 11 new air sparge remediation wells were each drilled to a depth of approximately 25 feet below the ground surface using a sonic drilling rig. Each 2-inch diameter PVC monitoring well was screened from approximately 20 feet to 25 feet below the ground surface. The location of each new well is shown on the Site Plan in Figure 2. Additional data from this well installation program will be submitted in a separate report.

#### 2.5.7 Subsequent Groundwater Monitoring and Sampling

In March 2017, an additional groundwater sampling event was conducted to evaluate the site conditions prior to the 2017 remediation events. The results of the sampling event were submitted to WDOE in a report dated May 1, 2017. The results of the March 2017 sampling event showed an additional rebound in the petroleum hydrocarbons but a reduction in benzene and other hydrocarbon constituents. The only monitoring well with hydrocarbon detections was MW-3 near the southeast corner of the property.

In June 2017, an additional groundwater sampling event was conducted to evaluate the site conditions prior to the summer 2017 remediation events. The results of the sampling event were submitted to WDOE in a report dated July 9, 2017. The results of the June 2017 sampling event showed a decrease in the petroleum hydrocarbons. Again, the only monitoring well with hydrocarbon detections was MW-3 near the southeast corner of the property.

In September 2017, an additional groundwater sampling event was conducted to evaluate the site conditions prior to the summer 2017 remediation events. The results of the sampling event were submitted to WDOE in a report dated October 13, 2017. The results of the September 2017 sampling event showed a decrease in the petroleum hydrocarbons. Again, the only monitoring well with hydrocarbon detections was MW-3 near the southeast corner of the property.

In December 2017, an additional groundwater sampling event was conducted to evaluate the site conditions prior to the summer 2018 remediation events. The results of the sampling event were submitted to WDOE in a report dated December 15, 2017. The results of the December 2017 sampling event showed a slight decrease in the petroleum hydrocarbons. Again, the only monitoring well with hydrocarbon detections was MW-3 near the southeast corner of the property.

In March 2018, an additional groundwater sampling event was conducted to evaluate the site conditions prior to the summer 2018 remediation events. The results of the sampling event were submitted to WDOE in a report dated March 16, 2018. The results of the March 2018 sampling event showed a slight decrease in the petroleum hydrocarbons compared with the December 2017 event. Again, the only monitoring well with hydrocarbon detections was MW-3 near the southeast corner of the property.

In July 2018, an additional groundwater sampling event was conducted to evaluate the site conditions prior to the autumn 2018 remediation events. The results of the sampling event were submitted to WDOE in a report dated July 31, 2018. The results of the July 2018 sampling event showed a slight decrease in the petroleum hydrocarbons compared with the March 2018 event. Again, the only monitoring well with hydrocarbon detections was MW-3 near the southeast corner of the property.

In September 2018, an additional groundwater sampling event was conducted at the site. The results of the sampling event were submitted to WDOE in a report dated September 24, 2018. The results of the September 2018 sampling event showed a decrease in the petroleum hydrocarbons compared with the July 2018 event. Again, the only monitoring well with hydrocarbon detections was MW-3 near the southeast corner of the property.

In late November 2018, an additional groundwater sampling event was conducted at the site. The results of the sampling event were submitted to WDOE in a report dated December 19, 2018. The results of the December 2018 sampling event showed about the same level of petroleum hydrocarbon

constituents compared with the July 2018 and September 2018 events. Again, the only monitoring well with hydrocarbon detections was MW-3 near the southeast corner of the property.

In April 2019, an additional groundwater sampling event was conducted at the site. The results of the sampling event were submitted to WDOE in a report dated May 3, 2019. The results of the April 2019 sampling event showed about the same level of petroleum hydrocarbon constituents compared with the November 2018 event. Again, the only monitoring well with hydrocarbon detections was MW-3 near the southeast corner of the property.

In July 2019, an additional groundwater sampling event was conducted at the site. The results of the sampling event were submitted to WDOE in a report dated July 26, 2019. The results of the July 2019 sampling event showed a decrease in the benzene level in well MW-3 compared to the previous sampling event. Again, the only monitoring well with hydrocarbon detections was MW-3 near the southeast corner of the property.

In September 2019, an additional groundwater sampling event was conducted at the site. The results of the sampling event were submitted to WDOE in a report dated October 17, 2019. The results of the September 2019 sampling event showed a continued impact of TPH in well MW-3 only. The only monitoring well with hydrocarbon detections was MW-3 near the southeast corner of the property. The benzene concentration in that well remained below the WDOE MTCA action level.

In January 2020, an additional groundwater sampling event was conducted at the site. The results of the sampling event were submitted to WDOE in a report dated February 13, 2020. The results of the January 2020 sampling event showed a continued impact of TPH in well MW-3 on the southeastern portion of the site. The benzene concentration in that well remained below the WDOE MTCA action level.

In May 2020, an additional groundwater sampling event was conducted at the site. The results of the sampling event were submitted to WDOE in a report dated May 16, 2020. During this sampling event, there was a decrease in benzene in the groundwater within well MW-3 and decreases in gasoline Range and diesel Range Organics in well MW-3 from this event compared to the sampling event conducted in January 2020. The benzene concentration is still below the MTCA Method A level and now both the gasoline and diesel range organics were also below MTCA Method A levels.

In November 2020, an additional groundwater sampling event was conducted at the site. The results of the sampling event were submitted to WDOE in a report dated December 12, 2020. Based on the analytical results from the groundwater samples, there was a slight increase in benzene in the groundwater within well MW-3 and a larger increase in gasoline Range and diesel Range Organics in well MW-3 from this event compared to the sampling event conducted in May 2020. The benzene concentration in well MW-3 is still below the MTCA Method A level but now both the gasoline and diesel range organics are back up above the MTCA Method A levels. The laboratory results from the groundwater sample collected from the newly installed well MW-9 show slight concentrations of both benzene and toluene with both concentrations below the MTCA Method A respective levels.

In April 2021, an additional groundwater sampling event was conducted at the site. The results of the sampling event were submitted to WDOE in a report dated May 1, 2021. Based on the analytical results from the groundwater samples collected on April 20, 2021, there was a decrease in benzene in the groundwater within well MW-3 and MW-9 compared to the sampling event conducted in November 2020. The benzene concentrations in wells MW-3 and MW-9 were still below the MTCA Method A level but the diesel range organics in well MW-3 was above the MTCA Method A levels during the event.

#### 2.5.8 Soil Vapor Extraction and Groundwater Air Sparge Events

In August 2016, during a scheduled addition of diesel fuel and fuel system repipe project the site by Circle K, Blaes Environmental conducted a soil vapor extraction and groundwater air sparging remediation pilot test event at the site. The objective of the pilot test program was to evaluate whether petroleum hydrocarbon concentrations in the vadose zone soil and in the groundwater saturated zone could be significantly reduced in the southeast part of the site without installing a full fixed-based remediation system. The program utilized a mobile trailer-mounted all-electric catalytic oxidizer (powered by its own diesel generator) to extract and treat soil vapor and a mobile air sparge compressor (powered by a separate diesel generator) to inject air. All of the equipment was located near the corner of the intersection. Select monitoring wells were used as the vapor extraction points and many of the new air sparge wells were used to inject air into the groundwater during the test.

The air sparge test was conducted from August 15, 2016 to August 26, 2016. The vapor extraction test was completed near the end of the air sparge test from August 24, 2016 to August 26, 2016 in part to recover vapors from the previous days of sparge testing. During both feasibility tests, Blaes

Environmental recorded system parameters and monitored the uptime of each system. Additional details from this pilot test program will be presented in a separate pilot test report.

On June 23, 2017, Blaes Environmental conducted a one-day additional air sparge injection event at the site. A small air compressor was used to inject air into sparge well AS-5 near monitoring well MW-3. The event last approximately three hours with a flowrate of approximately 5 cubic feet per minute at a pressure of approximately 3 pounds per square inch into AS-5.

During the summer of 2017, Blaes Environmental conducted four additional one-day additional air sparge injection events at the site. During each event (July 7, 2017, July 17, 2017, July 27, 2017, and August 2, 2017), a small air compressor was used to inject air into sparge well AS-5 near monitoring well MW-3. Each event last between four and eight hours of runtime with a flowrate of approximately 5 cubic feet per minute at a pressure of approximately 3 pounds per square inch into AS-5.

During the summer of 2018 (August 29, 2018 to September 7, 2018), Blaes Environmental conducted additional air sparge injection events at the site. During each event, a small air compressor was used to inject air into a combination of sparge wells AS-5 and AS-6 near monitoring well MW-3. During each event, the flowrate into the air sparge well was approximately 5 cubic feet per minute at a pressure of approximately 3 pounds per square inch.

During the summer of 2019 (July 1, 2019 to August 22, 2019), Blaes Environmental conducted six separate additional air sparge injection events at the site. During each event, a small air compressor was used to inject air into sparge well AS-5 near monitoring well MW-3. During each event, the flowrate into the air sparge well was approximately 5 cubic feet per minute at a pressure of approximately 3 pounds per square inch.

#### 2.5.9 Additional Groundwater Monitoring Well Installation of MW-9

On November 9, 2020, Blaes Environmental, in conjunction with Cascade Drilling of Woodinville, Washington installed one additional groundwater monitoring well MW-9 across Highway 12 south of the Circle K site. The objective of the additional monitoring well was to further understand the lateral distribution of petroleum hydrocarbon concentrations in groundwater from the past release at the Circle K station (before Circle K operated the station).

The groundwater monitoring well MW-9 was drilled to a depth of approximately 12 feet below the ground surface using a hollow-stem auger drilling rig where the rig met auger refusal on cobbles. The drilling was very difficult through gravel and cobbles starting at a depth of approximately 3 feet below the ground surface. No soil samples could be recovered from the boring due to the difficult drilling conditions. The ground surface elevation at well MW-9 was approximately 2-3 feet below the ground elevation of the Circle K station.

A 2-inch diameter PVC monitoring well installed within the boring and screened from approximately 7 feet to 12 feet below the ground surface at the well location (across the expected static groundwater zone). The location of well MW-9 is shown on the Site Plan in Figure 3.

### **3.0 GROUNDWATER MONITORING PROGRAM**

A groundwater monitoring and sampling event was conducted at the site in July 2021 by personnel from Blaes Environmental. The objective of the program was to evaluate the groundwater conditions at the site for a third time following the installation of offsite well MW-9. The data from this event was compared to the data from the May 2020, November 2020, and April 2021 sampling events to determine if the lateral extent of petroleum hydrocarbon constituents has been defined to the south of the Circle K property. Details of the July 2021 groundwater sampling event are provided in the following sections.

#### **3.1 GROUNDWATER MONITORING AND SAMPLING**

On July 27, 2021, Blaes Environmental conducted the groundwater monitoring and sampling event within one existing onsite groundwater monitoring well MW-3 at the Circle K property and within one off site well to the south (MW-9). The event consisted of three tasks: (1) measuring the depth to groundwater in six of the wells associated with the release case to obtain a groundwater gradient and update the site historical hydrograph, (2) purging well MW-3 and well MW-9 using low-flow procedures and collecting a groundwater sample from the well, and (3) analyzing the groundwater samples at a State of Washington certified analytical laboratory. A description of each task is presented in the following sections.

##### **3.1.1 Groundwater Depth Measurements and Gradient**

The depth to groundwater in six monitoring wells (MW-1, MW-3, MW-4, MW-6, MW-8, and MW-9) was measured to the nearest 0.01 foot using a groundwater level indicator. Depths to water ranged from 9.97 feet (MW-9) to 11.52 feet (MW-4) and averaged 10.50 feet across the site. The water level measurement probe was washed with a Liquinox™ solution and rinsed with tap water before and after each groundwater depth measurement to prevent cross contamination. A summary of the depth to water/elevation data from the July 27, 2021 sampling event is included in Table 1. The field data sheets showing the depth to groundwater measurements are included in Appendix A.

The depth to groundwater was measured from a permanent mark on the top of the uncapped PVC well casing. Using the elevation of the well casing at that same mark (including the new survey data from MW-9), Blaes Environmental calculated the elevation of groundwater in the well during the monitoring event by subtracting the measured depth to groundwater within the well from the surveyed wellhead elevation. On July 27, 2021, the average groundwater elevation at the site was 1455.29 feet.

The groundwater flow direction was to the south-southwest at a gradient of approximately 0.005 feet/foot. A diagram of the groundwater flow direction and gradient is presented in Figure 3. A hydrograph of groundwater elevations is presented in Figure 4.

### 3.1.2 Groundwater Sample Collection

Groundwater monitoring wells MW-3 and MW-9 were purged using low-flow procedures during this sampling event. A groundwater sample was collected directly from the low-flow purge water stream from the groundwater monitoring well to evaluate the current dissolved petroleum hydrocarbon concentrations in the groundwater at that location. The groundwater sample was placed into laboratory supplied sample containers. The sample containers were sealed with Teflon lined caps, labeled, and placed on ice in a cooler. A written record of the sample was entered onto a chain-of-custody document for transport to the analytical laboratory.

### 3.1.3 Groundwater Laboratory Analyses

The groundwater samples were delivered to Eurofins Test America in Fife, Washington for laboratory analyses. The groundwater samples from MW-3 and MW-9 were analyzed for Total Petroleum Hydrocarbons gasoline, diesel, and oil range organics using method NWTPH-GX, NWTPH-Dx, NWTPH-O as well as for Arsenic, Lead, and for full list VOCs according to EPA Method 8260B including EDB and EDC and Method 6020. A copy of the groundwater laboratory analytical report is included in Appendix B.

### 3.1.4 Groundwater Analytical Results

Laboratory analysis of the groundwater sample collected on July 27, 2021 indicated concentrations in well MW-3 were NWTPH-gas (1,000 ug/L), NWTPH-Dx (870 ug/L), and NWTPH-O (540 ug/L). Additional laboratory reported analytes in well MW-3 included 1,1,2-trichloroethane (3.1 ug/L), Ethylbenzene (21 ug/L), Isopropylbenzene (12 ug/L), N-Propylbenzene (69 ug/L), and 1,2,4-Trimethylbenzene (41 ug/L). Laboratory analysis of the groundwater sample event also indicated hydrocarbon concentrations in well MW-9 of NWTPH-Dx (110 ug/L). All VOC constituents in both wells were below laboratory reporting limits.

None of the other groundwater monitoring wells were sampled during this event in accordance with a directive from WDOE and at the request of Circle K. The laboratory analytical results of the groundwater sample are summarized in Table 2.

#### **4.0 RESULTS AND CONCLUSIONS**

Based on the analytical results from the groundwater samples collected on July 27, 2021, there were no laboratory reported concentrations of benzene in wells MW-3 or MW-9. The lab results showed that the detections of petroleum hydrocarbons in the groundwater within the two wells remained substantially the same as the previous groundwater sampling event. The estimated lateral extent of Benzene in groundwater (none detected) is shown in Figure 5.

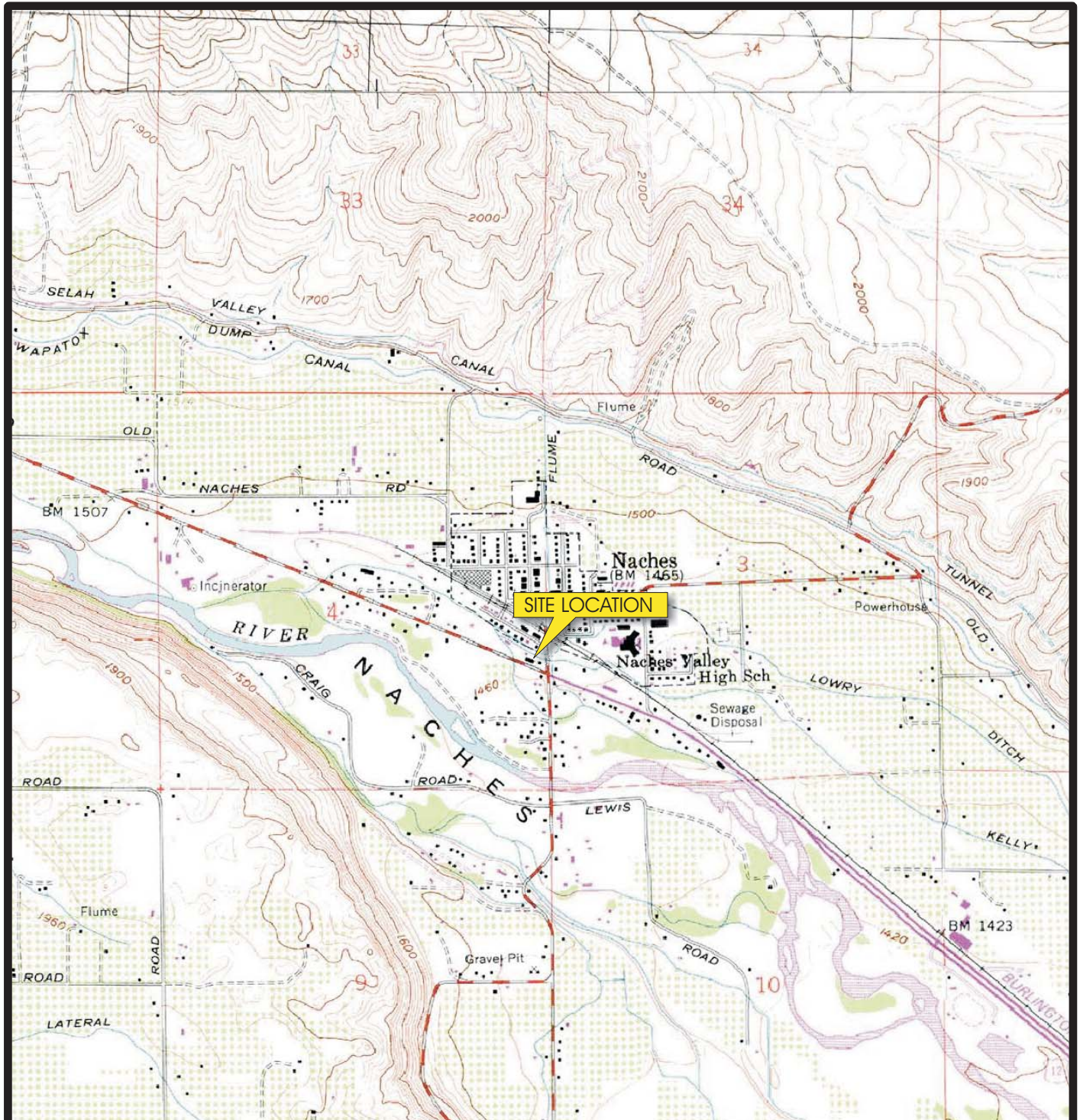
## **5.0 REFERENCES**

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Lasmanis, Raymond, 1991, The geology of Washington: Rocks and Minerals, v. 66, no. 4, p. 262-277. ©  
Copyright Heldref Publications (Helen Dwight Reid Educational Foundation).

## FIGURES



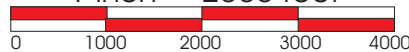
Source: MapTech Terrain Navigator Naches Quadrangle, 7.5 Minute Topographic Series, 1978

**QUADRANGLE LOCATION**



Approximate Scale  
**1:24,000**

1 inch = 2000 feet



Contour Interval = 20 feet



**Circle K Store 2706042  
(Former Sunmart #21)  
10171-10173 Highway 12  
Naches, WA**

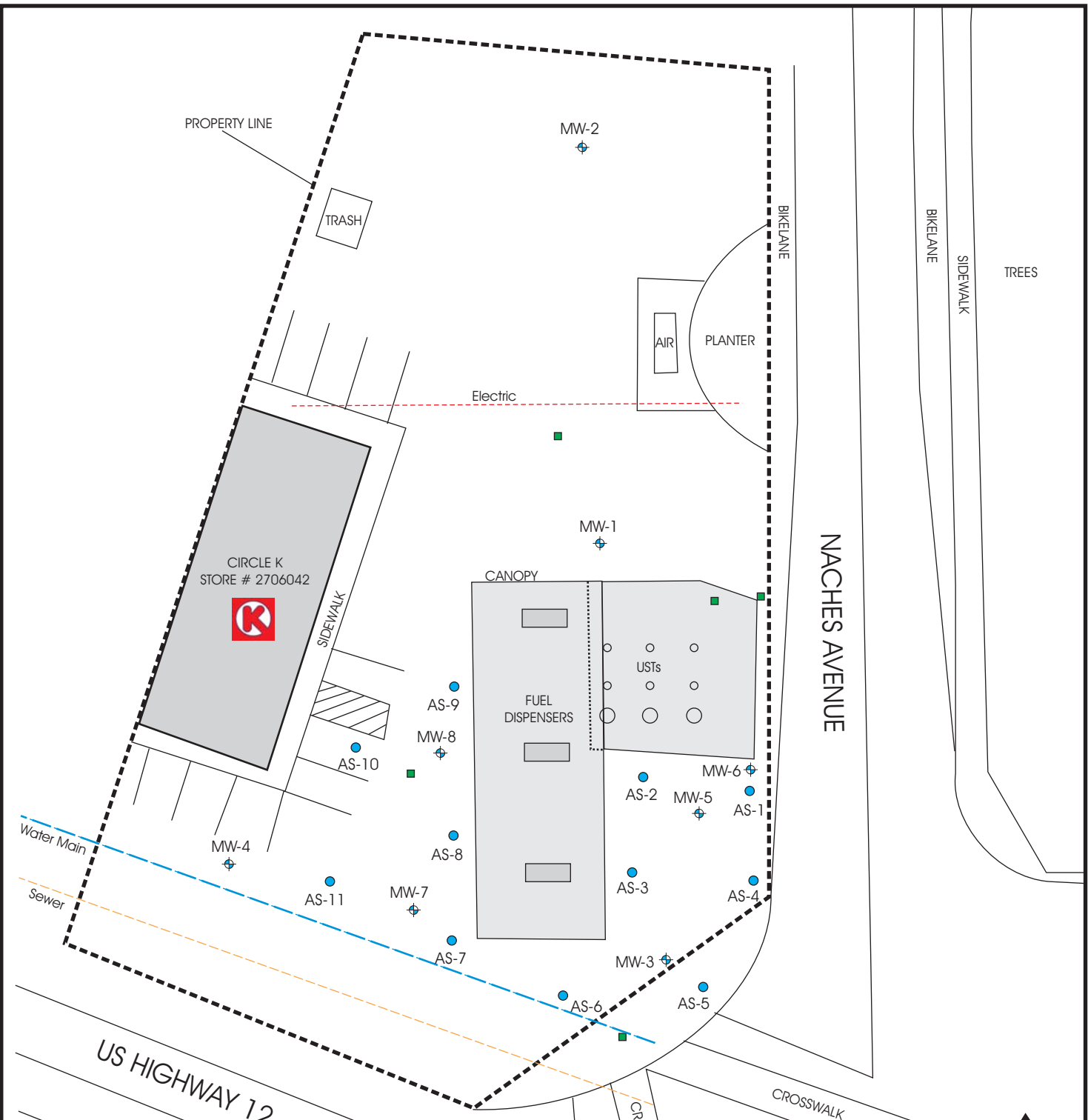
**SITE LOCATION  
MAP**

**SITE LOCATION: T14N, R17E, Section 4**

46° 43' 43.23" North Latitude; 120° 42' 03.07" West Longitude

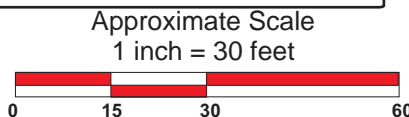
April 2013	Project #202-06042-02	Figure 1
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P:\Technical\202CK-WA\202-06042-02  
Naches\Graphics\SLM.cdr

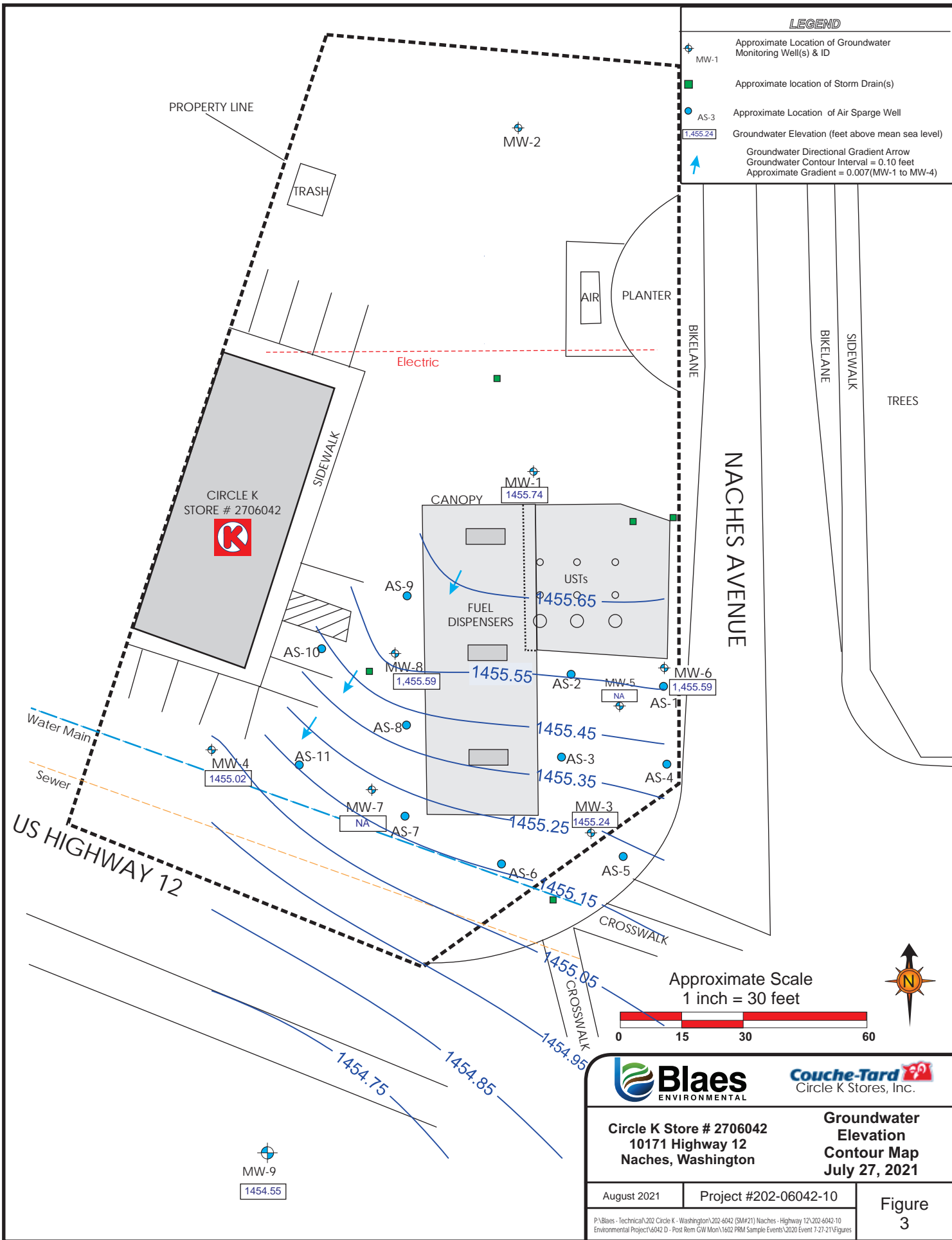


**LEGEND**

	MW-1	Approximate Location of Groundwater Monitoring Well(s) & ID
		Approximate Location of Stormdrain
	AS-3	Approximate Location of Air Sparge Well

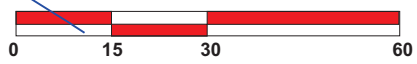


		<b>Site Plan</b>
<b>Circle K Store # 2706042</b> <b>10171 Highway 12</b> <b>Naches, Washington</b>		
Aug 2016	Project #202-06042-04	<b>Figure 2</b>
<small>P:\Technical\202CKWashington\202-6042-04Naches\6042 Figures\6042SiteMap.cdr</small>		



LEGEND	
	Approximate Location of Groundwater Monitoring Well(s) & ID
	Approximate location of Storm Drain(s)
	Approximate Location of Air Sparge Well
	Groundwater Elevation (feet above mean sea level)
	Groundwater Directional Gradient Arrow Groundwater Contour Interval = 0.10 feet Approximate Gradient = 0.007(MW-1 to MW-4)

Approximate Scale  
1 inch = 30 feet



**Circle K Store # 2706042**  
10171 Highway 12  
Naches, Washington

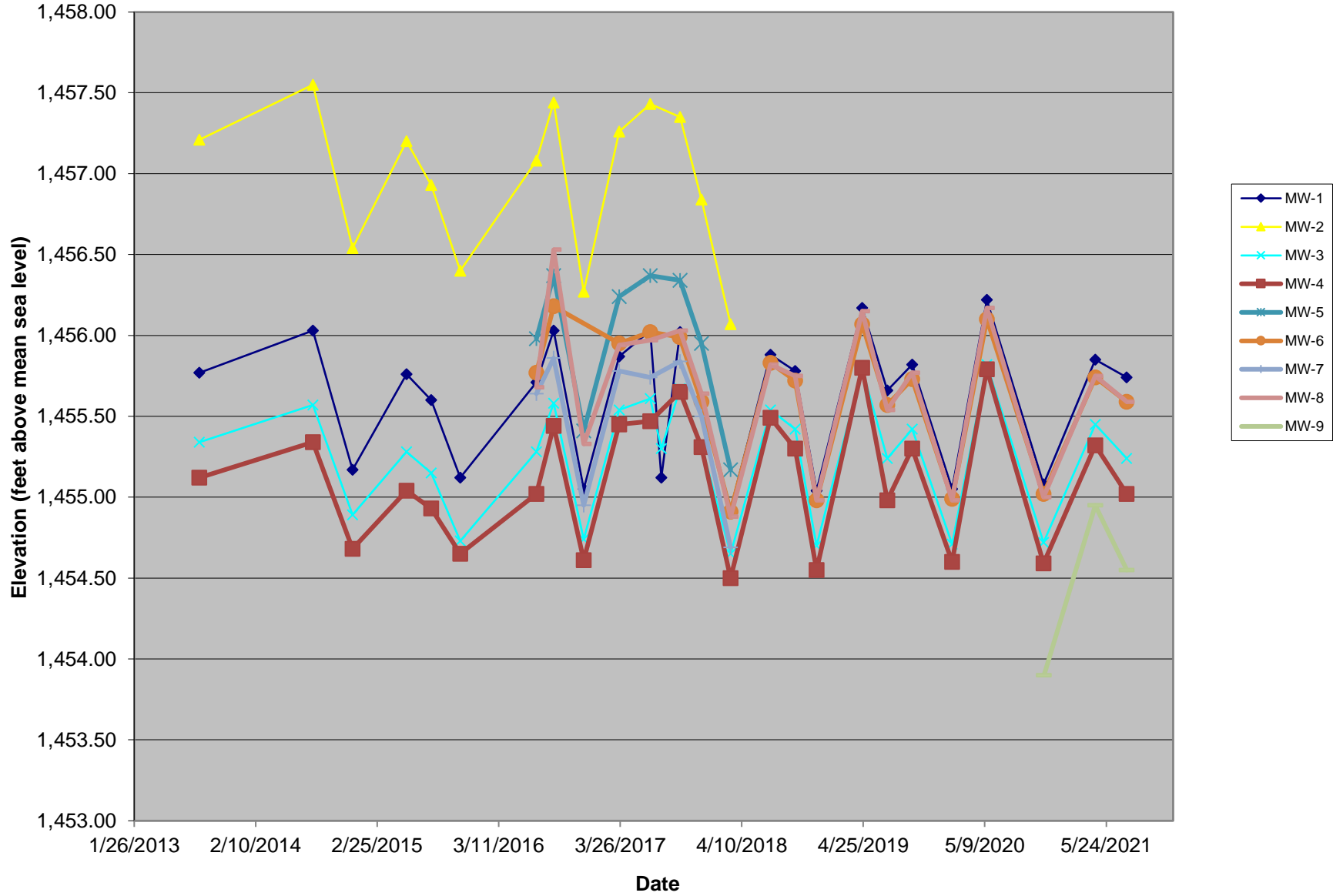
**Groundwater Elevation Contour Map**  
July 27, 2021

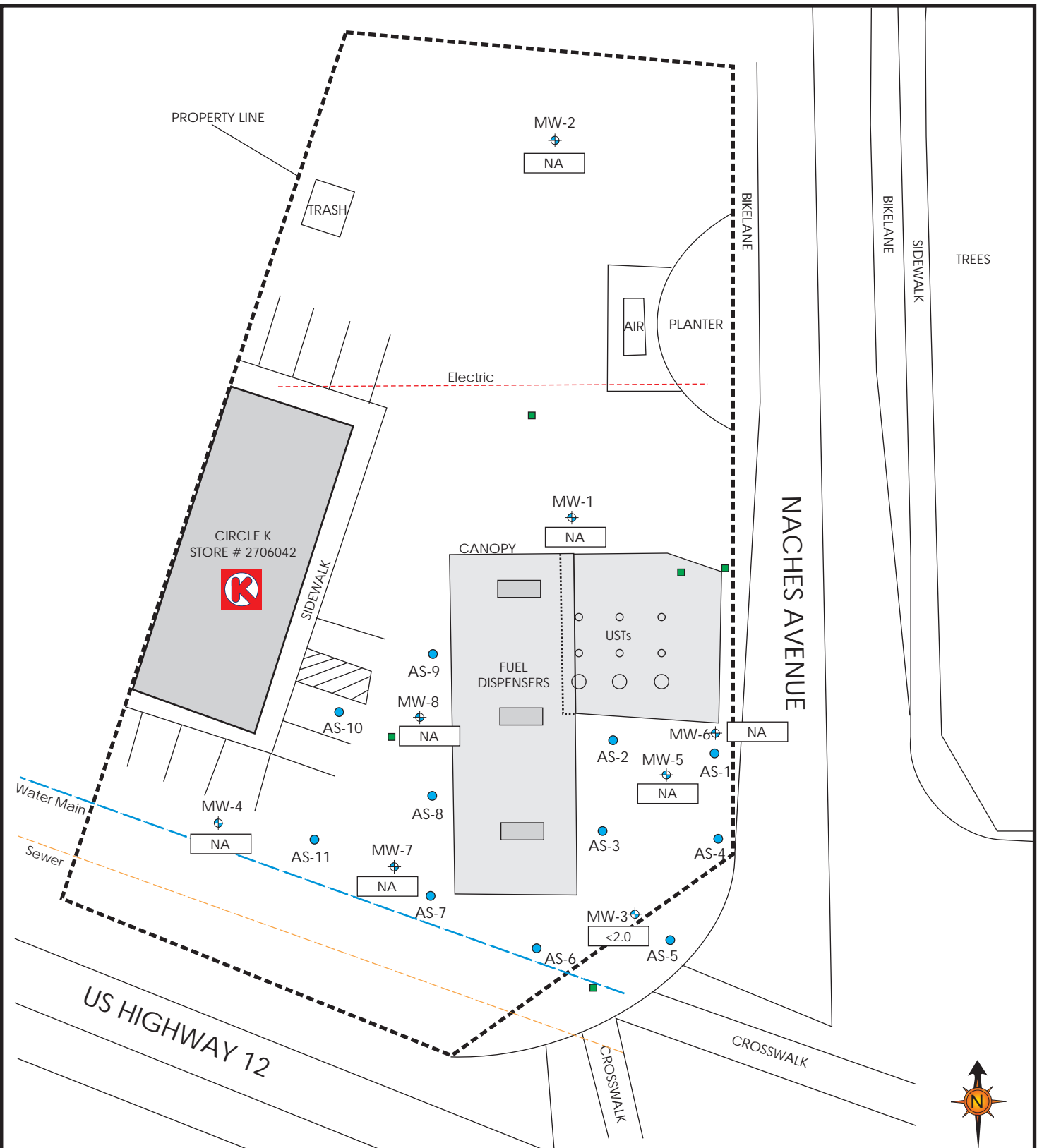
August 2021	Project #202-06042-10
-------------	-----------------------

Figure  
3

P:\Blaes - Technical\202 Circle K - Washington\202-6042 (SM#21) Naches - Highway 12\202-6042-10 Environmental Project\6042 D - Post Rem GW Mon\1602 PRM Sample Events\2020 Event 7-27-21\Figures

**FIGURE 4: HYDROGRAPH**  
**Circle K #2706042**  
**10171 Highway 12**  
**Naches, Washington**





Approximate Scale  
1 inch = 30 feet

- MW-1 Approximate Location of Groundwater Monitoring Well(s) & ID with Concentration in ug/L
- Approximate Location of Stormdrain
- AS-3 Approximate Location of Air Sparge Well

		Circle K Stores, Inc.	
Circle K Store # 2706042 10171 Highway 12 Naches, Washington		<b>Estimated Extent of Benzene in Groundwater</b> <b>July 27, 2021</b>	
		Project #202-06042-10	Figure 5

## TABLES

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATION DATA**

Circle K Store #2706042  
10171 Highway 12

Well ID	Date	TOC Elevation (ft amsl)	Depth to Free Product (ft btoc)	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft amsl)
MW-1	8/18/2013	1466.08	---	10.31	1,455.77
	8/8/2014		---	10.05	1,456.03
	12/10/2014		---	10.91	1,455.17
	5/28/2015		---	10.32	1,455.76
	8/13/2015		---	10.48	1,455.60
	11/12/2015		---	10.96	1,455.12
	7/7/2016		---	10.37	1,455.71
	8/30/2016		---	10.05	1,456.03
	12/2/2016		---	11.03	1,455.05
	3/23/2017		---	10.21	1,455.87
	6/28/2017		---	10.05	1,456.03
	8/2/2017		---	10.96	1,455.12
	9/29/2017		---	10.06	1,456.02
	12/5/2017		---	10.48	1,455.60
	3/6/2018		---	11.15	1,454.93
	7/9/2018		---	10.20	1,455.88
	9/24/2018		---	10.30	1,455.78
	11/30/2018		---	11.04	1,455.04
	4/22/2019		---	9.91	1,456.17
	7/9/2019		---	10.42	1,455.66
	9/25/2019		---	10.26	1,455.82
	1/28/2020		---	11.03	1,455.05
	5/16/2020		---	9.86	1,456.22
	11/9/2020		---	11.00	1,455.08
4/20/2021	---	10.23	1,455.85		
7/27/2021	---	10.34	1,455.74		
MW-2	8/18/2013	1466.84	---	9.63	1,457.21
	8/8/2014		---	9.29	1,457.55
	12/10/2014		---	10.30	1,456.54
	5/28/2015		---	9.64	1,457.20
	8/13/2015		---	9.91	1,456.93
	11/12/2015		---	10.44	1,456.40
	7/7/2016		---	9.76	1,457.08
	8/30/2016		---	9.40	1,457.44

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATION DATA**

Circle K Store #2706042  
10171 Highway 12

Well ID	Date	TOC Elevation (ft amsl)	Depth to Free Product (ft btoc)	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft amsl)
	12/2/2016		---	10.57	1,456.27
	3/23/2017		---	9.58	1,457.26
	6/28/2017		---	9.41	1,457.43
	9/29/2017		---	9.49	1,457.35
	12/5/2017		---	10.00	1,456.84
	3/6/2018		---	10.77	1,456.07
<b>MW-3</b>	8/18/2013	1466.26	---	10.92	1,455.34
	8/8/2014		---	10.69	1,455.57
	12/10/2014		---	11.37	1,454.89
	5/28/2015		---	10.98	1,455.28
	8/13/2015		---	11.11	1,455.15
	11/12/2015		---	11.53	1,454.73
	7/7/2016		---	10.98	1,455.28
	8/30/2016		---	10.68	1,455.58
	12/2/2016		---	11.52	1,454.74
	3/23/2017		---	10.72	1,455.54
	6/28/2017		---	10.65	1,455.61
	8/2/2017		---	10.96	1,455.30
	9/29/2017		---	10.59	1,455.67
	12/5/2017		---	10.94	1,455.32
	3/6/2018		---	11.61	1,454.65
	7/9/2018		---	10.72	1,455.54
	9/24/2018		---	10.84	1,455.42
	11/30/2018		---	11.56	1,454.70
	4/22/2019		---	10.47	1,455.79
	7/9/2019		---	11.02	1,455.24
	9/25/2019		---	10.84	1,455.42
	1/28/2020		---	11.55	1,454.71
	5/16/2020		---	10.44	1,455.82
11/9/2020	---	11.54	1,454.72		
4/20/2021	---	10.81	1,455.45		
7/27/2021	---	11.02	1,455.24		
<b>MW-4</b>	8/18/2013		---	11.42	1,455.12
	8/8/2014		---	11.20	1,455.34
	12/10/2014		---	11.86	1,454.68

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATION DATA**

Circle K Store #2706042  
10171 Highway 12

Well ID	Date	TOC Elevation (ft amsl)	Depth to Free Product (ft btoc)	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft amsl)
	5/28/2015	1466.54	---	11.50	1,455.04
	8/13/2015		---	11.61	1,454.93
	11/12/2015		---	11.89	1,454.65
	7/7/2016		---	11.52	1,455.02
	8/30/2016		---	11.10	1,455.44
	12/2/2016		---	11.93	1,454.61
	3/23/2017		---	11.09	1,455.45
	6/28/2017		---	11.07	1,455.47
	9/29/2017		---	10.89	1,455.65
	12/5/2017		---	11.23	1,455.31
	3/6/2018		---	12.04	1,454.50
	7/9/2018		---	11.05	1,455.49
	9/24/2018		---	11.24	1,455.30
	11/30/2018		---	11.99	1,454.55
	4/22/2019		---	10.74	1,455.80
	7/9/2019		---	11.56	1,454.98
	9/25/2019		---	11.24	1,455.30
	1/28/2020		---	11.94	1,454.60
	5/16/2020		---	10.75	1,455.79
	11/9/2020		---	11.95	1,454.59
	4/20/2021		---	11.22	1,455.32
7/27/2021	---	11.52	1,455.02		
<b>MW-5</b>	7/7/2016	1466.25	---	10.27	1,455.98
	8/30/2016		---	9.88	1,456.37
	12/2/2016		---	10.84	1,455.41
	3/23/2017		---	10.01	1,456.24
	6/28/2017		---	9.88	1,456.37
	9/29/2017		---	9.91	1,456.34
	12/5/2017		---	10.30	1,455.95
	3/6/2018		---	11.08	1,455.17
<b>MW-6</b>	7/7/2016		---	10.05	1,455.77
	8/30/2016		---	9.64	1,456.18
	12/2/2016		---	NA	NA
	3/23/2017		---	9.87	1,455.95
	6/28/2017		---	9.80	1,456.02
	9/28/2017		---	9.83	1,455.99
	12/5/2017		---	10.23	1,455.59

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATION DATA**

Circle K Store #2706042  
10171 Highway 12

Well ID	Date	TOC Elevation (ft amsl)	Depth to Free Product (ft btoc)	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft amsl)
	3/6/2018	1465.82	---	10.91	1,454.91
	7/9/2018		---	9.99	1,455.83
	9/24/2018		---	10.10	1,455.72
	11/30/2018		---	10.84	1,454.98
	4/22/2019		---	9.75	1,456.07
	7/9/2019		---	10.25	1,455.57
	9/25/2019		---	10.09	1,455.73
	1/28/2020		---	10.83	1,454.99
	5/16/2020		---	9.72	1,456.10
	11/9/2020		---	10.80	1,455.02
	4/20/2021		---	10.08	1,455.74
	7/27/2021		---	10.23	1,455.59
<b>MW-7</b>	7/7/2016	1465.99	---	10.35	1,455.64
	8/30/2016		---	10.13	1,455.86
	12/2/2016		---	11.04	1,454.95
	3/23/2017		---	10.21	1,455.78
	6/28/2017		---	10.25	1,455.74
	9/29/2017		---	10.15	1,455.84
	12/5/2017		---	10.49	1,455.50
	3/6/2018		---	11.30	1,454.69
<b>MW-8</b>	7/7/2016	1465.50	---	9.82	1,455.68
	8/30/2016		---	8.97	1,456.53
	12/2/2016		---	10.17	1,455.33
	3/23/2017		---	9.56	1,455.94
	6/28/2017		---	9.53	1,455.97
	9/29/2017		---	9.47	1,456.03
	12/5/2017		---	9.86	1,455.64
	3/6/2018		---	10.62	1,454.88
	7/9/2018		---	9.68	1,455.82
	9/24/2018		---	9.75	1,455.75
	11/30/2018		---	10.52	1,454.98
	4/22/2019		---	9.35	1,456.15
	7/9/2019		---	9.96	1,455.54
	9/25/2019		---	9.73	1,455.77
	1/28/2020		---	10.52	1,454.98
	5/16/2020		---	9.33	1,456.17
11/9/2020	---	10.50	1,455.00		

**TABLE 1**

**SUMMARY OF GROUNDWATER ELEVATION DATA**

Circle K Store #2706042  
10171 Highway 12

Well ID	Date	TOC Elevation (ft amsl)	Depth to Free Product (ft btoc)	Depth to Groundwater (ft btoc)	Groundwater Elevation (ft amsl)
	4/20/2021		---	9.75	1,455.75
	7/27/2021		---	9.91	1,455.59
MW-9	11/10/2020	1464.52	---	10.62	1,453.90
	4/20/2021		---	9.57	1,454.95
	7/27/2021		---	9.97	1,454.55

NOTES:

- ft btoc = Feet Below Top Of Casing
- ft amsl = Feet Above Mean Sea Level
- TOC = Top of Casing
- = Not Present/Not Applicable

TABLE 2

SUMMARY OF GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS

Circle K Store #2706042  
 10171 Highway 12  
 Naches, Washington 98937

Sample ID	Date Collected	NWTPH-Gx (ug/L)	NWTPH-Dx (ug/L)	NWTPH-O (ug/L)	EPA Method 8260														Total Lead (ug/L)	Other VOCs (ug/L)
					Benzene (ug/L)	Toluene (ug/L)	EB (ug/L)	m&p-Xylenes (ug/L)	o-Xylene (ug/L)	MTBE (ug/L)	EDB (ug/L)	EDC (ug/L)	Naph (ug/L)	Isoprop (ug/L)	1,2,4-TMB (ug/L)	1,3,5-TMB (ug/L)	Arsenic (ug/L)			
MW-1	8/12/2013	<50	---	---	1.1	<1.0	<1.0	<2.0	<1.0	<1.0	<0.01	NA	<1.0	<1.0	<1.0	<1.0	NA	---	ND	
	8/8/2014	340	---	---	<0.10	0.27	<0.10	0.26	0.11	<0.10	<0.01	<0.10	<0.40	<0.10	<0.10	<0.10	NA	---	1,2-Dichloropropane 0.16	
	12/10/2014	170	---	---	<0.10	1.9	0.13	29	5.1	<0.10	<0.01	<0.10	<0.40	1.5	<0.10	<0.10	NA	---	ND	
	5/28/2015	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.2	NA	---	ND	
	8/13/2015	<50	---	---	3.1	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	2.6	<0.5	<0.2	<0.5	NA	---	ND	
	11/12/2015	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND	
	7/7/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND	
	8/30/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND	
	12/2/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND	
	3/23/2017	<50	---	---	<0.2	<0.2	<0.2	<0.4	<0.2	<0.5	<0.01	<0.2	<0.5	<0.5	<0.2	<0.2	NA	---	ND	
	6/28/2017	<500	---	---	<0.2	<0.2	<0.2	<0.5	<0.2	<0.5	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND	
	9/29/2017	<250	<110	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	---	<0.2	<0.5	<0.5	<0.2	<0.5	NA	<30	ND	
	12/5/2017	<250	<100	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	<30	ND	
	3/6/2018	<250	<110	<360	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.2	<1.0	<1.0	<0.3	<0.5	28	53	ND	
	7/9/2018	<150	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	<4.0	ND	
9/24/2018	<250	<110	<350	<0.2	<0.2	<0.2	<0.50	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	7.7	ND		
11/30/2018	<250	<110	<360	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.30	<0.50	31	57	ND		
4/22/2019	<250	<240	<400	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.2	<1.0	<1.0	<0.30	<0.50	7.7	11	ND		
7/9/2019	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.2	<1.0	<1.0	<0.30	<0.50	3.1	5.4	ND		
9/25/2019	<250	130	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.2	<1.0	<1.0	<0.30	<0.50	<5.0	4.7	ND		
MW-2	8/12/2013	<50	---	---	<1.0	<1.0	<1.0	<2.0	<1.0	<1.0	<0.01	NA	<1.0	<1.0	<1.0	<1.0	NA	---	ND	
	8/8/2014	130	---	---	<0.10	<0.10	<0.10	<0.20	<0.10	<0.10	<0.01	<0.10	<0.40	<0.10	<0.10	<0.10	NA	---	ND	
	12/10/2014	<50	---	---	0.32	<0.10	<0.10	<0.20	<0.10	<0.10	<0.01	<0.10	<0.40	<0.10	<0.10	<0.10	NA	---	ND	
	5/28/2015	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.2	NA	---	ND	
	8/13/2015	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.2	NA	---	ND	
	11/12/2015	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND	
	7/7/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND	
	8/30/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND	
	12/2/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND	
	3/23/2017	<50	---	---	<0.2	<0.2	<0.2	<0.4	<0.2	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.2	NA	---	ND	
	6/28/2017	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND	
	9/29/2017	<250	<100	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	<30	ND	
	12/5/2017	<250	<100	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	1.7	ND	
3/6/2018	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0098	<0.2	<1.0	<1.0	<0.3	<0.5	NA	19	ND		

TABLE 2

SUMMARY OF GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS

Circle K Store #2706042  
 10171 Highway 12  
 Naches, Washington 98937

Sample ID	Date Collected	NWTPH-Gx (ug/L)	NWTPH-Dx (ug/L)	NWTPH-O (ug/L)	Benzene (ug/L)	Toluene (ug/L)	EB (ug/L)	m&p-Xylenes (ug/L)	o-Xylene (ug/L)	MTBE (ug/L)	EDB (ug/L)	EDC (ug/L)	Naph (ug/L)	Isoprop (ug/L)	1,2,4-TMB (ug/L)	1,3,5-TMB (ug/L)	Arsenic (ug/L)	Total Lead (ug/L)	Other VOCs (ug/L)
MW-3	8/12/2013	50000	---	---	<1.0	27	830	1,500	930	<1.0	<0.01	NA	380	160	1,200	780	NA	---	4-Isopropyltoluene 22; n-Butylbenzene 550; N-propylbenzene 490; sec-Butylbenzene 34; Styrene 32;
	8/8/2014	59000	---	---	2.6	15	1100	5,300	920	<0.10	<0.01	<0.10	320	110	3,600	1,300	NA	---	4-isopropylbenzene 57; n-Butylbenzene 510; N-Propylbenzene 430; sec-butylbenzene 31; Styrene 27;
	12/10/2014	49000	---	---	200	25	860	4,100	1000	<0.10	<0.01	<0.10	560	160	770	1,200	NA	---	4-isopropylbenzene 19; n-Butylbenzene 670; N-Propylbenzene 460; sec-butylbenzene 38; Styrene 1.2;
	5/28/2015	56000	---	---	2800	3100	1300	5,100	1200	<0.2	<0.01	<0.2	520	180	4,800	1,300	NA	---	4-isopropylbenzene 160; n-Butylbenzene 680; sec-butylbenzene 43; Styrene 1.4;
	8/13/2015	74000	110	---	2400	2300	1200	2,600	1200	<2	<0.01	<0.2	600	180	1,900	1,300	NA	---	#2 Diesel 0.11; sec-Butylbenzene 43; n-Butylbenzene 710; N-Propylbenzene 590; 4-Isopropyltoluene 19
	11/12/2015	54000	12000	---	1900	1800	970	3,000	780	<0.2	<0.01	<0.2	33	140	3,100	830	NA	---	4-Isopropyltoluene 16; Styrene 0.82; n-Butylbenzene 530; N-Propylbenzene 520; #2 Diesel 12000 Motor Oil 860 Styrene 0.74; 4-isopropyltoluene 19;
	7/7/2016	36000	---	---	540	260	1000	3,000	790	<0.2	<0.40	<0.2	9	130	3,700	790	NA	---	N-propylbenzene 520; n-Butylbenzene 590;
	8/30/2016	1900	---	---	14	33	36	100	32	<0.2	<0.001	<0.2	26	3.5	110	42	NA	---	1,3 Dichloropropene 0.5; N-Propylbenzene 13 ; sec-Butylbenzene 1.1; 4-Isopropyltoluene 0.84; n-Butylbenzene 44 ;
	12/2/2016	10000	---	---	150	25	510	1,200	280	<10	<0.0099	<10	350	84	2,400	540	NA	---	N-Propylbenzene 290; 4-Isopropyltoluene 15; n-Butylbenzene 430

TABLE 2

SUMMARY OF GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS

Circle K Store #2706042  
 10171 Highway 12  
 Naches, Washington 98937

Sample ID	Date Collected	NWTPH-Gx (ug/L)	NWTPH-Dx (ug/L)	NWTPH-O (ug/L)	Benzene (ug/L)	Toluene (ug/L)	EB (ug/L)	m&p-Xylenes (ug/L)	o-Xylene (ug/L)	MTBE (ug/L)	EDB (ug/L)	EDC (ug/L)	Naph (ug/L)	Isoprop (ug/L)	1,2,4-TMB (ug/L)	1,3,5-TMB (ug/L)	Arsenic (ug/L)	Total Lead (ug/L)	Other VOCs (ug/L)
	3/23/2017	18000	---	---	52.9	5.52	264	358	121	<0.5	<0.01	<0.2	<0.5	47.5	247	132	NA	---	2-Chlorotoluene 27.6; N-Propylbenzene 98.9; sec-Butylbenzene 15.1; 4-Isopropyltoluene 9.73; n-Butylbenzene 19.0;
	6/28/2017	8700	---	---	18	7.3	190	280	59	<2.0	<0.01	<2.0	91	38	940	81	NA	---	N-Propylbenzene 120; sec-Butylbenzene 14; 4-Isopropyltoluene 6.7; n-Butylbenzene 120;
	8/2/2017	4400	---	---	5.67	1.15	63.2	76	4.43	<0.15	<0.15	<0.15	25.1	13.9	402	7.5	NA	---	4-Chlorotoluene 10.0; N-Propylbenzene 58.3; sec-Butylbenzene 5.61; p-Isopropyltoluene 2.32; n-Butylbenzene 10.2;
	9/29/2017	10000	1400	300	32	<10	370	470	29	<10	<0.0099	<10	130	<250	1,500	76	NA	43	N-Propylbenzene 270; n-Butylbenzene 160;
	12/5/2017	7800	1900	400	22	3.5	210	110	19	<10	<0.01	<0.2	110	43	1,200	6.9	NA	12	N-Propylbenzene 160; n-Butylbenzene 50; 4-Isopropyltoluene 4.6; sec-butylbenzene 15
	3/6/2018	8400	2300	490	11	<10	210	88	<25	<15	<0.0099	<10	56	<50	1,300	<25	NA	57	N-Propylbenzene 160; n-Butylbenzene 79;
	7/9/2018	6300	2700	<360	8.4	6.0	260	270	38	<0.30	<0.0099	<0.20	96	56	1,400	59	9.3	13	N-Propylbenzene 210; n-Butylbenzene 130; 4-Isopropyltoluene 9.5; sec-butylbenzene 20
	9/24/2018	3,700	1,200	<360	2.8	0.98	85	19	4.5	<0.30	<0.01	<0.20	30	24	500	1.6	12	11	1,1,2-Trichloroethane 0.24; N-Butylbenzene 29; sec-Butylbenzene 8.1; 4-Isopropyltoluene 2.4; Propylbenzene 81
	11/30/2018	6,200	1,500	<350	4.8	<2.0	150	30	6.2	<3.0	<0.01	<0.20	41	54	960	<5.0	25	40	sec-Butylbenzene 16; n-Butylbenzene 60;
	4/22/2019	3,500	1,000	<400	2.6	<0.20	61	3	2.6	<0.30	<0.01	<0.20	1.4	32	57	5.7	6.0	4.4	N-Butylbenzene 50; sec-Butylbenzene 12; Isopropyltoluene 4.0; N-Propylbenzene 39
	7/9/2019	1,900	260	<350	0.97	0.39	18	14	0.9	<0.30	<0.01	<0.20	14	25	26	<0.50	5.0	8.0	sec-Butylbenzene 10; Isopropyltoluene 4.0; N-Propylbenzene 32

TABLE 2

SUMMARY OF GROUNDWATER SAMPLE LABORATORY ANALYTICAL RESULTS

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Sample ID	Date Collected	NWTPH-Gx (ug/L)	NWTPH-Dx (ug/L)	NWTPH-O (ug/L)	Benzene (ug/L)	Toluene (ug/L)	EB (ug/L)	m&p-Xylenes (ug/L)	o-Xylene (ug/L)	MTBE (ug/L)	EDB (ug/L)	EDC (ug/L)	Naph (ug/L)	Isoprop (ug/L)	1,2,4-TMB (ug/L)	1,3,5-TMB (ug/L)	Arsenic (ug/L)	Total Lead (ug/L)	Other VOCs (ug/L)
	9/25/19'	1,800	630	<350	1.90	0.58	64	25	2.3	<0.30	<0.01	<0.20	25	43	33	27	6.6	21	sec-Butylbenzene 16; Isopropyltoluene 2.9; N-Propylbenzene 42; 1,1,2-Trichloroethane 6.9;
	1/28/2020	2,400	1,200	<350	0.93	0.49	30	15	1.3	<0.30	<0.019	<0.20	15	32	37	37	7.4	11	sec-Butylbenzene 16; Isopropyltoluene 2.9; N-Propylbenzene 69; tert-butylbenzene 43;
	5/16/2020	380	280	<320	<0.20	<0.20	3.2	<0.50	<0.50	<0.30	<0.01	<0.20	<1.0	3.5	7.7	<0.50	<10	<8.0	sec-Butylbenzene 4.8; 1,1,2-Trichloroethane 4.9; N-Propylbenzene 9.2; N-Butylbenzene 9.0;
	11/9/2020	4,100	1,400	<330	2.8	1.8	110	47	3.4	<0.30	<0.01	<0.20	49	48	<6.0	<0.50	6.8	6.1	sec-Butylbenzene 23; 1,1,2-Trichloroethane 7.7; N-Propylbenzene 180; N-Butylbenzene 18; Isopropyltoluene 7.5 Trichloroethene 1.1
	4/20/2021	710	890	<350	<0.20	<0.20	<0.20	<0.50	<0.50	<0.3	<0.010	<0.20	<1.0	<1.0	<0.30	<0.50	<5.0	7.9	ND
	7/27/2021	1,000	870	540	<2.0	<2.0	21	<5.0	<5.0	<3.0	<0.0098	<2.0	<10	12	41	<5.0	14	37	1,1,2-Trichloroethane 3.1; N-Propylbenzene 69;
MW-4	8/12/2013	590	---	---	<1.0	<1.0	1.3	7.0	1.7	<1.0	<0.01	NA	72	<1.0	12	4.1	NA	---	N-propylbenzene 1.9
	8/8/2014	<50	---	---	<1.0	0.22	<1.0	<0.20	<0.10	<1.0	<0.01	<0.10	<0.40	<1.0	<0.10	<0.10	NA	---	1,2-Dichloropropane 0.17; sec-Butylbenzene 0.20
	12/10/2014	<50	---	---	12	0.12	0.71	3.6	0.64	<0.10	<0.01	<0.10	4.1	0.17	1.3	1.6	NA	---	sec-Butylbenzene 1.3
	5/28/2015	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.2	NA	---	N-propylbenzene 1.2
	8/13/2015	51.0	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.2	NA	---	trans-1,2 Dichloroethene 0.29;
	11/12/2015	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	7/7/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	2	<0.5	<0.2	<0.5	NA	---	ND
	8/30/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	12/2/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.50	<0.5	<0.2	<0.5	NA	---	ND
	3/23/2017	<50	---	---	<0.2	<0.2	0.32	0.7	<0.2	<0.5	<0.01	<0.2	11.4	<0.2	3.44	0.49	NA	---	N-propylbenzene 0.34
	6/28/2017	<50	---	---	<2.0	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	9/29/2017	<250	<100	<240	<2.0	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.5	<0.5	<0.2	<0.5	NA	<30	ND
	12/5/2017	<250	<100	<240	<2.0	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	3.1	ND
3/6/2018	<250	<110	<360	<2.0	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0097	<0.2	<1.0	<1.0	<0.3	<0.5	NA	23	ND	
7/9/2018	<150	<110	<350	<2.0	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	<4.0	ND	

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Sample ID	Date Collected	NWTPH-Gx (ug/L)	NWTPH-Dx (ug/L)	NWTPH-O (ug/L)	Benzene (ug/L)	Toluene (ug/L)	EB (ug/L)	m&p-Xylenes (ug/L)	o-Xylene (ug/L)	MTBE (ug/L)	EDB (ug/L)	EDC (ug/L)	Naph (ug/L)	Isoprop (ug/L)	1,2,4-TMB (ug/L)	1,3,5-TMB (ug/L)	Arsenic (ug/L)	Total Lead (ug/L)	Other VOCs (ug/L)
	9/24/2018	<250	<110	<350	<2.0	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.20	<1.0	<1.0	<0.3	<0.5	6.9	9.2	ND
	11/30/2018	<250	<110	<360	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	12	15	Chloroform 0.41
	4/22/2019	<250	<110	<420	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	<4.0	ND
	7/9/2019	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	<2.0	1.5	ND
	9/25/2019	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	<4.0	ND
MW-5	7/7/2016	850	---	---	1.9	33.0	14.0	96 E	67	0.70	<0.01	<0.2	4.3	0.7	40	<0.5	NA	---	N-Propylbenzene 2.2; 4-Isopropyltoluene 0.34 n-Butylbenzene 17;
	8/30/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	12/2/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.5	<0.5	0.32	0.51	NA	---	n-Butylbenzene 0.95
	3/23/2017	<50	---	---	<0.2	<0.2	<0.2	<0.4	<0.2	<0.5	<0.2	<0.2	1.64	<0.2	0.87	<0.2	NA	---	ND
	6/28/2017	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.2	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	9/29/2017	<250	<100	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.0099	<0.2	<0.5	<0.5	<0.2	<0.5	NA	<30	ND
	12/5/2017	<250	<110	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.5	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	3.2	ND
	3/6/2018	<250	<110	<350	<2.0	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.2	<1.0	<1.0	<0.3	<0.5	NA	5.4	ND
MW-6	7/7/2016	79	---	---	0.31	0.26	0.68	2.10	1.30	<0.20	<0.01	<0.20	0.51	<0.50	2.30	0.91	NA	---	n-butylbenzene 0.94
	8/30/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	0.50	<0.5	<0.2	<0.5	NA	---	ND
	12/2/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	3/23/2017	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	0.62	<0.2	0.43	<0.2	NA	---	ND
	6/28/2017	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	9/29/2017	<250	<100	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.5	<0.5	<0.2	<0.5	NA	<30	ND
	12/5/2017	<250	<110	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.5	<0.5	<0.2	<0.5	NA	5.4	ND
	3/6/2018	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.2	<1.0	<1.0	<0.3	<0.5	NA	7.3	ND
	7/9/2018	<150	120	<360	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	<4.0	ND
	9/24/2018	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	10	ND
	11/30/2018	<250	<110	<360	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	13	29	ND
	4/22/2019	<250	<240	<400	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	8	ND
	7/9/2019	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	5.1	ND
9/25/2019	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	<4.0	ND	
MW-7	7/7/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	2	<0.5	<0.2	<0.5	NA	---	ND
	8/30/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	12/2/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	3/27/2017	<50	---	---	<0.2	<0.2	<0.2	<0.4	<0.2	<0.5	<0.01	<0.2	<0.5	<0.2	0.28	<0.2	NA	---	ND
	6/28/2017	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	9/29/2017	<250	<100	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.5	<0.5	<0.2	<0.5	NA	<30	ND
	12/5/2017	<250	<110	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.5	<0.5	<0.2	<0.5	NA	<0.8	ND
	3/6/2018	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.0099	<0.2	<1.0	<1.0	<0.3	<0.5	NA	<4.0	ND
	7/7/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	2	<0.5	<0.2	<0.5	NA	---	ND
	8/30/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	12/2/2016	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND
	3/27/2017	<50	---	---	<0.2	<0.2	<0.2	<0.4	<0.2	<0.5	<0.01	<0.2	<0.5	<0.2	0.21	<0.2	NA	---	ND
	6/28/2017	<50	---	---	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.01	<0.2	<0.5	<0.5	<0.2	<0.5	NA	---	ND

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 10171 Highway 12  
 Naches, Washington 98937

Sample ID	Date Collected	NWTPH-Gx (ug/L)	NWTPH-Dx (ug/L)	NWTPH-O (ug/L)	Benzene (ug/L)	Toluene (ug/L)	EB (ug/L)	m&p-Xylenes (ug/L)	o-Xylene (ug/L)	MTBE (ug/L)	EDB (ug/L)	EDC (ug/L)	Naph (ug/L)	Isoprop (ug/L)	1,2,4-TMB (ug/L)	1,3,5-TMB (ug/L)	Arsenic (ug/L)	Total Lead (ug/L)	Other VOCs (ug/L)
MW-8	9/29/2017	<250	<110	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.5	<0.5	<0.2	<0.5	NA	<30	ND
	12/5/2017	<250	<100	<240	<0.2	<0.2	<0.2	<0.5	<0.5	<0.2	<0.0099	<0.2	<0.5	<0.5	<0.2	<0.5	NA	7.7	ND
	3/6/2018	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	NA	21	ND
	7/9/2018	<150	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	20	33	ND
	9/24/2018	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	30	46	ND
	11/30/2018	<250	<110	<360	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.10	<0.2	<1.0	<1.0	<0.3	<0.5	19	30	ND
	4/22/2019	<250	<240	<410	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.10	<0.2	<1.0	<1.0	<0.3	<0.5	14	21	ND
	7/9/2019	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	<0.10	<0.2	<1.0	<1.0	<0.3	<0.5	3.5	7.4	ND
	9/25/2019	<250	<110	<350	<0.2	<0.2	<0.2	<0.5	<0.5	<0.3	0.043p	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	<4.0	ND
MW-9	11/10/2020	<150	<110	<320	<b>0.38</b>	<b>0.32</b>	<0.2	<0.5	<0.5	<0.30	<0.01	<0.2	<1.0	<1.0	<0.3	<0.5	<5.0	<b>4.5</b>	<b>Trichloroethene 0.41</b>
	4/20/2021	<250	<110	<350	<0.20	<0.20	<0.2	<0.50	<0.5	<0.30	<0.01	<0.20	<1.0	<1.0	<0.3	<0.5	<5.0	<b>12.0</b>	ND
	7/27/2021	<0.25	<b>110</b>	<0.35	<0.20	<0.20	<0.2	<0.50	<0.5	<0.30	<0.01	<0.20	<1.0	<1.0	<0.3	<0.5	<b>6.6</b>	<b>18.0</b>	
MTCA Cleanup Standards		<b>800</b>	<b>500</b>	<b>500</b>	<b>5</b>	<b>1,000</b>	<b>700</b>	<b>1,000</b>	<b>20</b>	<b>0.01</b>	<b>NA</b>	<b>160</b>	<b>NA</b>	<b>NA</b>	<b>NA</b>	<b>5</b>	<b>15</b>	<b>NA</b>	

Notes:

- EB Ethylbenzene
- EPA U.S. Environmental Protection Agency
- mg/L milligrams per liter (parts per million)
- ug/L micrograms per liter (parts per billion)
- NWTPH-Gx Northwest Total Petroleum Hydrocarbons - Gasoline Range
- MTBE Methyl-tert-butyl Ether
- EDB Ethylene Dibromide
- Naph Naphthalene
- Isoprop Isopropylbenzene
- TMB Trimethylbenzene
- BOLD** Concentration exceeds laboratory reporting limit or method detection limit
- RED** Concentration exceeds applicable MTCA Cleanup Standard
- NA MTCA cleanup standard not available
- ND Not Detected above reporting limit
- MTCA Model Toxics Control Act

## **APPENDICES**

**APPENDIX A**

**GROUNDWATER SAMPLE DATA SHEETS**



BLAES ENVIRONMENTAL MANAGEMENT  
 45 East Monterey Way, Phoenix, Arizona 85012  
 602 728 0707

**GROUNDWATER SAMPLING FORM**

Well No.: MW-1  
 Well Type:  Monitor  Remedial - VE AS  
 Other: \_\_\_\_\_  
 Well Material:  PVC  St. Steel  
 Other: \_\_\_\_\_

Site ID: CIRCUK #6042  
 Project No.: 202-6042-10  
 Recorded By: BUES

**WELL PURGING**

**Purge Volume**      **Purge Date:** 7/27/21      **Purge Method**  
 Casing Diameter (D) in inches:  
 2-inch  4-inch  6-inch  Other: \_\_\_\_\_  
 Bailer - Type: \_\_\_\_\_  
 Submersible  Submersible Whale  
 Other: low flow  
 Total Depth of Casing (TD in feet BTOC): \_\_\_\_\_  
 Water Level Depth (WL in feet BTOC): 10.34'  
 Number of Well Volumes (# Vols) to be Purged:  
 3  4  5  Other: Low-flow  
**Pump Intake Setting**  
 Near Bottom  Near Top  Other: \_\_\_\_\_  
 Depth in feet (BTOC): \_\_\_\_\_  
 Screen Interval in Feet (BTOC): from \_\_\_\_\_ to \_\_\_\_\_

**Pump Time**      **Purge Rate**      **Actual Purge Volume**  
 Start: \_\_\_\_\_ Stop: \_\_\_\_\_ Time Elapsed: \_\_\_\_\_ Initial: \_\_\_\_\_ ml/min      \_\_\_\_\_ gallons  
 Final: \_\_\_\_\_ ml/min

**Field Parameter Measurements**

**Stabilization Settings**

Time	Temp.	Cond. 1 (umhos/cm)	Cond. 2 (umhos/cm)	DO%	DO (mg/L)	pH	ORP (mV)	Turbidity	Depth to water	Notes
<b>NO PURGING</b>										

Purge Water Storage/Disposal:  Drum(s), Number: \_\_\_\_\_  Sanitary Sewer  Storm Sewer  
 Observations During Purging (well Condition, Turbidity, Color, Odor, etc.): \_\_\_\_\_

**WELL SAMPLING**

**Sampled By:** \_\_\_\_\_ **Sampling date:** \_\_\_\_\_ **Sampling Time:** \_\_\_\_\_

**Sampling Distribution**

Water Level Before Sampling (in feet BTOC): \_\_\_\_\_

Sample No.	# Containers, Vol.	Preservative	Analysis	Lab	Comments

Other Notes: \_\_\_\_\_



BLAES ENVIRONMENTAL MANAGEMENT  
 45 East Monterey Way, Phoenix, Arizona 85012  
 602 728 0707

**GROUNDWATER SAMPLING FORM**

Site ID: CIRCLE K # 6042  
 Project No.: 202-6042-10  
 Recorded By: BLAES

Well No.: MW-3  
 Well Type:  Monitor  Remedial - VE AS  
 Other: \_\_\_\_\_  
 Well Material:  PVC  St. Steel  
 Other: \_\_\_\_\_

**WELL PURGING**

**Purge Volume**      **Purge Date:** 7/27/21      **Purge Method**  
 Casing Diameter (D) in inches:  
 2-inch  4-inch  6-inch  Other: \_\_\_\_\_  
 Bailer - Type: \_\_\_\_\_  
 Submersible  Submersible Whale  
 Other: low flow  
 Total Depth of Casing (TD in feet BTOC): 110.02'  
 Water Level Depth (WL in feet BTOC): \_\_\_\_\_  
 Number of Well Volumes (# Vols) to be Purged:  
 3  4  5  Other: Low-flow  
**Pump Intake Setting**  
 Near Bottom  Near Top  Other: \_\_\_\_\_  
 Depth in feet (BTOC): \_\_\_\_\_  
 Screen Interval in Feet (BTOC): from \_\_\_\_\_ to \_\_\_\_\_

**Pump Time**      **Purge Rate**      **Actual Purge Volume**  
 Start: \_\_\_\_\_ Stop: \_\_\_\_\_ Time Elapsed: \_\_\_\_\_ Initial \_\_\_\_\_ ml/min \_\_\_\_\_ gallons  
 Final \_\_\_\_\_ ml/min

**Field Parameter Measurements**

**Stabilization Settings**

Time	Temp.	3% of reading Cond. 1 (umhos/cm)	3% of reading Cond. 2 (umhos/cm)	+/- 10% DO%	0.2 mg/L DO (mg/L)	+/- 10% pH	+/- 10% ORP (mV)	+/- 10% or +/- 1.0 NTU Turbidity	5.12 Depth to water	6.12 NOTES
INSITM	17.74	265	229	16.4	1.55	8.56	-79.4	0.172	0.13	
1:21	17.56	269	231	31.9	3.01	8.41	-97.6	0.175	0.13	1
1:26	17.48	265	227	34.1	3.25	8.38	-91.7	0.173	0.13	2
1:31	17.30	259	221	33.3	3.19	8.38	-79.0	0.170	0.12	3

BUCKET

Purge Water Storage/Disposal:  Drum(s), Number: \_\_\_\_\_  Sanitary Sewer  Storm Sewer  
 Observations During Purging (well Condition, Turbidity, Color, Odor, etc.): \_\_\_\_\_

**WELL SAMPLING**

Sampled By: BLAES      Sampling date: 7/27/21      Sampling Time: 1:31 p

Water Level Before Sampling (in feet BTOC): \_\_\_\_\_

**Sampling Distribution**

Sample No.	# Containers, Vol.	Preservative	Analysis	Lab	Comments

Other Notes: \_\_\_\_\_



BLAES ENVIRONMENTAL MANAGEMENT  
45 East Monterey Way, Phoenix, Arizona 85012  
602 728 0707

**GROUNDWATER SAMPLING FORM**

Well No.: MW-4  
 Well Type:  Monitor  Remedial - VE AS  
 Other: \_\_\_\_\_  
 Well Material:  PVC  St. Steel  
 Other: \_\_\_\_\_

Site ID: CIRCLE K #6042  
 Project No.: 202-604270  
 Recorded By: BUES

**WELL PURGING**

Purge Volume \_\_\_\_\_ Purge Date: 7/27/24 Purge Method \_\_\_\_\_  
 Casing Diameter (D) in inches:  
 2-inch  4-inch  6-inch  Other: \_\_\_\_\_  
 Bailer - Type: \_\_\_\_\_  
 Submersible  Submersible Whale  
 Other: low flow  
 Total Depth of Casing (TD in feet BTOC): \_\_\_\_\_  
 Water Level Depth (WL in feet BTOC): 11.52'  
 Number of Well Volumes (# Vols) to be Purged:  
 3  4  5  Other: Low-flow  
 Pump Intake Setting  
 Near Bottom  Near Top  Other: \_\_\_\_\_  
 Depth in feet (BTOC): \_\_\_\_\_  
 Screen Interval in Feet (BTOC): from \_\_\_\_\_ to \_\_\_\_\_

Pump Time \_\_\_\_\_ Purge Rate \_\_\_\_\_ Actual Purge Volume \_\_\_\_\_  
 Start: \_\_\_\_\_ Stop: \_\_\_\_\_ Time Elapsed: \_\_\_\_\_ Initial \_\_\_\_\_ ml/min \_\_\_\_\_ gallons  
 Final \_\_\_\_\_ ml/min

**Field Parameter Measurements**

Stabilization Settings		3% of reading	3% of reading	+/- 10%	0.2 mg/L	+/- 10%	+/- 10%	+/- 10% or +/- 1.0 NTU		
Time	Temp.	Cond. 1 (umhos/cm)	Cond. 2 (umhos/cm)	DO%	DO (mg/L)	pH	ORP (mV)	Turbidity	Depth to water	Notes
		<u>NO PURGING</u>								

Purge Water Storage/Disposal:  Drum(s), Number: \_\_\_\_\_  Sanitary Sewer  Storm Sewer  
 Observations During Purging (well Condition, Turbidity, Color, Odor, etc.): \_\_\_\_\_

**WELL SAMPLING**

Sampled By: \_\_\_\_\_ Sampling date: \_\_\_\_\_ Sampling Time: \_\_\_\_\_

Sampling Distribution		Water Level Before Sampling (in feet BTOC): _____				
Sample No.	# Containers, Vol.	Preservative	Analysis	Lab	Comments	

Other Notes: \_\_\_\_\_



**BLAES ENVIRONMENTAL MANAGEMENT**  
 45 East Monterey Way, Phoenix, Arizona 85012  
 602 728 0707

**GROUNDWATER SAMPLING FORM**

Well No.: MW-6  
 Well Type:  Monitor  Remedial - VE AS  
 Other: \_\_\_\_\_  
 Well Material:  PVC  St. Steel  
 Other: \_\_\_\_\_

Site ID: CIRCLE K #6042  
 Project No.: 202-6042-10  
 Recorded By: BLAES

**WELL PURGING**

Purge Volume \_\_\_\_\_ Purge Date: 7/27/21 Purge Method \_\_\_\_\_  
 Casing Diameter (D) in inches: \_\_\_\_\_  
 2-inch  4-inch  6-inch  Other: \_\_\_\_\_  
 Bailer - Type: \_\_\_\_\_  
 Submersible  Submersible Whale  
 Other: low flow  
 Total Depth of Casing (TD in feet BTOC): \_\_\_\_\_  
 Water Level Depth (WL in feet BTOC): 10.23'  
 Number of Well Volumes (# Vols) to be Purged: \_\_\_\_\_  
 3  4  5  Other: Low-flow  
 Pump Intake Setting  
 Near Bottom  Near Top  Other: \_\_\_\_\_  
 Depth in feet (BTOC): \_\_\_\_\_  
 Screen Interval in Feet (BTOC): from \_\_\_\_\_ to \_\_\_\_\_

Pump Time \_\_\_\_\_ Purge Rate \_\_\_\_\_ Actual Purge Volume \_\_\_\_\_  
 Start: \_\_\_\_\_ Stop: \_\_\_\_\_ Time Elapsed: \_\_\_\_\_ Initial \_\_\_\_\_ ml/min \_\_\_\_\_ gallons  
 Final \_\_\_\_\_ ml/min

**Field Parameter Measurements**

**Stabilization Settings**

Time	Temp.	3% of reading Cond. 1 (umhos/cm)	3% of reading Cond. 2 (umhos/cm)	+/- 10% DO%	0.2 mg/L DO (mg/L)	+/- 10% pH	+/- 10% ORP (mV)	+/- 10% or +/- 1.0 NTU Turbidity	Depth to water	Notes
<b>NO PURGING</b>										

Purge Water Storage/Disposal:  Drum(s), Number: \_\_\_\_\_  Sanitary Sewer  Storm Sewer  
 Observations During Purging (well Condition, Turbidity, Color, Odor, etc.): \_\_\_\_\_

**WELL SAMPLING**

Sampled By: \_\_\_\_\_ Sampling date: \_\_\_\_\_ Sampling Time: \_\_\_\_\_

Water Level Before Sampling (in feet BTOC): \_\_\_\_\_

Sample No.	# Containers, Vol.	Preservative	Analysis	Lab	Comments

Other Notes: \_\_\_\_\_



**BLAES ENVIRONMENTAL MANAGEMENT**  
 45 East Monterey Way, Phoenix, Arizona 85012  
 602 728 0707

**GROUNDWATER SAMPLING FORM**

Well No.: MW-8

Site ID: CIRCLE K #6042

Well Type:  Monitor  Remedial - VE AS  
 Other: \_\_\_\_\_

Project No.: 202-6042-10

Well Material:  PVC  St. Steel

Recorded By: BLAES

Other: \_\_\_\_\_

**WELL PURGING**

Purge Volume

Purge Date: 7/27/21

Purge Method

Casing Diameter (D) in inches:  
 2-inch  4-inch  6-inch  Other: \_\_\_\_\_

Bailer - Type: \_\_\_\_\_  
 Submersible  Submersible Whale

Total Depth of Casing (TD in feet BTOC): 9091'

Other: low flow

Water Level Depth (WL in feet BTOC): \_\_\_\_\_

**Pump Intake Setting**

Number of Well Volumes (# Vols) to be Purged:

Near Bottom  Near Top  Other: \_\_\_\_\_

3  4  5  Other: Low-flow

Depth in feet (BTOC): \_\_\_\_\_

Screen Interval in Feet (BTOC): from \_\_\_\_\_ to \_\_\_\_\_

**Pump Time**

**Purge Rate**

**Actual Purge Volume**

Start: \_\_\_\_\_ Stop: \_\_\_\_\_ Time Elapsed: \_\_\_\_\_ Initial \_\_\_\_\_ ml/min \_\_\_\_\_ gallons

**Field Parameter Measurements**

Final \_\_\_\_\_ ml/min

**Stabilization Settings**

3% of reading 3% of reading +/- 10% 0.2 mg/L +/- 10% +/- 10% +/- 10% or +/- 1.0 NTU

Time	Temp.	Cond. 1 (umhos/cm)	Cond. 2 (umhos/cm)	DO%	DO (mg/L)	pH	ORP (mV)	Turbidity	Depth to water	Notes
NO PURGING										

Purge Water Storage/Disposal:  Drum(s), Number: \_\_\_\_\_  Sanitary Sewer  Storm Sewer

Observations During Purging (well Condition, Turbidity, Color, Odor, etc.): \_\_\_\_\_

**WELL SAMPLING**

Sampled By: \_\_\_\_\_ Sampling date: \_\_\_\_\_ Sampling Time: \_\_\_\_\_

**Sampling Distribution**

Water Level Before Sampling (in feet BTOC): \_\_\_\_\_

Sample No.	# Containers, Vol.	Preservative	Analysis	Lab	Comments

Other Notes: \_\_\_\_\_



**BLAES ENVIRONMENTAL MANAGEMENT**  
 45 East Monterey Way, Phoenix, Arizona 85012  
 602 728 0707

**GROUNDWATER SAMPLING FORM**

Well No.: MW-9  
 Well Type:  Monitor  Remedial - VE AS  
 Other: \_\_\_\_\_  
 Well Material:  PVC  St. Steel  
 Other: \_\_\_\_\_

Site ID: CIRCOCK # 6042  
 Project No.: 202-6042-10  
 Recorded By: BLAES

**WELL PURGING**

Purge Volume \_\_\_\_\_ Purge Date: 7/27/21 Purge Method \_\_\_\_\_  
 Casing Diameter (D) in inches:  2-inch  4-inch  6-inch  Other: \_\_\_\_\_  
 Bailer - Type: \_\_\_\_\_  
 Submersible  Submersible Whale  
 Other: low flow  
 Total Depth of Casing (TD in feet BTOC): 9.97'  
 Water Level Depth (WL in feet BTOC): \_\_\_\_\_  
 Number of Well Volumes (# Vols) to be Purged: \_\_\_\_\_  
 3  4  5  Other: Low-flow  
 Pump Intake Setting  
 Near Bottom  Near Top  Other: \_\_\_\_\_  
 Depth in feet (BTOC): \_\_\_\_\_  
 Screen Interval in Feet (BTOC): from \_\_\_\_\_ to \_\_\_\_\_

Pump Time \_\_\_\_\_ Purge Rate \_\_\_\_\_ Actual Purge Volume \_\_\_\_\_  
 Start: \_\_\_\_\_ Stop: \_\_\_\_\_ Time Elapsed: \_\_\_\_\_ Initial \_\_\_\_\_ ml/min \_\_\_\_\_ gallons  
 Final \_\_\_\_\_ ml/min

**Field Parameter Measurements**

**Stabilization Settings**

Time	Temp.	3% of reading Cond. 1 (umhos/cm)	3% of reading Cond. 2 (umhos/cm)	+/- 10% DO%	0.2 mg/L DO (mg/L)	+/- 10% pH	+/- 10% ORP (mV)	+/- 10% or +/- 1.0 NTU Turbidity	SAT Depth to water	GR Notes
INSITU	15.57	223	183	31.1	3.10	8.08	68.7	0.146	0.11	
12:10	16.24	223	186	59.1	5.80	8.38	62.9	0.144	0.11	1
12:15	16.16	217	181	58.2	5.72	8.20	76.1	0.142	0.10	2
12:20	16.06	212	176	55.5	5.46	8.17	75.2	0.140	0.10	3

TRUCK

Purge Water Storage/Disposal:  Drum(s), Number: \_\_\_\_\_  Sanitary Sewer  Storm Sewer  
 Observations During Purging (well Condition, Turbidity, Color, Odor, etc.): \_\_\_\_\_

**WELL SAMPLING**

Sampled By: BLAES Sampling date: 7/27/21 Sampling Time: 12:20 p

Water Level Before Sampling (in feet BTOC): \_\_\_\_\_

Sample No.	# Containers, Vol.	Preservative	Analysis	Lab	Comments

Other Notes: \_\_\_\_\_

**Eurofins FGS, Seattle**

5755 8th Street East  
Tacoma, WA 98424  
Phone: 253-922-2310 Fax: 425-420-9210

**Chain of Custody Record**

<b>Client Information</b>		Sampler: <u>D. BLAES</u>		Lab PM: Walker, Elaine M		Carrier Tracking No(s):		COC No: 580-44331-14165.1	
Client Contact: Dan Blaes		Phone: <u>602-728-0707</u>		E-Mail: m.elaine.walker@eurofinset.com		State of Origin:		Page: Page 1 of 1	
Company: Blaes Environmental Inc.				PWSID:		<b>Analysis Requested</b>			
Address: 45 E Monterey Way Suite 200		Due Date Requested: <u>NORMAL - 5 DAY</u>		TAT Requested (days): <u>5-DAY</u>					
City: Phoenix		Compliance Project: <input type="checkbox"/> Yes <input type="checkbox"/> No		PO #: Purchase Order not required		Total Number of Containers Field Filtered Sample (Yes or No) Perform MS/MSD (Yes or No) 60208 - Arsenic/Lead NWTPH_Dx - Dx LVI 82800_LL, NWTPH_Gx 8011 - (MOD) EDB in Water		Preservation Codes: A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2O3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - pH 4-5 L - EDA Z - other (specify)	
State, Zip: AZ, 85012		Project #: 58005982		WO #: <u>202-6042-10</u>					
Phone: 602-549-0925(Tel)		Project Name: Eastern Washington Project		SSOW#:					
Email: dblaes@blaesenvironmental.com		Site: <u>CIRCLE K #6042 NACHES, WA</u>							
<b>Sample Identification</b>		Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)			Special Instructions/Note:	
		Preservation Code:							
MW-3		7/27/21	1:31pm	G	Water	X	X	X	X
MW-9		7/27/21	12:20pm	G	Water	X	X	X	X
TRIP BLANK		7/27/21	-	-	Water	X			
<b>Possible Hazard Identification</b>		<input checked="" type="checkbox"/> Non-Hazard <input type="checkbox"/> Flammable <input type="checkbox"/> Skin Irritant <input type="checkbox"/> Poison B <input type="checkbox"/> Unknown <input type="checkbox"/> Radiological		<b>Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)</b>					
Deliverable Requested: I, II, III, IV, Other (specify)				<input type="checkbox"/> Return To Client <input checked="" type="checkbox"/> Disposal By Lab <input type="checkbox"/> Archive For _____ Months					
Empty Kit Relinquished by:		Date:		Time:		Special Instructions/QC Requirements:			
Relinquished by: <u>D.M. Blaes</u>		Date/Time: <u>7/27/21 4:53pm</u>		Company: <u>BLAES</u>		Received by: <u>Tom Stanley</u>		Date/Time: <u>7/27/21 1653</u>	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Relinquished by:		Date/Time:		Company:		Received by:		Date/Time:	
Custody Seals Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No		Custody Seal No.:		Cooler Temperature(s) °C and Other Remarks:					

**APPENDIX B**

**GROUNDWATER LABORATORY ANALYTICAL REPORT**

## ANALYTICAL REPORT

Eurofins FGS, Seattle  
5755 8th Street East  
Tacoma, WA 98424  
Tel: (253)922-2310

Laboratory Job ID: 580-104774-1

Client Project/Site: Eastern Washington Project - Circle K #6042

**For:**

Blaes Environmental Inc.  
45 E Monterey Way  
Suite 200  
Phoenix, Arizona 85012

Attn: Dan Blaes

*M. Elaine Walker*

Authorized for release by:  
8/11/2021 2:21:25 PM

Elaine Walker, Project Manager II  
(253)248-4972  
[m.elaine.walker@eurofinset.com](mailto:m.elaine.walker@eurofinset.com)

### LINKS

Review your project  
results through  
**TotalAccess**

Have a Question?



Visit us at:

[www.eurofinsus.com/Env](http://www.eurofinsus.com/Env)

*This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.*

*Results relate only to the items tested and the sample(s) as received by the laboratory.*



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# Case Narrative

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

**Job ID: 580-104774-1**

**Laboratory: Eurofins FGS, Seattle**

## Narrative

### CASE NARRATIVE

**Client: Blaes Environmental Inc.**  
**Project: Eastern Washington Project - Circle K #6042**  
**Report Number: 580-104774-1**

This case narrative is in the form of an exception report, where only the anomalies related to this report, method specific performance and/or QA/QC issues are discussed. If there are no issues to report, this narrative will include a statement that documents that there are no relevant data issues.

It should be noted that samples with elevated Reporting Limits (RLs) resulting from a dilution may not be able to satisfy customer reporting limits in some cases. Such increases in the RLs are an unavoidable but acceptable consequence of sample dilution that enables quantification of target analytes within the calibration range of the instrument or that reduces the interferences thereby enabling the quantification of target analytes.

Calculations are performed before rounding to avoid round-off errors in calculated results.

All holding times were met and proper preservation noted for the methods performed on these samples, unless otherwise detailed in the individual sections below.

### RECEIPT

Three samples were received on 7/27/2021 4:53 PM. Unless otherwise noted below, the samples arrived in good condition, and where required, properly preserved and on ice. The temperature of the cooler at receipt was 2.8° C.

Note: All samples which require thermal preservation are considered acceptable if the arrival temperature is within 2C of the required temperature or method specified range. For samples with a specified temperature of 4C, samples with a temperature ranging from just above freezing temperature of water to 6C shall be acceptable. Samples that are hand delivered immediately following collection may not meet these criteria, however they will be deemed acceptable according to NELAC standards, if there is evidence that the chilling process has begun, such as arrival on ice, etc.

### VOLATILE ORGANIC COMPOUNDS (GC-MS)

**Samples MW-3 (580-104774-1), MW-9 (580-104774-2) and Trip Blank (580-104774-3) were analyzed for volatile organic compounds (GC-MS) in accordance with 8260D.** The samples were analyzed on 07/31/2021, 08/03/2021 and 08/09/2021.

The continuing calibration verification (CCV) associated with batch 580-363841 recovered above the upper control limit for 1,1-Dichloropropene, m-Xylene & p-Xylene and tert-Butylbenzene. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported. Because the Initial Calibration (ICAL) was outside control limit for tert-Butylbenzene, this analyte is reported from a reanalysis run. The associated samples are impacted: MW-3 (580-104774-1), MW-9 (580-104774-2), Trip Blank (580-104774-3), and (CCVIS 580-363841/3).

The laboratory control sample (LCS) for analytical batch 580-363841 recovered outside control limits for the following analytes: 1,1-Dichloropropene and m-Xylene & p-Xylene. These analytes were biased high in the LCS, the LCSD was in control, and the analytes were not detected in the associated samples; therefore, the data have been reported.

The following sample was diluted due to the nature of the sample matrix: MW-3 (580-104774-1). Elevated reporting limits (RLs) are provided.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### GASOLINE RANGE ORGANICS (GRO)

**Samples MW-3 (580-104774-1) and MW-9 (580-104774-2) were analyzed for gasoline range organics (GRO) in accordance with Method NWTPH-Gx.** The samples were analyzed on 08/04/2021.

The RPD of the laboratory control sample (LCS) and laboratory control sample duplicate (LCSD) for analytical batch 580-364060

# Case Narrative

Client: Blaes Environmental Inc.  
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## Job ID: 580-104774-1 (Continued)

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### Laboratory: Eurofins FGS, Seattle (Continued)

recovered outside control limits for the following analytes: Gasoline

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### **1,2-DIBROMOETHANE BY MICROEXTRACTION AND GAS CHROMATOGRAPHY**

**Samples MW-3 (580-104774-1) and MW-9 (580-104774-2) were analyzed for 1,2-dibromoethane by microextraction and gas chromatography in accordance with EPA SW-846 Method 8011.** The samples were prepared on 08/05/2021 and analyzed on 08/06/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### **DIESEL AND MOTOR OIL RANGE ORGANICS**

**Samples MW-3 (580-104774-1) and MW-9 (580-104774-2) were analyzed for diesel and motor oil range organics in accordance with Method NWTPH-Dx.** The samples were prepared on 07/28/2021 and analyzed on 07/29/2021.

The following sample contained a hydrocarbon pattern in the diesel range; however, the elution pattern was earlier than the typical diesel fuel pattern used by the laboratory for quantitative purposes: MW-3 (580-104774-1).

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

### **METALS (ICPMS)**

**Samples MW-3 (580-104774-1) and MW-9 (580-104774-2) were analyzed for Metals (ICPMS) in accordance with 6020B.** The samples were prepared on 07/30/2021 and analyzed on 08/02/2021.

No analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

# Definitions/Glossary

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Qualifiers

### GC/MS VOA

Qualifier	Qualifier Description
*+	LCS and/or LCSD is outside acceptance limits, high biased.

### GC VOA

Qualifier	Qualifier Description
*1	LCS/LCSD RPD exceeds control limits.

## Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
▫	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

# Client Sample Results

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

**Client Sample ID: MW-3**

**Lab Sample ID: 580-104774-1**

**Date Collected: 07/27/21 13:31**

**Matrix: Water**

**Date Received: 07/27/21 16:53**

**Method: 8260D - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		4.0		ug/L			08/03/21 16:51	10
Chloromethane	ND		5.0		ug/L			08/03/21 16:51	10
Vinyl chloride	ND		0.20		ug/L			08/03/21 16:51	10
Bromomethane	ND		5.0		ug/L			08/03/21 16:51	10
Chloroethane	ND		5.0		ug/L			08/03/21 16:51	10
Trichlorofluoromethane	ND		5.0		ug/L			08/03/21 16:51	10
1,1-Dichloroethene	ND		2.0		ug/L			08/03/21 16:51	10
Methylene Chloride	ND		50		ug/L			08/03/21 16:51	10
Methyl tert-butyl ether	ND		3.0		ug/L			08/03/21 16:51	10
trans-1,2-Dichloroethene	ND		2.0		ug/L			08/03/21 16:51	10
1,1-Dichloroethane	ND		2.0		ug/L			08/03/21 16:51	10
2,2-Dichloropropane	ND		5.0		ug/L			08/03/21 16:51	10
cis-1,2-Dichloroethene	ND		2.0		ug/L			08/03/21 16:51	10
Chlorobromomethane	ND		2.0		ug/L			08/03/21 16:51	10
Chloroform	ND		2.0		ug/L			08/03/21 16:51	10
1,1,1-Trichloroethane	ND		2.0		ug/L			08/03/21 16:51	10
Carbon tetrachloride	ND		2.0		ug/L			08/03/21 16:51	10
1,1-Dichloropropene	ND	*+	2.0		ug/L			08/03/21 16:51	10
Benzene	ND		2.0		ug/L			08/03/21 16:51	10
EDC	ND		2.0		ug/L			08/03/21 16:51	10
Trichloroethene	ND		2.0		ug/L			08/03/21 16:51	10
1,2-Dichloropropane	ND		2.0		ug/L			08/03/21 16:51	10
Dibromomethane	ND		2.0		ug/L			08/03/21 16:51	10
Dichlorobromomethane	ND		2.0		ug/L			08/03/21 16:51	10
cis-1,3-Dichloropropene	ND		2.0		ug/L			08/03/21 16:51	10
Toluene	ND		2.0		ug/L			08/03/21 16:51	10
trans-1,3-Dichloropropene	ND		2.0		ug/L			08/03/21 16:51	10
<b>1,1,2-Trichloroethane</b>	<b>3.1</b>		2.0		ug/L			08/03/21 16:51	10
Tetrachloroethene	ND		5.0		ug/L			08/03/21 16:51	10
1,3-Dichloropropane	ND		2.0		ug/L			08/03/21 16:51	10
Chlorodibromomethane	ND		2.0		ug/L			08/03/21 16:51	10
Chlorobenzene	ND		2.0		ug/L			08/03/21 16:51	10
1,1,1,2-Tetrachloroethane	ND		3.0		ug/L			08/03/21 16:51	10
<b>Ethylbenzene</b>	<b>21</b>		2.0		ug/L			08/03/21 16:51	10
m-Xylene & p-Xylene	ND	*+	5.0		ug/L			08/03/21 16:51	10
o-Xylene	ND		5.0		ug/L			08/03/21 16:51	10
Styrene	ND		10		ug/L			08/03/21 16:51	10
Bromoform	ND		5.0		ug/L			08/03/21 16:51	10
<b>Isopropylbenzene</b>	<b>12</b>		10		ug/L			08/03/21 16:51	10
Bromobenzene	ND		2.0		ug/L			08/03/21 16:51	10
1,1,2,2-Tetrachloroethane	ND		2.0		ug/L			08/03/21 16:51	10
1,2,3-Trichloropropane	ND		2.0		ug/L			08/03/21 16:51	10
<b>N-Propylbenzene</b>	<b>69</b>		3.0		ug/L			08/03/21 16:51	10
2-Chlorotoluene	ND		5.0		ug/L			08/03/21 16:51	10
4-Chlorotoluene	ND		3.0		ug/L			08/03/21 16:51	10
1,3,5-Trimethylbenzene	ND		5.0		ug/L			08/03/21 16:51	10
<b>1,2,4-Trimethylbenzene</b>	<b>41</b>		3.0		ug/L			08/03/21 16:51	10
sec-Butylbenzene	ND		10		ug/L			08/03/21 16:51	10
4-Isopropyltoluene	ND		5.0		ug/L			08/03/21 16:51	10

Eurofins FGS, Seattle

# Client Sample Results

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

**Client Sample ID: MW-3**

**Lab Sample ID: 580-104774-1**

**Date Collected: 07/27/21 13:31**

**Matrix: Water**

**Date Received: 07/27/21 16:53**

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		3.0		ug/L			08/03/21 16:51	10
1,4-Dichlorobenzene	ND		3.0		ug/L			08/03/21 16:51	10
n-Butylbenzene	ND		10		ug/L			08/03/21 16:51	10
1,2-Dichlorobenzene	ND		3.0		ug/L			08/03/21 16:51	10
1,2-Dibromo-3-Chloropropane	ND		20		ug/L			08/03/21 16:51	10
1,2,4-Trichlorobenzene	ND		5.0		ug/L			08/03/21 16:51	10
Hexachlorobutadiene	ND		5.0		ug/L			08/03/21 16:51	10
Naphthalene	ND		10		ug/L			08/03/21 16:51	10
1,2,3-Trichlorobenzene	ND		5.0		ug/L			08/03/21 16:51	10
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	105		80 - 120					08/03/21 16:51	10
Dibromofluoromethane (Surr)	100		80 - 120					08/03/21 16:51	10
4-Bromofluorobenzene (Surr)	107		80 - 120					08/03/21 16:51	10
1,2-Dichloroethane-d4 (Surr)	97		80 - 120					08/03/21 16:51	10

## Method: 8260D - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		0.50		ug/L			08/09/21 17:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120					08/09/21 17:47	1
Dibromofluoromethane (Surr)	97		80 - 120					08/09/21 17:47	1
4-Bromofluorobenzene (Surr)	97		80 - 120					08/09/21 17:47	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 120					08/09/21 17:47	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Gasoline</b>	<b>1.0</b>	<b>*1</b>	0.25		mg/L			08/04/21 21:36	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	139		50 - 150					08/04/21 21:36	1

## Method: 8011 - EDB

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.0098		ug/L		08/05/21 14:44	08/06/21 17:05	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	111		60 - 140				08/05/21 14:44	08/06/21 17:05	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>#2 Diesel (C10-C24)</b>	<b>0.87</b>		0.11		mg/L		07/28/21 10:59	07/29/21 20:57	1
<b>Motor Oil (&gt;C24-C36)</b>	<b>0.54</b>		0.36		mg/L		07/28/21 10:59	07/29/21 20:57	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	65		50 - 150				07/28/21 10:59	07/29/21 20:57	1

## Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
<b>Arsenic</b>	<b>14</b>		5.0		ug/L		07/30/21 17:39	08/02/21 11:05	5
<b>Lead</b>	<b>37</b>		2.0		ug/L		07/30/21 17:39	08/02/21 11:05	5

Eurofins FGS, Seattle

# Client Sample Results

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

**Client Sample ID: MW-9**

**Lab Sample ID: 580-104774-2**

**Date Collected: 07/27/21 12:20**

**Matrix: Water**

**Date Received: 07/27/21 16:53**

**Method: 8260D - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40		ug/L			08/03/21 17:15	1
Chloromethane	ND		0.50		ug/L			08/03/21 17:15	1
Vinyl chloride	ND		0.020		ug/L			08/03/21 17:15	1
Bromomethane	ND		0.50		ug/L			08/03/21 17:15	1
Chloroethane	ND		0.50		ug/L			08/03/21 17:15	1
Trichlorofluoromethane	ND		0.50		ug/L			08/03/21 17:15	1
1,1-Dichloroethene	ND		0.20		ug/L			08/03/21 17:15	1
Methylene Chloride	ND		5.0		ug/L			08/03/21 17:15	1
Methyl tert-butyl ether	ND		0.30		ug/L			08/03/21 17:15	1
trans-1,2-Dichloroethene	ND		0.20		ug/L			08/03/21 17:15	1
1,1-Dichloroethane	ND		0.20		ug/L			08/03/21 17:15	1
2,2-Dichloropropane	ND		0.50		ug/L			08/03/21 17:15	1
cis-1,2-Dichloroethene	ND		0.20		ug/L			08/03/21 17:15	1
Chlorobromomethane	ND		0.20		ug/L			08/03/21 17:15	1
Chloroform	ND		0.20		ug/L			08/03/21 17:15	1
1,1,1-Trichloroethane	ND		0.20		ug/L			08/03/21 17:15	1
Carbon tetrachloride	ND		0.20		ug/L			08/03/21 17:15	1
1,1-Dichloropropene	ND	*+	0.20		ug/L			08/03/21 17:15	1
Benzene	ND		0.20		ug/L			08/03/21 17:15	1
EDC	ND		0.20		ug/L			08/03/21 17:15	1
Trichloroethene	ND		0.20		ug/L			08/03/21 17:15	1
1,2-Dichloropropane	ND		0.20		ug/L			08/03/21 17:15	1
Dibromomethane	ND		0.20		ug/L			08/03/21 17:15	1
Dichlorobromomethane	ND		0.20		ug/L			08/03/21 17:15	1
cis-1,3-Dichloropropene	ND		0.20		ug/L			08/03/21 17:15	1
Toluene	ND		0.20		ug/L			08/03/21 17:15	1
trans-1,3-Dichloropropene	ND		0.20		ug/L			08/03/21 17:15	1
1,1,2-Trichloroethane	ND		0.20		ug/L			08/03/21 17:15	1
Tetrachloroethene	ND		0.50		ug/L			08/03/21 17:15	1
1,3-Dichloropropane	ND		0.20		ug/L			08/03/21 17:15	1
Chlorodibromomethane	ND		0.20		ug/L			08/03/21 17:15	1
Chlorobenzene	ND		0.20		ug/L			08/03/21 17:15	1
1,1,1,2-Tetrachloroethane	ND		0.30		ug/L			08/03/21 17:15	1
Ethylbenzene	ND		0.20		ug/L			08/03/21 17:15	1
m-Xylene & p-Xylene	ND	*+	0.50		ug/L			08/03/21 17:15	1
o-Xylene	ND		0.50		ug/L			08/03/21 17:15	1
Styrene	ND		1.0		ug/L			08/03/21 17:15	1
Bromoform	ND		0.50		ug/L			08/03/21 17:15	1
Isopropylbenzene	ND		1.0		ug/L			08/03/21 17:15	1
Bromobenzene	ND		0.20		ug/L			08/03/21 17:15	1
1,1,2,2-Tetrachloroethane	ND		0.20		ug/L			08/03/21 17:15	1
1,2,3-Trichloropropane	ND		0.20		ug/L			08/03/21 17:15	1
N-Propylbenzene	ND		0.30		ug/L			08/03/21 17:15	1
2-Chlorotoluene	ND		0.50		ug/L			08/03/21 17:15	1
4-Chlorotoluene	ND		0.30		ug/L			08/03/21 17:15	1
1,3,5-Trimethylbenzene	ND		0.50		ug/L			08/03/21 17:15	1
1,2,4-Trimethylbenzene	ND		0.30		ug/L			08/03/21 17:15	1
sec-Butylbenzene	ND		1.0		ug/L			08/03/21 17:15	1
4-Isopropyltoluene	ND		0.50		ug/L			08/03/21 17:15	1

Eurofins FGS, Seattle

# Client Sample Results

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

**Client Sample ID: MW-9**

**Lab Sample ID: 580-104774-2**

**Date Collected: 07/27/21 12:20**

**Matrix: Water**

**Date Received: 07/27/21 16:53**

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3-Dichlorobenzene	ND		0.30		ug/L			08/03/21 17:15	1
1,4-Dichlorobenzene	ND		0.30		ug/L			08/03/21 17:15	1
n-Butylbenzene	ND		1.0		ug/L			08/03/21 17:15	1
1,2-Dichlorobenzene	ND		0.30		ug/L			08/03/21 17:15	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			08/03/21 17:15	1
1,2,4-Trichlorobenzene	ND		0.50		ug/L			08/03/21 17:15	1
Hexachlorobutadiene	ND		0.50		ug/L			08/03/21 17:15	1
Naphthalene	ND		1.0		ug/L			08/03/21 17:15	1
1,2,3-Trichlorobenzene	ND		0.50		ug/L			08/03/21 17:15	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120					08/03/21 17:15	1
Dibromofluoromethane (Surr)	108		80 - 120					08/03/21 17:15	1
4-Bromofluorobenzene (Surr)	103		80 - 120					08/03/21 17:15	1
1,2-Dichloroethane-d4 (Surr)	101		80 - 120					08/03/21 17:15	1

## Method: 8260D - Volatile Organic Compounds by GC/MS - RA

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		0.50		ug/L			08/09/21 18:11	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120					08/09/21 18:11	1
Dibromofluoromethane (Surr)	94		80 - 120					08/09/21 18:11	1
4-Bromofluorobenzene (Surr)	96		80 - 120					08/09/21 18:11	1
1,2-Dichloroethane-d4 (Surr)	98		80 - 120					08/09/21 18:11	1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND	*1	0.25		mg/L			08/04/21 22:02	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	104		50 - 150					08/04/21 22:02	1

## Method: 8011 - EDB

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010		ug/L		08/05/21 14:44	08/06/21 17:21	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
1,2-Dibromopropane	113		60 - 140				08/05/21 14:44	08/06/21 17:21	1

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	0.11		0.11		mg/L		07/28/21 10:59	07/29/21 21:17	1
Motor Oil (>C24-C36)	ND		0.35		mg/L		07/28/21 10:59	07/29/21 21:17	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
o-Terphenyl	81		50 - 150				07/28/21 10:59	07/29/21 21:17	1

## Method: 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	6.6		5.0		ug/L		07/30/21 17:39	08/02/21 11:01	5
Lead	18		2.0		ug/L		07/30/21 17:39	08/02/21 11:01	5

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# Client Sample Results

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 580-104774-3**

**Date Collected: 07/27/21 00:00**

**Matrix: Water**

**Date Received: 07/27/21 16:53**

**Method: 8260D - Volatile Organic Compounds by GC/MS**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40		ug/L			08/03/21 17:40	1
Chloromethane	ND		0.50		ug/L			08/03/21 17:40	1
Vinyl chloride	ND		0.020		ug/L			08/03/21 17:40	1
Bromomethane	ND		0.50		ug/L			08/03/21 17:40	1
Chloroethane	ND		0.50		ug/L			08/03/21 17:40	1
Trichlorofluoromethane	ND		0.50		ug/L			08/03/21 17:40	1
1,1-Dichloroethene	ND		0.20		ug/L			08/03/21 17:40	1
Methylene Chloride	ND		5.0		ug/L			08/03/21 17:40	1
Methyl tert-butyl ether	ND		0.30		ug/L			08/03/21 17:40	1
trans-1,2-Dichloroethene	ND		0.20		ug/L			08/03/21 17:40	1
1,1-Dichloroethane	ND		0.20		ug/L			08/03/21 17:40	1
2,2-Dichloropropane	ND		0.50		ug/L			08/03/21 17:40	1
cis-1,2-Dichloroethene	ND		0.20		ug/L			08/03/21 17:40	1
Chlorobromomethane	ND		0.20		ug/L			08/03/21 17:40	1
Chloroform	ND		0.20		ug/L			08/03/21 17:40	1
1,1,1-Trichloroethane	ND		0.20		ug/L			08/03/21 17:40	1
Carbon tetrachloride	ND		0.20		ug/L			08/03/21 17:40	1
1,1-Dichloropropene	ND	*+	0.20		ug/L			08/03/21 17:40	1
Benzene	ND		0.20		ug/L			08/03/21 17:40	1
EDC	ND		0.20		ug/L			08/03/21 17:40	1
Trichloroethene	ND		0.20		ug/L			08/03/21 17:40	1
1,2-Dichloropropane	ND		0.20		ug/L			08/03/21 17:40	1
Dibromomethane	ND		0.20		ug/L			08/03/21 17:40	1
Dichlorobromomethane	ND		0.20		ug/L			08/03/21 17:40	1
cis-1,3-Dichloropropene	ND		0.20		ug/L			08/03/21 17:40	1
Toluene	ND		0.20		ug/L			08/03/21 17:40	1
trans-1,3-Dichloropropene	ND		0.20		ug/L			08/03/21 17:40	1
1,1,2-Trichloroethane	ND		0.20		ug/L			08/03/21 17:40	1
Tetrachloroethene	ND		0.50		ug/L			08/03/21 17:40	1
1,3-Dichloropropane	ND		0.20		ug/L			08/03/21 17:40	1
Chlorodibromomethane	ND		0.20		ug/L			08/03/21 17:40	1
Chlorobenzene	ND		0.20		ug/L			08/03/21 17:40	1
1,1,1,2-Tetrachloroethane	ND		0.30		ug/L			08/03/21 17:40	1
Ethylbenzene	ND		0.20		ug/L			08/03/21 17:40	1
m-Xylene & p-Xylene	ND	*+	0.50		ug/L			08/03/21 17:40	1
o-Xylene	ND		0.50		ug/L			08/03/21 17:40	1
Styrene	ND		1.0		ug/L			08/03/21 17:40	1
Bromoform	ND		0.50		ug/L			08/03/21 17:40	1
Isopropylbenzene	ND		1.0		ug/L			08/03/21 17:40	1
Bromobenzene	ND		0.20		ug/L			08/03/21 17:40	1
1,1,2,2-Tetrachloroethane	ND		0.20		ug/L			08/03/21 17:40	1
1,2,3-Trichloropropane	ND		0.20		ug/L			08/03/21 17:40	1
N-Propylbenzene	ND		0.30		ug/L			08/03/21 17:40	1
2-Chlorotoluene	ND		0.50		ug/L			08/03/21 17:40	1
4-Chlorotoluene	ND		0.30		ug/L			08/03/21 17:40	1
1,3,5-Trimethylbenzene	ND		0.50		ug/L			08/03/21 17:40	1
tert-Butylbenzene	ND		0.50		ug/L			07/31/21 01:10	1
1,2,4-Trimethylbenzene	ND		0.30		ug/L			08/03/21 17:40	1
sec-Butylbenzene	ND		1.0		ug/L			08/03/21 17:40	1

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# Client Sample Results

Client: Blaes Environmental Inc.  
 Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

**Client Sample ID: Trip Blank**

**Lab Sample ID: 580-104774-3**

**Date Collected: 07/27/21 00:00**

**Matrix: Water**

**Date Received: 07/27/21 16:53**

**Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)**

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
4-Isopropyltoluene	ND		0.50		ug/L			08/03/21 17:40	1
1,3-Dichlorobenzene	ND		0.30		ug/L			08/03/21 17:40	1
1,4-Dichlorobenzene	ND		0.30		ug/L			08/03/21 17:40	1
n-Butylbenzene	ND		1.0		ug/L			08/03/21 17:40	1
1,2-Dichlorobenzene	ND		0.30		ug/L			08/03/21 17:40	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			08/03/21 17:40	1
1,2,4-Trichlorobenzene	ND		0.50		ug/L			08/03/21 17:40	1
Hexachlorobutadiene	ND		0.50		ug/L			08/03/21 17:40	1
Naphthalene	ND		1.0		ug/L			08/03/21 17:40	1
1,2,3-Trichlorobenzene	ND		0.50		ug/L			08/03/21 17:40	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	101		80 - 120					07/31/21 01:10	1
Toluene-d8 (Surr)	99		80 - 120					08/03/21 17:40	1
Dibromofluoromethane (Surr)	105		80 - 120					07/31/21 01:10	1
Dibromofluoromethane (Surr)	102		80 - 120					08/03/21 17:40	1
4-Bromofluorobenzene (Surr)	101		80 - 120					07/31/21 01:10	1
4-Bromofluorobenzene (Surr)	97		80 - 120					08/03/21 17:40	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 120					07/31/21 01:10	1
1,2-Dichloroethane-d4 (Surr)	100		80 - 120					08/03/21 17:40	1

# QC Sample Results

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Method: 8260D - Volatile Organic Compounds by GC/MS

**Lab Sample ID: MB 580-363547/7**  
**Matrix: Water**  
**Analysis Batch: 363547**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		0.50		ug/L			07/30/21 22:17	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	102		80 - 120					07/30/21 22:17	1
Dibromofluoromethane (Surr)	105		80 - 120					07/30/21 22:17	1
4-Bromofluorobenzene (Surr)	101		80 - 120					07/30/21 22:17	1
1,2-Dichloroethane-d4 (Surr)	103		80 - 120					07/30/21 22:17	1

**Lab Sample ID: LCS 580-363547/4**  
**Matrix: Water**  
**Analysis Batch: 363547**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
tert-Butylbenzene	5.00	5.97		ug/L		119	70 - 129
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Toluene-d8 (Surr)	103		80 - 120				
Dibromofluoromethane (Surr)	100		80 - 120				
4-Bromofluorobenzene (Surr)	103		80 - 120				
1,2-Dichloroethane-d4 (Surr)	98		80 - 120				

**Lab Sample ID: LCSD 580-363547/5**  
**Matrix: Water**  
**Analysis Batch: 363547**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
tert-Butylbenzene	5.00	5.16		ug/L		103	70 - 129	15	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
Toluene-d8 (Surr)	100		80 - 120						
Dibromofluoromethane (Surr)	96		80 - 120						
4-Bromofluorobenzene (Surr)	102		80 - 120						
1,2-Dichloroethane-d4 (Surr)	99		80 - 120						

**Lab Sample ID: MB 580-363841/7**  
**Matrix: Water**  
**Analysis Batch: 363841**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dichlorodifluoromethane	ND		0.40		ug/L			08/03/21 15:12	1
Chloromethane	ND		0.50		ug/L			08/03/21 15:12	1
Vinyl chloride	ND		0.020		ug/L			08/03/21 15:12	1
Bromomethane	ND		0.50		ug/L			08/03/21 15:12	1
Chloroethane	ND		0.50		ug/L			08/03/21 15:12	1
Trichlorofluoromethane	ND		0.50		ug/L			08/03/21 15:12	1
1,1-Dichloroethene	ND		0.20		ug/L			08/03/21 15:12	1
Methylene Chloride	ND		5.0		ug/L			08/03/21 15:12	1
Methyl tert-butyl ether	ND		0.30		ug/L			08/03/21 15:12	1

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# QC Sample Results

Client: Blaes Environmental Inc.  
 Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 580-363841/7**  
**Matrix: Water**  
**Analysis Batch: 363841**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
trans-1,2-Dichloroethene	ND		0.20		ug/L			08/03/21 15:12	1
1,1-Dichloroethane	ND		0.20		ug/L			08/03/21 15:12	1
2,2-Dichloropropane	ND		0.50		ug/L			08/03/21 15:12	1
cis-1,2-Dichloroethene	ND		0.20		ug/L			08/03/21 15:12	1
Chlorobromomethane	ND		0.20		ug/L			08/03/21 15:12	1
Chloroform	ND		0.20		ug/L			08/03/21 15:12	1
1,1,1-Trichloroethane	ND		0.20		ug/L			08/03/21 15:12	1
Carbon tetrachloride	ND		0.20		ug/L			08/03/21 15:12	1
1,1-Dichloropropene	ND		0.20		ug/L			08/03/21 15:12	1
Benzene	ND		0.20		ug/L			08/03/21 15:12	1
EDC	ND		0.20		ug/L			08/03/21 15:12	1
Trichloroethene	ND		0.20		ug/L			08/03/21 15:12	1
1,2-Dichloropropane	ND		0.20		ug/L			08/03/21 15:12	1
Dibromomethane	ND		0.20		ug/L			08/03/21 15:12	1
Dichlorobromomethane	ND		0.20		ug/L			08/03/21 15:12	1
cis-1,3-Dichloropropene	ND		0.20		ug/L			08/03/21 15:12	1
Toluene	ND		0.20		ug/L			08/03/21 15:12	1
trans-1,3-Dichloropropene	ND		0.20		ug/L			08/03/21 15:12	1
1,1,2-Trichloroethane	ND		0.20		ug/L			08/03/21 15:12	1
Tetrachloroethene	ND		0.50		ug/L			08/03/21 15:12	1
1,3-Dichloropropane	ND		0.20		ug/L			08/03/21 15:12	1
Chlorodibromomethane	ND		0.20		ug/L			08/03/21 15:12	1
Chlorobenzene	ND		0.20		ug/L			08/03/21 15:12	1
1,1,1,2-Tetrachloroethane	ND		0.30		ug/L			08/03/21 15:12	1
Ethylbenzene	ND		0.20		ug/L			08/03/21 15:12	1
m-Xylene & p-Xylene	ND		0.50		ug/L			08/03/21 15:12	1
o-Xylene	ND		0.50		ug/L			08/03/21 15:12	1
Styrene	ND		1.0		ug/L			08/03/21 15:12	1
Bromoform	ND		0.50		ug/L			08/03/21 15:12	1
Isopropylbenzene	ND		1.0		ug/L			08/03/21 15:12	1
Bromobenzene	ND		0.20		ug/L			08/03/21 15:12	1
1,1,2,2-Tetrachloroethane	ND		0.20		ug/L			08/03/21 15:12	1
1,2,3-Trichloropropane	ND		0.20		ug/L			08/03/21 15:12	1
N-Propylbenzene	ND		0.30		ug/L			08/03/21 15:12	1
2-Chlorotoluene	ND		0.50		ug/L			08/03/21 15:12	1
4-Chlorotoluene	ND		0.30		ug/L			08/03/21 15:12	1
1,3,5-Trimethylbenzene	ND		0.50		ug/L			08/03/21 15:12	1
1,2,4-Trimethylbenzene	ND		0.30		ug/L			08/03/21 15:12	1
sec-Butylbenzene	ND		1.0		ug/L			08/03/21 15:12	1
4-Isopropyltoluene	ND		0.50		ug/L			08/03/21 15:12	1
1,3-Dichlorobenzene	ND		0.30		ug/L			08/03/21 15:12	1
1,4-Dichlorobenzene	ND		0.30		ug/L			08/03/21 15:12	1
n-Butylbenzene	ND		1.0		ug/L			08/03/21 15:12	1
1,2-Dichlorobenzene	ND		0.30		ug/L			08/03/21 15:12	1
1,2-Dibromo-3-Chloropropane	ND		2.0		ug/L			08/03/21 15:12	1
1,2,4-Trichlorobenzene	ND		0.50		ug/L			08/03/21 15:12	1
Hexachlorobutadiene	ND		0.50		ug/L			08/03/21 15:12	1
Naphthalene	ND		1.0		ug/L			08/03/21 15:12	1
1,2,3-Trichlorobenzene	ND		0.50		ug/L			08/03/21 15:12	1

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# QC Sample Results

Client: Blaes Environmental Inc.  
 Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	100		80 - 120		08/03/21 15:12	1
Dibromofluoromethane (Surr)	109		80 - 120		08/03/21 15:12	1
4-Bromofluorobenzene (Surr)	105		80 - 120		08/03/21 15:12	1
1,2-Dichloroethane-d4 (Surr)	102		80 - 120		08/03/21 15:12	1

**Lab Sample ID: LCS 580-363841/4**  
**Matrix: Water**  
**Analysis Batch: 363841**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dichlorodifluoromethane	5.00	4.91		ug/L		98	20 - 150
Chloromethane	5.00	4.92		ug/L		98	32 - 150
Vinyl chloride	5.00	5.20		ug/L		104	41 - 150
Bromomethane	5.00	5.82		ug/L		116	51 - 148
Chloroethane	5.00	5.20		ug/L		104	54 - 140
Trichlorofluoromethane	5.00	5.21		ug/L		104	60 - 132
1,1-Dichloroethene	5.00	5.87		ug/L		117	60 - 129
Methylene Chloride	5.00	5.55		ug/L		111	40 - 142
Methyl tert-butyl ether	5.00	5.78		ug/L		116	61 - 131
trans-1,2-Dichloroethene	5.00	5.69		ug/L		114	69 - 121
1,1-Dichloroethane	5.00	5.30		ug/L		106	74 - 120
2,2-Dichloropropane	5.00	5.87		ug/L		117	55 - 140
cis-1,2-Dichloroethene	5.00	5.76		ug/L		115	72 - 120
Chlorobromomethane	5.00	5.17		ug/L		103	79 - 121
Chloroform	5.00	5.08		ug/L		102	75 - 120
1,1,1-Trichloroethane	5.00	5.56		ug/L		111	70 - 121
Carbon tetrachloride	5.00	5.38		ug/L		108	66 - 130
1,1-Dichloropropene	5.00	6.31	*+	ug/L		126	72 - 125
Benzene	5.00	4.94		ug/L		99	80 - 120
EDC	5.00	4.95		ug/L		99	74 - 127
Trichloroethene	5.00	4.95		ug/L		99	72 - 120
1,2-Dichloropropane	5.00	4.76		ug/L		95	69 - 130
Dibromomethane	5.00	4.92		ug/L		98	65 - 141
Dichlorobromomethane	5.00	4.51		ug/L		90	74 - 131
cis-1,3-Dichloropropene	5.00	5.22		ug/L		104	77 - 131
Toluene	5.00	4.86		ug/L		97	80 - 126
trans-1,3-Dichloropropene	5.00	4.53		ug/L		91	71 - 138
1,1,2-Trichloroethane	5.00	4.66		ug/L		93	73 - 127
Tetrachloroethene	5.00	5.09		ug/L		102	75 - 124
1,3-Dichloropropane	5.00	4.56		ug/L		91	69 - 138
Chlorodibromomethane	5.00	4.68		ug/L		94	62 - 141
Chlorobenzene	5.00	5.13		ug/L		103	74 - 123
1,1,1,2-Tetrachloroethane	5.00	5.05		ug/L		101	69 - 127
Ethylbenzene	5.00	5.66		ug/L		113	80 - 124
m-Xylene & p-Xylene	5.00	6.24	*+	ug/L		125	75 - 124
o-Xylene	5.00	5.82		ug/L		116	71 - 124
Styrene	5.00	5.15		ug/L		103	74 - 127
Bromoform	5.00	4.69		ug/L		94	48 - 127
Isopropylbenzene	5.00	5.27		ug/L		105	71 - 123
Bromobenzene	5.00	4.59		ug/L		92	74 - 130
1,1,2,2-Tetrachloroethane	5.00	4.26		ug/L		85	67 - 136

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# QC Sample Results

Client: Blaes Environmental Inc.  
 Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCS 580-363841/4**  
**Matrix: Water**  
**Analysis Batch: 363841**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2,3-Trichloropropane	5.00	4.73		ug/L		95	67 - 135
N-Propylbenzene	5.00	5.98		ug/L		120	72 - 126
2-Chlorotoluene	5.00	5.42		ug/L		108	73 - 120
4-Chlorotoluene	5.00	5.37		ug/L		107	75 - 124
1,3,5-Trimethylbenzene	5.00	5.07		ug/L		101	75 - 123
1,2,4-Trimethylbenzene	5.00	5.00		ug/L		100	71 - 127
sec-Butylbenzene	5.00	5.09		ug/L		102	75 - 126
4-Isopropyltoluene	5.00	4.94		ug/L		99	78 - 125
1,3-Dichlorobenzene	5.00	4.96		ug/L		99	72 - 125
1,4-Dichlorobenzene	5.00	4.67		ug/L		93	71 - 129
n-Butylbenzene	5.00	5.03		ug/L		101	69 - 127
1,2-Dichlorobenzene	5.00	5.10		ug/L		102	72 - 129
1,2-Dibromo-3-Chloropropane	5.00	4.21		ug/L		84	55 - 135
1,2,4-Trichlorobenzene	5.00	5.52		ug/L		110	60 - 130
Hexachlorobutadiene	5.00	5.43		ug/L		109	63 - 130
Naphthalene	5.00	5.31		ug/L		106	54 - 137
1,2,3-Trichlorobenzene	5.00	5.42		ug/L		108	60 - 136

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Toluene-d8 (Surr)	101		80 - 120
Dibromofluoromethane (Surr)	103		80 - 120
4-Bromofluorobenzene (Surr)	107		80 - 120
1,2-Dichloroethane-d4 (Surr)	96		80 - 120

**Lab Sample ID: LCSD 580-363841/5**  
**Matrix: Water**  
**Analysis Batch: 363841**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dichlorodifluoromethane	5.00	4.36		ug/L		87	20 - 150	12	30
Chloromethane	5.00	4.39		ug/L		88	32 - 150	11	33
Vinyl chloride	5.00	4.64		ug/L		93	41 - 150	11	32
Bromomethane	5.00	5.00		ug/L		100	51 - 148	15	35
Chloroethane	5.00	4.57		ug/L		91	54 - 140	13	33
Trichlorofluoromethane	5.00	4.72		ug/L		94	60 - 132	10	32
1,1-Dichloroethene	5.00	5.30		ug/L		106	60 - 129	10	29
Methylene Chloride	5.00	5.10		ug/L		102	40 - 142	8	25
Methyl tert-butyl ether	5.00	5.23		ug/L		105	61 - 131	10	27
trans-1,2-Dichloroethene	5.00	5.20		ug/L		104	69 - 121	9	27
1,1-Dichloroethane	5.00	4.98		ug/L		100	74 - 120	6	26
2,2-Dichloropropane	5.00	5.27		ug/L		105	55 - 140	11	31
cis-1,2-Dichloroethene	5.00	5.42		ug/L		108	72 - 120	6	22
Chlorobromomethane	5.00	4.94		ug/L		99	79 - 121	5	20
Chloroform	5.00	4.78		ug/L		96	75 - 120	6	21
1,1,1-Trichloroethane	5.00	5.13		ug/L		103	70 - 121	8	24
Carbon tetrachloride	5.00	4.94		ug/L		99	66 - 130	8	24
1,1-Dichloropropene	5.00	6.04		ug/L		121	72 - 125	4	23
Benzene	5.00	4.76		ug/L		95	80 - 120	4	22

Eurofins FGS, Seattle

# QC Sample Results

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: LCSD 580-363841/5**  
**Matrix: Water**  
**Analysis Batch: 363841**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
EDC	5.00	4.94		ug/L		99	74 - 127	0	21
Trichloroethene	5.00	4.79		ug/L		96	72 - 120	3	22
1,2-Dichloropropane	5.00	4.62		ug/L		92	69 - 130	3	22
Dibromomethane	5.00	4.80		ug/L		96	65 - 141	2	22
Dichlorobromomethane	5.00	4.45		ug/L		89	74 - 131	1	21
cis-1,3-Dichloropropene	5.00	5.44		ug/L		109	77 - 131	4	24
Toluene	5.00	4.82		ug/L		96	80 - 126	1	20
trans-1,3-Dichloropropene	5.00	4.63		ug/L		93	71 - 138	2	26
1,1,2-Trichloroethane	5.00	4.61		ug/L		92	73 - 127	1	22
Tetrachloroethene	5.00	5.01		ug/L		100	75 - 124	2	20
1,3-Dichloropropane	5.00	4.62		ug/L		92	69 - 138	1	19
Chlorodibromomethane	5.00	4.62		ug/L		92	62 - 141	1	22
Chlorobenzene	5.00	5.01		ug/L		100	74 - 123	2	21
1,1,1,2-Tetrachloroethane	5.00	4.86		ug/L		97	69 - 127	4	22
Ethylbenzene	5.00	5.44		ug/L		109	80 - 124	4	22
m-Xylene & p-Xylene	5.00	6.04		ug/L		121	75 - 124	3	22
o-Xylene	5.00	5.64		ug/L		113	71 - 124	3	23
Styrene	5.00	4.95		ug/L		99	74 - 127	4	22
Bromoform	5.00	4.44		ug/L		89	48 - 127	5	23
Isopropylbenzene	5.00	5.04		ug/L		101	71 - 123	4	23
Bromobenzene	5.00	4.68		ug/L		94	74 - 130	2	23
1,1,2,2-Tetrachloroethane	5.00	4.20		ug/L		84	67 - 136	1	24
1,2,3-Trichloropropane	5.00	4.75		ug/L		95	67 - 135	0	25
N-Propylbenzene	5.00	5.99		ug/L		120	72 - 126	0	20
2-Chlorotoluene	5.00	5.47		ug/L		109	73 - 120	1	22
4-Chlorotoluene	5.00	5.37		ug/L		107	75 - 124	0	23
1,3,5-Trimethylbenzene	5.00	5.07		ug/L		101	75 - 123	0	23
1,2,4-Trimethylbenzene	5.00	5.00		ug/L		100	71 - 127	0	23
sec-Butylbenzene	5.00	5.07		ug/L		101	75 - 126	0	23
4-Isopropyltoluene	5.00	4.88		ug/L		98	78 - 125	1	24
1,3-Dichlorobenzene	5.00	4.95		ug/L		99	72 - 125	0	22
1,4-Dichlorobenzene	5.00	4.64		ug/L		93	71 - 129	1	22
n-Butylbenzene	5.00	4.94		ug/L		99	69 - 127	2	24
1,2-Dichlorobenzene	5.00	5.01		ug/L		100	72 - 129	2	22
1,2-Dibromo-3-Chloropropane	5.00	4.04		ug/L		81	55 - 135	4	29
1,2,4-Trichlorobenzene	5.00	5.39		ug/L		108	60 - 130	2	26
Hexachlorobutadiene	5.00	5.32		ug/L		106	63 - 130	2	26
Naphthalene	5.00	5.14		ug/L		103	54 - 137	3	28
1,2,3-Trichlorobenzene	5.00	5.27		ug/L		105	60 - 136	3	28

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Toluene-d8 (Surr)	103		80 - 120
Dibromofluoromethane (Surr)	100		80 - 120
4-Bromofluorobenzene (Surr)	105		80 - 120
1,2-Dichloroethane-d4 (Surr)	94		80 - 120

# QC Sample Results

Client: Blaes Environmental Inc.  
 Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

**Lab Sample ID: MB 580-364540/21**  
**Matrix: Water**  
**Analysis Batch: 364540**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
tert-Butylbenzene	ND		0.50		ug/L			08/09/21 12:37	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
Toluene-d8 (Surr)	99		80 - 120					08/09/21 12:37	1
Dibromofluoromethane (Surr)	94		80 - 120					08/09/21 12:37	1
4-Bromofluorobenzene (Surr)	97		80 - 120					08/09/21 12:37	1
1,2-Dichloroethane-d4 (Surr)	96		80 - 120					08/09/21 12:37	1

**Lab Sample ID: LCS 580-364540/18**  
**Matrix: Water**  
**Analysis Batch: 364540**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
tert-Butylbenzene	5.00	5.06		ug/L		101	70 - 129
Surrogate	LCS %Recovery	LCS Qualifier	Limits				
Toluene-d8 (Surr)	99		80 - 120				
Dibromofluoromethane (Surr)	98		80 - 120				
4-Bromofluorobenzene (Surr)	98		80 - 120				
1,2-Dichloroethane-d4 (Surr)	99		80 - 120				

**Lab Sample ID: LCSD 580-364540/19**  
**Matrix: Water**  
**Analysis Batch: 364540**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
tert-Butylbenzene	5.00	4.97		ug/L		99	70 - 129	2	24
Surrogate	LCSD %Recovery	LCSD Qualifier	Limits						
Toluene-d8 (Surr)	99		80 - 120						
Dibromofluoromethane (Surr)	99		80 - 120						
4-Bromofluorobenzene (Surr)	99		80 - 120						
1,2-Dichloroethane-d4 (Surr)	99		80 - 120						

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC)

**Lab Sample ID: MB 580-364060/3**  
**Matrix: Water**  
**Analysis Batch: 364060**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gasoline	ND		0.25		mg/L			08/04/21 13:48	1
Surrogate	MB %Recovery	MB Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene (Surr)	102		50 - 150					08/04/21 13:48	1

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# QC Sample Results

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Method: NWTPH-Gx - Northwest - Volatile Petroleum Products (GC) (Continued)

**Lab Sample ID: LCS 580-364060/4**  
**Matrix: Water**  
**Analysis Batch: 364060**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gasoline	1.00	1.04		mg/L		104	79 - 120
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
4-Bromofluorobenzene (Surr)	113		50 - 150				

**Lab Sample ID: LCSD 580-364060/5**  
**Matrix: Water**  
**Analysis Batch: 364060**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Gasoline	1.00	0.937	*1	mg/L		94	79 - 120	11	10
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCSD Qualifier</b>	<b>Limits</b>						
4-Bromofluorobenzene (Surr)	108		50 - 150						

## Method: 8011 - EDB

**Lab Sample ID: MB 580-364162/1-A**  
**Matrix: Water**  
**Analysis Batch: 364308**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 364162**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ethylene Dibromide	ND		0.010		ug/L		08/05/21 14:43	08/06/21 15:59	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>						
1,2-Dibromopropane	109		60 - 140						

**Lab Sample ID: LCS 580-364162/2-A**  
**Matrix: Water**  
**Analysis Batch: 364308**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 364162**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylene Dibromide	0.0576	0.0599		ug/L		104	60 - 140
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
1,2-Dibromopropane	109		60 - 140				

**Lab Sample ID: LCSD 580-364162/3-A**  
**Matrix: Water**  
**Analysis Batch: 364308**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 364162**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ethylene Dibromide	0.0576	0.0628		ug/L		109	60 - 140	5	20
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCSD Qualifier</b>	<b>Limits</b>						
1,2-Dibromopropane	114		60 - 140						

Eurofins FGS, Seattle

# QC Sample Results

Client: Blaes Environmental Inc.  
 Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Method: 8011 - EDB (Continued)

**Lab Sample ID: LLCS 580-364162/4-A**  
**Matrix: Water**  
**Analysis Batch: 364308**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 364162**  
**%Rec.**

Analyte	Spike Added	LLCS Result	LLCS Qualifier	Unit	D	%Rec	Limits
Ethylene Dibromide	0.0115	0.0142		ug/L		123	60 - 145
<b>Surrogate</b>	<b>%Recovery</b>	<b>LLCS Qualifier</b>	<b>Limits</b>				
1,2-Dibromopropane	110		60 - 140				

## Method: NWTPH-Dx - Northwest - Semi-Volatile Petroleum Products (GC)

**Lab Sample ID: MB 580-363264/1-A**  
**Matrix: Water**  
**Analysis Batch: 363471**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 363264**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
#2 Diesel (C10-C24)	ND		0.11		mg/L		07/28/21 10:59	07/29/21 19:56	1
Motor Oil (>C24-C36)	ND		0.35		mg/L		07/28/21 10:59	07/29/21 19:56	1
<b>Surrogate</b>	<b>%Recovery</b>	<b>MB Qualifier</b>	<b>Limits</b>				<b>Prepared</b>	<b>Analyzed</b>	<b>Dil Fac</b>
o-Terphenyl	68		50 - 150				07/28/21 10:59	07/29/21 19:56	1

**Lab Sample ID: LCS 580-363264/2-A**  
**Matrix: Water**  
**Analysis Batch: 363471**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 363264**  
**%Rec.**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
#2 Diesel (C10-C24)	2.00	1.41		mg/L		71	50 - 120
Motor Oil (>C24-C36)	2.00	1.69		mg/L		84	64 - 120
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCS Qualifier</b>	<b>Limits</b>				
o-Terphenyl	77		50 - 150				

**Lab Sample ID: LCSD 580-363264/3-A**  
**Matrix: Water**  
**Analysis Batch: 363471**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 363264**  
**%Rec.**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
#2 Diesel (C10-C24)	2.00	1.50		mg/L		75	50 - 120	6	26
Motor Oil (>C24-C36)	2.00	1.80		mg/L		90	64 - 120	6	24
<b>Surrogate</b>	<b>%Recovery</b>	<b>LCSD Qualifier</b>	<b>Limits</b>						
o-Terphenyl	84		50 - 150						

## Method: 6020B - Metals (ICP/MS)

**Lab Sample ID: MB 580-363575/6-A**  
**Matrix: Water**  
**Analysis Batch: 363816**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 363575**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		5.0		ug/L		07/30/21 17:39	08/02/21 10:57	5

Eurofins FGS, Seattle

# QC Sample Results

Client: Blaes Environmental Inc.  
 Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Method: 6020B - Metals (ICP/MS) (Continued)

**Lab Sample ID: MB 580-363575/6-A**  
**Matrix: Water**  
**Analysis Batch: 363816**

**Client Sample ID: Method Blank**  
**Prep Type: Total/NA**  
**Prep Batch: 363575**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	ND		2.0		ug/L		07/30/21 17:39	08/02/21 10:57	5

**Lab Sample ID: LCS 580-363575/7-A**  
**Matrix: Water**  
**Analysis Batch: 363816**

**Client Sample ID: Lab Control Sample**  
**Prep Type: Total/NA**  
**Prep Batch: 363575**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	1000	1030		ug/L		103	80 - 120
Lead	1000	1030		ug/L		103	80 - 120

**Lab Sample ID: LCSD 580-363575/8-A**  
**Matrix: Water**  
**Analysis Batch: 363816**

**Client Sample ID: Lab Control Sample Dup**  
**Prep Type: Total/NA**  
**Prep Batch: 363575**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	1000	1020		ug/L		102	80 - 120	1	20
Lead	1000	1020		ug/L		102	80 - 120	0	20

**Lab Sample ID: 580-104774-1 MS**  
**Matrix: Water**  
**Analysis Batch: 363816**

**Client Sample ID: MW-3**  
**Prep Type: Total/NA**  
**Prep Batch: 363575**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	14		1000	1040		ug/L		102	80 - 120
Lead	37		1000	1080		ug/L		104	80 - 120

**Lab Sample ID: 580-104774-1 MSD**  
**Matrix: Water**  
**Analysis Batch: 363816**

**Client Sample ID: MW-3**  
**Prep Type: Total/NA**  
**Prep Batch: 363575**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	14		1000	1070		ug/L		106	80 - 120	3	20
Lead	37		1000	1110		ug/L		107	80 - 120	3	20

**Lab Sample ID: 580-104774-1 DU**  
**Matrix: Water**  
**Analysis Batch: 363816**

**Client Sample ID: MW-3**  
**Prep Type: Total/NA**  
**Prep Batch: 363575**

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Arsenic	14		13.3		ug/L		2	20
Lead	37		36.1		ug/L		2	20

# Lab Chronicle

Client: Blaes Environmental Inc.  
 Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Client Sample ID: MW-3

Date Collected: 07/27/21 13:31

Date Received: 07/27/21 16:53

## Lab Sample ID: 580-104774-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D	RA	1	364540	08/09/21 17:47	TL1	FGS SEA
Total/NA	Analysis	8260D		10	363841	08/03/21 16:51	T1W	FGS SEA
Total/NA	Analysis	NWTPH-Gx		1	364060	08/04/21 21:36	JBT	FGS SEA
Total/NA	Prep	8011			364162	08/05/21 14:44	MLT	FGS SEA
Total/NA	Analysis	8011		1	364308	08/06/21 17:05	TL1	FGS SEA
Total/NA	Prep	3510C			363264	07/28/21 10:59	N1B	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	363471	07/29/21 20:57	T1W	FGS SEA
Total/NA	Prep	3010A			363575	07/30/21 17:39	TMH	FGS SEA
Total/NA	Analysis	6020B		5	363816	08/02/21 11:05	FCW	FGS SEA

## Client Sample ID: MW-9

Date Collected: 07/27/21 12:20

Date Received: 07/27/21 16:53

## Lab Sample ID: 580-104774-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D	RA	1	364540	08/09/21 18:11	TL1	FGS SEA
Total/NA	Analysis	8260D		1	363841	08/03/21 17:15	T1W	FGS SEA
Total/NA	Analysis	NWTPH-Gx		1	364060	08/04/21 22:02	JBT	FGS SEA
Total/NA	Prep	8011			364162	08/05/21 14:44	MLT	FGS SEA
Total/NA	Analysis	8011		1	364308	08/06/21 17:21	TL1	FGS SEA
Total/NA	Prep	3510C			363264	07/28/21 10:59	N1B	FGS SEA
Total/NA	Analysis	NWTPH-Dx		1	363471	07/29/21 21:17	T1W	FGS SEA
Total/NA	Prep	3010A			363575	07/30/21 17:39	TMH	FGS SEA
Total/NA	Analysis	6020B		5	363816	08/02/21 11:01	FCW	FGS SEA

## Client Sample ID: Trip Blank

Date Collected: 07/27/21 00:00

Date Received: 07/27/21 16:53

## Lab Sample ID: 580-104774-3

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260D		1	363547	07/31/21 01:10	CJ	FGS SEA
Total/NA	Analysis	8260D		1	363841	08/03/21 17:40	T1W	FGS SEA

**Laboratory References:**

FGS SEA = Eurofins FGS, Seattle, 5755 8th Street East, Tacoma, WA 98424, TEL (253)922-2310

# Accreditation/Certification Summary

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

## Laboratory: Eurofins FGS, Seattle

The accreditations/certifications listed below are applicable to this report.

Authority	Program	Identification Number	Expiration Date
Washington	State	C788	07-13-22

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11

# Sample Summary

Client: Blaes Environmental Inc.  
Project/Site: Eastern Washington Project - Circle K #6042

Job ID: 580-104774-1

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Lab Sample ID	Client Sample ID	Matrix	Collected	Received
580-104774-1	MW-3	Water	07/27/21 13:31	07/27/21 16:53
580-104774-2	MW-9	Water	07/27/21 12:20	07/27/21 16:53
580-104774-3	Trip Blank	Water	07/27/21 00:00	07/27/21 16:53

1

2

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11



# Login Sample Receipt Checklist

Client: Blaes Environmental Inc.

Job Number: 580-104774-1

**Login Number: 104774**

**List Source: Eurofins FGS, Seattle**

**List Number: 1**

**Creator: Greene, Ashton R**

Question	Answer	Comment
Radioactivity wasn't checked or is <math>\leq</math> background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

