

February 2, 2024

Ms. Anna Nguyen, Esq. Wactor Environmental Law Group, P.C. 3640 Grand Avenue, Suite 200 Oakland, California 94612

Re: Cap Integrity and Groundwater Monitoring Report

Former Walker Chevrolet Property, VCP No. SW1040

633 Division Avenue Tacoma, Washington

TRC Project Number: 566091.0000

Dear Ms. Nguyen:

TRC Environmental Corporation (TRC) is pleased to submit this *Cap Integrity and Groundwater Monitoring Report* (Report) documenting the completed pavement cap inspection and groundwater monitoring at the Former Walker Chevrolet property located at 633 Division Avenue in Tacoma, Washington (subject property). TRC performed inspection and monitoring for Wactor Environmental Law Group, P.C. (Wactor) on behalf its client ROIC Tuo LLC (ROIC). The subject property contains a Washington State Department of Ecology (Ecology) Site (Site), as defined under Ecology's Model Toxics Control Act (MTCA). This Site is enrolled in Ecology's Voluntary Cleanup Program (VCP) under VCP Project Number SW1040. The Cleanup Site ID for the Site is 5318 and the Facility Site ID is 347832.

The location of the Site is indicated on Figure 1. TRC understands that the subject property was formerly an automotive retail business with auto service bays, fuel, paint booths, and waste oil underground storage tanks (USTs). The subject property and Site have undergone extensive redevelopment into the Stadium Center shopping center and are currently occupied by various retail shops and restaurants including Starbucks, Jimmy Johns, Mud Bay, and Stadium Thriftway (a retail grocery store).

BACKGROUND

The Site has a conditional No Further Action (NFA) determination from Ecology that is contingent on provisions of an Environmental Covenant (EC) filed with Pierce County on December 12, 2017. The EC lists ongoing prohibitions and requirements that must be met by the current property owner, ROIC, to maintain the conditional NFA determination for the Site. As mandated by MTCA, long-term compliance monitoring is required if, as described below, containment is the selected cleanup action for the Site or portion of a Site. This Report has been prepared per the requirements of Washington Administrative

Code (WAC) 173-340-820 and contains applicable elements of WAC 173-340-410(3), as described in Exhibit D of the EC.

The conditional NFA determination for the Site is based on containment of known areas of contaminated soil under a cap comprised of portions of the existing building on the Site, which has been used by automotive businesses, and the asphalt- and concrete-paved surfaces of adjoining rights-of-way between the building and street curb lines near the southern portion of the building.

The 25,820-square-foot building occupies the majority of the 29,730-square-foot parcel. The building provides an impermeable cap that prevents potential contact with contaminated soil and minimizes potential stormwater infiltration and leaching of contaminants to groundwater. The pavement cap, which is exterior to the building cap, minimizes leaching of contaminants to groundwater. The extent and configuration of the building and pavement caps are illustrated on Figure 2.

This Report has been prepared to document the completed inspection of the caps, inspection of groundwater monitoring well MW-11, and groundwater monitoring, that are required under the EC. The requirements are primarily described in Exhibit D of the EC, Cap Integrity and Groundwater Monitoring Plan, which is included in Attachment A.

CAP INSPECTION

Per Ecology's requirements stated within the EC under Section 2.a., the Grantor shall maintain the integrity of the building and pavement caps. The primary purpose of the building cap is to prevent potential contact with contaminated soils and to minimize leaching of contaminants to groundwater. The primary purpose of the pavement cap is to minimize leaching of contaminants to groundwater.

Per Section 2.a. of the EC, restrictions shall apply within the building and pavement cap areas. These restrictions are discussed below.

The following EC restrictions apply to the building cap:

• The Grantor shall not alter or remove the existing structures on the property in any manner that would expose contaminated soil, result in a release to the environment of contaminants, or create a new exposure pathway, without prior written approval of Ecology. Should the Grantor propose to remove all or a portion of the existing structure designated as a cap so that access to the underlying contamination is feasible, Ecology may require treatment or removal of the underlying contaminated soil.

The following EC restrictions apply to the pavement cap:

If the Grantor becomes aware of any activities proposed on the adjacent portions of the City
of Tacoma right-of-way that will compromise the integrity of the cap including: drilling;
digging; piercing the cap with sampling device, post, stake or similar device; grading;
excavation; installation of underground utilities; or removal of the cap shall be reported to



Ecology in writing within 48 hours of notification. The Grantor shall report to Ecology within 48 hours of the discovery of any damage to the cap.

TRC visited the Site on December 15, 2023, and performed a thorough on-foot inspection of the subject property to delineate the condition of the building and pavement caps and identify monuments or other permanent corner markers. Figure 2 illustrates the outline of the pavement cap boundary required by the EC.

Notably, the shallowest remaining impacted soil in the area within the pavement cap footprint is documented in the *Remedial Investigation and Feasibility Study Former Walker Chevrolet Site* (Aspect Consulting 2016) to be 15 feet or more below ground surface (bgs). That minimum depth to residual impacts in soil is below the point of compliance for direct human contact per WAC 173-340-740(5)(d) of MTCA. In addition, it appears that the remaining impacted soil remains under a paved patio area or beneath sidewalk. Due to the 15-foot-bgs or greater depth of the residual impacted soil and overlying pavement, the landscaped areas do not pose a risk of direct contact with impacted soil to workers maintaining the landscaped areas or to the public.

In addition to eliminating the direct contact exposure pathway, any residual soil contamination below the landscaped areas has not leached to groundwater. This finding is based on the empirical evidence of current groundwater sampling data, as described further in the Groundwater Monitoring section below. Therefore, the overlapping landscaped areas with the pavement cap footprint do not expose contaminated soil, or result in a release to the environment of contaminants, or create a new exposure pathway.

MONUMENT INSPECTION

In December 2019, Pace Engineers (Pace), under the direction of Environmental Partners, Inc. (EPI)¹, permanently marked the exterior corners of the pavement cap to ensure that the extent of the pavement cap remained clearly delineated with monuments or other permanent corner markers as required per Section 1.f. of the EC. The interior corners of the pavement cap are defined by the exterior corners and perimeter of the building cap, which is intact and is not required to be delineated by markers. Pace surveyed and set four markers that identify the exterior corner boundaries of the property cap annotated "A" through "D" as shown on Figure 2 and in Attachment B. The pavement cap exterior corner boundary markers are described below.

- Marker "A" is set lead and tack with a brass washer with a northing of 709832.45 and an easting of 1156493.60.
- Marker "B" is set nail with a brass washer with a northing of 709791.98 and an easting of 1156573.25.

¹ EPI was acquired by TRC on December 27, 2019. For the purposes of this report, EPI and TRC are used synonymously.



1

- Marker "C" is set nail with a brass washer with 4-foot offset to east southeast from EC corner with a northing of 709739.81 and an easting of 1156499.32.
- Marker "D" is set rebar and cap with a northing of 709761.18 and an easting of 1156457.26.

During the December 15, 2023, site visit, TRC field staff, along with Dean Malte, Cleanup Project Manager with Ecology, located, inspected, and photographed the pavement cap corner markers. Three of the four markers (Markers A, B, and C) identifying the exterior corners of the pavement cap area subject to conditions of the EC were noted to be in good condition and no maintenance or repairs are necessary at this time. The fourth marker (Marker D) was noted to likely be buried in landscaping present at the location. TRC and Ecology were able to identify the location of Marker D based on photographs from previous inspections, which allowed identification of the capped area. TRC confirmed with Ecology at the time of the inspection that further efforts to unearth the marker are unnecessary at this time. Photographs of the EC pavement cap markers are included in Attachment B. Refer to Figure 2 and the EC Exhibit prepared by Pace in Attachment B for marker locations and coordinates.

GROUNDWATER MONITORING

Monitoring well MW-11, located inside of a walk-in cooler in the Stadium Thriftway grocery store, is a required observation point in accordance with EC Section 2.c., which states that sampling MW-11 will take place at a 24-month interval to confirm the effectiveness of the building cap. Prior to the initial (October 2019) sampling event, EPI prepared a *Compliance Monitoring Plan* (CMP) in accordance with the requirements of WAC 173-340-820 and contained the elements of WAC 173-340-410(3) to satisfy the requirements of the EC.

The first 24-month sampling event was performed by EPI on October 15, 2019, the timing of which was based on the official recording of the EC on December 12, 2017. The second and third 24-month groundwater monitoring events were performed by TRC on February 23, 2021, and December 15, 2023, respectively. Groundwater sampling was performed following the requirements of the CMP, which is presented in Attachment C.

Sampling Methods

Groundwater samples were collected using low-flow purging and sampling methods using a bladder pump equipped with new, single-use sample tubing and new, single-use Teflon-lined bladders. Purging and sampling were performed following "Technical Guidance on Low Flow Purging and Sampling" (Nielsen 2002) as cited in Exhibit D of the EC (Attachment A).

TRC field staff measured the depth to water and total depth of MW-11 prior to purging and sampling. The depth to groundwater at MW-11 was 50.54 feet below the top of casing (TOC) and the total depth was measured at 62.29 feet below TOC. The bladder pump intake was set at approximately 56 feet below TOC to pump groundwater from the middle portion of the water column in the well. The pumping rate was set at less than 0.5 liters per minute (L/min) to be consistent with low-flow purging and sampling techniques. An electronic water level indicator was used to periodically monitor the depth to groundwater during purging to mitigate excessive drawdown of the water level, as defined by the technical guidance.



Purge water stabilization was evaluated using a calibrated multi-parameter water meter equipped with an in-line flow cell for monitoring field parameters (e.g., temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential) during purging. Field parameter data were recorded on pre-printed field forms, which are provided in Attachment D. The groundwater sample was collected after field parameter measurements stabilized to within their respective stabilization criteria in three consecutive readings. Approximately 0.83 wetted casing volumes were removed prior to stabilization.

Following field parameter stabilization, groundwater samples were collected directly from the pump discharge tubing at a flow rate of approximately 100 milliliters per minute or less. Samples collected for volatile organic compounds (VOC) and gasoline-range organics (GRO) analyses were collected in new, pre-labeled, laboratory-supplied 40 milliliter (mL) volatile organic analysis vials with hydrochloric acid preservative. Samples collected for diesel-range organics (DRO) and oil-range organics (ORO) analyses were collected in new, pre-labeled, laboratory-supplied 500 mL amber glass bottles.

Filled sample bottles were immediately placed in a chilled cooler at 4 degrees Celsius or lower, and delivered to the Ecology-accredited analytical laboratory Friedman and Bruya, Inc. under standard chain-of-custody protocols. Groundwater samples were submitted for laboratory analysis for the following EC-defined contaminants of concern (COCs) under standard laboratory turnaround times:

- VOCs by U.S. Environmental Protection Agency (EPA) Method 8260D;
- GRO by Northwest Total Petroleum Hydrocarbons as Gasoline extended (NWTPH-Gx) Method; and
- DRO and ORO by Northwest Total Petroleum Hydrocarbons as Diesel extended (NWTPH-Dx) Method.

MW-11 Analytical Results

Analytical results for the December 15, 2023, groundwater monitoring event were compared to their respective Ecology MTCA Method A or B Groundwater Cleanup Levels (CULs) as summarized in Table 1. Laboratory data sheets of the analytical results are presented in Attachment E.

- Trichloroethene (TCE) was detected at a concentration of 1.8 micrograms per liter (μ g/L), which is less than the MTCA Method A CUL of 5.0 μ g/L. Historical concentrations of TCE in samples from MW-11 range from 1.4 μ g/L to 4.6 μ g/L indicating that the current concentration of 1.8 μ g/L is within the normal concentration range for MW-11 groundwater and that groundwater conditions are stable at the Site.
- Chloroform was detected at a concentration of 6.5 μg/L, which is greater than the MTCA Method B CUL (carcinogenic) of 1.4 μg/L. Chloroform was not detected at the laboratory reporting limit of 1.0 μg/L during the initial, October 2019, sampling event and was detected at a concentration of 1.2 μg/L during the February 2021 sampling event. Chloroform is not considered a principal contaminant under the EC and there are no apparent historical or current sources at the subject property. The presence of chloroform in groundwater may be



associated with the Morrell's Dry Cleaners site, which is located to the north of the subject property and has had chloroform detected in soil and groundwater.

- GRO, DRO, and ORO were not detected at concentrations exceeding their respective laboratory reporting limits in the MW-11 sample; therefore, the sample did not exceed the MTCA Method A CULs for those petroleum hydrocarbon ranges.
- Benzene, toluene, ethylbenzene, and total xylenes (BTEX) were not detected at concentrations exceeding their respective laboratory reporting limits; therefore, the sample did not exceed the MTCA Method A CULs for BTEX compounds.
- The groundwater sample from MW-11 was reanalyzed by the laboratory due to the detection of 1,2-dibromoethane (EDB) at a concentration of 0.013 µg/L because EDB was also detected in the method blank. EDB was not detected in the reanalyzed sample at a concentration greater than the reporting limit of 0.01 µg/L and was likely present in the initial analysis due to laboratory contamination. Therefore, EDB does not appear to be present in groundwater at the Site.
- Chloroethane exceeded the acceptance criteria in the matrix spike sample associated with the EPA Method 8260D analysis; however, the laboratory control samples met the acceptance criteria. The laboratory indicated the results were likely due to sample matrix effects. Therefore, chloroethane does not appear to be present in groundwater at the Site.

The shallowest impacted soil remaining beneath the pavement cap at the Site is at 15 feet. bgs. This soil had detections of GRO, benzene, and total xylenes at concentrations exceeding MTCA Method A Soil CULs for Unrestricted Land Uses. The current groundwater sample from MW-11 confirmed that all petroleum hydrocarbon ranges and BTEX compounds were not detected. These analytical results provide empirical evidence that residual petroleum hydrocarbon and BTEX concentrations present in soil under the pavement cap are not leaching to groundwater.

MW-11 Inspection Results

TRC field staff inspected the condition of monitoring well MW-11 while conducting the scheduled groundwater sampling event on December 15, 2023, and noted that the well monument, watertight well cap, and lock were in good condition and did not require maintenance, repair, or replacement.

When measuring the total depth of the well, TRC field staff noted a soft bottom potentially indicating accumulated solids in the sump of the polyvinyl chloride (PVC) well casing. Upon purging MW-11, TRC observed moderately high turbidity levels, with a maximum of 50.4 nephelometric turbidity units (NTU) early in the well purging process. Turbidity readings quickly declined to less than 10 NTU and stabilized to less than 5 NTU.



CONCLUSIONS AND RECOMMENDATIONS

TRC's conclusions and recommendations based on the findings of the December 2023 groundwater sampling event and TRC's site inspection and documentation activities are provided below:

- The building cap at the subject property is intact and unchanged since the last inspection and appears to meet the requirements described in the EC.
- The pavement cap permanent corner boundary markers are present and are in good condition with no repairs or maintenance required.
- Pavement appears to be absent at several small, landscaped areas installed at the direction of the City of Tacoma prior to the development of the EC that are within the EC-defined pavement cap area. However, landscape maintenance workers and the public are protected from potential direct contact with residual contamination based on the 15-foot-bgs or greater depth to residual impacts in soil, which is covered primarily asphalt pavement, concrete sidewalk, or by clean soil and landscaped vegetation. In addition, all petroleum hydrocarbon ranges and BTEX compounds were non-detect in the MW-11 groundwater sample indicating that residual petroleum hydrocarbon concentrations in soil beneath the pavement are not leaching to groundwater to a detectable degree at the Site. Thus, the landscaped areas within the pavement cap footprint do not expose contaminated soil, result in a release of contaminants to the environment, or create a new exposure pathway,
- Analytical results for the groundwater sample from MW-11 are primarily non-detect with a detection of TCE at a concentration less than half the MTCA Method A CUL for groundwater. Chloroform was detected at a concentration greater than the MTCA Method B CUL. Chloroform is not considered a principal contaminant under the EC and there are no apparent historical or current sources at the subject property. The presence of chloroform in groundwater may be associated with the Morrell's Dry Cleaners site, which is located to the north of the subject property and has had chloroform detected in soil and groundwater. All other EC-defined COCs were not detected at their respective laboratory reporting limits. The December 2023 groundwater sample from well MW-11 demonstrates compliance with the MTCA CULs for the 24-month groundwater monitoring event detailed in Section 2.b. of the EC.
- Empirical evidence (i.e., groundwater sample results for MW-11) demonstrates that groundwater beneath the Site complies with MTCA Method A and B CULs.
- Groundwater monitoring at MW-11 should continue under the existing biannual sampling frequency. Inspections of the building cap, pavement cap, and pavement cap corner monuments should be performed during the biannual groundwater monitoring events.

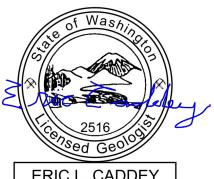


This Cap Integrity and Groundwater Monitoring Report was prepared solely for Wactor and its client ROIC, and the contents herein may not be used or relied upon by any other person without the express written consent and authorization of TRC.

Sincerely,

Prepared by: Kevin Bartelt

Senior Environmental Scientist



ERIC L. CADDEY

Reviewed and approved by: Eric Caddey, L.G. Senior Geologist

ENCLOSURES

Tables

Table 1 **Groundwater Analytical Results**

Figures

Figure 1 General Vicinity Map

Figure 2 Site Representation with Environmental Cap Locations

Attachments

Attachment A Environmental Covenant, Exhibit D Attachment B Environmental Covenant Survey Attachment C Compliance Monitoring Plan

Attachment D Field Data Sheets Attachment E Laboratory Data Sheets

LIMITATIONS

To the extent that preparation of this Report has required the application of best professional judgment and the application of scientific principles, certain results of this work have been based on subjective



interpretation. TRC makes no warranties express or implied, including and without limitation, warranties as to merchantability or fitness for a particular purpose. The information provided in this report is not to be construed as legal advice. TRC can be contacted by phone at (425) 395-0010.

REFERENCES

Aspect Consulting. 2016. Remedial Investigation and Feasibility Study, Former Walker Chevrolet Site, 633 Division Avenue, Tacoma, Washington. Prepared for David Shaw, Successor to Walker Chevrolet. 25 July 25.

The Nielsen Environmental Field School, Inc. (Nielsen). 2002. *Technical Guidance on Low Flow Purging and Sampling*.



Table

Table 1

Groundwater Analytical Results

Cap Integrity and Groundwater Monitoring Report Wactor Environmental Law Groupp, P.C.

633 Division Avenue Tacoma, Washington

Sample Identification		Petro	Petroleum Hydrocarbons Volatile Organic Compounds ^c												
	Date Collected	GROª	DRO⁵	ORO ^b	Tetrachloro- ethene	Trichloro- ethene	cis-1,2- Dichloro- ethene	trans-1,2- Dichloro- ethene	Vinyl Chloride	Benzene	Toluene	Ethylbenzene	Total Xylenes	Chloroform	1,2-Dibromo- ethane
MW-11	10/15/2019	<100	<50	<250	<1	2.0	<1	<1	<0.2	<0.35	<1	<1	<2	<1	<1
	2/23/2021	<100	<50	<250	<1	2.2	<1	<1	<0.2	<0.35	<1	<1	<2	1.2	<1
	12/15/2023	<100	<50	<250	<1	1.8	<1	<1	<0.02	<0.35	<1	<1	<3	6.5	0.013fb (<0.01)*
MTCA Met Cleanup I Ground		800/1,000 ^d	500 ^e	500 ^e	5.0 ^e	5.0 ^e	16 ^f	160 ^f	0.2 ^e	5.0 ^e	1,000 ^e	700e	1,000 ^e	1.4 ^f	.01 ^e

Notes:

All results presented in micrograms per liter (µg/L).

Bold Bold result exceeds the laboratory reporting limit.

- Result is less than the laboratory reporting limit.
- a Analyzed by NWTPH-Gx.
- b Analyzed by NWTPH-Dx.
- c Analyzed by EPA Method 8260C or 8260D Dual Acquisition.
- d Model Toxics Control Act (MTCA) Method A Groundwater Cleanup Level is 800 μg/L when benzene is present in the sample and 1,000 μg/L when benzene is not detected.
- e MTCA Method A Cleanup Levels for Groundwater, Table 720-1, Washington Administrative Code (WAC) 173-340-900.
- f MTCA Method B Soil Cleanup Levels from Cleanup Levels and Risk Calculations (CLARC) spreadsheet. Where cleanup levels based on carcinogenic and non-carcinogenic risk were available, the lower value was listed.
- * Sample reanalyzed, detection likely due to lab contamination.

Compounds:

GRO Gasoline-range organics

DRO Diesel-range organics

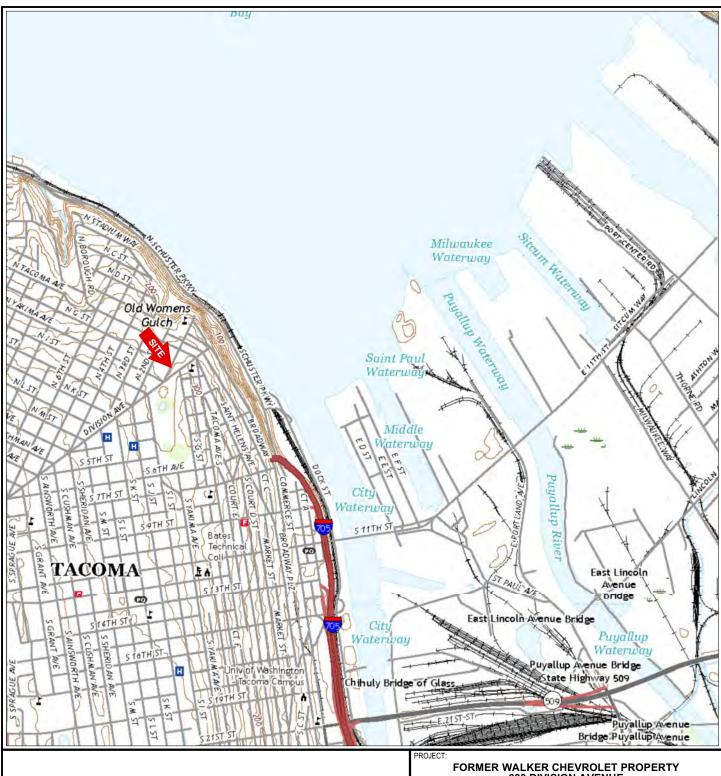
ORO Oil-range organics

Qualifier:

The analyte was detected in the method blank.



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SOURCE: USGS 7.5 MINUTE QUADRANGLE (TOPOGRAPHIC)

TACOMA NORTH, WA TACOMA SOUTH, WA POVERTY BAY, WA

2017

SCALE = 1:25,000

FORMER WALKER CHEVROLET PROPERTY 633 DIVISION AVENUE TACOMA, WASHINGTON

TITLE:

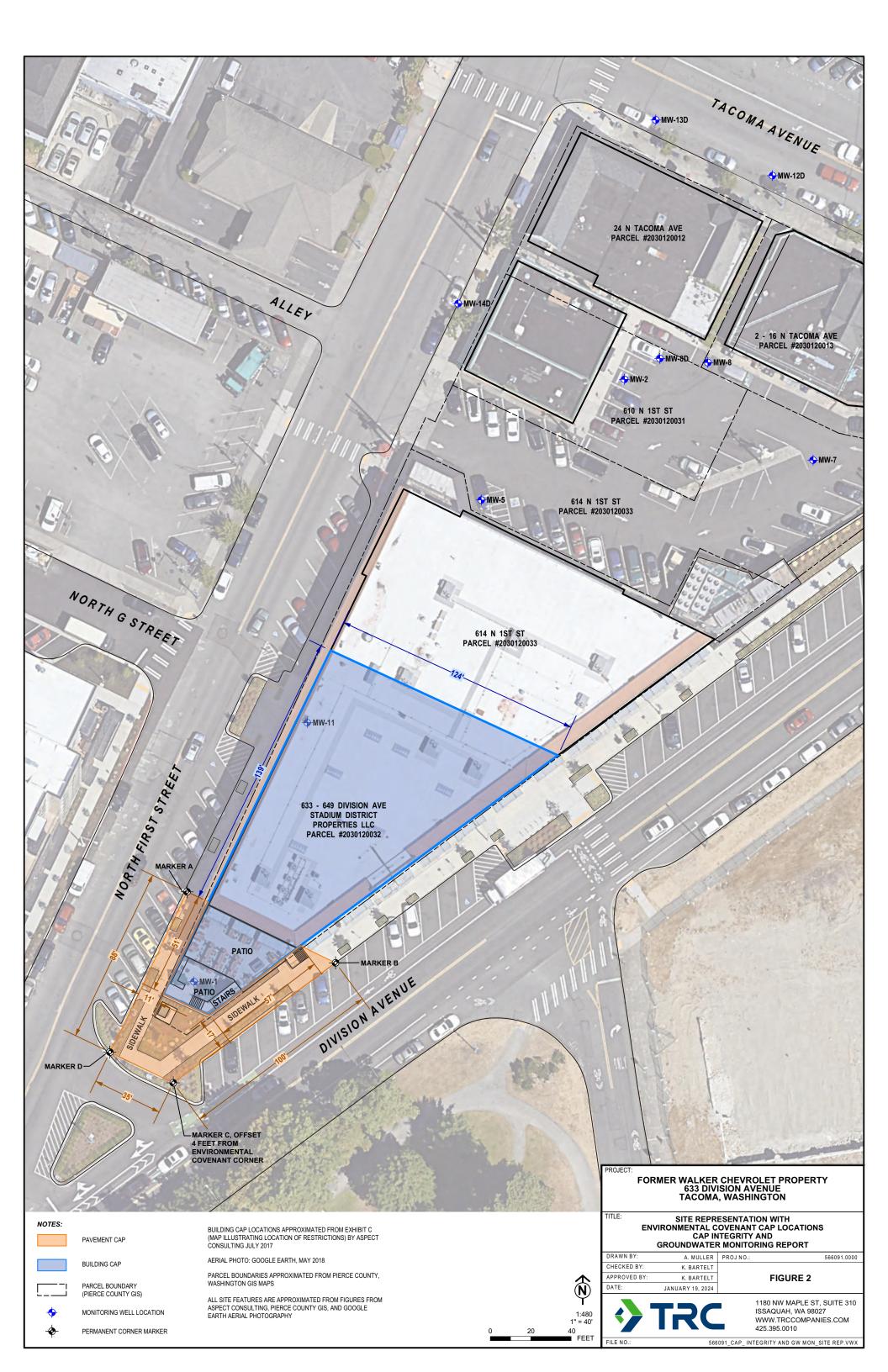
GENERAL VICINITY MAP CAP INTEGRITY AND GROUNDWATER MONITORING REPORT

DRAWN BY:	A. MULLER	PROJ NO.:	566091.0000
CHECKED BY:	K. BARTELT		
APPROVED BY:	K. BARTELT	FIGURE 1	
DATE:	JANUARY 19, 2024		



1180 NW MAPLE ST, SUITE 310 ISSAQUAH, WA 98027 WWW.TRCCOMPANIES.COM 425.395.0010

FILE NO.: 566091_CAP INTEGRITY GVM



Attachment A Environmental Covenant, Exhibit D

Exhibit D

CAP INTEGRITY AND GROUNDWATER MONITORING PLAN

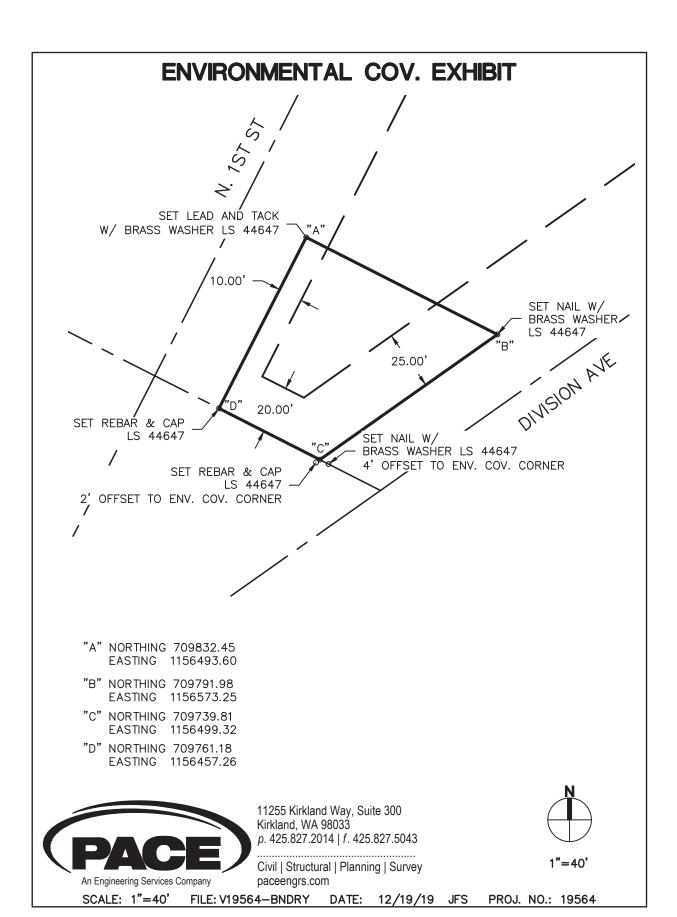
The Grantor shall maintain the building cap in accordance with Section 2.a, and shall not modify or remove the existing structure over the area designated as a cap, as illustrated in Exhibit C, without written authorization from Ecology. There are no inspection requirements for the building cap on the Property. The presence and condition of the pavement cap in the right-of-way will be observed during five-year periodic reviews.

The Grantor shall maintain MW-11 as an observation point in accordance with Section 2.c. MW-11 shall be sampled at a 24-month interval following receipt of Ecology's no further action (NFA) opinion letter to confirm the effectiveness of the building cap. As mandated by the Model Toxic Control Act, long-term compliance monitoring is required if containment is the selected cleanup action for a site or a portion of a site. The compliance monitoring plan must be prepared as per the requirements of WAC 173-340-820 and must contain the elements of WAC 173-340-410(3). The plan must require submittal of groundwater samples for the analysis of volatile organic compounds by EPA Method 8260 and total petroleum hydrocarbons by Methods NWTPH-Gx and NWTPH-Dx, or equivalent. Sample results shall be submitted to the Department of Ecology through the Environmental Information Management (EIM) database. A groundwater monitoring report must be submitted to Ecology after each sampling event.

Groundwater samples will be collected following "Technical Guidance on Low Flow Purging and Sampling" (Nielson, 2002). Groundwater will be pumped from the middle portion of the water column in the well at a rate of less than 1.0 L/min. A water level indicator will be used to monitor the elevation of groundwater during pumping of the well to mitigate drops in the water level during pumping and sampling. A calibrated multi-parameter water meter will be used with a flow cell for monitoring groundwater (temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential) during the pumping and sampling process (Appendix A).

The Department of Ecology will perform a five-year periodic review of the Site in accordance with Section 173-340-420, Washington Administrative Code of the Model Toxics Control Act.

Attachment B Environmental Covenant Survey



Attachment C Compliance Monitoring Plan



COMPLIANCE MONITORING PLAN

DATE: October 9, 2019

TO: Wactor & Wick LLP

CC: Ms. Anna Nguyen, Esq., Wactor & Wick LLP

FROM: Mr. Sean Trimble, L.G.

RE: Compliance Monitoring Plan

Former Walker Chevrolet Property

633 Division Avenue Tacoma, Washington

EPI Project Number: 48006.0

INTRODUCTION

Environmental Partners, Inc. (EPI) is pleased to submit this *Compliance Monitoring Plan* (CMP) documenting the planned inspection, groundwater monitoring, and reporting tasks at the Former Walker Chevrolet property located at 633 Division Avenue in Tacoma, Washington (the subject property). The subject property contains a Washington State Department of Ecology (Ecology) defined Site that is enrolled in Ecology's Voluntary Cleanup Program (VCP) under VCP Project Number SW1040. The Cleanup Site ID for the Site is 5318 and the Facility Site ID is 347832.

The location of the subject property and Site is indicated on Figure 1. EPI understands that the subject property was formerly an automotive retail business with auto service bays, fuel and waste oil underground storage tanks (USTs), and paint booths. The subject property and Site have undergone extensive redevelopment is currently occupied by various retail shops and restaurants including Starbucks, Jimmy Johns, Rhein Haus Tacoma, and Stadium Thriftway, a retail grocery store.

The Site has a conditional No Further Action (NFA) determination from Ecology that is contingent on provisions of an Environmental Covenant (EC) filed with Pierce County on December 12, 2017. The EC lists ongoing prohibitions and requirements that must be met by the current property owner, ROIC Tuo LLC (ROIC), to maintain the conditional NFA determination. As mandated by Ecology's Model Toxics Control Act (MTCA), long-term compliance monitoring is required if, as described below, containment is the selected cleanup action for the Site or portion of a Site. This CMP has been prepared per the requirements of Washington Administrative Code (WAC) 173-340-820 and contains elements of WAC 173-340-410(3), as described in Exhibit D of the EC. All work performed by EPI under this CMP will be confidential and will be performed under Wactor & Wick LLP oversight. Nothing will be submitted to any agency without Wactor & Wick LLP's advance approval.

The conditional NFA for the Site is based on containing known areas of contaminated soil under a cap comprising portions of the existing building on the Site, which have been used by automotive businesses, and the asphalt- and concrete-paved surfaces on adjoining rights-of-way between the building and street curb lines near the southern portion of the building. The 25,820-square-foot building occupies the majority of the 29,730-square-foot parcel. The building provides an impermeable cap that prevents potential contact with contaminated soil and minimizes leaching of contaminants to groundwater. The pavement cap minimizes leaching of contaminants to groundwater. The extents of the building and pavement caps are illustrated on Figure 2.

This CMP documents the planned work to implement the required inspection of the caps, groundwater monitoring, and reporting components of the EC, which are primarily described in Exhibit D of the EC, Cap Integrity and Groundwater Monitoring Plan (Attachment A).

SCOPE OF WORK

The scope of work for this CMP is described below:

- Inspect the Site to evaluate compliance with conditions of the EC, including a good faith
 effort to locate and preserve any reference monuments and boundary markers used to
 define the areal extent of coverage of the EC;
- Inspect and document the condition of the building and pavement caps;
- Perform groundwater monitoring at existing well MW-11 per the planning documents; and
- Prepare and submit a Client review draft groundwater monitoring and cap, monument, and boundary marker inspection report to Wactor & Wick LLP for review and revision. Send final report to Ecology with Wactor & Wick LLP approval.

Inspection of the Site

EPI personnel will inspect the Site for reference monuments and boundary markers used to delineate the areal extent of the cap as shown on Figure 2. In addition, personnel will inspect and evaluate if access to remedial action components described in the EC (e.g., monitoring wells, reference monuments, and boundary markers) is unencumbered.

Inspection and Document Condition of the Caps

In accordance with the EC, EPI will verify that the building cap and building structures have not been altered or removed in any manner that would expose contaminated soil, result in a release of contaminants to the environment, or create a new exposure pathway. Any damage to the cap that would compromise the integrity of the cap (e.g., drilling; digging; piercing the cap with a post, stake or similar device; grading; excavation; installation of underground utilities; or removal of the cap) will be reported to Wactor & Wick LLP.

Groundwater Monitoring

This task includes collecting a groundwater sample from monitoring well MW-11 to confirm the continued effectiveness of the building cap. The groundwater sample will be collected using low-flow purging and sampling methods and single-use sample tubing using a bladder pump following "Technical Guidance on Low Flow Purging and Sampling" (Nielsen 2002) as cited in Exhibit D of the EC (Attachment A). Groundwater will be pumped from the middle portion of the water column in the well at a rate of less than 1.0 liter per minute (L/min). A water level indicator will be used to monitor the depth to groundwater during pumping of the well to mitigate excessive decreases in the water level, as defined by the technical guidance, during purging and sampling.

Purge water stabilization will be evaluated using a calibrated multi-parameter water meter equipped with an in-line flow cell for monitoring field parameters (e.g., temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential) during the pumping and sampling process. All such data will be recorded on field forms. Sampling procedures will be adjusted to take all reasonable measures to prevent the potential loss of volatiles during sample collection. The groundwater sample will be collected after these measurements have stabilized to within 10 percent in consecutive readings or three wetted casing volumes have been removed, whichever occurs first.

Samples will be collected directly from the discharge tubing and will occur at a flow rate of approximately 100 milliliters per minute or less. Samples collected for volatile organic compound (VOC) and gasoline-range organics (GRO) analyses will be retained in new, pre-labeled, laboratory-supplied 40 milliliter VOA vials with hydrochloric acid preservative. Samples collected for diesel-range organics (DRO) and oil-range organics (ORO) analyses will be retained in new, pre-labeled, laboratory-supplied 500 milliliter (mL) amber glass bottles, or equivalent.

Samples will be immediately placed in a chilled cooler at 4 degrees Celsius or lower, pending delivery to an accredited analytical laboratory. All samples will be handled and transported under standard chain-of-custody protocols. Groundwater samples will be submitted for fixed base laboratory analysis of the following analytes under standard laboratory turnaround time:

- VOCs by U.S. Environmental Protection Agency (EPA) Method 8260C;
- GRO by Northwest Total Petroleum Hydrocarbons as Gasoline (NWTPH-Gx) Method; and
- DRO and ORO by Northwest Total Petroleum Hydrocarbons as Diesel (NWTPH-Dx)
 Method.

Groundwater Monitoring Report

Following completion of the inspection and groundwater monitoring at the subject property and receipt of laboratory data, EPI will prepare a *Groundwater Monitoring Report* (GMR) documenting sampling results from the MW-11 monitoring event, including depth to water, stabilized field parameter measurements, and laboratory data.

Wactor & Wick, LLP Compliance Monitoring Plan Former Walker Chevrolet Property, 633 Division Avenue, Tacoma, Washington

October 9, 2019

The GMR will also include documentation of inspection results and evaluations for access to remedial action components described in the EC, including monitoring wells, reference monuments, and boundary markers for delineation of the area of the Site that is subject to the EC. Results for inspection and evaluation of the condition of the building and pavement caps will also be documented in the GMR as described in the EC.

Schedule

As noted in Exhibit D of the EC, groundwater sampling at MW-11 will be performed at 24-month intervals. The initial groundwater sampling and cap inspection event will be scheduled and performed within 2 weeks of Wactor & Wick LLP's approval of this CMP. Laboratory analyses for the MW-11 groundwater sample will be performed under standard turnaround time, which is commonly 2 weeks for most analyses.

The Client review draft GMR will be submitted to Wactor & Wick LLP for review and comment within 2 weeks of receipt of all laboratory data. EPI will incorporate Wactor & Wick LLP's revisions and comments into a final GMR within 1 week of receiving Client comments and revisions. The final GMR will be submitted to Ecology, with Wactor & Wick LLP approval, as required under the terms of the EC. In addition, with advanced approval from Wactor & Wick LLP, EPI will upload analytical and field parameter data to Ecology's Environmental Information Management (EIM) database, as required under the EC.

ENCLOSURES

Figures

Figure 1 General Vicinity Map

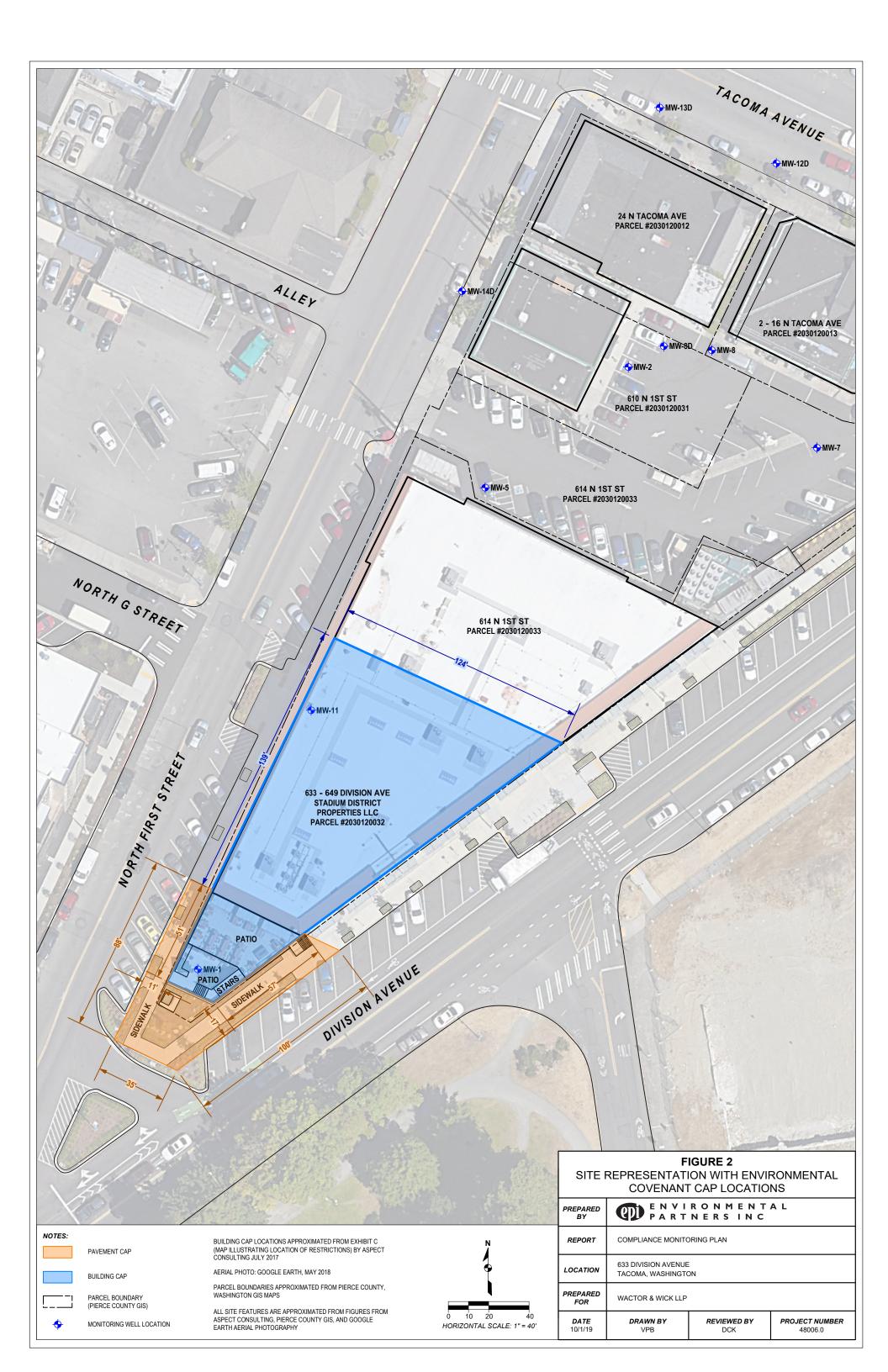
Figure 2 Site Representation with Environmental Covenant Cap Locations

Attachment A

Exhibit D from the Stadium Retail LLC Environmental Covenant, electronically recorded in Pierce County, Washington, December 12, 2017

F	ig	u	re	S





Attachment A
Exhibit D from the Stadium Retail LLC
Environmental Covenant, electronically recorded in
Pierce County, Washington, December 12, 2017

Exhibit D

CAP INTEGRITY AND GROUNDWATER MONITORING PLAN

The Grantor shall maintain the building cap in accordance with Section 2.a, and shall not modify or remove the existing structure over the area designated as a cap, as illustrated in Exhibit C, without written authorization from Ecology. There are no inspection requirements for the building cap on the Property. The presence and condition of the pavement cap in the right-of-way will be observed during five-year periodic reviews.

The Grantor shall maintain MW-11 as an observation point in accordance with Section 2.c. MW-11 shall be sampled at a 24-month interval following receipt of Ecology's no further action (NFA) opinion letter to confirm the effectiveness of the building cap. As mandated by the Model Toxic Control Act, long-term compliance monitoring is required if containment is the selected cleanup action for a site or a portion of a site. The compliance monitoring plan must be prepared as per the requirements of WAC 173-340-820 and must contain the elements of WAC 173-340-410(3). The plan must require submittal of groundwater samples for the analysis of volatile organic compounds by EPA Method 8260 and total petroleum hydrocarbons by Methods NWTPH-Gx and NWTPH-Dx, or equivalent. Sample results shall be submitted to the Department of Ecology through the Environmental Information Management (EIM) database. A groundwater monitoring report must be submitted to Ecology after each sampling event.

Groundwater samples will be collected following "Technical Guidance on Low Flow Purging and Sampling" (Nielson, 2002). Groundwater will be pumped from the middle portion of the water column in the well at a rate of less than 1.0 L/min. A water level indicator will be used to monitor the elevation of groundwater during pumping of the well to mitigate drops in the water level during pumping and sampling. A calibrated multi-parameter water meter will be used with a flow cell for monitoring groundwater (temperature, pH, specific conductance, dissolved oxygen, turbidity, and oxidation-reduction potential) during the pumping and sampling process (Appendix A).

The Department of Ecology will perform a five-year periodic review of the Site in accordance with Section 173-340-420, Washington Administrative Code of the Model Toxics Control Act.

Attachment D Field Data Sheets

TRC Groundwater Sampling Field Data

Project Na	me.	1.	enant F	ormer	. و طالعه لمرا	- Chen	ml-t D		
Project Nu			*	ormer	0-01120	· chen	rolet t	roperty	
Well ID:	mber.	566	•			Date	را ما	15/2023	
Sample ID:		MW-11 MW-11			Field Tea	m: (Initials)	MA	18/2000	
Field Condit	tions			3 1 A F	36° F	ni. (mitalo)	POLYT		
Mall Diameter (Purge Information Well Diameter (in.) 7. Purge Method: Submersible pump								
Well Diameter (Well Depth (ft.)		62.29	Soft Batton		· ·	Submersible pur Bladder Pump	np -		
Initial Depth to		50.54	J677 D5 1104	•	<	Peristaltic Pump	\geq		
Depth of Water	` '	11.75				Other: :			
1 Casing Volum	es	1.92			Start Time	11:45	-		
3 Casing Volum	е	5.76			End Time	12:25	•		
(2"=0.163 x de	epth)		1	Tota	al Gallons Purged	1.6			
(4"=0.653 x de	epth)			Final De	pth to Water (ft.)	50.5	5		
								Depth to	
Time	Volume	рН	Conductivity	DO	Temp.	ORP	Turbidity	Water	Appearance/Notes
	Gallons		mS/cm	mg/L	~c'	mV	NTU	ft.	
11:45	0 · 0	5.74	0.152	6.26	12.2	171.2	5 b.4	50.54	Clear
11:50	0.2	6.23	0. 48	6.99	12.6	145.6	22.4	50.54	1
11:55	ં ૦. મ	6.43	0,143	9.50	12.6	142.3	21.3	50.54	
12:00	0.6	6.33	0.146	6.57	11.6	151.3	10.4	50.54	
12:05	6.5	6.31	0.149	6.01	٦١ .٦	143.6	7.14	50.55	
12:10	1.0	6.34	0.152	5.45	12.6	141.5	5.12	50.55	
12:15	1.2	6.31	0.153	5.51	12.7	144.1	4.91	50.55	
	1.4	6.32	0.153	5.43	12.7	144.3	4.32	50.55	
12:20	1.6	6.31	0.153				4.73	50.55	
12:25	1.6	6.51	0.135	5.36	12.7	145.3	-1,,,	90,23	
	5~	~~ 10 l	e 1						
		\	11/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1/1						
		//							
		\mathcal{M}							
				± 10% if			± 10% if		<
Stabilization	n Criteria	± 0.1	± 3%	> 0.5	± 3%	± 20 mV	> 5 NTU		
<u> </u>			Com	nala laf	a rmatia n				
0	l 1/ - \	D! - 4 - 14!		-	ormation	S			
Sample Met	nod(s) :	Peristaltic	pump/Subme	rsible pur	mp/ Bladder F	umpy Balle	r / Other		
Analy	<i>j</i> sis	Time	Bottle Type	Preserva	tive/Filtration		Comments		-
DRO and by NWTP1		12:30	500 mL	N/A			, /	1	
GRO by			40 mL VOA	HCL				///	
VOC > bx		-		HCL				/	
EPA 8	z 60	, ,	40 mL 10A	nu.			///		
	ıΩ		\						
End Time	•	12:42							
	Comments / Exceptions:								
Presence of floating product? YES/NO Presence of sinking product? YES/NO									
			$\overline{}$						
		- 							
		111/1							
		1/10							
		10/							

Attachment E Laboratory Data Sheets

ENVIRONMENTAL CHEMISTS

James E. Bruya, Ph.D. Yelena Aravkina, M.S. Michael Erdahl, B.S. Vineta Mills, M.S. Eric Young, B.S. 5500 4th Avenue South Seattle, WA 98108 (206) 285-8282 fbi@isomedia.com www.friedmanandbruya.com

December 27, 2023

Kevin Bartelt, Project Manager TRC Environmental 1180 NW Maple St, Suite 310 Issaquah, WA 98027

RE: 566091 PO 210459, F&BI 312308

Dear Mr Bartelt:

Included are the results from the testing of material submitted on December 15, 2023 from the 566091 PO 210459, F&BI 312308 project. There are 13 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

c: Cynthia Moon

ENVIRONMENTAL CHEMISTS

CASE NARRATIVE

This case narrative encompasses samples received on December 15, 2023 by Friedman & Bruya, Inc. from the TRC Environmental 566091 PO 210459, F&BI 312308 project. Samples were logged in under the laboratory ID's listed below.

<u>Laboratory ID</u> <u>TRC Environmental</u>

312308-01 MW-11

1,2-Dibromoethane (EDB) was detected in the 8260D analysis of sample MW-11. The sample was reanalyzed. Both data sets are enclosed.

Chloroethane exceeded the acceptance criteria in the 8260D matrix spike sample. The laboratory control samples met the acceptance criteria, therefore the data were likely due to sample matrix effect.

All other quality control requirements were acceptable.

ENVIRONMENTAL CHEMISTS

Date of Report: 12/27/23 Date Received: 12/15/23

Project: 566091 PO 210459, F&BI 312308

Date Extracted: 12/18/23 Date Analyzed: 12/19/23

RESULTS FROM THE ANALYSIS OF WATER SAMPLES FOR TOTAL PETROLEUM HYDROCARBONS AS GASOLINE USING METHOD NWTPH-Gx

Results Reported as ug/L (ppb)

Sample ID Laboratory ID	Gasoline Range	Surrogate (% Recovery) (Limit 50-150)
MW-11 312308-01	<100	96
Method Blank 03-2842 MB	<100	92

ENVIRONMENTAL CHEMISTS

Date of Report: 12/27/23 Date Received: 12/15/23

Project: 566091 PO 210459, F&BI 312308

Date Extracted: 12/18/23 Date Analyzed: 12/18/23

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	$\frac{\text{Diesel Range}}{(\text{C}_{10}\text{-}\text{C}_{25})}$	$\frac{\text{Motor Oil Range}}{(C_{25}\text{-}C_{36})}$	Surrogate (% Recovery) (Limit 50-150)
MW-11 312308-01	<50	<250	103
Method Blank 03-2930 MB	<50	<250	96

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-11	Client:	TRC Environmental

Date Received: 12/15/23 Project: 566091 PO 210459, F&BI 312308
Date Extracted: 12/18/23 Lab ID: 312308-01

Date Extracted: 12/18/23 Lab ID: 312308-01
Date Analyzed: 12/18/23 Data File: 121824.D
Matrix: Water Instrument: GCMS11
Units: ug/L (ppb) Operator: MD

		Lower	Opper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	99	78	126
Toluene-d8	104	84	115
4-Bromofluorobenzene	108	72	130

Compounds:	Concentration ug/L (ppb)	Compounds:	Concentration ug/L (ppb)
Dichlorodifluoromethane	<1	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	< 0.02	Dibromochloromethane	< 0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	0.013 fb
Chloroethane	<1	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	< 50	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	6.5	1,1,2,2-Tetrachloroethane	< 0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	< 0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	< 0.5	1,2,4-Trimethylbenzene	<1
Benzene	< 0.35	sec-Butylbenzene	<1
Trichloroethene	1.8	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	< 0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	< 0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	< 0.5
trans-1,3-Dichloropropene	< 0.4	Naphthalene	<1
1,1,2-Trichloroethane	< 0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	MW-11	Client:	TRC Environmental
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566091 PO 210459, F&BI 312308Date Received: 12/15/23Project: Lab ID: Date Extracted: 12/18/23 312308-01 Date Analyzed: 12/21/23 Data File: 122130.DMatrix: Water Instrument: GCMS13 Units: ug/L (ppb) Operator: MD

Surrogates:	% Recovery:	Lower Limit:	Upper Limit:
1,2-Dichloroethane-d4	103	71	132
Toluene-d8	102	68	139
4-Bromofluorobenzene	98	62	136

Concentration

Compounds: ug/L (ppb)

1,2-Dibromoethane (EDB) <0.01

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID:	Method Blank	Client:	TRC Environmental

Date Received: Not Applicable Project: 566091 PO 210459, F&BI 312308
Date Extracted: 12/18/23 Lab ID: 03-2911 mb

Date Extracted:12/18/23Lab ID:03-2911 mlDate Analyzed:12/18/23Data File:121814.DMatrix:WaterInstrument:GCMS13Units:ug/L (ppb)Operator:IJL

		Lower	Upper
Surrogates:	% Recovery:	Limit:	Limit:
1,2-Dichloroethane-d4	109	71	132
Toluene-d8	103	68	139
4-Bromofluorobenzene	114	62	136

	Concentration		Concentration
Compounds:	ug/L (ppb)	Compounds:	ug/L (ppb)
Dichlorodifluoromethane	<1 k	1,3-Dichloropropane	<1
Chloromethane	<10	Tetrachloroethene	<1
Vinyl chloride	< 0.02	Dibromochloromethane	< 0.5
Bromomethane	<5	1,2-Dibromoethane (EDB)	0.010 lc
Chloroethane	<1 k	Chlorobenzene	<1
Trichlorofluoromethane	<1	Ethylbenzene	<1
Acetone	<50 ca	1,1,1,2-Tetrachloroethane	<1
1,1-Dichloroethene	<1	m,p-Xylene	<2
Hexane	<5	o-Xylene	<1
Methylene chloride	<5	Styrene	<1
Methyl t-butyl ether (MTBE)	<1	Isopropylbenzene	<1
trans-1,2-Dichloroethene	<1	Bromoform	<5 ca
1,1-Dichloroethane	<1	n-Propylbenzene	<1
2,2-Dichloropropane	<1	Bromobenzene	<1
cis-1,2-Dichloroethene	<1	1,3,5-Trimethylbenzene	<1
Chloroform	<1	1,1,2,2-Tetrachloroethane	< 0.2
2-Butanone (MEK)	<20	1,2,3-Trichloropropane	<1
1,2-Dichloroethane (EDC)	< 0.2	2-Chlorotoluene	<1
1,1,1-Trichloroethane	<1	4-Chlorotoluene	<1
1,1-Dichloropropene	<1	tert-Butylbenzene	<1
Carbon tetrachloride	< 0.5	1,2,4-Trimethylbenzene	<1
Benzene	< 0.35	sec-Butylbenzene	<1
Trichloroethene	< 0.5	p-Isopropyltoluene	<1
1,2-Dichloropropane	<1	1,3-Dichlorobenzene	<1
Bromodichloromethane	< 0.5	1,4-Dichlorobenzene	<1
Dibromomethane	<1	1,2-Dichlorobenzene	<1
4-Methyl-2-pentanone	<10	1,2-Dibromo-3-chloropropane	<10
cis-1,3-Dichloropropene	< 0.4	1,2,4-Trichlorobenzene	<1
Toluene	<1	Hexachlorobutadiene	< 0.5
trans-1,3-Dichloropropene	< 0.4	Naphthalene	<1
1,1,2-Trichloroethane	< 0.5	1,2,3-Trichlorobenzene	<1
2-Hexanone	<10		

ENVIRONMENTAL CHEMISTS

Analysis For Volatile Compounds By EPA Method 8260D Dual Acquisition

Client Sample ID: Method Blank Client: TRC Environmental

Date Received: Not Applicable Project: 566091 PO 210459, F&BI 312308

Lab ID: Date Extracted: 12/21/23 03-2921 mbDate Analyzed: 12/21/23 Data File: 122108.DMatrix: Water Instrument: GCMS13 Units: ug/L (ppb) Operator: MD

Upper Lower Surrogates: % Recovery: Limit: Limit: 1,2-Dichloroethane-d4 99 71 132 Toluene-d8 92 68 139 4-Bromofluorobenzene 96 62 136

Concentration

Compounds: ug/L (ppb)

1,2-Dibromoethane (EDB) <0.01

ENVIRONMENTAL CHEMISTS

Date of Report: 12/27/23 Date Received: 12/15/23

Project: 566091 PO 210459, F&BI 312308

QUALITY ASSURANCE RESULTS FOR THE ANALYSIS OF WATER SAMPLES FOR TPH AS GASOLINE USING METHOD NWTPH-Gx

Laboratory Code: 312214-01 (Duplicate)

	Reporting	Sample	Duplicate	RPD
Analyte	Units	Result	Result	(Limit 20)
Gasoline	ug/L (ppb)	<100	<100	nm

Laboratory Code: Laboratory Control Sample

			Percent		
	Reporting	Spike	Recovery	Acceptance	
Analyte	Units	Level	LCS	Criteria	
Gasoline	ug/L (ppb)	1,000	110	70-130	

ENVIRONMENTAL CHEMISTS

Date of Report: 12/27/23 Date Received: 12/15/23

Project: 566091 PO 210459, F&BI 312308

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	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Diesel Extended	ug/L (ppb)	2,500	84	84	72-139	0

ENVIRONMENTAL CHEMISTS

Date of Report: 12/27/23 Date Received: 12/15/23

Project: 566091 PO 210459, F&BI 312308

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

Laboratory Code: 312269-02 (Matrix Spike)

	-	~ .1	~ .	Percent	
	Reporting	-	-		Acceptance
Analyte	Units	Level	Result	MS	Criteria
Dichlorodifluoromethane	ug/L (ppb)	10	<1	113	27-164
Chloromethane	ug/L (ppb)	10	<10	129	34-141
Vinyl chloride	ug/L (ppb)	10	0.022	156	16-176
Bromomethane	ug/L (ppb)	10	<5	164	10-193
Chloroethane Trichlorofluoromethane	ug/L (ppb)	10 10	<1 <1	160 vo 127	50-150 50-150
Acetone	ug/L (ppb) ug/L (ppb)	50	<50	82	50-150 15-179
1.1-Dichloroethene	ug/L (ppb)	10	<1	114	50-150
Hexane	ug/L (ppb)	10	<5	110	49-161
Methylene chloride	ug/L (ppb)	10	<5	118	40-143
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	<1	112	50-150
trans-1,2-Dichloroethene	ug/L (ppb)	10	<1	111	50-150
1,1-Dichloroethane	ug/L (ppb)	10	<1	117	50-150
2,2-Dichloropropane	ug/L (ppb)	10	<1	148	62-152
cis-1,2-Dichloroethene	ug/L (ppb)	10	<1	110	50-150
Chloroform	ug/L (ppb)	10	<1	110	50-150
2-Butanone (MEK)	ug/L (ppb)	50	<20	101	34-168
1,2-Dichloroethane (EDC)	ug/L (ppb)	10	< 0.2	128	50-150
1,1,1-Trichloroethane	ug/L (ppb)	10	<1	115	50-150
1,1-Dichloropropene	ug/L (ppb)	10	<1	119	50-150
Carbon tetrachloride	ug/L (ppb)	10	< 0.5	111	50-150
Benzene	ug/L (ppb)	10	< 0.35	121	50-150
Trichloroethene	ug/L (ppb)	10	< 0.5	107	43-133
1,2-Dichloropropane Bromodichloromethane	ug/L (ppb) ug/L (ppb)	10 10	<1 <0.5	114 106	50-150 50-150
Dibromomethane	ug/L (ppb)	10	<0.5	109	50-150
4-Methyl-2-pentanone	ug/L (ppb)	50	<10	109	50-150
cis-1,3-Dichloropropene	ug/L (ppb)	10	<0.4	108	48-145
Toluene	ug/L (ppb)	10	<1	115	50-150
trans-1,3-Dichloropropene	ug/L (ppb)	10	< 0.4	115	37-152
1,1,2-Trichloroethane	ug/L (ppb)	10	< 0.5	115	50-150
2-Hexanone	ug/L (ppb)	50	<10	102	50-150
1,3-Dichloropropane	ug/L (ppb)	10	<1	109	50-150
Tetrachloroethene	ug/L (ppb)	10	<1	88	50-150
Dibromochloromethane	ug/L (ppb)	10	< 0.5	94	33-164
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	0.072	107	50-150
Chlorobenzene	ug/L (ppb)	10	<1	101	50-150
Ethylbenzene	ug/L (ppb)	10	<1	117	50-150
1,1,1,2-Tetrachloroethane	ug/L (ppb)	10	<1	107	50-150
m,p-Xylene	ug/L (ppb)	20	<2	111	50-150
o-Xylene Stvrene	ug/L (ppb)	10 10	<1 <1	111 107	50-150 50-150
Isopropylbenzene	ug/L (ppb) ug/L (ppb)	10	<1	107	50-150 50-150
Bromoform	ug/L (ppb)	10	<5	98	23-161
n-Propylbenzene	ug/L (ppb)	10	<1	104	50-150
Bromobenzene	ug/L (ppb)	10	<1	97	50-150
1,3,5-Trimethylbenzene	ug/L (ppb)	10	<1	99	50-150
1,1,2,2-Tetrachloroethane	ug/L (ppb)	10	< 0.2	110	57-162
1,2,3-Trichloropropane	ug/L (ppb)	10	<1	131	33-151
2-Chlorotoluene	ug/L (ppb)	10	<1	101	50-150
4-Chlorotoluene	ug/L (ppb)	10	<1	102	50-150
tert-Butylbenzene	ug/L (ppb)	10	<1	99	50-150
1,2,4-Trimethylbenzene	ug/L (ppb)	10	<1	101	50-150
sec-Butylbenzene	ug/L (ppb)	10	<1	102	46-139
p-Isopropyltoluene	ug/L (ppb)	10	<1	101	46-140
1,3-Dichlorobenzene	ug/L (ppb)	10	<1	98	50-150
1,4-Dichlorobenzene	ug/L (ppb)	10	<1	97	50-150
1,2-Dichlorobenzene	ug/L (ppb)	10 10	<1 <10	99 113	50-150 50-150
1,2-Dibromo-3-chloropropane 1,2,4-Trichlorobenzene	ug/L (ppb) ug/L (ppb)	10	<10 <1	91	50-150 50-150
Hexachlorobutadiene	ug/L (ppb) ug/L (ppb)	10	<0.5	83	42-150
Naphthalene	ug/L (ppb)	10	<1	81	50-150
1,2,3-Trichlorobenzene	ug/L (ppb)	10	<1	80	44-155
1,2,0 111011010001120110	ug/L (ppb)	10	~1	00	44-100

ENVIRONMENTAL CHEMISTS

Date of Report: 12/27/23 Date Received: 12/15/23

Project: 566091 PO 210459, F&BI 312308

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

Laboratory Code: Laboratory Control Sample

Edward Gode. Edward God.	itioi zampio		Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
Dichlorodifluoromethane	ug/L (ppb)	10	110	111	49-149	1
Chloromethane	ug/L (ppb)	10	130	125	34-143	4
Vinyl chloride	ug/L (ppb)	10	143	130	43-149	10
Bromomethane	ug/L (ppb)	10	166	150	28-182	10
Chloroethane	ug/L (ppb)	10	146	134	59-157	9
Trichlorofluoromethane Acetone	ug/L (ppb) ug/L (ppb)	10 50	119 80	113 84	59-141 20-139	5 5
1,1-Dichloroethene	ug/L (ppb) ug/L (ppb)	10	109	109	67-138	0
Hexane	ug/L (ppb)	10	108	103	50-161	5
Methylene chloride	ug/L (ppb)	10	120	116	29-192	3
Methyl t-butyl ether (MTBE)	ug/L (ppb)	10	115	111	70-130	4
trans-1,2-Dichloroethene	ug/L (ppb)	10	111	109	70-130	2
1,1-Dichloroethane	ug/L (ppb)	10	121	114	70-130	6
2,2-Dichloropropane	ug/L (ppb)	10	139	127	71-148	9
cis-1,2-Dichloroethene	ug/L (ppb)	10	109	108	70-130	1
Chloroform 2-Butanone (MEK)	ug/L (ppb)	10 50	108 110	109 112	70-130 50-157	$\frac{1}{2}$
1,2-Dichloroethane (EDC)	ug/L (ppb) ug/L (ppb)	10	122	112	70-130	1
1.1.1-Trichloroethane	ug/L (ppb) ug/L (ppb)	10	111	111	70-130	0
1,1-Dichloropropene	ug/L (ppb)	10	110	109	70-130	1
Carbon tetrachloride	ug/L (ppb)	10	103	112	70-130	8
Benzene	ug/L (ppb)	10	116	115	70-130	1
Trichloroethene	ug/L (ppb)	10	103	104	70-130	1
1,2-Dichloropropane	ug/L (ppb)	10	111	108	70-130	3
Bromodichloromethane	ug/L (ppb)	10	108	107	70-130	1
Dibromomethane	ug/L (ppb)	10	104	107	70-130	3
4-Methyl-2-pentanone cis-1,3-Dichloropropene	ug/L (ppb) ug/L (ppb)	50 10	109 103	114 104	70-130 70-130	4 1
Toluene	ug/L (ppb) ug/L (ppb)	10	109	105	70-130	4
trans-1,3-Dichloropropene	ug/L (ppb)	10	113	103	70-130	9
1,1,2-Trichloroethane	ug/L (ppb)	10	113	108	70-130	5
2-Hexanone	ug/L (ppb)	50	99	101	66-132	2
1,3-Dichloropropane	ug/L (ppb)	10	105	103	70-130	2
Tetrachloroethene	ug/L (ppb)	10	95	94	70-130	1
Dibromochloromethane	ug/L (ppb)	10	98	102	63-142	4
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	106	107	70-130	1
Chlorobenzene Ethylbenzene	ug/L (ppb) ug/L (ppb)	10 10	100 108	100 108	70-130 70-130	0
1,1,1,2-Tetrachloroethane	ug/L (ppb) ug/L (ppb)	10	108	108	70-130	0
m,p-Xylene	ug/L (ppb)	20	103	102	70-130	1
o-Xylene	ug/L (ppb)	10	103	102	70-130	1
Styrene	ug/L (ppb)	10	97	98	70-130	1
Isopropylbenzene	ug/L (ppb)	10	101	100	70-130	1
Bromoform	ug/L (ppb)	10	100	101	50-157	1
n-Propylbenzene	ug/L (ppb)	10	105	107	70-130	2
Bromobenzene	ug/L (ppb)	10	95	97	70-130	2
1,3,5-Trimethylbenzene 1,1,2,2-Tetrachloroethane	ug/L (ppb) ug/L (ppb)	10 10	100 108	100 110	52-150 $75-140$	$\frac{0}{2}$
1,2,3-Trichloropropane	ug/L (ppb) ug/L (ppb)	10	111	115	40-153	4
2-Chlorotoluene	ug/L (ppb)	10	102	102	70-130	0
4-Chlorotoluene	ug/L (ppb)	10	103	105	70-130	2
tert-Butylbenzene	ug/L (ppb)	10	99	102	70-130	3
1,2,4-Trimethylbenzene	ug/L (ppb)	10	101	102	70-130	1
sec-Butylbenzene	ug/L (ppb)	10	102	102	70-130	0
p-Isopropyltoluene	ug/L (ppb)	10	102	102	70-130	0
1,3-Dichlorobenzene	ug/L (ppb)	10	100	100	70-130	0
1,4-Dichlorobenzene 1,2-Dichlorobenzene	ug/L (ppb) ug/L (ppb)	10 10	98 100	98 101	70-130 70-130	0 1
1,2-Dichloropenzene 1,2-Dibromo-3-chloropropane	ug/L (ppb) ug/L (ppb)	10	100	101	70-130 70-130	3
1,2,4-Trichlorobenzene	ug/L (ppb)	10	96	97	70-130	1
Hexachlorobutadiene	ug/L (ppb)	10	97	96	70-130	1
Naphthalene	ug/L (ppb)	10	99	98	61-133	1
1,2,3-Trichlorobenzene	ug/L (ppb)	10	97	95	69-143	2

ENVIRONMENTAL CHEMISTS

Date of Report: 12/27/23 Date Received: 12/15/23

Project: 566091 PO 210459, F&BI 312308

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

Laboratory Code: 312389-02 (Matrix Spike)

				Percent	
	Reporting	Spike	Sample	Recovery	Acceptance
Analyte	Units	Level	Result	MS	Criteria
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	< 0.01	99	50-150

Laboratory Code: Laboratory Control Sample

			Percent	Percent		
	Reporting	Spike	Recovery	Recovery	Acceptance	RPD
Analyte	Units	Level	LCS	LCSD	Criteria	(Limit 20)
1,2-Dibromoethane (EDB)	ug/L (ppb)	10	104	99	70-130	5

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, biased low; or, the calibration results for the analyte were outside of acceptance criteria, biased high, with a detection for the analyte in the sample. 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 standard reporting limit. 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.
- k The calibration results for the analyte were outside of acceptance criteria, biased high, and the analyte was not detected in the sample.
- 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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