# CHARACTERIZATION OF ON-SITE CONTAMINATION

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

**TOULA PROPERTIES LLC** 

# ENVIRONMENTAL ASSOCIATES, INC.

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April 12, 2019 JN-40139-2

Mr. Curt Kruse Toula Properties LLC 3801 92<sup>nd</sup> Avenue Northeast Bellevue, Washington 98004

Subject: CHARACTERIZATION OF ON-SITE CONTAMINATION

Vacant Former Firestone Complete Auto Care

351 Rainier Avenue South Renton, Washington 98057

Dear Mr. Kruse:

Environmental Associates, Inc. (EAI) has performed additional sampling and testing of subsurface soils and groundwater at selected localities on the subject property. The purpose of this work was to attempt to define the extent of chlorinated solvent and petroleum impacted soils and/or groundwater previously detected by EAI at the site in February 2021. This report, prepared in accordance with the terms of our proposal dated March 1, 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.



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.

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DON W. SPENCER

Respectfully submitted,

ENVIRONMENTAL ASSOCIATES, INC.

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

Principal

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License: 11464 (Oregon)
License: 876 (California)
License: 5195 (Illinois)

License: 0327 (Mississippi)

REPA: 418290

# **CHARACTERIZATION OF ON-SITE** CONTAMINATION

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

#### Prepared for:

Toula Properties LLC 3801 92nd Avenue Northeast Bellevue, Washington 98004

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

Eric Zuern

Environmental Geologist / Project Manager

Don W. Spencer, M.Sd., P.G.

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REPA: 418290

Reference Job Number: JN 40139-2

April 12, 2021

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DON W. SPENCER

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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 occupied by Firestone from construction in 1960 until roughly 2020. Firestone was the only occupant of the building, which is currently unoccupied. Firestone used the property for approximately 60 years for automotive service and repair. Firestone's operations included the use of multiple in-ground hydraulic hoists, an underground storage tank (reportedly in the 100 to 1000-gallon capacity range) that contained used/waste oil that was removed at an unknown time, and an above-ground waste oil storage tank (AST) that was removed from the western margin of the site. 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 by Firestone which utilized in-ground hoists.
- An underground waste oil storage tank (UST) had previously been utilized by Firestone on the property and reportedly removed at some time in the past. No documentation regarding subsurface environmental 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.

On February 25, 2021, EAI presented a report titled Limited Subsurface Sampling and Testing to Kidder Mathews relating to the subject site. That report documented the results of soil and groundwater sampling and testing at ten (10) locations (B1 through B10 on the attached Site Plan, Plate 2) as well as soil-vapor sampling and testing at three (3) locations (B5, B9, and B10) across the site. Soil and groundwater samples were analyzed for gasoline, diesel, heavy oil total petroleum hydrocarbons (TPH) as well as volatile organic compounds (VOCs). Select soil and groundwater samples proximal to a former waste oil storage area (B2) were also analyzed for polychlorinated

biphenyls (PCBs), polyaromatic hydrocarbons (PAHs), and MTCA-5 metals including arsenic, cadmium, chromium, lead, and mercury. Soil-vapor samples were tested for aliphatic/aromatic petroleum hydrocarbons (APHs), BTEX, naphthalene, and chlorinated solvents. Laboratory analysis revealed diesel TPH was identified in soils (B7) and groundwater (B6 and B7) above its applicable MTCA Method-A compliance limit around the central portion of the shop while tetrachloroethene (PCE) in soils above applicable compliance limits were also identified in the central portion of the shop (B6). Naphthalene and PCE were detected in soil-vapor above their applicable MTCA Method-B screening limits at select locations.

Acknowledging that the full <u>extent</u> of impacted media was not defined during that preliminary investigation, additional subsurface sampling and testing was recommended in the event that the client and/or other involved parties wished to quantify the extent of the contamination so that suitable management alternatives could be evaluated along with a reliable projection of costs which might be associated with implementation of such alternatives.

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

#### **Current Study**

Your expressed interests to conduct additional evaluation of subsurface conditions to attempt to assess the vertical and areal extent of petroleum and chlorinated solvent impacted soils and/or groundwater as memorialized in EAI's proposal dated March 1, 2021, formed the basis for the following scope of work:

- Drilled and sampled eleven (11) borings in accessible locations throughout the subject site and surrounding the previously discovered contamination. Soil and groundwater samples were obtained from each boring and a log of subsurface conditions encountered was prepared for each boring by the EAI project geologist. In addition, EAI drilled directly to the water table and re-sampled groundwater at boring B7 for further characterization.
- Laboratory analysis of selected soil and groundwater samples for diesel and oil TPH and chlorinated volatile organic compounds (cVOCs). Two (2) "worst case" samples were submitted for analysis of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and MTCA-5 metals including arsenic, cadmium, chromium, lead, and mercury. The client authorized additional testing of soil samples for arsenic as well as gasoline TPH and associated fuel constituents based upon olfactory observations during drilling. Further testing was also performed on a single soil sample for hexavalent chromium.
- Preparation of this summary report documenting the methodology and results of the investigation.

#### **FINDINGS**

#### **SUBSURFACE INVESTIGATION**

#### Soil Boring Sampling

Between March 17<sup>th</sup>, 2021 and March 19<sup>th</sup>, 2021, eleven (11) borings were made at the approximate locations identified as B6A and B11 through B20 on the attached Site Plan (Plate 2). Borings B11 and B12 were placed along the western margin of the shop where compliant detections of PCE had been reported during prior explorations in that area. Borings B13 through B19 were installed surrounding prior explorations B6 and B7 where non-compliant detections of diesel TPH and PCE had previously been found. Boring B6A was installed proximal to the prior B6 exploration in an effort to reach greater depths than the original iteration of that boring. Finally, B20 was placed to the south of B7 in an area where heavily stained concrete was observed. In an effort to resample groundwater from the prior B7 locality, a stainless-steel screen was extended directly into the water table at that locality for sample retrieval.

The borings were installed to depths of approximately 20 to 30 feet below ground surface (bgs) except for B20 which could only reach a depth of eighteen (18) feet bgs before subsurface soil density precluded further exploration with the drilling equipment employed for this study.

#### Soil and Groundwater Sampling Procedure

Under the observation of the EAI field geologist, a truck-mounted push probe drill rig or limited access push probe drill rig were brought into position over each boring location. Following set-up preparations, the push-probe boring/sampling technique consisted of advancing a 2 to 5-foot 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 4 ounce glass jars. New liners were inserted into the sampler at each interval, extending to the lowest extent of the boring.

After soil sampling within the borings had been completed, a temporary well screen was installed within the borings in an attempt to collect groundwater from moist or wet soil zones. Small diameter plastic tubing was extended from a peristaltic pump into that temporary screen to recover groundwater samples.

Soil and groundwater samples were transferred from sampling apparatus 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.

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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. Final form logs appear as plates 4 through 14. Boring logs relating to B1 through B10 are found in EAI's February 25, 2021-dated report.

#### **Subsurface Conditions**

Referring to boring logs (Plates 4 to 14), soils encountered within the borings generally consisted of silts, sands, and gravels, with grey sands or silty sands becoming prominent below a depth of 10 feet below ground surface (bgs). Groundwater was generally encountered at depths between 9 to 10 feet bgs. Petroleum odors were noticed in soils collected from boring B6 within a narrow zone at a depth of approximately 10 feet bgs which also corresponded to an elevated reading on EAI's photoionization detector (PID) utilized for field screening. Materials below 20 feet transitioned to gravels or sandy gravels. Throughout the sampling process, EAI's PID began showing detections of vapors between 0 to 12 ppm when field screening, even when no other evidence of potential contaminants was present. After checking various field parameters, EAI deduced that the plastic bags used to hold soils for field screening were emitting vapors which were being detected by the PID. As such, PID concentrations between 0 to 12 ppm annotated on the attached boring logs are not likely representative of true vapor concentrations.

#### LABORATORY ANALYSIS

Laboratory analysis of soil and groundwater samples during this current phase of work was conducted by Friedman & Bruya, Inc., Seattle, Washington and Fremont Analytical, Seattle, Washington, both being WDOE-accredited analytical laboratories. Selected soil and groundwater samples were submitted for analysis of diesel and oil TPH and chlorinated volatile organic compounds (cVOCs). Two (2) "worst case" samples were submitted for analysis of polycyclic aromatic hydrocarbons (PAHs), polychlorinated biphenyls (PCBs), and MTCA-5 metals including arsenic, cadmium, chromium, lead, and mercury. The client authorized additional testing of soil samples for arsenic as well as gasoline TPH and associated fuel constituents based upon olfactory observations during drilling. Further testing was also performed on a single soil sample for hexavalent chromium

As documented in Table 1 of this report, laboratory analysis of soils sampled during March 2021 revealed no detections of petroleum or associated BTEX constituents except for gasoline and diesel TPH along with ethylbenzene and xylenes at B6A at a depth of 10 feet bgs. The detection of gasoline TPH (at 160 parts per million (ppm)) is <u>above</u> the MTCA Method-A compliance limit for that analyte (100 ppm). As shown in the attached laboratory data, further analysis of that sample did not reveal the presence of additional fuel constituents hexane, methyl t-butyl ether (MTBE), 1,2-dibromoethane (EDB), or 1,2-dichloroethane (EDC) above the minimum laboratory reporting limits. The results of testing from surrounding soils indicate that the non-compliant gasoline TPH contamination is limited to depths shallower than 15 feet bgs and was not present at similar depths in the surrounding borings.

While the detection of "diesel" TPH in the B6A-10 soil sample was below the applicable action level for that compound, that detection was flagged by the project laboratory as not matching the standard "diesel" chemistry chromatogram. EAI inquired with the project lab as to whether any other compounds were suspected in that sample or what the detection was suspected to be. After further review of the chemistry chromatogram, laboratory staff advised that the "diesel" detection appeared to be some "carry-over" from the gasoline detection as well as a trace of oil. Similar to the gasoline contamination noted above, diesel and oil testing from borings surrounding the prior non-compliant concentration of diesel at B7 (at a depth of 9 to 10 feet bgs) indicate that the non-compliant diesel TPH contamination is limited to the immediate B7 vicinity at depths shallower than 16 feet bgs and was not present in the surrounding borings. Both non-compliant petroleum detections are co-located with in-ground hoist mechanisms left by Firestone.

The ethylbenzene and xylenes detections were both well under their published MTCA Method-A compliance limits for unrestricted land use.

As depicted in Table 2, attached to this report, laboratory testing of groundwater sampled in March 2021 from borings B13, B15, B16, B17, and B18 reported diesel TPH at levels below (i.e. compliant with) the applicable MTCA Method-A compliance limit for that analyte. Each of those detections were "flagged" by the project laboratory as not matching a standard diesel pattern on the chemistry chromatogram. Again EAI inquired with the project lab as to whether any other compounds were suspected in that sample or what the detection was presumed to be. After further review of the chemistry chromatogram, laboratory staff advised that the "diesel" detections appeared to be possible "fuel metabolite" (i.e. fuel breakdown) or simply organic material interfering in the sample as opposed to some other type of fuel product. The non-compliant diesel TPH in groundwater appears to be limited to the vicinity of B6 and B7 at the time of this writing.

As shown in Table 3 and supporting laboratory data attached to this report, the soil samples analyzed in March 2021 reportedly did not contain detectable concentrations of chlorinated volatile organic compounds (cVOCs) including PCE. That includes soils sampled from B6A (installed proximal to previous boring B6) at a depth of 15 feet bgs. Prior testing in February 2016 detected PCE at that locality /depth slightly above published cleanup limits. In an effort to identify any discrepancy between the lab results, the sample from B6A at 15 feet bgs was re-run (i.e. re-extracted). No detections of PCE continued to be reported in the re-analyzed sample indicating that PCE was not currently present at that depth/location. The March 2021 testing indicates that PCE does not extend below depths of 10 to 15 feet bgs at B6/B6A and is not present in surrounding soils at similar depths.

As summarized in Table 4 as well as the appended laboratory data, groundwater samples collected in March 2021 did not contain concentrations of cVOCs above the project lab's minimum reporting limits.

As depicted in Table 5, attached to this report, arsenic, chromium, and lead were reported in soils sampled at B6A at a depth of 10 feet bgs with arsenic being detected above its MTCA Method-A action level. Based on that arsenic detection soils at shallower and deeper depths from that boring as well as from similar depths in surrounding borings (B13 through B16). Based on these results, the non-compliant arsenic detection appears limited to soils in the vicinity of B6/B6A at a depth of 10 feet bgs.

Chromium was detected in soils at B6A at a depth of 10 feet bgs at 26.6 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 concentrations in the soil samples analyzed in February and March 2021 are 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 Metals Concentrations in Washington State document by WDOE, the "background" levels for chromium in the Puget Sound region in the 90<sup>th</sup> percentile for soil samples is 48.15 ppm, a value well above the detected concentrations in question. Based upon the WDOE data, it would appear that the results of the completed testing would fall into the realm of normal background levels for this area.

In an effort to determine which species of chromium is present on the property, the sample with the highest level of chromium (B6A-10) was analyzed for hexavalent chromium. As depicted in the attached laboratory data results, that test revealed <u>no hexavalent chromium</u> above the minimum laboratory reporting limits. Based on that result, the chromium species present at the site appears to be chromium III and would therefore be considered compliant.

As shown in Table 6, appended to this report, dissolved arsenic was detected in groundwater at boring B7A at 1.89 parts per billion (ppb) which is well below (i.e. compliant with) its applicable MTCA Method-A compliance limit of 5 ppb. No other metals were reported in the groundwater sampled from that location.

As summarized in Tables 7 and 8, attached to this report, no PCBs were detected in the soil or groundwater samples analyzed during either the February or March 2021 sampling events.

As depicted in Tables 9 and 10 appended to this report, no carcinogenic or non-carcinogenic PAHs were detected in soils sampled from B6A at a depth of 10 feet bgs (where petroleum hydrocarbons had previously been identified) except for the non-carcinogenic compound phenanthrene (detected at 0.015 ppm) which does not currently have a published MTCA compliance limit in the State of Washington.

Table 11, attached to this report, depicts test results for groundwater sampled from B7A (vicinity where previous detections of diesel TPH had been encountered). The carcinogenic PAH chrysene was detected at a concentration of 0.61 ppb however when calculating the total carcinogenic PAHs in the sample which includes multiplying compounds by their toxicity equivalent fractions, the total carcinogenic PAH value in the groundwater sample was 0.07 ppb which is below (i.e. compliant with) the MTCA Method-A compliance limit of 0.1 ppb.

Finally, Table 12 appended to this report depicts the results of testing groundwater sampled from B7A during the March 2021 sampling event for non-carcinogenic PAHs. Fluorene, and pyrene were detected at various concentrations below their published applicable MTCA compliance limits while phenanthrene was also reported at a trace detection however that analyte does not currently have a published cleanup level with the State of Washington.

#### **CONCLUSIONS / RECOMMENDATIONS**

Relying upon the results of limited sampling and laboratory testing documented in this report, soils impacted by PCE, gasoline TPH, arsenic, and diesel TPH appear limited to isolated vertical and horizontal "zones" in the vicinity of in-ground hoists at B6 or B7. Similarly, diesel impacted groundwater appears limited to the B6 and B7 localities. Consistent with earlier investigations, these findings are believed to be the result of historic automotive service operations by Firestone at the property.

In analyzing the test results documented above, two (2) "zones" of impacted soils have been identified and are noted as Zone B6 and Zone B7. The zones of impacted soils are depicted on the attached Plate 3 "Southwest to Northeast Cross Section". The following observations are made:

• Acknowledging that non-compliant concentrations of arsenic and gasoline TPH in "Zone B6" were not detected at a depth of 15 feet bgs, soils impacted by those compounds appear to be limited to depths between 10 to 15 feet bgs. Based on retesting of soils from the 15 foot depth at the B6 location for PCE, it appears that non-compliant PCE in soils may be limited to similar depths. Additionally, as those contaminants of concern were not detected in surrounding borings at similar depths, it appears reasonable to presume that impacted soils are horizontally limited to a potential 10 foot by 10 foot area around boring B6. That contaminated zone is further identified as Zone B6.

- Similar to the conditions described above, soils previously identified as adversely impacted by diesel TPH at depths of 9 to 10 feet below grade appear limited both in vertical and horizontal extent as soils sampled from shallower and deeper intervals from the B7 boring as well as from similar depths in surrounding borings did not detect diesel TPH above compliance limits. This contaminated soil zone is identified as Zone B7.
- Groundwater previously identified as impacted by diesel TPH in borings B6 and B7 appear to be limited to those areas as groundwater sampled and tested from surrounding borings did not reveal elevated (i.e. non-compliant) concentrations of TPH.

At the request of the client and their representatives, EAI has included a tentative scope of work to address/remediate the contaminants identified above along with approximate costs for completing such work. The following "cleanup action plan" (CAP) includes the following tasks:

- B7 zones. Each excavation may have dimensions of 10 feet long by 10 feet wide by approximately 10 feet deep (corresponding to the top of the perched groundwater table). Prior to excavation, applicable permits would be obtained by the excavation contractor and acknowledging the detection of PCE and arsenic in soils, EAI would request a "contained-in/out" letter from the WDOE so that soils may be classified as "non-dangerous waste" for handling and disposal purposes. Acknowledging the depth that contaminants were present (approximately 10 feet below grade), depending upon the depths reachable through excavation, some impacted soils may not be able to be removed through this method. Upon completion of excavation activities, soil samples would be collected from the base, sidewalls, and stockpiled material and submitted for laboratory analysis to confirm conditions at the limits of hole. A mobile laboratory may be brought to the site to analyze samples as they are collected from the dig areas for the sake of expedience and efficiency in defining the limits of the excavation.
- 2) Application of remedial compound to the base of the excavation(s) and backfilling. Upon reaching the accessible depths of the soil excavations, the contractor would apply remedial compounds supplied by Regenesis Environmental Remediation Research (Regenesis) to the base of the excavation and mix it into the upper water table in an attempt to treat remaining soils as well as groundwater at the impacted locations. After application of the remedial compound(s), the excavation would be backfilled with engineering grade backfill materials/gravels. During backfilling, effort may be made to install perforated PVC injection piping so that additional remedial compounds may be re-applied if needed at a later date.

As work items 1 and 2 above would be performed together, an estimated cost for completing both items as provided by local vendors may be on the order of approximately \$84,500 (see Limitations section).

Monitoring well installation and groundwater sampling/testing. Upon completion of backfilling activities, contractors would install a series of monitoring wells at and around the B6 and B7 zones of impact. The wells would allow for periodic sampling and testing of groundwater to verify the effectiveness of the remedial products. In an effort to achieve regulatory closure for the subject site, four (4) consecutive quarters of compliant groundwater results would need to be achieved. This work would also tentatively occur after demolition of the current structure and redevelopment as a parking lot.

Estimated costs for the initial well installation are based upon only performing evaluation of groundwater samples for diesel/oil range petroleum hydrocarbons (as previously shown to be the only contaminant in groundwater above compliance limits). Approximate costs for the initial well installation, sampling and testing, and report finalization of the above work items may be on the order of \$24,000. Additionally, costs for four quarters of monitoring (i.e. sampling and testing) from the wells may be estimated at \$13,500 (approximately 3,375 per each sampling event).

Regulatory data submittal. In an effort to work with the Washington Department of Ecology towards gaining a status of "no further action" (NFA) for the identified subject site release, EAI would provide confirmation sampling reports, remedial action reports, and groundwater monitoring data (including electronic testing spreadsheets) to the WDOE, documenting remedial progress. The site would also be required to enroll in Ecology's Voluntary Cleanup Program (VCP) and submit a "Remedial Investigation/Feasibility Study" (RIFS) report. Ecology may request additional data (i.e. testing activities) upon review of the submitted data. In an effort to provide Ecology an opportunity to provide commentary on proposed cleanup actions, the client may elect to apply to the VCP prior to commencement of excavation and sampling/testing activities. The estimated costs for completing entry into the VCP as well as drafting RIFS documents and electronic data uploads may be approximately \$8,600.

In summary, after totaling the above costs and adding an approximate 20% contingency, the total estimated costs for the above work items may be on the order of approximately \$160,200 or more. It should be noted that the approximate costs provided above are preliminary estimates and should not be used as a sole informational resource for final budgeting. Exact quantities of impacted subsurface materials can only be known at the time of excavation. EAI would be pleased to meet with the client to discuss potential remedial options in further detail prior to finalization of a remedial action strategy.

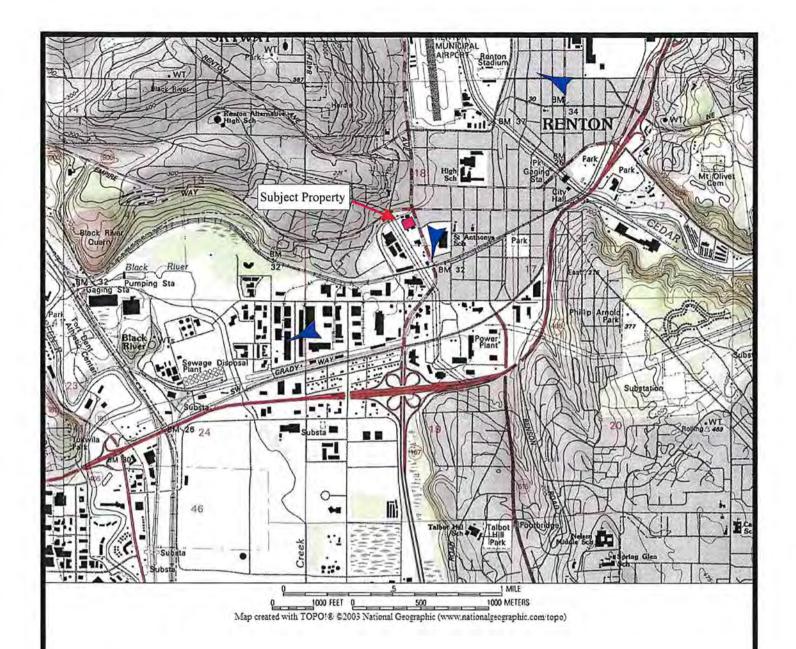
As a footnote, to achieve lawful compliance with Chapter 173-340-300, WAC, copies of this report along with any future reports regarding the environmental conditions encountered be forwarded to the Northwest Regional Office of the Department of Ecology (Bellevue, Washington) by the property owner.

#### LIMITATIONS

This report has been prepared for the exclusive use of Toula Properties LLC 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 March 1, 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 locations or at other locations, media, depths, or date. To reiterate, costs for various stages of work discussed herein are approximate and preliminary being based upon experience on similar past projects and approximations provided by potential vendors. As such, actual costs may only be known upon completion of remedial work. 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.

#### 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.
- Environmental Associates, Inc., September 1, 2017, Phase 2 Limited Subsurface Sampling and Testing, Firestone Master Care Service Facility 1145 Northwest Market Street, Seattle, Washington.
- Washington State Department of Ecology. Model Toxics Control Act Cleanup Regulation (MTCA), Chapter 173-340 WAC. Publication #94-06, et seq.
- Washington State Department of Ecology, October 1994, Natural Background Soil Metals Concentrations in Washington State. Publication #94-115.

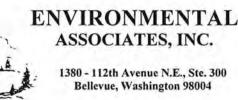


Approximate Site Location



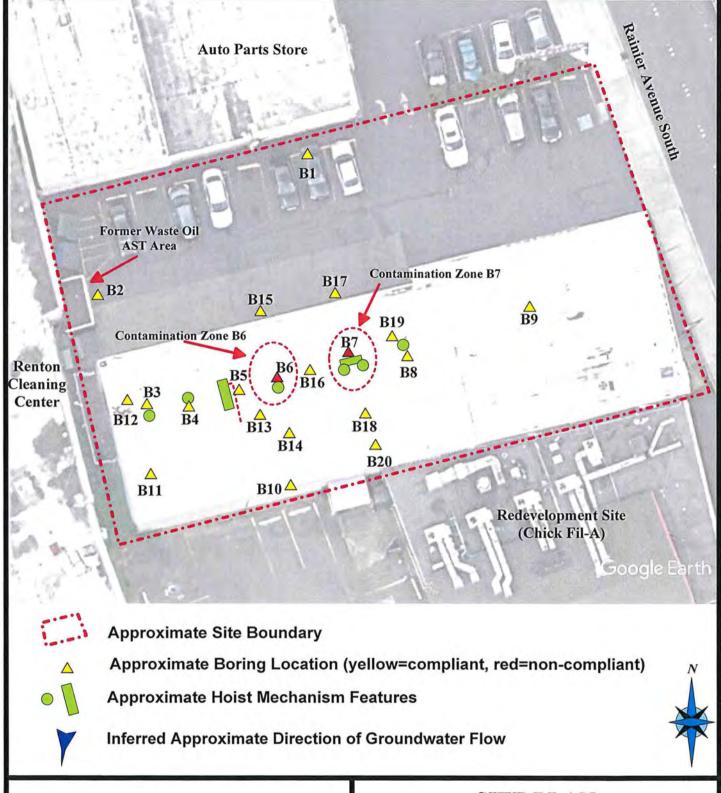
Inferred Approximate Direction of Groundwater Flow





#### VICINITY/TOPOGRAPHIC MAP

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Date:	Plate:
February 2021	1
	No. 175-27



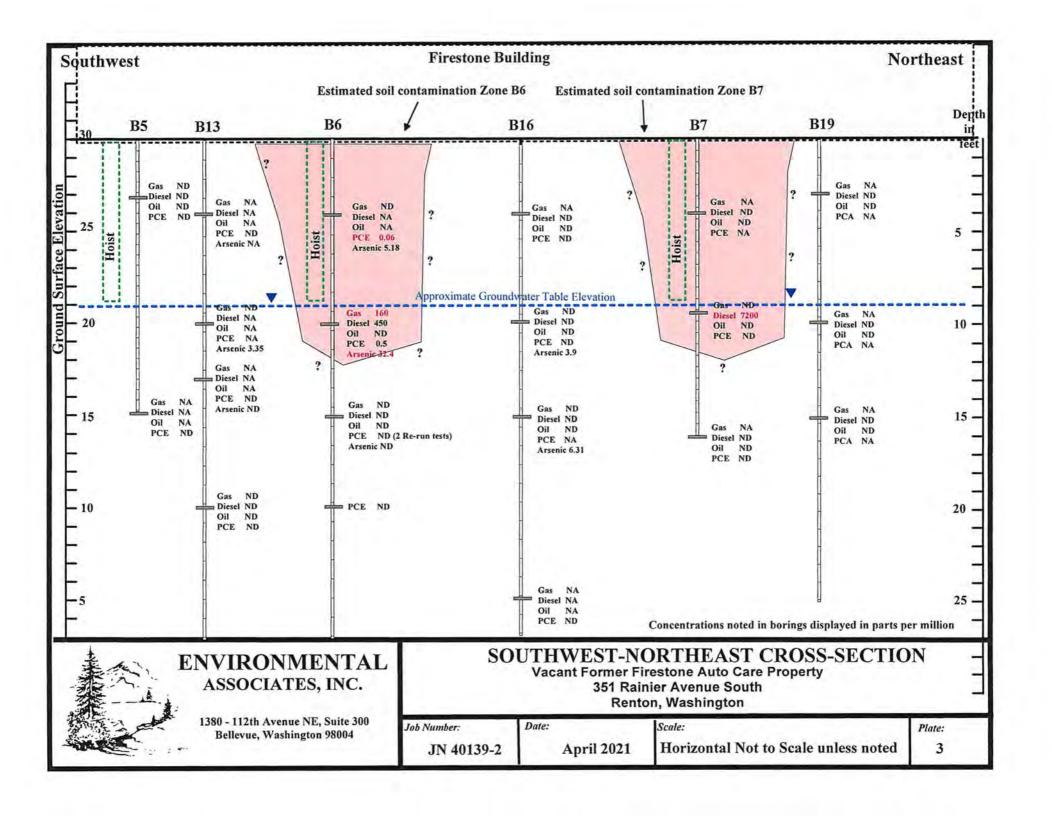


# ENVIRONMENTAL ASSOCIATES, INC.

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

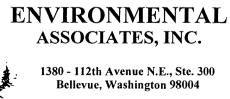
#### SITE PLAN

Job Number:	Date:	Plate:
JN 40139-2	March 2021	2



## **BORING B6A**

						DUA DUA
0	Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	uscs	DESCRIPTION
5			Dry		ML	Brown silt, dry, no odors or discoloration, PID=3.4
10	_ _ _ _	11- to 15'	Moist		ML	Grey/brown silt, moist, petroleum odor, PID=39
15	_ - - -	Temporary screen 11- to 15'	Wet		SP	Grey sands, wet, no odors or discolorations, PID=3.2
20		Te	Wet		SP	Grey sand, organic matieral, wet, no odors or discolorations, PID=3.3
25	- - - -		Wet		SP/ GW	Brown gravels and sands, wet, no odors or discolorations, PID=4.1
30			Wet		SP/ GW	Brown gravels and sands, wet, no odors or discolorations, PID=2.2
35	-					Boring terminated at 30 feet below grade on March 17, 2021.
40						



# **Boring: B6A**

Job Number:	Date:	Logged by:	Plate:
JN 40139-2	April 2021	EAZ	4

_				20001111		DOMING DIT
0	Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
5			Dry		GM	Brown silt and gravels, dry, no odors or discoloration, PID=0
					SM	brown silts and sand
10		to 18'	Moist		SM	Grey silt and sand, moist, no odors or discolorations, PID=0
15	<u>-</u>	Temporary screen 8- to 18'	Wet		SP	Grey/brown sands, wet, no odors or discolorations, PID=0
20	  )-[]-	Тетро	Wet		SP/ GW	Brown sands and gravels, wet, no odors or discolorations, PID=0
						Boring terminated at 20 feet below grade on March 17, 2021.
25	<u> </u>					
	_					
30	) <del>-</del>			i		
35						
	_					
40	<b>-</b>				979,	



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

## **Boring: B11**

Job Number:	Date:	Logged by:	Plate:
JN 40139-2	April 2021	EAZ	5

				<b>F</b>	DONING DIZ
Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	uscs	DESCRIPTION
5 -		Dry		SM	Brown silt and sand, dry, no odors or discoloration, PID=0
10 -	1- to 15'	Moist		ML	Brown silt, moist, no odors or discolorations, PID=0
15 🗇	Temporary screen 11- to 15'	Wet		SP	Grey sands, wet, no odors or discolorations, PID=0
20	Tem	Wet		GW	Brown gravels, wet, no odors or discolorations, PID=0
25	Administra	Wet		GW	Brown gravels, wet, no odors or discolorations, PID=0
30 -		Wet		GW	Brown gravels, wet, no odors or discolorations, PID=0
35 —					Boring terminated at 30 feet below grade on March 17, 2021.



# ENVIRONMENTAL ASSOCIATES, INC.

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

## **Boring: B12**

Job Number:	Date:	Logged by:	Plate:
JN 40139-2	April 2021	EAZ	6

					OIMIO DIS
Depth. Sampl	/ Well e <u>Design</u>	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
5		Dry		ML	Brown silt, dry, no odors or discoloration, PID=0
10 -	to 15'	Moist		SM	Brown silt and sand, moist, no odors or discolorations, PID=0
15 —	Temporary screen 11- to 15'	Wet		SP	Grey sands, wet, no odors or discolorations, PID=0
20	Tempo	Wet		SP	Grey sand, wet, no odors or discolorations, PID=0
25 -		Wet		SP/ GW	Brown gravels and sands, wet, no odors or discolorations, PID=0
30		Wet		SP/ GW	Brown gravels and sands, wet, no odors or discolorations, PID=0
35 —					Boring terminated at 30 feet below grade on March 17, 2021.



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

## **Boring: B13**

I	Job Number:	Date:	Logged by:	Plate:
ı	JN 40139-2	April 2021	EAZ	7

				***************************************		CITING DIT
	Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	uscs	DESCRIPTION
5			Dry		ML	Brown silt, dry, no odors or discoloration, PID≔0
10	_ _ 	o 15'	Moist		SP	Brown sand, moist, no odors or discolorations, PID=0
15		Temporary screen 11- to 15'	Wet		SM SP	Transition from brown silts/sands to grey sand organic odor, PID=0.6  Grey sands, wet,
15	-	Temporary				no odors or discolorations, PID=0
20	<u>-</u>		Wet		SP	Grey sand, organic matieral, wet, no odors or discolorations, PID=0.3
25	_  		Wet		SP/ GW	Brown gravels and sands, wet, no odors or discolorations, PID=0.4
30	  		Wet		SP/ GW	Brown gravels and sands, wet, no odors or discolorations, PID=1.5
- Parkers	-				İ	Boring terminated at 30 feet below grade on March 17, 2021.
35						
40						



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

## **Boring: B14**

Job Number:	Date:	Logged by:	Plate:
JN 40139-2	April 2021	EAZ	8
 -			

_						OKINO DIS
	Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	uscs	DESCRIPTION
5			Dry		SM	Brown silt and sand, dry, no odors or discoloration, PID=0
10		to 15'	Moist		SP	Brown sand, moist, petroleum odor, PID=0
	-	n 11-1				Transition from brown silts/sands to grey sand no odors
15	<u>-</u>	Temporary screen 11- to 15'	Wet		SP	Grey sands, wet, no odors or discolorations, PID=0
20		Ten	Wet		SP	Grey sand, wet, no odors or discolorations, PID=1.2
25			Wet		GW	Brown gravels, wet, no odors or discolorations, PID=3.6
30			Wet		GW	Brown gravels, wet, no odors or discolorations, PID=3
35						Boring terminated at 30 feet below grade on March 18, 2021.
40	) —					



# ENVIRONMENTAL ASSOCIATES, INC.

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

## **Boring: B15**

Job Number:	Date:	Logged by:	Plate:
JN 40139-2	April 2021	EAZ	9

Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION
	Dry		ML	Brown silt, dry, no odors or discoloration, PID=5.5
111- to 15'	Moist		SP	Grey sand, moist, no odors or discoloration, PID=5
emporary screen	Wet		SP/ GW	Grey sand and gravels, wet, no odors or discolorations, PID=4.4
J. J.	Wet		SP	Grey sand, wet, no odors or discolorations, PID=3.3
	Wet		GW	Gravels, wet, no odors or discolorations, PID=5.5
	Wet		GW	Gravels, wet, no odors or discolorations, PID=5.4
	Wet			Boring terminated at 30 feet below grade on March 18, 2021.
	Temporary screen 11- to 15'	Design Water Table  Dry  Moist  Wet	Design Water Table Foot  Wet  Wet	Dry  ML  SP  Wet  Wet  SP  Wet  GW  GW



# ENVIRONMENTAL ASSOCIATES, INC.

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

### **Boring: B16**

Job Number:	Date:	Logged by:	Plate:
JN 40139-2	April 2021	EAZ	10

_						<u> </u>	O DII
	Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	USCS	DESCRIPTION	
5			Dry		ML		Brown silt, dry, no odors or discoloration, PID=5.1
10		11- to 15'	Moist		ML		Brown/grey silt, moist, no odors or discoloration, PID=4.9
15	<del> </del>	Temporary screen 11- to 15'	Wet		SP		Grey sand, wet, no odors or discolorations, PID=4.8
20		Te	Wet		SP/ GW		Sand and gravels, wet, no odors or discolorations, PID=4.2
25			Wet		SP/ GW	Boring termina	Sand and gravels, wet, no odors or discolorations, PID=4.8 ated at 25 feet below grade on March 18, 2021.
30				İ		J	C ,
35				;			
40	<b>-</b> ) <b></b> -						



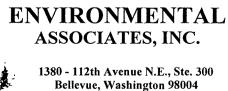
# ENVIRONMENTAL ASSOCIATES, INC.

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

### **Boring: B17**

Job Number:	Date:	Logged by:	Plate:
JN 40139-2	April 2021	EAZ	11

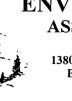
_							0 010
0	Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	uscs	DESCRIPTION	
5			Dry		ML		Brown silt, dry, no odors or discoloration, PID=3.8
10		11- to 15'	Moist		SM		Brown silt and sand, moist, no odors or discoloration, PID=3.4
15	_  _ _	Temporary screen 11- to 15'	Wet		SP		Grey sand, wet, no odors or discolorations, PID=7.3
20	- )-[]- -	Tel	Wet		SP/ GW		Brown sand and gravels, wet, no odors or discolorations, PID=11
25	- 5		Wet		SP/ GW	Roring termin	Brown sand and gravels, wet, no odors or discolorations, PID=11.3
30	_ _ _					Boring termin	ated at 25 feet below grade on March 18, 2021.
40	)—						



## **Boring: B18**

Job Number:	Date:	Logged by:	Plate:
JN 40139-2	April 2021	EAZ	12

					<b>F_</b>	DIVINO DIS
	Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	uscs	DESCRIPTION
5			Dry		ML	Brown silt, dry, no odors or discoloration, PID=5.7
10		- to 15'	Moist		SM	Brown silt and sand, moist, no odors or discoloration, PID=8.3
	-	cen 11				Transition from brown silts/sands to grey sand no odors
15	<u>-</u>	Temporary screen 11- to 15'	Wet		SP	Grey sand, wet, no odors or discolorations, PID=10
20	<u>-</u>	Ter	Wet		SP/ GW	Sand and gravels, wet, no odors or discolorations, PID=9.3
25	-		Wet		SP/ GW	Brown sand and gravels, wet, no odors or discolorations, PID=8.5
						Boring terminated at 25 feet below grade on March 18, 2021.
30						
35	_	:				
40	_					



# ENVIRONMENTAL ASSOCIATES, INC.

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

# **Boring: B19**

Job Number:	Date:	Logged by:	Plate:
JN 40139-2	April 2021	EAZ	13

	***************************************					DEU DEU
0	Depth/ Sample	Well Design	Moisture/ Water Table	Blows / Foot	uscs	DESCRIPTION
	0		Dry		ML	Brown silt and gravels, dry, no odors or discoloration, PID=12
5			Moist		SM	Brown silt and sand, moist, no odors or discoloration, PID=7
10	<u></u>	11- to 15'	Moist		ML	Brown to grey silts, moist, no odors or discolorations, PID=9.5
15	-	Temporary screen 11- to 15'	Wet		SM	Grey sand, wet, no odors or discolorations, PID=9.9
		Гетро	Wet		GW	Brown gravels, wet, no odors or discolorations, PID=11
24						Boring refusal at 18 feet below grade on March 19, 2021.
35	- - - - -					



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

### Boring: B20

Job Number:	Date:	Logged by:	Plate:
JN 40139-2	April 2021	EAZ	14

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

Sample Date	Sample & Depth	Gasoline (TPH)	Diesel	Heavy Oil	Benzene	Toluene	Ethylbenzene	Total Xylenes
Feb-21	B1-10 @ 10' BGS	ND ND	ND	ND	ND	ND	ND	ND
Feb-21	B2-2.5 BGS	ND	ND	ND	ND	ND	ND	ND
Feb-21	B3-10 @ 10' BGS	ND	ND	ND	ND	ND	ND	ND
Feb-21	B4-4 @ 4' BGS	ND	ND	ND	ND	ND	ND	ND
Feb-21	B5-3 @ 3' BGS	ND	ND	ND	ND	ND	ND	ND
Mar-21	B6A-4 @ 4' BGS	ND	NA	NA	ND	ND	ND	ND
Feb-21	B6-10 @ 10' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B6A-10 @ 10' BGS	160	450x	ND	ND	ND	0.18	0.29
Feb-21	B6-15 @ 15' BGS	ND	ND	ND	ND	ND	ND	ND
Feb-21	B7-4 @ 4' BGS	NA	ND	ND	NA	NA	NA	NA
Feb-21	B7-9-10 @ 9' TO 10' BGS	ND	7,200	ND	ND	ND	ND	ND
Feb-21	B7-16 @ 16' BGS	NA	ND	ND	NA	NA	NA	NA
Feb-21	B8-8 @ 8' BGS	ND	ND	ND	ND	ND	ND	ND
Feb-21	B8-8 @ 8' BGS DUPLICATE	ND	NA	NA	NA	NA	NA	NA
Feb-21	B9-2 @ 2' BGS	ND	ND	ND	ND	ND	ND	ND
Feb-21	B10-8 @ 8' BGS	ND	ND	ND	ND	ND	ND	ND
Mar-21	B13-10 @ 10' BGS	ND	NA	NA	ND	ND	ND	ND
Mar-21	B13-20 @ 20' BGS	ND	ND	ND	ND	ND	ND	ND
Mar-21	B14-10 @ 10' BGS	ND	NA	NA	ND	ND	ND	ND
Mar-21	B14-12 @ 12' BGS	ND	ND	ND	ND	ND	ND	ND
Mar-21	B14-15 @ 15' BGS	ND	NA	NA	ND	ND	ND	ND
Mar-21	B15-10 @ 10' BGS	ND	NA	NA	ND	ND	ND	ND
Mar-21	B15-15 @ 15' BGS	ND	NA	NA	ND	ND	ND	ND
Mar-21	B16-4 @ 4' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B16-10 @ 10' BGS	ND	ND	ND	ND	ND	ND	ND
Mar-21	B16-15 @ 15' BGS	ND	ND	ND	ND	ND	ND	ND
Mar-21	B17-3 @ 3' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B17-9-10 @ 9'-10' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B17-15 @ 15' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B18-3 @ 3' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B18-10 @ 10' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B18-15 @ 15' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B19-3 @ 3' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B19-10 @ 10' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B19-15 @ 15' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B20-6 @ 6' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B20-9-10 @ 9' TO 10' BGS	NA	ND	ND	NA	NA	NA	NA
Mar-21	B20-14 @ 14' BGS	NA	ND	ND	NA	NA	NA	NA
	Reporting Limit <sup>3</sup>	5 to 10	50	100 to 250	0.02	0.05/.02	0.05/.02	0.15/.0
WDOE	Target Compliance Level <sup>4</sup>	30 or 100 <sup>5</sup>	2000	2000	0.03	7	6	9

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

BGS - Below ground surface.

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.

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.

5 - The MTCA gasoline TPH cleanup level is 30 ppm for soils with benzene or toleune, etheylbenzene, and xylenes = more than 1% of gas detections otherwise it is 100 ppm.

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

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

Sample Date	Sample	Gasoline	Diesel	Heavy Oil	Benzene	Toluene	thylbenzer	
		(TPH)	(TPH)	(TPH)				Xylenes
Feb-21	B1	ND	ND	ND	ND	ND	ND	ND
Feb-21	B2	ND	ND	ND	ND	ND	ND	ND
Feb-21	В3	ND	ND	ND	ND	ND	ND	ND
Feb-21	B4	ND	ND	ND	ND	ND	ND	ND
Feb-21	B5	ND	ND	ND	ND	ND	ND	ND
Feb-21	В6	240	2,400	ND	ND	ND	ND	ND
Feb-21	В7	ND	16,000	ND	ND	2.3	ND	ND
Feb-21	В8	ND	ND	ND	ND	2.1	1.0	ND
Feb-21	В9	ND	ND	ND	ND	1.3	ND	ND
Feb-21	B10	ND	ND	ND	ND	ND	ND	ND
Mar-21	B13	NA	81 x	ND	NA	NA	NA	NA
Mar-21	B14	NA	ND	ND	NA	NA	NA	NA
Mar-21	B15	NA	130 x	ND	NA	NA	NA	NA
Mar-21	B16	NA	79x	ND	NA	NA	NA	NA
Mar-21	B17	NA	86 x	ND	NA	NA	NA	NA
Mar-21	B18	NA	62 x	ND	NA	NA	NA	NA
Mar-21	B19	NA	ND	ND	NA	NA	NA	NA
Mar-21	B20	NA	ND	ND	NA	NA	NA	NA
Reporting Limit <sup>3</sup>		100	50 to 53	100	1	1	1	3
MTCA-Method-A Cleanup	Levels <sup>4</sup>	800 or 1000 <sup>5</sup>	500	500	5	1000	700	1000

- 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 Toxic
  5 The MTCA gasoline TPH cleanup level is 800 ppb for groundwater wi

- Method A groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC.
- The MTCA gasoline TPH cleanup level is 800 ppb for groundwater with benzene. Otherwise, the cleanup level is 1000 ppb.
- x- The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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 Date	Sample	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethene	Z Vinyl Chloride
Feb-21	B1-10	ND	ND	ND	ND	ND
Feb-21	B2-2.5	ND	ND	ND	ND	ND
Feb-21	B3-10	0.05	ND	ND	ND	ND
Feb-21	B4-4	ND	ND	ND	ND	ND
Feb-21	B5-3	ND	ND	ND	ND	ND
Feb-21	B5-15	ND	ND	ND	ND	ND
Feb-21	B6-4	0.06	ND	ND	ND	ND
Feb-21	B6-10	0.05	ND	ND	ND	ND
Feb-21	B6-15	0.08	ND	ND	ND	ND
Mar-21	B6A-15	ND	ND	ND	ND	ND
Mar-21	B6A-15 (RE-EXTRACT)	ND	ND	ND	ND	ND
Mar-21	B6A-20	ND	ND	ND	ND	ND
Mar-21	B6A-30	ND	ND	ND	ND	ND
Feb-21	B7-9-10	ND	ND	ND	ND	ND
Feb-21	B7-16	ND	ND	ND	ND	ND
Feb-21	B8-8	ND	ND	ND	ND	ND
Feb-21	B9-2	ND	ND	ND	ND	ND
Feb-21	B10-8	ND	ND	ND	ND	ND
Mar-21	B11-2.5	ND	ND	ND	ND	ND
Mar-21	B11-10	ND	ND	ND	ND	ND
Mar-21	B11-20	ND	ND	ND	ND	ND
Mar-21	B12-3	ND	ND	ND	ND	ND
Mar-21	B12-10	ND	ND	ND	ND	ND
Mar-21	B12-30	ND	ND	ND	ND	ND
Mar-21	B13-4	ND	ND	ND	ND	ND
Mar-21	B13-13	ND	ND	ND	ND	ND
Mar-21	B13-20	ND	ND	ND	ND	ND
Mar-21	B14-4	ND	ND	ND	ND	ND
Mar-21	B14-10	ND	ND	ND	ND	ND
Mar-21	B14-12	ND	ND	ND	ND	ND_
Mar-21	B14-20	ND	ND	ND	ND ND	ND
Mar-21	B15-4	ND	ND ND	ND	ND	ND
Mar-21	B15-10	ND		ND	ND	ND
Mar-21	B15-25	ND	ND ND	ND	ND ND	ND
Mar-21	B16-4	ND ND	ND	ND ND	ND ND	ND ND
Mar-21 Mar-21	B16-10 B16-25	ND	ND	ND	ND	ND
	<u> </u>	0.02/.025				
	orting Limit 3	0.02/.025	0.02	0.05	0.05	0.05
	estricted Land Use (Method-A) <sup>4</sup> evel - (Method-B) <sup>5</sup>	480	12	160	1600.0	0.667
Notes:	ever - (Memou-D)	1 400	12	100	1000.0	0.007

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

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.

<sup>5-</sup> Method-B soil cleanup levels for the "direct contact pathway", as published in Ecology's CLARC database.

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

Sample Date	Boring	Tetrachloroethene (PCE)	Trichloroethene (TCE)	(cis) 1,2 Dichloroethene	(trans) 1,2 Dichloroethen	Vinyl Chloride
Feb-21	B1	ND	ND	ND	ND	ND
Feb-21	B2	1.2	ND	ND	ND	ND
Feb-21	B3	ND	ND	ND	ND	ND
Feb-21	B4	ND	ND	ND	ND	ND
Feb-21	B5	ND	ND	ND	ND	ND
Feb-21	В6	ND	ND	ND	ND	ND
Feb-21	B7	ND	ND	ND	ND	ND
Feb-21	B8	ND	ND	ND	ND	ND
Feb-21	B9	ND	ND	ND	ND	ND
Feb-21	B10	ND	ND	ND	ND	ND
Mar-21	B11	ND	ND	ND	ND	ND
Mar-21	B12	ND	ND	ND	ND	ND
Reporti	1	1	1	1	0.2	
Existing C	leanup Level <sup>4</sup>	5 (A)	5 (A)	16 (B)	160 (B)	0.2 (A)

- 1 "ND" denotes analyte not detected at or above listed Reporting Limit.
   2- "NA" denotes sample not analyzed for specific analyte.
- "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.

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

TABLE 5 - MTCA-5 Metals - Soil Sampling Resul	ts
All results and limits in parts per million (ppm	)

Sample Name & Sample Date	Arsenic	Cadmium	Chromium	Lead	Mercury
B2-2.5 (February 2021)	4	ND	23.9	9.5	ND
B6A-4 (March 2021)	5.18	NA	NA	NA	NA
B6A-10 (March 2021)	32.4	ND	26.6	7.14	ND
B6A-15 (March 2021)	ND	NA	NA	NA	NA
B13-10 (March 2021)	3.35	NA	NA	NA	NA
B13-20 (March 2021)	ND	NA	NA	NA	NA
B14-10 (March 2021)	2.85	NA	NA	NA	NA
B14-15 (March 2021)	1.08	NA	NA	NA	NA
B15-10 (March 2021)	2.82	NA	NA	NA	NA
B15-15 (March 2021)	4.03	NA	NA	NA	NA
B16-10 (March 2021)	3.9	NA	NA	NA	NA
B16-15 (March 201)	6.31	NA	NA	NA	NA
Reporting Limit <sup>3</sup>	1	1	1	1	1
WDOE-Method-A Cleanup Level (unrestricted land use)	20	2	19 / 2000 <sup>(5)</sup>	250	2

- 1 "ND" denotes analyte not detected at or above listed Reporting Limit.
- "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.
- 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 B6A-10 revealed no detections of chromium VI (hexavalent chromium).

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

# TABLE 6 - Dissolved MTCA-5 Metals Groundwater Sampling Results All results and limits in parts per billion (ppb)

Sample Location (and sample date)	Arsenic	Cadmium	Chromium	Lead	Mercury
B2 (February 2021)	ND	ND	ND	ND	ND
B7A f (March 2021)	1.89	ND	ND J	ND	ND
Reporting Limit <sup>3</sup>	1	0.5-1	0.5-10	0.25-1	0.25-1
Existing Cleanup Level <sup>4</sup>	5 (A)	5 (A)	50 (A)	15 (A)	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 cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC.
- f The sample was laboratory filtere prior to analysis.
- J- The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.

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)										
Aroclor 1221 Aroclor 1232 Aroclor 1248 Aroclor 1248 Aroclor 1254 Arochlor 1260 Arochlor 1268 Arochlor 1268 Total PCBs										
B2-2.5 (February 2021)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
B6A-10 (March 2021)	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND
Reporting Limit <sup>3</sup>	0.2-0.005	0.02-0.005	0.02-0.005	0.02-0.005	0.02-0.005	0.02-0.005	0.02-0.005	0.02-0.005	0.02-0.005	0.02-0.005
Existing Cleanup Level <sup>4</sup>								1900 TANK STATE		1 (A)

- "ND" denotes analyte not detected at or above listed Reporting Limit.
   "NA" denotes sample not analyzed for specific analyte.
   "Reporting Limit" represents the laboratory lower quantitation limit.
   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.

Toula Properties LLC JN 40139-2

TABLE 8 - PCBs - Groundwater Sampling Results All results and limits in parts per billion (ppb)												
Samble Name (and Date)  Arochli Arochl									Total PCBs			
B2 (February 2021)	ND	ND										
B7A (March 2021)	ND	ND										
Reporting Limit <sup>3</sup>	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1			
Existing Cleanup Level <sup>4</sup>										0.1 (A)		

#### Notes:

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

Toula Properties LLC JN 40139-2

TABLE 9 - Carcinogenic PAHs - Soil Sampling Results  All results and limits in parts per million (ppm)												
Sample Name (and date)	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>(\$</sup>				
B22.5* (February 2021)	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02				
B6A-10* (March 2021)	0.005	0.005	0.005	0.005	0.005	0.005	0.005	0.01				
cPAH Toxicity Equivilant Fraction (4)	1.0	0.01	0.1	0.1	0.1	0.1	0.1					
Reporting Limit <sup>2</sup>	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02					
MTCA-Method-A Residential (3)								0.1				
MTCA-Method-A Industrial (3)								2				

- 1- "NA" denotes sample not analyzed for specific analyte.
- 2- "Reporting Limit" represents the laboratory lower quantitation limit.
  3- Method A soil cleanup level for total carcinogenic PAHs as published in the Model Toxics Control Act (MTCA) 173-340-WAC.
- 4- Total carcinogenic PAHs are calculated by suming the product of each cPAH mulitplied by its toxicity equivalency fraction per WAC 173-340-708(8).
- \*- Sample results were "non detected" with a reporting limit of 0.1 ppb however values above were reported at half the reporting limit so value could be entered.

Toula Properties LLC JN 40139-2

TABLE 10 - Other PAHs - Soil Sampling Results All results and limits in parts per million (ppm)											
Sample Name	Naphthalene	Acenaphthene	Phenanthrene	Anthracene	Fluoranthene	Pyrene					
B2-2.5	ND	ND	ND	ND	ND	ND					
B6A-10	ND	ND	0.015	ND	ND	ND					
Reporting Limit <sup>3</sup>	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02	0.01-0.02					
Cleanup Level for Unrestricted Land Use (Method-A) <sup>4</sup>	5	*4 *41 *11									
Cleanup Level - Direct Contact (Method-B) <sup>5</sup>	1600	4800		24000	3200	2400					

#### 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.
- 5- Method-B soil cleanup levels for the "direct contact pathway", as published in Ecology's CLARC database.
- 6- Method-B soil cleanup level for the protection of groundwater based upon the Method-B groundwater cleanup levels. Values as published in Ecology's CLARC database.

Toula Properties LLC JN 40139-2

TABLE 11 - Carcinogenic PAHs - Groundwater Sampling Results All results and limits in parts per billion (ppb)												
Sample Name (and date)	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>(†</sup>				
B2* (February 2021)	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.08				
B7A (March 2021)	0.04	0.61	0.04	0.04	0.04	0.04	0.04	0.07				
cPAH Toxicity Equivilant Fraction (4)	1.0	0.01	0.1	0.1	0.1	0.1	0.1					
Reporting Limit <sup>2</sup>	0.02-0.1	0.02-0.1	0.02-0.1	0.02-0.1	0.02-0.1	0.02-0.1	0.02-0.1					
Existing Cleanup Level <sup>3</sup>								0.1				

#### Notes:

- 1- "NA" denotes sample not analyzed for specific analyte.
- 2- "Reporting Limit" represents the laboratory lower quantitation limit.
- 3- Method-A Groundwater cleanup level for total carcinogenic PAHs as published in the Model Toxics Control Act (MTCA) 173-340-WAC.
- 4- Total carcinogenic PAHs are calculated by suming the product of each cPAH mulitplied by its toxicity equivalency fraction per WAC 173-340-708(8).
- \*- Sample results were "non detected" with a reporting limit of 0.1 ppb however values above were reported at half the reporting limit so value could be entered.

Toula Properties LLC JN 40139-2

TABLE 12 - Other PAHs - Groundwater Sampling Results All results and limits in parts per billion (ppb)										
Sample Name (and Date)	Naphthalene	Phenanthrene	Fluorene	Pyrene						
B2 (February 2021)	ND	ND	ND	ND						
B7A (March 2021)	ND	2.9	1.40	1.90						
Reporting Limit <sup>3</sup>	0.1-0.4	0.1-0.2	0.1-0.04	0.1-0.02						
Existing Cleanup Level <sup>4</sup>	160		640	480						

#### Notes:

- "ND" denotes analyte not detected at or above listed Reporting Limit.
   "NA" denotes sample not analyzed for specific analyte.
   "Reporting Limit" represents the laboratory lower quantitation limit.
   Method B groundwater cleanup levels as published in the Model Toxics Control Act (MTCA) 173-340-WAC.

## APPENDIX A

Laboratory Reports

#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

April 1, 2021

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

Dear Mr Zuern:

Included are the results from the additional testing of material submitted on March 18, 2021 from the Renton Firestone 40139-2, F&BI 103364 project. There are 10 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 EAI0401R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on March 18, 2020 by Friedman & Bruya, Inc. from the Environmental Associates Renton Firestone 40139-2, F&BI 103364 project. Samples were logged in under the laboratory ID's listed below.

T 1	-
<u>Laboratory ID</u>	Environmental Associates
103364 -01	B15-4
103364 -02	B15-10
103364 -03	B15-15
103364 -04	B15-20
103364 -05	B15-25
103364 -06	B15-30
103364 -07	B15
103364 -08	B16-4
103364 -09	B16-10
103364 -10	B16-15
103364 -11	B16-20
103364 -12	B16-25
103364 -13	B16-30
103364 -14	B16
103364 -15	B17-3
103364 -16	B17-9-10
103364 -17	B17-15
103364 -18	B17-20
103364 -19	B17-25
103364 -20	B17
103364 -21	B18-3
103364 -22	B18-10
103364 -23	B18-15
103364 -24	B18-20
103364 -25	B18-25
103364 -26	B18
103364 -27	B19-3
103364 -28	B19-10
103364 -29	B19-15
103364 -30	B19-20
103364 -31	B19-25
103364 -32	B19

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/18/21

Project: Renton Firestone 40139-2, F&BI 103364

Date Extracted: 03/29/21 Date Analyzed: 03/30/21

#### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	<u>Benzene</u>	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate (% Recovery) (Limit 50-150)
B15-10 103364-02	< 0.02	< 0.02	< 0.02	<0.06	<5	77
B15-15 103364-03	< 0.02	< 0.02	< 0.02	<0.06	<5	87
B16-10 103364-09	< 0.02	< 0.02	<0.02	<0.06	<5	89
B16-15 103364-10	< 0.02	< 0.02	< 0.02	< 0.06	<5	82
Method Blank 01-591 MB	< 0.02	< 0.02	< 0.02	<0.06	<5	90

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: B15-10 Client: Environmental Associates

Date Received: 03/18/21 Project: Renton Firestone 40139-2, F&BI 103364

 Date Extracted:
 03/26/21
 Lab ID:
 103364-02

 Date Analyzed:
 03/26/21
 Data File:
 103364-02.121

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 2.82

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: B15-15 Client: Environmental Associates

Date Received: 03/18/21 Project: Renton Firestone 40139-2, F&BI 103364

 Date Extracted:
 03/26/21
 Lab ID:
 103364-03

 Date Analyzed:
 03/26/21
 Data File:
 103364-03.122

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic 4.03

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: B16-10 Client: Environmental Associates

Date Received: 03/18/21 Project: Renton Firestone 40139-2, F&BI 103364

 Date Extracted:
 03/26/21
 Lab ID:
 103364-09

 Date Analyzed:
 03/26/21
 Data File:
 103364-09.123

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Analyte: Concentration mg/kg (ppm)

Arsenic 3.90

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: Date Received: B16-15 03/18/21

Date Extracted: Date Analyzed:

03/26/21 03/26/21

Matrix: Units:

Soil

mg/kg (ppm) Dry Weight

Concentration

Analyte: Arsenic

6.31

mg/kg (ppm)

Client: Project: **Environmental Associates** 

Renton Firestone 40139-2, F&BI 103364

Lab ID: Data File: 103364-10 103364-10.124

Instrument: Operator:

ICPMS2

SP

6

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: Method Blank Client: Environmental Associates

Date Received: NA Project: Renton Firestone 40139-2, F&BI 103364

Date Extracted: 03/26/21 Lab ID: I1-195 mb
Date Analyzed: 03/26/21 Data File: I1-195 mb.039
Matrix: Soil Instrument: ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/18/21

Project: Renton Firestone 40139-2, F&BI 103364

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 103509-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Toluene	mg/kg (ppm)	< 0.02	< 0.02	nm
Ethylbenzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Xylenes	mg/kg (ppm)	< 0.06	< 0.06	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

Laboratory Code: Laboratory Control Sample

	Percent										
	Reporting	Spike	Recovery	Acceptance							
Analyte	Units	Level	LCS	Criteria							
Benzene	mg/kg (ppm)	0.5	94	69-120							
Toluene	mg/kg (ppm)	0.5	96	70-117							
Ethylbenzene	mg/kg (ppm)	0.5	96	65-123							
Xylenes	mg/kg (ppm)	1.5	100	66-120							
Gasoline	mg/kg (ppm)	20	105	71-131							

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/18/21

Project: Renton Firestone 40139-2, F&BI 103364

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

Laboratory Code: 103463-21 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	5.68	66 b	66 b	75-125	0 b

Laboratory Code: Laboratory Control Sample

		Percent									
	Reporting	$_{ m Spike}$	Recovery	Acceptance							
Analyte	Units	Level	LCS	Criteria							
Arsenic	mg/kg (ppm)	10	95	80-120							

#### **ENVIRONMENTAL CHEMISTS**

#### **Data Qualifiers & Definitions**

- a The analyte was detected at a level less than five times the reporting limit. The RPD results may not provide reliable information on the variability of the analysis.
- b The analyte was spiked at a level that was less than five times that present in the sample. Matrix spike recoveries may not be meaningful.
- ca The calibration results for the analyte were outside of acceptance criteria. The value reported is an estimate.
- c The presence of the analyte may be due to carryover from previous sample injections.
- cf The sample was centrifuged prior to analysis.
- d The sample was diluted. Detection limits were raised and surrogate recoveries may not be meaningful.
- dv Insufficient sample volume was available to achieve normal reporting limits.
- f The sample was laboratory filtered prior to analysis.
- fb The analyte was detected in the method blank.
- fc The analyte is a common laboratory and field contaminant.
- hr The sample and duplicate were reextracted and reanalyzed. RPD results were still outside of control limits. Variability is attributed to sample inhomogeneity.
- hs Headspace was present in the container used for analysis.
- ht The analysis was performed outside the method or client-specified holding time requirement.
- ip Recovery fell outside of control limits due to sample matrix effects.
- j The analyte concentration is reported below the lowest calibration standard. The value reported is an estimate.
- J The internal standard associated with the analyte is out of control limits. The reported concentration is an estimate.
- jl The laboratory control sample(s) percent recovery and/or RPD were out of control limits. The reported concentration should be considered an estimate.
- js The surrogate associated with the analyte is out of control limits. The reported concentration should be considered an estimate.
- lc The presence of the analyte is likely due to laboratory contamination.
- L The reported concentration was generated from a library search.
- nm The analyte was not detected in one or more of the duplicate analyses. Therefore, calculation of the RPD is not applicable.
- pc The sample was received with incorrect preservation or in a container not approved by the method. The value reported should be considered an estimate.
- ve The analyte response exceeded the valid instrument calibration range. The value reported is an estimate.
- vo The value reported fell outside the control limits established for this analyte.
- x The sample chromatographic pattern does not resemble the fuel standard used for quantitation.

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Ph. (206) 285-8282

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B16-25	12		10:53	1	3				;	1								
B16-30	13		11:07	J	3													
B16	14 A-F		10,52	Water	6	X												
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B17-9-10	16		11:35		3	X											·	
B17-15	17		11:40		3	X												
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Seattle, WA 98119-2029 Ph. (206) 285-8282

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Report To Enc Zucon	SAMPLE CHAIN OF CUSTO	DY 03-18-21	VS3 / EOY/ BO3/AL3 / Vn TURNAROUND TIME
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City, State, ZIP PhoneEmail	REMARKS  Project specific RLs? - Yes / No	INVOICE TO	SAMPLE DISPOSAL  Of Archive samples Of Other Default: Dispose after 30 days
		ANALYSES REQUE	STED

									P	IAM	YSE	SRE	QUE	STE	D			
Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH.Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHS EPA 8270	PCBs EPA 8082	Arsenie				Not	es
B18-3	21 AZ	3-18-21	12:33	Soil	3	X												i.
B18-10	22	}	12:37		3	X												
B18-15	23		12=42	·	3	X												
B18-20	24		(:08		3													
B18-25	25 V		1:24	1	3							1						
BIB	26 A-F		12:50	Waster	6	X												
B19-3	27 AC		1:35	Soil	3	X												
B19-10	28		1240	1	3	X					$\top$					-		
B19-15	29	/	1:44		3	X		1				1						
B19-20	30		2:10	1	7		1	1	7		1.	$\top$	$\top$					

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

April 1, 2021

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 March 17, 2021 from the Renton Firestone 40139-2, F&BI 103339 project. There are 53 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures EAI0401R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on March 17, 2020 by Friedman & Bruya, Inc. from the Environmental Associates Renton Firestone 40139-2, F&BI 103339 project. Samples were logged in under the laboratory ID's listed below.

Laboratory ID	Environmental Associates
103339 -01	Environmental Associates B11-2.5
103339 -02	B11-10
103339 -02	B11-15
103339 -04	B11-10
103339 -05	B11-20
103339 -06	B12-3
103339 -07	B12-10
103339 -08	B12-10
103339 -09	
103339 -10	B12-20
103339 -11	B12-25
	B12-30
103339 -12	B12
103339 -13	B13-4
103339 -14	B13-10
103339 -15	B13-13
103339 -16	B13-20
103339 -17	B13-25
103339 -18	B13-30
103339 -19	B13
103339 -20	B14-4
103339 -21	B14-10
103339 -22	B14-12
103339 -23	B14-15
103339 -24	B14-20
103339 -25	B14-25
103339 -26	B14-30
103339 -27	B14
103339 -28	B6A-4
103339 -29	B6A-10
103339 -30	B6A-15
103339 -31	B6A-20
103339 -32	B6A-25
103339 -33	B6A-30
103339 -34	B6A

All quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

Date Extracted: 03/22/21 and 03/29/21 Date Analyzed: 03/23/21 and 03/30/21

#### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES AND TPH AS GASOLINE USING METHODS 8021B AND NWTPH-Gx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	Benzene	<u>Toluene</u>	Ethyl <u>Benzene</u>	Total <u>Xylenes</u>	Gasoline <u>Range</u>	Surrogate (% Recovery) (Limit 50-150)
B13-10 103339-14	< 0.02	< 0.02	< 0.02	<0.06	<5	93
B13-20 103339-16	< 0.02	< 0.02	< 0.02	< 0.06	<5	94
B14-10 103339-21	< 0.02	< 0.02	< 0.02	< 0.06	<5	92
B14-12 103339-22	< 0.02	< 0.02	< 0.02	< 0.06	<5	80
B14-15 103339-23	< 0.02	< 0.02	< 0.02	< 0.06	<5	90
B6A-4 103339-28	< 0.02	<0.02	< 0.02	< 0.06	<5	89
B6A-10 103339-29	<0.02	< 0.02	0.18	0.29	160	95
Method Blank 01-583 MB	< 0.02	< 0.02	< 0.02	<0.06	<5	78
Method Blank 01-591 MB	< 0.02	< 0.02	<0.02	<0.06	<5	90

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

Date Extracted: 03/18/21 and 03/25/21 Date Analyzed: 03/18/21 and 03/25/21

#### RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25} ext{)}}$	Motor Oil Range (C <sub>25</sub> -C <sub>36</sub> )	Surrogate (% Recovery) (Limit 53-144)
B13-20 103339-16	<50	<250	86
B14-12 103339-22	<50	<250	84
B6A-10 103339-29	450 x	<250	96
Method Blank	<50	<250	101
Method Blank 01-725 MB	<50	<250	88

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

Date Extracted: 03/18/21 Date Analyzed: 03/18/21

# RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Diesel Range (C <sub>10</sub> -C <sub>25</sub> )	Motor Oil Range (C <sub>25</sub> -C <sub>36</sub> )	Surrogate (% Recovery) (Limit 41-152)
B13 103339-19	81 x	<250	106
B14 103339-27	<50	<250	73
Method Blank	<50	<250	96

#### **ENVIRONMENTAL CHEMISTS**

Client:

Project:

Lab ID:

Data File:

Operator:

Instrument:

**Environmental Associates** 

Renton Firestone 40139-2

103339-14

ICPMS2

SP

103339-14.131

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

Client ID: Date Received: B13-10 03/17/21 03/25/21

Date Extracted: Date Analyzed: Matrix:

03/25/21 Soil

Units:

mg/kg (ppm) Dry Weight

Concentration mg/kg (ppm)

Analyte:

Arsenic

3.35

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 6020B

Client ID: B13-20 Date Received: 03/17/21

03/25/21 Date Extracted: 03/25/21 Date Analyzed: Matrix: Soil

Analyte:

mg/kg (ppm) Dry Weight Units:

Concentration mg/kg (ppm)

Arsenic <1

Client: Project: **Environmental Associates** Renton Firestone 40139-2

Lab ID: 103339-16 Data File:

103339-16.132

Instrument:

ICPMS2

Operator: SP

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: B14-10 Client: Environmental Associates
Date Received: 03/17/21 Project: Renton Firestone 40139-2

 Date Extracted:
 03/25/21
 Lab ID:
 103339-21

 Date Analyzed:
 03/25/21
 Data File:
 103339-21.133

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Analyte: Concentration mg/kg (ppm)

Arsenic 2.85

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: B14-15 Client: Environmental Associates
Date Received: 03/17/21 Project: Renton Firestone 40139-2

 Date Extracted:
 03/25/21
 Lab ID:
 103339-23

 Date Analyzed:
 03/25/21
 Data File:
 103339-23.147

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Analyte: Concentration mg/kg (ppm)

Arsenic 1.08

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: B6A-4 Client: Environmental Associates
Date Received: 03/17/21 Project: Renton Firestone 40139-2

 Date Extracted:
 03/25/21
 Lab ID:
 103339-28

 Date Analyzed:
 03/25/21
 Data File:
 103339-28.154

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

 $\begin{array}{cc} & & Concentration \\ Analyte: & mg/kg \ (ppm) \end{array}$ 

Arsenic 5.18

#### **ENVIRONMENTAL CHEMISTS**

Client:

Project:

Lab ID:

Data File:

Operator:

Instrument:

**Environmental Associates** 

Renton Firestone 40139-2

103339-29

ICPMS2

SP

103339-29.106

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

 Client ID:
 B6A-10

 Date Received:
 03/17/21

 Date Extracted:
 03/22/21

 Date Analyzed:
 03/22/21

 Matrix:
 Soil

Units: mg/kg (ppm) Dry Weight

Concentration

Analyte: mg/kg (ppm)

 Arsenic
 32.4

 Cadmium
 <1</td>

 Lead
 7.14

 Mercury
 <1</td>

10

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: B6A-10 Client: Environmental Associates
Date Received: 03/17/21 Project: Renton Firestone 40139-2

 Date Extracted:
 03/22/21
 Lab ID:
 103339-29 x5

 Date Analyzed:
 03/23/21
 Data File:
 103339-29 x5.095

Matrix: Soil Instrument: ICPMS2 Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Chromium 26.6

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: B6A-15 Client: Environmental Associates
Date Received: 03/17/21 Project: Renton Firestone 40139-2

 Date Extracted:
 03/25/21
 Lab ID:
 103339-30

 Date Analyzed:
 03/25/21
 Data File:
 103339-30.155

 Matrix:
 Soil
 Instrument:
 ICPMS2

Units: mg/kg (ppm) Dry Weight Operator: SP

Analyte: Concentration mg/kg (ppm)

Arsenic <1

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Total Metals By EPA Method 6020B

Client ID:	Method Blank	Client:	Environmental Associates
Date Received:	NA	Project:	Renton Firestone 40139-2
Date Extracted:	03/22/21	Lab ID:	I1-182 mb
Date Analyzed:	03/22/21	Data File:	I1-182 mb.090

Matrix: Soil Instrument: ICPMS2 Units: mg/kg (ppm) Dry Weight Operator: SP

Analyte:	Concentration mg/kg (ppm)
Arsenic	<1
Λ 1 '	

Cadmium <1 Chromium <1 Lead <1 Mercury <1

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: Method Blank Client: Environmental Associates
Date Received: NA Project: Renton Firestone 40139-2

Date Extracted:03/25/21Lab ID:I1-189 mb2Date Analyzed:03/25/21Data File:I1-189 mb2.038Matrix:SoilInstrument:ICPMS2

Matrix: Soil Instrument: ICPMS
Units: mg/kg (ppm) Dry Weight Operator: SP

Concentration

Analyte: mg/kg (ppm)

Arsenic <1

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B11-2.5 Client: Environmental Associates

Date Received: 03/17/21 Project: Renton Firestone 40139-2

Date Entropy and 102229 01

Date Extracted: 03/18/21 Lab ID: 103339-01 Date Analyzed: 03/18/21 Data File: 031810.D Matrix: Soil Instrument: GCMS4 Units: mg/kg (ppm) Dry Weight Operator: **JCM** 

Lower Upper Surrogates: % Recovery: Limit: Limit: 1.2-Dichloroethane-d4 106 90 109 Toluene-d8 99 89 112 4-Bromofluorobenzene 96 84 115

Concentration mg/kg (ppm) Compounds: Vinyl chloride < 0.05 Chloroethane < 0.5 1,1-Dichloroethene < 0.05 Methylene chloride < 0.5 trans-1,2-Dichloroethene < 0.05 1,1-Dichloroethane < 0.05 cis-1,2-Dichloroethene < 0.05 1,2-Dichloroethane (EDC) < 0.05 1,1,1-Trichloroethane < 0.05 Trichloroethene < 0.02 Tetrachloroethene < 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B11-10 Client: Environmental Associates

Date Received: 03/17/21 Project: Renton Firestone 40139-2

Date Firested: 03/18/21 Leb ID: 102220 02

Date Extracted:03/18/21Lab ID:103339-02Date Analyzed:03/18/21Data File:031811.DMatrix:SoilInstrument:GCMS4Units:mg/kg (ppm) Dry WeightOperator:JCM

Units: mg/kg (ppm) Dry Weight Operator: JCM

Lower Upper
Surrogates: % Recovery: Limit: Limit:

 Surrogates:
 % Recovery:
 Limit:
 Limit:

 1,2-Dichloroethane-d4
 103
 90
 109

 Toluene-d8
 100
 89
 112

 4-Bromofluorobenzene
 98
 84
 115

Concentration mg/kg (ppm) Compounds: Vinyl chloride < 0.05 Chloroethane < 0.5 1.1-Dichloroethene < 0.05 Methylene chloride < 0.5 trans-1,2-Dichloroethene < 0.05 1,1-Dichloroethane < 0.05 cis-1,2-Dichloroethene < 0.05 1,2-Dichloroethane (EDC) < 0.05 1,1,1-Trichloroethane < 0.05 Trichloroethene < 0.02 Tetrachloroethene < 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B11-20 Client:
Date Received: 03/17/21 Project
Date Extracted: 03/18/21 Lab ID
Date Analyzed: 03/18/21 Data F
Matrix: Soil Instrum
Units: mg/kg (ppm) Dry Weight Operat

Project: Renton Firestone 40139-2
Lab ID: 103339-04
Data File: 031812.D
Instrument: GCMS4
Operator: JCM

Environmental Associates

		$\operatorname{Lower}$	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	103	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	98	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B12-3 Client: Environmental Associates Date Received: Project: 03/17/21 Renton Firestone 40139-2 103339-06

Date Extracted: 03/18/21 Lab ID: Date Analyzed: 03/18/21 Data File: 031813.D Matrix: Soil Instrument:

GCMS4 Units: mg/kg (ppm) Dry Weight Operator: JCM

		Lower	$_{ m Upper}$
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	102	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	99	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Environmental Associates Client Sample ID: B12-10 Client: Date Received: Project: 03/17/21 Renton Firestone 40139-2 Lab ID: Date Extracted: 03/18/21 103339-07 Date Analyzed: 03/18/21 Data File: 031814.D

Matrix: Soil Instrument: GCMS4
Units: mg/kg (ppm) Dry Weight Operator: JCM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	98	90	109
Toluene-d8	98	89	112
4-Bromofluorobenzene	102	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B12-30 Date Received: 03/17/21 03/18/21 Date Extracted: Date Analyzed: 03/18/21 Matrix: Soil Units:

mg/kg (ppm) Dry Weight

Client: Project: Environmental Associates Renton Firestone 40139-2

Lab ID: 103339-11 Data File: Instrument: Operator:

031815.D GCMS4 JCM

		Lower	$\operatorname{Upper}$
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	99	90	109
Toluene-d8	100	89	112
4-Bromofluorobenzene	98	84	115

·y	<0.05 <0.5
Chloroethane	<0.5
	~U.U
1,1-Dichloroethene	< 0.05
Methylene chloride	<0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B13-4 Client: Environmental Associates
Date Received: 03/17/21 Project: Renton Firestone 40139-2

Lab ID: Date Extracted: 03/18/21 103339-13 Date Analyzed: 03/18/21 Data File: 031816.D Matrix: Soil Instrument: GCMS4 mg/kg (ppm) Dry Weight Units: Operator: JCM

Lower Upper Surrogates: % Recovery: Limit: Limit: 1.2-Dichloroethane-d4 105 90 109 Toluene-d8 98 89 112 97 4-Bromofluorobenzene 84 115

Concentration mg/kg (ppm) Compounds: Vinyl chloride < 0.05 Chloroethane < 0.5 1,1-Dichloroethene < 0.05 < 0.5 Methylene chloride trans-1,2-Dichloroethene < 0.05 1,1-Dichloroethane < 0.05 cis-1,2-Dichloroethene < 0.05 1,2-Dichloroethane (EDC) < 0.05 1,1,1-Trichloroethane < 0.05 Trichloroethene < 0.02 Tetrachloroethene < 0.025

#### **ENVIRONMENTAL CHEMISTS**

84

115

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B13-13 Client: **Environmental Associates** Date Received: Project: 03/17/21 Renton Firestone 40139-2 Lab ID: Date Extracted: 03/18/21 103339-15 Date Analyzed: 03/18/21 Data File: 031817.D Matrix: Soil Instrument: GCMS4 Units: mg/kg (ppm) Dry Weight Operator: **JCM** 

Lower Upper Surrogates: % Recovery: Limit: Limit: 1,2-Dichloroethane-d4 102 90 109
Toluene-d8 98 89 112

101

Concentration mg/kg (ppm) Compounds: Vinyl chloride < 0.05 Chloroethane < 0.5 1.1-Dichloroethene < 0.05 Methylene chloride < 0.5 trans-1.2-Dichloroethene < 0.05 1,1-Dichloroethane < 0.05 cis-1,2-Dichloroethene < 0.05 1,2-Dichloroethane (EDC) < 0.05 1,1,1-Trichloroethane < 0.05 Trichloroethene < 0.02 Tetrachloroethene < 0.025

4-Bromofluorobenzene

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B13-20 Client: Environmental Associates
Date Received: 03/17/21 Project: Renton Firestone 40139-2
Date Extracted: 03/18/21 Lab ID: 103339-16

Date Analyzed:03/18/21Data File:031818.DMatrix:SoilInstrument:GCMS4Units:mg/kg (ppm) Dry WeightOperator:JCM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	103	90	109
Toluene-d8	97	89	112
4-Bromofluorobenzene	97	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B14-4 Date Received: 03/17/21 Date Extracted: 03/18/21 03/18/21 Date Analyzed: Matrix: Soil Units:

mg/kg (ppm) Dry Weight

Client: Project:

**Environmental Associates** Renton Firestone 40139-2

Lab ID: 103339-20 Data File: 031819.D Instrument: GCMS4 Operator: JCM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	103	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	102	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B14-10 Client: **Environmental Associates** Date Received: Project: 03/17/21 Renton Firestone 40139-2 Lab ID: Date Extracted: 03/18/21 103339-21 Date Analyzed: 03/18/21 Data File: 031820.D Matrix: Soil Instrument: GCMS4 Units: mg/kg (ppm) Dry Weight Operator: JCM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	104	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	100	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B14-12 Client: Environmental Associates
Date Received: 03/17/21 Project: Renton Firestone 40139-2
Date Entracted: 03/18/21 Lab ID: 103339-32

Date Extracted: 03/18/21 Lab ID: 103339-22 Date Analyzed: 03/18/21 Data File: 031821.D Matrix: Soil Instrument: GCMS4 mg/kg (ppm) Dry Weight JCM Units: Operator:

Lower Upper Limit: Surrogates: % Recovery: Limit: 1.2-Dichloroethane-d4 103 90 109 Toluene-d8 97 89 112 102 4-Bromofluorobenzene 84 115

Concentration mg/kg (ppm) Compounds: Vinvl chloride < 0.05 Chloroethane < 0.5 1,1-Dichloroethene < 0.05 Methylene chloride < 0.5 trans-1,2-Dichloroethene < 0.05 1,1-Dichloroethane < 0.05 cis-1,2-Dichloroethene < 0.05 1,2-Dichloroethane (EDC) < 0.05 1,1,1-Trichloroethane < 0.05 Trichloroethene < 0.02 Tetrachloroethene < 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B14-20 Client: Environmental Associates
Date Received: 03/17/21 Project: Renton Firestone 40139-2

 Date Extracted:
 03/18/21
 Lab ID:
 103339-24

 Date Analyzed:
 03/18/21
 Data File:
 031822.D

 Matrix:
 Soil
 Instrument:
 GCMS4

Units: mg/kg (ppm) Dry Weight Operator: JCM

Lower

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	102	90	109
Toluene-d8	98	89	112
4-Bromofluorobenzene	104	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B6A-15 Client: Environmental Associates Date Received: Project: 03/17/21 Renton Firestone 40139-2 Lab ID: Date Extracted: 03/18/21 103339-30 Date Analyzed: 03/18/21 Data File: 031823.D Matrix: Soil Instrument: GCMS4 Units: mg/kg (ppm) Dry Weight Operator: **JCM** 

Lower Upper Surrogates: % Recovery: Limit: Limit: 1.2-Dichloroethane-d4 102 90 109 Toluene-d8 99 89 112 4-Bromofluorobenzene 98 84 115

Concentration mg/kg (ppm) Compounds: Vinyl chloride < 0.05 Chloroethane < 0.5 1.1-Dichloroethene < 0.05 Methylene chloride < 0.5 trans-1,2-Dichloroethene < 0.05 1,1-Dichloroethane < 0.05 cis-1,2-Dichloroethene < 0.05 1,2-Dichloroethane (EDC) < 0.05 1,1,1-Trichloroethane < 0.05 Trichloroethene < 0.02 Tetrachloroethene < 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B6A-15 REEXTRACT Client: Environmental Associates

Date Received: 03/17/21 Project: Renton Firestone 40139-2

Date Extracted: 03/26/21 Lab ID: 103339-30

Date Analyzed: 03/26/21 Data File: 032613.D

Matrix: Soil Instrument: GCMS4
Units: mg/kg (ppm) Dry Weight Operator: JCM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	107	90	109
Toluene-d8	101	89	112
4-Bromofluorobenzene	96	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

Client:

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B6A-20 Date Received: 03/17/21 Date Extracted: 03/18/21 Date Analyzed: 03/18/21 Matrix: Soil Units: mg/kg (ppm) Dry Weight

Project: Renton Firestone 40139-2 Lab ID: 103339-31 Data File: 031824.D GCMS4 Instrument: Operator: JCM

**Environmental Associates** 

Upper

Limit:

109

112

115

		Lower
Surrogates:	% Recovery:	Limit:
1,2-Dichloroethane-d4	101	90
Toluene-d8	99	89
4-Bromofluorobenzene	101	84

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B6A-30 Client: Environmental Associates
Date Received: 03/17/21 Project: Renton Firestone 40139-2
Date Extracted: 03/18/21 Lab ID: 103339-33

Date Analyzed: 03/18/21 Data File: 031825.D

Matrix: Soil Instrument: GCMS4

Units: mg/kg (ppm) Dry Weight Operator: JCM

Lower Upper Surrogates: % Recovery: Limit: Limit: 1,2-Dichloroethane-d4 102 90 109 Toluene-d8 99 89 112 99 4-Bromofluorobenzene 84 115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Method Blank Client: Environmental Associates Date Received: Not Applicable Project: Renton Firestone 40139-2 Date Extracted: 03/18/21 Lab ID: 01-639 mb 03/18/21 Data File: 031809.D Date Analyzed: Matrix: Soil GCMS4 Instrument: Units: mg/kg (ppm) Dry Weight Operator: **JCM** 

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	100	90	109
Toluene-d8	98	89	112
4-Bromofluorobenzene	98	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Method Blank Date Received: Not Applicable 03/26/21 Date Extracted: 03/26/21 Date Analyzed: Matrix: Soil Units:

mg/kg (ppm) Dry Weight

Client: Project: **Environmental Associates** Renton Firestone 40139-2

Lab ID: 01-665 mb Data File: 032609.D Instrument: GCMS4 Operator: JCM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	107	90	109
Toluene-d8	101	89	112
4-Bromofluorobenzene	101	84	115

Compounds:	Concentration mg/kg (ppm)	
Vinyl chloride	< 0.05	
Chloroethane	< 0.5	
1,1-Dichloroethene	< 0.05	
Methylene chloride	< 0.5	
trans-1,2-Dichloroethene	< 0.05	
1,1-Dichloroethane	< 0.05	
cis-1,2-Dichloroethene	< 0.05	
1,2-Dichloroethane (EDC)	< 0.05	
1,1,1-Trichloroethane	< 0.05	
Trichloroethene	< 0.02	
Tetrachloroethene	< 0.025	

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B11 Client: Environmental Associates Date Received: 03/17/21 Project: Renton Firestone 40139-2 Lab ID: Date Extracted: 03/30/21 103339-05 Date Analyzed: 03/30/21 Data File: 033010.D Matrix: Water Instrument: GCMS13 Units: ug/L (ppb) Operator: JCM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	91	85	117
Toluene-d8	93	88	112
4-Bromofluorobenzene	114 vo	90	111

#### Concentration Compounds: ug/L (ppb) Vinyl chloride < 0.2 Chloroethane <1 1,1-Dichloroethene <1 Methylene chloride <5 trans-1,2-Dichloroethene <1 1,1-Dichloroethane <1 cis-1,2-Dichloroethene <1 1,2-Dichloroethane (EDC) <1 1,1,1-Trichloroethane <1 Trichloroethene <1 Tetrachloroethene <1

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B12	Client:	Environmental Associates
Date Received:	03/17/21	Project:	Renton Firestone 40139-2
Date Extracted:	03/30/21	Lab ID:	103339-12
Date Analyzed:	03/30/21	Data File:	033011.D
Matrix:	Water	Instrument:	GCMS13
Units:	ug/L (ppb)	Operator:	JCM
	G UF-7	*	

		Lower	$\mathbf{U}_{\mathbf{pper}}$
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	102	85	117
Toluene-d8	91	88	112
4-Bromofluorobenzene	109	90	111

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	< 0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

#### ENVIRONMENTAL CHEMISTS

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Date Received:	Method Blank Not Applicable	Client: Project:	Environmental Associates Renton Firestone 40139-2
Date Extracted:	03/30/21	Lab ID:	01-673 mb
Date Analyzed:	03/30/21	Data File:	033008.D
Matrix:	Water	Instrument:	GCMS4
Units:	ug/L (ppb)	Operator:	JCM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	101	86	113
Toluene-d8	96	88	114
4-Bromofluorobenzene	102	88	112

Compounds:	Concentration ug/L (ppb)
Vinyl chloride	< 0.2
Chloroethane	<1
1,1-Dichloroethene	<1
Methylene chloride	<5
trans-1,2-Dichloroethene	<1
1,1-Dichloroethane	<1
cis-1,2-Dichloroethene	<1
1,2-Dichloroethane (EDC)	<1
1,1,1-Trichloroethane	<1
Trichloroethene	<1
Tetrachloroethene	<1

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID: B6A-10 Client: **Environmental Associates** Renton Firestone 40139-2 Date Received: Project: 03/17/21 Lab ID: Date Extracted: 03/23/21 103339-29 1/5 Date Analyzed: 03/23/21 Data File: 032314.D Matrix: Soil Instrument: GCMS9 Units: mg/kg (ppm) Dry Weight Operator: VM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
2-Fluorophenol	73	32	100
Phenol-d6	82	46	107
Nitrobenzene-d5	93	24	127
2-Fluorobiphenyl	87	46	108
2,4,6-Tribromophenol	87	25	127
Terphenyl-d14	85	50	150

respicity surf	
Compounds:	Concentration mg/kg (ppm)
Naphthalene	< 0.01
2-Methylnaphthalene	< 0.01
1-Methylnaphthalene	< 0.01
Acenaphthylene	< 0.01
Acenaphthene	< 0.01
Fluorene	< 0.01
Phenanthrene	0.015
Anthracene	< 0.01
Fluoranthene	< 0.01
Pyrene	< 0.01
Benz(a)anthracene	< 0.01
Chrysene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b)fluoranthene	< 0.01
Benzo(k)fluoranthene	< 0.01
Indeno(1,2,3-cd)pyrene	< 0.01
Dibenz(a,h)anthracene	< 0.01
Benzo(g,h,i)perylene	< 0.01

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Environmental Associates
Date Received:	Not Applicable	Project:	Renton Firestone 40139-2
Date Extracted:	03/23/21	Lab ID:	01-715 mb 1/5
Date Analyzed:	03/23/21	Data File:	032310.D
Matrix:	Soil	Instrument:	GCMS9
Units:	mg/kg (ppm) Dry Weight	Operator:	VM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
2-Fluorophenol	88	32	100
Phenol-d6	97	46	107
Nitrobenzene-d5	104	24	127
2-Fluorobiphenyl	106	46	108
2,4,6-Tribromophenol	89	25	127
Ternhenyl-d14	106	50	150

• •	
Compounds:	Concentration mg/kg (ppm)
Naphthalene	< 0.01
2-Methylnaphthalene	< 0.01
1-Methylnaphthalene	< 0.01
Acenaphthylene	< 0.01
Acenaphthene	< 0.01
Fluorene	< 0.01
Phenanthrene	< 0.01
Anthracene	< 0.01
Fluoranthene	< 0.01
Pyrene	< 0.01
Benz(a)anthracene	< 0.01
Chrysene	< 0.01
Benzo(a)pyrene	< 0.01
Benzo(b)fluoranthene	< 0.01
Benzo(k)fluoranthene	< 0.01
Indeno(1,2,3-cd)pyrene	< 0.01
Dibenz(a,h)anthracene	< 0.01
Benzo(g,h,i)perylene	< 0.01

#### **ENVIRONMENTAL CHEMISTS**

**Environmental Associates** Renton Firestone 40139-2

103339-29 1/6 032419.D

#### Analysis For PCBs By EPA Method 8082A

B6A-10	Client:	Envi
03/17/21	Project:	Rente
03/24/21	Lab ID:	10333
03/24/21	Data File:	0324
Soil	Instrument:	GC9
mg/kg (ppm) Dry Weight	Operator:	IJL
	03/17/21 03/24/21 03/24/21 Soil	03/17/21       Project:         03/24/21       Lab ID:         03/24/21       Data File:         Soil       Instrument:

Surrogates: TCMX	% Recovery: 66	Lower Limit: 23	Upper Limit: 120

Compounds:	Concentration mg/kg (ppm)
Aroclor 1221	< 0.02
Aroclor 1232	< 0.02
Aroclor 1016	< 0.02
Aroclor 1242	< 0.02
Aroclor 1248	< 0.02
Aroclor 1254	< 0.02
Aroclor 1260	< 0.02
Aroclor 1262	< 0.02
Aroclor 1268	< 0.02

#### **ENVIRONMENTAL CHEMISTS**

Client:

Project: Lab ID:

Data File:

Operator:

Instrument:

**Environmental Associates** 

Renton Firestone 40139-2

01-720 mb 1/6

032414.D

GC9

IJL

#### Analysis For PCBs By EPA Method 8082A

Client Sample ID:	Method Blank
Date Received:	Not Applicable
Date Extracted:	03/24/21
Date Analyzed:	03/24/21
Matrix:	Soil
Units:	mg/kg (ppm) Dry Weight

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
TCMX	76	23	120

Concentration mg/kg (ppm)
< 0.02
< 0.02
< 0.02
< 0.02
< 0.02
< 0.02
< 0.02
< 0.02
< 0.02

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING METHOD 8021B AND NWTPH-Gx

Laboratory Code: 103348-07 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Toluene	mg/kg (ppm)	0.042	< 0.02	nm
Ethylbenzene	mg/kg (ppm)	0.61	0.47	$26~\mathrm{hr}$
Xylenes	mg/kg (ppm)	0.52	0.40	$26~\mathrm{hr}$
Gasoline	mg/kg (ppm)	85	66	25 hr

	Percent				
	Reporting	$\mathbf{Spike}$	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Benzene	mg/kg (ppm)	0.5	88	69-120	
Toluene	mg/kg (ppm)	0.5	91	70-117	
Ethylbenzene	mg/kg (ppm)	0.5	89	65-123	
Xylenes	mg/kg (ppm)	1.5	92	66-120	
Gasoline	mg/kg (ppm)	20	100	71-131	

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

# QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR BENZENE, TOLUENE, ETHYLBENZENE, XYLENES, AND TPH AS GASOLINE USING EPA METHOD 8021B AND NWTPH-Gx

Laboratory Code: 103509-01 (Duplicate)

Analyte	Reporting Units	Sample Result (Wet Wt)	Duplicate Result (Wet Wt)	RPD (Limit 20)
Benzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Toluene	mg/kg (ppm)	< 0.02	< 0.02	nm
Ethylbenzene	mg/kg (ppm)	< 0.02	< 0.02	nm
Xylenes	mg/kg (ppm)	< 0.06	< 0.06	nm
Gasoline	mg/kg (ppm)	<5	<5	nm

	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Benzene	mg/kg (ppm)	0.5	94	69-120
Toluene	mg/kg (ppm)	0.5	96	70-117
Ethylbenzene	mg/kg (ppm)	0.5	96	65-123
Xylenes	mg/kg (ppm)	1.5	100	66-120
Gasoline	mg/kg (ppm)	20	105	71-131

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

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

Laboratory Code: 103339-16 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	80	82	64-133	2

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	mg/kg (ppm)	5,000	82	58-147

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

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

Laboratory Code: 103427-04 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	210	91	94	64-133	3

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	mg/kg (ppm)	5.000	86	58-147

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

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

			Percent	Percent			
	Reporting	Spike	Recovery	Recovery	Acceptance	$\operatorname{RPD}$	
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)	_
Diesel Extended	ug/L (ppb)	2.500	88	100	63-142	13	

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

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

Laboratory Code: 103386-01 x5 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	11.3	111	116	75-125	4
Cadmium	mg/kg (ppm)	10	<5	101	102	75-125	1
Chromium	mg/kg (ppm)	50	14.7	100	101	75-125	1
Lead	mg/kg (ppm)	50	8.72	103	104	75-125	1
Mercury	mg/kg (ppm	5	<5	106	110	75-125	4

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	mg/kg (ppm)	10	109	80-120
Cadmium	mg/kg (ppm)	10	99	80-120
Chromium	mg/kg (ppm)	50	104	80-120
Lead	mg/kg (ppm)	50	103	80-120
Mercury	mg/kg (ppm)	5	104	80-120

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

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

Laboratory Code: 103407-01 (Matrix Spike)

			Sample	$\operatorname{Percent}$	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Arsenic	mg/kg (ppm)	10	2.07	102	109	75-125	7

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	_
Arsenic	mg/kg (ppm)	10	98	80-120	_

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

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

Laboratory Code: 103339-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	$\operatorname{RPD}$
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Vinyl chloride	mg/kg (ppm)	1	< 0.05	33	31	10-138	6
Chloroethane	mg/kg (ppm)	1	< 0.5	44	42	10-176	5
1,1-Dichloroethene	mg/kg (ppm)	1	< 0.05	57	54	10-160	5
Methylene chloride	mg/kg (ppm)	1	< 0.5	74	71	10-156	4
trans-1,2-Dichloroethene	mg/kg (ppm)	1	< 0.05	62	62	14-137	0
1,1-Dichloroethane	mg/kg (ppm)	1	< 0.05	67	64	19-140	5
cis-1,2-Dichloroethene	mg/kg (ppm)	1	< 0.05	71	70	25-135	1
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	< 0.05	76	73	12-160	4
1,1,1-Trichloroethane	mg/kg (ppm)	1	< 0.05	67	64	10-156	5
Trichloroethene	mg/kg (ppm)	1	< 0.02	78	75	21-139	4
Tetrachloroethene	mg/kg (ppm)	1	< 0.025	76	74	20-133	3

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Vinyl chloride	mg/kg (ppm)	1	69	22-139
Chloroethane	mg/kg (ppm)	1	58	9-163
1,1-Dichloroethene	mg/kg (ppm)	1	95	47-128
Methylene chloride	mg/kg (ppm)	1	100	10-184
trans-1,2-Dichloroethene	mg/kg (ppm)	1	94	67-129
1,1-Dichloroethane	mg/kg (ppm)	1	92	68-115
cis-1,2-Dichloroethene	mg/kg (ppm)	1	93	72 - 127
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	97	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	1	89	62-131
Trichloroethene	mg/kg (ppm)	1	97	63-121
Tetrachloroethene	mg/kg (ppm)	1	105	72-114

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

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

Laboratory Code: 103339-30 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Vinyl chloride	mg/kg (ppm)	1	< 0.05	28	31	10-138	10
Chloroethane	mg/kg (ppm)	1	< 0.5	41	44	10-176	7
1,1-Dichloroethene	mg/kg (ppm)	1	< 0.05	48	<b>54</b>	10-160	12
Methylene chloride	mg/kg (ppm)	1	< 0.5	59	70	10-156	17
trans-1,2-Dichloroethene	mg/kg (ppm)	1	< 0.05	53	61	14-137	14
1,1-Dichloroethane	mg/kg (ppm)	1	< 0.05	55	63	19-140	14
cis-1,2-Dichloroethene	mg/kg (ppm)	1	< 0.05	58	67	25-135	14
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	< 0.05	62	71	12-160	14
1,1,1-Trichloroethane	mg/kg (ppm)	1	< 0.05	55	62	10-156	12
Trichloroethene	mg/kg (ppm)	1	< 0.02	60	67	21-139	11
Tetrachloroethene	mg/kg (ppm)	1	< 0.025	59	70	20-133	17

		Percent	
Reporting	Spike	Recovery	Acceptance
Units	Level	LCS	Criteria
mg/kg (ppm)	1	64	22-139
mg/kg (ppm)	1	71	9-163
mg/kg (ppm)	1	85	47-128
mg/kg (ppm)	1	97	10-184
mg/kg (ppm)	1	83	67-129
mg/kg (ppm)	1	84	68-115
mg/kg (ppm)	1	87	72 - 127
mg/kg (ppm)	1	89	56-135
mg/kg (ppm)	1	86	62-131
mg/kg (ppm)	1	88	63-121
mg/kg (ppm)	1	87	72 - 114
	Units  mg/kg (ppm)   Units         Level           mg/kg (ppm)         1           mg/kg (ppm)         1	Reporting         Spike         Recovery           Units         Level         LCS           mg/kg (ppm)         1         64           mg/kg (ppm)         1         71           mg/kg (ppm)         1         85           mg/kg (ppm)         1         97           mg/kg (ppm)         1         83           mg/kg (ppm)         1         84           mg/kg (ppm)         1         87           mg/kg (ppm)         1         89           mg/kg (ppm)         1         86           mg/kg (ppm)         1         88	

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

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

Laboratory Code: 103462-01 (Matrix Spike)

				Percent	Percent		
	Reporting	Spike	Sample	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	Result	MS	MSD	Criteria_	(Limit 20)
Vinyl chloride	ug/L (ppb)	10	< 0.2	65	67	36-166	3
Chloroethane	ug/L (ppb)	10	<1	65	69	46-160	6
1,1-Dichloroethene	ug/L (ppb)	10	<1	79	81	58-142	2
Methylene chloride	ug/L (ppb)	10	<5	94	104	50-145	10
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	77	79	61-136	3
1,1-Dichloroethane	ug/L (ppb)	10	<1	80	80	63-135	0
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	83	86	63-134	4
1,2-Dichloroethane (EDC)	${\sf ug/L}\ ({\sf ppb})$	10	<1	91	92	48-149	1
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	85	87	60-146	2
Trichloroethene	ug/L (ppb)	10	<1	88	91	66-135	3
Tetrachloroethene	ug/L (ppb)	10	<1	105	105	10-226	0

•			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Vinyl chloride	ug/L (ppb)	10	88	87	50-154	1
Chloroethane	ug/L (ppb)	10	88	85	58-146	3
1,1-Dichloroethene	ug/L (ppb)	10	99	96	67-136	3
Methylene chloride	ug/L (ppb)	10	97	96	19-178	1
trans-1,2-Dichloroethene	ug/L (ppb)	10	94	92	68-128	2
1,1-Dichloroethane	ug/L (ppb)	10	90	89	74-135	1
cis-1,2-Dichloroethene	ug/L (ppb)	10	93	92	74-136	1
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	94	94	66-129	0
1,1,1-Trichloroethane	ug/L (ppb)	10	95	94	74-142	1
Trichloroethene	ug/L (ppb)	10	92	93	67-133	1
Tetrachloroethene	ug/L (ppb)	10	108	104	76-121	4

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

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

Laboratory Code: 103407-03 1/5 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	. Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Naphthalene	mg/kg (ppm)	0.83	< 0.01	84	86	50-150	2
2-Methylnaphthalene	mg/kg (ppm)	0.83	< 0.01	85	85	50-150	0
1-Methylnaphthalene	mg/kg (ppm)	0.83	< 0.01	84	85	50-150	1
Acenaphthylene	mg/kg (ppm)	0.83	< 0.01	100	99	50-150	1
Acenaphthene	mg/kg (ppm)	0.83	< 0.01	92	92	50-150	0
Fluorene	mg/kg (ppm)	0.83	< 0.01	96	96	50-150	0
Phenanthrene	mg/kg (ppm)	0.83	0.029	87	88	50-150	1
Anthracene	mg/kg (ppm)	0.83	< 0.01	90	94	50-150	4
Fluoranthene	mg/kg (ppm)	0.83	0.046	94	95	50-150	1
Pyrene	mg/kg (ppm)	0.83	0.054	95	94	50-150	1
Benz(a)anthracene	mg/kg (ppm)	0.83	0.025	97	98	50-150	1
Chrysene	mg/kg (ppm)	0.83	0.026	90	92	50-150	2
Benzo(a)pyrene	mg/kg (ppm)	0.83	0.031	99	102	50-150	3
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	0.028	94	95	50-150	1
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	0.011	94	98	50-150	4
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	0.021	127	114	50-150	11
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	< 0.01	101	111	50-150	9
Benzo(g, h, i)perylene	mg/kg (ppm)	0.83	0.019	97	106	50-150	9

Laboratory Code: Laboratory Control Sample 1/5

Laboratory Code. Laboratory	Control Dample.	1/0		
			Percent	
	Reporting	Spike	Recovery	Acceptance
A 1+-		_ *	LCS	
Analyte	Units	Level	TOS	Criteria
Naphthalene	mg/kg (ppm)	0.83	87	58-108
2-Methylnaphthalene	mg/kg (ppm)	0.83	87	70-130
1-Methylnaphthalene	mg/kg (ppm)	0.83	87	70-130
Acenaphthylene	mg/kg (ppm)	0.83	101	70-130
Acenaphthene	mg/kg (ppm)	0.83	93	70-130
Fluorene	mg/kg (ppm)	0.83	99	70-130
Phenanthrene	mg/kg (ppm)	0.83	94	70-130
Anthracene	mg/kg (ppm)	0.83	96	70-130
Fluoranthene	mg/kg (ppm)	0.83	100	70-130
Pyrene	mg/kg (ppm)	0.83	99	70-130
Benz(a)anthracene	mg/kg (ppm)	0.83	101	70-130
Chrysene	mg/kg (ppm)	0.83	97	70-130
Benzo(a)pyrene	mg/kg (ppm)	0.83	103	70-130
Benzo(b)fluoranthene	mg/kg (ppm)	0.83	103	70-130
Benzo(k)fluoranthene	mg/kg (ppm)	0.83	96	70-130
Indeno(1,2,3-cd)pyrene	mg/kg (ppm)	0.83	104	70-130
Dibenz(a,h)anthracene	mg/kg (ppm)	0.83	99	70-130
Benzo(g,h,i)perylene	mg/kg (ppm)	0.83	98	70-130

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 04/01/21 Date Received: 03/17/21

Project: Renton Firestone 40139-2, F&BI 103339

## QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF SOIL SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Laboratory Code: 103407-06 1/6 (Matrix Spike) 1/6

Analyte	Reporting Units	Spike Level	Sample Result (Wet Wt)	Percent Recovery MS	Percent Recovery MSD	Control Limits	RPD (Limit 20)
Aroclor 1016	mg/kg (ppm)	0.25	< 0.02	90	92	44-107	2
Aroclor 1260	mg/kg (ppm)	0.25	< 0.02	93	92	38-124	1

Laboratory Code: Laboratory Control Sample 1/6

			$\operatorname{Percent}$	
Analyte	Reporting Units	Spike Level	Recovery LCS	Acceptance Criteria
Aroclor 1016	mg/kg (ppm)	0.25	96	47-158
Aroclor 1260	mg/kg (ppm)	0.25	100	69-147

#### **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.

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Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282

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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

March 24, 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 March 18, 2021 from the Renton Firestone 40139-2, F&BI 103364 project. There are 15 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures EAI0324R.DOC

#### **ENVIRONMENTAL CHEMISTS**

## CASE NARRATIVE

This case narrative encompasses samples received on March 18, 2020 by Friedman & Bruya, Inc. from the Environmental Associates Renton Firestone 40139-2, F&BI 103364 project. Samples were logged in under the laboratory ID's listed below.

	·
<u>Laboratory ID</u>	Environmental Associates
103364 -01	B15-4
103364 -02	B15-10
103364 -03	B15-15
103364 -04	B15-20
103364 -05	B15-25
103364 -06	B15-30
103364 -07	B15
103364 -08	B16-4
103364 -09	B16-10
103364 -10	B16-15
103364 -11	B16-20
103364 -12	B16-25
103364 -13	B16-30
103364 -14	B16
103364 -15	B17-3
103364 - 16	B17-9-10
103364 -17	B17-15
103364 -18	B17-20
103364 -19	B17-25
103364 -20	B17
103364 -21	B18-3
103364 -22	B18-10
103364 -23	B18-15
103364 -24	B18-20
103364 -25	B18-25
103364 -26	B18
103364 -27	B19-3
103364 -28	B19-10
103364 -29	B19-15
103364 -30	B19-20
103364 -31	B19-25
103364 -32	B19
100001 -02	

The 8260D matrix spike and matrix spike duplicate exceeded the relative percent difference for methylene chloride. The analyte was not detected in the samples therefore the data were acceptable.

All other quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/24/21 Date Received: 03/18/21

Project: Renton Firestone 40139-2, F&BI 103364

Date Extracted: 03/22/21 Date Analyzed: 03/22/21

## RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	$\frac{\text{Diesel Range}}{(\text{C}_{10}\text{-C}_{25})}$	Motor Oil Range (C <sub>25</sub> -C <sub>36</sub> )	Surrogate (% Recovery) (Limit 48-168)
B16-4 103364-08	<50	<250	86
B16-10 103364-09	<50	<250	92
B16-15 103364-10	<50	<250	92
B17-3 103364-15	<50	<250	84
B17-9-10 103364-16	<50	<250	82
B17-15 103364-17	<50	<250	92
B18-3 103364-21	<50	<250	83
B18-10 103364-22	<50	<250	81
B18-15 103364-23	<50	<250	92
B19-3 103364-27	<50	<250	91

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/24/21 Date Received: 03/18/21

Project: Renton Firestone 40139-2, F&BI 103364

Date Extracted: 03/22/21 Date Analyzed: 03/22/21

# RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25} ext{)}}$	Motor Oil Range (C <sub>25</sub> -C <sub>36</sub> )	Surrogate (% Recovery) (Limit 48-168)
B19-10 103364-28	<50	<250	83
B19-15 103364-29	<50	<250	90
Method Blank	<50	<250	95

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/24/21 Date Received: 03/18/21

Project: Renton Firestone 40139-2, F&BI 103364

Date Extracted: 03/19/21 Date Analyzed: 03/19/21

## RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	$rac{ ext{Diesel Range}}{ ext{(C}_{10} ext{-C}_{25} ext{)}}$	Motor Oil Range (C <sub>25</sub> -C <sub>36</sub> )	Surrogate (% Recovery) (Limit 41-152)
B15 103364-07	130 х	<250	81
B16 103364-14	79 x	<250	39
B17 103364-20	86 x	<250	90
B18 103364-26	62 x	<250	106
B19 103364-32	<53	<260	46
Method Blank	<50	<250	105

## **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B15-4	Client:	Environmental Associates
Date Received:	03/18/21	Project:	Renton Firestone 40139-2
Date Extracted:	03/19/21	Lab ID:	103364-01
Date Analyzed:	03/19/21	Data File:	031914.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM
		_	

		$\operatorname{Lower}$	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	106	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	97	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B15-10 Client: Environmental Associates
Date Received: 03/18/21 Project: Renton Firestone 40139-2

Lab ID: Date Extracted: 03/19/21 103364-02 Date Analyzed: 03/19/21 Data File: 031915.D Matrix: Soil Instrument: GCMS4 Units: mg/kg (ppm) Dry Weight Operator: **JCM** 

Lower Upper Surrogates: % Recovery: Limit: Limit: 1.2-Dichloroethane-d4 107 90 109 Toluene-d8 98 89 112 101 4-Bromofluorobenzene 84 115

Concentration mg/kg (ppm) Compounds: < 0.05 Vinyl chloride Chloroethane < 0.5 1.1-Dichloroethene < 0.05 Methylene chloride < 0.5 trans-1,2-Dichloroethene < 0.05 < 0.05 1,1-Dichloroethane cis-1,2-Dichloroethene < 0.05 1,2-Dichloroethane (EDC) < 0.05 1,1,1-Trichloroethane < 0.05 Trichloroethene < 0.02 Tetrachloroethene < 0.025

## ENVIRONMENTAL CHEMISTS

## Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID:	B15-25	Client:	Environmental Associates
Date Received:	03/18/21	Project:	Renton Firestone 40139-2
Date Extracted:	03/19/21	Lab ID:	103364-05
Date Analyzed:	03/19/21	Data File:	031916.D
Matrix:	Soil	Instrument:	GCMS4
Units:	mg/kg (ppm) Dry Weight	Operator:	JCM

	Lower	Upper
% Recovery:	Limit:	Limit:
102	90	109
98	89	112
103	84	115
	102 98	% Recovery:       Limit:         102       90         98       89

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B16-4 Client:
Date Received: 03/18/21 Project:
Date Extracted: 03/19/21 Lab ID:
Date Analyzed: 03/19/21 Data F:
Matrix: Soil Instrum
Units: mg/kg (ppm) Dry Weight Operate

Project: Renton Firestone 40139-2
Lab ID: 103364-08
Data File: 031917.D
Instrument: GCMS4
Operator: JCM

**Environmental Associates** 

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	102	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	99	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B16-10 Client: Environmental Associates
Date Received: 03/18/21 Project: Renton Firestone 40139-2

Lab ID: Date Extracted: 03/19/21 103364-09 Date Analyzed: 03/19/21 Data File: 031918.DMatrix: Soil Instrument: GCMS4 Units: mg/kg (ppm) Dry Weight Operator: JCM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	103	90	109
Toluene-d8	99	89	112
4-Bromofluorobenzene	101	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

## **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Date Received: Date Extracted:	03/18/21 03/19/21	Client: Project: Lab ID: Data File:	Environmental Associates Renton Firestone 40139-2 103364-12 031919.D
Date Analyzed: Matrix: Units:	03/19/21 Soil mg/kg (ppm) Dry Weight	Instrument: Operator:	
		_	

		$\operatorname{Lower}$	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	105	90	109
Toluene-d8	100	89	112
4-Bromofluorobenzene	99	84	115

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Method Blank
Date Received: Not Applicable
Date Extracted: 03/19/21
Date Analyzed: 03/19/21
Matrix: Soil
Units: mg/kg (ppm) Dry Weight

Client: Environmental Associates
Project: Renton Firestone 40139-2
Lab ID: 01-643 mb
Data File: 031909.D
Instrument: GCMS4
Operator: JCM

	Lower	Upper
% Recovery:	Limit:	Limit:
109 vo	90	109
100	89	112
98	84	115
	109 vo 100	% Recovery:       Limit:         109 vo       90         100       89

Compounds:	Concentration mg/kg (ppm)
Vinyl chloride	< 0.05
Chloroethane	< 0.5
1,1-Dichloroethene	< 0.05
Methylene chloride	< 0.5
trans-1,2-Dichloroethene	< 0.05
1,1-Dichloroethane	< 0.05
cis-1,2-Dichloroethene	< 0.05
1,2-Dichloroethane (EDC)	< 0.05
1,1,1-Trichloroethane	< 0.05
Trichloroethene	< 0.02
Tetrachloroethene	< 0.025

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/24/21 Date Received: 03/18/21

Project: Renton Firestone 40139-2, F&BI 103364

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

Laboratory Code: 103364-08 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	< 50	82	94	73-135	14

Laboratory Code: Laboratory Control Sample

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Diesel Extended	mg/kg (ppm)	5,000	92	74-139	

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/24/21 Date Received: 03/18/21

Project: Renton Firestone 40139-2, F&BI 103364

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

Laboratory Code: Laboratory Control Sample

			Percent	$\operatorname{Percent}$		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	112	124	63-142	10

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/24/21 Date Received: 03/18/21

Project: Renton Firestone 40139-2, F&BI 103364

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

Laboratory Code: 103364-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet wt)	MS	MSD	Criteria	(Limit 20)
Vinyl chloride	mg/kg (ppm)	1	< 0.05	24	27	10-138	12
Chloroethane	mg/kg (ppm)	1	< 0.5	34	40	10-176	16
1,1-Dichloroethene	mg/kg (ppm)	1	< 0.05	41	46	10-160	11
Methylene chloride	mg/kg (ppm)	1	< 0.5	53	70	10-156	28 vo
trans-1,2-Dichloroethene	mg/kg (ppm)	1	< 0.05	45	51	14-137	12
1,1-Dichloroethane	mg/kg (ppm)	1	< 0.05	48	57	19-140	17
cis-1,2-Dichloroethene	mg/kg (ppm)	1	< 0.05	51	61	25-135	18
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	< 0.05	55	66	12-160	18
1,1,1-Trichloroethane	mg/kg (ppm)	1	< 0.05	47	56	10-156	17
Trichloroethene	mg/kg (ppm)	1	< 0.02	83	88	21-139	6
Tetrachloroethene	mg/kg (ppm)	1	< 0.025	<b>52</b>	61	20-133	16

Laboratory Code: Laboratory Control Sample

Bassiatory coust Bassiatory	COLLEGE CALLED TO			
			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Vinyl chloride	mg/kg (ppm)	1	63	22-139
Chloroethane	mg/kg (ppm)	1	70	9-163
1,1-Dichloroethene	mg/kg (ppm)	1	89	47-128
Methylene chloride	mg/kg (ppm)	1	102	10-184
trans-1,2-Dichloroethene	mg/kg (ppm)	1	89	67 - 129
1,1-Dichloroethane	mg/kg (ppm)	1	90	68-115
cis-1,2-Dichloroethene	mg/kg (ppm)	1	91	72 - 127
1,2-Dichloroethane (EDC)	mg/kg (ppm)	1	98	56-135
1,1,1-Trichloroethane	mg/kg (ppm)	1	91	62-131
Trichloroethene	mg/kg (ppm)	1	93	63-121
Tetrachloroethene	mg/kg (ppm)	1	101	72-114

#### **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.

103364			SAMPLI	E CHAIN	OF	CUS	STO	DY		03	18-	2	V3.	3/E	04/803/	/ #3/v	
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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID VOCS EPA 8260	PAHs EPA 8270	PCBs EPA 8082				No	tes	
B15-4	OLAC	3-18-21	8:52	Soil	3				×							.#	
B15-10	07		8:56	1	3				X								
B15-15	03		9:00		3												
B15-20	84		9:18		3												
BU5-25	05		9:30		3				X					-			
B15-30	06		9:45	V	13							ì			,		
B15	07A-D	,	9:08	Water	4	X											
B16-4	08 A 7		10:04	Soil	3	X			$\times$								
B16-10	09		10:08	1	3	X			X								
B16-15	10	1	10:15	Ü	3	X											
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102264	SAMPLE CHAIN OF CUSTO	<del>-</del>	VS3   EOY 303/193/
Report to Effic Zuern	SAMPLERS (signature)	4	Page #Of
Company EAT	PROJECT NAME  Renton Firestone	PO# 40139-Z	© Standard turnaround © RUSH Rush charges authorized by:
AddressCity, State, ZIP	REMARKS	INVOICE TO	SAMPLE DISPOSAL  ☐ Archive samples
Phone Email	Project specific RLs? - Yes / No		□ Other Default: Dispose after 30 days

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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOC PPA 8260	PAHs EPA 8270	PCBs EPA 8082	-				Notes	
B16-20	11 AZ	3-18-21	10:40	Soil	3													
B16-25	12		(0'53		3					X								
B16-30	13		11:07	J	3													
B16	4 A-F		10125	Waster	6	X												
B17-3	15 A-C		1 (;3)	Sail	3	4										·		
B17-9-10	16		11:35		3	×												
B17-15	7		11:40		3	X												
B17-20	18		12:04		3													
B17-25	17		12:18	7	3													
B17	20 A.E	V	11:50	Waster	5	X												

Friedman & Bruya, Inc. 3012 16<sup>th</sup> Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282

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103364	SAMPLE CHAIN OF CUSTO	DDY 03-18-21	VS3   EUX BU3/AI3/
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City, State, ZIP	REWLARKS	MANOICE 10	☐ Archive samples
PhoneEmail	Project specific RLs? - Yes / No		Default: Dispose after 30 days

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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH-Dx	NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082					Notes
B18-3	21 AC	3-18-21	12:33	Soil	3	X											
B18-10	22	)	12:37	1	3	X											
B18-15	23		12=42		3	X											
B18-20	24		(>08		3												
B18-25	25 -		1:24	1	3												,
BIB	26 A-F		12:50	Waster	6	X											
B19-3	27 AC		1:35	Soil	3	X											
B19-10	25		1:40	1	3	X										·	
B19-15	29	1	1:44		3	X											
B19-Z0	30		2:10	7	3										,		

Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282

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Relinquished by:				
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City, State, ZIP			REMAR	tks					L	NVO	ICE	TO			] Arcl	nive s	amples		MLJ .	
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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars		NWTPH-Gx	BTEX EPA 8021	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082						Note	<b>8</b>	
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#### **ENVIRONMENTAL CHEMISTS**

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Arina Podnozova, B.S. Eric Young, B.S. 3012 16th Avenue West Seattle, WA 98119-2029 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

March 29, 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 March 19, 2021 from the Renton Firestone 40139-2, F&BI 103389 project. There are 16 pages included in this report. Any samples that may remain are currently scheduled for disposal in 30 days, or as directed by the Chain of Custody document. If you would like us to return your samples or arrange for long term storage at our offices, please contact us as soon as possible.

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

Sincerely,

FRIEDMAN & BRUYA, INC.

Michael Erdahl Project Manager

Enclosures EAI0329R.DOC

#### **ENVIRONMENTAL CHEMISTS**

#### CASE NARRATIVE

This case narrative encompasses samples received on March 19, 2021 by Friedman & Bruya, Inc. from the Environmental Associates Renton Firestone 40139-2, F&BI 103389 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u>	Environmental Associates
103389 -01	B7A
103389 -02	B20-2
103389 -03	B20-6
103389 -04	B20-9-10
103389 -05	B20-14
103389 -06	B20-18
103389 -07	B20

A 6020B internal standard failed the acceptance criteria for sample B7A. The sample was diluted and reanalyzed with acceptable results. Both data sets were reported.

All other quality control requirements were acceptable.

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/29/21 Date Received: 03/19/21

Project: Renton Firestone 40139-2, F&BI 103389

Date Extracted: 03/22/21 Date Analyzed: 03/22/21

## RESULTS FROM THE ANALYSIS OF SOIL SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported on a Dry Weight Basis Results Reported as mg/kg (ppm)

Sample ID Laboratory ID	$\frac{\text{Diesel Range}}{\text{(C}_{10}\text{-C}_{25})}$	Motor Oil Range (C <sub>25</sub> -C <sub>36</sub> )	Surrogate (% Recovery) (Limit 53-144)
B20-6 103389-03	<50	<250	94
B20-9-10 103389-04	<50	<250	96
B20-14 103389-05	<50	<250	93
Method Blank	<50	<250	95

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/29/21 Date Received: 03/19/21

Project: Renton Firestone 40139-2, F&BI 103389

Date Extracted: 03/22/21 Date Analyzed: 03/22/21

# RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS DIESEL AND MOTOR OIL USING METHOD NWTPH-Dx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	$\frac{\mathrm{Diesel}\;\mathrm{Range}}{(\mathrm{C}_{10}\text{-}\mathrm{C}_{25})}$	Motor Oil Range (C <sub>25</sub> -C <sub>36</sub> )	Surrogate (% Recovery) (Limit 41-152)
B20 103389-07	<50	<250	81
Method Blank	<50	<250	115

#### **ENVIRONMENTAL CHEMISTS**

## Analysis For Dissolved Metals By EPA Method 6020B

Client ID: B7A f Client: Environmental Associates

Date Received: 03/19/21 Project: Renton Firestone 40139-2, F&BI 103389

Date Extracted: 03/25/21 Lab ID: 103389-01 Date Analyzed: 03/25/21 Data File: 103389-01.108 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Analyte: Concentration ug/L (ppb)

 Arsenic
 1.89

 Cadmium
 <1</td>

 Chromium
 <1 J</td>

 Lead
 <1</td>

 Mercury
 <1</td>

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID: B7A f Client: Environmental Associates

Date Received: 03/19/21 Project: Renton Firestone 40139-2, F&BI 103389

 Date Extracted:
 03/25/21
 Lab ID:
 103389-01 x10

 Date Analyzed:
 03/26/21
 Data File:
 103389-01 x10.053

Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Concentration

Analyte: ug/L (ppb)

Chromium <10

#### **ENVIRONMENTAL CHEMISTS**

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

Client ID:	Method Blank f	Client:	Environmental Associates

Renton Firestone 40139-2, F&BI 103389 Date Received: NA

Project: Lab ID: Date Extracted: 03/25/21 I1-191 mb Date Analyzed: 03/25/21 Data File: I1-191 mb.106 Matrix: Water Instrument: ICPMS2 Units: ug/L (ppb) Operator: SP

Analyte:	Concentration ug/L (ppb)
Arsenic	<1
Cadmium	<1
Chromium	<1
Lead	<1
Mercury	<1

## ENVIRONMENTAL CHEMISTS

## Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	B7A	Client:	Environmental Associates
Date Received:	03/19/21	Project:	Renton Firestone 40139-2, F&BI 103389
Date Extracted:	03/22/21	Lab ID:	103389-01 1/2
Date Analyzed:	03/22/21	Data File:	032214.D
Matrix:	Water	Instrument:	GCMS8
Units:	ug/L (ppb)	Operator:	YA
		Lamen	Timore

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
2-Fluorophenol	36	15	99
Phenol-d6	30	11	65
Nitrobenzene-d5	95	10	145
2-Fluorobiphenyl	96	16	138
2,4,6-Tribromophenol	90	12	132
Terphenyl-d14	94	35	138

Terphenyl-d14	94	
Compounds:	Concentration ug/L (ppb)	
Naphthalene	< 0.4	
2-Methylnaphthalene	< 0.4	
1-Methylnaphthalene	< 0.4	
Acenaphthylene	< 0.04	
Acenaphthene	< 0.04	
Fluorene	1.4 646	
Phenanthrene	2.9 NA	
Anthracene	< 0.04	
Fluoranthene	< 0.04	
Pyrene	1.9	
Benz(a)anthracene	< 0.04	
Chrysene	0.61	
Benzo(a)pyrene	< 0.04	
Benzo(b)fluoranthene	< 0.04	
Benzo(k)fluoranthene	< 0.04	
Indeno(1,2,3-cd)pyrene	< 0.04	
Dibenz(a,h)anthracene	< 0.04	
Benzo(g,h,i)perylene	< 0.08	

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For Semivolatile Compounds By EPA Method 8270E

Client Sample ID:	Method Blank	Client:	Environmental Associates
T) ( T) ' 1	NT / A 1' 11	70 ' '	D 1 D 1 10100 0

Date Received: Not Applicable Project: Renton Firestone 40139-2, F&BI 103389
Date Extracted: 03/22/21 Lab ID: 01-709 mb

Date Analyzed: 03/22/21 Data File: 032207.D

Matrix: Water Instrument: GCMS8

Units: ug/L (ppb) Operator: YA

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
2-Fluorophenol	23	15	99
Phenol-d6	16	11	65
Nitrobenzene-d5	101	10	145
2-Fluorobiphenyl	93	16	138
2,4,6-Tribromophenol	62	12	132
Terphenyl-d14	97	35	138

## Concentration Compounds: ug/L (ppb)

*	0 41 /
Naphthalene	< 0.2
2-Methylnaphthalene	< 0.2
1-Methylnaphthalene	< 0.2
Acenaphthylene	< 0.02
Acenaphthene	< 0.02
Fluorene	< 0.02
Phenanthrene	< 0.02
Anthracene	< 0.02
Fluoranthene	< 0.02
Pyrene	< 0.02
Benz(a)anthracene	< 0.02
Chrysene	< 0.02
Benzo(a)pyrene	< 0.02
Benzo(b)fluoranthene	< 0.02
Benzo(k)fluoranthene	< 0.02
Indeno(1,2,3-cd)pyrene	< 0.02
Dibenz(a,h)anthracene	< 0.02
Benzo(g,h,i)perylene	< 0.04

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For PCBs By EPA Method 8082A

Client Sample ID:	B7A	Client:	Environmental Associates
Date Received:	03/19/21	Project:	Renton Firestone 40139-2, F&BI 103389
Date Extracted:	03/23/21	Lab ID:	103389-01
Date Analyzed:	03/24/21	Data File:	032411.D
Matrix:	Water	Instrument:	GC9
Units:	ug/L (ppb)	Operator:	VM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
TCMX	40	25	160

	<del>- •</del>
Compounds:	Concentration ug/L (ppb)
Aroclor 1221	< 0.1
Aroclor 1232	< 0.1
Aroclor 1016	< 0.1
Aroclor 1242	< 0.1
Aroclor 1248	< 0.1
Aroclor 1254	< 0.1
Aroclor 1260	< 0.1
Aroclor 1262	< 0.1
Aroclor 1268	< 0.1

#### **ENVIRONMENTAL CHEMISTS**

#### Analysis For PCBs By EPA Method 8082A

Client Sample ID: Method Blank Client: Environmental Associates

Date Received: Not Applicable Project: Renton Firestone 40139-2, F&BI 103389

Date Extracted: 03/23/21 Lab ID: 01-714 mb Date Analyzed: 03/24/21 Data File: 032408.DWater GC9 Matrix: Instrument: Units: ug/L (ppb) Operator: VM

Concentration Compounds: ug/L (ppb) Aroclor 1221 < 0.1 Aroclor 1232 < 0.1 Aroclor 1016 < 0.1 Aroclor 1242 < 0.1 Aroclor 1248 < 0.1 Aroclor 1254 < 0.1 Aroclor 1260 < 0.1 Aroclor 1262 < 0.1 Aroclor 1268 < 0.1

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/29/21 Date Received: 03/19/21

Project: Renton Firestone 40139-2, F&BI 103389

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

Laboratory Code: 103390-01 (Matrix Spike)

			Sample	Percent	Percent		
	Reporting	Spike	Result	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	(Wet Wt)	MS	MSD	Criteria	(Limit 20)
Diesel Extended	mg/kg (ppm)	5,000	<50	86	88	64-133	2

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Diesel Extended	mg/kg (ppm)	5,000	82	58-147

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/29/21 Date Received: 03/19/21

Project: Renton Firestone 40139-2, F&BI 103389

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

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

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/29/21 Date Received: 03/19/21

Project: Renton Firestone 40139-2, F&BI 103389

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

Laboratory Code: 103389-01 x10 (Matrix Spike)

Analyte	Reporting Units	Spike Level	Sample Result	Percent Recovery MS	Percent Recovery MSD	Acceptance Criteria	RPD (Limit 20)
Arsenic	ug/L (ppb)	10	<10	91	92	75-125	1
Cadmium	ug/L (ppb)	5	<10	99	97	75-125	2
Chromium	ug/L (ppb)	20	<10	89	90	75-125	1
Lead	ug/L (ppb)	10	<10	93	92	75-125	1
Mercury	ug/L (ppb)	5	<10	91	92	75-125	1

			Percent	
	Reporting	Spike	Recovery	Acceptance
Analyte	Units	Level	LCS	Criteria
Arsenic	ug/L (ppb)	10	91	80-120
Cadmium	ug/L (ppb)	5	99	80-120
Chromium	ug/L (ppb)	20	97	80-120
Lead	ug/L (ppb)	10	97	80-120
Mercury	ug/L (ppb)	5	99	80-120

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/29/21 Date Received: 03/19/21

Project: Renton Firestone 40139-2, F&BI 103389

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

,	-		Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Naphthalene	ug/L (ppb)	5	79	78	56-100	1
2-Methylnaphthalene	ug/L (ppb)	5	81	81	60-104	0
1-Methylnaphthalene	ug/L (ppb)	5	80	81	60-104	1
Acenaphthylene	ug/L (ppb)	5	100	99	70-130	1
Acenaphthene	ug/L (ppb)	5	91	90	65-122	1
Fluorene	ug/L (ppb)	5	86	87	70-130	1
Phenanthrene	ug/L (ppb)	5	89	89	70-130	0
Anthracene	ug/L (ppb)	5	93	93	70-130	0
Fluoranthene	ug/L (ppb)	5	103	104	70-130	1
Pyrene	ug/L (ppb)	5	102	99	70-130	3
Benz(a)anthracene	ug/L (ppb)	5	98	97	70-130	1
Chrysene	ug/L (ppb)	5	93	93	70-130	0
Benzo(a)pyrene	ug/L (ppb)	5	91	92	70-130	1
Benzo(b)fluoranthene	ug/L (ppb)	5	97	99	70-130	2
Benzo(k)fluoranthene	ug/L (ppb)	5	96	96	70-130	0
Indeno(1,2,3-cd)pyrene	ug/L (ppb)	5	101	99	57-141	2
Dibenz(a,h)anthracene	ug/L (ppb)	5	98	95	57-137	3
Benzo(g,h,i)perylene	ug/L (ppb)	5	96	92	50-143	4

#### **ENVIRONMENTAL CHEMISTS**

Date of Report: 03/29/21 Date Received: 03/19/21

Project: Renton Firestone 40139-2, F&BI 103389

#### QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR POLYCHLORINATED BIPHENYLS AS AROCLOR 1016/1260 BY EPA METHOD 8082A

Analyte	Reporting Units	Spike Level	Percent Recovery LCS	Percent Recovery LCSD	Acceptance Criteria	RPD (Limit 20)
Aroclor 1016	ug/L (ppb)	0.25	65	62	25-165	5
Aroclor 1260	ug/L (ppb)	0.25	82	76	25-163	8

#### **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.
- dy 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.

103389	!		SAMPLI	E CHAIN	OF	CUSI	OD	Y		MC	0	3-19	7-2	-1		Ł	. Vw
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Phone 475-455-9025 E		i ton mental	- Project	specific RL	s? - Y	es / N	0 5	אנג	des	pres	t Sub	milte)		Oth Defau	er	Dispose afte	er 30 days
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Sample ID	Lab ID	Date Sampled	Time Sampled	Sample Type	# of Jars	NWTPH.Dx	NWTPH-Gx	NWTPH-HCID	VOCs EPA 8260	PAHs EPA 8270	PCBs EPA 8082	miches ma				No	otes
B7.A	OLA-F	3-19-21	9:35	Whoter	6					X	X	X					
B20-2	02 AC		10:08	Soil	3												
B20-6	03		10:23		3	$\times$											
BZ0-9-10	04		10:35		3	X											
620-14	05		10:52	·	3	X											
BZ0-18	96		11:49	J	3												,
B20	67	J	11:06	Water	3	X											
													Sa	mpl	s re	eived at_	10c
	ST	GNATURE		1	PRIN	IT NAI	VIF.				C	OMP	AN	7		DATE	TIME
Friedman & Bruya, Inc.	Relinquished by:	lu Cher		1	~~ (						Ë	AT				3-19-21	3;33
3012 16th Avenue West	Received by			FOI	- 1/	I		*************		1		R	-			2/1/2	1533

3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282

SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
Relinquished by:	Eric Zum	EAE	3-19-21	3;33
Received by	Elicifan	F.B	3/1/2	1533
Relinquished y:				
Received by:				

#### DRAFT

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: B6A-10 ht Client: Environmental Associates

Date Received: 03/17/21 Project: Renton Firestone 40139-2, F&BI 103339

Lab ID: Date Extracted: 04/01/21 103339-29 04/01/21 12:37 Date Analyzed: Data File: 040113.D Instrument: GCMS4 Matrix: Soil Units: mg/kg (ppm) Dry Weight Operator: JCM

Lower Upper Limit: Surrogates: % Recovery: Limit: 1,2-Dichloroethane-d4 98 90 109 Toluene-d8 98 89 112 4-Bromofluorobenzene 101 84 115

Compounds: Concentration mg/kg (ppm)

Hexane<0.25</th>Methyl t-butyl ether (MTBE)<0.05</td>1,2-Dibromoethane (EDB)<0.05</td>1,2-Dichloroethane (EDC)<0.05</td>

#### Analysis For Volatile Compounds By EPA Method 8260D

Client Sample ID: Method Blank Client: Environmental Associates

Date Received: Not Applicable Project: Renton Firestone 40139-2, F&BI 103339

04/01/21 Date Extracted: Lab ID: 01-679 mb Date Analyzed: 04/01/21 Data File: 040110.D Matrix: Soil Instrument: GCMS4 Units: mg/kg (ppm) Dry Weight Operator: JCM

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	104	90	109
Toluene-d8	97	89	112
4-Bromofluorobenzene	98	84	115

	Concentration mg/kg (ppm)
Compounds:	mg/kg (ppm)

< 0.25
< 0.05
< 0.05
< 0.05

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	Phone 425-453-4625 I	associateria	C. com	Project	specific RI	s? - Y	es /	No	<u> </u>				<del></del>		) [D		t: Disp	ose afte	r 30 day	5_
•			Data	Time			ξŪχ	I-Gx	4 8021			·		10,000	O LEI	T				-
	Sample ID	Sample ID Lab ID Sa			Sample Type	# of Jars	NWTPH-D	NWTPH-Gx	BTEX EPA 8021	HATTAN	VOCS EPA 8280	PAHs EPA 8270	PCBs BPA 8082						tes	
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Friedman & Bruya, Inc. 3012 16th Avenue West Seattle, WA 98119-2029 Ph. (206) 285-8282

	SIGNATURE	PRINT NAME	COMPANY	DATE	TIME
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9	Relinquished by:	8	Samples re	ceived at	4 °C
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	Ph. (206) 285-8282	Receiv	ed by:																	



3600 Fremont Ave. N.
Seattle, WA 98103
T: (206) 352-3790
F: (206) 352-7178
info@fremontanalytical.com

Friedman & Bruya Michael Erdahl 3012 16th Ave. W. Seattle, WA 98119

RE: 103339

Work Order Number: 2104013

April 08, 2021

#### Attention Michael Erdahl:

Fremont Analytical, Inc. received 1 sample(s) on 4/1/2021 for the analyses presented in the following report.

Hexavalent Chromium by EPA Method 7196 Sample Moisture (Percent Moisture)

This report consists of the following:

- Case Narrative
- Analytical Results
- Applicable Quality Control Summary Reports
- Chain of Custody

All analyses were performed consistent with the Quality Assurance program of Fremont Analytical, Inc. Please contact the laboratory if you should have any questions about the results.

Thank you for using Fremont Analytical.

Sincerely,

Brianna Barnes Project Manager

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



Date: 04/08/2021

CLIENT: Friedman & Bruya Work Order Sample Summary

**Project:** 103339 **Work Order:** 2104013

 Lab Sample ID
 Client Sample ID
 Date/Time Collected
 Date/Time Received

 2104013-001
 B6A-10
 03/17/2021 2:26 PM
 04/01/2021 11:59 AM



#### **Case Narrative**

WO#: 2104013 Date: 4/8/2021

CLIENT: Friedman & Bruya

Project: 103339

#### I. SAMPLE RECEIPT:

Samples receipt information is recorded on the attached Sample Receipt Checklist.

#### II. GENERAL REPORTING COMMENTS:

Results are reported on a wet weight basis unless dry-weight correction is denoted in the units field on the analytical report ("mg/kg-dry" or "ug/kg-dry").

Matrix Spike (MS) and MS Duplicate (MSD) samples are tested from an analytical batch of "like" matrix to check for possible matrix effect. The MS and MSD will provide site specific matrix data only for those samples which are spiked by the laboratory. The sample chosen for spike purposes may or may not have been a sample submitted in this sample delivery group. The validity of the analytical procedures for which data is reported in this analytical report is determined by the Laboratory Control Sample (LCS) and the Method Blank (MB). The LCS and the MB are processed with the samples and the MS/MSD to ensure method criteria are achieved throughout the entire analytical process.

#### III. ANALYSES AND EXCEPTIONS:

Exceptions associated with this report will be footnoted in the analytical results page(s) or the quality control summary page(s) and/or noted below.



#### Qualifiers & Acronyms

WO#: 2104013

Date Reported: 4/8/2021

#### Qualifiers:

- \* Flagged value is not within established control limits
- B Analyte detected in the associated Method Blank
- D Dilution was required
- E Value above quantitation range
- H Holding times for preparation or analysis exceeded
- I Analyte with an internal standard that does not meet established acceptance criteria
- J Analyte detected below Reporting Limit
- N Tentatively Identified Compound (TIC)
- Q Analyte with an initial or continuing calibration that does not meet established acceptance criteria
- S Spike recovery outside accepted recovery limits
- ND Not detected at the Reporting Limit
- R High relative percent difference observed

#### Acronyms:

%Rec - Percent Recovery

CCB - Continued Calibration Blank

CCV - Continued Calibration Verification

DF - Dilution Factor

DUP - Sample Duplicate

HEM - Hexane Extractable Material

ICV - Initial Calibration Verification

LCS/LCSD - Laboratory Control Sample / Laboratory Control Sample Duplicate

MCL - Maximum Contaminant Level

MB or MBLANK - Method Blank

MDL - Method Detection Limit

MS/MSD - Matrix Spike / Matrix Spike Duplicate

PDS - Post Digestion Spike

Ref Val - Reference Value

REP - Sample Replicate

RL - Reporting Limit

RPD - Relative Percent Difference

SD - Serial Dilution

SGT - Silica Gel Treatment

SPK - Spike

Surr - Surrogate



## **Analytical Report**

Work Order: 2104013
Date Reported: 4/8/2021

Client: Friedman & Bruya Collection Date: 3/17/2021 2:26:00 PM

Project: 103339

Lab ID: 2104013-001 Matrix: Soil

Client Sample ID: B6A-10

Analyses	Result	RL	Qual	Units	DF	Date Analyzed
Sample Moisture (Percent Mo	oisture)			Bato	h ID: R6	6294 Analyst: CH
Percent Moisture	25.7	0.500		wt%	1	4/1/2021 4:53:47 PM
Hexavalent Chromium by EP	A Method 7196			Bato	h ID: 31	887 Analyst: LB
Chromium, Hexavalent	ND	0.663		mg/Kg-dry	1	4/6/2021 3:57:00 PM





Work Order: 2104013

QC SUMMARY REPORT

CLIENT: Friedman & Bruva

Project: 103339						н	lexavale	ent Chrom	ium by EP	'A Metho	d 71
Sample ID: MB-31887	SampType: MBLK			Units: mg/Kg		Prep Date:	4/6/2021		RunNo: 664	136	
Client ID: MBLKS	Batch ID: 31887					Analysis Date:	4/6/2021		SeqNo: 133	36765	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit f	RPD Ref Val	%RPD	RPDLimit	Qua
Chromium, Hexavalent	ND	0.500									
Sample ID: LCS-31887	SampType: LCS			Units: mg/Kg		Prep Date:	4/6/2021	1	RunNo: 664	136	
Client ID: LCSS	Batch ID: 31887					Analysis Date:	4/6/2021		SeqNo: 133	86766	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit F	RPD Ref Val	%RPD	RPDLimit	Qua
Chromium, Hexavalent	ND	0.500	0.5000	0	97.6	86.5	114				
Sample ID: 2104013-001ADUP	SampType: DUP			Units: mg/Kg-	dry	Prep Date:	4/6/2021		RunNo: 664	136	
Client ID: B6A-10	Batch ID: 31887					Analysis Date:	4/6/2021		SeqNo: 133	6768	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	lighLimit F	RPD Ref Val	%RPD	RPDLimit	Qua
Chromium, Hexavalent	ND	0.670						0		30	П
Sample ID: 2104013-001AMS	SampType: MS			Units: mg/Kg-	dry	Prep Date:	4/6/2021	-	RunNo: 664	136	
Client ID: B6A-10	Batch ID: 31887					Analysis Date:	4/6/2021		SeqNo: 133	6769	
Analyte	Result	RL	SPK value	SPK Ref Val	%REC	LowLimit H	ighLimit F	RPD Ref Val	%RPD	RPDLimit	Qua
Chromium, Hexavalent NOTES:	ND	0.673	0.6726	0.1327	-19.7	6.79	138				S
S - Outlying spike recovery(ies)		lysis was pe	erformed and r			B - B -			A. 11. 240		
Sample ID: 2104013-001AMSD	SampType: MSD			Units: mg/Kg-	ary	Prep Date:	4/6/2021		RunNo: 664		
Client ID: B6A-10	Batch ID: 31887	DI	CDV value	PDK DetVel	W DEC	Analysis Date:		DDD Dativel	SeqNo: 133		
Analyte	Result	RL	SPK value	SPK Ref Val	%REC			RPD Ref Val	%RPD	RPDLimit	Qua
Chromium, Hexavalent	0.389	0.673	0.6726	0.1327	38.1	6.79	138	0		30	



## Sample Log-In Check List

Client Name: FB	Work Order Num	ber: 2104013	
Logged by: Gabrielle Coeuille	Date Received:	4/1/2021	11:59:00 AM
Chain of Custody			
1. Is Chain of Custody complete?	Yes 🗹	No 🗆	Not Present
2. How was the sample delivered?	Client		
og In			
3. Coolers are present?	Yes 🗌	No 🗹	NA 🗆
	No cooler prese	ent	
4. Shipping container/cooler in good condition?	Yes 🗹	No 🗆	
<ol><li>Custody Seals present on shipping container/cooler? (Refer to comments for Custody Seals not intact)</li></ol>	Yes 🗌	No 🗆	Not Present 🗹
6. Was an attempt made to cool the samples?	Yes 🗹	No 🗆	NA 🗆
7. Were all items received at a temperature of >2°C to 6°C *	Yes	No 🗆	NA 🗆
8. Sample(s) in proper container(s)?	Yes 🗸	N. 🗆	
9. Sufficient sample volume for indicated test(s)?	Yes V	No 🗆	
10. Are samples properly preserved?	Yes 🗸	No 🗆	
11. Was preservative added to bottles?	Yes	No 🗹	NA 🗆
12. Is there headspace in the VOA vials?	Yes 🗌	No 🗆	NA 🗹
13. Did all samples containers arrive in good condition(unbroken)?	Yes 🗹	No 🗆	
14. Does paperwork match bottle labels?	Yes 🗹	No 🗌	
15. Are matrices correctly identified on Chain of Custody?	Yes 🗹	No 🗆	
16. Is it clear what analyses were requested?	Yes 🗹	No 🗆	
17. Were all holding times able to be met?	Yes 🗹	No 🗆	
Special Handling (if applicable)			
18. Was client notified of all discrepancies with this order?	Yes 🗌	No 🗆	NA 🗹
Person Notified: Date			
By Wham: Via:	□ «Mau □ P	nono 🗌 Fax	In Person
Regarding.			
Cilant Instructions			
19. Additional remarks:			
em Information			
Item# Temp °C 5.9			

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

#### SUBCONTRACT SAMPLE CHAIN OF CUSTODY

SUBCONTRACT SAMPLE CHAIN OF CUSTODY												210	140	13	,				
Send Report <u>To</u>	Michae	l Erdabl			SUF	CONT	RACT	ER		nF					F	Page :	13 # NAROUND	of / TIME	
Company			Inc	-	PRO	)JECT	NAME	E/NO.				PO#		-	≰Stan	dard			
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