

**LIMITED SUBSURFACE  
SAMPLING AND TESTING**

Vacant Former Firestone Complete Auto Care  
351 Rainier Avenue South  
Renton, Washington 98057

**KIDDER MATHEWS**

# ENVIRONMENTAL ASSOCIATES, INC.

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February 18, 2021

JN-40139-1

Mr. Mike Catt, Associate Vice President  
Kidder Mathews  
12886 Interurban Avenue South  
Seattle, Washington 98168

Subject:       **LIMITED SUBSURFACE SAMPLING AND TESTING**  
                  **Vacant Former Firestone Auto Care Property**  
                  **351 Rainier Avenue South**  
                  **Renton, Washington 98057**

Dear Mr. Catt:

Environmental Associates, Inc. (EAI) has performed sampling and environmental testing of subsurface soils, groundwater, and soil-vapor at selected localities on the subject property. The purpose of this work was to make an assessment of the conditions beneath the property in recognition of prior on-site auto service and waste oil storage. This report, prepared in accordance with the terms of our proposal dated January 18, 2021, summarizes our approach to the project along with results and conclusions.

The contents of this report are confidential and are intended solely for your use and the use of your representatives. No other distribution or discussion of this report will take place without your prior approval in writing.



*Kidder Mathews*  
*February 18, 2021*

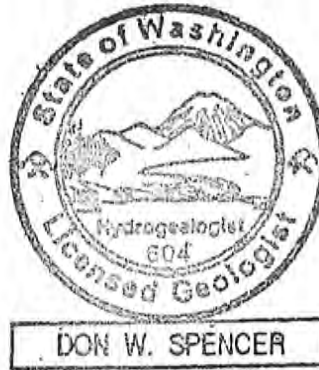
*JN-40139-1*  
*Page - 2*

We appreciate the opportunity to be of service on this assignment. If you have any questions or if we may be of additional service, please do not hesitate to contact us.

Respectfully submitted,  
**ENVIRONMENTAL ASSOCIATES, INC.**



Don W. Spencer, M.Sc., P.G.  
Principal



License: 604	(Washington)
License: 11464	(Oregon)
License: 876	(California)
License: 5195	(Illinois)
License: 0327	(Mississippi)
REPA: 418290	

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**ENVIRONMENTAL ASSOCIATES, INC.**

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# LIMITED SUBSURFACE SAMPLING AND TESTING

Vacant Former Firestone Auto Care Property  
351 Rainier Avenue South  
Renton, Washington 98057

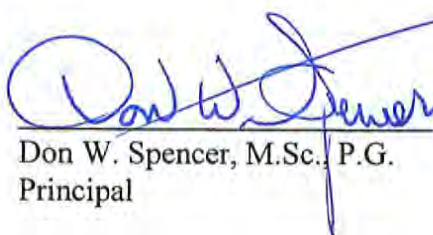
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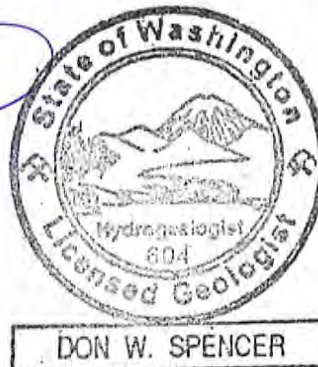
Kidder Mathews  
12886 Interurban Avenue South  
Seattle, Washington 98168

Questions regarding this investigation, the conclusions reached should be addressed to one of the following undersigned.

  
Eric Zuern

Environmental Geologist / Project Manager

  
Don W. Spencer, M.Sc., P.G.  
Principal



License: 604	(Washington)
License: 11464	(Oregon)
License: 876	(California)
License: 5195	(Illinois)
License: 0327	(Mississippi)
REPA: 418290	

Reference Job Number: JN 40139-1

February 18, 2021

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## **INTRODUCTION/SCOPE OF WORK**

### **SITE/PROJECT DESCRIPTION**

The subject property is a roughly rectangular - shaped parcel (tax parcel number 000720-0126) covering approximately 15,578 square feet of land or approximately 0.36 acres. Existing improvements consist principally of a single-story building of masonry design enclosing approximately 8,750 square feet of space which was reportedly constructed in 1960. Additional improvements include an asphalt paved parking lot and untended landscaping. The property was recently occupied by a Firestone Automotive Service Center however the building is currently unoccupied. The approximate location of the site is shown on the Vicinity/Topographic Map, Plate 1, appended herewith.

### **Background**

In December 2020, Environmental Associates, Inc.(EAI) completed a Phase I Environmental Site Assessment for the subject. That report identified the following environmental conditions associated with the site:

- Long-term on-site automotive service and repair which utilized in-ground hoists.
- An underground waste oil storage tank (UST) had previously been utilized on the property and reportedly removed at some time in the past. No documentation regarding subsurface conditions at the time of UST removal was discovered in the readily available public record.

EAI recommended that if the client and/or other involved parties desired knowledge of current environmental conditions beneath the site, subsurface sampling and testing could be employed to assess whether impacts were present.

The reader is referred to the above reports for further details.

### **Current Study**

Your expressed interests to evaluate current subsurface conditions beneath the site as memorialized in EAI's proposal dated January 18, 2021, formed the basis for the following scope of work:

- Conduct a geophysical survey of the accessible portions of the site in an attempt to determine the former location of the historic waste oil UST.
- Drill and sample ten (10) borings surrounding the on-site building. Soil and groundwater samples were obtained from the borings and a log of subsurface conditions encountered was prepared for each boring by the EAI project geologist. Soil-vapor samples were collected from three (3) of the borings.

- Laboratory analysis of selected soil and groundwater samples for gasoline, diesel, and heavy oil total petroleum hydrocarbons as well as benzene, toluene, ethylbenzene, xylenes (BTEX) and volatile organic compounds (VOCs). Two (2) samples generally proximal to the former waste oil storage area were submitted for analysis of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and MTCA-5 metals including arsenic, cadmium, chromium, lead, and mercury. Soil-vapor samples were analyzed for aliphatic/aromatic petroleum hydrocarbons (APHs) and select VOCs including BTEX compounds, naphthalene, and chlorinated solvents.
- Preparation of this summary report documenting the methodology and results of the investigation.

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## **FINDINGS**

### **Geophysical Survey**

On January 28, 2021, EAI's technical team performed a geophysical survey of the interior shop areas, storage areas, and exterior parking lot of the subject in an effort to discover the former waste oil UST tank excavation as well as to "clear" each of the proposed boring locations of utilities which may be present in the exploration areas. Ground penetrating radar (GPR) equipment was used to scan for subsurface "anomalies". No anomalies (i.e. vent piping, soil disturbances, etc.) were identified which would otherwise indicate the locality of the former UST. Interior below grade electric, sewer, water, and air lines were noted within the shop building as were features which appeared to be remnants of fence posts along the western building exterior. Additionally, below grade piping was detected running from one of the former hoist areas to an above-ground stand pipe. The stand pipe was found to still contain hydraulic oil. The piping appeared to transport hydraulic oil to the hoist from a former above ground reservoir tank which likely sat next the stand pipe.

### **SUBSURFACE INVESTIGATION**

#### **Soil Boring Sampling**

Referring to the attached Site Plan, Plate 2, ten (10) borings were made on February 1 and 2, 2021 at the approximate locations noted as B1 through B10. Boring locations were selected to assess for impacts from the former hoists, as well as from where an above-ground waste oil storage tank (AST) had previously been located. "Guard" holes were also placed along the northern and southern property lines to assess for contaminant migration (if any) along the parcel boundaries. The borings were extended to depths between approximately 12 to 16 feet below ground surface (bgs) depending upon the occurrence of groundwater and reaching depths below the in-ground hoist mechanisms. Recoverable groundwater was generally encountered at various depth zones between approximately 8 feet and 12 feet bgs depending upon location across the site.

### **Soil and Groundwater Sampling Procedure**

Under the observation of the EAI field geologist, a push probe drill rig was brought into position over the borings locations. Following set-up preparations, the push-probe sampling technique consisted of advancing a plastic lined sampler into the ground. The sampler was then withdrawn and the liner was removed and cut open for examination and transfer of the soil sample to laboratory prepared glassware by EPA Method 5035 as well as sterilized 4 ounce jars.

As groundwater was observed in each boring, after soil sampling within the borings had been completed, a temporary well screen was installed in an attempt to sample the groundwater. Small diameter plastic tubing was extended from a peristaltic pump into each temporary well screen to recover groundwater samples.

Soil and groundwater samples were transferred from the sampler directly to sterilized laboratory prepared glassware which were then stored in an iced chest maintained at approximately 4 degrees centigrade at the site and taken to the laboratory in this condition in an effort to preserve sample integrity.

Each sample container was clearly labeled as to boring and sample number/depth, date, time, project, etc. EPA-recommended sample-management protocol was observed at each stage of the project. During drilling, a field log was made by EAI for each boring. Information recorded versus corresponding depth included soil classification (Unified Soil Classification System), color, texture, relative moisture, odors (if present), etc.

### **Soil-Vapor Sampling Procedure**

In an effort to evaluate soil-vapor beneath the floor slab, sampling “pins” (essentially a hollow small-diameter steel spike) were extended through the concrete slab floor at locations adjacent to B5, B9, and B10 and a soil -vapor sample from immediately beneath the floor slab was collected through the temporary sampling pin and tubing at each location.

Laboratory-prepared “summa canisters” (vacuum cylinders drawing at a predetermined rate) were utilized to collect samples of the subsurface (sub-slab) soil-vapor at the specified locations. Utilizing flow controllers and gauge-vacuum provided by Friedman & Bruya, Inc. of Seattle, Washington, soil-vapor was collected over a span of several minutes.

Each sample container was recorded as to sample number/location, date, time, project, etc. EPA-recommended sample-management protocol was observed at each stage of the project.



## **Subsurface Conditions**

Referring to boring logs (Plates 3 to 12), soils encountered within the borings generally consisted of silts, sands, and gravels, with sands or silty sands becoming prominent below a depth of 10 feet below ground surface (bgs). Groundwater was generally encountered at depths between 7 to 10 feet bgs. Petroleum odors were noticed in soils collected from boring B7 at depths between 9 to 10 feet bgs.

## **LABORATORY ANALYSIS**

Laboratory analysis of soil and groundwater samples was conducted by ESN Northwest of Olympia and Renton, Washington, Friedman & Bruya, Inc. of Seattle, Washington, and Dragon Analytical Laboratories of Tumwater, Washington, all being WDOE-accredited analytical laboratories. Select soil and groundwater samples were submitted for analysis of gasoline, diesel, and heavy oil total petroleum hydrocarbons (TPH) along with fuel constituents benzene, toluene, ethylbenzene, and xylenes (BTEX) as well as volatile organic compounds (VOCs). Two (2) samples proximal to the former waste oil storage area were also analyzed for polycyclic aromatic hydrocarbons (PAHs), MTCA-5 metals (including arsenic, cadmium, chromium, lead, and mercury), and polychlorinated biphenyls (PCBs). Soil-vapor samples were tested for aliphatic/aromatic petroleum hydrocarbons (APHs), BTEX, naphthalene, and chlorinated solvents.

As summarized in Table 1 attached to this report, total petroleum hydrocarbons (TPH) in the boiling range of diesel was reported in soils collected from boring B7 between 9 to 10 feet bgs. That detection of **7,200** parts per million (ppm) is above the applicable MTCA Method-A compliance limit for diesel TPH, currently published at **2,000** ppm. No other detections of petroleum or BTEX constituents were found in the soil samples analyzed.

As discussed in Table 2 appended to this report, diesel TPH was reported in groundwater samples from borings B6 and B7 at concentrations above the applicable MTCA Method-A cleanup level. Gasoline TPH was also reported in groundwater sampled from B6 however that concentration was below (i.e. compliant with) the published compliance limit for that analyte. Trace detections of toluene were also encountered in groundwater from borings B7, B8, and B9 at compliant concentrations while ethylbenzene was reported in groundwater sampled from B8 at a compliant level.

As documented in Table 3 attached to this report as well as the appended laboratory data, tetrachloroethene (PCE) was reported in soil sampled from B3 at a depth of 10 feet bgs and B6 at depths between 4 to 15 feet bgs. The detections at B6 at 4 and 10 feet bgs (at concentrations of 0.06 and 0.08 ppm respectively) are above the MTCA Method-A compliance limit for PCE, currently established at 0.05 ppm. Other detections of PCE just met the cleanup level. No other VOCs were reported in the soil samples analyzed.

As depicted in Table 4 attached to this report and as reflected in the appended laboratory data, PCE was reported in groundwater sampled from boring B2 at a concentration of 1.2 parts per billion (ppb) which is below (i.e. compliant with) the MTCA Method-A compliance limit of 5 ppb for PCE in groundwater.

As reported in Tables 5 and 6 attached to this report as well as the appended laboratory data, no PAHs (carcinogenic or otherwise) were detected in the soil or groundwater samples analyzed from boring B2 (former waste oil UST area).

As summarized in Tables 7 and 8 attached to this report, no detections of PCBs were found in the soil or groundwater samples analyzed from boring B2.

As documented in Table 9, attached to this report, various detections of arsenic, chromium, and lead were reported in the soil sample analyzed from boring B2 (former waste oil UST area). While the lead and arsenic detections were well below their applicable MTCA Method A compliance limits for unrestricted land use, chromium was found at 23.9 parts per million (ppm). There are two (2) species of chromium (Chromium III and Chromium VI) with each having different cleanup levels (2,000 ppm and 19 ppm respectively). Given that the detected concentration in the soil sample is between the two cleanup levels, follow-up testing would need to be conducted to discern what type of chromium is present. With that said, according to the referenced Natural Background Soil Metal Concentrations in Washington State document by WDOE, the “background” levels for chromium in soils in western Washington is 22 ppm, a value similar to the detected concentration in question. Based upon the WDOE data, and site history it would appear that the results of the completed testing would fall into the realm of normal background levels for this area.

As depicted in Table 10 appended to this report, no detections of dissolved arsenic, cadmium, chromium, lead, or mercury were reported in groundwater sampled from B2.

As shown in Table 11 along with the attached laboratory data, various APHs as well as VOCs were detected in the three (3) soil-vapor samples collected at the site. Individual analytes as well as the calculated TPH value were generally compliant with applicable MTCA Method-B screening levels except for naphthalene in each of the soil-vapor samples as well as PCE in soil-vapor sampled from B5 which were above their applicable MTCA Method-B screening limits.

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## **CONCLUSIONS / RECOMMENDATIONS**

Relying upon the results of limited soil, groundwater, and soil-vapor sampling and laboratory testing documented in this report, soil, groundwater, and soil-vapor have been impacted by the contaminants of concern (COCs). Based on the findings discussed earlier, EAI concludes that long-term use of the site for automotive service has impacted subsurface materials beneath the site.

In analyzing the data developed thus far, the diesel TPH in soils appears limited to a relatively vertically limited zone positioned between 4 to 16 feet bgs. Based upon field observations, the occurrence may consist of a band just several feet thick. The release appears to have likely originated from the former adjacent hoist mechanism. No diesel TPH was detected in soils collected from multiple depths in adjacent borings. Additionally, diesel impacted groundwater appears limited to the central shop area around borings B6 and B7.

While the single PCE detection in soil at B3 would be considered compliant, non-compliant concentrations of PCE at multiple depths in B6 including at the lowest depth sampled (15 feet bgs) indicates that the PCE release at that locality may have originated from a shallow or surficial (i.e. on-site) source and that the impact may extend to greater depths beneath the site. As PCE was not detected in borings surrounding B6, the areal extent of PCE at B6 may conceivably be limited to that area. The PCE detection at B3 may be from a separate release point. The PCE occurrences in soil appear to be the source of PCE found in soil-vapor collecting from beneath the floor slab.

Acknowledging that the full extent of impacted media was not defined during this preliminary investigation, additional subsurface sampling and testing would be necessary in the event that the client and/or other involved parties wish to quantify the extent of the contamination so that suitable management alternatives can be developed along with a reliable projection of costs which might be associated with implementation of such alternatives.

EAI has been informed that plans for the current structure include demolition. That said, if the structure is to become occupied again, EAI would then recommend that the client consider sampling and testing air from various locations including within and outside the building in an effort to determine whether subsurface vapors are migrating above the floor slab into potential occupied spaces. Alternatively, any new structures should be designed and constructed so as to incorporate an appropriate soil-vapor barrier/vapor mitigation system into the floor slab and foundation system. Indoor and outdoor air testing should then be conducted to verify the performance of that "system".

Finally, to achieve lawful compliance with Chapter 173-340-300, WAC, copies of this report along with any future reports regarding the environmental conditions encountered be forwarded to the Northwest Regional Office of the Department of Ecology (Bellevue, Washington) by the property owner.

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## **LIMITATIONS**

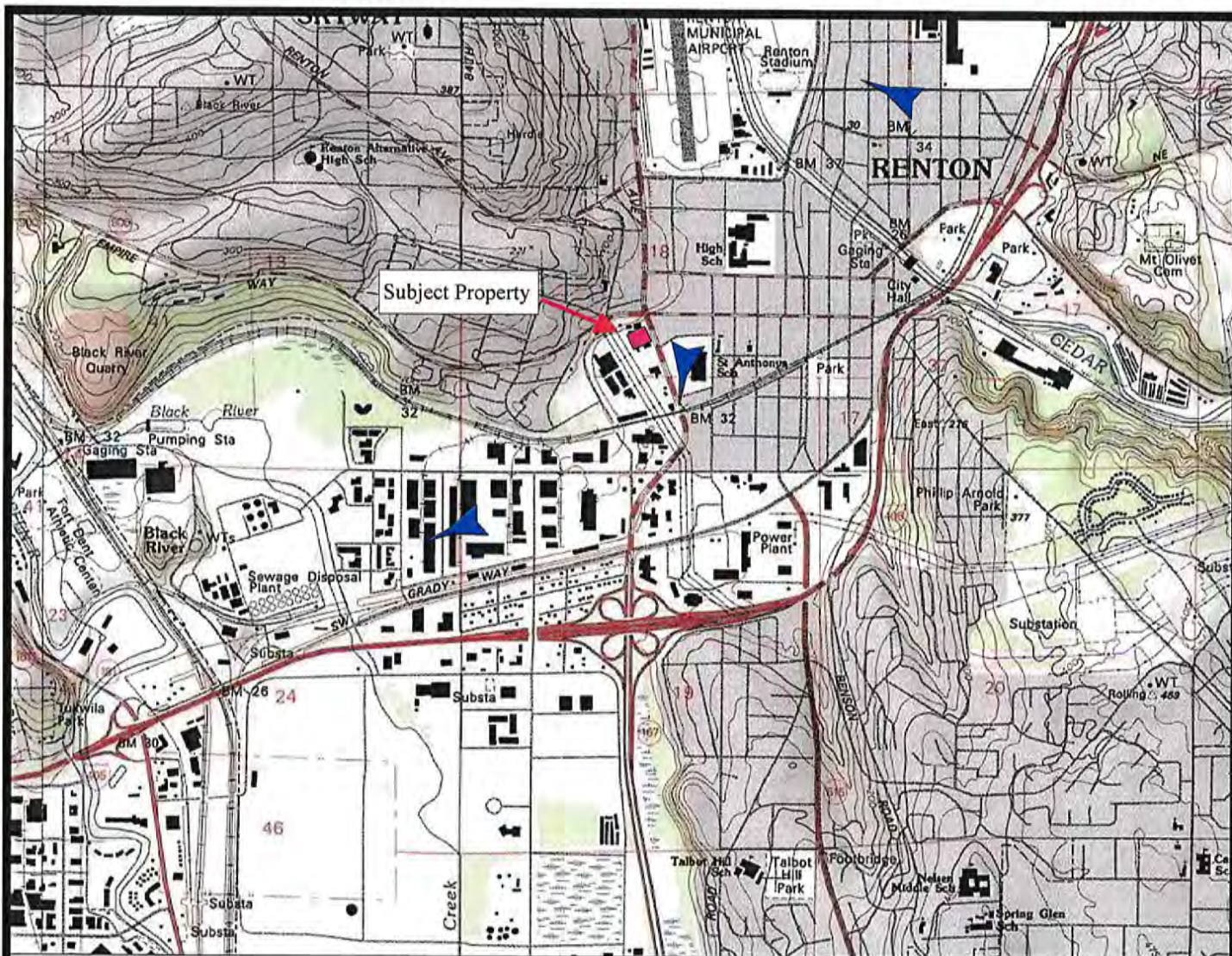
This report has been prepared for the exclusive use of Kidder Mathews and their several representatives for specific application to this site. Our work for this project was conducted in a manner consistent with that level of care and skill normally exercised by members of the environmental science profession currently practicing under similar conditions in the area, and in accordance with the terms and conditions set forth in our proposal dated January 18, 2021. The findings and conclusions of this study are based upon the results of laboratory testing of selected samples obtained from separated boring localities and conditions may vary between those localities or at other locations, media, depths, or date. No other warranty, expressed or implied, is made. If new information is developed in future site work which may include excavations, borings, studies, etc., Environmental Associates, Inc., must be retained to reevaluate the conclusions of this report and to provide amendments as required.

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## **REFERENCES**

Environmental Associates, Inc., December 18, 2020, Phase I Environmental Site Assessment.  
Vacant Former Firestone Complete Auto Care, 351 Rainier Avenue South, Renton,  
Washington 98057.





0 1000 FEET 0 500 1000 METERS  
Map created with TOPO!® ©2003 National Geographic (www.nationalgeographic.com/topo)



**Approximate Site Location**



**Inferred Approximate Direction of Groundwater Flow**



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Bellevue, Washington 98004

## VICINITY/TOPOGRAPHIC MAP

**Vacant Former Firestone Auto Care Property  
351 Rainier Avenue South  
Renton, Washington**

Job Number:

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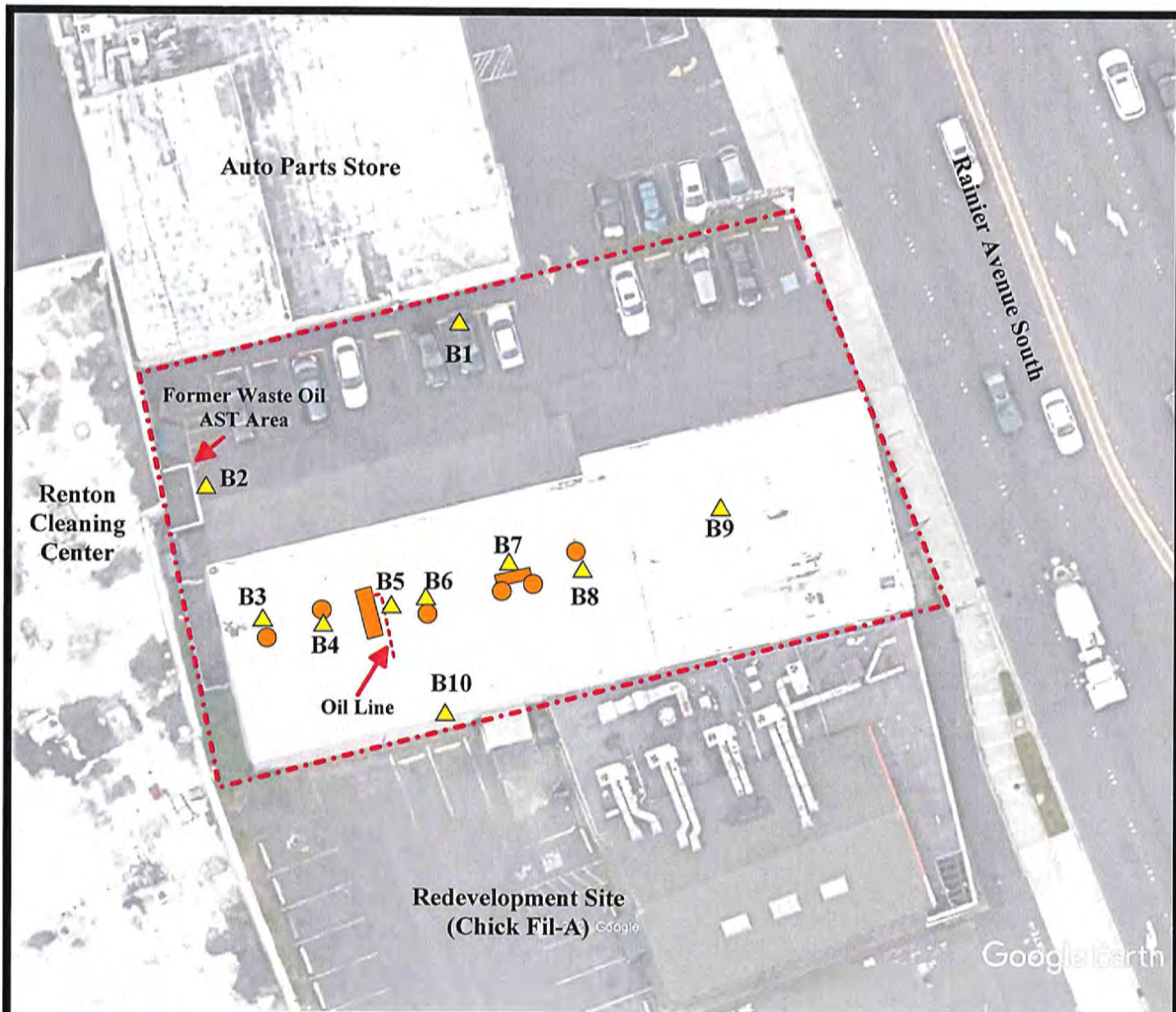
Date:

February 2021

Plate:

1





**Approximate Site Boundary**



**Approximate Boring Location**



**Approximate Hoist Mechanism Features**



**Inferred Approximate Direction of Groundwater Flow**



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## SITE PLAN

**Vacant Former Firestone Auto Care Property  
351 Rainier Avenue South  
Renton, Washington**

Job Number:  
JN 40139-1

Date:  
February 2021

Plate:  
2

# BORING B1

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
5		Moist		ML	No Recovery Brown silt, moist, no odors or discoloration, PID=0
10		Moist		SP	brown sand
15	Temporary screen 11' - to 15'	Wet		ML	Brown silts, moist, no odors or discolorations, PID=0
20				SP	Grey sand, wet, no odors or discolorations, PID=0
25					Boring terminated at 15 feet below grade on February 1, 2021.
30					
35					
40					



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## Boring: B1

Vacant Former Firestone Auto Care Property  
351 Rainier Avenue South  
Renton, Washington

Job Number:  
JN 40139-1

Date:  
February 2021

Logged by:  
EAZ

Plate:  
3

# BORING B2

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
1					
2					
3					
4					No Recovery Brown silty sand, gravels, dry, no odors or discoloration, PID=0
5				SM/ GP	
6					
7					
8				SP	brown sand
9					
10				ML	Brown silts, moist, no odors or discolorations, PID=0
11					
12					
13					
14					
15				SM	Brown silty sand, wet, no odors or discolorations, PID=0
16					Boring terminated at 15 feet below grade on February 1, 2021.
17					
18					
19					
20					
21					
22					
23					
24					
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40					



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## Boring: B2

Vacant Former Firestone Auto Care Property  
351 Rainier Avenue South  
Renton, Washington

Job Number:  
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Date:  
February 2021

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Plate:  
4



# BORING B3

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
1					No Recovery
2					
3					
4					Brown silt and gravels, dry, no odors or discoloration, PID=0
5					
6					
7					
8					brown silts and sand
9					
10					
11					Brown soft silts, moist, no odors or discolorations, PID=0
12					
13					
14					
15					Grey sands, wet, no odors or discolorations, PID=0
16					Boring terminated at 15 feet below grade on February 1, 2021.
17					
18					
19					
20					
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22					
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## Boring: B3

Vacant Former Firestone Auto Care Property  
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Plate:

5

# BORING B4

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
1					
2					
3					
4					No Recovery
5		Dry		SM	Brown silt and sand, dry, no odors or discoloration, PID=0.4
6					
7					
8					
9				SM	brown silts and sand
10					
11					
12					
13				SM	Grey silt and sand, moist, no odors or discolorations, PID=0.1
14					
15					
16		Wet		SP	Grey sand, wet, no odors or discolorations, PID=0.1
17					Boring terminated at 15 feet below grade on February 1, 2021.
18					
19					
20					
21					
22					
23					
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## Boring: B4

Vacant Former Firestone Auto Care Property  
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Job Number:

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Date:

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Plate:

6

# BORING B5

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
1					
2					
3					
4					No Recovery
5		Dry		GM	Brown silt and gravels, dry, no odors or discoloration, PID=0.1
6					
7					
8				SP	brown sand
9					
10		Moist		ML	Grey silt, moist, no odors or discolorations, PID=0
11					
12					
13					
14					
15	Temporary screen 11' to 15'	Wet		SP	Grey sand, wet, no odors or discolorations, PID=0
16					Boring terminated at 15 feet below grade on February 1, 2021.
17					
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## Boring: B5

Vacant Former Firestone Auto Care Property  
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Plate:

7

# BORING B6

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
1					
2					
3					
4					No Recovery
5		Dry		GM	Brown silt and gravels, dry, no odors or discoloration, PID=0
6					
7					No Recovery - loose material
8					
9					
10		Dry		SM	Brown silt and sand, dry, no odors or discolorations, PID=0
11					
12					
13					
14					
15		Wet		SP	Grey sand, wet, no odors or discolorations, PID=0.1
16	Boring terminated at 15 feet below grade on February 1, 2021.				
17					
18					
19					
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# BORING B7

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
1					No Recovery
2					
3					
4		Dry		ML	Brown silt, dry, no odors or discoloration, PID=0.1
5					
6				SP	
7					brown sands
8		Moist		ML	Brown silt, moist, no odors or discolorations, PID=0.2
9				ML	
10					Grey silt, moist, petroleum odor, PID=0.7
11					
12		Wet		SP	Grey sand, wet, no odors or discolorations, PID=0.3
13					
14					
15		Wet		SP	Grey sand, wet, no odors or discolorations, PID=0.3
16					Boring terminated at 16 feet below grade on February 2, 2021.
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					



## ENVIRONMENTAL ASSOCIATES, INC.

1380 - 112th Avenue N.E., Ste. 300  
Bellevue, Washington 98004

## Boring: B7

Vacant Former Firestone Auto Care Property  
351 Rainier Avenue South  
Renton, Washington

Job Number:

JN 40139-1

Date:

February 2021

Logged by:

EAZ

Plate:

9

# BORING B8

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
1					No Recovery
2					
3					
4					Brown silt, dry, no odors or discoloration, PID=0.3
5					
6					brown sands
7					
8					Brown silt, moist, no odors or discolorations, PID=0.5
9					Brown sand, wet,
10					
11					Brown silt, moist, no odors or discolorations, PID=0.4
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

Boring terminated at 12 feet below grade on February 2, 2021.



**ENVIRONMENTAL  
ASSOCIATES, INC.**

1380 - 112th Avenue N.E., Ste. 300  
Bellevue, Washington 98004

## Boring: B8

Vacant Former Firestone Auto Care Property  
351 Rainier Avenue South  
Renton, Washington

Job Number:

JN 40139-1

Date:

February 2021

Logged by:

EAZ

Plate:

10

# BORING B9

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

Boring terminated at 12 feet below grade on February 2, 2021.



**ENVIRONMENTAL  
ASSOCIATES, INC.**

1380 - 112th Avenue N.E., Ste. 300  
Bellevue, Washington 98004

## Boring: B9

Vacant Former Firestone Auto Care Property  
351 Rainier Avenue South  
Renton, Washington

Job Number:  
JN 40139-1

Date:  
February 2021

Logged by:  
EAZ

Plate:  
11

# BORING B10

Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
0					
1					
2					
3					
4					No Recovery Brown silty sand and gravels, dry, no odors or discoloration, PID=0
5				SM/ GP	
6					
7					
8					
9					Brown silty sand, moist, no odors or discolorations, PID=0.3
10				SM	
11					
12					Brown silty sand, wet, no odors or discolorations, PID=0.3
13					
14					
15					
16					
17					
18					
19					
20					
21					
22					
23					
24					
25					
26					
27					
28					
29					
30					
31					
32					
33					
34					
35					
36					
37					
38					
39					
40					

Boring terminated at 12 feet below grade on February 2, 2021.



**ENVIRONMENTAL  
ASSOCIATES, INC.**

1380 - 112th Avenue N.E., Ste. 300  
Bellevue, Washington 98004

## Boring: B10

Vacant Former Firestone Auto Care Property  
351 Rainier Avenue South  
Renton, Washington

Job Number:

JN 40139-1

Date:

February 2021

Logged by:

EAZ

Plate:

12



**TABLE 1 - Petroleum Hydrocarbons and BTEX - Soil Sampling Results**  
**All results and limits in parts per million (ppm)**

Sample & Depth	Gasoline (TPH)	Diesel	Heavy Oil	Benzene	Toluene	Ethylbenzene	Total Xylenes
B1-10 @ 10' BGS	ND	ND	ND	ND	ND	ND	ND
B2-2.5 BGS	ND	ND	ND	ND	ND	ND	ND
B3-10 @ 10' BGS	ND	ND	ND	ND	ND	ND	ND
B4-4 @ 4' BGS	ND	ND	ND	ND	ND	ND	ND
B5-3 @ 3' BGS	ND	ND	ND	ND	ND	ND	ND
B6-10 @ 10' BGS	NA	ND	ND	NA	NA	NA	NA
B6-15 @ 15' BGS	ND	ND	ND	ND	ND	ND	ND
B7-4 @ 4' BGS	NA	ND	ND	NA	NA	NA	NA
B7-9-10 @ 9' TO 10' BGS	ND	7,200	ND	ND	ND	ND	ND
B7-16 @ 16' BGS	NA	ND	ND	NA	NA	NA	NA
B8-8 @ 8' BGS	ND	ND	ND	ND	ND	ND	ND
B8-8 @ 8' BGS DUPLICATE	ND	NA	NA	NA	NA	NA	NA
B9-2 @ 2' BGS	ND	ND	ND	ND	ND	ND	ND
B10-8 @ 8' BGS	ND	ND	ND	ND	ND	ND	ND
Reporting Limit <sup>3</sup>	10	50	100	0.02	0.05	0.05	0.15
WDOE Target Compliance Level <sup>4</sup>	30 or 100 <sup>5</sup>	2000	2000	0.03	7	6	9

## Notes:

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2 - "NA" denotes sample not analyzed for specific analyte.

3 - "Reporting Limit" represents the laboratory lower quantitation limit.

4 - Soil samples were field screened using a GasTech combustible gas meter to measure the concentration of combustible gas, such as petroleum VOCs.

5 - Headspace VOC concentrations were measured after placing the soil sample in a sealed plastic bag and allowing soil and air inside the bag to equilibrate.

6 - The MTCA gasoline TPH cleanup level is 30 ppm for soils without benzene or toluene, ethylbenzene, and xylenes = more than 1% of gas detections otherwise it is ppm.

7 - Laboratory flag advises that "carbon range detection is indicative of kerosene rather than gasoline". Kerosene is measured against a cleanup level of 2,000 ppm.

Bold and Italics denotes concentrations above MTCA Method A soil cleanup levels.

**TABLE 2- Petroleum Hydrocarbons and BTEX- Groundwater Sampling Results**  
**All results and limits in parts per billion (ppb)**

Sample	Gasoline (TPH)	Diesel (TPH)	Heavy Oil (TPH)	Benzene	Toluene	Ethylbenzene	Total Xylenes
B1	ND	ND	ND	ND	ND	ND	ND
B2	ND	ND	ND	ND	ND	ND	ND
B3	ND	ND	ND	ND	ND	ND	ND
B4	ND	ND	ND	ND	ND	ND	ND
B5	ND	ND	ND	ND	ND	ND	ND
B6	240	<b>2,400</b>	ND	ND	ND	ND	ND
B7	ND	<b>16,000</b>	ND	ND	2.3	ND	ND
B8	ND	ND	ND	ND	2.1	1.0	ND
B9	ND	ND	ND	ND	1.3	ND	ND
B10	ND	ND	ND	ND	ND	ND	ND
Reporting Limit <sup>3</sup>	100	50	100	1	1	1	3
<b>MTCA-Method-A Cleanup Levels<sup>4</sup></b>	<b>800 or 1000<sup>5</sup></b>	<b>500</b>	<b>500</b>	<b>5</b>	<b>1000</b>	<b>700</b>	<b>1000</b>

Notes:

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method A groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC.

5- The MTCA gasoline TPH cleanup level is 800 ppb for groundwater with benzene. Otherwise, the cleanup level is 1000 ppb.

Bold and Italics denotes concentrations above existing or proposed MTCA Method A groundwater cleanup levels.

**TABLE 3- Select VOCs - Soil Sampling Results**  
**All results and limits in parts per million (ppm)**

Sample	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Vinyl Chloride
B1-10	ND	ND	ND	ND	ND
B2-2.5	ND	ND	ND	ND	ND
B3-10	0.05	ND	ND	ND	ND
B4-4	ND	ND	ND	ND	ND
B5-3	ND	ND	ND	ND	ND
B5-15	ND	ND	ND	ND	ND
B6-4	<b>0.06</b>	ND	ND	ND	ND
B6-10	0.05	ND	ND	ND	ND
B6-15	<b>0.08</b>	ND	ND	ND	ND
B7-9-10	ND	ND	ND	ND	ND
B7-16	ND	ND	ND	ND	ND
B8-8	ND	ND	ND	ND	ND
B9-2	ND	ND	ND	ND	ND
B10-8	ND	ND	ND	ND	ND
Reporting Limit <sup>3</sup>	0.02	0.02	0.05	0.05	0.05
Cleanup Level for Unrestricted Land Use (Method-A) <sup>4</sup>	0.05	0.03	---	---	---
Cleanup Level - (Method-B) <sup>5</sup>	480	12	160	1600.0	0.667

## Notes:

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method A soil cleanup levels for unrestricted land use as published in the Model Toxics Control Act (MTCA) 173-340-WAC, Table 740-1.

5- Method-B soil cleanup levels for the "direct contact pathway", as published in Ecology's CLARC May 2014 database.

\* - Methylene Chloride contamination is suspected laboratory contamination

Bold and Italics denotes concentrations above existing MTCA Method A or B soil cleanup levels.

**TABLE 4- Select VOCs - Groundwater Sampling Results**  
**All results and limits in parts per billion (ppb)**

<b>Boring</b>	<b>Tetrachloroethene (PCE)</b>	<b>Trichloroethene (TCE)</b>	<b>(cis) 1,2 Dichloroethene</b>	<b>(trans) 1,2 Dichloroethene</b>	<b>Vinyl Chloride</b>
B1	ND	ND	ND	ND	ND
B2	1.2	ND	ND	ND	ND
B3	ND	ND	ND	ND	ND
B4	ND	ND	ND	ND	ND
B5	ND	ND	ND	ND	ND
B6	ND	ND	ND	ND	ND
B7	ND	ND	ND	ND	ND
B8	ND	ND	ND	ND	ND
B9	ND	ND	ND	ND	ND
B10	ND	ND	ND	ND	ND
Reporting Limit <sup>3</sup>	1	1	1	1	0.2
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	16 (B)	160 (B)	0.2 (A)

## Notes:

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method A or B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC, amended May 2014.

Bold and Italics denotes concentrations above existing MTCA Method A groundwater cleanup levels.

**TABLE 5- Carcinogenic PAHs - Soil Sampling Results**  
**All results and limits in parts per million (ppm)**

Sample Name	Benzo(a)pyrene	Chrysene	Dibenzo(a,h)anthracene	Indeno(1,2,3,-cd)pyrene	Benzo(k)fluoranthene	Benzo(a)anthracene	Benzo(b)fluoranthene	Total Carcinogenic PAHs <sup>(5)</sup>
B2-2.5	ND	ND	ND	ND	ND	ND	ND	<b><i>ND</i></b>
cPAH Toxicity Equilant Fraction <sup>(5)</sup>	1.0	0.01	0.1	0.1	0.1	0.1	0.1	
Reporting Limit <sup>3</sup>	0.02	0.02	0.02	0.02	0.02	0.02	0.02	
MTCA-Method-A Residential <sup>(4)</sup>	0.1	---	---	---	---	---	---	0.1
MTCA-Method-A Industrial <sup>(4)</sup>	---	---	---	---	---	---	---	2

## Notes:

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method A soil cleanup level for total carcinogenic PAHs as published in the Model Toxics Control Act (MTCA) 173-340-WAC.

5- Total carcinogenic PAHs are calculated by summing the product of each cPAH multiplied by its toxicity equivalency fraction per WAC 173-340-708(8).

Bold and Italics denotes concentrations above existing MTCA Method A soil cleanup levels.

**TABLE 6 - Carcinogenic PAHs - Groundwater Sampling Results**  
**All results and limits in parts per billion (ppb)**

<b>Strataprobe Boring</b>	<b>Benzo(a)pyrene</b>	<b>Chrysene</b>	<b>Dibenzo(a,h)anthracene</b>	<b>Indeno(1,2,3-cd)pyrene</b>	<b>Benzo(k)fluoranthene</b>	<b>Benzo(a)anthracene</b>	<b>Benzo(b)fluoranthene</b>	<b>Total Carcinogenic PAHs<sup>(5)</sup></b>
B2	ND	ND	ND	ND	ND	ND	ND	<b>ND</b>
cPAH Toxicity Equivalent Fraction <sup>(5)</sup>	1.0	0.01	0.1	0.1	0.1	0.1	0.1	
Reporting Limit <sup>3</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	---
Existing Cleanup Level <sup>4</sup>	---	---	---	---	---	---	---	0.1

## Notes:

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method-A Groundwater cleanup level for total carcinogenic PAHs as published in the Model Toxics Control Act (MTCA) 173-340-WAC.

5- Total carcinogenic PAHs are calculated by summing the product of each cPAH multiplied by its toxicity equivalency fraction per WAC 173-340-708(8).

Bold and Italics denotes concentrations above existing MTCA Method A soil cleanup levels.

**TABLE 7 - PCBs - Soil Sampling Results**  
**All results and limits in parts per million (ppm)**

Sample	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	Total PCBs
B2-2.5	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Reporting Limit <sup>3</sup>	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.005
Existing Cleanup Level <sup>4</sup>	---	---	---	---	---	---	---	---	---	1 (A)

## Notes:

1 - "ND" denotes analyte not detected at or above listed Reporting Limit.

2- "NA" denotes sample not analyzed for specific analyte.

3- "Reporting Limit" represents the laboratory lower quantitation limit.

4- Method A soil cleanup level for total PCB mixtures as published in the Model Toxics Control Act (MTCA) 173-340-WAC.

Bold and Italics denotes concentrations above existing MTCA Method A soil cleanup levels.

**TABLE 8 - PCBs - Groundwater Sampling Results**  
**All results and limits in parts per billion (ppb)**

Sample	Aroclor 1016	Aroclor 1221	Aroclor 1232	Aroclor 1242	Aroclor 1248	Aroclor 1254	Aroclor 1260	Aroclor 1262	Aroclor 1268	Total PCBs
B2	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Reporting Limit <sup>3</sup>	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	---
Existing Cleanup Level <sup>4</sup>	---	---	---	---	---	---	---	---	---	0.1 (A)

**Notes:**

- 1 - "ND" denotes analyte not detected at or above listed Reporting Limit.
- 2 - "NA" denotes sample not analyzed for specific analyte.
- 3 - "Reporting Limit" represents the laboratory lower quantitation limit.
- 4 - Method A soil cleanup level for total PCB mixtures as published in the Model Toxics Control Act (MTCA) 173-340-WAC.

Bold and Italics denotes concentrations above existing MTCA Method A soil cleanup levels.



**TABLE 9 - MTCA-5 Metals - Soil Sampling Results**  
**All results and limits in parts per million (ppm)**

Sample Name	Arsenic	Cadmium	Chromium	Lead	Mercury
B2-2.5	4	ND	23.9	9.5	ND
Reporting Limit <sup>3</sup>	1	0.5	0.5	0.25	0.25
WDOE-Method-A Cleanup Level (unrestricted land use)	20	2	19 / 2000 <sup>(5)</sup>	250	2

## Notes:

- 1 - "ND" denotes analyte not detected at or above listed Reporting Limit.  
 2- "NA" denotes sample not analyzed for specific analyte.  
 3- "Reporting Limit" represents the laboratory lower quantitation limit.  
 4- Method A or B cleanup levels as published in the Model Toxics Control Act (MTC A) 173-340-WAC.  
 5- Results reported as total chromium. The Method A target compliance level for chromium III is 2,000 ppm, while the Method-A compliance level for chromium VI is 19 ppm. Additional testing of sample B2-2.5 revealed no detections of chromium VI (hexavalent chromium).

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

**TABLE 10 - MTCA-5 Metals - Groundwater Sampling Results**  
**All results and limits in parts per billion (ppb)**

Sample Location	Arsenic	Cadmium	Chromium	Lead	Mercury
B2 (dissolved)	ND	ND	ND	ND	ND
Reporting Limit <sup>3</sup>	1	0.5	0.5	0.25	0.25
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	50 (A)	15 (A)	2 (A)
<b>Notes:</b> 1 - "ND" denotes analyte not detected at or above listed Reporting Limit. 2- "NA" denotes sample not analyzed for specific analyte. 3- "Reporting Limit" represents the laboratory lower quantitation limit. 4- Method A or B cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC. f - The sample was laboratory filtered prior to analysis. Bold and Italics denotes concentrations above existing MTCA Method A soil cleanup levels.					

**TABLE 11 - APH and Select VOCs - Soil Vapor Sampling Results**  
**All results and limits in micro-grams per cubic meter (ug/M<sup>3</sup>)**

Sample Name	Location	APH EC5-8 aliphatics	APH EC9-12 aliphatics	APH EC9-10 aromatics	Benzene	Toluene	Ethylbenzene	Total Xylenes	Naphthalene	TOTAL PETROLEUM HYDROCARBONS (TPH)	Tetrachloroethene (PCE)	Trichloroethene (TCE)	Chloroethane	1,1-Dichloroethane	1,2-Dichloroethane (EDC)	cis-1,2-Dichloroethene	trans-1,2-Dichloroethene	1,1,1 Trichloroethane	Vinyl Chloride
B5	Adjacent to former in-ground hoist and oil line	1900	510	180,000	4.7	<98	16.0	117.0	3.7	2,730.8	440.0	<0.56	<14	<2.1	<0.21	<2.1	<2.1	49.0	<1.3
B9	Within former service bay in eastern half of the margin of the property in former material storage	910 fb	460	170	5.4	<62	15.0	109.0	3.4	1,672.8	<22	<0.35	<8.7	<1.3	<0.13	<1.3	<1.3	3.6	<0.84
B10		710 fb	410	190,000	5.6	63.0	18.0	126.0	3.6	1,526.2	<21	<0.33	<8.2	<1.3	<0.13	<1.2	<1.2	<1.7	<0.79
WDOE - Soil Vapor Screening Levels <sup>1</sup>		90000*	4700*	6000*	11	76,000	15,000	1,500	2.50	4,700	320	12	152,000	52	3.2	---	---		9.4

**Bold and Italics** indicate concentrations of compounds that exceed the WDOE Standard Method-B Air Target Compliance Levels.

- 1 - Soil gas screening level that concentrations in the soil gas just beneath a building expected to not result in exceedance of the air cleanup level in the overlying structure, per the WDOE's Guidance For Evaluating Soil Vapor Intrusion - (April, 2015).  
 fb - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.  
 fb - The analyte was detected in the method blank.

\* - Individual petroleum fraction hydrocarbon compliance levels no longer in use and replaced with Total Petroleum Hydrocarbon (TPH) Compliance Limit per WDOE Memorandum 18 document published January 10, 2018.

## **APPENDIX A**

### Laboratory Reports



3155 NE Sunset Blvd, Suite A  
Renton, WA 98056  
Phone: 425.207.8345  
Email: [lab@esnanalytical.com](mailto:lab@esnanalytical.com)  
Web: [www.esnanalytical.com](http://www.esnanalytical.com)

February 16, 2021

Mr. Eric Zuern  
Environmental Associates, Inc.  
1380 112<sup>th</sup> Ave NE #300  
Bellevue, WA 98004

Dear Eric,

Please find enclosed analytical data report for **PROJECT: FIRESTONE, Project Number: 40139-1** located in Renton, WA. Fifteen soil samples and ten water samples were analyzed for Gasoline by NWTPH-Gx, VOC by EPA Method 8260, Diesel by NWTPH-Dx/Dx Ext, PAH by EPA Method 8270, PCB by EPA Method 8082, VOC-Chlorinated by EPA Method 8260 and MTCA 5 Metals by EPA Method on February 1, 2021- February 12, 2021.

The results of the analyses are summarized and included on this report. Applicable detection limits and QA/QC data are included.

ESN Analytical appreciates the opportunity to have provided services for this project. If you have any further questions about the data report, please give us a call at 425-207-8345.

Thank you so much and it was a pleasure working with your company on this project. We are looking forward to the next opportunity to work together.

Sincerely,

A handwritten signature in black ink, appearing to read 'Dely Grace Agoy', is written over a horizontal line.

Dely Grace Agoy  
Senior Chemist  
425-207-8345  
[delygrace.agoy@esnanalytical.com](mailto:delygrace.agoy@esnanalytical.com)



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# ANALYTICAL DATA REPORT

## Project: FIRESTONE

Project Number: 40139-1

Location: Renton, WA

Submitted to: ENVIROMENTAL ASSOCIATES, INC.

Project Manager: Eric Zuern

Sample Collector: Eric Zuern

**Sample Matrix: Water, Soil**



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3155 NE Sunset Blvd, Suite A  
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 Web: [www.esnanalytical.com](http://www.esnanalytical.com)

## SAMPLE INFORMATION

SAMPLE ID	ESN Analytical Project Number	SAMPLING DATE	Sampling Time	Depth	Matrix	Analysis
B1-10	S210202.1	02/01/21	0922	10'	S	NWTPH-Gx NWTPH-Dx, 8260
B1	S210202.1	02/01/21	0940	11'-15'	W	NWTPH-Gx, NWTPH-Dx, 8260
B2-2.5	S210202.1	02/01/21	1015	2.5'	S	NWTPH-Gx NWTPH-Dx, 8260, PAH, PCB, MTCA 5 Metals
B2	S210202.1	02/01/21	1040	11'-15"	W	NWTPH-Gx NWTPH-Dx, 8260, PAH, PCB, MTCA 5 Metals
B3-10	S210202.1	02/01/21	1104	10'	S	NWTPH-Gx NWTPH-Dx, 8260
B3	S210202.1	02/01/21	1112	11'-15'	W	NWTPH-Gx NWTPH-Dx, 8260
B4-4	S210202.1	02/01/21	1146	10'	S	NWTPH-Gx NWTPH-Dx, 8260
B4	S210202.1	02/01/21	1215	2'-12'	W	NWTPH-Gx NWTPH-Dx, 8260
B5-3	S210202.1	02/01/21	1235	3'	S	NWTPH-Gx NWTPH-Dx, 8260
B5	S210202.1	02/01/21	1300	11'-15'	W	NWTPH-Gx NWTPH-Dx, 8260
B5-15	S210202.1	02/01/21	1247	15'	S	VOC-Chlorinated*
B6-4	S210201.1	02/01/21	123	4'	S	VOC-Chlorinated*
B6-10	S210201.1	02/01/21	126	10'	S	NWTPH-Dx*, VOC- Chlorinated*
B6-15	S210202.1	02/01/21	1330	15'	S	NWTPH-Gx NWTPH-Dx, 8260
B6	S210202.1	02/01/21	1345	11'-15'	W	NWTPH-Gx NWTPH-Dx, 8260
B7-4	S210203.1	02/02/21	0909	4"	S	NWTPH-Dx*
B7-9-16	S210203.1	02/02/21	0917	9'-10'	S	NWTPH-Gx, NWTPH-Dx, 8260

\*Add-on





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SAMPLE ID	ESN Analytical Project Number	SAMPLING DATE	SAMPLING TIME	DEPTH	MATRIX	ANALYSIS
B7-16	S210203.1	02/02/21	0924	16'	S	NWTPH-Dx*, VOC- Chlorinated*
B7	S210203.1	02/02/21	0935	10'-15'	W	NWTPH-Gx, NWTPH-Dx, 8260
B8-8	S210203.1	02/02/21	0949	8'	S	NWTPH-Gx, NWTPH-Dx, 8260
B8	S210203.1	02/02/21	1000	10'-15'	W	NWTPH-Gx, NWTPH-Dx, 8260
B9-2	S210203.1	02/02/21	1011	2'	S	NWTPH-Gx, NWTPH-Dx, 8260
B-9	S210203.1	02/02/21	1025	10'-15'	W	NWTPH-Gx, NWTPH-Dx, 8260
B10-8	S210203.1	02/02/21	1112	12"	S	NWTPH-Gx, NWTPH- Dx, 8260
B10	S210203.1	02/02/21	1140	10'-15'	W	NWTPH-Gx, NWTPH- Dx, 8260

\*Add-on



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## TEST RESULTS

Sampling date: February 1, 2021

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx/Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	2/3/2021	2/3/2021	99	nd	nd
LCS	2/3/2021	2/3/2021	141	118%	---
B1-10	2/3/2021	2/3/2021	62	nd	nd
B2-2.5	2/3/2021	2/3/2021	73	nd	nd
B3-10	2/3/2021	2/3/2021	74	nd	nd
B4-4	2/3/2021	2/3/2021	50	nd	nd
B5-3	2/3/2021	2/3/2021	54	nd	nd
B6-15	2/3/2021	2/3/2021	64	nd	nd
B6-15 Duplicate	2/3/2021	2/3/2021	62	nd	nd
Reporting Limits				50	100

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx/Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank	2/2/2021	2/2/2021	132	nd	nd
LCS	2/2/2021	2/2/2021	139	110%	---
B1	2/2/2021	2/2/2021	91	nd	nd
B2	2/2/2021	2/2/2021	111	nd	nd
B3	2/2/2021	2/2/2021	107	nd	nd
B4	2/2/2021	2/2/2021	91	nd	nd
B5	2/2/2021	2/2/2021	97	nd	nd
B6	2/2/2021	2/2/2021	98	2400	nd
Reporting Limits				50	100

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%



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**Analysis of Gasoline Range Organics in Soil  
by Method NWTPH-Gx**

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Gasoline Range Organics (mg/kg)
Method Blank	2/4/2021	2/4/2021	102	nd
LCS	2/4/2021	2/4/2021	106	68%
B1-10	2/1/2021	2/4/2021	100	nd
B2-2.5	2/1/2021	2/4/2021	101	nd
B3-10	2/1/2021	2/4/2021	101	nd
B4-4	2/1/2021	2/4/2021	99	nd
B5-3	2/1/2021	2/4/2021	97	nd
B6-15	2/1/2021	2/4/2021	98	nd
Reporting Limits				10

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

**Analysis of Gasoline Range Organics in Water  
by Method NWTPH-Gx**

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline Range Organics (ug/L)
Method Blank	2/3/2021	101	nd
LCS	2/3/2021	95	64%
B1	2/3/2021	99	nd
B2	2/3/2021	93	nd
B3	2/3/2021	87	nd
B4	2/3/2021	106	nd
B5	2/3/2021	95	nd
B6	2/3/2021	109	240

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%





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Analysis of Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	MB	LCS	LCSD	B1-10	B2-2.5	B3-10	B4-4
Date extracted		02/04/21	02/04/21	02/04/21	02/01/21	02/01/21	02/01/21	02/01/21
Date analyzed	(mg/Kg)	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21
% Moisture					29%	7%	31%	29%
Dichlorodifluoromethane	0.05	nd			nd	nd	nd	nd
Chloromethane	0.05	nd			nd	nd	nd	nd
Vinyl chloride	0.02	nd	90%	107%	nd	nd	nd	nd
Bromomethane	0.05	nd			nd	nd	nd	nd
Chloroethane	0.05	nd			nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd			nd	nd	nd	nd
trans-1,2-Dichloroethene	0.05	nd			nd	nd	nd	nd
1,1-Dichloroethane	0.05	nd			nd	nd	nd	nd
2-Butanone (MEK)	0.25	nd			nd	nd	nd	nd
cis-1,2-Dichloroethene	0.05	nd			nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd			nd	nd	nd	nd
Chloroform	0.05	nd	107%	128%	nd	nd	nd	nd
Bromochloromethane	0.05	nd			nd	nd	nd	nd
1,1,1-Trichloroethane	0.05	nd			nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.05	nd			nd	nd	nd	nd
1,1-Dichloropropene	0.05	nd			nd	nd	nd	nd
Carbon tetrachloride	0.05	nd			nd	nd	nd	nd
Benzene	0.02	nd	84%	106%	nd	nd	nd	nd
Trichloroethene (TCE)	0.02	nd	88%	106%	nd	nd	nd	nd
1,2-Dichloropropane	0.05	nd	83%	102%	nd	nd	nd	nd
Dibromomethane	0.05	nd			nd	nd	nd	nd
Bromodichloromethane	0.05	nd			nd	nd	nd	nd
4-Methyl-2-pentanone (MIBK)	0.25	nd			nd	nd	nd	nd
cis-1,3-Dichloropropene	0.05	nd			nd	nd	nd	nd
Toluene	0.05	nd	76%	122%	nd	nd	nd	nd
trans-1,3-Dichloropropene	0.05	nd			nd	nd	nd	nd
1,1,2-Trichloroethane	0.05	nd			nd	nd	nd	nd
2-Hexanone	0.25	nd			nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd			nd	nd	nd	nd
Dibromochloromethane	0.05	nd			nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	79%	97%	nd	nd	0.05	nd
1,2-Dibromoethane (EDB)	0.05	nd			nd	nd	nd	nd
Chlorobenzene	0.05	nd	85%	105%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd			nd	nd	nd	nd
Ethylbenzene	0.05	nd	76%	99%	nd	nd	nd	nd
Xylenes	0.15	nd	76%	105%	nd	nd	nd	nd
Styrene	0.05	nd			nd	nd	nd	nd
Bromoform	0.05	nd			nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd			nd	nd	nd	nd
Isopropylbenzene	0.05	nd			nd	nd	nd	nd
1,2,3-Trichloropropane	0.05	nd			nd	nd	nd	nd
Bromobenzene	0.05	nd			nd	nd	nd	nd
n-Propylbenzene	0.05	nd			nd	nd	nd	nd



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Analysis of Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	MB	LCS	LCSD	B1-10	B2-2.5	B3-10	B4-4
Date extracted		02/04/21	02/04/21	02/04/21	02/01/21	02/01/21	02/01/21	02/01/21
Date analyzed	(mg/Kg)	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21
% Moisture					29%	7%	31%	29%
n-Propylbenzene	0.05	nd			nd	nd	nd	nd
2-Chlorotoluene	0.05	nd			nd	nd	nd	nd
4-Chlorotoluene	0.05	nd			nd	nd	nd	nd
1,3,5-Trimethylbenzene	0.05	nd			nd	nd	nd	nd
tert-Butylbenzene	0.05	nd			nd	nd	nd	nd
1,2,4-Trimethylbenzene	0.05	nd			nd	nd	nd	nd
sec-Butylbenzene	0.05	nd			nd	nd	nd	nd
1,3-Dichlorobenzene	0.05	nd			nd	nd	nd	nd
1,4-Dichlorobenzene	0.05	nd			nd	nd	nd	nd
Isopropyltoluene	0.05	nd			nd	nd	nd	nd
1,2-Dichlorobenzene	0.05	nd			nd	nd	nd	nd
n-Butylbenzene	0.05	nd			nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	0.05	nd			nd	nd	nd	nd
1,2,4-Trichlorobenzene	0.05	nd			nd	nd	nd	nd
Naphthalene	0.05	nd			nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.05	nd			nd	nd	nd	nd
1,2,3-Trichlorobenzene	0.05	nd			nd	nd	nd	nd
Surrogate recoveries								
Dibromofluoromethane		124%	120%	117%	117%	126%	117%	125%
Toluene-d8		97%	98%	99%	95%	93%	95%	97%
4-Bromofluorobenzene		102%	104%	105%	100%	101%	101%	99%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
Acceptable Recovery limits: 65% TO 135%  
Acceptable RPD limit: 35%



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# Analysis of Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	B5-3	B6-15
Date extracted		02/01/21	02/01/21
Date analyzed	(mg/Kg)	02/04/21	02/04/21
% Moisture		21%	22%
Dichlorodifluoromethane	0.05	nd	nd
Chloromethane	0.05	nd	nd
Vinyl chloride	0.02	nd	nd
Bromomethane	0.05	nd	nd
Chloroethane	0.05	nd	nd
Trichlorofluoromethane	0.05	nd	nd
trans-1,2-Dichloroethene	0.05	nd	nd
1,1-Dichloroethane	0.05	nd	nd
2-Butanone (MEK)	0.25	nd	nd
cis-1,2-Dichloroethene	0.05	nd	nd
2,2-Dichloropropane	0.05	nd	nd
Chloroform	0.05	nd	nd
Bromochloromethane	0.05	nd	nd
1,1,1-Trichloroethane	0.05	nd	nd
1,2-Dichloroethane (EDC)	0.05	nd	nd
1,1-Dichloropropene	0.05	nd	nd
Carbon tetrachloride	0.05	nd	nd
Benzene	0.02	nd	nd
Trichloroethene (TCE)	0.02	nd	nd
1,2-Dichloropropane	0.05	nd	nd
Dibromomethane	0.05	nd	nd
Bromodichloromethane	0.05	nd	nd
4-Methyl-2-pentanone (MIBK)	0.25	nd	nd
cis-1,3-Dichloropropene	0.05	nd	nd
Toluene	0.05	nd	nd
trans-1,3-Dichloropropene	0.05	nd	nd
1,1,2-Trichloroethane	0.05	nd	nd
2-Hexanone	0.25	nd	nd
1,3-Dichloropropane	0.05	nd	nd
Dibromochloromethane	0.05	nd	nd
Tetrachloroethene (PCE)	0.02	nd	0.08
1,2-Dibromoethane (EDB)	0.05	nd	nd
Chlorobenzene	0.05	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd	nd
Ethylbenzene	0.05	nd	nd
Xylenes	0.15	nd	nd
Styrene	0.05	nd	nd
Bromoform	0.05	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd	nd
Isopropylbenzene	0.05	nd	nd
1,2,3-Trichloropropane	0.05	nd	nd
Bromobenzene	0.05	nd	nd





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Analysis of Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	B5-3	B6-15
Date extracted		02/01/21	02/01/21
Date analyzed	(mg/Kg)	02/04/21	02/04/21
% Moisture		21%	22%
n-Propylbenzene	0.05	nd	nd
2-Chlorotoluene	0.05	nd	nd
4-Chlorotoluene	0.05	nd	nd
1,3,5-Trimethylbenzene	0.05	nd	nd
tert-Butylbenzene	0.05	nd	nd
1,2,4-Trimethylbenzene	0.05	nd	nd
sec-Butylbenzene	0.05	nd	nd
1,3-Dichlorobenzene	0.05	nd	nd
1,4-Dichlorobenzene	0.05	nd	nd
Isopropyltoluene	0.05	nd	nd
1,2-Dichlorobenzene	0.05	nd	nd
n-Butylbenzene	0.05	nd	nd
1,2-Dibromo-3-Chloropropane	0.05	nd	nd
1,2,4-Trichlorobenzene	0.05	nd	nd
Naphthalene	0.05	nd	nd
Hexachloro-1,3-butadiene	0.05	nd	nd
1,2,3-Trichlorobenzene	0.05	nd	nd
Surrogate recoveries			
Dibromofluoromethane		124%	126%
Toluene-d8		97%	97%
4-Bromofluorobenzene		97%	98%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%



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# Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C

## Analytical Results

	RL	MB	LCS	LCS D	B1	B2	B3	B4
Date analyzed	(ug/L)	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21	02/12/21	02/03/21
Dichlorodifluoromethane	1.0	nd			nd	nd	nd	nd
Chloromethane	1.0	nd			nd	nd	nd	nd
Vinyl chloride	0.2	nd	99%	98%	nd	nd	nd	nd
Bromomethane	1.0	nd			nd	nd	nd	nd
Chloroethane	1.0	nd			nd	nd	nd	nd
Trichlorofluoromethane	1.0	nd			nd	nd	nd	nd
Acetone	10.0	nd			nd	nd	nd	nd
1,1-Dichloroethene	1.0	nd			nd	nd	nd	nd
2-Butanone (MEK)	10.0	nd			nd	nd	nd	nd
n-hexane	1.0	nd			nd	nd	nd	nd
cis-1,2-Dichloroethene	1.0	nd			nd	nd	nd	nd
2,2-Dichloropropane	1.0	nd			nd	nd	nd	nd
Chloroform	1.0	nd	115%	126%	nd	nd	nd	nd
Bromochloromethane	1.0	nd			nd	nd	nd	nd
1,1,1-Trichloroethane	1.0	nd			nd	nd	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd			nd	nd	nd	nd
1,1-Dichloropropene	1.0	nd			nd	nd	nd	nd
Carbon tetrachloride	1.0	nd			nd	nd	nd	nd
Benzene	1.0	nd	98%	103%	nd	nd	nd	nd
Trichloroethene (TCE)	1.0	nd	102%	99%	nd	nd	nd	nd
1,2-Dichloropropane	1.0	nd	101%	105%	nd	nd	nd	nd
Dibromomethane	1.0	nd			nd	nd	nd	nd
Bromedichloromethane	1.0	nd			nd	nd	nd	nd
4-Methyl-2-pentanone (MIBK)	1.0	nd			nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd			nd	nd	nd	nd
Toluene	1.0	nd	97%	89%	nd	nd	nd	nd
trans-1,3-Dichloropropene	1.0	nd			nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd			nd	nd	nd	nd
2-Hexanone	1.0	nd			nd	nd	nd	nd
1,3-Dichloropropane	1.0	nd			nd	nd	nd	nd
Dibromochloromethane	1.0	nd			nd	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	94%	87%	nd	1.2	nd	nd
1,2-Dibromoethane (EDB)	1.0	nd			nd	nd	nd	nd
Chlorobenzene	1.0	nd	101%	98%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd			nd	nd	nd	nd
Ethylbenzene	1.0	nd	92%	84%	nd	nd	nd	nd
Xylenes	3.0	nd	111%	83%	nd	nd	nd	nd
Styrene	1.0	nd			nd	nd	nd	nd
Bromoform	1.0	nd			nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd			nd	nd	nd	nd
Isopropylbenzene	1.0	nd			nd	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd			nd	nd	nd	nd
Bromobenzene	1.0	nd			nd	nd	nd	nd
n-Propylbenzene	1.0	nd			nd	nd	nd	nd





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# Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C

## Analytical Results

	RL	MB	LCS	LCSD	B1	B2	B3	B4
Date analyzed	(ug/L)	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21	02/12/21	02/03/21
2-Chlorotoluene	1.0	nd			nd	nd	nd	nd
4-Chlorotoluene	1.0	nd			nd	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd			nd	nd	nd	nd
tert-Butylbenzene	1.0	nd			nd	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd			nd	nd	nd	nd
sec-Butylbenzene	1.0	nd			nd	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
Isopropyltoluene	1.0	nd			nd	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
n-Butylbenzene	1.0	nd			nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd			nd	nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd			nd	nd	nd	nd
Naphthalene	1.0	nd			nd	nd	nd	nd
Hexachloro-1,3-butadiene	1.0	nd			nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd			nd	nd	nd	nd

## Surrogate recoveries

Dibromofluoromethane	118%	117%	124%	121%	122%	127%	127%
Toluene-d8	94%	98%	102%	93%	97%	96%	100%
4-Bromofluorobenzene	101%	103%	101%	99%	93%	101%	106%

## Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 Acceptable Recovery limits: 65% TO 135%  
 Acceptable RPD limit: 35%



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Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C

Analytical Results

	RL	B5	B6
Date analyzed	(ug/L)	02/03/21	02/03/21
Dichlorodifluoromethane	1.0	nd	nd
Chloromethane	1.0	nd	nd
Vinyl chloride	0.2	nd	nd
Bromomethane	1.0	nd	nd
Chloroethane	1.0	nd	nd
Trichlorofluoromethane	1.0	nd	nd
Acetone	10.0	nd	nd
1,1-Dichloroethene	1.0	nd	nd
2-Butanone (MEK)	10.0	nd	nd
n-hexane	1.0	nd	nd
cis-1,2-Dichloroethene	1.0	nd	nd
2,2-Dichloropropane	1.0	nd	nd
Chloroform	1.0	nd	nd
Bromochloromethane	1.0	nd	nd
1,1,1-Trichloroethane	1.0	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd	nd
1,1-Dichloropropene	1.0	nd	nd
Carbon tetrachloride	1.0	nd	nd
Benzene	1.0	nd	nd
Trichloroethene (TCE)	1.0	nd	nd
1,2-Dichloropropane	1.0	nd	nd
Dibromomethane	1.0	nd	nd
Bromodichloromethane	1.0	nd	nd
4-Methyl-2-pentanone (MIBK)	1.0	nd	nd
cis-1,3-Dichloropropene	1.0	nd	nd
Toluene	1.0	nd	nd
trans-1,3-Dichloropropene	1.0	nd	nd
1,1,2-Trichloroethane	1.0	nd	nd
2-Hexanone	1.0	nd	nd
1,3-Dichloropropane	1.0	nd	nd
Dibromochloromethane	1.0	nd	nd
Tetrachloroethene (PCE)	1.0	nd	nd
1,2-Dibromoethane (EDB)	1.0	nd	nd
Chlorobenzene	1.0	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd	nd
Ethylbenzene	1.0	nd	nd
Xylenes	3.0	nd	nd
Styrene	1.0	nd	nd
Bromoform	1.0	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd	nd
Isopropylbenzene	1.0	nd	nd
1,2,3-Trichloropropane	1.0	nd	nd
Bromobenzene	1.0	nd	nd
n-Propylbenzene	1.0	nd	nd



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**Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C**

**Analytical Results**

	RL	B5	B6
Date analyzed	(ug/L)	02/03/21	02/03/21
n-Propylbenzene	1.0	nd	nd
2-Chlorotoluene	1.0	nd	nd
4-Chlorotoluene	1.0	nd	nd
1,3,5-Trimethylbenzene	1.0	nd	nd
tert-Butylbenzene	1.0	nd	nd
1,2,4-Trimethylbenzene	1.0	nd	nd
sec-Butylbenzene	1.0	nd	nd
1,3-Dichlorobenzene	1.0	nd	nd
1,4-Dichlorobenzene	1.0	nd	nd
Isopropyltoluene	1.0	nd	nd
1,2-Dichlorobenzene	1.0	nd	nd
n-Butylbenzene	1.0	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd	nd
1,2,4-Trichlorobenzene	1.0	nd	nd
Naphthalene	1.0	nd	nd
Hexachloro-1,3-butadiene	1.0	nd	nd
1,2,3-Trichlorobenzene	1.0	nd	nd

**Surrogate recoveries**

Dibromofluoromethane	125%	112%
Toluene-d8	99%	91%
4-Bromofluorobenzene	95%	109%

**Data Qualifiers and Analytical Comments**

nd - not detected at listed reporting limits  
Acceptable Recovery limits: 65% TO 135%  
Acceptable RPD limit: 35%



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# Analysis of Polynuclear Aromatic Hydrocarbons in Water by Method 8270E

## Analytical Results

	Reporting	MTH BLK	LCS	B2
Date extracted	Limits	02/02/21	02/02/21	02/02/21
Date analyzed	(ug/L)	02/02/21	02/02/21	02/02/21
Naphthalene	0.1	nd	107%	nd
2-Methylnaphthalene	0.1	nd	105%	nd
1-Methylnaphthalene	0.1	nd	100%	nd
Acenaphthylene	0.1	nd	133%	nd
Acenaphthene	0.1	nd	100%	nd
Fluorene	0.1	nd	114%	nd
Phenanthrene	0.1	nd	98%	nd
Anthracene	0.1	nd	99%	nd
Fluoranthene	0.1	nd	108%	nd
Pyrene	0.1	nd	106%	nd
Benzo(a)anthracene*	0.1	nd	78%	nd
Chrysene*	0.1	nd	121%	nd
Benzo(b)fluoranthene*	0.1	nd	94%	nd
Benzo(k)fluoranthene*	0.1	nd	93%	nd
Benzo(a)pyrene*	0.1	nd	95%	nd
Indeno(1,2,3-cd)pyrene*	0.1	nd	121%	nd
Dibenzo(a,h)anthracene*	0.1	nd	85%	nd
Benzo(ghi)perylene	0.1	nd	86%	nd

Total Carcinogens nd

## Surrogate recoveries:

2-Fluorobiphenyl	77%	95%	104%
p-Terphenyl-d14	116%	92%	106%

## Data Qualifiers and Analytical Comments

\* - Carcinogenic Analyte

nd - not detected at listed reporting limits

ns - not spiked

Acceptable Recovery limits: 50% TO 150%

Acceptable RPD limit: 35%





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# Analysis of Polynuclear Aromatic Hydrocarbons in Soil by Method 8270E

## Analytical Results

		MTH BLK	LCS	B2-2.5
Date extracted	Reporting	02/03/21	02/03/21	02/03/21
Date analyzed	Limits	02/03/21	02/03/21	02/03/21
Moisture, %	(mg/kg)			7%
Naphthalene	0.02	nd	102%	nd
2-Methylnaphthalene	0.02	nd	105%	nd
1-Methylnaphthalene	0.02	nd	99%	nd
Acenaphthylene	0.02	nd	135%	nd
Acenaphthene	0.02	nd	99%	nd
Fluorene	0.02	nd	112%	nd
Phenanthrene	0.02	nd	99%	nd
Anthracene	0.02	nd	96%	nd
Fluoranthene	0.02	nd	111%	nd
Pyrene	0.02	nd	109%	nd
Benzo(a)anthracene*	0.02	nd	81%	nd
Chrysene*	0.02	nd	122%	nd
Benzo(b)fluoranthene*	0.02	nd	96%	nd
Benzo(k)fluoranthene*	0.02	nd	112%	nd
Benzo(a)pyrene*	0.02	nd	96%	nd
Indeno(1,2,3-cd)pyrene*	0.02	nd	107%	nd
Dibenzo(a,h)anthracene*	0.02	nd	93%	nd
Benzo(ghi)perylene	0.02	nd	88%	nd

Total Carcinogens nd

## Surrogate recoveries:

2-Fluorobiphenyl	98%	95%	72%
p-Terphenyl-d14	97%	97%	71%

## Data Qualifiers and Analytical Comments

\* - Carcinogenic Analyte

nd - not detected at listed reporting limits

ns - not spiked

Results reported on dry-weight basis

Acceptable Recovery limits: 50% TO 150%

Acceptable RPD limit: 35%



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### Third Party Laboratory Test Results



## DRAGON ANALYTICAL LABORATORY

627 Duell Road SE, STE 8105, Tumwater, WA 98501 (360)866-0543  
CustomerService@DragonLaboratory.com

Hazardous Waste, Microbiology, NPDES, Potable and Non-potable Water  
Mobile Environmental Laboratory



ESN Analytical  
3155 NE Sunset Blvd, Suite A  
Renton, WA 98056

Sampled By: Unknown

DAL Project No.: 210202-02

Project Name: Firestone

Project No.: Firestone

PO No.: n/a

Date Collected: 2/1/2021; 10:15 - 10:40

Date Received: 2/2/2021; 11:30

Temperature Received (°C): 4

Report Date: 2/8/2021

Preparation Method: US EPA 200.8 Dissolved

Analytical Method: US EPA 200.8

Date Prepared: 2/2/2021

Date Analyzed: 2/4/2021

Analyst: TM

Units: ug/L

Matrix: Non-Potable Water

Reporting Limits: Standard

Instrument ID: Agilent 7500

Lab Data File: 21B04k00

#### DISSOLVED HEAVY METALS ANALYTICAL RESULTS

Analyte	CAS No.	MRL	Method Blank	B2
Arsenic (As)	7440-38-2	1.0	nd	nd
Cadmium (Cd)	7440-43-9	0.50	nd	nd
Chromium (Cr)	7440-47-3	0.50	nd	nd
Lead (Pb)	7439-92-1	0.25	nd	nd
Mercury (Hg)	7439-97-6	0.25	nd	nd
Dilution Factor			1.0	1.0

#### DISSOLVED HEAVY METALS QUALITY CONTROL RESULTS

##### LABORATORY CONTROL SAMPLE AND MATRIX SPIKE

QC Batch ID: 210204-Metals		MS/MSD Sample ID: 210204-Metals MS/MSD								LCS Sample ID: 210204-Metals LCS			
Analyte	MS/MSD Level (ug/L)	Sample Conc. (ug/L)	MS Recovery (ug/L)	MS Percent Recovery	MSD Recovery (ug/L)	MSD Percent Recovery	MS/MSD Limits (%)	RPD	MS/MSD RPD Limits	LCS Level (ug/L)	LCS Recovery (ug/L)	LCS Percent Recovery	LCS Limits (%)
Arsenic (As)	50	0.51	50.0	98.0%	50.7	100%	70-130	1.4	≤ 25%	50	49.0	97.9%	85-115
Cadmium (Cd)	50	0.00	49.4	98.9%	49.7	99.4%	70-130	0.56	≤ 25%	50	48.2	96.4%	85-115
Chromium (Cr)	50	7.4	57.3	99.8%	56.6	98.5%	70-130	1.3	≤ 25%	50	54.1	108%	65-115
Lead (Pb)	50	0.40	50.8	101%	50.8	101%	70-130	0.040	≤ 25%	50	50.1	100%	85-115
Mercury (Hg)	4.0	0.020	4.0	99.8%	4.3	106%	70-130	6.1	≤ 25%	4.0	4.0	99.8%	85-115

WA-DOE-Laboratory Certification No.: C890

Comments and Explanations: None.

\*nd\* indicates the analyte was not detected at or above the listed Method Reporting Limit.

n/a indicates not applicable



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Preparation Method: US EPA 3050B  
Analytical Method: US EPA 6020B  
Date Prepared: 2/2/2021  
Date Analyzed: 2/4/2021  
Analyst: TM

Units: mg/kg  
Matrix: Soil  
Reporting Limits: Standard  
Instrument ID: Agilent 7500  
Lab Data File: 21B04K00

#### TOTAL METALS ANALYTICAL RESULTS

Sample Identification	CAS No.	MRL	Method Blank	B2-2.5
Arsenic (As)	7440-38-2	1.0	nd	4.0
Cadmium (Cd)	7440-43-9	0.50	nd	nd
Chromium (Cr)	7440-47-3	0.50	nd	23.9
Lead (Pb)	7439-92-1	0.25	nd	9.5
Mercury (Hg)	7439-97-6	0.25	nd	nd
Percent Solids (%)				92.1
Dilution Factor				1000

#### TOTAL METALS QUALITY CONTROL RESULTS

##### LABORATORY CONTROL SAMPLE AND MATRIX SPIKE

QC Batch ID: 210204-Metals

MS-PD Sample ID: 210204-Metals MS-PD

LCS Sample ID: 210204-Metals LCS

Analyte	MS-PD Level (mg/kg)	Sample Conc. (mg/kg)	MS-PD Recovery (mg/kg)	MS-PD Percent Recovery	MS-PD Limits (%)	LCS Level (mg/kg)	LCS Recovery (mg/kg)	LCS Percent Recovery	LCS Limits (%)
Arsenic (As)	0.050	0.0037	0.051	95.1%	75-125	0.050	0.050	101%	80-120
Cadmium (Cd)	0.050	0.00016	0.049	98.3%	75-125	0.050	0.049	98.9%	80-120
Chromium (Cr)	0.050	0.022	0.065	86.6%	75-125	0.050	0.049	98.2%	80-120
Lead (Pb)	0.050	0.0088	0.057	97.0%	75-125	0.050	0.050	101%	80-120
Mercury (Hg)	0.0040	0.00	0.0039	95.4%	75-125	0.0040	0.0039	97.3%	80-120

WA-DOE-Laboratory Certification No.: C890  
Sample results based on dry weight.

\*nd\* indicates the analyte was not detected at or above the listed Method Reporting Limit.

n/a indicates not applicable

Comments and Explanations: None.



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ESN Analytical  
3155 NE Sunset Blvd, Suite A  
Renton, WA 98056

Sampled By: Unknown

DAL Project No.: 210202-02

Project Name: Firestone

Project No.: Firestone

P.O. No.: n/a

Date Collected: 2/1/2021; 10:15 - 10:40

Date Received: 2/2/2021; 11:30

Temperature Received (°C): 4

Report Date: 2/8/2021

Preparation Method: US EPA 3510C

Analytical Method: US EPA 8062A

Date Prepared: 2/2/2021

Date Analyzed: 2/2/2021

Analyst: TM

Units: µg/L

Matrix: Non-Potable Water

Reporting Limits: Standard

Injection Volume: 2 µL

Instrument ID: Agilent 9074

Lab Data File: 21020201

#### PCB's ANALYTICAL RESULTS

Sample Identification	CAS No.	MRL	Method Blank	B2
PCB Aroclor 1016	12674-11-2	0.050	nd	nd
PCB Aroclor 1221	1104-28-2	0.050	nd	nd
PCB Aroclor 1232	11141-16-5	0.050	nd	nd
PCB Aroclor 1242	53469-21-9	0.050	nd	nd
PCB Aroclor 1248	12672-29-6	0.050	nd	nd
PCB Aroclor 1254	11097-69-1	0.050	nd	nd
PCB Aroclor 1260	11096-82-5	0.050	nd	nd
PCB Aroclor 1262	37324-23-5	0.050	nd	nd
PCB Aroclor 1268	11100-14-4	0.050	nd	nd
Concentration Factor				200

#### Data Flags

Comments and Explanations: None.

#### PCB's QUALITY CONTROL RESULTS SURROGATE RECOVERY

Surrogate	Limits (%)	Method Blank	B2
TCMX	30-150	104	99.3
DCBP	30-150	124	117

#### LABORATORY CONTROL SAMPLE AND MATRIX SPIKE

QC Batch ID: 210202-PCB

MS/MSD Sample ID: 210202-PCB MS/MSD

LCS Sample ID: 210202-PCB LCS

Analyte	MS/MSD Limits (%)	MS/MSD Level (µg/L)	Sample Conc. (µg/L)	MS Recovery (µg/L)	MS Percent Recovery	MSD Recovery (µg/L)	MSD Percent Recovery	RPD	LCS Limits (%)	LCS Level (µg/L)	LCS Recovery (µg/L)	LCS Percent Recovery
PCB Aroclor 1016	29-135	400	nd	418	104%	395	98.7%	5.6	50-120	400	411	103%
PCB Aroclor 1260	29-135	400	nd	245	61.2%	378	93.9%	42.2	50-120	400	395	98.6%

WA-DOE Laboratory Certification No.: C890

"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.

"n/a" indicates not applicable

Comments and Explanations: None.





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ESN Analytical  
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Renton, WA 98056

Sampled By: Unknown

DAL Project No.: 210202-02

Project Name: Firestone

Project No.: Firestone

P.O. No.: n/a

Date Collected: 2/1/2021; 10:15 - 10:40

Date Received: 2/2/2021; 11:30

Temperature Received (°C): 4

Report Date: 2/8/2021

Preparation Method: US EPA 3550C

Analytical Method: US EPA 8082A

Date Prepared: 2/2/2021

Date Analyzed: 2/2/2021

Analyst: TM

Units: mg/kg

Matrix: Solids

Reporting Limits: Standard

Injection Volume: 2 µL

Instrument ID: Agilent 9074

Lab Data File: 21020201

PCB's  
ANALYTICAL RESULTS

Sample Identification	CAS No.	MRL	Method Blank	B2-2.5
PCB Aroclor 1016	12874-11-2	0.0050	nd	nd
PCB Aroclor 1221	1104-28-2	0.0050	nd	nd
PCB Aroclor 1232	11141-16-5	0.0050	nd	nd
PCB Aroclor 1242	53469-21-9	0.0050	nd	nd
PCB Aroclor 1248	12672-29-6	0.0050	nd	nd
PCB Aroclor 1254	11097-69-1	0.0050	nd	nd
PCB Aroclor 1260	11096-82-5	0.0050	nd	nd
PCB Aroclor 1262	37324-23-5	0.0050	nd	nd
PCB Aroclor 1268	11100-14-4	0.0050	nd	nd
Dilution Factor				100
Percent Solids				92.1
Data Flags				

Comments and Explanations: None.

PCB's  
QUALITY CONTROL RESULTS  
SURROGATE RECOVERY

Surrogate	Limits (%)	Method Blank	B2-2.5
TCMX	30-150	118	112
DCBP	30-150	96.5	89.7

LABORATORY CONTROL SAMPLE AND MATRIX SPIKE

QC Batch ID: 210202-PCB

MS/MSD Sample ID: 210202-PCB MS/MSD

LCS Sample ID: 210202-PCB LCS

Analyte	MS/MSD Limits (%)	MS/MSD Level (mg/kg)	Sample Conc. (mg/kg)	MS Recovery (mg/kg)	MS Percent Recovery	MSD Recovery (mg/kg)	MSD Percent Recovery	RPD	LCS Limits (%)	LCS Level (mg/kg)	LCS Recovery (mg/kg)	LCS Percent Recovery
PCB Aroclor 1016	29-135	0.40	nd	0.42	104%	0.39	98.7%	5.6	50-120	0.40	0.42	105%
PCB Aroclor 1260	29-135	0.40	nd	0.24	61.2%	0.38	93.9%	42.2	50-120	0.40	0.24	61.2%

WA-DOE-Laboratory Certification No.: C690

"nd" indicates the analyte was not detected at or above the listed Method Reporting Limit.

"n/a" indicates not applicable

Comments and Explanations: None.



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Sampling Date: February 2, 2021

Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx/Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	2/3/2021	2/3/2021	99	nd	nd
LCS	2/3/2021	2/3/2021	141	118%	---
B7-9-10	2/3/2021	2/3/2021	52	7200	nd
B8-8	2/3/2021	2/3/2021	62	nd	nd
B9-2	2/3/2021	2/3/2021	56	nd	nd
B10-8	2/3/2021	2/3/2021	67	nd	nd
Reporting Limits				50	100

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

Analysis of Diesel Range Organics & Lube Oil Range Organics in Water by Method NWTPH-Dx/Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (ug/L)	Lube Oil Range Organics (ug/L)
Method Blank	2/4/2021	2/4/2021	91	nd	nd
LCS	2/4/2021	2/4/2021	133	102%	---
B7	2/4/2021	2/4/2021	85	16000	nd
B8	2/4/2021	2/4/2021	77	nd	nd
B9	2/4/2021	2/4/2021	67	nd	nd
B10	2/4/2021	2/4/2021	73	nd	nd
Reporting Limits				50	100

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%



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**Analysis of Gasoline Range Organics in Soil  
by Method NWTPH-Gx**

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Gasoline Range Organics (mg/kg)
Method Blank	2/4/2021	2/4/2021	102	nd
LCS	2/4/2021	2/4/2021	106	68%
B7-9-10	2/2/2021	2/4/2021	96	nd
B8-8	2/2/2021	2/4/2021	103	nd
B8-8 Duplicate	2/2/2021	2/4/2021	101	nd
B9-2	2/2/2021	2/4/2021	98	nd
B10-8	2/2/2021	2/4/2021	101	nd
Reporting Limits				10

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%

**Analysis of Gasoline Range Organics in Water  
by Method NWTPH-Gx**

Sample Number	Date Analyzed	Surrogate Recovery (%)	Gasoline Range Organics (ug/L)
Method Blank	2/3/2021	101	nd
LCS	2/3/2021	95	64%
B7	2/3/2021	99	nd
B8	2/3/2021	94	nd
B9	2/3/2021	99	nd
B10	2/3/2021	98	nd
Reporting Limits			100

"nd" Indicates not detected at the listed detection limits.

"int" Indicates that interference prevents determination.

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%





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Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C

Analytical Results

	RL	MB	LCS	LCSD	B7	B8	B9	B10
Date analyzed	(ug/L)	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21
Dichlorodifluoromethane	1.0	nd			nd	nd	nd	nd
Chloromethane	1.0	nd			nd	nd	nd	nd
Vinyl chloride	0.2	nd	99%	98%	nd	nd	nd	nd
Bromomethane	1.0	nd			nd	nd	nd	nd
Chloroethane	1.0	nd			nd	nd	nd	nd
Trichlorofluoromethane	1.0	nd			nd	nd	nd	nd
Acetone	10.0	nd			nd	nd	nd	nd
1,1-Dichloroethene	1.0	nd	103%	119%	nd	nd	nd	nd
Methylene chloride	1.0	nd			nd	nd	nd	nd
Methyl-t-butyl ether (MTBE)	1.0	nd			nd	nd	nd	nd
trans-1,2-Dichloroethene	1.0	nd			nd	nd	nd	nd
1,1-Dichloroethane	1.0	nd			nd	nd	nd	nd
2-Butanone (MEK)	10.0	nd			nd	nd	nd	nd
n-hexane	1.0	nd			nd	nd	nd	nd
cis-1,2-Dichloroethene	1.0	nd			nd	nd	nd	nd
2,2-Dichloropropane	1.0	nd			nd	nd	nd	nd
Chloroform	1.0	nd	115%	126%	nd	nd	nd	nd
Bromochloromethane	1.0	nd			nd	nd	nd	nd
1,1,1-Trichloroethane	1.0	nd			nd	nd	nd	nd
1,2-Dichloroethane (EDC)	1.0	nd			nd	nd	nd	nd
1,1-Dichloropropene	1.0	nd			nd	nd	nd	nd
Carbon tetrachloride	1.0	nd			nd	nd	nd	nd
Benzene	1.0	nd	98%	103%	nd	nd	nd	nd
Trichloroethene (TCE)	1.0	nd	102%	99%	nd	nd	nd	nd
1,2-Dichloropropane	1.0	nd	101%	105%	nd	nd	nd	nd
Dibromomethane	1.0	nd			nd	nd	nd	nd
Bromodichloromethane	1.0	nd			nd	nd	nd	nd
4-Methyl-2-pentanone (MIBK)	1.0	nd			nd	nd	nd	nd
cis-1,3-Dichloropropene	1.0	nd			nd	nd	nd	nd
Toluene	1.0	nd	97%	89%	2.3	2.1	1.3	nd
trans-1,3-Dichloropropene	1.0	nd			nd	nd	nd	nd
1,1,2-Trichloroethane	1.0	nd			nd	nd	nd	nd
2-Hexanone	1.0	nd			nd	nd	nd	nd
1,3-Dichloropropane	1.0	nd			nd	nd	nd	nd
Dibromochloromethane	1.0	nd			nd	nd	nd	nd
Tetrachloroethene (PCE)	1.0	nd	94%	87%	nd	nd	nd	nd
1,2-Dibromoethane (EDB)	1.0	nd			nd	nd	nd	nd
Chlorobenzene	1.0	nd	101%	98%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	1.0	nd			nd	nd	nd	nd
Ethylbenzene	1.0	nd	92%	84%	nd	1.0	nd	nd
Xylenes	3.0	nd	111%	83%	nd	nd	nd	nd
Styrene	1.0	nd			nd	nd	nd	nd
Bromoform	1.0	nd			nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	1.0	nd			nd	nd	nd	nd
Isopropylbenzene	1.0	nd			nd	nd	nd	nd
1,2,3-Trichloropropane	1.0	nd			nd	nd	nd	nd
Bromobenzene	1.0	nd			nd	nd	nd	nd



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Analysis of Volatile Organic Compounds in Water by Method 8260C/5030C

Analytical Results

	RL	MB	LCS	LCSD	B7	B8	B9	B10
Date analyzed	(ug/L)	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21	02/03/21
n-Propylbenzene	1.0	nd			nd	nd	nd	nd
2-Chlorotoluene	1.0	nd			nd	nd	nd	nd
4-Chlorotoluene	1.0	nd			nd	nd	nd	nd
1,3,5-Trimethylbenzene	1.0	nd			nd	nd	nd	nd
tert-Butylbenzene	1.0	nd			nd	nd	nd	nd
1,2,4-Trimethylbenzene	1.0	nd			nd	nd	nd	nd
sec-Butylbenzene	1.0	nd			nd	nd	nd	nd
1,3-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
1,4-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
Isopropyltoluene	1.0	nd			nd	nd	nd	nd
1,2-Dichlorobenzene	1.0	nd			nd	nd	nd	nd
n-Butylbenzene	1.0	nd			nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	1.0	nd			nd	nd	nd	nd
1,2,4-Trichlorobenzene	1.0	nd			nd	nd	nd	nd
Naphthalene	1.0	nd			nd	nd	nd	nd
Hexachloro-1,3-butadiene	1.0	nd			nd	nd	nd	nd
1,2,3-Trichlorobenzene	1.0	nd			nd	nd	nd	nd
Surrogate recoveries								
Dibromofluoromethane		118%	117%	124%	137%*	142%*	125%	128%
Toluene-d8		94%	98%	102%	100%	98%	97%	96%
4-Bromofluorobenzene		101%	103%	101%	99%	94%	99%	98%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits

Acceptable Recovery limits: 65% TO 135%

Acceptable RPD limit: 35%

\*Dibromofluoromethane exceeded acceptable recovery limits. Analytes compared to this surrogate were non-detect, therefore no further action was taken



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Analysis of Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	MB	LCS	LCSD	B7-9-10	B8-8	B9-2	B10-8
Date extracted		02/04/21	02/04/21	02/04/21	02/02/21	02/02/21	02/02/21	02/02/21
Date analyzed	(mg/Kg)	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21
% Moisture					37%	32%	7%	27%
Dichlorodifluoromethane	0.05	nd			nd	nd	nd	nd
Chloromethane	0.05	nd			nd	nd	nd	nd
Vinyl chloride	0.02	nd	90%	107%	nd	nd	nd	nd
Bromomethane	0.05	nd			nd	nd	nd	nd
Chloroethane	0.05	nd			nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd			nd	nd	nd	nd
Acetone	0.25	nd			nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	104%	125%	nd	nd	nd	nd
Methylene chloride	0.05	nd			nd	nd	nd	nd
Methyl-t-butyl ether (MTBE)	0.05	nd			nd	nd	nd	nd
trans-1,2-Dichloroethene	0.05	nd			nd	nd	nd	nd
1,1-Dichloroethane	0.05	nd			nd	nd	nd	nd
2-Butanone (MEK)	0.25	nd			nd	nd	nd	nd
cis-1,2-Dichloroethene	0.05	nd			nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd			nd	nd	nd	nd
Chloroform	0.05	nd	107%	128%	nd	nd	nd	nd
Bromochloromethane	0.05	nd			nd	nd	nd	nd
1,1,1-Trichloroethane	0.05	nd			nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.05	nd			nd	nd	nd	nd
1,1-Dichloropropene	0.05	nd			nd	nd	nd	nd
Carbon tetrachloride	0.05	nd			nd	nd	nd	nd
Benzene	0.02	nd	84%	106%	nd	nd	nd	nd
Trichloroethene (TCE)	0.02	nd	88%	106%	nd	nd	nd	nd
1,2-Dichloropropane	0.05	nd	83%	102%	nd	nd	nd	nd
Dibromomethane	0.05	nd			nd	nd	nd	nd
Bromodichloromethane	0.05	nd			nd	nd	nd	nd
4-Methyl-2-pentanone (MIBK)	0.25	nd			nd	nd	nd	nd
cis-1,3-Dichloropropene	0.05	nd			nd	nd	nd	nd
Toluene	0.05	nd	76%	122%	nd	nd	nd	nd
trans-1,3-Dichloropropene	0.05	nd			nd	nd	nd	nd
1,1,2-Trichloroethane	0.05	nd			nd	nd	nd	nd
2-Hexanone	0.25	nd			nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd			nd	nd	nd	nd
Dibromochloromethane	0.05	nd			nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	79%	97%	nd	nd	nd	nd
1,2-Dibromoethane (EDB)	0.05	nd			nd	nd	nd	nd
Chlorobenzene	0.05	nd	85%	105%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd			nd	nd	nd	nd
Ethylbenzene	0.05	nd	76%	99%	nd	nd	nd	nd
Xylenes	0.15	nd	76%	105%	nd	nd	nd	nd
Styrene	0.05	nd			nd	nd	nd	nd
Bromoform	0.05	nd			nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd			nd	nd	nd	nd
Isopropylbenzene	0.05	nd			nd	nd	nd	nd
1,2,3-Trichloropropane	0.05	nd			nd	nd	nd	nd
Bromobenzene	0.05	nd			nd	nd	nd	nd





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Analysis of Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	MB	LCS	LCSD	B7-9-10	B8-8	B9-2	B10-8
Date extracted		02/04/21	02/04/21	02/04/21	02/02/21	02/02/21	02/02/21	02/02/21
Date analyzed	(mg/Kg)	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21	02/04/21
% Moisture					37%	32%	7%	27%
n-Propylbenzene	0.05	nd			nd	nd	nd	nd
2-Chlorotoluene	0.05	nd			nd	nd	nd	nd
4-Chlorotoluene	0.05	nd			nd	nd	nd	nd
1,3,5-Trimethylbenzene	0.05	nd			nd	nd	nd	nd
tert-Butylbenzene	0.05	nd			nd	nd	nd	nd
1,2,4-Trimethylbenzene	0.05	nd			nd	nd	nd	nd
sec-Butylbenzene	0.05	nd			nd	nd	nd	nd
1,3-Dichlorobenzene	0.05	nd			nd	nd	nd	nd
1,4-Dichlorobenzene	0.05	nd			nd	nd	nd	nd
Isopropyltoluene	0.05	nd			nd	nd	nd	nd
1,2-Dichlorobenzene	0.05	nd			nd	nd	nd	nd
n-Butylbenzene	0.05	nd			nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	0.05	nd			nd	nd	nd	nd
1,2,4-Trichlorobenzene	0.05	nd			nd	nd	nd	nd
Naphthalene	0.05	nd			nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.05	nd			nd	nd	nd	nd
1,2,3-Trichlorobenzene	0.05	nd			nd	nd	nd	nd
Surrogate recoveries								
Dibromofluoromethane		124%	120%	117%	131%	120%	122%	122%
Toluene-d8		97%	98%	99%	102%	95%	96%	98%
4-Bromofluorobenzene		102%	104%	105%	96%	103%	98%	101%

Data Qualifiers and Analytical Comments

nd - not detected at listed reporting limits  
 Acceptable Recovery limits: 65% TO 135%  
 Acceptable RPD limit: 35%



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## ADDITIONAL ANALYSIS TEST RESULTS

### Analysis of Diesel Range Organics & Lube Oil Range Organics in Soil by Method NWTPH-Dx/Dx Extended

Sample Number	Date Prepared	Date Analyzed	Surrogate Recovery (%)	Diesel Range Organics (mg/kg)	Lube Oil Range Organics (mg/kg)
Method Blank	2/10/2021	2/10/2021	64	nd	nd
LCS	2/10/2021	2/10/2021	65	72%	---
B6-10	2/10/2021	2/10/2021	52	nd	nd
B7-4	2/10/2021	2/10/2021	73	nd	nd
B7-16	2/10/2021	2/10/2021	68	nd	nd
Reporting Limits				50	100

"---" Indicates not tested for component.

"nd" Indicates not detected at the listed detection limits.

Analyst: LH

ACCEPTABLE RECOVERY LIMITS FOR SURROGATE : 50% TO 150%





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Analysis of Chlorinated Volatile Organic Compounds in Soil by Method 8260C/5035

	RL	MB	LCS	LCSD	B5-15	B6-4	B6-10	B7-16
Date extracted		02/12/21	02/12/21	02/12/21	02/01/21	02/01/21	02/01/21	02/02/21
Date analyzed	(mg/Kg)	02/12/21	02/12/21	02/12/21	02/12/21	02/12/21	02/12/21	02/12/21
% Moisture					19%	16%	21%	19%
Dichlorodifluoromethane	0.05	nd			nd	nd	nd	nd
Chloromethane	0.05	nd			nd	nd	nd	nd
Vinyl chloride	0.02	nd	103%	94%	nd	nd	nd	nd
Chloroethane	0.05	nd			nd	nd	nd	nd
Trichlorofluoromethane	0.05	nd			nd	nd	nd	nd
1,1-Dichloroethene	0.05	nd	75%	68%	nd	nd	nd	nd
Methylene chloride	0.05	nd			nd	nd	nd	nd
trans-1,2-Dichloroethene	0.05	nd			nd	nd	nd	nd
1,1-Dichloroethane	0.05	nd			nd	nd	nd	nd
cis-1,2-Dichloroethene	0.05	nd			nd	nd	nd	nd
2,2-Dichloropropane	0.05	nd			nd	nd	nd	nd
Chloroform	0.05	nd	76%	66%	nd	nd	nd	nd
Bromochloromethane	0.05	nd			nd	nd	nd	nd
1,1,1-Trichloroethane	0.05	nd			nd	nd	nd	nd
1,2-Dichloroethane (EDC)	0.05	nd	82%	70%	nd	nd	nd	nd
1,1-Dichloropropene	0.05	nd			nd	nd	nd	nd
Carbon tetrachloride	0.05	nd			nd	nd	nd	nd
Trichloroethene (TCE)	0.02	nd	127%	112%	nd	nd	nd	nd
1,2-Dichloropropane	0.05	nd	125%	106%	nd	nd	nd	nd
Bromodichloromethane	0.05	nd			nd	nd	nd	nd
cis-1,3-Dichloropropene	0.05	nd			nd	nd	nd	nd
trans-1,3-Dichloropropene	0.05	nd			nd	nd	nd	nd
1,1,2-Trichloroethane	0.05	nd			nd	nd	nd	nd
1,3-Dichloropropane	0.05	nd			nd	nd	nd	nd
Dibromochloromethane	0.05	nd			nd	nd	nd	nd
Tetrachloroethene (PCE)	0.02	nd	117%	102%	nd	0.06	0.05	nd
Chlorobenzene	0.05	nd	130%	115%	nd	nd	nd	nd
1,1,1,2-Tetrachloroethane	0.05	nd			nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	0.05	nd			nd	nd	nd	nd
1,2,3-Trichloropropane	0.05	nd			nd	nd	nd	nd
2-Chlorotoluene	0.05	nd			nd	nd	nd	nd
4-Chlorotoluene	0.05	nd			nd	nd	nd	nd
1,3-Dichlorobenzene	0.05	nd			nd	nd	nd	nd
1,4-Dichlorobenzene	0.05	nd			nd	nd	nd	nd
1,2-Dichlorobenzene	0.05	nd			nd	nd	nd	nd
1,2-Dibromo-3-Chloropropane	0.05	nd			nd	nd	nd	nd
1,2,4-Trichlorobenzene	0.05	nd			nd	nd	nd	nd
Hexachloro-1,3-butadiene	0.05	nd			nd	nd	nd	nd
1,2,3-Trichlorobenzene	0.05	nd			nd	nd	nd	nd
Surrogate recoveries								
Dibromofluoromethane		129%	124%	116%	121%	119%	125%	126%
Toluene-d8		97%	99%	97%	95%	96%	96%	98%
4-Bromofluorobenzene		101%	105%	107%	99%	106%	98%	104%

Data Qualifiers and Analytical Comments  
 nd - not detected at listed reporting limits  
 Acceptable Recovery limits: 65% TO 135%  
 Acceptable RPD limit: 35%

Analyst: Jennifer A



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ESN

5210202.1

# CHAIN-OF-CUSTODY RECORD

CLIENT: <u>Equinavent Associates Inc.</u>	DATE: <u>2-1-21</u>	PAGE <u>1</u> OF <u>2</u>
ADDRESS: <u>1380 112th Ave NE #300 Bellevue WA 98004</u>	PROJECT NAME: <u>Freestar</u>	
PHONE: <u>425-488-9025</u>	LOCATION: <u>Reuter</u>	
EMAIL: <u>info@equinavent.com</u>	COLLECTOR: <u>Eric Ziem</u>	DATE OF COLLECTION: <u>2-1-21</u>
CLIENT PROJECT #: <u>401391</u>	PROJECT MANAGER: <u>Eric Ziem</u>	

Sample Number	Depth	Time	Sample Type	Container Type	TPH-HC10	TPH-DIESEL AND OIL	TPH-GASOLINE	BTEX-R260	VOC-R260CL	VOC-R260	SEMI-VOC-R270	PAH'S-R270	PCDD'S-R082	CL PESTICIDES-R081	RCRA 8 Metals	MICA 5 Metals	Pb	ASBESTOS PLM	GRO Suite 830-1	DRO Suite 830-1	1-DEB Suite 830-1	1-DEB Suite 830-1
1. B-1	4'	9:15	Soil																			
2. B-1-10	10'	9:22	↓		X																	
3. B-1-15	15'	9:29	↓																			
4. B-1	11-15	9:40	Water		X	X																
5. B-2-2.5	2.5'	10:15	Soil		X	X																
6. B-2-10	10'	10:19	↓																			
7. B-2-15	15'	10:25	↓																			
8. B-2	11-15	10:40	Water		X	X																
9. B-3-4	4'	10:59	Soil																			
10. B-3-10	10'	11:04	↓		X	X																
11. B-3-15	15'	11:07	↓																			
12. B-3	11-15	11:12	Water		X	X																
13. B-4-4	4'	11:46	Soil																			
14. B-4-10	10'	12:04	↓		X	X																
15. B-4-15	15'	12:08	↓		X	X																
16. B-4	11-15	12:15	Water		X	X																
17. B-5-3	3'	12:35	Soil																			
18. B-5-10	10'	12:42	↓		X	X																

RELINQUISHED BY (Signature) <u>[Signature]</u>	DATE/TIME <u>2-1-21 2:00</u>	RECEIVED BY (Signature) <u>[Signature]</u>	DATE/TIME <u>2-1-21 2:00</u>
RELINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME

NOTES:	LABORATORY NOTES:
1210 Eastside Street SE, Suite 200 Olympia, Washington 98501	Turn Around Time: 24 HR / 48 HR / 5 DAY Website: <a href="http://www.esnanalytical.com">www.esnanalytical.com</a> E-Mail: <a href="mailto:lab@esnan.com">lab@esnan.com</a>





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5210210.2R (Add-on)

# CHAIN-OF-CUSTODY RECORD

CLIENT: <u>ESN</u>		DATE: <u>2-1-21</u>	PAGE <u>2</u> OF <u>2</u>
ADDRESS: <u>3155 NE Sunset Blvd, Suite A, Renton, WA 98056</u>		PROJECT NAME: <u>Firestone</u>	
PHONE: <u>425.207.8345</u>		LOCATION: <u>Renton</u>	
EMAIL: <u>lab@esnanalytical.com</u>		COLLECTOR: <u>Eric Ziem</u>	DATE OF COLLECTION: <u>2-1-21</u>
CLIENT PROJECT #: <u>40139-1</u>		PROJECT MANAGER: <u>Eric Ziem</u>	

Sample Number	Depth	Time	Sample Type	Container Type	TPH-HC/D	TPH-DIESEL AND OIL	TPH-GASOLINE	BTEX 8260	VOC 8260CL	VOC 8260	SEMI-VOC 8270	PAH'S 8270	PCB'S 8082	CL PESTICIDES 8081	RCRA'S Metals	MTCA'S Metals	Pb	ASBESTOS PLM	GRO Suite 830-1	T-CE Suite 830-1	T-CE Suite 830-1	T-CE Suite 830-1	
B5-15	15'	12:40	Soil																				
B5	11-15'	1:00	Water																				
B6-4	4'	1:23	Soil																				
B6-10	10'	1:26	↓																				
B6-15	15'	1:30	↓																				
B6	11-15'	1:45	Water																				

REINQUISHED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME	SAMPLE RECEIPT	LABORATORY NOTES:
<u>[Signature]</u>	<u>2-1-21 2:00</u>	<u>[Signature]</u>	<u>2-1-21 2:00</u>	TOTAL NUMBER OF CONTAINERS <u>76</u>	Call Eric for p. 11-15
RETURNED BY (Signature)	DATE/TIME	RECEIVED BY (Signature)	DATE/TIME	CHAIN OF CUSTODY SEALS V/N/NA	
				SEALS INTACT? V/N/NA	
				RECEIVED GOOD COND./COLD	

Turn Around Time: 24 HR 48 HR 5 DAY

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Fax: 360-459-3432  
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E-Mail: [lab@esnanalytical.com](mailto:lab@esnanalytical.com)



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Web: [www.esnanalytical.com](http://www.esnanalytical.com)

SN

5210600.1

# CHAIN-OF-CUSTODY RECORD

CLIENT: Environmental Associates Inc.

ADDRESS: 1380 112th Ave NE #300 Bellevue WA 98004

PHONE: 425-455-9025 EMAIL: info@environmentalassociatesinc.com

CLIENT PROJECT #: 401361 PROJECT MANAGER: Eric Zorn

DATE: 2-2-21 PAGE 1 OF 1

PROJECT NAME: Firestone

LOCATION: Retention

COLLECTOR: Eric Zorn DATE OF COLLECTION: 2-2-21

Cardinal Street SE, Suite 200

Phone: 360-450-4670

Turn Around Time: 24 HR 48 HR 60+ HR

Sample Number

Depth

Time

Sample Type

Container Type

- PH-HCl
- PH-DIESEL AND OIL
- PH-GASOLINE
- PH-XAD
- VOC BOD
- VOC BOD
- SEMI-VOL BOD
- PAH BOD
- PCB BOD
- GC PESTICIDES BOD
- NCRA BOD
- MTCA BOD
- PH
- ASBESTOS FIBER
- GRO Suite B30.1
- DRC Suite B30.1
- WQ Suite B30.1

LABORATORY NOTES:

Call Eric for billing

UNOBTAINED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

DATE/TIME

UNOBTAINED BY (Signature)

DATE/TIME

RECEIVED BY (Signature)

DATE/TIME

SAMPLE RECEIPT

LABORATORY NOTES:

*[Signature]*

2-2-21

*[Signature]*

2-2-21

58

Call Eric for billing

5

*[Signature]*

2-2-21

*[Signature]*

2-2-21

58

Call Eric for billing

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1 Eastside Street SE, Suite 200  
Renton, Washington 98021  
Phone: 360-459-4670  
Fax: 360-459-3432  
Website: [www.esnanaw.com](http://www.esnanaw.com)  
E-Mail: [lab@esnanaw.com](mailto:lab@esnanaw.com)





3155 NE Sunset Blvd, Suite A  
Renton, WA 98056  
Phone: 425.207.8345  
Email: [lab@esnanalytical.com](mailto:lab@esnanalytical.com)  
Web: [www.esnanalytical.com](http://www.esnanalytical.com)

## ESN Analytical

---

**From:** donsperencer@environmentalassociatesinc.com  
**Sent:** Tuesday, February 9, 2021 1:30 PM  
**To:** Jennifer Arnold  
**Cc:** ESN Analytical  
**Subject:** RE: Corrected Reports Firestone 02/1/21

Hi Jennifer,

Based on our initial results, I'd like to run a few more samples from the Renton Firestone site.

I'd like to run the following soil samples for Diesel-extended:

B6-10

B7-4

B7-16

I'd like to run the following samples for chlorinated VOCs:

B5-15

B6-4

B6-10

B7-16

Thanks!

Eric Zuern  
Environmental Associates, Inc.  
Phone: 425-455-9025



3155 NE Sunset Blvd, Suite A  
Renton, WA 98056  
Phone: 425.207.8345  
Email: [lab@esnanalytical.com](mailto:lab@esnanalytical.com)  
Web: [www.esnanalytical.com](http://www.esnanalytical.com)

## INVOICE

ESN ANALYTICAL  
3155 NE Sunset Blvd, Suite A  
Renton, WA 98056

Invoice#: 1017

February 16, 2021

**BILL TO:**

Toula Properties LLC  
3801 92<sup>nd</sup> Ave NE  
Bellevue WA 98004

**REMIT TO:**

ESN ANALYTICAL  
C/O JONAS EVANGELISTA  
10701 Main St., Unit 710  
Bellevue, WA 98004

Tax ID: 85-3345717

**ATTENTION: Mr. Curt Kruse**

**PROJECT:**

**Firestone**  
351 Rainier Ave., S,  
Renton, WA

**PROJECT NUMBER: 40139-1**

**PROJECT MANAGER: ERIC ZUERN (EAI)**

**TERMS: NET 30 DAYS**

Date Samples Received	Quantity	Description	Sample Matrix	Unit Cost (5 dayTAT) per Sample	AMOUNT
02/01/21, 02/02/21	10	NWTPH-Gx	W	\$60.00	\$600.00
02/01/21, 02/02/21	13	NWTPH-Dx	W	\$60.00	\$780.00
02/01/21, 02/02/21	10	NWTPH-Gx	S	\$60.00	\$600.00
02/01/21, 02/02/21	10	NWTPH-Dx	S	\$60.00	\$600.00
02/01/21, 02/02/21	10	VOC	W	\$120.00	\$1200.00
02/01/21, 02/02/21	10	VOC	S	\$120.00	\$1200.00
02/01/21, 02/02/21	4	Chlorinated VOC	S	\$100.00	\$400.00
02/01/2021	1	PAH	W	\$160.00	\$160.00
02/01/2021	1	PAH	S	\$160.00	\$160.00
02/01/2021	1	PCB	W	\$75.00	\$75.00
02/01/2021	1	PCB	S	\$75.00	\$75.00
02/01/2021	1	MTCA 5 Metals	S	\$90.00	\$90.00
02/01/2021	1	MTCA 5 Metals	W	\$90.00	\$90.00
02/01/2021	32	5035 Sampling Kit	S	\$4.00	\$128.00
				<b>TOTAL AMOUNT DUE</b>	<b>\$6158.00</b>

FRIEDMAN & BRUYA, INC.

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D.  
Yelena Aravkina, M.S.  
Michael Erdahl, B.S.  
Arina Podnozova, B.S.  
Eric Young, B.S.

3012 16th Avenue West  
Seattle, WA 98119-2029  
(206) 285-8282  
fbi@isomedia.com  
www.friedmanandbruya.com

February 10, 2021

Eric Zuern, Project Manager  
Environmental Associates, Inc.  
1380 112th Ave. NE, 300  
Bellevue, WA 98004

Dear Mr Zuern:

Included are the results from the testing of material submitted on February 1, 2021 from the Renton Firestone PO 40139-1, F&BI 102015 project. There are 12 pages included in this report.

We appreciate this opportunity to be of service to you and hope you will call if you have any questions.

Sincerely,

FRIEDMAN & BRUYA, INC.



Michael Erdahl  
Project Manager

Enclosures  
EAI0210R.DOC

## FRIEDMAN & BRUYA, INC.

### ENVIRONMENTAL CHEMISTS

#### CASE NARRATIVE

This case narrative encompasses samples received on February 1, 2020 by Friedman & Bruya, Inc. from the Environmental Associates Renton Firestone PO 40139-1, F&BI 102015 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	<u>Environmental Associates</u>
102015 -01	B5
102015 -02	B9
102015 -03	B10

Non-petroleum compounds identified in the air phase hydrocarbon (APH) ranges were subtracted per the MA-APH method.

APH EC5-8 aliphatics were detected in the MA-APH method blank at a level greater than one tenth the concentration detected in the samples. The data were flagged accordingly.

All other quality control requirements were acceptable.



# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	B5	Client:	Environmental Associates
Date Received:	02/01/21	Project:	Renton Firestone PO 40139-1, F&BI 102015
Date Collected:	02/01/21	Lab ID:	102015-01 1/5.2
Date Analyzed:	02/05/21	Data File:	020427.D
Matrix:	Air	Instrument:	GCMS12
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	101	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	1,900
APH EC9-12 aliphatics	510
APH EC9-10 aromatics	180

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	B9	Client:	Environmental Associates
Date Received:	02/01/21	Project:	Renton Firestone PO 40139-1, F&BI 102015
Date Collected:	02/01/21	Lab ID:	102015-02 1/3.3
Date Analyzed:	02/05/21	Data File:	020426.D
Matrix:	Air	Instrument:	GCMS12
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration
	ug/m3

APH EC5-8 aliphatics	910 fb
APH EC9-12 aliphatics	460
APH EC9-10 aromatics	170

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	B10	Client:	Environmental Associates
Date Received:	02/01/21	Project:	Renton Firestone PO 40139-1, F&BI 102015
Date Collected:	02/01/21	Lab ID:	102015-03 1/3.1
Date Analyzed:	02/05/21	Data File:	020424.D
Matrix:	Air	Instrument:	GCMS12
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	99	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	710 fb
APH EC9-12 aliphatics	410
APH EC9-10 aromatics	190

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method MA-APH

Client Sample ID:	Method Blank	Client:	Environmental Associates
Date Received:	Not Applicable	Project:	Renton Firestone PO 40139-1, F&BI 102015
Date Collected:	Not Applicable	Lab ID:	01-221 MB
Date Analyzed:	02/04/21	Data File:	020413.D
Matrix:	Air	Instrument:	GCMS12
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	103	70	130

Compounds:	Concentration ug/m3
APH EC5-8 aliphatics	150 lc
APH EC9-12 aliphatics	<50
APH EC9-10 aromatics	<25

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method TO-15

Client Sample ID: B5	Client: Environmental Associates
Date Received: 02/01/21	Project: Renton Firestone PO 40139-1, F&BI 102015
Date Collected: 02/01/21	Lab ID: 102015-01 1/5.2
Date Analyzed: 02/05/21	Data File: 020427.D
Matrix: Air	Instrument: GCMS12
Units: ug/m3	Operator: bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	101	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Vinyl chloride	<1.3	<0.52
Chloroethane	<14	<5.2
1,1-Dichloroethene	<2.1	<0.52
trans-1,2-Dichloroethene	<2.1	<0.52
1,1-Dichloroethane	<2.1	<0.52
cis-1,2-Dichloroethene	<2.1	<0.52
1,2-Dichloroethane (EDC)	<0.21	<0.052
1,1,1-Trichloroethane	49	9.0
Benzene	4.7	1.5
Trichloroethene	<0.56	<0.1
Toluene	<98	<26
1,1,2-Trichloroethane	<0.28	<0.052
Tetrachloroethene	440	66
Ethylbenzene	16	3.6
m,p-Xylene	92	21
o-Xylene	25	5.7
Naphthalene	3.1	0.58

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	B9	Client:	Environmental Associates
Date Received:	02/01/21	Project:	Renton Firestone PO 40139-1, F&BI 102015
Date Collected:	02/01/21	Lab ID:	102015-02 1/3.3
Date Analyzed:	02/05/21	Data File:	020426.D
Matrix:	Air	Instrument:	GCMS12
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	100	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Vinyl chloride	<0.84	<0.33
Chloroethane	<8.7	<3.3
1,1-Dichloroethene	<1.3	<0.33
trans-1,2-Dichloroethene	<1.3	<0.33
1,1-Dichloroethane	<1.3	<0.33
cis-1,2-Dichloroethene	<1.3	<0.33
1,2-Dichloroethane (EDC)	<0.13	<0.033
1,1,1-Trichloroethane	3.6	0.67
Benzene	5.4	1.7
Trichloroethene	<0.35	<0.066
Toluene	<62	<16
1,1,2-Trichloroethane	<0.18	<0.033
Tetrachloroethene	<22	<3.3
Ethylbenzene	15	3.6
m,p-Xylene	86	20
o-Xylene	23	5.2
Naphthalene	3.4	0.64



# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method TO-15

Client Sample ID: B10	Client: Environmental Associates
Date Received: 02/01/21	Project: Renton Firestone PO 40139-1, F&BI 102015
Date Collected: 02/01/21	Lab ID: 102015-03 1/3.1
Date Analyzed: 02/05/21	Data File: 020424.D
Matrix: Air	Instrument: GCMS12
Units: ug/m3	Operator: bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	98	70	130

Compounds:	Concentration	
	ug/m3	ppbv
Vinyl chloride	<0.79	<0.31
Chloroethane	<8.2	<3.1
1,1-Dichloroethene	<1.2	<0.31
trans-1,2-Dichloroethene	<1.2	<0.31
1,1-Dichloroethane	<1.3	<0.31
cis-1,2-Dichloroethene	<1.2	<0.31
1,2-Dichloroethane (EDC)	<0.13	<0.031
1,1,1-Trichloroethane	<1.7	<0.31
Benzene	5.6	1.8
Trichloroethene	<0.33	<0.062
Toluene	63	17
1,1,2-Trichloroethane	<0.17	<0.031
Tetrachloroethene	<21	<3.1
Ethylbenzene	18	4.0
m,p-Xylene	100	23
o-Xylene	26	6.1
Naphthalene	3.6	0.69

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Analysis For Volatile Compounds By Method TO-15

Client Sample ID:	Method Blank	Client:	Environmental Associates
Date Received:	Not Applicable	Project:	Renton Firestone PO 40139-1, F&BI 102015
Date Collected:	Not Applicable	Lab ID:	01-221 MB
Date Analyzed:	02/04/21	Data File:	020413.D
Matrix:	Air	Instrument:	GCMS12
Units:	ug/m3	Operator:	bat

	%	Lower	Upper
Surrogates:	Recovery:	Limit:	Limit:
4-Bromofluorobenzene	103	70	130

	Concentration	
Compounds:	ug/m3      ppbv	
Vinyl chloride	<0.26	<0.1
Chloroethane	<2.6	<1
1,1-Dichloroethene	<0.4	<0.1
trans-1,2-Dichloroethene	<0.4	<0.1
1,1-Dichloroethane	<0.4	<0.1
cis-1,2-Dichloroethene	<0.4	<0.1
1,2-Dichloroethane (EDC)	<0.04	<0.01
1,1,1-Trichloroethane	<0.55	<0.1
Benzene	<0.32	<0.1
Trichloroethene	<0.11	<0.02
Toluene	<19	<5
1,1,2-Trichloroethane	<0.055	<0.01
Tetrachloroethene	<6.8	<1
Ethylbenzene	<0.43	<0.1
m,p-Xylene	<0.87	<0.2
o-Xylene	<0.43	<0.1
Naphthalene	<0.26	<0.05

**FRIEDMAN & BRUYA, INC.**

**ENVIRONMENTAL CHEMISTS**

Date of Report: 02/10/21

Date Received: 02/01/21

Project: Renton Firestone PO 40139-1, F&BI 102015

**QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES  
FOR VOLATILES BY METHOD MA-APH**

Laboratory Code: 102015-03 1/3.1 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
APH EC5-8 aliphatics	ug/m3	710 fb	690 fb	3
APH EC9-12 aliphatics	ug/m3	410	400	2
APH EC9-10 aromatics	ug/m3	190	170	11

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
APH EC5-8 aliphatics	ug/m3	67	85	70-130
APH EC9-12 aliphatics	ug/m3	67	103	70-130
APH EC9-10 aromatics	ug/m3	67	113	70-130

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

Date of Report: 02/10/21

Date Received: 02/01/21

Project: Renton Firestone PO 40139-1, F&BI 102015

### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF AIR SAMPLES FOR VOLATILES BY METHOD TO-15

Laboratory Code: 102015-03 1/3.1 (Duplicate)

Analyte	Reporting Units	Sample Result	Duplicate Result	RPD (Limit 30)
Vinyl chloride	ug/m3	<0.79	<0.79	nm
Chloroethane	ug/m3	<8.2	<8.2	nm
1,1-Dichloroethene	ug/m3	<1.2	<1.2	nm
trans-1,2-Dichloroethene	ug/m3	<1.2	<1.2	nm
1,1-Dichloroethane	ug/m3	<1.3	<1.3	nm
cis-1,2-Dichloroethene	ug/m3	<1.2	<1.2	nm
1,2-Dichloroethane (EDC)	ug/m3	<0.13	<0.13	nm
1,1,1-Trichloroethane	ug/m3	<1.7	<1.7	nm
Benzene	ug/m3	5.6	5.3	6
Trichloroethene	ug/m3	<0.33	<0.33	nm
Toluene	ug/m3	63	<58	nm
1,1,2-Trichloroethane	ug/m3	<0.17	<0.17	nm
Tetrachloroethene	ug/m3	<21	<21	nm
Ethylbenzene	ug/m3	18	16	12
m,p-Xylene	ug/m3	100	93	7
o-Xylene	ug/m3	26	24	8
Naphthalene	ug/m3	3.6	3.4	6

Laboratory Code: Laboratory Control Sample

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Acceptance Criteria
Vinyl chloride	ug/m3	35	99	70-130
Chloroethane	ug/m3	36	108	70-130
1,1-Dichloroethene	ug/m3	54	102	70-130
trans-1,2-Dichloroethene	ug/m3	54	99	70-130
1,1-Dichloroethane	ug/m3	55	102	70-130
cis-1,2-Dichloroethene	ug/m3	54	101	70-130
1,2-Dichloroethane (EDC)	ug/m3	55	103	70-130
1,1,1-Trichloroethane	ug/m3	74	102	70-130
Benzene	ug/m3	43	101	70-130
Trichloroethene	ug/m3	73	99	70-130
Toluene	ug/m3	51	97	70-130
1,1,2-Trichloroethane	ug/m3	74	102	70-130
Tetrachloroethene	ug/m3	92	97	70-130
Ethylbenzene	ug/m3	59	103	70-130
m,p-Xylene	ug/m3	120	104	70-130
o-Xylene	ug/m3	59	106	70-130
Naphthalene	ug/m3	71	105	70-130

# FRIEDMAN & BRUYA, INC.

## ENVIRONMENTAL CHEMISTS

### Data Qualifiers & Definitions

a - The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.

b - The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.

ca - The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.

c - The presence of the analyte may be due to carryover from previous sample injections.

cf - The sample was centrifuged prior to analysis.

d - The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.

dv - Insufficient sample volume was available to achieve normal reporting limits.

f - The sample was laboratory filtered prior to analysis.

fb - The analyte was detected in the method blank.

fc - The analyte is a common laboratory and field contaminant.

hr - The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.

hs - Headspace was present in the container used for analysis.

ht - The analysis was performed outside the method or client-specified holding time requirement.

ip - Recovery fell outside of control limits due to sample matrix effects.

j - The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.

J - The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

jl - The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.

js - The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.

lc - The presence of the analyte is likely due to laboratory contamination.

L - The reported concentration was generated from a library search.

nm - The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.

pc - The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.

ve - The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.

vo - The value reported fell outside the control limits established for this analyte.

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

# SAMPLE CHAIN OF CUSTODY

ME 02-01-21

Page # 1 of 1

TURNAROUND TIME

Standard  
RUSH

Rush charges authorized by:

SAMPLE DISPOSAL

Default: Clean after 3 days

Archive (Fee may apply)

SAMPLERS (signature)

PROJECT NAME & ADDRESS

2040 N First Ave

PO #

40139-1

NOTES:

12885 Intervenor Ave S,  
Seattle, WA  
206-948-7602  
Mike Kiddler, com

INVOICE TO

Mike Kiddler

102015  
Report To Eric Zern  
Company Environmental Associates Inc.  
Address 1380 12th Ave NE #300  
City, State, ZIP Bellevue WA 98004  
Phone 425-455-9025 Email info@environmental-associates.com

## SAMPLE INFORMATION

## ANALYSIS REQUESTED

Sample Name	Lab ID	Canister ID	Flow Cont. ID	Reporting Level: IA=Indoor Air SG=Soil Gas (Circle One)	Date Sampled	Initial Vac. (Hg)	Field Initial Time	Field Final Time	Field Final Time	TO15 Full Scan	TO15 BTEXN	TO15 cVOCs	APH	Helium	Notes
B5	01	4117	302	IA / SG	2-1-21	29	9:43	4	9:48	X	X	X	X		Can't 4177
B9	02	4180	307	IA / SG		30	9:52	4	9:57	X	X	X	X		
B10	03	8533	308	IA / SG		30	9:59	4	10:04	X	X	X	X		
				IA / SG											
				IA / SG											
				IA / SG											
				IA / SG											
				IA / SG											
				IA / SG											
				IA / SG											
				IA / SG											

Samples received at 16 °C

Friedman & Bruyo, Inc.

3012 16th Avenue West

Seattle, WA 98119-3029

Ph. (206) 285-8282

Fax (206) 283-5044

FORMSVCOC\CCOCTO-15.DOC

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by: <i>[Signature]</i>	Eric Zern	EAT	2-1-21	3:02
Received by: <i>[Signature]</i>	Nikun Pham	FEBT	2-7-2	✓
Relinquished by:				
Received by:				



**WM**  
Greater Wenatchee Regional Landfill  
191 Webb Road  
Wenatchee, WA 98802

Reprint  
Ticket# 924155  
Ph: (509) 884-2802

Customer Name ANDERSON ENVIRONMENTAL A Carrier r transport  
Ticket Date 04/27/2022 Vehicle# 88  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Route Check#  
Hauling Ticket# Billing# 0508083  
Destination Grid  
Manifest 116848wa  
Profile 116848WA (CID SOIL)  
Generator 168-FORMER FIRESTONE AUTO CARE FORMER FIRESTONE AUTO CARE PROPERTY 351 RAIN  
PO# 21-0050

	Time	Scale	Operator	Inbound	Gross	
In	04/27/2022 12:06:41	Inbound	Janelle		Tare	95860 lb
Out	04/27/2022 12:19:38	Outbound	Janelle		Net	39520 lb
					Tons	56340 lb
						28.17

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	28.17	Tons				KING
2 EVF-P-Standard Environm	100		%				KING
3 CDHD FEE-Chelan Douglas	100	28.17	Tons				KING
4 TF-TRANSPORTATION FEE T	100	28.17	Tons				KING

Total Tax/Fees  
Total Ticket

Driver's Signature

*HL for Transport*

The total amount includes fees and taxes that may not all be listed on this ticket due to technical limitation.

**WM**  
Greater Wenatchee Regional Landfill  
191 Webb Road  
Wenatchee, WA 98802

Reprint  
Ticket# 924240  
Ph: (509) 884-2802

Customer Name ANDERSON ENVIRONMENTAL A Carrier r transport  
Ticket Date 04/28/2022 Vehicle# 87  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Route Check#  
Hauling Ticket# Billing# 0508083  
Destination Grid  
Manifest 116848wa  
Profile 116848WA (CID SOIL)  
Generator 168-FORMER FIRESTONE AUTO CARE FORMER FIRESTONE AUTO CARE PROPERTY 351 RAIN  
PO# 21-0050

	Time	Scale	Operator	Inbound	Gross	
In	04/28/2022 09:21:38	Inbound	Janelle		Tare	109060 lb 41640 lb
Out	04/28/2022 09:40:26	Outbound	Janelle		Net	67420 lb
					Tons	33.71

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	33.71	Tons				KING
2 EVF-P-Standard Environm	100		%				KING
3 CDHD FEE-Chelan Douglas	100	33.71	Tons				KING
4 TF-TRANSPORTATION FEE T	100	33.71	Tons				KING

Total Tax/Fees  
Total Ticket

Driver's Signature

*JL for R Transport 87*

The total amount includes fees and taxes that may not all be listed on this ticket due to technical limitation.

**WM**  
Greater Wenatchee Regional Landfill  
191 Webb Road  
Wenatchee, WA 98802

Reprint  
Ticket# 924294  
Ph: (509) 884-2802

Customer Name ANDERSON ENVIRONMENTAL A Carrier r transport  
Ticket Date 04/28/2022 Vehicle# 84  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Route Check#  
Hauling Ticket# Billing# 0508083  
Destination Grid  
Manifest 116848wa  
Profile 116848WA (CID SOIL)  
Generator 168-FORMER FIRESTONE AUTO CARE FORMER FIRESTONE AUTO CARE PROPERTY 351 RAIN  
PO# 21-0050

	Time	Scale	Operator	Inbound	Gross	
In	04/28/2022 13:45:46	Inbound	Janelle		Tare	62800 lb 42420 lb
Out	04/28/2022 14:00:51	Outbound	Janelle		Net	20380 lb
					Tons	10.19

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	10.19	Tons				KING
2 EVF-P-Standard Environm	100		%				
3 CDHD FEE-Chelan Douglas	100	10.19	Tons				
4 TF-TRANSPORTATION FEE T	100	10.19	Tons				
5 SBY125-STAND BY 125\$/HR	100	3.00	Each				

Total Tax/Fees  
Total Ticket

Driver's Signature

*HL for Transport*

The total amount includes fees and taxes that may not all be listed on this ticket due to technical limitation.

**WM**  
Greater Wenatchee Regional Landfill  
191 Webb Road  
Wenatchee, WA 98802  
Phone: (509) 884-2802

Reprint  
Ticket# 924816

Customer Name ANDERSON ENVIRONMENTAL A Carrier r transport  
Ticket Date 05/05/2022 Vehicle# r80  
Payment Type Credit Account Container  
Manual Ticket# Driver  
Route Check#  
Hauling Ticket# Billing# 0508083  
Destination Grid  
Manifest 116848wa  
Profile 116848WA (CID SOIL)  
Generator 168-FORMER FIRESTONE AUTO CARE FORMER FIRESTONE AUTO CARE PROPERTY 351 RAIN  
PO# 21-0050

	Time	Scale	Operator	Inbound	Gross	
In	05/05/2022 06:03:16	Inbound	Janelle		Tare	60140 lb 39860 lb
Out	05/05/2022 06:19:16	Outbound	Janelle		Net	20280 lb
					Tons	10.14

Comments

Product	LD%	Qty	UOM	Rate	Tax/Fee	Amount	Origin
1 Spwaste Solid Oth-Tons-	100	10.14	Tons				KING
2 EVF-P-Standard Environm	100		%				KING
3 CDHD FEE-Chelan Douglas	100	10.14	Tons				KING
4 TF-TRANSPORTATION FEE T	100	10.14	Tons				KING

Total Tax/Fees  
Total Ticket

Driver's Signature

*HL for Jason R. Transport*

The total amount includes fees and taxes that may not all be listed on this ticket due to technical limitation.

Table 749-1

Simplified Terrestrial Ecological Evaluation – Exposure Analysis Procedure under WAC 173-340-7492(2)(a)(ii).<sup>a</sup>

Estimate the area of contiguous (connected) undeveloped land on the site or within 500 feet of any area of the site to the nearest 1/2 acre (1/4 acre if the area is less than 0.5 acre). "Undeveloped land" means land that is not covered by existing buildings, roads, paved areas or other barriers that will prevent wildlife from feeding on plants, earthworms, insects or other food in or on the soil.																					
1) From the table below, find the number of points corresponding to the area and enter this number in the box to the right.																					
<table border="1"> <thead> <tr> <th>Area (acres)</th> <th>Points</th> </tr> </thead> <tbody> <tr> <td>0.25 or less</td> <td>4</td> </tr> <tr> <td>0.5</td> <td>5</td> </tr> <tr> <td>1.0</td> <td>6</td> </tr> <tr> <td>1.5</td> <td>7</td> </tr> <tr> <td>2.0</td> <td>8</td> </tr> <tr> <td>2.5</td> <td>9</td> </tr> <tr> <td>3.0</td> <td>10</td> </tr> <tr> <td>3.5</td> <td>11</td> </tr> <tr> <td>4.0 or more</td> <td>12</td> </tr> </tbody> </table>	Area (acres)	Points	0.25 or less	4	0.5	5	1.0	6	1.5	7	2.0	8	2.5	9	3.0	10	3.5	11	4.0 or more	12	4
Area (acres)	Points																				
0.25 or less	4																				
0.5	5																				
1.0	6																				
1.5	7																				
2.0	8																				
2.5	9																				
3.0	10																				
3.5	11																				
4.0 or more	12																				
2) Is this an industrial or commercial property? See WAC 173-340-7490(3)(c). If yes, enter a score of 3 in the box to the right. If no, enter a score of 1.	3																				
3) Enter a score in the box to the right for the habitat quality of the site, using the rating system shown below <sup>b</sup> . (High = 1, Intermediate = 2, Low = 3)	3																				
4) Is the undeveloped land likely to attract wildlife? If yes, enter a score of 1 in the box to the right. If no, enter a score of 2. See footnote c.	2																				
5) Are there any of the following soil contaminants present: Chlorinated dioxins/furans, PCB mixtures, DDT, DDE, DDD, aldrin, chlordane, dieldrin, endosulfan, endrin, heptachlor, benzene hexachloride, toxaphene, hexachlorobenzene, pentachlorophenol, pentachlorobenzene? If yes, enter a score of 1 in the box to the right. If no, enter a score of 4.	4																				
6) Add the numbers in the boxes on lines 2 through 5 and enter this number in the box to the right. If this number is larger than the number in the box on line 1, the simplified terrestrial ecological evaluation may be ended under WAC 173-340-7492 (2)(a)(ii).	12																				

## Footnotes:

- a It is expected that this habitat evaluation will be undertaken by an experienced field biologist. If this is not the case, enter a conservative score (1) for questions 3 and 4.
- b **Habitat rating system.** Rate the quality of the habitat as high, intermediate or low based on your professional judgment as a field biologist. The following are suggested factors to consider in making this evaluation:  
**Low:** Early successional vegetative stands; vegetation predominantly noxious, nonnative, exotic plant species or weeds. Areas severely disturbed by human activity, including intensively cultivated croplands. Areas isolated from other habitat used by wildlife.  
**High:** Area is ecologically significant for one or more of the following reasons: Late-successional native plant communities present; relatively high species diversity; used by an uncommon or rare species; priority habitat (as defined by the Washington Department of Fish and Wildlife); part of a larger area of habitat where size or fragmentation may be important for the retention of some species.  
**Intermediate:** Area does not rate as either high or low.
- c Indicate "yes" if the area attracts wildlife or is likely to do so. Examples: Birds frequently visit the area to feed; evidence of high use by mammals (tracks, scat, etc.); habitat "island" in an industrial area; unusual features of an area that make it important for feeding animals; heavy use during seasonal migrations.